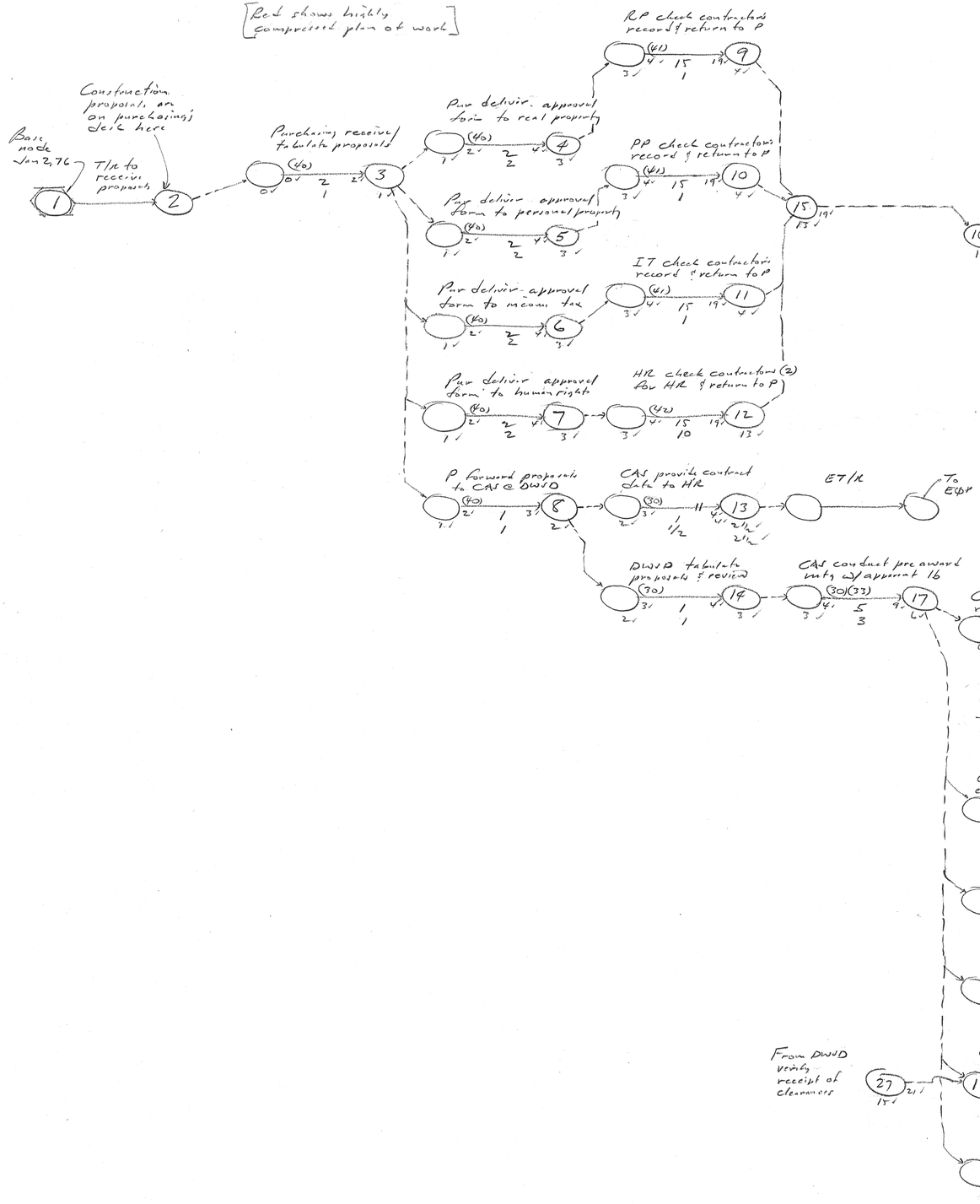
Note: Shts 1 & 2 are for Col D process/award on sht 2 titled _____?

[Red shows highly compressed plan of work]



PRELIM - FOR STUDY ONLY !

10/30/78 (764) Vari. Procedure

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Nov 23, 76

Reserved Nods. Nos.

37 42 47
38 43 48
39 44 49
40 45
41 46

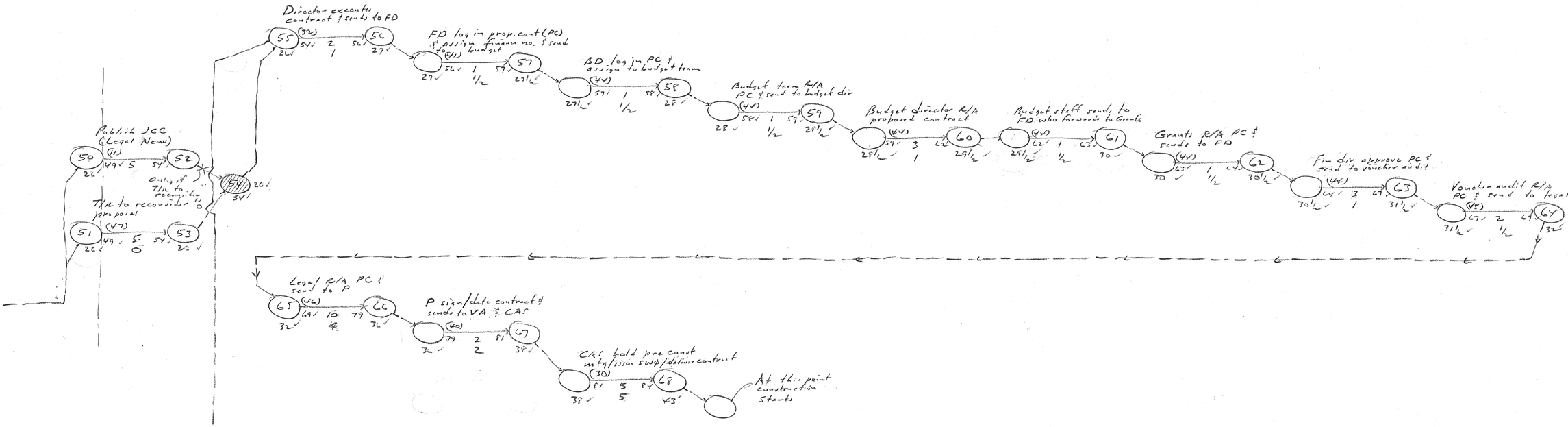
LN 1
HN 49

NETWORK MODEL FOR PROCESSING AWARD OF BOOK TYPE CONTRACTS
DETROIT WATER & SEWERAGE DEPARTMENT - DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-75 MC 4699+



10/30/75 (rev) V. Ltr
Preliminary

PRELIM- FOR STUDY ONLY !

76:V5

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Nov 23 76

Reserved Node Nos

69	74
70	75
71	76
72	77
73	78

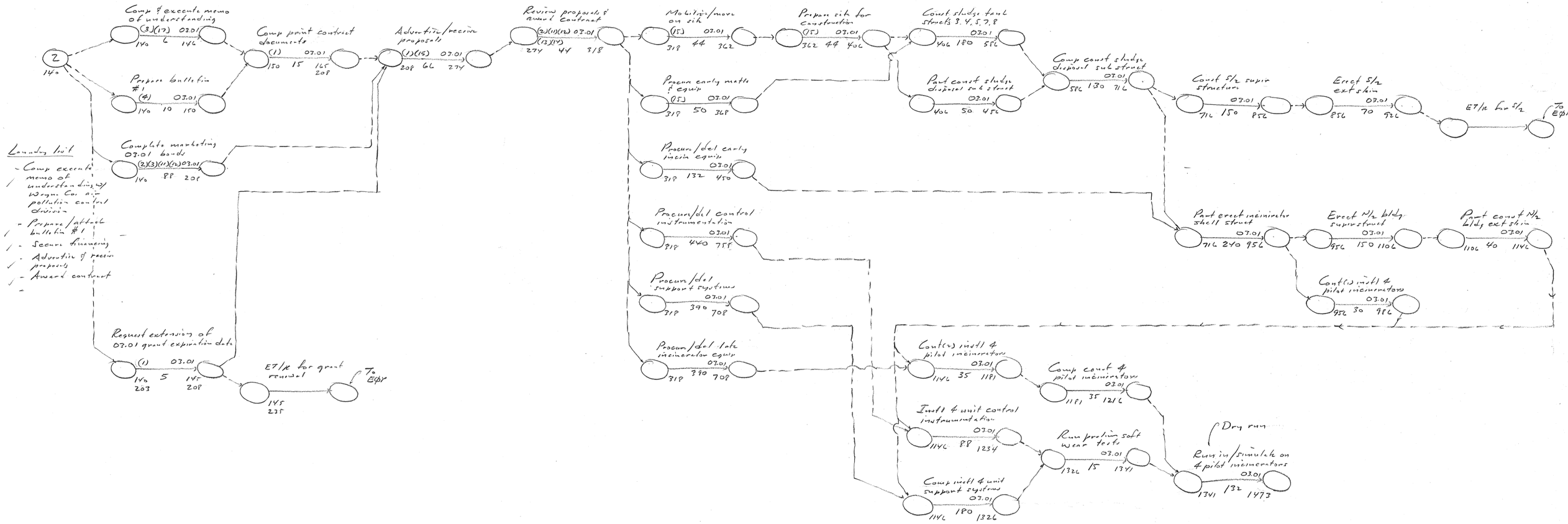
LN 50
HN 78

NETWORK MODEL FOR PROCESSING AWARD OF BOOK TYPE CONTRACTS
DETROIT WATER & SEWERAGE DEPARTMENT - DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 6-75 603974



Launching Unit

- Comp execute memo of understanding by Wayne Co air pollution control division
- Prepare/attach bulletin #1
- Secure financing
- Advertise & receive proposals
- Award contract
-

Responsibility Codes

For codes 1 thru 16 ref #1
17 Wayne County Air Pollution Control Division

Project Codes

03.00 Sludge handling @ WWPP
03.01 Sludge complex #3

Special Abbreviations

ALT A long time

FOR REVIEW & STUDY ONLY!

Project 10/30/73 (PERT) V.I.C.?

SLUDGE DISPOSAL BUILDING (PC 295) 76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	JULY 20 76

Revised Node Nos.

LN
HN

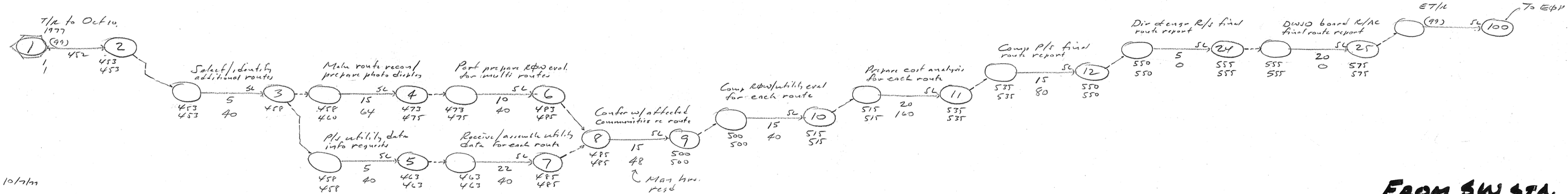
NETWORK MODEL FOR
03.00 PROJECTS
DETROIT WATER & SEWERAGE
DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

4

MULTI-COLOR 400 4-75 60397-

Note: Estimated man hours required = 500

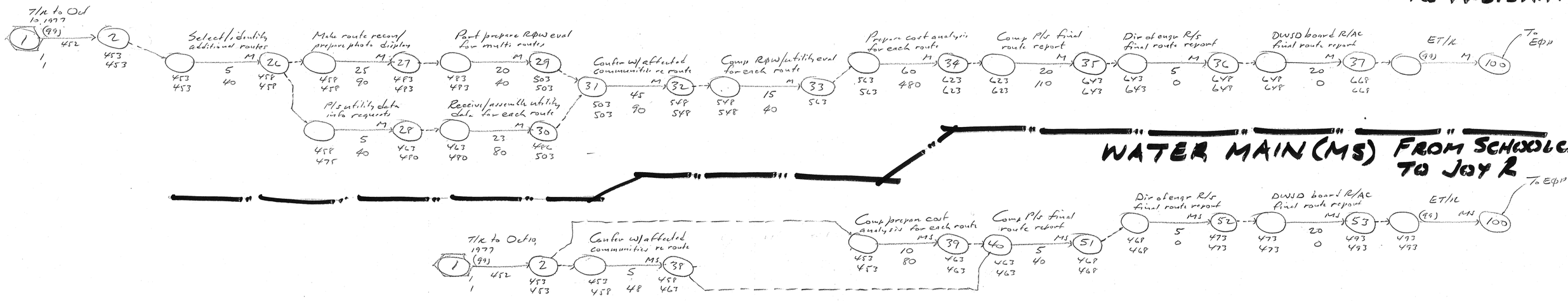


10/7/77

Charles Watson
L. Pokrykowski (Leonard)
Ed Everett
Ralph J. Stephenson
Bala Sekaran

SLUDGE LINE (SL) FROM SW STA. TO LIDDESDALE

Note: Estimated man hours required = 900



WATER MAIN (M) FROM JOY R. TO YPSILANTI

WATER MAIN (MS) FROM SCHOOLCR TO JOY R

Responsibility Codes
See master list

Abbreviations

R&W	Right of way
P/S	Prepare / submit
R/S	Review / submit
R/AC	Review / accept
SL	Sludge line
M	Main

Project

10/20/77 (???) Valid for analysis

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	OCT 7,77

Reserved Nod. Nov.

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14	22	42	47
15	23	43	48
16		44	49
17		45	50
18			
19			
20			

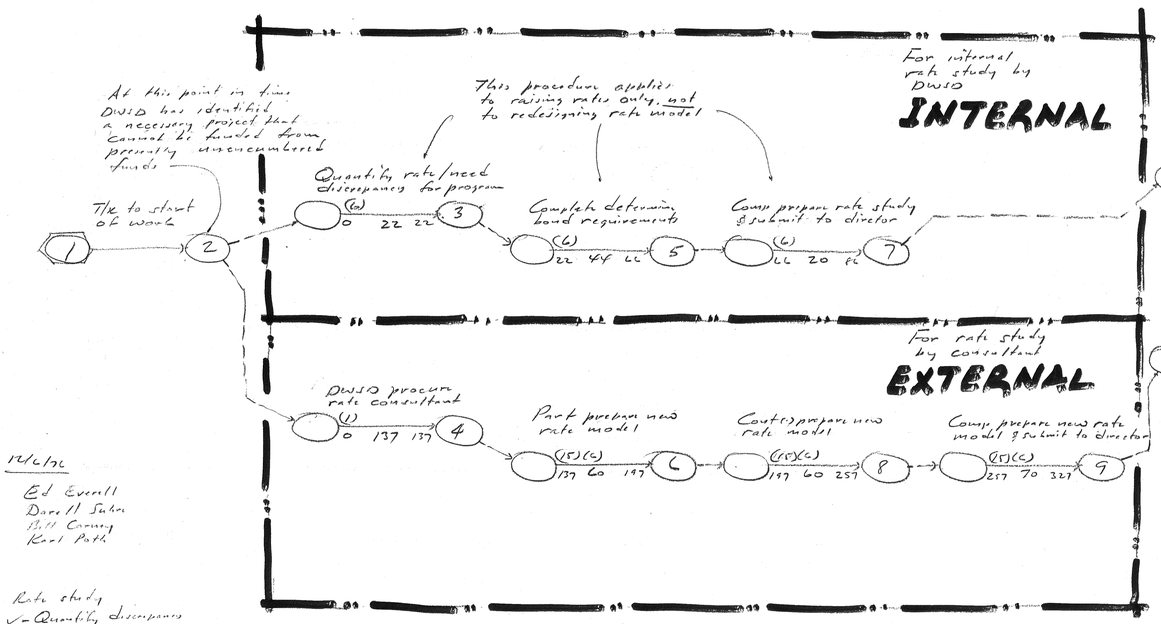
LN 1
HN 53
EPP 100

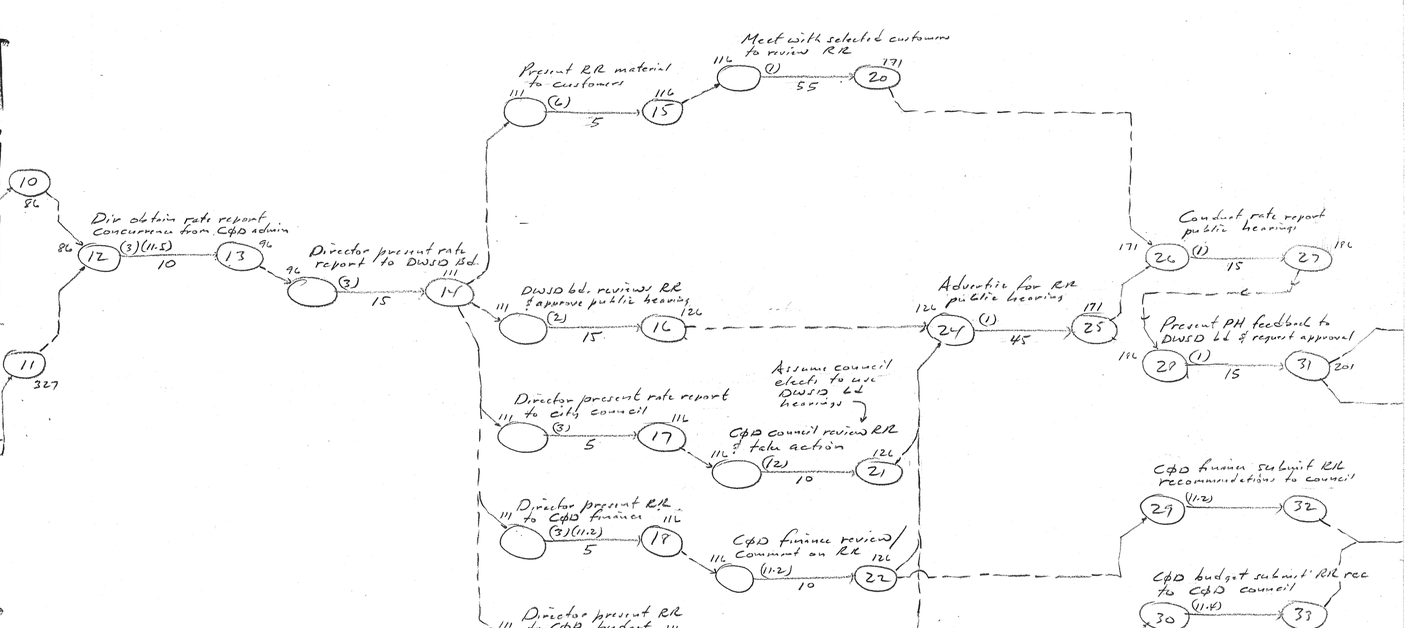
NETWORK MODEL FOR ROUTE ANALYSIS & SELECTION - DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-75 MC 4698





12/6/76
Ed Everett
Darrel Sabo
Bill Carney
Karl Path

Rate study
✓ - Quantify discrepancy
✓ - Analyze capital improvement financial requirements
✓ - Analyze OE&M financial requirements
- Analyze existing/future bond liability
- Determine returns on investment & receipts if needed

12/15/76
EJ Everett
Darrel Sabo
Bill Carney
Henry Rykerboschi
(by phone w/ D.S.)

General Abbreviations

RR	Rate report
PH	Public hearing
rec	recommendation

10/30/76 (722)
Ver. 2
Proj. level

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Dec 6.76
						2	Dec 15.76

Received Nos. Nos.

34	39	44	49
35	40	45	50
36	41	46	
37	42	47	
38	43	48	

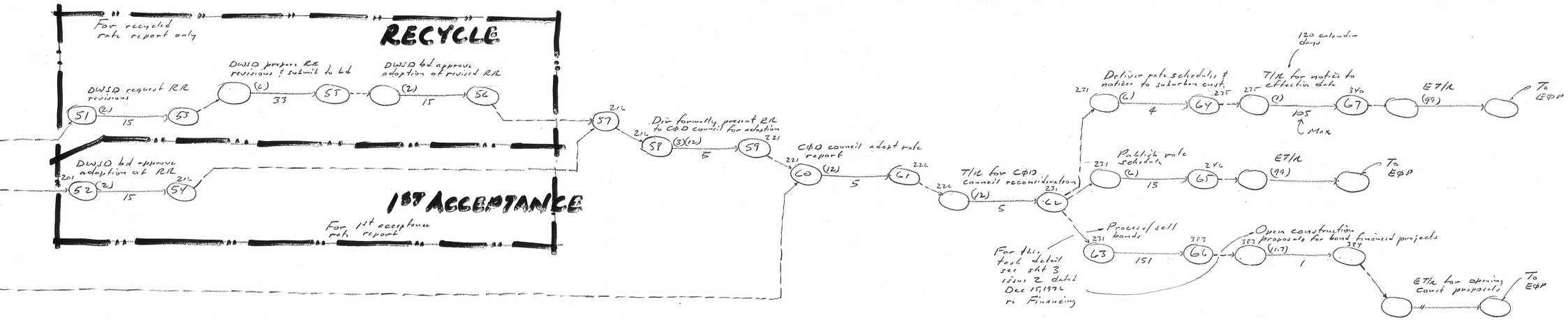
LN 1
HN 50

NETWORK MODEL FOR FINANCING - DETROIT WATER & SEWERAGE DEPT.

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-75 MC 4699



Dec 11, 76

241
3 DY
229
Jan 19, 1978

3 2 86
241
229
870
May 30, 1979

Assumptions

Special Abbreviations:

R/A	Review & approve
B/O	Board ordinance
DCC	Detroit City Council
MMFC	Michigan Municipal Finance Commission
B/I	Board issue
AG	Attorney general

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Dec 6, 76
						2	Dec 15, 76

Revised Network Model

LN 51
HN 68

10/20/77 (722)
Valid
Procedural

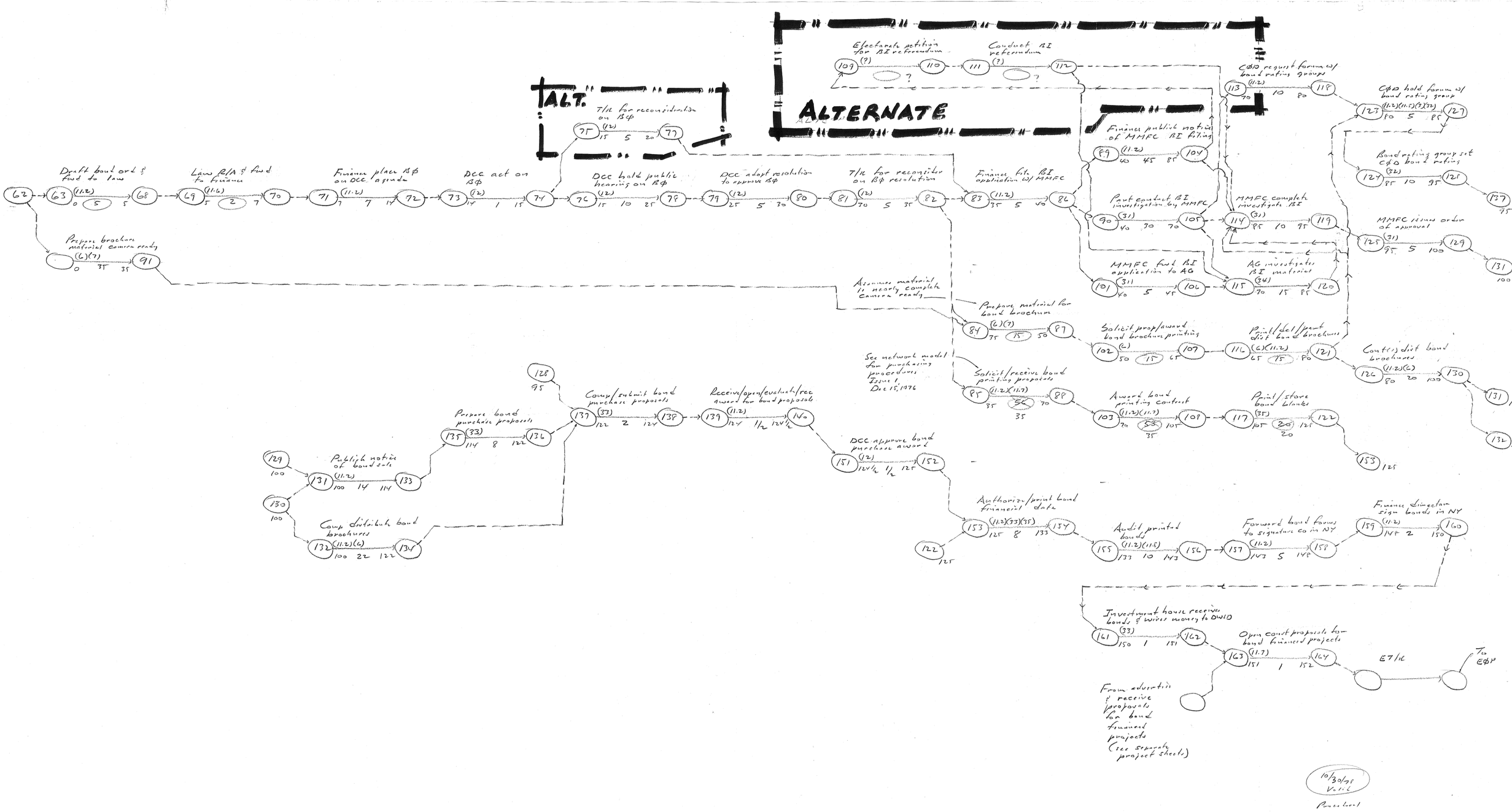
76:45

NETWORK MODEL FOR FINANCING - DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 3-75 MC 8698



7L:Y5

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE NO.	DATE
						1	-
						2	DEC 15, 76

Reserved Nod. Nos.

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92	97	142	147
93	98	143	148
94	99	144	149
95	100	145	150

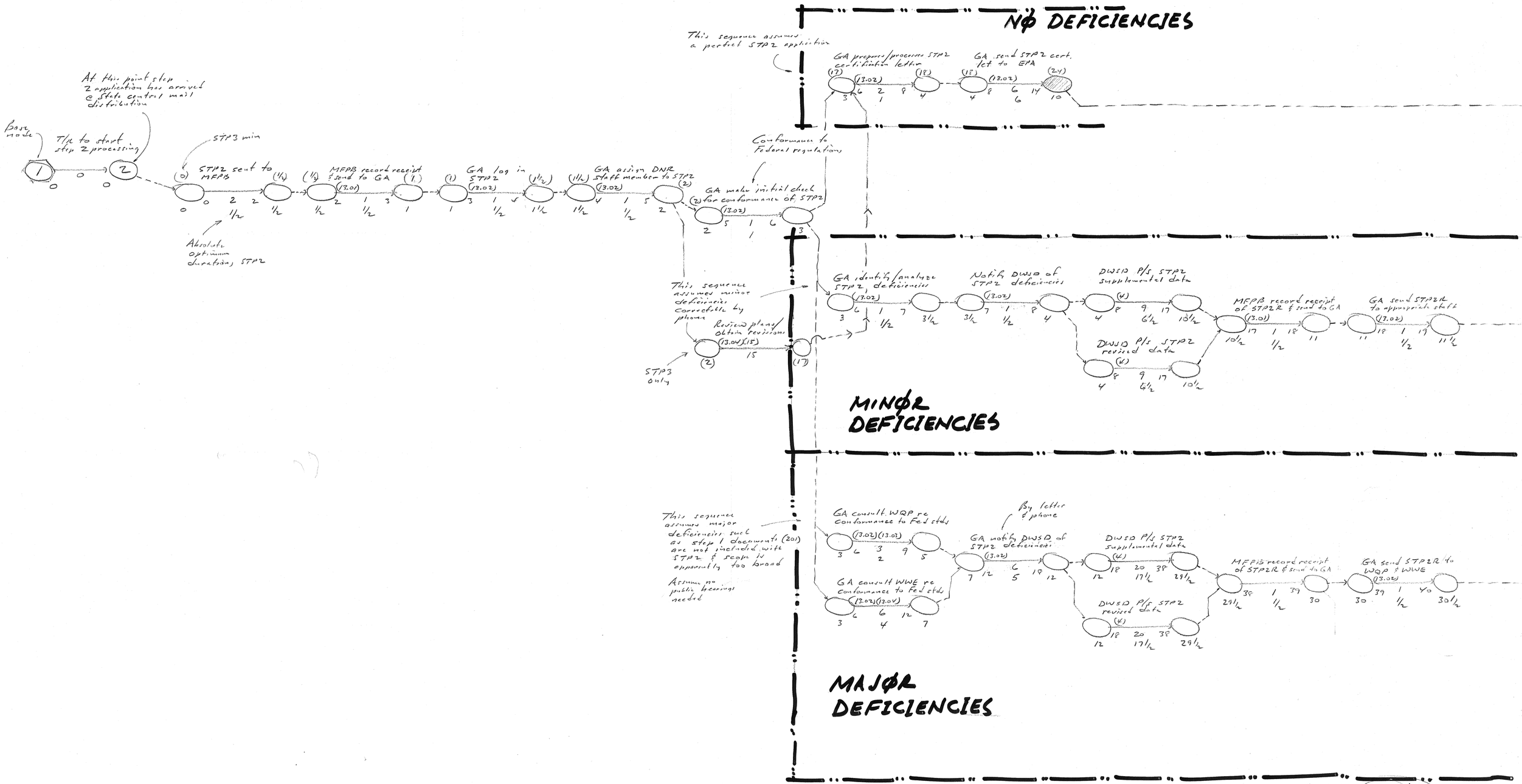
LN
HN

NETWORK MODEL FOR FINANCING DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

3

MULTI-COLOR 400 3-75 MC 4699



Responsibility Codes

13.00	DNR
13.01	MFPB
13.02	GA
13.03	WQP
13.0V	WWE
14.00	EPA
14.01	FSS
14.02	CGB
14.03	PB
14.0V	RA
14.05	CAH
21.00	Reps & Sens in D.C.

General Notes

Special Abbreviations

FSS	Fiscal Services Section - EPA
CGB	Construction Grants Branch - EPA
PB	Planning branch - EPA
FP	Facilities planning - EPA
RA	Regional administrator - EPA
GAG	Grant agreement
CAH	Congressional affairs hdq. - EPA
STP2	Step 2 application
MFPB	Municipal Facilities & Planning Branch DNR
GA	Grants Administration DNR
P/S	Prepare & submit
STP2R	Step 2 application resubmitted
WQP	Water Quality Planning, DNR
WWE	Waste Water Engineering, DNR
DWSD	Detroit Water & Sewerage Department
Fed	Federal
DNR	Department of Natural Resources
T/R	Time restraint

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Nov 8, 76
						1a	Nov 8, 76

Revised Klock Hdr.

LN
HN

Procedural network (10/10/78 (722) Vol. 2)

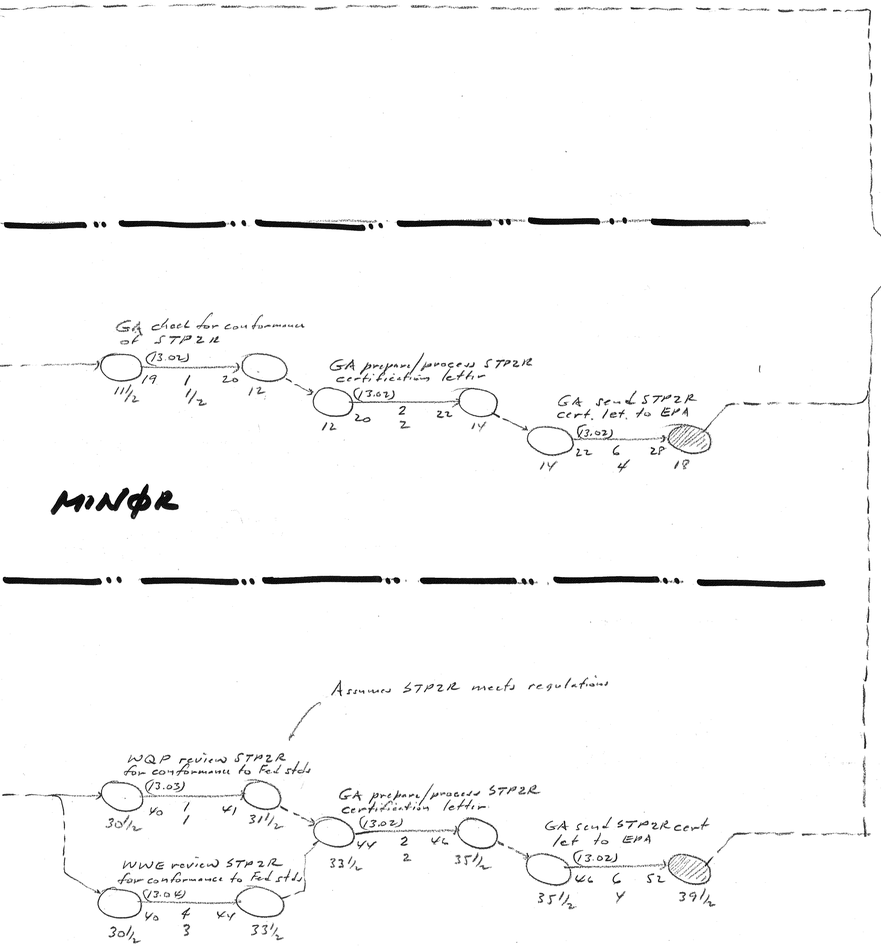
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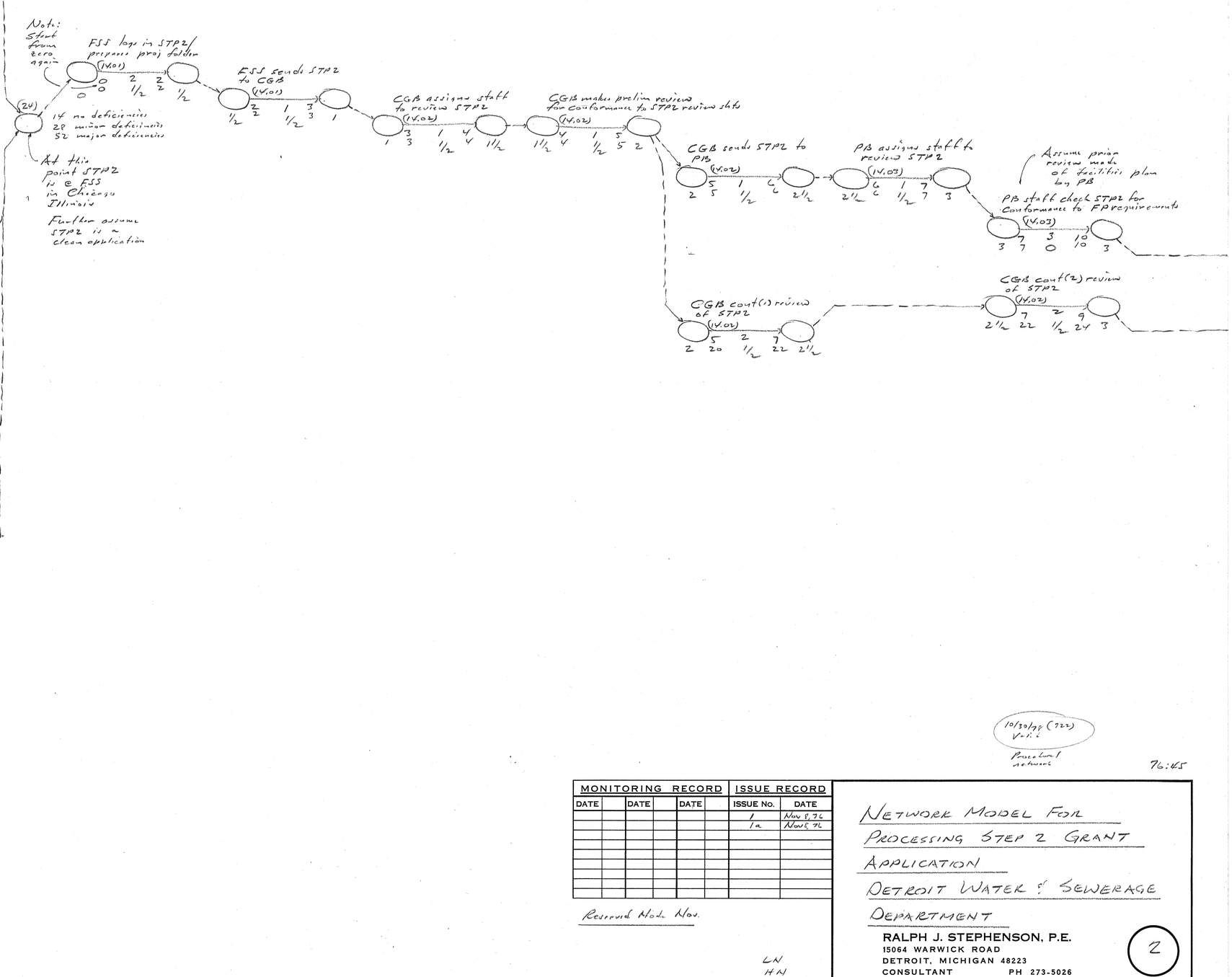
NETWORK MODEL FOR STEP PROCESSING STEP 2 GRANT APPLICATION DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 4-75 60397•





10/30/78 (723) V-1: 2

Procedural network

76:65

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Nov 8, 76
						1a	Nov 8, 76

Revised Mod. Nov.

LN
HN

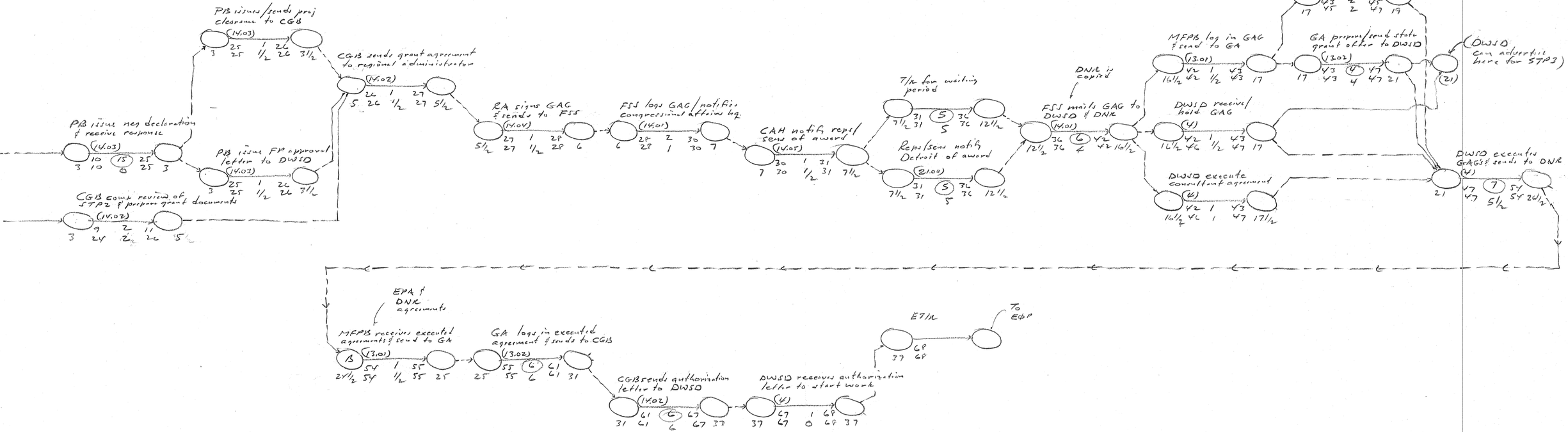
NETWORK MODEL FOR PROCESSING STEP 2 GRANT APPLICATION

DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 3-75 MC 4699-



MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE

Received Node Nos.

LN
HN

NETWORK MODEL FOR PROCESSING STEP 2 GRANT APPLICATION
DETROIT WATER & SEWERAGE DEPARTMENT

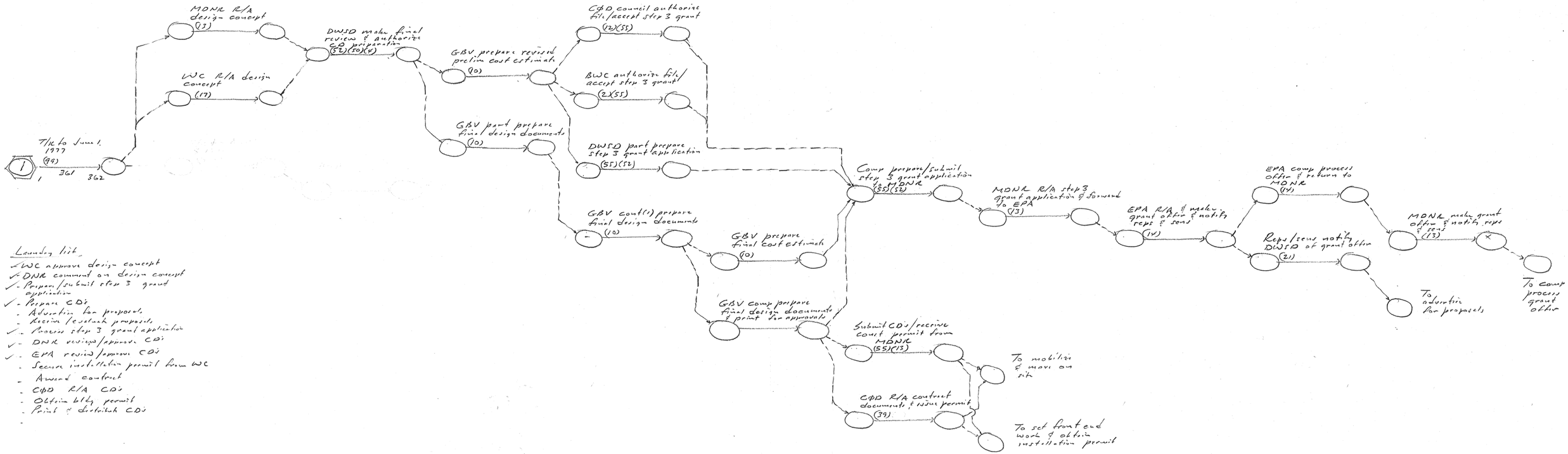
RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

3

MULTI-COLOR 400 3-78 MC 4699•

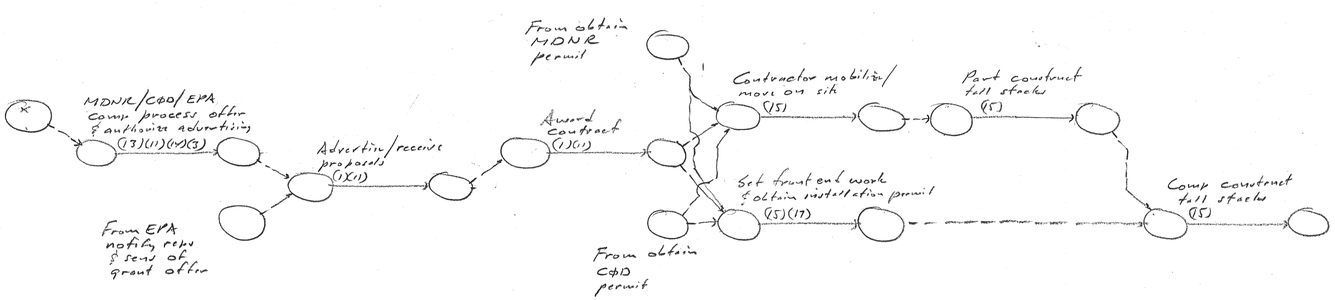
10/20/78 (923) Vol. 4
Revised network

76:45



Laundry list

- ✓ WC approves design concept
- ✓ DNR comment on design concept
- ✓ - Prepare/submit step 3 grant application
- ✓ - Prepare CD's
- - Advertise for proposals
- - Receive/evaluate proposals
- ✓ - Process step 3 grant application
- ✓ - DNR review/approve CD's
- ✓ - EPA review/approve CD's
- - Secure installation permit from WC
- - Award contract
- - C&D R/A CD's
- - Obtain bldg permit
- - Print & distribute CD's
-



10/20/76 (TLW) Adopted Project

76:85

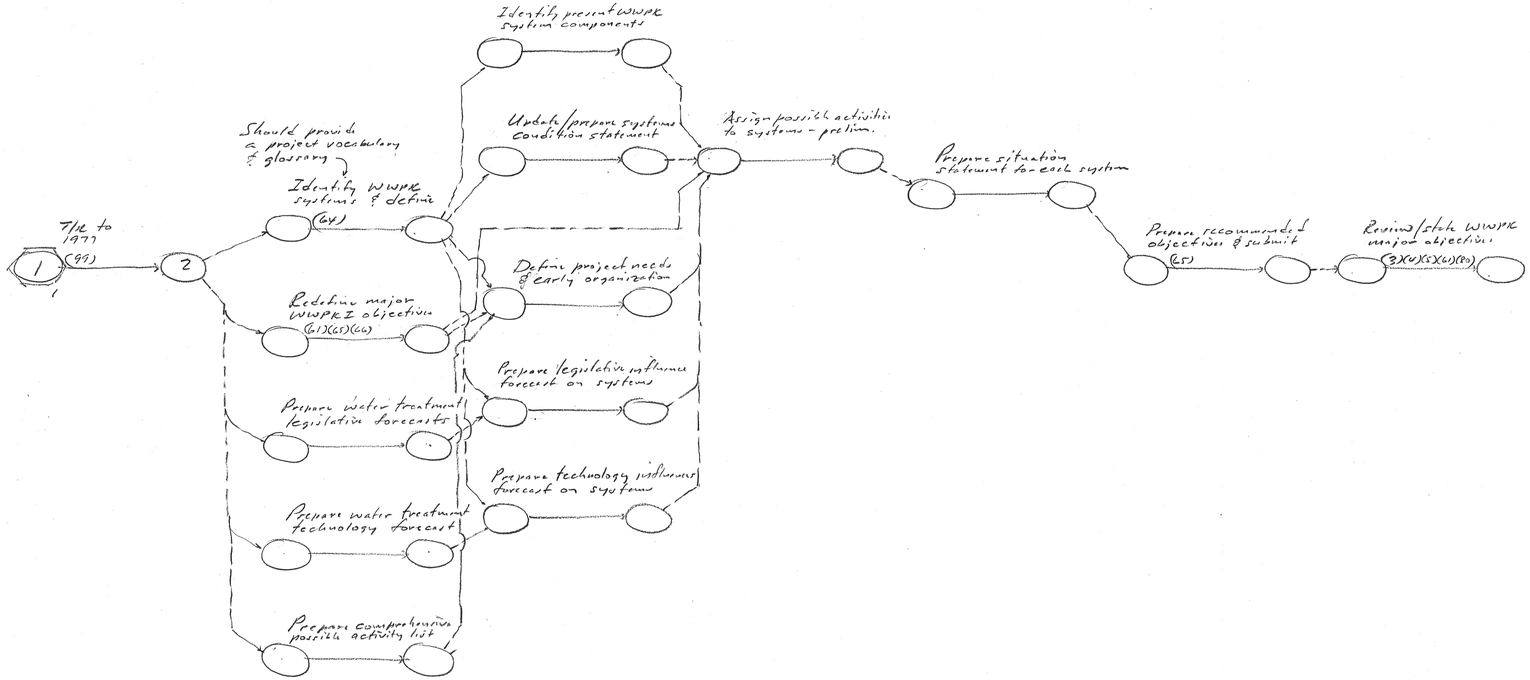
MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	–
						2	–
						3	–
						4	MAY 27 77

SUMMARY NETWORK MODEL FOR TALL STACK DESIGN & CONSTRUCTION AT DWSD SEWAGE PLANT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 600 3-75 MC 4699-



Joint use
Recreation
River Front Road

Project

10/30/78 (224) Complete

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Nov 3, 77
						2	Nov 17, 77

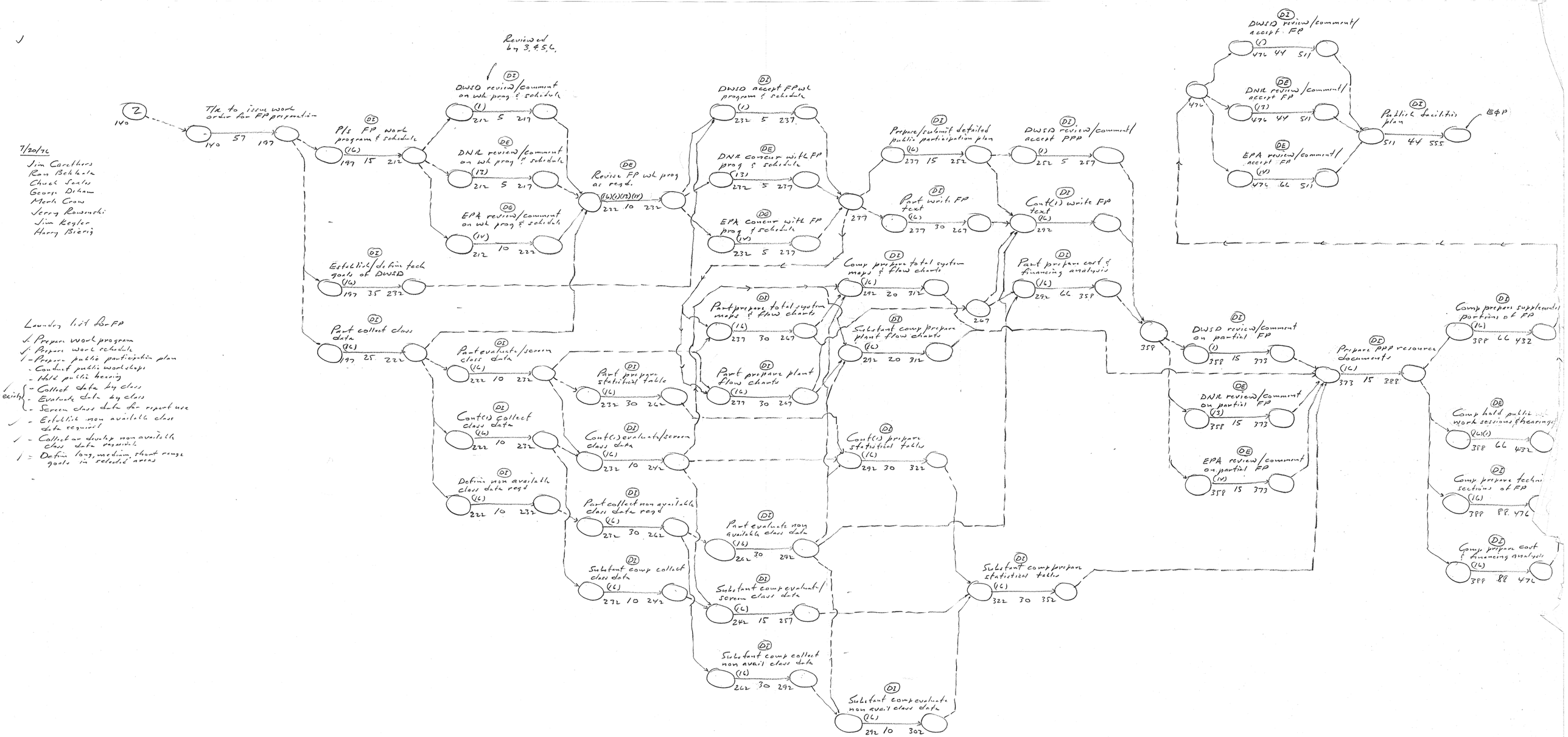
Reserved Node Nos

LN
HN

NETWORK MODEL FOR WATER WORKS PARK (WWPK) IMPROVEMENT PROGRAM

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

MULTI-COLOR 400 3-78 MC 4699-



7/20/76

Jim Carothers
Ron Bekkala
Chuck Sealls
George Dikam
Mark Crow
Jerry Romanski
Jim Keyler
Harry Bierig

Laundry list for FP

- ✓ Prepare work program
- ✓ Prepare work schedule
- ✓ - Prepare public participation plan
- Conduct public workshops
- Hold public hearing
- ✓ (exist) - Collect data by class
- ✓ (exist) - Evaluate data by class
- ✓ (exist) - Screen class data for report use
- ✓ - Establish non available class data required
- ✓ - Collect or display non available class data required
- ✓ = Define long, medium, short range goals in selected areas

Responsibility Codes

For codes 1 thru 15 see dkt #1
16 FP consultant

General Notes

- Design work required is an integral part of document preparation
- Reviews & approvals are included in preparation of various FP elements

Special Abbreviations

- THTS That's hard to say
- PPP Public participation plan
- E&P End of project

Project 10/30/81 (74W) Superseded

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	July 20, 76

NETWORK MODEL FOR FP PREPARATION

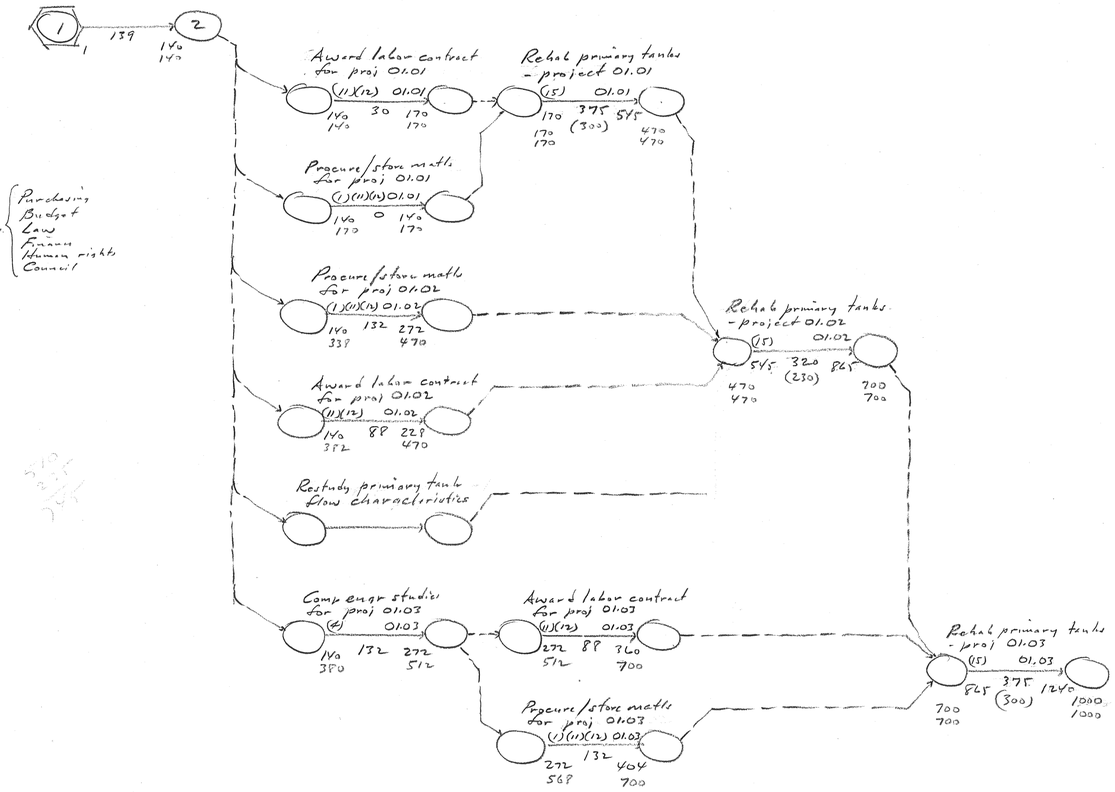
DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

3

MULTI-COLOR 400 6-75 60392+

T/L to July 19, 1976



Comp det as outlined in State proposed revocation order was Dec 1, 1979 (wd 1008)

Project 10/30/78 (777) Superseded

7a:45

Responsibility Codes

For codes 1 thru 14 see sht 1

15 Undesignated contractor

Project Codes

01.01 Rehabilitation of 1st four primary settling tanks @ WWTP

01.02 Rehabilitation of 2nd four primary settling tanks @ WWTP

01.03 Rehabilitation of all remaining primary tanks after 01.01, 01.02

Special Abbreviations

WWTP Waste water treatment plant

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	July 14, 76

NETWORK MODEL FOR 01.00 PROJECTS

DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 4-75 603974

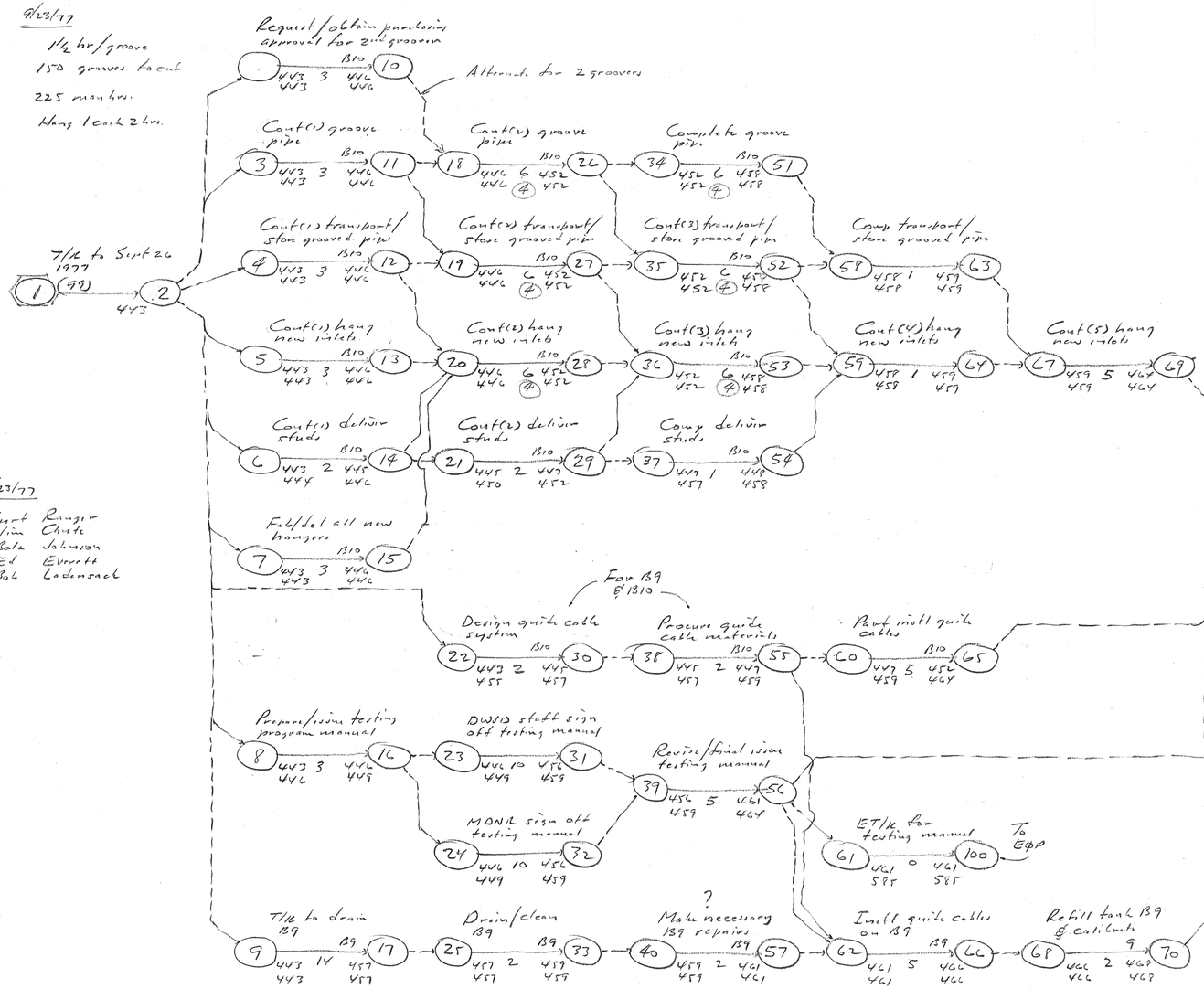
9/23/77

1½ hr/groove

150 grooves to cut

225 man hrs.

Hang 1 each 2 hrs.



9/23/77

Curt Ranger
Jim Chute
Bob Johnson
Ed Everett
Bob Ladensack

Project 10/30/78 (mw) Complete

CONSENT DECREE - SECT III F-2, 3, 4 76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Sept 2277

Received Rbk Nos.

41 46
42 47
43 48
44 49
45 50

83 thru 99

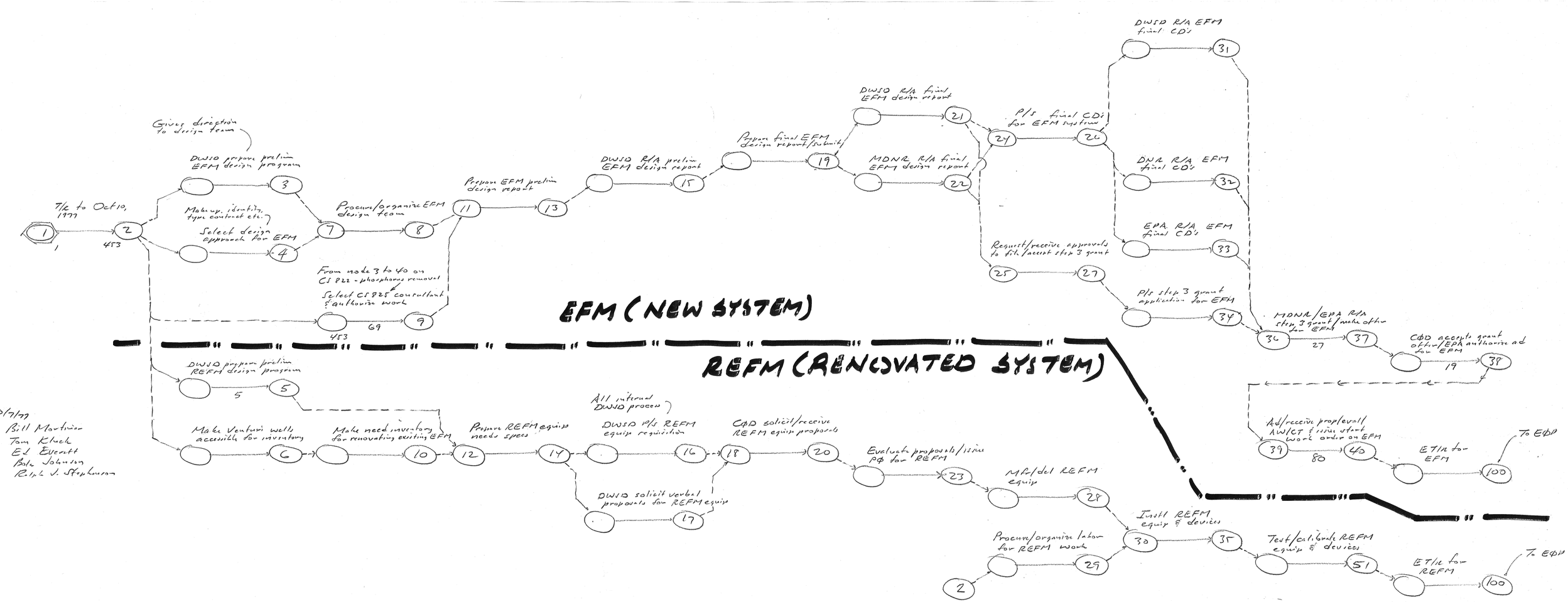
LN 1
HN 82

NETWORK MODEL FOR CLARIFIER MODIFICATION PROGRAM - DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-75 MC 4699-



10/7/77
Bill Martinson
Tom Kluck
Ed Everett
Bale Johnson
Ralph J. Stephenson

Responsibility codes
See master list

Abbreviations
- EFM Effluent flow measurement (total new system)
- REFM Renovated effluent flow measurement (renovated system only)
- P/S Prepare & submit
- PO Purchase order
- R/A Review & approve
- CD Contract document
- T/R Train received

Project 10/30/77 (72w) Complete

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Oct 7, 77

Reserved Node Nos.
41 46
42 47
43 48
44 49
45 50

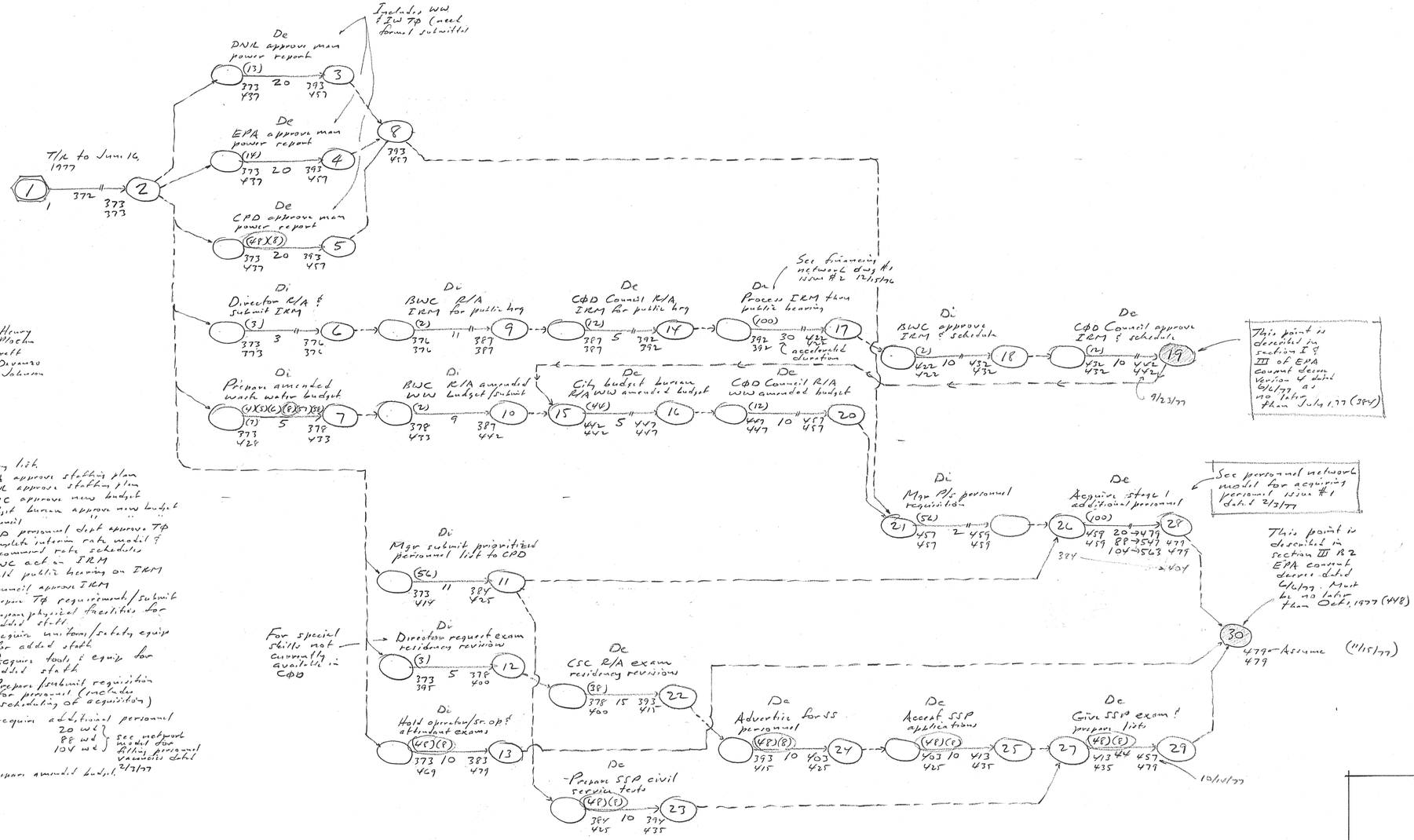
LN 1
HN 51
EOP

NETWORK MODEL FOR EFM SYSTEM DESIGN & CONSTRUCTION - SECTION III-D-4 CONSENT DECREE

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 600 3-78 MC 4699-



6/6/77
Barbara Henry
Adolph Macha
EJ Everett
Rafel Dayanzo
Adebola Johnson

6/6/77

Learning list
- ✓ EPA approve staffing plan
- ✓ DNR approve staffing plan
- ✓ BWC approve new budget
- ✓ Budget bureau approve new budget
- ✓ Council " " "
- ✓ C&D personnel dept approve TP
- ✓ Complete interim rate model & recommend rate schedules
- ✓ BWC act on IRM
- ✓ Hold public hearing on IRM
- ✓ Council approve IRM
- Prepare TP requirements/submit
- Prepare physical facilities for added staff
- Acquire uniforms/safety equip for added staff
- Acquire tools & equip for added staff
- ✓ Prepare/submit requisition for personnel (include scheduling of acquisition)
- Acquire additional personnel
  - 20 wd
  - 88 wd
  - 104 wd
  - } see network model for hiring personnel requisites list
- ✓ Prepare amended budget 2/3/77

Responsibility Codes (see master list)

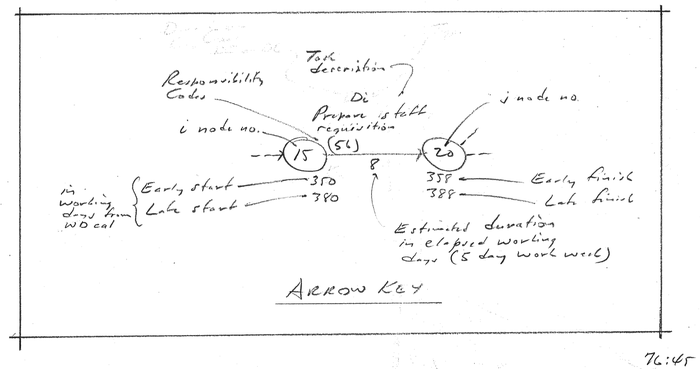
100	Various (see detail diagrams)
2	Board of Water Commissioners
3	Director of DWSD
4	Engineering Division
5	Operations
6	Management Services
8	Personnel (DWSD)
12	Detroit Council
13	DNR
14	Environmental Protection Agency
38	C&D Civil Services Comm
48	CPD
56	A. Dayanzo
57	W. Herrscher
58	H. Fisher

Abbreviations

TP	Task of organization
T/C	Time constraint
IRM	Interim rate model
CPD	City of Detroit personnel dept.
P/S	Prepare & submit
R/A	Review & approve
BWC	Board of Water
WW	Wash water
IW	Industrial wash
CSC	Civil service commission
SSP	Special skills personnel
C&D	City of Detroit
	Consent decree #EP key points
DE	Dependent goals
DI	Direct goals

General Notes

- This model assumes no court action will be taken on IRM.
- On critical path DEG tasks = 80 wd DIG = 26 wd



7G:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	JUN 15, 77

Revised Nod. Mar.

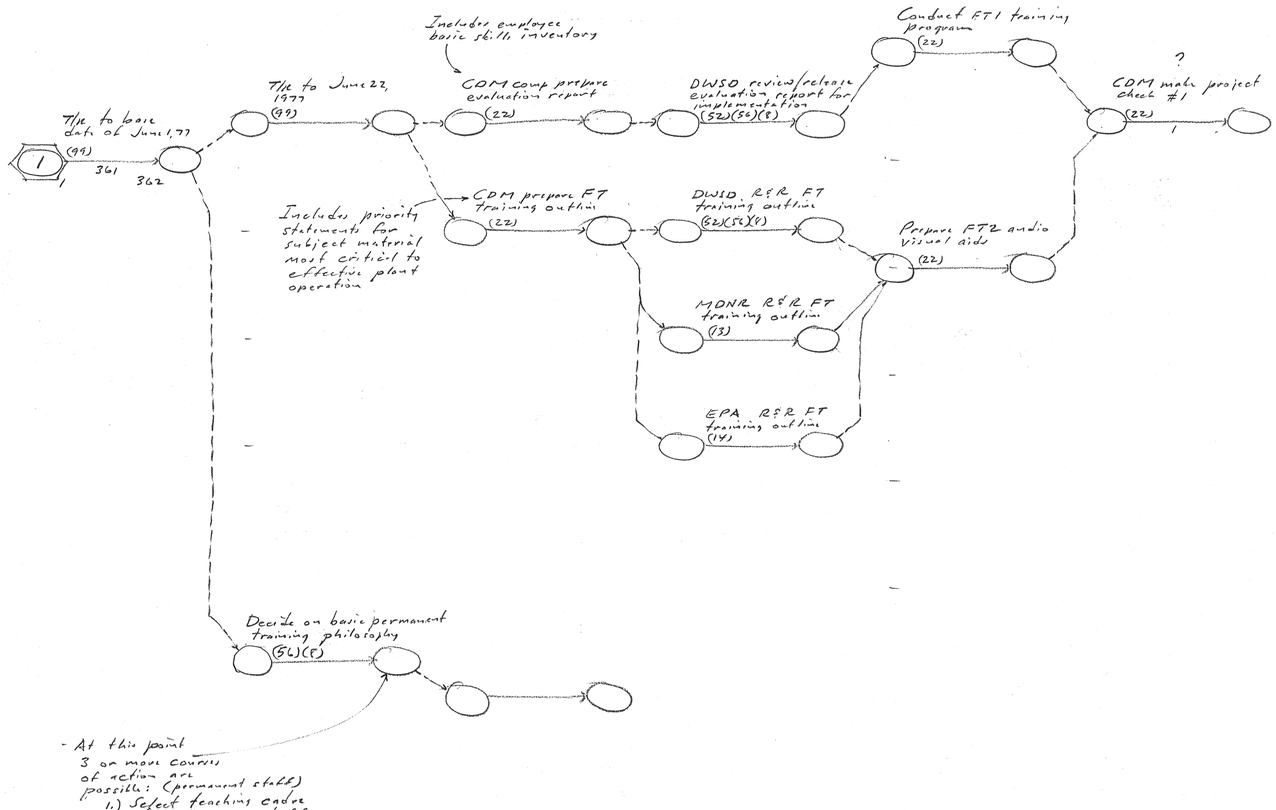
LN
14N

NETWORK MODEL FOR LONG RANGE PROGRAM OF DWSD PERSONNEL ACQUISITION, TRAINING & IN HOUSE STAFFING

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-75 MC 4699-



- At this point 3 or more courses of action are possible: (permanent staff)
  1.) Select teaching cadre from DWSD staff
  2.) Acquire professional teaching staff
  3.) Retain outside teaching services & skills on a contract basis
  4.) Combine two or more of the above
  5.) Retain skilled people individually on a contract basis to manage & teach.

Responsibility Codes (see master list)

22	Comp. Drexiln. Meker (COM)
52	W. Martinez (DWSD)
13	MDNR
14	EPA
56	A. Davanzo (DWSD)
8	Personnel

Special Abbreviations:

FT	Fast track
FT1	Fast track training with minimal audio visual aids & no manual
FT2	Fast track training with full audio visual aids & fast track manual
ST	Specialized training with complete operations & maintenance manual.
STO	Specialized training - operations
STM	" " - maintenance
STL	" " - laboratory
STS	" " - supervisory
R&R	Review & release

See sht #1 of 6/15/77 additional network

10/20/76 (722) Semi-sided Project

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	May 27 77
						2	JUN 15, 77

Received Wade Hoe

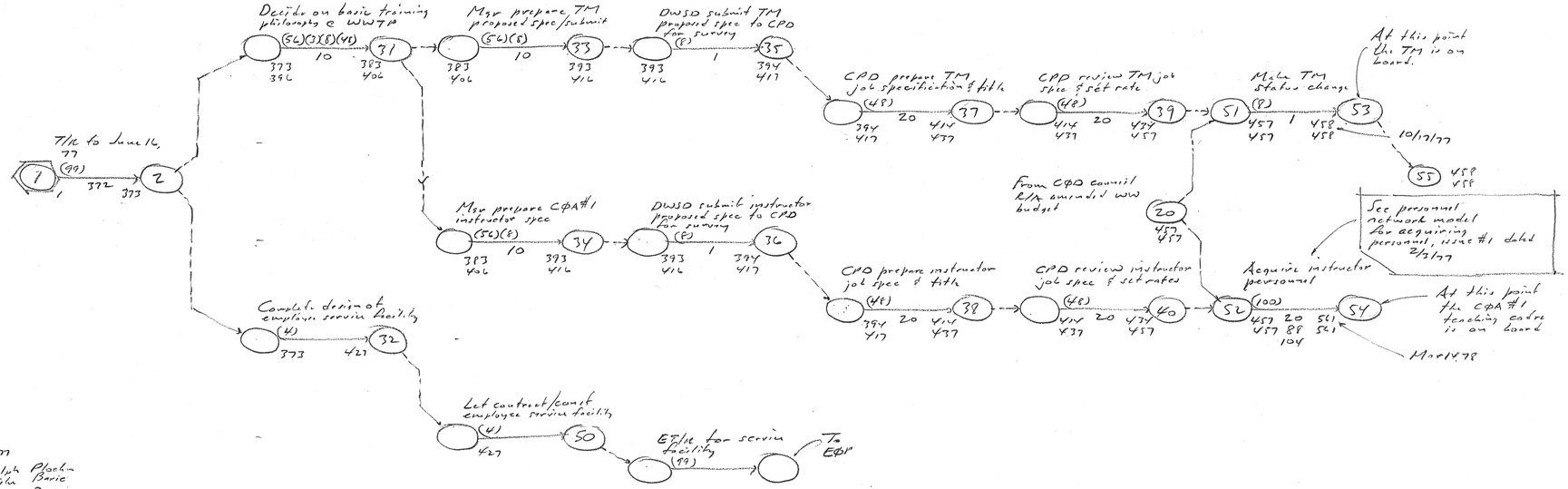
LN
HN

SUMMARY NETWORK MODEL FOR PERMANENT TRAINING & STAFFING PROGRAM AT DWSD SEWAGE PLANT

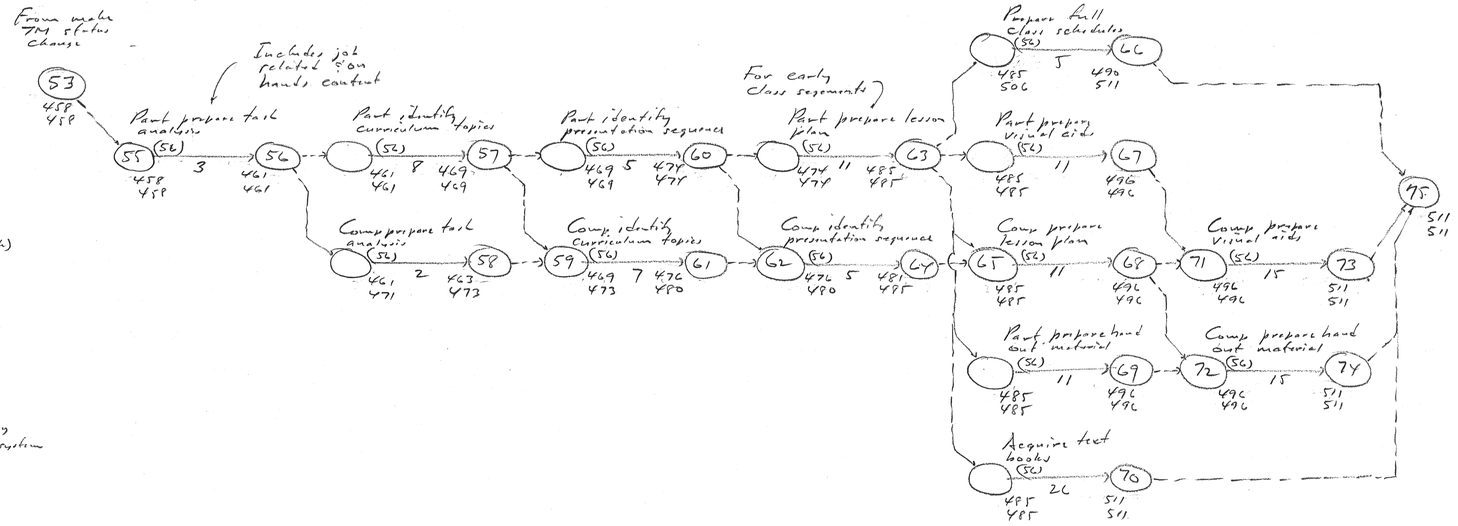
RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 2-79 MC 6699



C/S/Tm
Adalus Pfeifer
Milo Baric
Buell Davenbo
Adelbert Johnson



- Apprentice programmes
- Coop students
- Licensing
- Examining
- High school & jobs
- Swing shift

Training needs
- Leadership training (available for supervisors)
- Special training programs other outside
- Special department training courses
- Advanced training
- Library operation & maintenance
- Entry level training
- Upgrading training
- Refresher training
- Training for proficiency
- Work waste collection system

Responsibility Codes

Abbreviations
- CPA Course of action
- TM Training manager
- CPD City personnel department
- CPD City of Detroit
- EOP End of project

General Notes
Course of action (CPA) #1 - requires a permanent training manager plus 4 permanent instructors. Teaching effort aimed at entry level training & upgrading & refresher training

Project 10/20/78 (722) Sunfield

PERMANENT TRAINING PROGRAM

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	JUN 15,77

Reserved Node Nos.

41	46
42	47
43	48
44	49
45	50

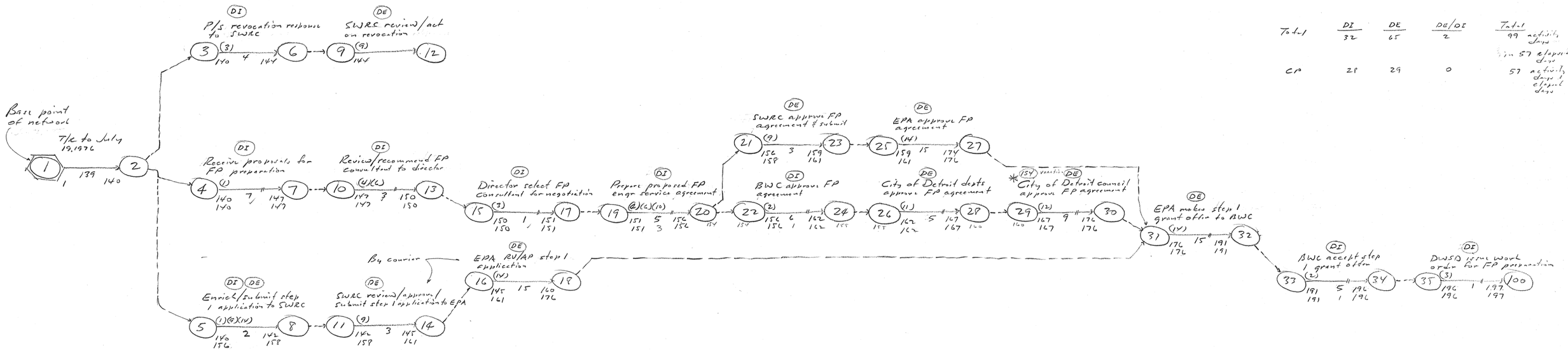
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NN.

NETWORK MODEL FOR LONG RANGE PROGRAM OF DWSD PERSONNEL ACQUISITION, TRAINING & IN HOUSE STAFFING

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 3-75 MC 4699



Total	DI	DE	DE/OE	Total
	32	65	2	99 activity days plus 57 elapsed days
CP	28	29	0	57 activity days + elapsed days

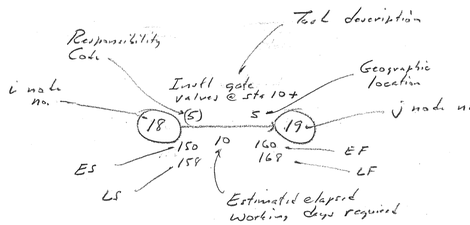
Responsibility Codes

1 Detroit Water & Sewerage Department (DWSD)
2 Board of Water Commissioners (BWC)
3 Director of Water & Sewerage
4 Engineering Division (Darrel Stiles)
5 Operations (George Dehem)
6 Management Services (Ron Bakkala)
7 Accounting (Jack Fahner)
8 Personnel (Adolph Ploehn)
9 SWRC
10 FP consultant
11 City of Detroit depts
12 City of Detroit council
13 Dept of Natural Resources (DNR)
14 Environmental Protection Agency (EPA)

General Notes:

Special Abbreviations

T/R Time restraint
BWC Board of Water Comm
SWRC State Water Resources Commission
P/C Prepare & submit
FP Facilities Plan
RV/AP Review & approve
(DE) Dependent goal activity
(DI) Direct goal activity



10/30/78 (724) Superseded

Project

76-45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	July 16, 76

Reserved Node Nos.
36 thru 99

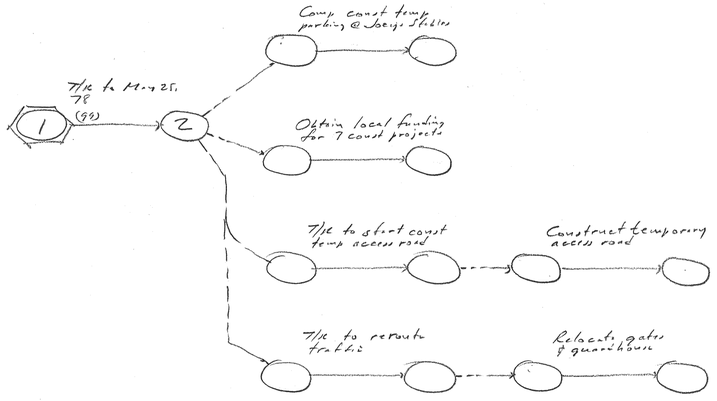
LN
HN

NETWORK MODEL FOR FACILITIES PLAN (FP) INITIATION
DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 4-75 60397-



10/30/75 Submitted

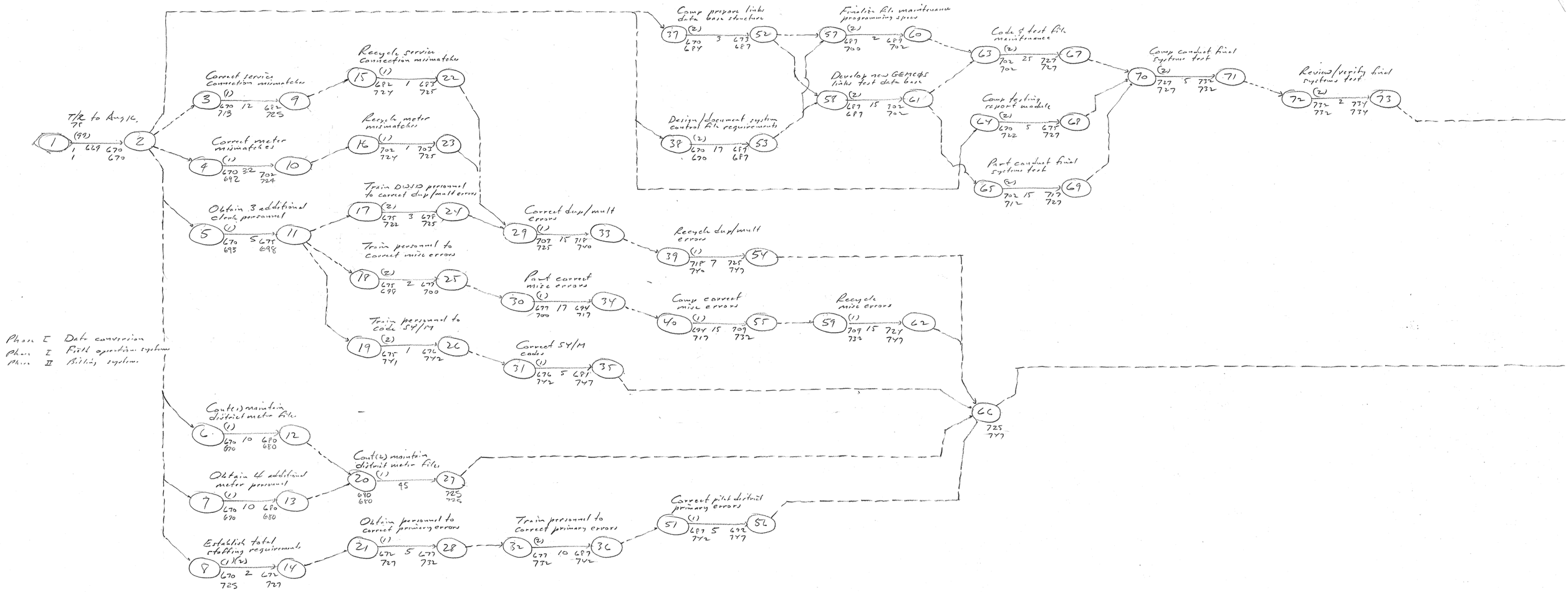
MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAY 25 '76

NETWORK MODEL FOR TRAFFIC PATTERNS AT WASTE TREATMENT PLANT DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 10-77 69916



Phase I Data conversion
Phase I Field operations systems
Phase II Billing systems

Responsibility Codes
1 DWSD
2 Coopers & Lybrand

Abbreviations
T/K Time restraint
SY Service yard
M Map

10/30/78 Superseded by in house network

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Aug 16 78

Reserved Node Nos.
V1 V6
V2 V7
V3 V8
V4 V9
V5 50

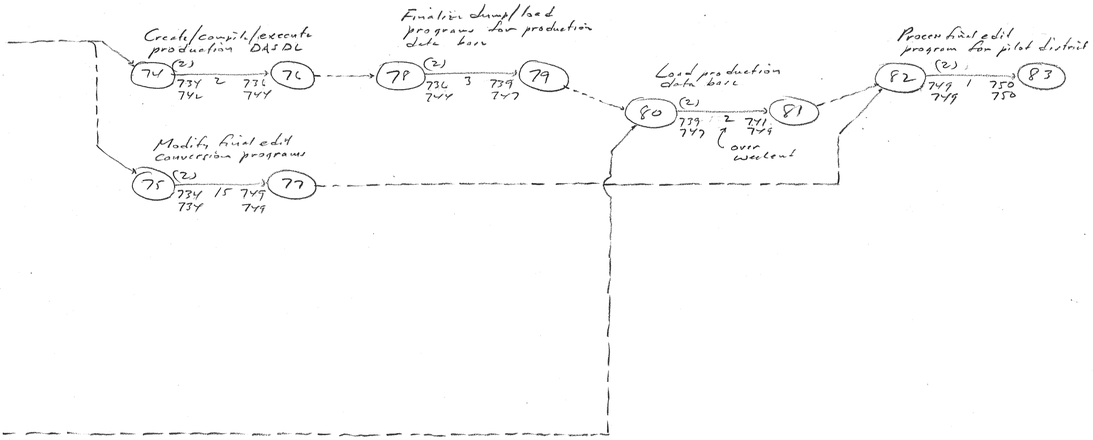
LN 1
HN 73

NETWORK MODEL FOR PREPARATION OF CUSTOMER BILLING & INFORMATION SYSTEM - DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 10-77 69916



10/30/78 Superseded by 17 hours network.

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Aug 14, 78

Revised Node Nos.

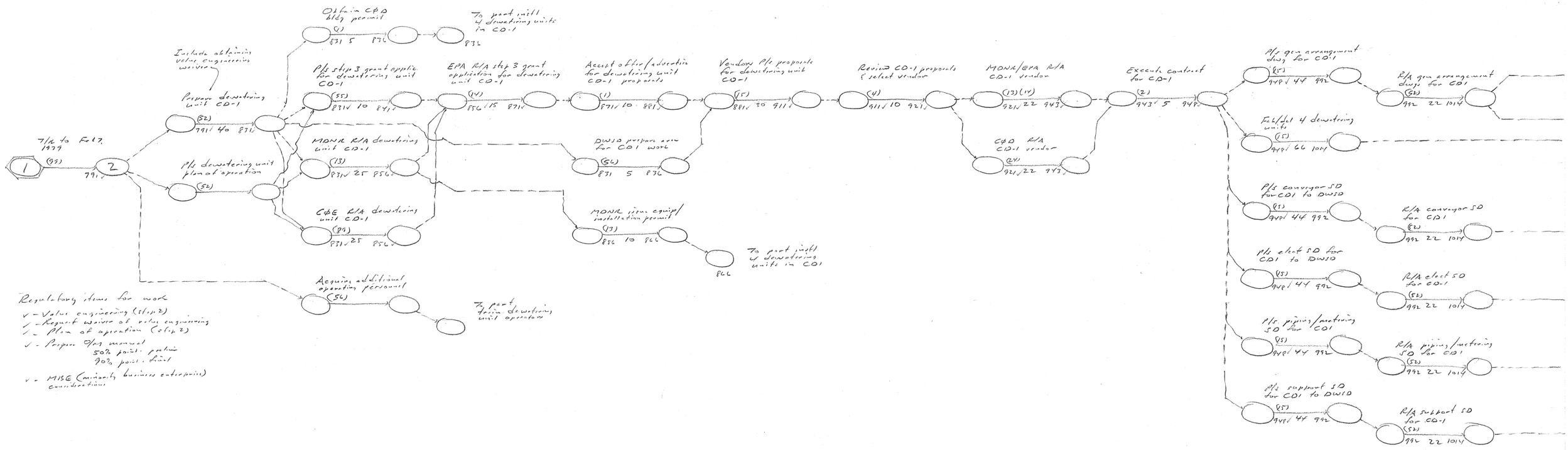
LN 74
HN 83

NETWORK MODEL FOR
PREPARATION OF
CUSTOMER BILLING
INFORMATION SYSTEM
DWSD

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 10-77 69916e



2/7/79 Util supply/ instl contract

Phase	Dewatering units	Storage tank	Dewatering unit fence, equip, structural	Electrical	Mechanical equipment equip & piping	Conveyor	Concrete	Piping
1A	1st 2 units	-	/	-	/	/	/	/	-
1B	2nd 2 units	-	/	-	/	/	/	/	-

CONTRACT PACKAGING

General Notes

Assumptions for plan of work are:

1. Need 4 additional dewatering units.
2. Money available for phase 1 & 2
3. Contracts will be field sum contracts
4. Design work is done in house w/ some outside help as required.
5. Money for construction to include new step 3 grant.
6. Contract for CD1 will be for supplying & installing
7. Does not include provisions for truck loading.

Abbreviations

T/R	Time restraint
P/S	Prepare & submit
CD	Contract document package
R/A	Review & approve
C&D	City of Detroit
MDNR	Michigan Department of Natural Resources
ET/R	End time restraint
EOP	End of project

ITEM 24. SUPPLEMENTAL SLUDGE DEWATERING FACILITY COMPLEX 2 (4 UNITS)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	Feb 7.79

Revised Node No

LN
HN

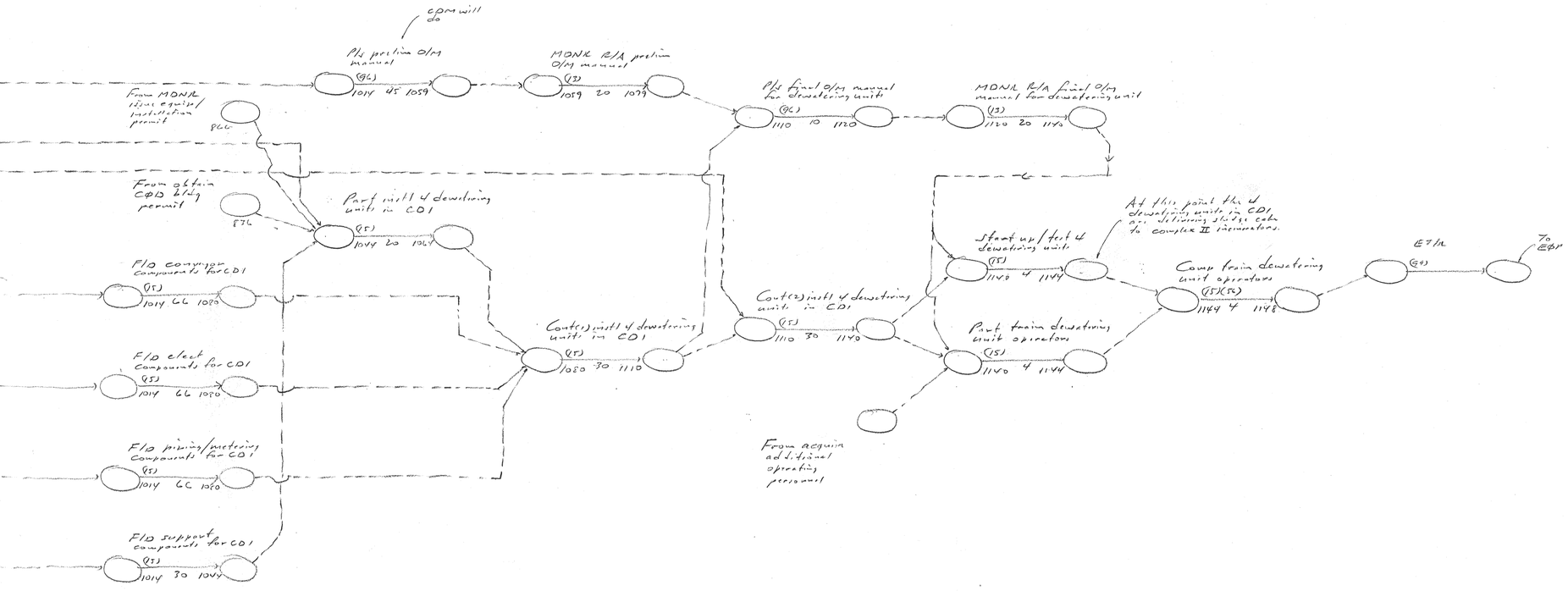
NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM - DETROIT

CPM-059

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1A

MULTI-COLOR 200 6-78 67950



ITEM 24. SUPPLEMENTAL SLUDGE DEWATERING FACILITY COMPLEX 2 (4 UNITS)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	Feb 779

Revised Mark Nos.

LN
HN

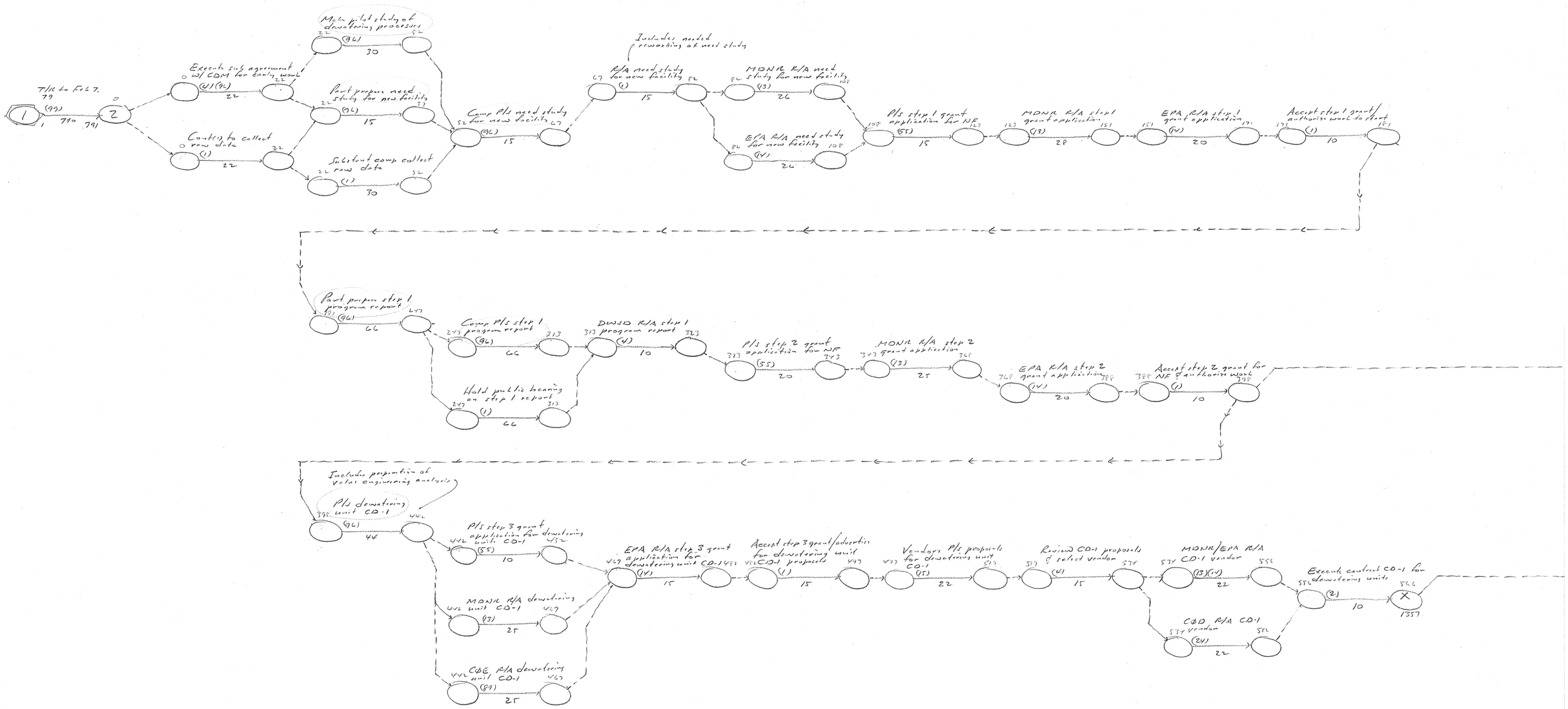
NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM - DETROIT

CPM-059

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2A

MULTI-COLOR 200 8-78 67990*



All Abbreviations

T/L	Time realtaint
R/A	Review/approve
NF	New facility
P/S	Prepare/submit
CD	Contract documents
C&E	Corps of Engineers
CD-1	Contract package 1
CD-2	Contract package 2

ITEM 24. SUPPLEMENTAL SLUDGE DEWATERING FACILITY NEW BUILDING

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	FEB 1979

Revised Mach Hrs

LN
HN

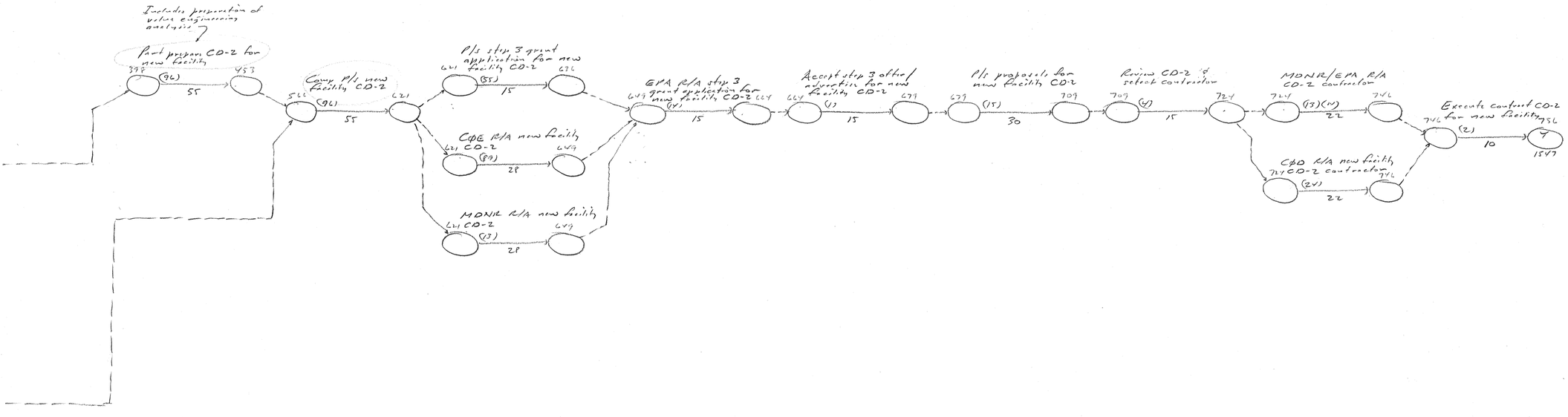
NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM - DETROIT

CPM-060

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

3

MULTI-COLOR 200 8-78 67950



ITEM 24- SUPPLEMENTAL SLUDGE DEWATERING FACILITY NEW BUILDING

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	Feb 7,79

Removed Hold Hbs

LN
HN

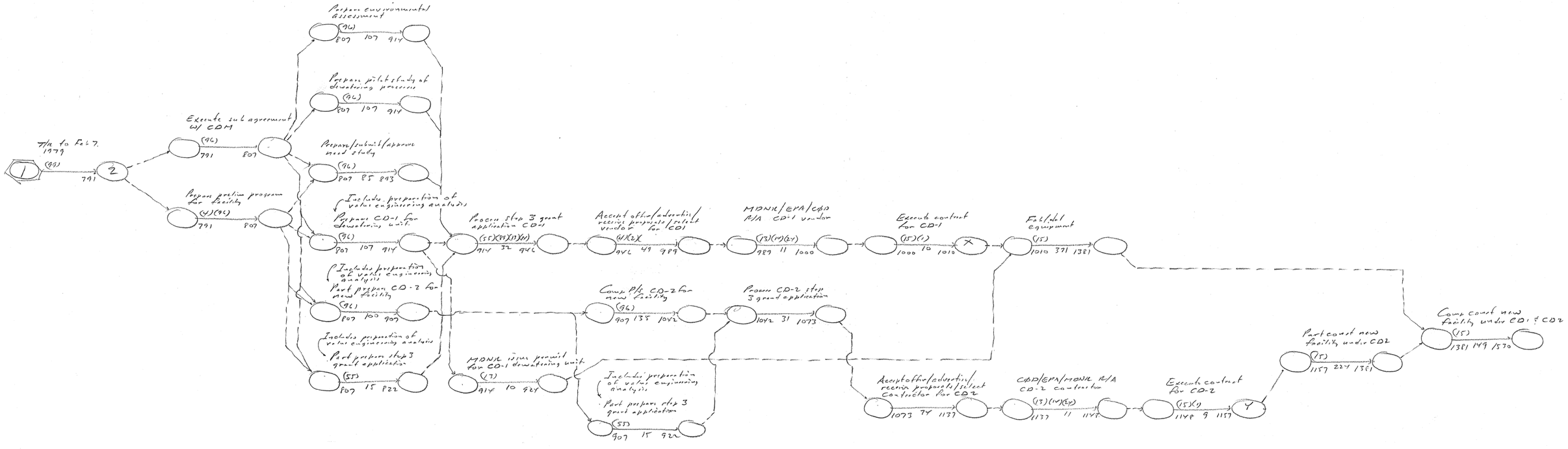
NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM- DETROIT

CPM-060

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

4

MULTI-COLOR 200 6-78 679904



NOTE: THIS NETWORK SHOWS THE PLAN OF ACTION PROPOSED IN THE MONITOR RESPONSE (FEB 1, 1979) PAGES 28 & 29

ITEM 24 - SUPPLEMENTAL SLUDGE DEWATERING FACILITY NEW BUILDING

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	–
						2	Feb 7, 79

Revised Mod. Nos.

LN
HN

SUMMARY NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM DETROIT

CPM-061

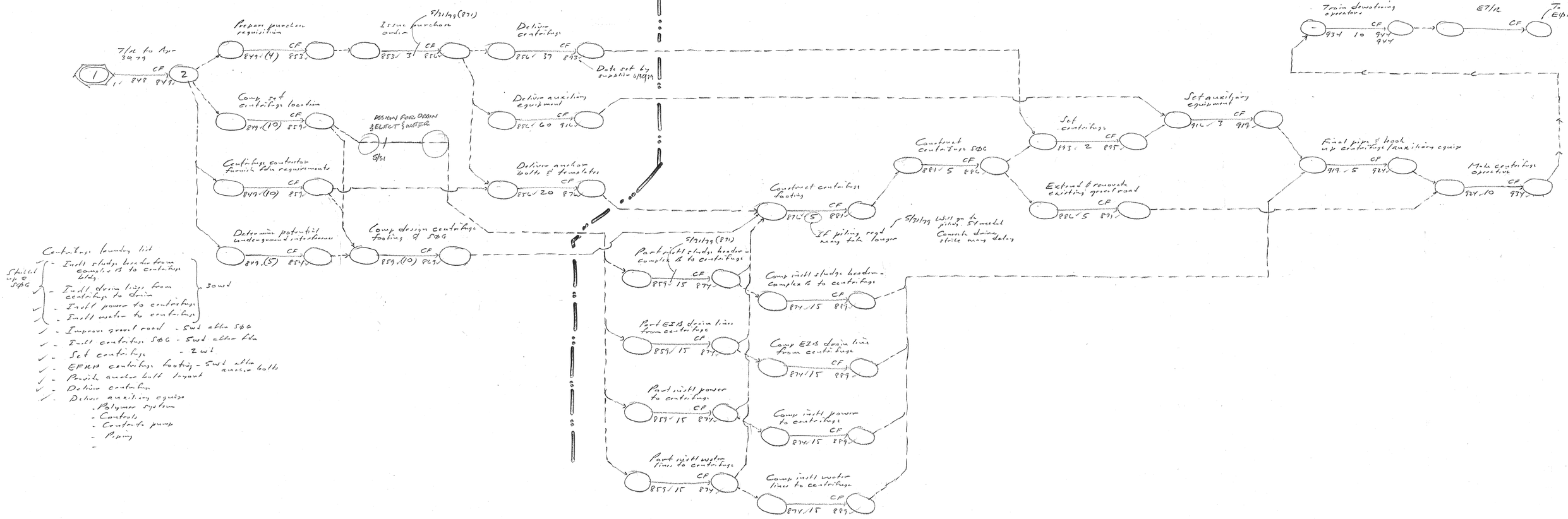
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15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

3A

MULTI-COLOR 200 6-78 67990

CENTRIFUGE (CF)
II-3

PROCURE | CONSTRUCT



ITEM II-3 CENTRIFUGE INSTALLATION (CF)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	APR 30 79
						2	MAY 31, 79

Revised Network Flow.

LN
JHN

NETWORK MODEL FOR DWSD SUMMER PRETEST ACTIVITIES - DETROIT, MICHIGAN

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

MULTI-COLOR 200 6-78 67990

GREASE COLLECTION SYSTEM IMPROVEMENTS

IV-11 (GC)

Item IV-11

Landing list IV-11 (sht 1/2)

- ✓ - Design secondary screw baffle
- ✓ - Deliver new trash pumps
- ✓ - Install trash pumps & check valves 7/1/79
- ✓ - Select isolation value type
- ✓ - Order/del isolation values
- - Prepare alternate routing (sht #)
- ✓ - Deliver new heat exchanger
- ✓ - Install/connect new heat exchanger

Crew A — 1 millwright, 1 helper

Crew B — 2 welders, 2 helpers

Crew C — 1 electrician, 1 helper

Crew D — 1 millwright, 2 helpers

Remodeling tank A2
- Order/del new pump
- Modify grease trap sys
- Take tank A2 out of service
- Install new pump/replace grease trap sys

5/31/79 (871) Dino

Santos Rivera

Will be del about July 9, 79 (894)

Shaded nodes indicate points that must be reached for summer test c/o back up system

TRASH PUMP #9

HEAT EXCHANGER

CHECK/ISOLATION VALVES

ENGINERATOR

ON SITE

OFF SITE

TANKS A1 & A2

Sept 11, 79

5/31/79 (871) Grease removal effectiveness to improving, filtration project priority 1, lowered.

General Notes:
- Diagrams on this sheet are for specific activities required for the summer test program 1979. Ongoing maintenance & repair activities not specifically required for 1979 summer testing are not shown. These include:
  - Lubrication of trash pumps (except #9)
  - Rebuilding each tank grease collection system
  - Install new secondary screw baffle

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	April 20, 79
						2	May 31, 79

- Revised Network Nov

LN
HN

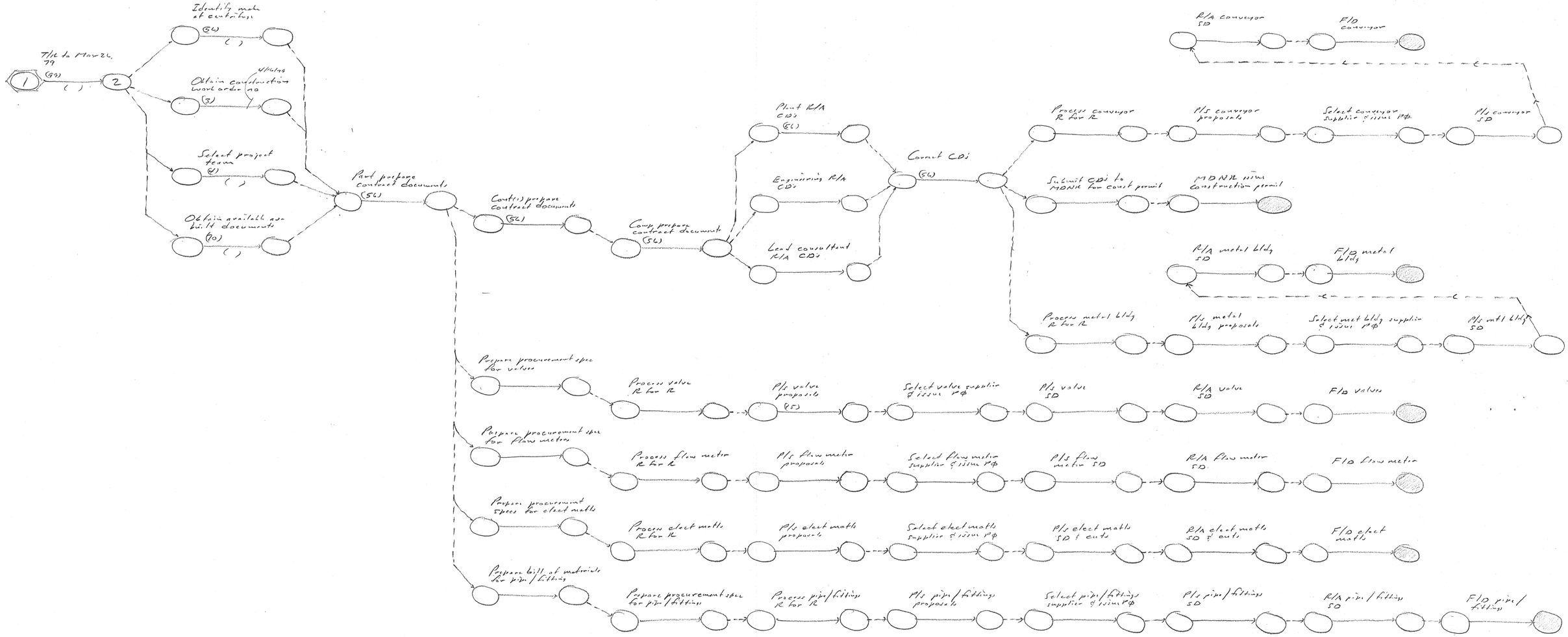
ITEM IV-11 GREASE COLLECTION SYSTEM IMPROVEMENTS (GC)

NETWORK MODEL FOR DWSO SUMMER PRETEST ACTIVITIES - DETROIT MICHIGAN

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 200 6-78 679904



4/16/79 (93)
If bus. PO by Apr 30,79 (84d)
could have facility in operation
by 7/16/79 (90d)

CENTRIFUGE DESIGN & INSTALLATION

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAR 2379

Reserved Node Nos.

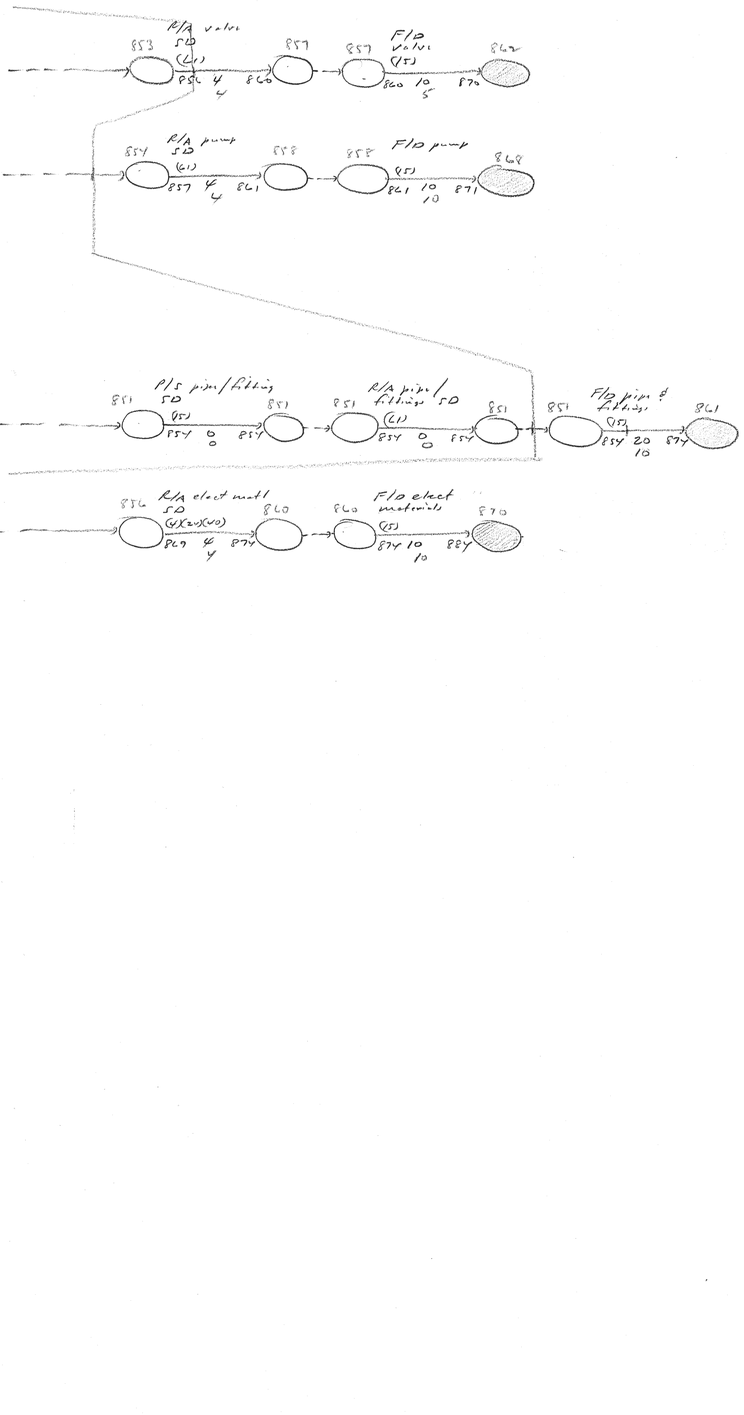
LN
HN

NETWORK MODEL FOR DWSD SUMMER PRETEST ACTIVITIES - DETROIT, MICHIGAN

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 200 6-78 67990



16" SLUDGE LINE EXTENSION

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAR 27 79

Revised Mod. Nos

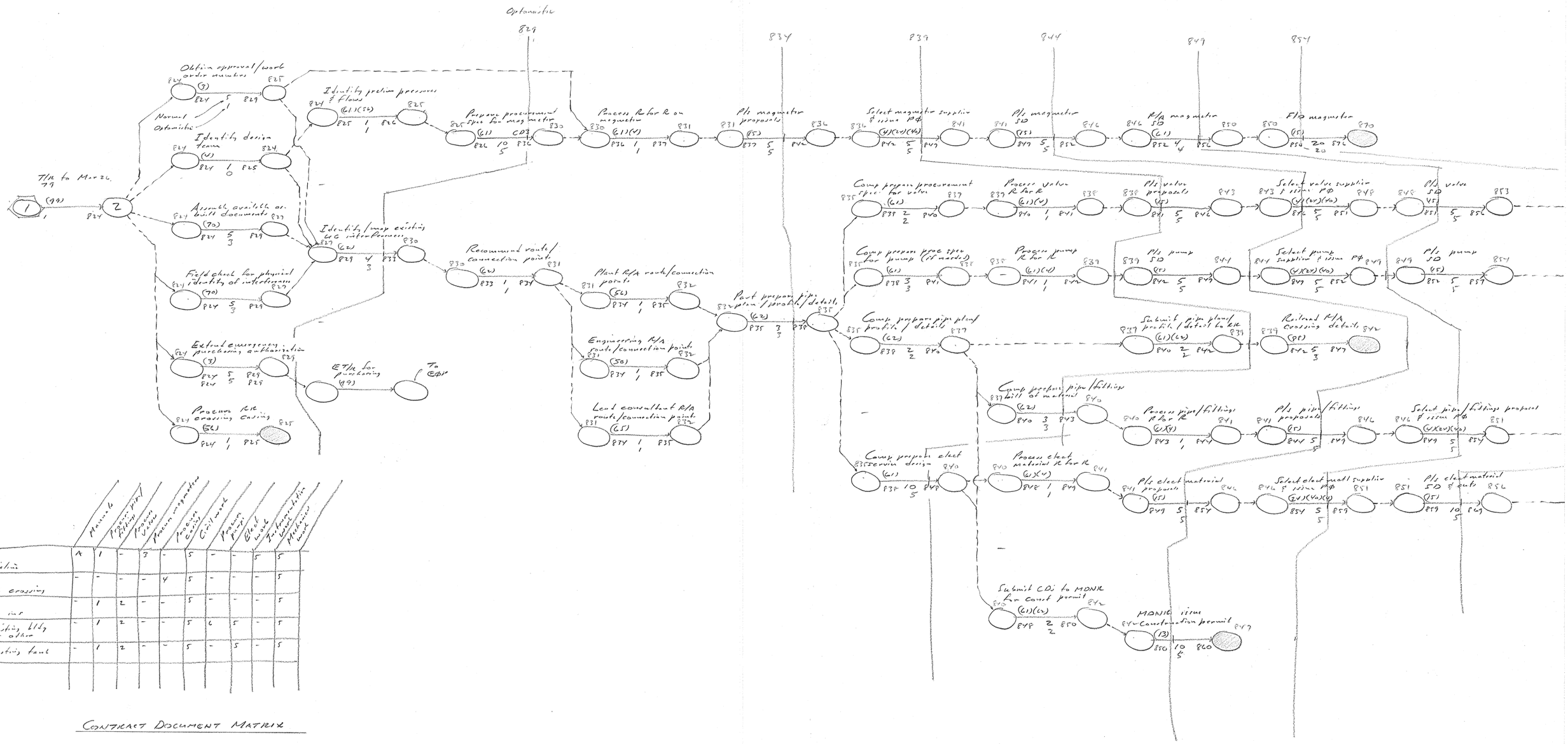
LN
HN

NETWORK MODEL FOR
DWSD SUMMER PILETEST
ACTIVITIES - DETROIT MICHIGAN

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 200 6-78 67950M



	Manhole	Pipeline pipe/fitting	Pipeline valves	Pipeline instruments	Pipeline casing	Civil work	Pipeline pump	Elect work	Instrumentation work	Mechanical work
Pipeline	4	1	-	3	-	5	-	-	5	5
R/R crossing	-	-	-	-	4	5	-	-	-	5
Tie ins	-	1	2	-	-	5	-	-	-	5
Existing bldg or other	-	1	2	-	-	5	6	5	-	5
Existing tank	-	1	2	-	-	5	-	5	-	5

CONTRACT DOCUMENT MATRIX

Responsibilities
See matrix list.

Abbreviations
- T/R Train received
- R/A Review & approval - made by sign off
- R for R Request for requisition
- P# Purchase order
- P/s Prepare & submit
- SD Shop drawings
- F/D Fab/delivery

General Notes
Assumptions:
- CD's done in house
- Procurement by DWSD
  - Pipe & fittings
  - Valves
  - Mag meters
  - Casing
  - Pumps
- Funding available
- Purchasing by emergency procedures
- Work to be done by DWSD plant personnel
- Engineering is overall project direction position
- In charge - to be appointed

16" SLUDGE LINE EXTENSION

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAR2799

Record Mod. Nos.

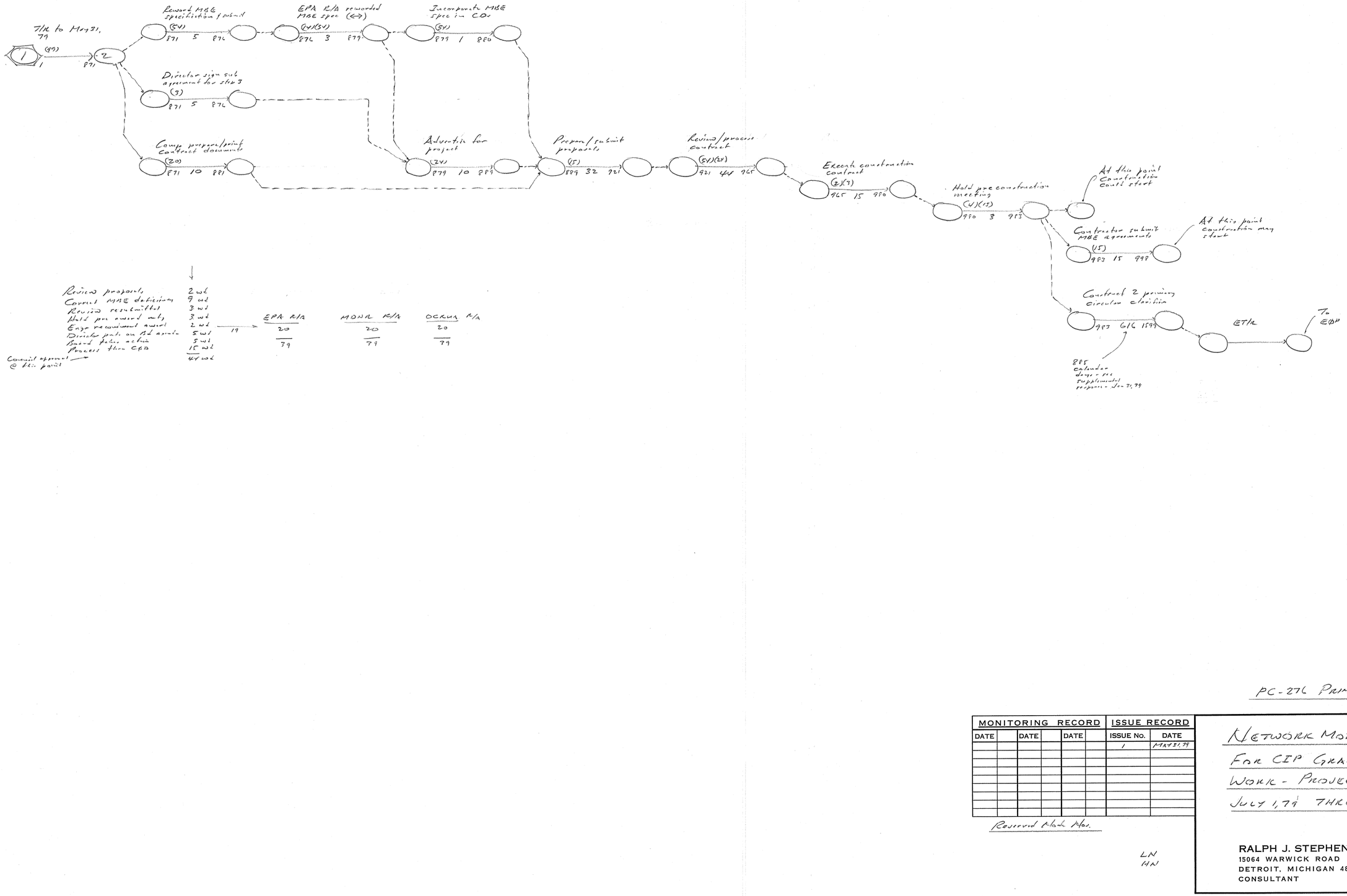
LN
HN

NETWORK MODEL FOR
DWSD SUMMER PRETEST
ACTIVITIES - DETROIT, MICHIGAN

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 200 8-78 67990



PC-276 PRIMARY CLARIFIERS (2)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAY 31, 79

Reserved block for

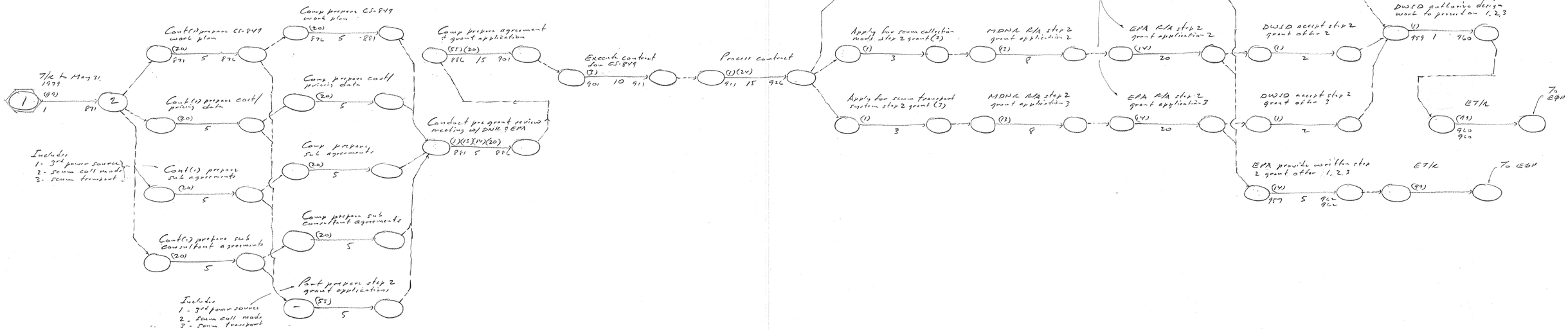
LN
HN

NETWORK MODEL FOR DWSD
FOR CIP GRANT FRONT END
WORK - PROJECTS TO START
JULY 1, 79 THRU DECEMBER 31, 79

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 11-78 69207



MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAY 31, 79

Revised Node Nos.

LN
MN

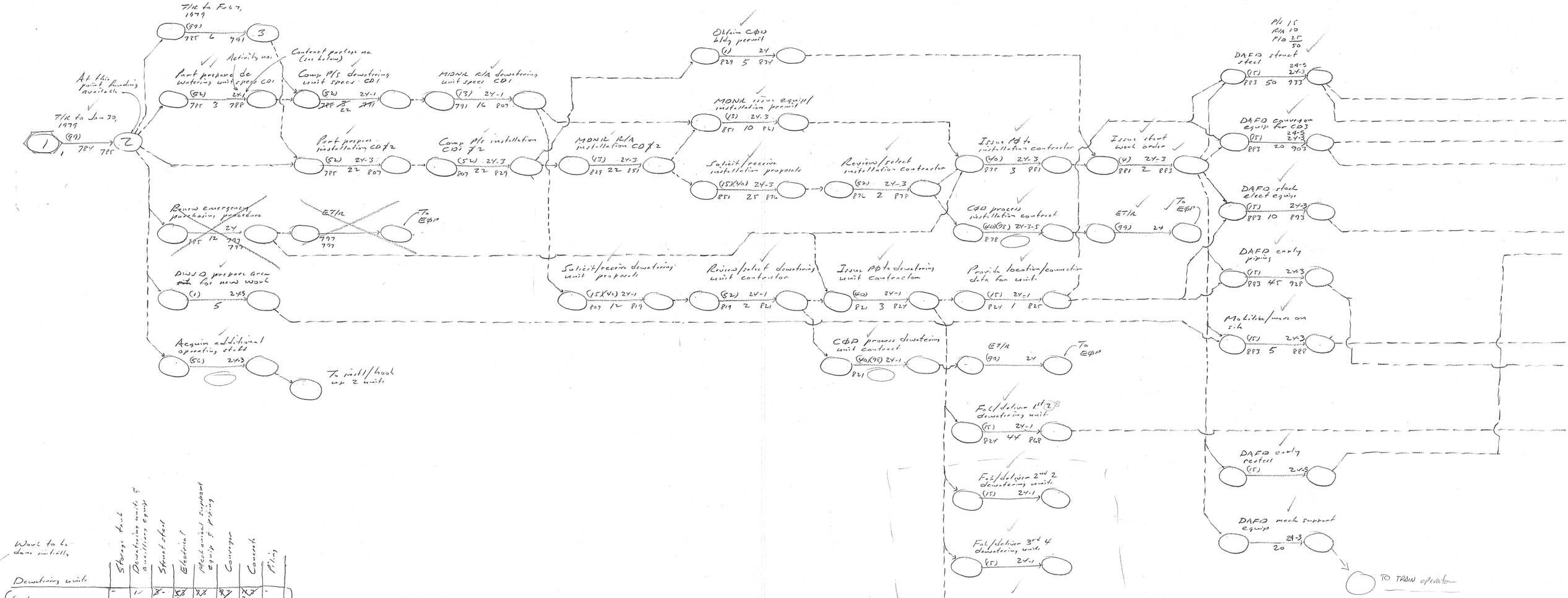
CS-849 MISCELLANEOUS DESIGN

NETWORK MODEL FOR DWSD FOR CIP GRANT FRONT END WORK - PROJECTS TO START JULY 1, 79 THRU DECEMBER 31, 79

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 400 11-78 69307●



Work to be done initially

	Storage tank	Dewatering units & ancillary equip	Struct steel	Electrical	Mech misc & equip & piping	Conveyor	Concrete	Piping	
Dewatering units									
1st 2 - 1A	-	1	3	2	2	2	2	-	Item 24
2nd 2 - 1B	-	1	3	2	2	2	2	-	
3rd 4 - 1C	-	1	3	2	2	2	2	-	
4th 2 - 1D	-	1	3	2	2	2	2	-	
Phase 2									
Loading / unloading / storage facility	1	-	3	2	-	2	2	2	Item 25

Phase 1

CONTRACT PACKAGING

2/7/79 Superseded by new issue 2 sht. 1A & 2A 2/7/79

General Notes

Assumptions for plan of work are:

1. Need additional dewatering units
2. Moving is available as required (for phase 1 & 2)
3. Logic & durations are based upon emergency conditions
4. No grant funds involved (for phase 1 & 2)
5. Contracts are fixed sum contracts
6. Design work is done in house & w/ COM as needed
7. Moving for const. is from new step 3 grant
8. Logic & durations are based on conventional conditions

Abbreviations

T/R	Time restraint
P/S	Prepare & submit
CD	Contract documents
R/A	Review & approve
C&D	City of Detroit
MDNR	Michigan Dept of Nat Resources
P&D	Purchase, order
ET/R	End time restraint
DAFD	Detail, approve, fab, deliver

ITEM 24 - SUPPLEMENTAL SLUDGE DEWATERING FACILITY COMPLEX 2 (FOR 4 UNITS ONLY)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	JAN 30, 79
						2	FEB 7, 79

Revised Work Nos

LN
HN

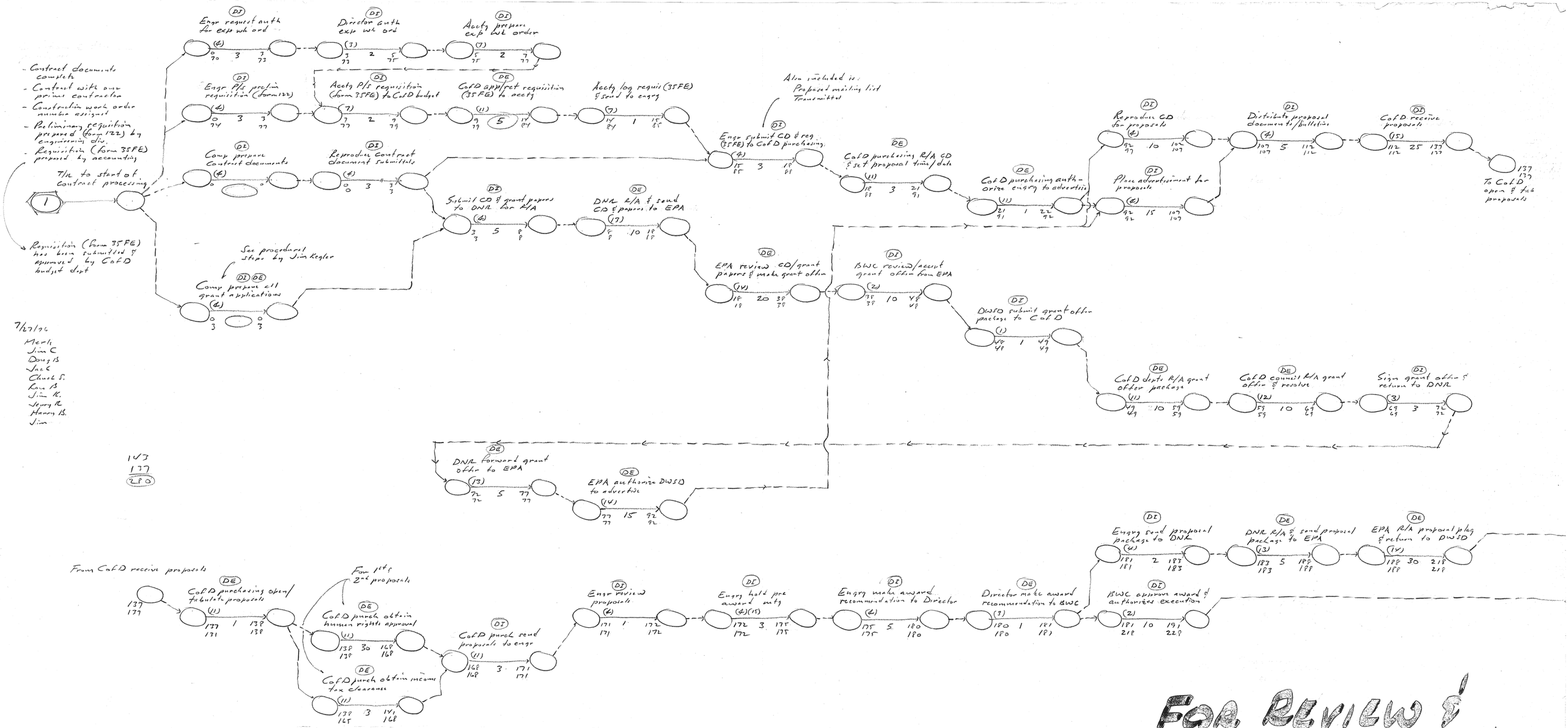
NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM - DETROIT

CPM-058

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 200 6-78 679904



7/27/76
Merl
Jim C
Doug B
Jack C
Chuck S.
Ron B
Jim K.
Jerry K
Harry B.
Jim

1V3
177
2P0

FOR REVIEW & STUDY ONLY!

10/20/76 (920) Valid Procedural

76:45

Responsibility Codes.
- See shts 1, 2, 3 for codes

Special Abbreviations
- P/S Prepare/Submit
- CofD City of Detroit
- R/A Review & approve
- DNR Department of Natural Resources
- DWSD Detroit Water & Sewerage Dept
- CD Contract documents
- PP Proposal package
- EC Executed contract
- VA Voucher audit

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	-
						3	July 27, 76

Reserved Node Nos.

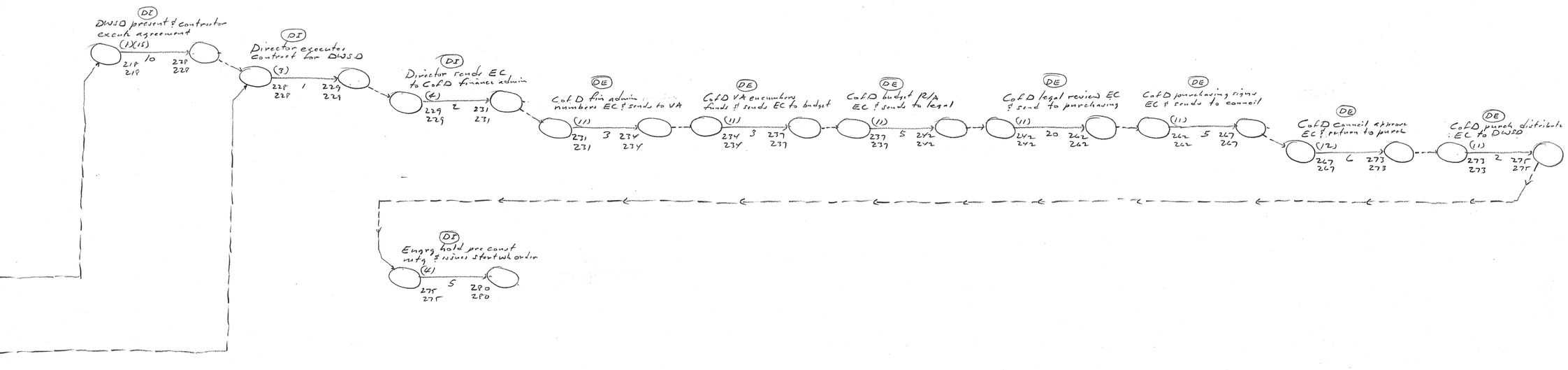
LN
HN

NETWORK MODEL FOR CONTRACT PROCESSING
DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

5

MULTI-COLOR 400 4-75 60397•



FOR REVIEW & STUDY ONLY!

10/30/75 (720)
Ver. 1.1
Proctored

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	-
						3	July 27, 76

Reserved Node Nos.

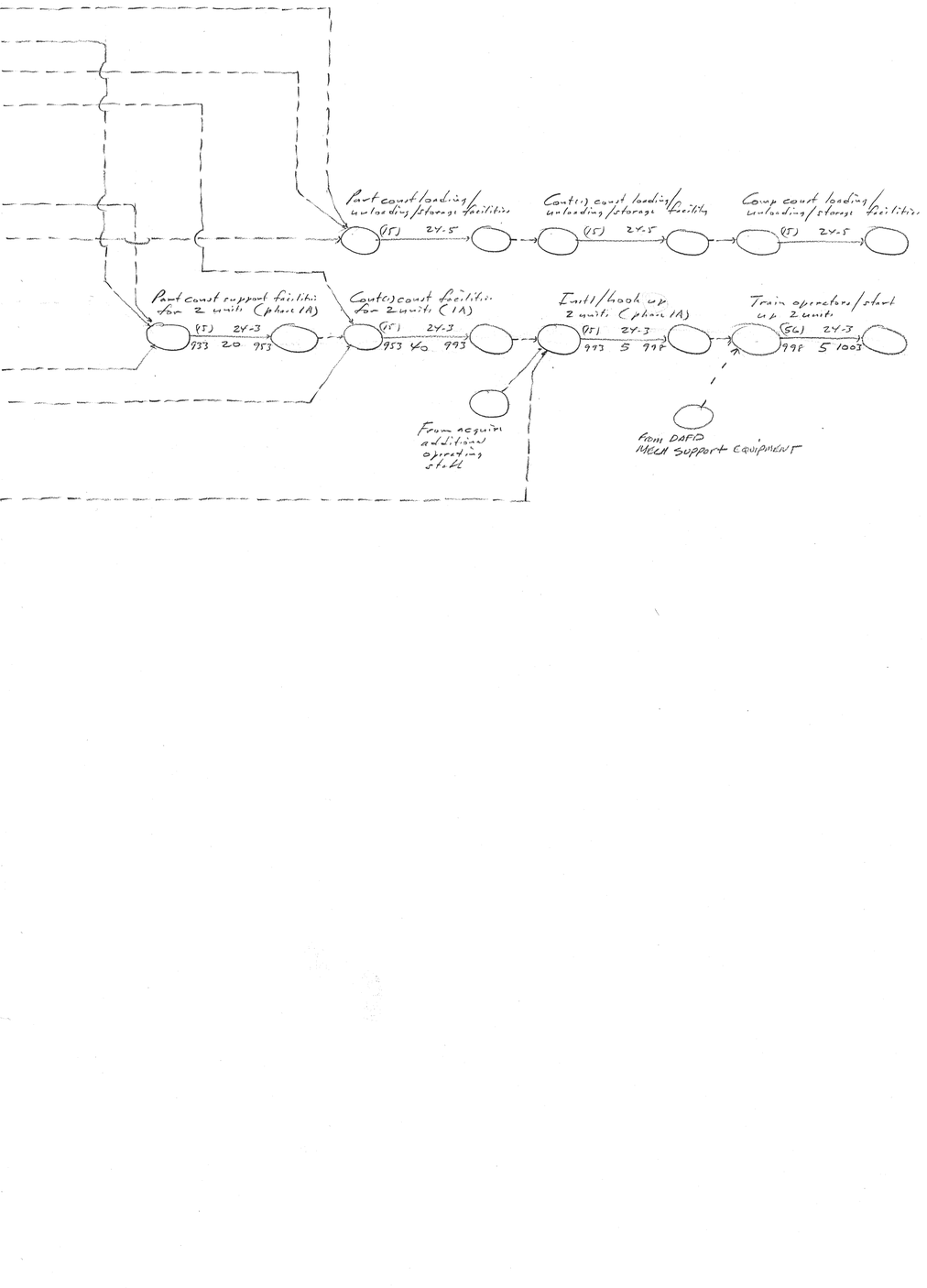
LN
HN

NETWORK MODEL FOR CONTRACT PROCESSING DETROIT WATER & SEWERAGE DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

6

MULTI-COLOR 400 4-75 60397•



2/7/79 Superseded by new issue 2 sht. 1A & 2A Chk'd 2/7/79

ITEM 24. SUPPLEMENTAL SLUDGE DEWATERING FACILITY COMPLEX 2

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	JAN 2379

Rosmid Mod. No.

LN
HN

NETWORK MODEL FOR DWSD EFFLUENT LIMITATION PROGRAM - DETROIT

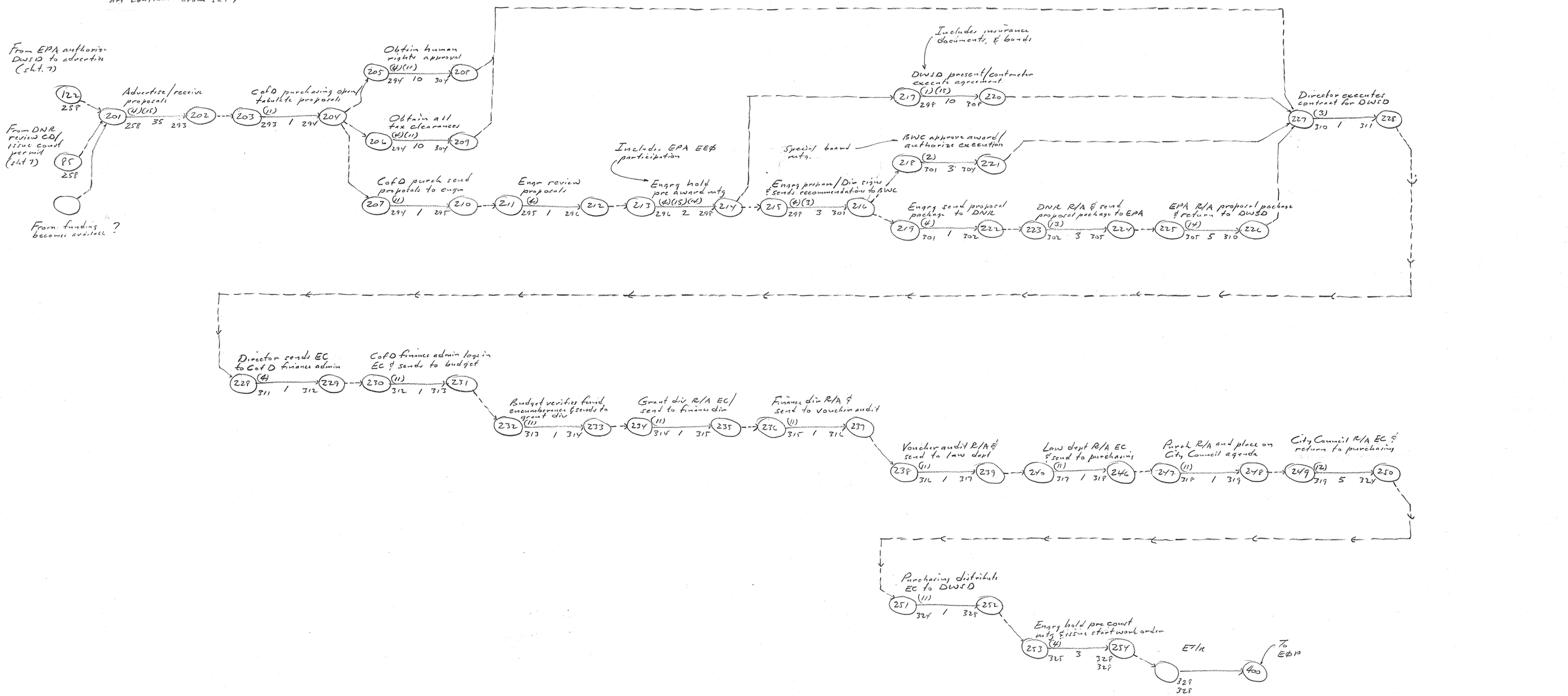
CPM-058

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

2

MULTI-COLOR 200 6-78 67990

Note: Node numbers are continued from sht 7



Project (10/30/78 (722) V.1.1)

For PC 285 & PC 276

7C:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	-
						2	Oct 11.76

Reserved Node Nos.

241
242
243
244
245

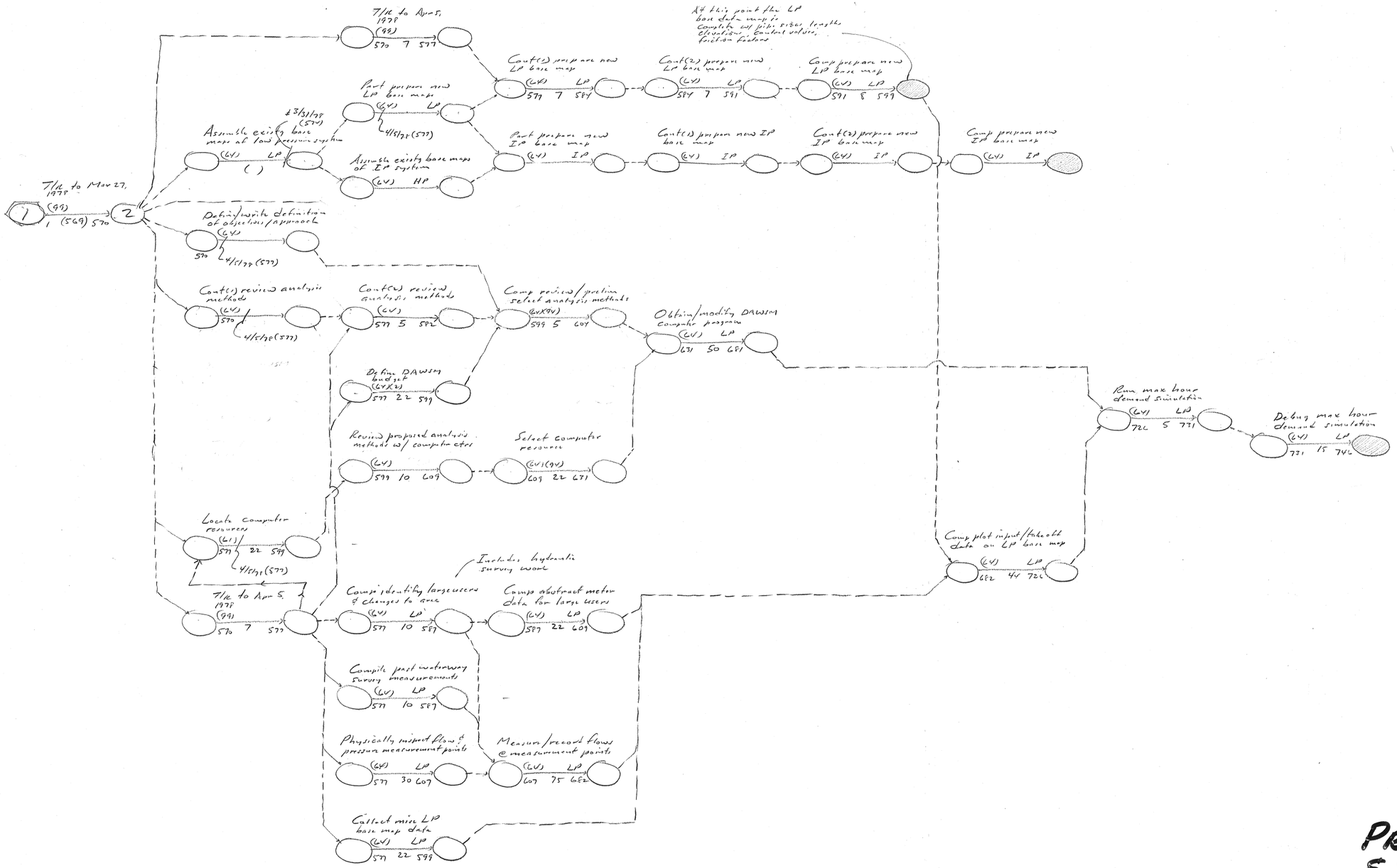
LN 200
HN
EOP 400

NETWORK MODEL FOR CONTRACT PROCESSING DWSD, DETROIT.

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

8

MULTI-COLOR 400 4-78 60397•



Abbreviations

T/K Time restraint
DAWSM Detroit Area Water System Model
LP Low pressure
A/P Assemble/plot
HP High pressure
EP Intermediate pressure
SS Suburban system
IDK I don't know
THTS That's hard to say

PRELIM - FOR REVIEW & STUDY ONLY !

Project (10/30/78 (721) V.1.1)

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAR 23,78
						2	APR 5,78

Revised Block Hol

LN
HN

NETWORK MODEL FOR PREPARATION OF DETROIT AREA WATER SYSTEM MODEL - DWSD

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DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 10-77 69916

8/30/76

Laundry list

✓ - Comp wkly diary/forces
✓ - Amend existg contract
✓ - Obtain EPA grant
✓ - Obtain city approval to fin. & accept
✓ - Obtain state approval of plan revisions
✓ - Let contract for const
✓ - Make site available

Laundry List for tanks
- Long lead time items
- Mass excavation
- Contin conc fdn
- Const ext wall ftgs
- Const ext walls
- Const base mat
- Install equip
- Instl tank int finish
- Const tunnels & pump chambers

Responsibility Codes

For codes 1-20 see sht #1

General Notes

06.00 Enlarge primary clarifier facilities @ WWTP
10.00 Enlarge final clarifier facilities @ WWTP

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Aug 30, 76

Reserved Nos.

41	46	91	96
42	47	92	97
43	48	93	98
44	49	94	99
45	50	95	100

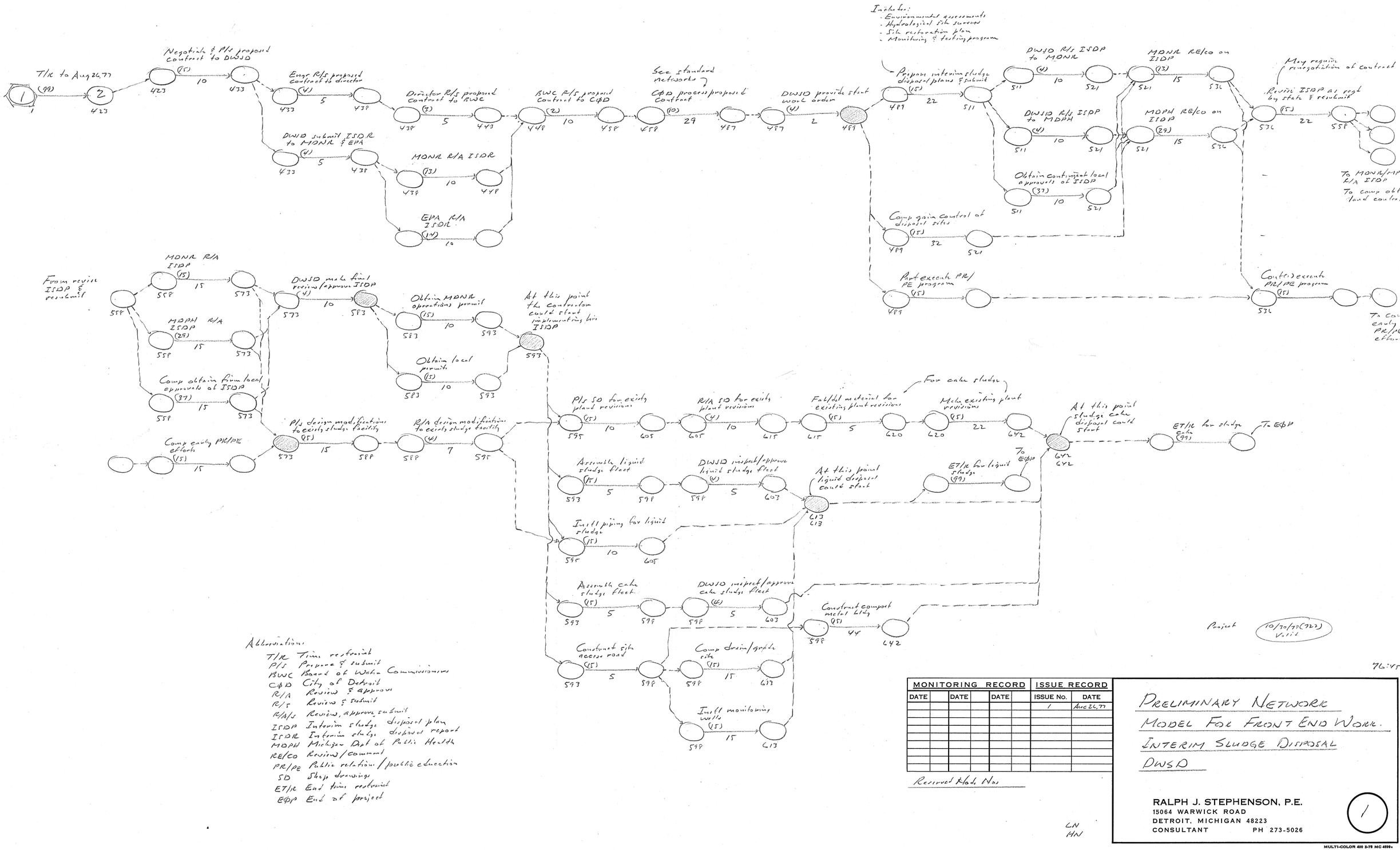
LN 2
HN 124
EØP 200

NETWORK MODEL FOR
PRIMARY & FINAL CLARIFIER
TANKS - 06.00 & 10.00 (PC276/285)
DETROIT WATER & SEWERAGE
DEPARTMENT

RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

7

MULTI-COLOR 400 4-75 60397•



Abbreviations:

T/R	Time restraint
P/S	Prepare & submit
BWC	Board of Water Commissioners
C&D	City of Detroit
R/A	Review & approve
R/S	Review & submit
R/A/S	Review, approve, submit
ISDP	Interim sludge disposal plan
ISDR	Interim sludge disposal report
MDPH	Michigan Dept of Public Health
RE/CO	Review/comment
PR/PE	Public relations/public education
SD	Shop drawings
ET/R	End time restraint
EOP	End of project

Project 10/20/78(722) Valid

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE NO.	DATE
						1	Aug 26,77

Revised Hold Nos

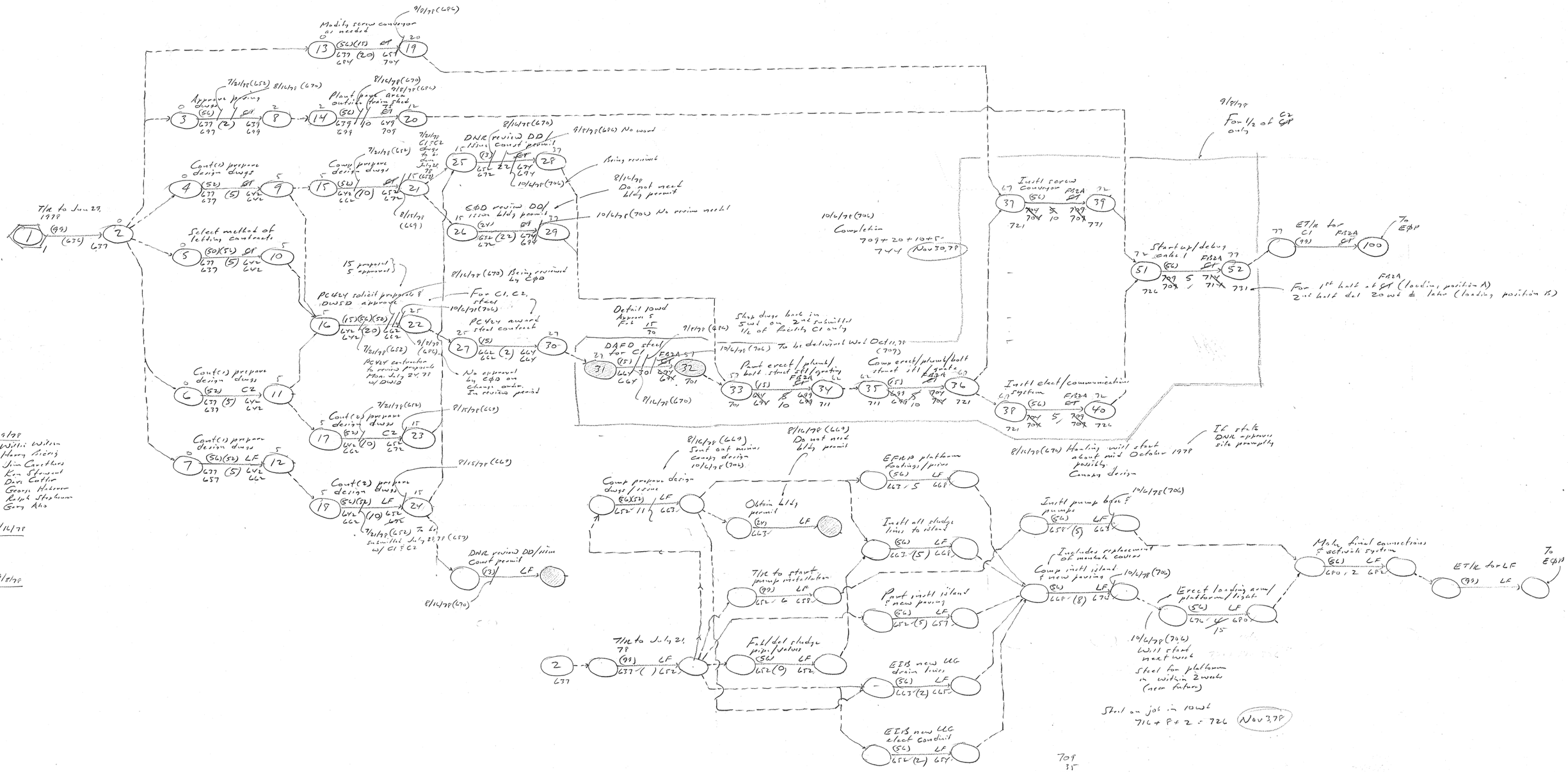
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HN

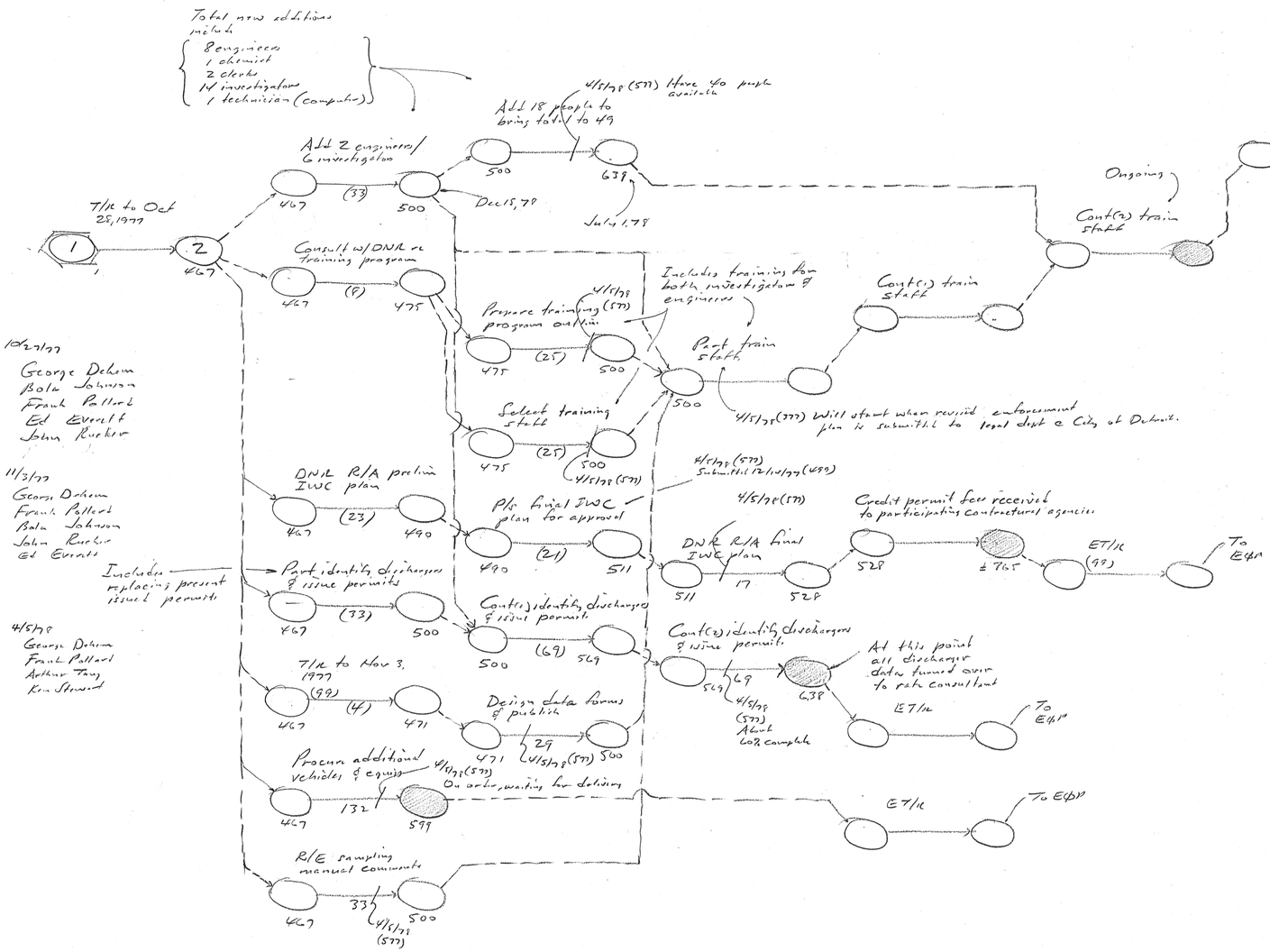
PRELIMINARY NETWORK MODEL FOR FRONT END WORK. INTERIM SLUDGE DISPOSAL DWSD

RALPH J. STEPHENSON, P.E.
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DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

MULTI-COLOR 400 3-78 MC 4699-1


Modify screw conveyor as needed
Approve paving change
Plant foyer area outside fusing shed
DNR (revise DD/ issue permit)
Cont(s) prepare design dwgs
Comp prepare design dwgs
Select method of letting contracts
PCHLY solicit proposals from DWSD approved
PCHLY award steel contract
DAFD steel for C1
Detail dwgs
Shop dwgs back in
Paint erect/ plumb/ bolt steel/ grating
Comp erect/plumb/bolt steel/grating
Install screw Conveyor
Start up/ debug
ET/R for C1
To EOP
For 1/2 of C2 only
For 1st half of ST (loading position A)
2nd half del 20 wd ± later (loading position B)
Install elect/communications system
Comp prepare design dwgs / issue
Obtain LLG permit
Install all sludge lines to island
EFHP platform footings/piers
Install pump base
Includes replacement of manhole covers
Comp install island & new paving
Erect loading arm/ platform/ light
Make final connections & activate system
ET/R for LF
To EOP
T/R to start pump installation
Part install island & new paving
Fab/del sludge pipe/valves
T/R to July 21, 78
EIB new LLG drain lines
EIB new LLG elect conduit
DNR review DD/ issue permit
Cont(c) prepare design dwgs
Cont(2) prepare design dwgs
T/R to June 29, 1978
Comp(s) prepare design dwgs
Cont(s) prepare design dwgs
Cont(c) prepare design dwgs
Cont(2) prepare design dwgs
DNR review DD/ issue permit
EOD review DD/ issue LLG permit
Comp(s) prepare design dwgs
Cont(s) prepare design dwgs
Cont(c) prepare design dwgs
Cont(2



Indicates ongoing activity starting @ this node

Abbreviations

CA Contractural agency
T/R Time restraint
R/E Review/evaluate
IWC Industrial Waste Control

Chronology of IWC plan approval

Dec 14, 77 (V39) Submitted final enforcement plan to DNR for approval
Mar 1, 78 (552) No response
Mar 24, 78 (569) DNR responded to submission of final enforcement plan. Did not approve
Mar 30, 78 (577) DWSD responded they would resubmit on or before June 5, 78 (C19)

Meanwhile plan is being implemented.

10/30/78 V. Hill Antioch

76:45

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	Oct 27 77
						2	Nov 3 77
						3	Apr 5, 78

Revised M & L Mod.

LN
HN

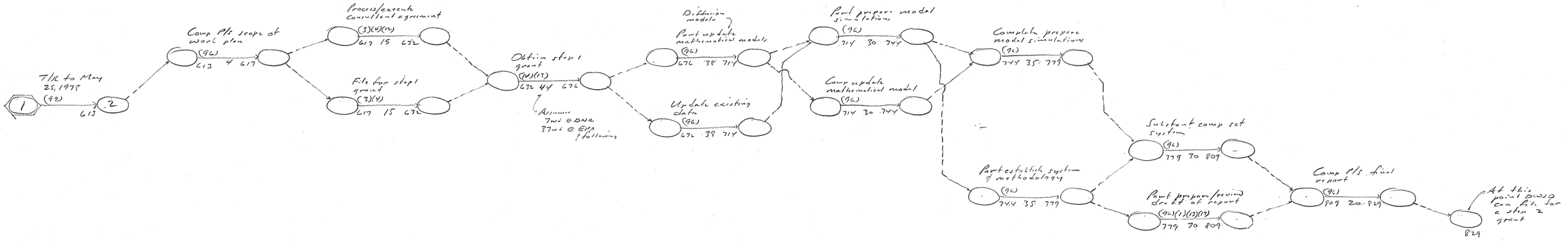
NETWORK MODEL FOR INDUSTRIAL WASTE CONTROL PROGRAM - DWSD

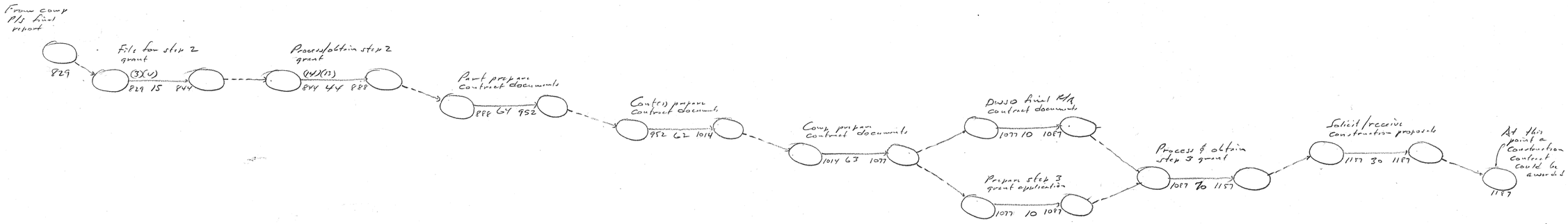
RALPH J. STEPHENSON, P.E.
15064 WARWICK ROAD
DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

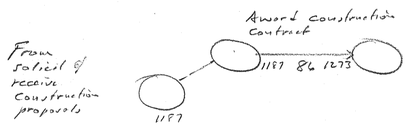
MULTI-COLOR 400 3-78 MC 4699-

CPM-032





Willis Wilson
Bill Martinez
Jim Carethers
Art Ting
Ken Stewart



Responsibility Codes

1 DWSD
3 Director DWSD
4 Engr Div - DWSD
12 CBD Council
13 MDNR
14 EPA
17 WCAP
9L CDM

10/30/78 V. 1:1
Project

ENHANCEMENT OF STACK DISPERSION
CS823- SLUDGE MANAGEMENT

MONITORING RECORD						ISSUE RECORD	
DATE		DATE		DATE		ISSUE No.	DATE
						1	MAY22,78

Record Node Nos.

NETWORK MODEL FOR AIR POLLUTION ABATEMENT PROGRAM - DWSD

RALPH J. STEPHENSON, P.E.
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DETROIT, MICHIGAN 48223
CONSULTANT PH 273-5026

1

CN
HN

MULTI-COLOR 400 10-77 69916