



Main-Contractor



**HSE CONTRACTORS INC.
CPM SCHEDULING CONSULTANTS**

Project:

**96-INCH AND 87-INCH SES PIPE REHABILITATION
Final As-Build Schedule Narrative Report**

Notice to Proceed	February 14th 2020
Substantial completion	October 15th 2020
Final Completion	October 30th 2020
Data Date	February 08th 2021

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1. Introduction:

HSE produced schedule using a time-scaled PDM network diagram representing the work of the Contract and showing the sequence of the work and all activities required to complete this portion of the project with total duration of 180 working days from NTP.

1.1 Progress during this update

- During September update the schedule is mitigated back to the Planned BL Schedule where the substantial completion is on October 15th,2020 and the completion date is on October 30th,2020.
- Three (3) change orders were added to the schedule (DCMs #9, #10, and #11) as delay Fragnets and Time Impact Analysis (TIA) incorporated in September update as shown below:

Change Order	Start Date	Finish Date
DCM 09	13-Aug-20	25-Sep-20
DCM 10	24-Sep-20	15-Oct-20
DCM11	21-Sep-20	05-Oct-20

- The changes that were requested and incorporated into September Update.
 - o DCM #09 included Construction Activities (Excavation, Chip Crowns, Install Rebars, Install Concrete forms, Install Couplings, Finish Epoxy & Backfilling)
 - o DCM #10 included Construction Activities (Mobilization, Clean and Prep Crown, Epoxy Application, Testing, post rehabilitation Inspection).
 - o DCM #11 included Construction Activities (Mobilization, Clean and Spray Crown, Spray Joints & Site Restoration).
- During the last Update, testing startup and commissioning started on 15th of October 2020 and finished on 27th of October 2020.
- The substantial completion is on 15th of October 2020 and the completion date is on 30th of October 2020.
- The change order cost of (Covid-19 Guidelines Response \$9,117.78 as of Material cost) & (Breakdown and Flush Discharge Pipes \$4,928.89 for a total Subcontractor cost of \$14,513.89) were added during the last update bringing the Budgeted Total cost to (\$4,755,987.16).
- The Project reached its final Closeout by 08th of February 2021.

2. Contractual Dates

- Notice to Proceed February 14th 2020
- Substantial completion October 15th 2020
- Final Completion October 30th 2020

3. Calendars

1. SES Pipe 5days - 8HRs

5 days working calendar with holidays used for Construction activities as well as submittals activities that require 8 working hours.

2. SES Pipe 5days - 10HRs

5 days working calendar with holidays used for some construction activities that require 10 working hours.

3. SES Pipe 5days - 12HRs

5 days working calendar with holidays used for some construction activities that require 12 working hours.

The following figure shows the non-work days in the Standard 5-Days working calendar.

Calendar

Year

SES Pipe 5days - 8HRs

2020

No Working Day

Exception

Inherited Exceptions from the Global Calendar

January							February							March						
Wed 01	Thu 02	Fri 03	Sat 04	Sun 05	Mon 06	Tue 07	Sat 01	Sun 02	Mon 03	Tue 04	Wed 05	Thu 06	Fri 07	Sun 01	Mon 02	Tue 03	Wed 04	Thu 05	Fri 06	Sat 07
Wed 08	Thu 09	Fri 10	Sat 11	Sun 12	Mon 13	Tue 14	Sat 08	Sun 09	Mon 10	Tue 11	Wed 12	Thu 13	Fri 14	Sun 08	Mon 09	Tue 10	Wed 11	Thu 12	Fri 13	Sat 14
Wed 15	Thu 16	Fri 17	Sat 18	Sun 19	Mon 20	Tue 21	Sat 15	Sun 16	Mon 17	Tue 18	Wed 19	Thu 20	Fri 21	Sun 15	Mon 16	Tue 17	Wed 18	Thu 19	Fri 20	Sat 21
Wed 22	Thu 23	Fri 24	Sat 25	Sun 26	Mon 27	Tue 28	Sat 22	Sun 23	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28	Sun 22	Mon 23	Tue 24	Wed 25	Thu 26	Fri 27	Sat 28
Wed 29	Thu 30	Fri 31					Sat 29							Sun 29	Mon 30	Tue 31				
April							May							June						
Wed 01	Thu 02	Fri 03	Sat 04	Sun 05	Mon 06	Tue 07	Fri 01	Sat 02	Sun 03	Mon 04	Tue 05	Wed 06	Thu 07	Mon 01	Tue 02	Wed 03	Thu 04	Fri 05	Sat 06	Sun 07
Wed 08	Thu 09	Fri 10	Sat 11	Sun 12	Mon 13	Tue 14	Fri 08	Sat 09	Sun 10	Mon 11	Tue 12	Wed 13	Thu 14	Mon 08	Tue 09	Wed 10	Thu 11	Fri 12	Sat 13	Sun 14
Wed 15	Thu 16	Fri 17	Sat 18	Sun 19	Mon 20	Tue 21	Fri 15	Sat 16	Sun 17	Mon 18	Tue 19	Wed 20	Thu 21	Mon 15	Tue 16	Wed 17	Thu 18	Fri 19	Sat 20	Sun 21
Wed 22	Thu 23	Fri 24	Sat 25	Sun 26	Mon 27	Tue 28	Fri 22	Sat 23	Sun 24	Mon 25	Tue 26	Wed 27	Thu 28	Mon 22	Tue 23	Wed 24	Thu 25	Fri 26	Sat 27	Sun 28
Wed 29	Thu 30						Fri 29	Sat 30	Sun 31					Mon 29	Tue 30					
July							August							September						
Wed 01	Thu 02	Fri 03	Sat 04	Sun 05	Mon 06	Tue 07	Sat 01	Sun 02	Mon 03	Tue 04	Wed 05	Thu 06	Fri 07	Tue 01	Wed 02	Thu 03	Fri 04	Sat 05	Sun 06	Mon 07
Wed 08	Thu 09	Fri 10	Sat 11	Sun 12	Mon 13	Tue 14	Sat 08	Sun 09	Mon 10	Tue 11	Wed 12	Thu 13	Fri 14	Tue 08	Wed 09	Thu 10	Fri 11	Sat 12	Sun 13	Mon 14
Wed 15	Thu 16	Fri 17	Sat 18	Sun 19	Mon 20	Tue 21	Sat 15	Sun 16	Mon 17	Tue 18	Wed 19	Thu 20	Fri 21	Tue 15	Wed 16	Thu 17	Fri 18	Sat 19	Sun 20	Mon 21
Wed 22	Thu 23	Fri 24	Sat 25	Sun 26	Mon 27	Tue 28	Sat 22	Sun 23	Mon 24	Tue 25	Wed 26	Thu 27	Fri 28	Tue 22	Wed 23	Thu 24	Fri 25	Sat 26	Sun 27	Mon 28
Wed 29	Thu 30	Fri 31					Sat 29	Sun 30	Mon 31					Tue 29	Wed 30					
October							November							December						
Thu 01	Fri 02	Sat 03	Sun 04	Mon 05	Tue 06	Wed 07	Sun 01	Mon 02	Tue 03	Wed 04	Thu 05	Fri 06	Sat 07	Tue 01	Wed 02	Thu 03	Fri 04	Sat 05	Sun 06	Mon 07
Thu 08	Fri 09	Sat 10	Sun 11	Mon 12	Tue 13	Wed 14	Sun 08	Mon 09	Tue 10	Wed 11	Thu 12	Fri 13	Sat 14	Tue 08	Wed 09	Thu 10	Fri 11	Sat 12	Sun 13	Mon 14
Thu 15	Fri 16	Sat 17	Sun 18	Mon 19	Tue 20	Wed 21	Sun 15	Mon 16	Tue 17	Wed 18	Thu 19	Fri 20	Sat 21	Tue 15	Wed 16	Thu 17	Fri 18	Sat 19	Sun 20	Mon 21
Thu 22	Fri 23	Sat 24	Sun 25	Mon 26	Tue 27	Wed 28	Sun 22	Mon 23	Tue 24	Wed 25	Thu 26	Fri 27	Sat 28	Tue 22	Wed 23	Thu 24	Fri 25	Sat 26	Sun 27	Mon 28
Thu 29	Fri 30	Sat 31					Sun 29	Mon 30						Tue 29	Wed 30	Thu 31				

Figure 1: SES Pipe 5days Calendar

4. SES Pipe 7days

7 days working calendar used for all Milestones, Testing and Commissioning, and Closeout activities.

4. Working Hours

The following figure represents the planned hours for the calendars assigned to the project

Hours per Time Period

Specify the number of work hours for each time period.

Hours/Day

Hours/Week

Hours/Month

Hours/Year

8.0

40.0

172.0

2000.0

OK

Cancel

Help

Figure 2: Planning Hours for SES Pipe 5days - 8HRs

Hours per Time Period

Specify the number of work hours for each time period.

Hours/Day

Hours/Week

Hours/Month

Hours/Year

10.0

50.0

215.0

2580.0

OK

Cancel

Help

Figure 3: Planning Hours for SES Pipe 5days - 10HRs

Hours per Time Period

Specify the number of work hours for each time period.

Hours/Day

Hours/Week

Hours/Month

Hours/Year

12.0

60.0

258.0

3096.0

OK

Cancel

Help

Figure 4: Planning Hours for SES Pipe 5days - 12HRs

5. Work Breakdown Structure

The following diagram reflects the work break down structure used to build the baseline schedule; decomposing the scope of work to manageable sections.

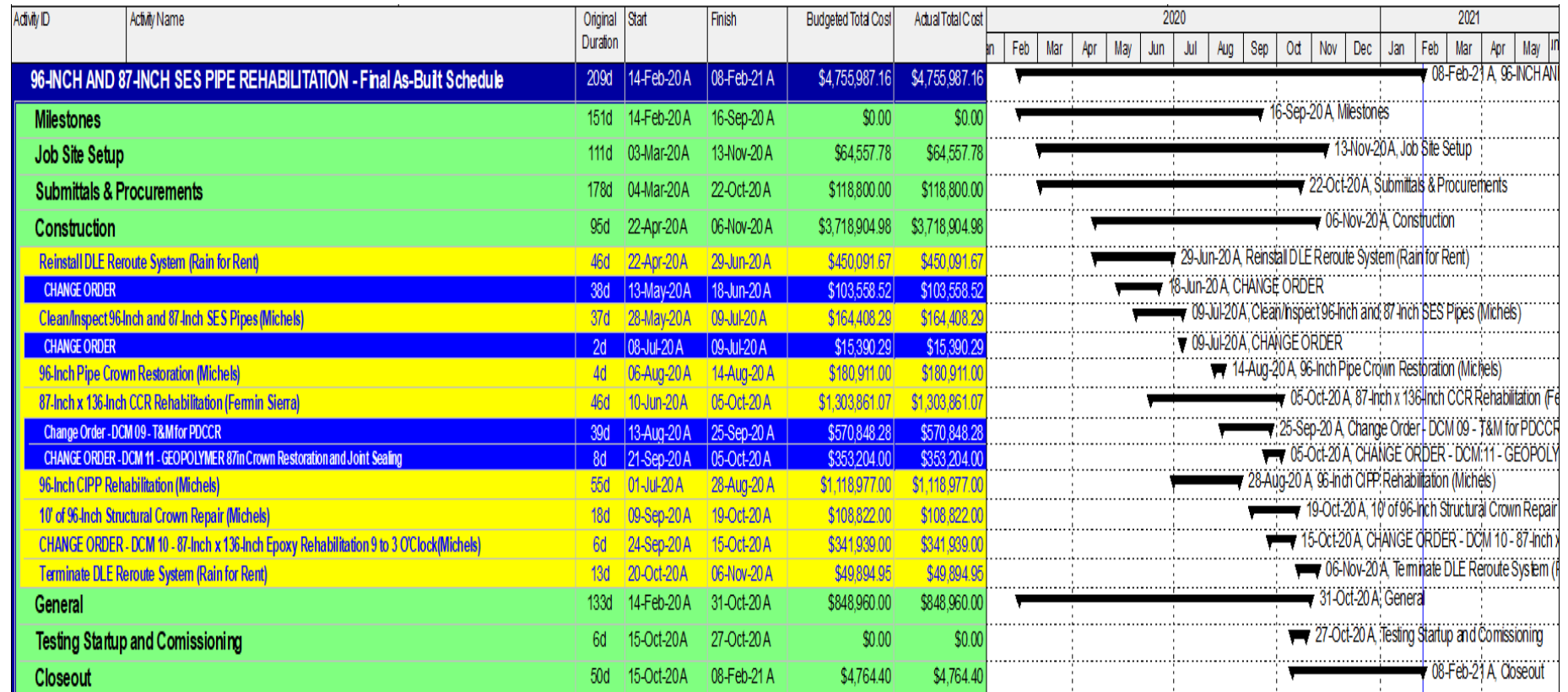


Figure 5: Project Schedule Work Breakdown Structure

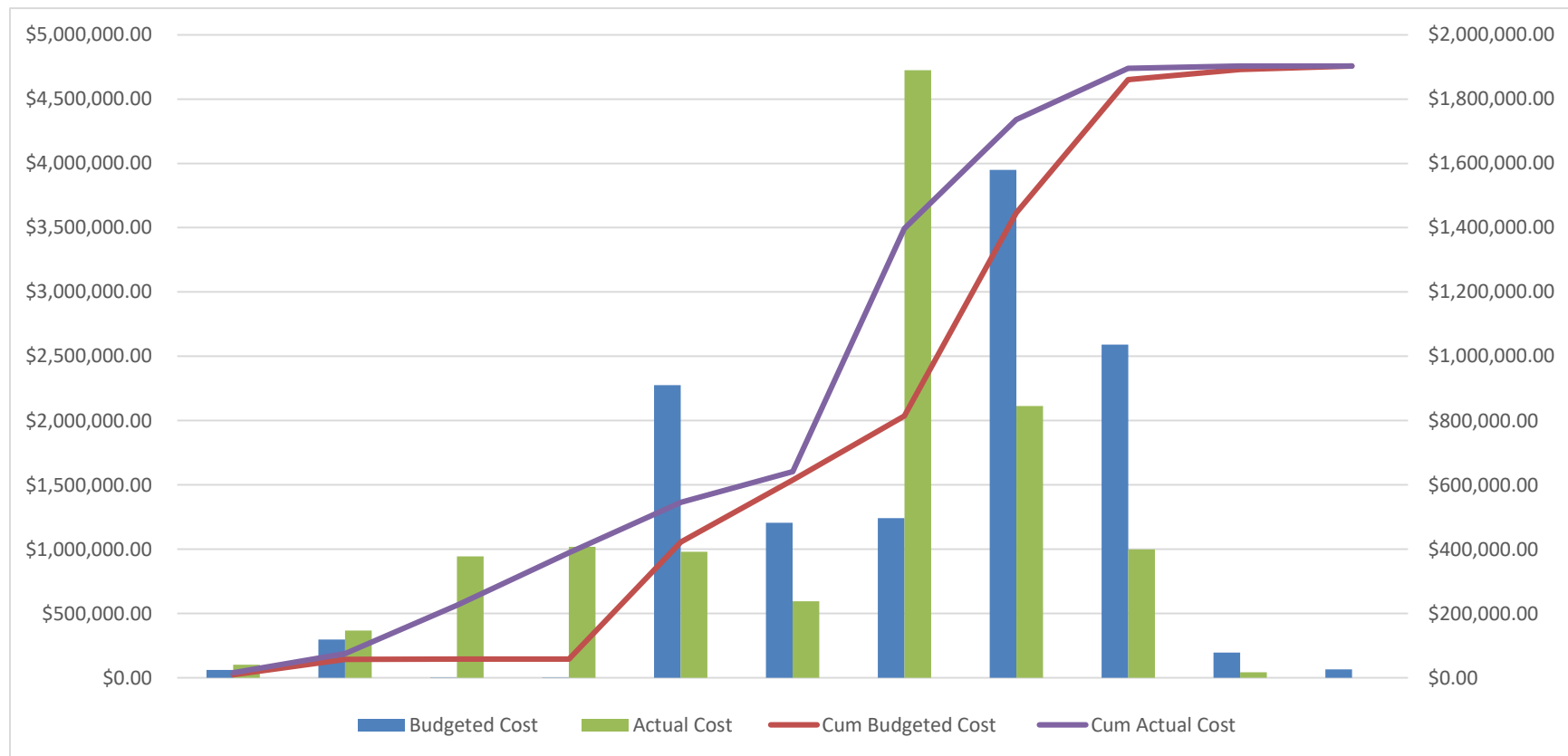
6. Cost Loading

The Total Budgeted Cost as of the Original Baseline Schedule was (\$4,169,370.50). This Update now includes DCMs #9, #10 & #11 bringing the Total Budgeted Cost to (\$4,741,940.50) as per the BL Schedule.

The Total Budgeted Cost is now (\$4,755,987.16) after adding the approved cost of the two change orders (Covid-19 Guidelines Response \$9,117.78 as of Material cost) & (Breakdown and Flush Discharge Pipes \$4,928.89 for a total Subcontractor cost of \$14,513.89).

- The current schedule activities are Cost loaded as per the following Table:

Total Budgeted Cost of \$4,755,987.16:	Total Actual Cost of \$4,755,987.16:
<ul style="list-style-type: none"> \$1,690,002.77 Budgeted Labor Cost 	<ul style="list-style-type: none"> \$1,690,002.77 Actual Labor Cost
<ul style="list-style-type: none"> \$695,499.78 Budgeted Material Cost 	<ul style="list-style-type: none"> \$695,499.78 Actual Material Cost
<ul style="list-style-type: none"> \$2,370,484.61 Budgeted No Labor Cost 	<ul style="list-style-type: none"> \$2,370,484.61 Actual No Labor Cost



7. Changes during the current update

7.1 Activity % Complete

Activity ID	Activity Name	New % Complete	Old % Complete
CO1.4.5	As Builts	100%	0%
CO1.4.6	Record Documents	100%	0%

7.2 Activities Added/Deleted

No changes have been reported in the following sections	
Section Detail	
Added Activities	
Deleted Activities	

7.3 Change orders Cost added during last Update

Costs			
Budgeted Nonlabor Cost			
Activity ID	Activity Name	New Budgeted Nonlabor Cost	Old Budgeted Nonlabor Cost
C1.2.8.04	Breakdown and Flush Discharge Pipes	\$14,513.89	\$9,585.00
Actual Nonlabor Cost			
Activity ID	Activity Name	New Actual Nonlabor Cost	Old Actual Nonlabor Cost
C1.2.8.04	Breakdown and Flush Discharge Pipes	\$14,513.89	\$9,585.00
Budgeted Material Cost			
Activity ID	Activity Name	New Budgeted Material Cost	Old Budgeted Material Cost
JS1.1.2.12	Covid-19 Guidelines Response	\$9,117.78	\$0.00
Actual Material Cost			
Activity ID	Activity Name	New Actual Material Cost	Old Actual Material Cost
JS1.1.2.12	Covid-19 Guidelines Response	\$9,117.78	\$0.00

8. Schedule Settings & Statistics

Scheduling/Leveling Report - 2021-02-09 09:55:13 - PM.EXE

Default Project.....SESPipe-Final As-Built Schedule

Projects:

SESPipe-Final As-Built Schedule.....96-INCH AND 87-INCH SES PIPE
REHABILITATION - Final As-Built Schedule

Scheduling/Leveling Settings:

General

SchedulingYes
LevelingNo
Ignore relationships to and from other projectsNo
Make open-ended activities criticalNo
Use Expected Finish DatesNo
Schedule automatically when a change affects datesYes
Level resources during schedulingNo
Recalculate assignment costs after schedulingNo
When scheduling progressed activities useRetained Logic
Calculate start-to-start lag fromEarly Start
Define critical activities as Total Float less than or equal to .8
Compute Total Float AsFinish Float
Calculate float based on finish date ofEach project
Calendar for scheduling Relationship LagSuccessor Activity Calendar

Advanced

Calculate multiple float paths.....No

Statistics:

Projects.....1
Activities.....174
Not Started.....0
In Progress.....0
Completed.....174
Relationships.....250
Activities with Constraint.....3

Project:	SESPipe-Final As-Built Schedule	Activity:	1.1.1	Notice To Proceed
Project:	SESPipe-Final As-Built Schedule	Activity:	CO1.4.1	Substantial

Completion

Project:	SESPipe-Final As-Built Schedule	Activity:	CO1.4.4	Contract
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Completion Date

Errors:

Warnings:

Activities without predecessors.....1

Project: SESPipe-Final As-Built Schedule Activity: 1.1.1 Notice To Proceed

Activities without successors.....2

Project: SESPipe-Final As-Built Schedule Activity: CO1.4.5 As Builts

Project: SESPipe-Final As-Built Schedule Activity: CO1.4.6 Record

Documents

Out-of-sequence activities.....0

Activities with Actual Dates > Data Date.....0

Milestone Activities with invalid relationships.....0

Finish milestone and predecessors have different calendars.....1

Project: SESPipe-Final As-Built Schedule Activity: CO1.4.4 Contract

Completion Date

Scheduling/Leveling Results:

Projects Scheduled/Leveled.....1

Activities Scheduled/Leveled.....174

Relationships with other projects.....0

Data Date.....08-Feb-21

Earliest Early Start Date.....08-Feb-21

Latest Early Finish Date.....08-Feb-21

Exceptions:

Critical Activities.....0

Activities with unsatisfied constraints.....0

Activities with unsatisfied relationships.....0

Activities with external dates.....0

9. Attachments

- Detailed Schedule
- Detailed Cost Schedule
- Activity Report
- Logic Report
- Summary Schedule
- Variance Report