

Pelton, Jason M (DEC)

From: Hannon, ED [US] (AS) <Edward.Hannon@ngc.com>
Sent: Thursday, October 22, 2020 10:31 AM
To: mrusso@OYSTERBAY-NY.gov; Hesler, Donald (DEC); Richard Lenz; Pelton, Jason M (DEC); Gregory Carman; Sullivan, James (HEALTH)
Cc: Engler, Christopher; San Giovanni, Carlo; Dave Stern (David.Stern@arcadis-us.com); Wolfert, Mike; Lattari, Michael E [US] (AS); Baumert-Moyik, Dianne C [US] (AS); Aaron Gershonowitz; Carol Henry (chenry@emagin-inc.com); jbalmat@hsweng.com
Subject: RE: RW 21 Pipe Route Alternatives
Attachments: NG_OU3-RW21-CENTRAL-ALT-1-4_09.22.20.pdf; 20201021 - Option 3 Summary Gantt.pdf; 20201021 - UC and Central Ave Baseline Summary Gantt.pdf; 20201021 - Option 4 Summary Gantt.pdf; 20201021 - RW-21 Pipe Route Options Summary.pdf

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We worked with Arcadis to developed supporting information comparing pipeline construction activities for Central Ave (baseline) to pipeline projects that utilize the Residential Street (Option 3) and Utility Corridor (Option 4). North Windhorst/Central Ave pipe route (Option 2) is provided for reference (see Item 3 below). Specifically attached with this email are the following:

1. Summary table of rolled up tasks and durations for the baseline, residential and utility corridor options.
2. Rolled up Gantt charts (3) each illustrating anticipated pre-construction, design and construction work sequencing and duration, for the baseline and 2 options under consideration.
3. Plan view layout of baseline and all options (provided previously for reference).

Feel free to call or email me with any questions.

Ed

From: Matt Russo <mrusso@oysterbay-ny.gov>
Sent: Friday, October 16, 2020 11:08 AM
To: Hannon, ED [US] (AS) <Edward.Hannon@ngc.com>; Hesler, Donald (DEC) <donald.hesler@dec.ny.gov>; Richard Lenz <rlenz@oysterbay-ny.gov>; Pelton, Jason M (DEC) <jason.pelton@dec.ny.gov>; Gregory Carman <gcarman@oysterbay-ny.gov>; Sullivan, James (HEALTH) <James.Sullivan@health.ny.gov>
Cc: Engler, Christopher <christopher.engler@arcadis.com>; San Giovanni, Carlo <Carlo.SanGiovanni@arcadis.com>; Dave Stern (David.Stern@arcadis-us.com) <David.Stern@arcadis-us.com>; Wolfert, Mike <Mike.Wolfert@arcadis.com>; Lattari, Michael E [US] (AS) <michael.lattari@ngc.com>; Baumert-Moyik, Dianne C [US] (AS) <Dianne.Baumert-

Moyik@ngc.com>; Aaron Gershonowitz <AGershonowitz@ForchelliLaw.com>

Subject: EXT :RE: RW 21 Pipe Route Alternatives

Ed-

Can Arcadis provide a timeline for the design and construction of alternatives 3 & 4? That is, if you were given the green light, how long to survey, utility locate and design the project? And would it be done in pieces? (Central Avenue Work, Stewart Avenue work, and Town roads East & West of Stewart)

-Matt

From: Hannon, ED [US] (AS) <Edward.Hannon@ngc.com>

Sent: Tuesday, September 29, 2020 2:11 PM

To: Hesler, Donald (DEC) <donald.hesler@dec.ny.gov>; Richard Lenz <rlenz@oysterbay-ny.gov>; Pelton, Jason M (DEC) <jason.pelton@dec.ny.gov>; Gregory Carman <gcarman@oysterbay-ny.gov>; Matt Russo <mrusso@oysterbay-ny.gov>; Sullivan, James (HEALTH) <James.Sullivan@health.ny.gov>

Cc: Engler, Christopher <christopher.engler@arcadis.com>; San Giovanni, Carlo <Carlo.SanGiovanni@arcadis.com>; Dave Stern (David.Stern@arcadis-us.com) <David.Stern@arcadis-us.com>; Wolfert, Mike <Mike.Wolfert@arcadis.com>; Carol Henry (chenry@emagin-inc.com) <chenry@emagin-inc.com>; jbalmat@hsweng.com; Lattari, Michael E [US] (AS) <michael.lattari@ngc.com>; Baumert-Moyik, Dianne C [US] (AS) <Dianne.Baumert-Moyik@ngc.com>; Aaron Gershonowitz <AGershonowitz@ForchelliLaw.com>

Subject: RW 21 Pipe Route Alternatives

Fig 1 – Option 1 is the current plan – Utility Corridor to Central and turn west

Fig 2 – Option 2 is N. Windhorst to Central Ave turn west

Fig 3 – Option 3 is N. Windhorst to Emma St. and turn west

Fig 4 – Option 3 is Utility Corridor to William to N. Windhorst to Emma and turn west. (Preferred option reduces time on residential streets and completes work several months sooner)

I will send the Central Ave figure we used during our call in a separate email.

Option 1 – Current proposed design path

Option1 - Trenching, fusing and pipe install with back filling and temp patching followed by final patching is anticipated to take around 10 months from the start, weather permitting.

The time line for starting the trenching pivots on successfully completing a series of air knifing and excavation pits which is necessary to assess that adequate and safe space exist in between this utility crowded street for installing the 24 inch RW 21 influent pipe. Also, as a direct result of just having received a property boundary figure/map depicting county owned property vs. privately owned property it will take an uncertain length of time to negotiate and obtain numerous access agreements with private property owners, if at all possible.

The estimated progress schedule for installing pipe once all access agreements and 95% design is complete and barring any other unknowns:

20 LF/DAY ALONG CENTRAL AVENUE

40 LF/DAY ACROSS STEWART AVENUE

60 LF/DAY ALONG UTILITY CORRIDOR

80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

Option 2 – North Windhorst to Central

Option 2 is anticipated to take 7 months from the start, weather permitting.

The time line for starting the trenching pivots on successfully completely a series of air knifing and excavation pits which is necessary to assess that adequate and safe space exist in a utility crowded street for installing the RW 21 influent pipe. Also As a direct result of just having receiving a property boundary figure/map depicting county owned property Vs. privately owned property it will take an uncertain length of time to negotiate and obtain numerous access agreements with private property owners, if at all possible.

The estimated progress schedule for installing pipe once all access agreements and 95% design is completed and barring any other unknowns is:

- 20 LF/DAY ALONG CENTRAL AVENUE
- 40 LF/DAY ALONG STEWART AVENUE
- 60 LF/DAY ALONG UTILITY CORRIDOR
- 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

Option 3 – Utility Corridor – William - N. Windhorst – Emma- South Pershing on to Central

Option 3 is anticipated to take 4-5 months weather permitting.

The estimated schedule is based upon obtaining a signed access agreement for Seavest and TOB utility corridor properties in order for NG to award contracts for the pipe install within the corridor. Concurrently TOB issues NG Contractors access to conduct the utility mark-out from Emma Street westward to support pipeline design completion.

The estimated progress schedule for installing the pipe

- 20 LF/DAY ALONG CENTRAL AVENUE
- 40 LF/DAY ALONG STEWART AVENUE
- 60 LF/DAY ALONG UTILITY CORRIDOR
- 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

Call or email me if you have any questions.

Sincerely,

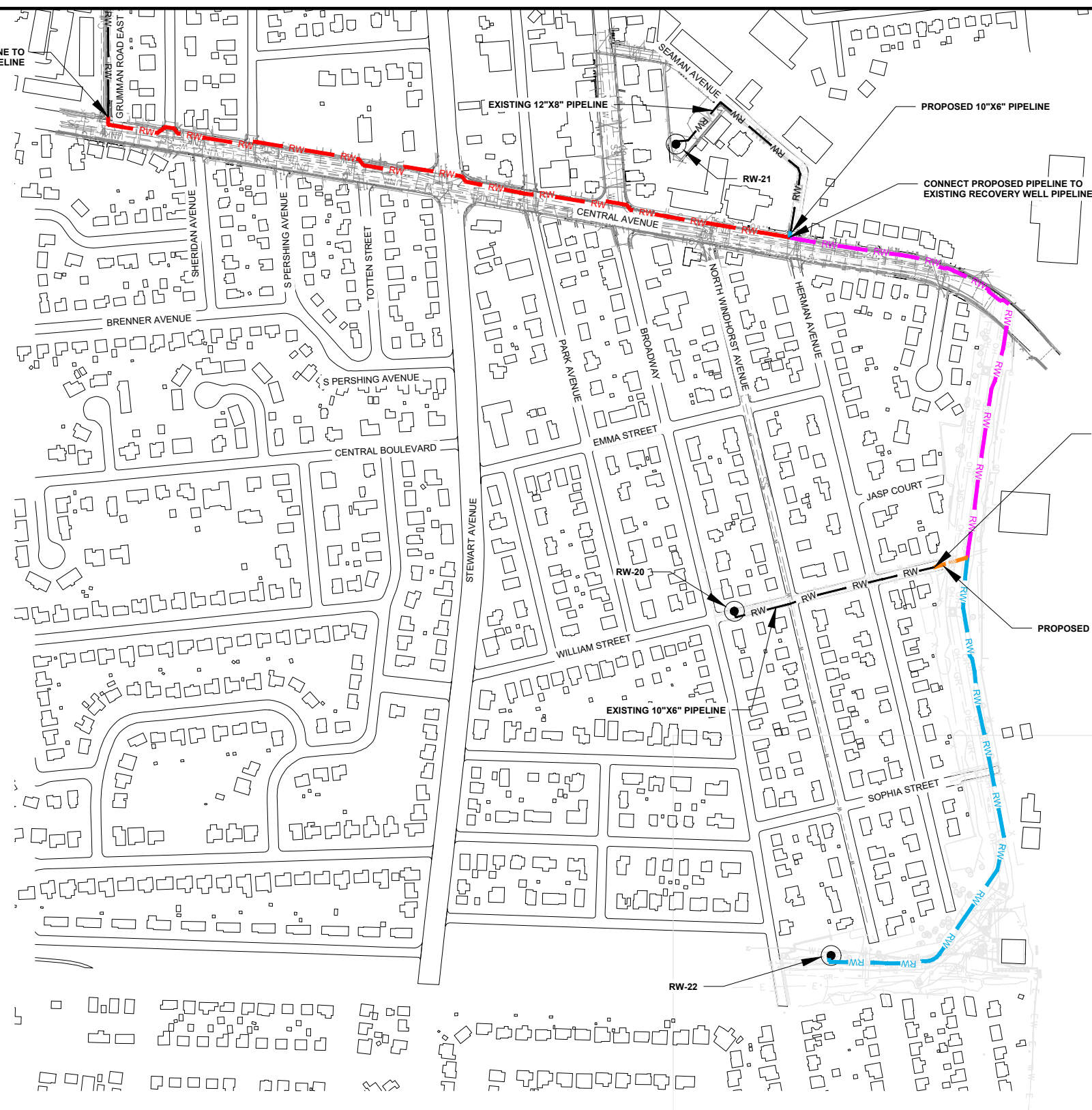
EDWARD HANNON |

Northrop Grumman | Aeronautics Systems

O: 516-575-2333 | C: 516-353-4618 | F: 844-888-8503 | ed.hannon@ngc.com

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CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE



CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

PROPOSED 10"x6" PIPELINE

DRAFT

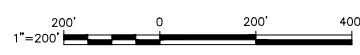
- LEGEND**
- EXISTING RECOVERY WELL
 - RW EXISTING RECOVERY WELL CONVEYANCE PIPELINE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 10"x6" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 12"x8" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 16"x10" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 24"x16" PIPE

TABLE 1 - PROPOSED RECOVERY WELL PIPELINE LENGTHS

PIPELINE TYPE/DIMENSIONS	APPROXIMATE LENGTH (LF)	
	ENTIRE ALIGNMENT	ALONG CENTRAL AVENUE
10"x6"	110	0
12"x8"	1,660	0
16"x10"	1,510	800
24"x16"	2,190	2,190
TOTAL	5,470	2,990

- SCHEDULE:**
1. OPTION 1 IS ANTICIPATED TO TAKE APPROXIMATELY 10 MONTHS.
 2. THIS SCHEDULE IS BASED UPON AN ESTIMATE OF THE LINEAR FOOTGAGE OF PIPELINE THAT COULD BE INSTALLED DAILY IN DIFFERENT AREAS:
 - 2.1. 20 LF/DAY ALONG CENTRAL AVENUE
 - 2.2. 40 LF/DAY ALONG STEWART AVENUE
 - 2.3. 60 LF/DAY ALONG UTILITY CORRIDOR
 - 2.4. 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

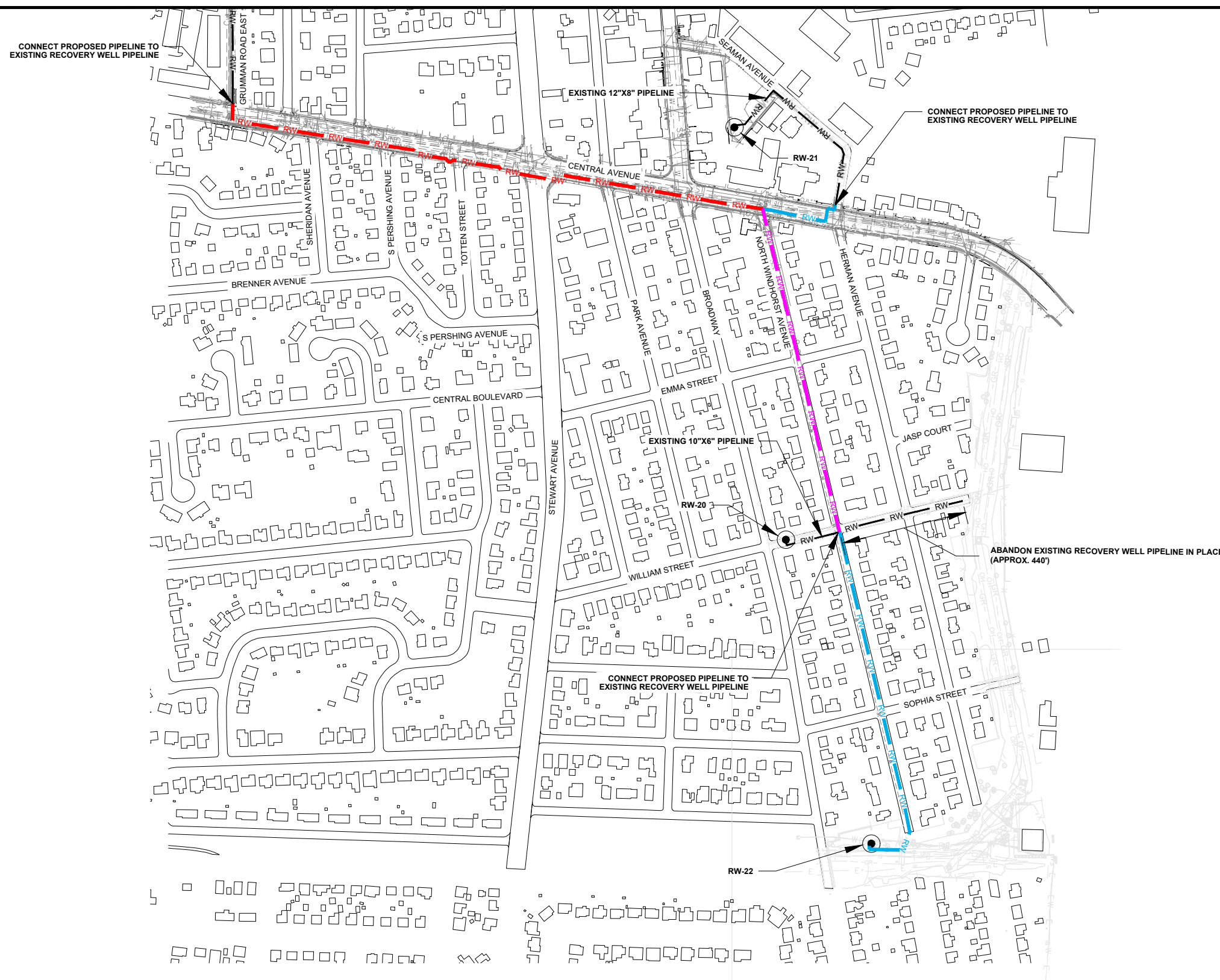
- NOTES:**
1. BASEMAP INFORMATION PROVIDED BY GALLAS SURVEYING GROUP, 2865 U.S. ROUTE 1 NORTH BRUNSWICK, NJ 08902, DRAWINGS TITLED "TOPOGRAPHIC AND LOCATION SURVEY - NORTH WINDHORST AVENUE (07-17-19); - CENTRAL AVENUE (08-02-19); AND - GRUMMAN ROAD EAST (08-23-19)", AT A SCALE OF 1" = 20', RESPECTIVELY. ADDITIONAL PROPERTY AND PARCEL LINE INFORMATION OBTAINED FROM NASSAU COUNTY GIS DEPARTMENT.
 2. THE BASEMAP UTILITY INFORMATION WITHIN THE RESIDENTIAL AREA SOUTH OF CENTRAL AVE WAS SUPPLEMENTED WITH APPROXIMATE UTILITY ALIGNMENTS, WHICH WERE BASED OFF EXISTING BASEMAP INFORMATION AND STREETVIEW PHOTOS. THESE ALIGNMENTS ARE APPROXIMATE AND SHOULD BE FIELD-VERIFIED BY THE CONTRACTOR.



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
RW-21 PROJECT AREA TREATMENT SYSTEM

**CONCEPTUAL RW PIPING LAYOUT
OPTION 1 - CURRENT DESIGN**





DRAFT

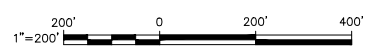
- LEGEND**
- EXISTING RECOVERY WELL
 - RW EXISTING RECOVERY WELL CONVEYANCE PIPELINE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 10"x6" PIPE
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 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 24"x16" PIPE

TABLE 1 – PROPOSED RECOVERY WELL PIPELINE LENGTHS

PIPELINE TYPE/DIMENSIONS	APPROXIMATE LENGTH (LF)	
	ENTIRE ALIGNMENT	ALONG CENTRAL AVENUE
10"x6"	0	0
12"x8"	1,570	310
16"x10"	1,150	0
24"x16"	1,950	1,950
TOTAL	4,670	2,260

- SCHEDULE:**
1. OPTION 2 IS ANTICIPATED TO TAKE APPROXIMATELY 7 MONTHS.
 2. THIS SCHEDULE IS BASED UPON AN ESTIMATE OF THE LINEAR FOOTGAGE OF PIPELINE THAT COULD BE INSTALLED DAILY IN DIFFERENT AREAS:
 - 2.1. 20 LF/DAY ALONG CENTRAL AVENUE
 - 2.2. 40 LF/DAY ALONG STEWART AVENUE
 - 2.3. 60 LF/DAY ALONG UTILITY CORRIDOR
 - 2.4. 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

- NOTES:**
1. BASEMAP INFORMATION PROVIDED BY GALLAS SURVEYING GROUP, 2865 U.S. ROUTE 1 NORTH BRUNSWICK, NJ 08902, DRAWINGS TITLED "TOPOGRAPHIC AND LOCATION SURVEY - NORTH WINDHORST AVENUE (07-17-19); - CENTRAL AVENUE (08-02-19); AND - GRUMMAN ROAD EAST (08-23-19)", AT A SCALE OF 1" = 20', RESPECTIVELY. ADDITIONAL PROPERTY AND PARCEL LINE INFORMATION OBTAINED FROM NASSAU COUNTY GIS DEPARTMENT.
 2. THE BASEMAP UTILITY INFORMATION WITHIN THE RESIDENTIAL AREA SOUTH OF CENTRAL AVE WAS SUPPLEMENTED WITH APPROXIMATE UTILITY ALIGNMENTS, WHICH WERE BASED OFF EXISTING BASEMAP INFORMATION AND STREETVIEW PHOTOS. THESE ALIGNMENTS ARE APPROXIMATE AND SHOULD BE FIELD-VERIFIED BY THE CONTRACTOR.



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
RW-21 PROJECT AREA TREATMENT SYSTEM

**CONCEPTUAL RW PIPING LAYOUT
OPTION 2**



CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

EXISTING 12"X8" PIPELINE

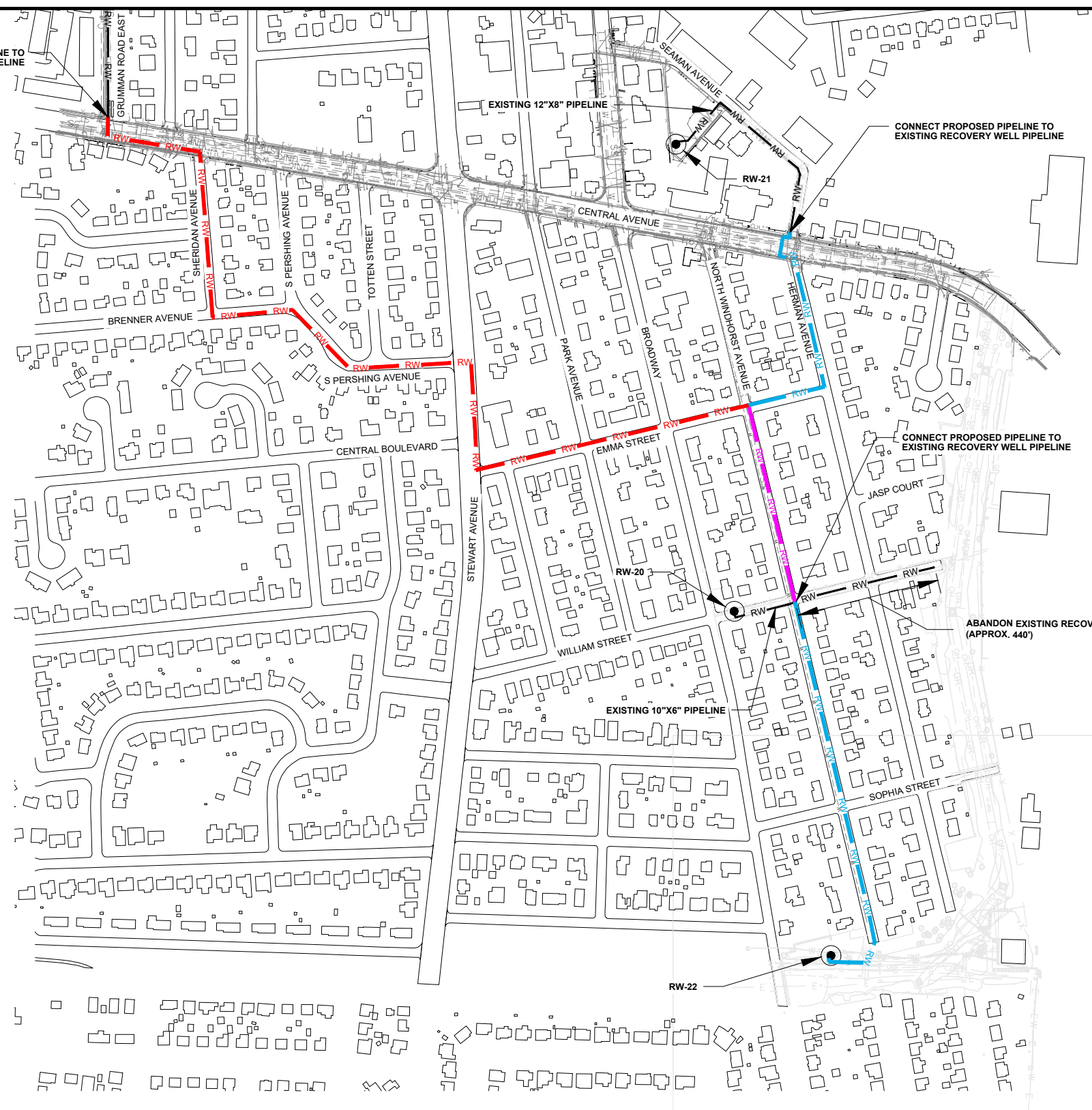
CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

ABANDON EXISTING RECOVERY WELL PIPELINE IN PLACE (APPROX. 400')

EXISTING 10"X6" PIPELINE

RW-22



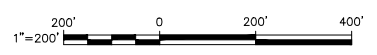
- LEGEND**
- EXISTING RECOVERY WELL
 - RW EXISTING RECOVERY WELL CONVEYANCE PIPELINE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 10"X6" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 12"X8" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 16"X10" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 24"X16" PIPE

TABLE 1 – PROPOSED RECOVERY WELL PIPELINE LENGTHS

PIPELINE TYPE/DIMENSIONS	APPROXIMATE LENGTH (LF)	
	ENTIRE ALIGNMENT	ALONG CENTRAL AVENUE
10"X6"	0	0
12"X8"	2,050	160
16"X10"	620	0
24"X16"	2,910	350
TOTAL	5,580	510

- SCHEDULE:**
1. OPTION 3 IS ANTICIPATED TO TAKE APPROXIMATELY 4 MONTHS.
 2. THIS SCHEDULE IS BASED UPON AN ESTIMATE OF THE LINEAR FOOTGAGE OF PIPELINE THAT COULD BE INSTALLED DAILY IN DIFFERENT AREAS:
 - 2.1. 20 LF/DAY ALONG CENTRAL AVENUE
 - 2.2. 40 LF/DAY ALONG STEWART AVENUE
 - 2.3. 60 LF/DAY ALONG UTILITY CORRIDOR
 - 2.4. 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

- NOTES:**
1. BASEMAP INFORMATION PROVIDED BY GALLAS SURVEYING GROUP, 2865 U.S. ROUTE 1 NORTH BRUNSWICK, NJ 08902, DRAWINGS TITLED "TOPOGRAPHIC AND LOCATION SURVEY - NORTH WINDHORST AVENUE (07-17-19); - CENTRAL AVENUE (08-02-19); AND - GRUMMAN ROAD EAST (08-23-19)", AT A SCALE OF 1" = 20', RESPECTIVELY. ADDITIONAL PROPERTY AND PARCEL LINE INFORMATION OBTAINED FROM NASSAU COUNTY GIS DEPARTMENT.
 2. THE BASEMAP UTILITY INFORMATION WITHIN THE RESIDENTIAL AREA SOUTH OF CENTRAL AVE WAS SUPPLEMENTED WITH APPROXIMATE UTILITY ALIGNMENTS, WHICH WERE BASED OFF EXISTING BASEMAP INFORMATION AND STREETVIEW PHOTOS. THESE ALIGNMENTS ARE APPROXIMATE AND SHOULD BE FIELD-VERIFIED BY THE CONTRACTOR.



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NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK
RW-21 PROJECT AREA TREATMENT SYSTEM

**CONCEPTUAL RW PIPING LAYOUT
OPTION 3**



FIGURE
3

CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

EXISTING 12"X8" PIPELINE

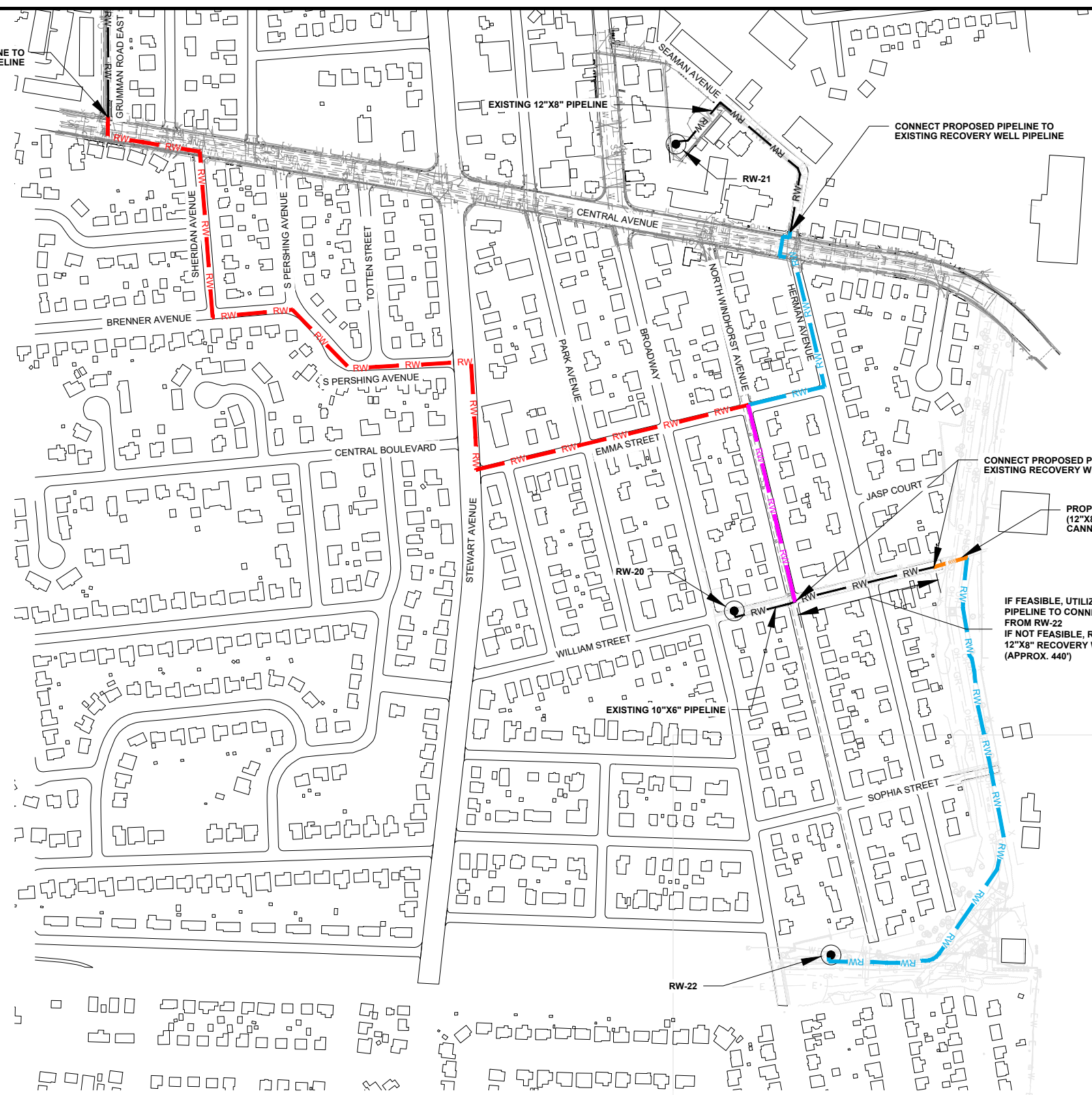
CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

CONNECT PROPOSED PIPELINE TO EXISTING RECOVERY WELL PIPELINE

PROPOSED 10"X6" PIPELINE
(12"X8" PIPELINE IF EXISTING PIPELINE CANNOT BE UTILIZED)

IF FEASIBLE, UTILIZE THIS SECTION OF EXISTING PIPELINE TO CONNECT WITH THE PIPELINE COMING FROM RW-22
IF NOT FEASIBLE, REPLACE EXISTING PIPELINE WITH 12"X8" RECOVERY WELL PIPELINE (APPROX. 440')

EXISTING 10"X6" PIPELINE



DRAFT

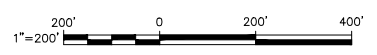
- LEGEND**
- EXISTING RECOVERY WELL
 - RW EXISTING RECOVERY WELL CONVEYANCE PIPELINE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 10"X6" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 12"X8" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 16"X10" PIPE
 - RW PROPOSED RECOVERY WELL CONVEYANCE PIPELINE 24"X16" PIPE

TABLE 1 - PROPOSED RECOVERY WELL PIPELINE LENGTHS

PIPELINE TYPE/DIMENSIONS	APPROXIMATE LENGTH (LF) (SEE NOTE 3)	
	ENTIRE ALIGNMENT	ALONG CENTRAL AVENUE
10"X6"	110 (0)	0
12"X8"	2,430 (2,965)	150
16"X10"	620	0
24"X16"	2,910	350
TOTAL	6,070 (6,486)	500

- SCHEDULE:**
1. OPTION 4 IS ANTICIPATED TO TAKE APPROXIMATELY 5 MONTHS.
 2. THIS SCHEDULE IS BASED UPON AN ESTIMATE OF THE LINEAR FOOTGAGE OF PIPELINE THAT COULD BE INSTALLED DAILY IN DIFFERENT AREAS:
 - 2.1. 20 LF/DAY ALONG CENTRAL AVENUE
 - 2.2. 40 LF/DAY ALONG STEWART AVENUE
 - 2.3. 60 LF/DAY ALONG UTILITY CORRIDOR
 - 2.4. 80 LF/DAY ALONG RESIDENTIAL/SIDE STREETS

- NOTES:**
1. BASEMAP INFORMATION PROVIDED BY GALLAS SURVEYING GROUP, 2865 U.S. ROUTE 1 NORTH BRUNSWICK, NJ 08902. DRAWINGS TITLED "TOPOGRAPHIC AND LOCATION SURVEY - NORTH WINDHORST AVENUE (07-17-19); - CENTRAL AVENUE (08-02-19); AND - GRUMMAN ROAD EAST (08-23-19)", AT A SCALE OF 1" = 20', RESPECTIVELY. ADDITIONAL PROPERTY AND PARCEL LINE INFORMATION OBTAINED FROM NASSAU COUNTY GIS DEPARTMENT.
 2. THE BASEMAP UTILITY INFORMATION WITHIN THE RESIDENTIAL AREA SOUTH OF CENTRAL AVE WAS SUPPLEMENTED WITH APPROXIMATE UTILITY ALIGNMENTS, WHICH WERE BASED OFF EXISTING BASEMAP INFORMATION AND STREETVIEW PHOTOS. THESE ALIGNMENTS ARE APPROXIMATE AND SHOULD BE FIELD-VERIFIED BY THE CONTRACTOR.
 3. PIPE LENGTH VALUES IN PARENTHESES DENOTE CHANGES DUE TO REPLACING SECTIONS OF THE EXISTING PIPE ALONG WILLIAM STREET.



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

RW-21 PROJECT AREA TREATMENT SYSTEM

**CONCEPTUAL RW PIPING LAYOUT
OPTION 4**




FIGURE
4

Task	Baseline Schedule - Utility Corridor/ Central Route (weeks)	Option 3 - Residential Route (weeks)	Option 4 - Utility Corridor/ Residential Route (weeks)
Funding	3	3	3
Pre-design, Design, Material & Contractor Procurement ¹	15	15	15
Construction Activities - Utility Corridor ²	10	N/A	5
Construction Activities - Residential Streets / Stewart Ave ²	N/A	20	15
Construction Activities - Central Ave ²	34	8	8
TOTAL (weeks)	62	46	46

NOTES

1. For the baseline schedule, pre-design and design work for Central Ave would occur concurrently with construction activities on the Utility Corridor. For Options 3 and 4, pre-design and design work for N Hermann Ave, Emma St, Stewart Ave, S Pershing Ave, Brenner Ave, Sheridan Ave, and Central Ave would occur concurrently with construction activities on Utility Corridor/N Windhorst.
2. Construction durations shown assume contractor uses one crew and all pipeline work is completed in sequence.
3. Schedules assumes no delays in task implementation caused by:
 - Obtaining site access agreements
 - Obtaining required permits
 - Actions or involvement of NYSDEC, NYSDOH, TOB, TOH, NCDPW, BWD, NC, or other stakeholders
 - Other project-related conditions or events beyond the control of Northrop Grumman
 - DEC/DOH/TOB work plan reviews/approvals
 - Lack of availability of contractors
 - Weather and other force majeure events
 - Previously unknown field conditions that affect scope (e.g. unknown utilities, adverse ground conditions, etc.)
4. The durations shown represent the critical path to completion of the pipeline routes (i.e. actual durations may be longer but overlap with other tasks). Additionally, there are other schedule elements not shown above which will occur concurrently.

**Northrop Grumman
Bethpage, New York
RW-21 Groundwater Remediation System
Baseline Schedule for Utility Corridor and Central Ave Pipeline Design/Construction**

ID	Task Name	Duration	W-41	W-36	W-31	W-26	W-21	W-16	W-11	W-6	W-1	W5	W10	W15	W20	W25	W30	W35	W40	W45	W50	W55	W60	W65	W70	W75	W80	W85	W
1	Utility Corridor Pipeline	251 days																											
1	Funding and Authorization	160 days																											
11	Pre-Design Investigation	63 days																											
21	Design - Utility Corridor	105 days																											
53	Pre-Construction Activities	174 days																											
100	Construction Activities - Utility Corridor	51 days																											
2	Central Ave Pipeline	436 days																											
1	Funding and Authorization	217 days																											
12	Pre-Design Investigation	119 days																											
15	Design - Central Ave	140 days																											
53	Pre-Construction Activities	66 days																											
90	Construction Activities - Central Ave	169 days																											

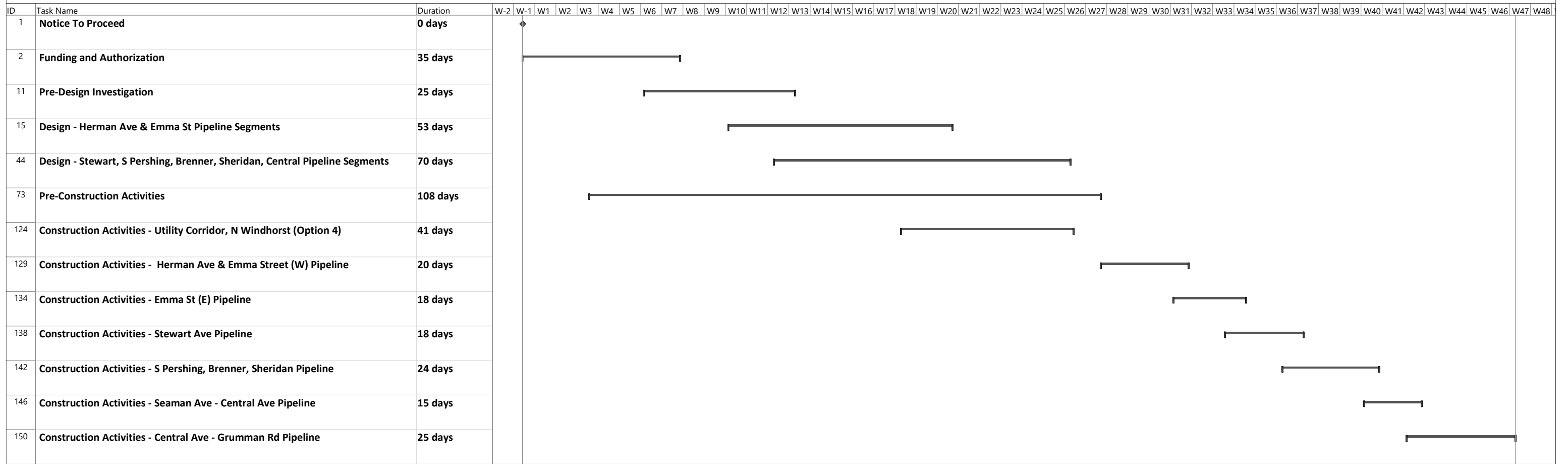
Task		Summary		Inactive Milestone		Duration-only		Start-only		External Milestone		Critical Split	
Split		Project Summary		Inactive Summary		Manual Summary Rollup		Finish-only		Deadline		Progress	
Milestone		Inactive Task		Manual Task		Manual Summary		External Tasks		Critical		Manual Progress	






















Schedule assumes no delays in task implementation caused by:

- Obtaining site access agreements
- Obtaining required permits
- Actions or involvement of regulatory/governmental agencies other than NYSDEC and NYSDOH
- Other project-related conditions or events beyond the control of Northrop Grumman
- DEC/DOH work plan reviews/approvals
- Lack of availability of contractors
- Weather and other force majeure events

The schedule will be revised as needed to account for delays caused by any of the above conditions.

**Northrop Grumman Systems Corporation
Bethpage, New York
Schedule for Option 4 Pipeline Design/Construction**



Task		Summary		Inactive Milestone		Duration-only		Start-only		External Milestone		Critical Split	
Split		Project Summary		Inactive Summary		Manual Summary Rollup		Finish-only		Deadline		Progress	
Milestone		Inactive Task		Manual Task		Manual Summary		External Tasks		Critical		Manual Progress	

Schedule assumes no delays in task implementation caused by:

- Obtaining site access agreements
- Obtaining required permits
- Actions or involvement of regulatory/governmental agencies other than NYSDEC and NYSDOH
- Other project-related conditions or events beyond the control of Northrop Grumman
- DEC/DOH work plan reviews/approvals
- Lack of availability of contractors
- Weather and other force majeure events

The schedule will be revised as needed to account for delays caused by any of the above conditions.