SAN FRANCISCO PUBLIC WORKS

BETTER MARKET STREET – PHASE I - CONTRACT ID NO. 1000012553

CLIENT: CITY AND COUNTY OF SAN FRANCISCO

MAIN CONTRACTOR: ESQUIVEL GRADING & PAVING INC.

HSE CONTRACTORS INC. CPM SCHEDULING CONSULTANTS

Narrative Report – Main Baseline Schedule

Notice to Proceed	August 18th, 2022
Substantial Completion	April 8th, 2024
Final Completion	June 7th, 2024

Table of Contents

1. Purpose of this Document

The Purpose of this document is to illustrate and define HSE's Project Execution Strategy and Planning Approach demonstrated in the Baseline schedule complying with the Specs and Drawings.

1.1 Project Description and Scope of Work

- The work is located on Market Street, from 8th Street to 5th Street, San Francisco.

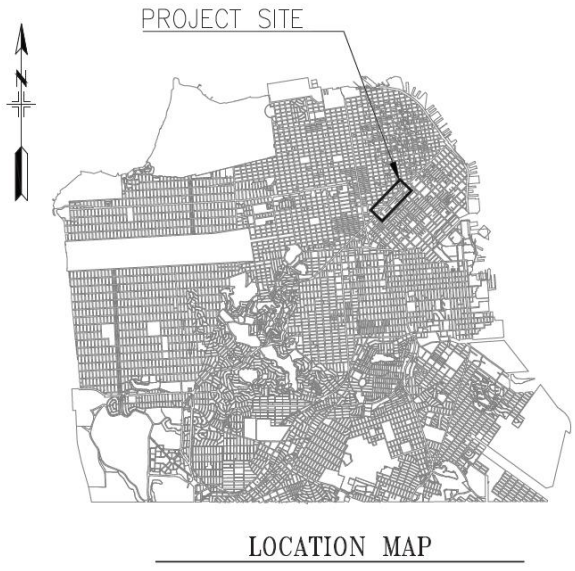


Figure 1: Project Location

- Esquivel Grading and Paving Inc. is responsible for the Renovation of Better Market Street including the following:
  - Underground utilities of Sewer and Water work.
  - Traffic Signal Poles and equipment work, and OCS installation.
  - Structural Work of shoring, demolition, framing, and pouring concrete in specific locations in the street.
  - Restoration of the Roadway Pavements and Sidewalks.
  - Landscaping.

2. Project Phasing

The Baseline Schedule shows the works for Better Market Street Intersections Renovations starting with the Procurement Section which is divided into Subcontract Award, Prepare & Submit, Review & Approve, and Fabricate & Deliver. This section includes shop drawings and the delivery of the main materials required for Construction.

The construction section then includes the street intersections utilities in sewer and water work, signalization in the furnishing and installing Traffic Signal Poles, Street Light Poles, and OCS. The Roadway flatwork replacement starts with demolition then grading and Paving. Finally, landscaping in Tree Protection, sidewalk restoration, and tree planting. After that, the shutdowns include Traffic Signal work and paving in determined durations starting from Mid-May, 2023, then Mid-September, 2023, End-October 2023, and finally the last shutdown in Mid-February, 2024. Finally, City Inspections and Punch list is done for Substantial Completion then finalizing the work by Demobilization and Clean Up then the inspections for Final Completion.

2.1 Key dates & Milestones

The Key dates and Milestones section includes all important dates such as:

Milestone Name	Milestone Date
NTP	18-Aug-22
Completion of Potholing Work	30-Nov-22
Administrative Work	18-Aug-22
Actual Construction Commencement	03-Jan-23
Substantial Completion	02-Mar-24
Final Completion	07-Jun-24

2.2 Procurement

The procurement phase of the project starts with the preparation of submittals along with their review and approval and the delivery of the main material needed for the project. The submittals in the project start by:

- Pre-Excavation Soil Profiling Sampling Plan for the Potholing Work.
- Sewer Materials.
- Electrical Materials and Equipment such as Traffic Signals Poles, Non-Traffic Rated Pull Boxes, Intersection Controllers & Cabinets, Trolley Wires, OCS Poles & Hardware, and SF Trolley Poles.

- Concrete, and Granite Curbs.

2.3 Construction

The Construction Work starts with the Construction of Potholing Work on November 7th, 2022. Then after the Potholing work and administrative work is completed, the actual construction starts on January 2023 in the Sewer and Water starting from East to West in the following order:

- 5th St / Cyril Magnin St / Market St.
- Between 5th St and Turk / Mason.
- Mason St / Turk St / Market St.
- Between Turk / Mason and 6th St.
- 6th St / Golden Gate Ave / Taylor / Market St.
- Between 6th St and McAllister / Jones.
- Between 6th St & 7th St.
- U.N. Plaza between 7th St & 8th St.
- 8th St / Grove St / Hyde St / Market St.

After finishing the Sewer Trench Backfilling in 5th St / Cyril Magnin St / Market St, the Traffic Signal Pole and Equipment Work starts in the Traffic signal poles foundation then Excavate T-trench, Conduit Installation, and Pull boxes. This is done simultaneously with removing existing conduits, foundations & poles and then Backfilling for the Electrical. After Backfilling, Controllers, and Cabinets along with wires installation starts to finalize the installation of Traffic Signal Poles and Street Light Poles, and finally the switchover. After Excavating T-Trench, Conduits/ Pull boxes installation then backfilling occurs for the Traffic Signal Interconnect.

Structure works started 20 days after the construction commencement starts in the “6th St / Golden Gate Ave / Taylor / Market St.” and then in the Mason St / Turk St / Market St.

The OCS Work starts with the foundations and then the pole installation in the following locations:

- Mason St / Turk St / Market St.
- 6th St / Golden Gate Ave / Taylor / Market St.
- McAllister St / Jones St / Market St.
- 8th St / Grove St / Hyde St / Market St.

The Roadway Flatwork starts in the street with the North Side of the U.N. Plaza between 7th St & 8th St with demolition, then grading, and after that the forming and Pouring of the Curbs and gutters. After that, the Parking Strip begins and then followed by 10” and 12” Base repair & temp pave. Landscaping starts at the same time as the Roadway flatwork and starts with Tree Protection and Tree Removal then Excavation, Soil cell, and sidewalk restoration. After the Poles installation, the Furnishing of bicycle racks, and single and double benches begins then the last thing is the Tree Planting.

Shutdowns then comprise the Traffic Signal Work, Base repair & temp paving, Crossing Tracks, and Grind and Pave in the following durations:

1. 1st Shutdown (Mid-May 2023).
2. 2nd Shutdown (Mid-September 2023).
3. 3rd Shutdown (End-October 2023).
4. 4th Shutdown (Mid-February 2024).

3. WBS

The below figure is extracted from the baseline schedule of the project on the P6 software and shows all WBS levels. The Key dates & Milestones section includes all important milestones and dates for the project. The Procurement section includes Submittal and preparation activities along with their reviews and approvals, their Fabrication, and Delivery. The Construction Phase is divided into:

1. 5th St / Cyril Magnin St / Market St.
2. Between 5th St and Turk / Mason.
3. Mason St / Turk St / Market St.
4. Between Turk / Mason and 6th St.
5. 6th St / Golden Gate Ave / Taylor / Market St.
6. Between 6th St and McAllister / Jones.
7. McAllister St / Jones St / Market St.
8. Between 6th St & 7th St.
9. U.N. Plaza between 7th St & 8th St.
10. 8th St / Grove St / Hyde St / Market St.

Then, each intersection comprises Utilities (Sewer & Water), Signalization (Traffic Signal Pole and Equipment Work, Traffic Signal Interconnect, and OCS Work), Roadway Flatwork, and Landscape; each broken down into North and South Sides. Finally, the 4 shutdowns. After that is the Closeout section containing the inspections, punch list, and Demobilization and Cleanup.

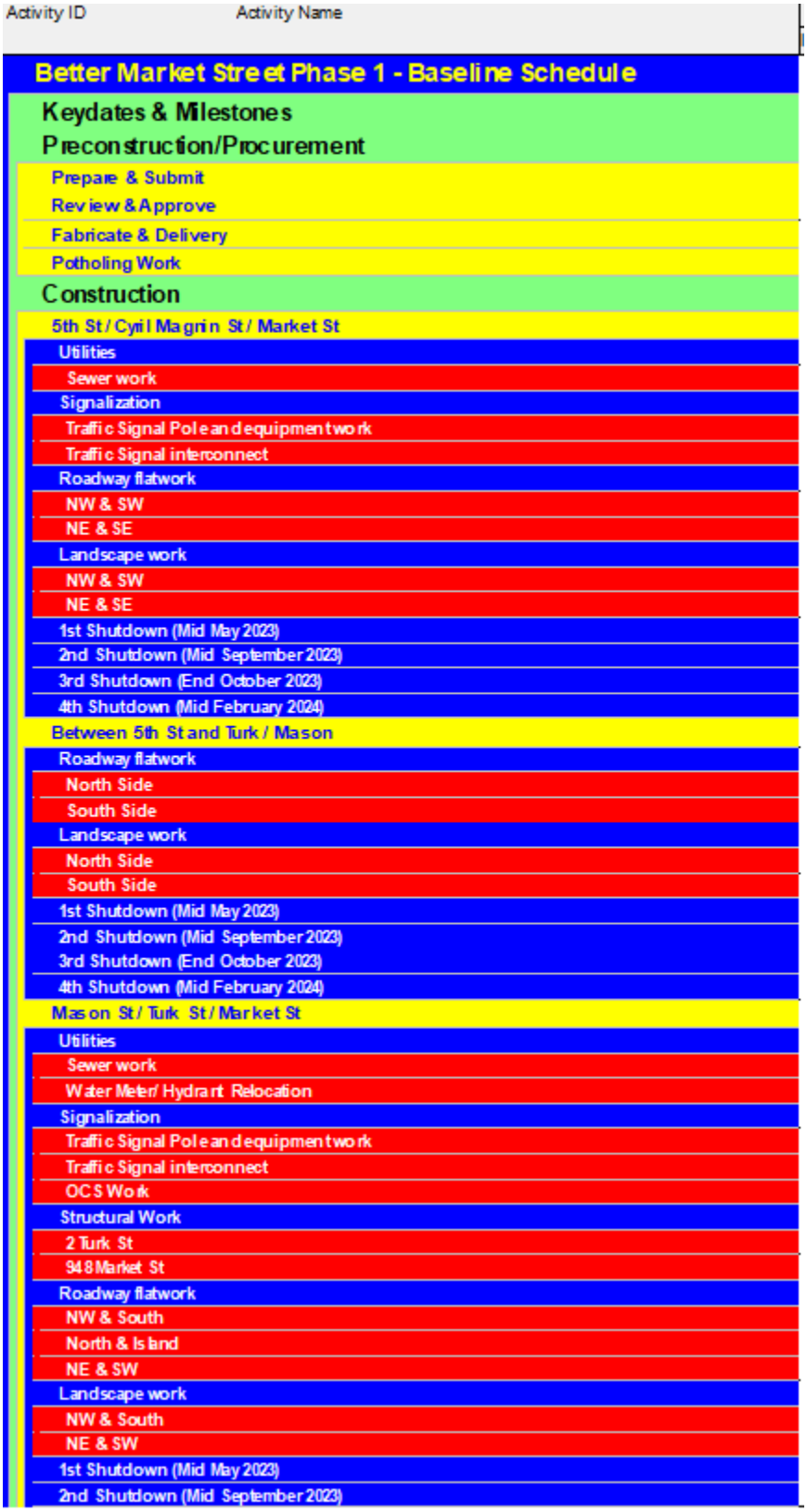

Activity ID
Activity Name
Better Market Street Phase 1 - Baseline Schedule
Keydates & Milestones
Preconstruction/Procurement
Prepare & Submit
Review & Approve
Fabricate & Delivery
Potholing Work
Construction
5th St / Cyril Magnin St / Market St
Utilities
Sewer work
Signalization
Traffic Signal Pole and equipment work
Traffic Signal interconnect
Roadway flatwork
NW & SW
NE & SE
Landscape work
NW & SW
NE & SE
1st Shutdown (Mid May 2023)
2nd Shutdown (Mid September 2023)
3rd Shutdown (End October 2023)
4th Shutdown (Mid February 2024)
Between 5th St and Turk / Mason
Roadway flatwork
North Side
South Side
Landscape work
North Side
South Side
1st Shutdown (Mid May 2023)
2nd Shutdown (Mid September 2023)
3rd Shutdown (End October 2023)
4th Shutdown (Mid February 2024)
Mason St / Turk St / Market St
Utilities
Sewer work
Water Meter/ Hydrant Relocation
Signalization
Traffic Signal Pole and equipment work
Traffic Signal interconnect
OCS Work
Structural Work
2 Turk St
948 Market St
Roadway flatwork
NW & South
North & Island
NE & SW
Landscape work
NW & South
NE & SW
1st Shutdown (Mid May 2023)
2nd Shutdown (Mid September 2023)

Figure 2: WBS 1of3

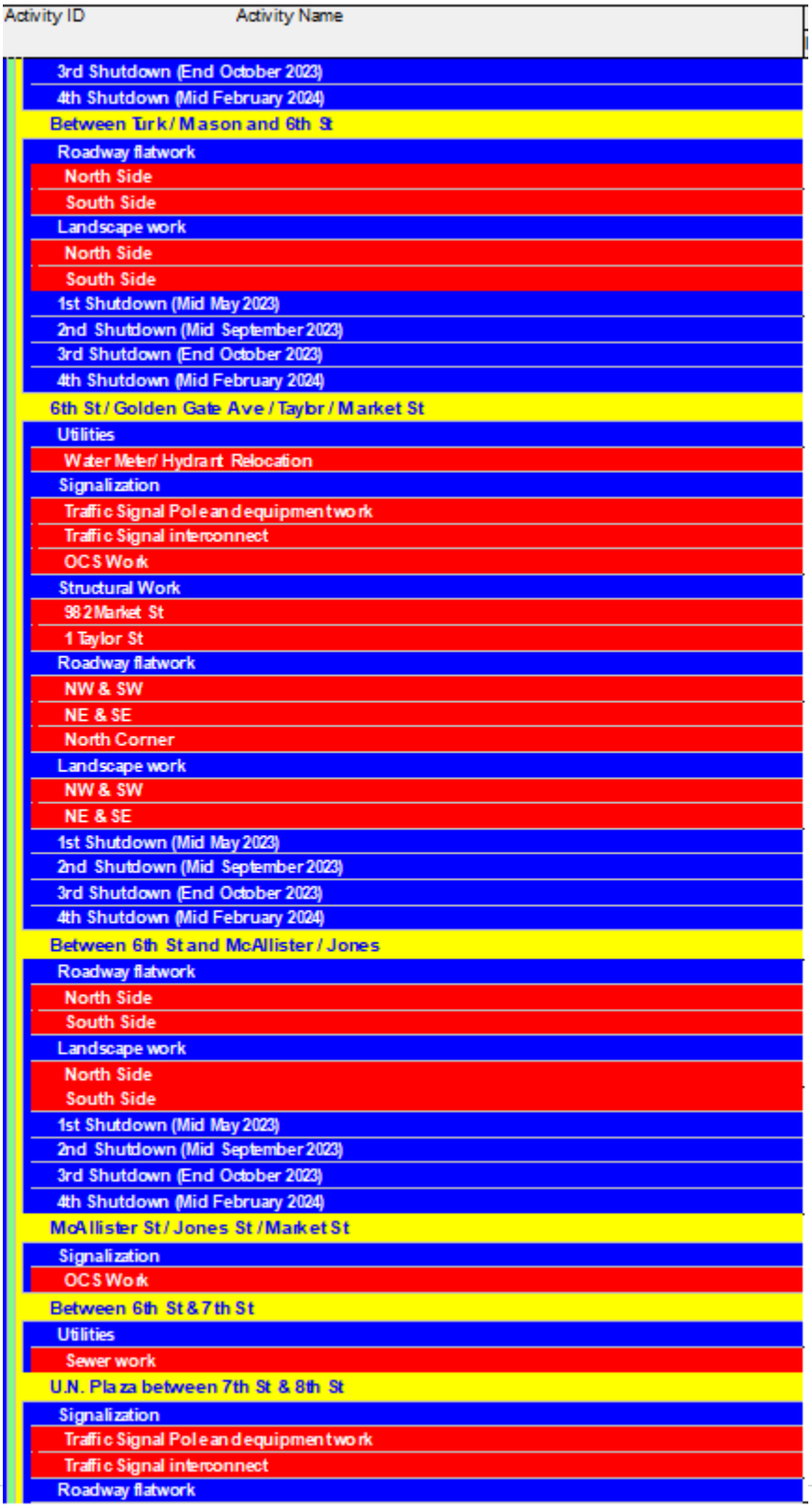


Figure 3: WBS 2of3

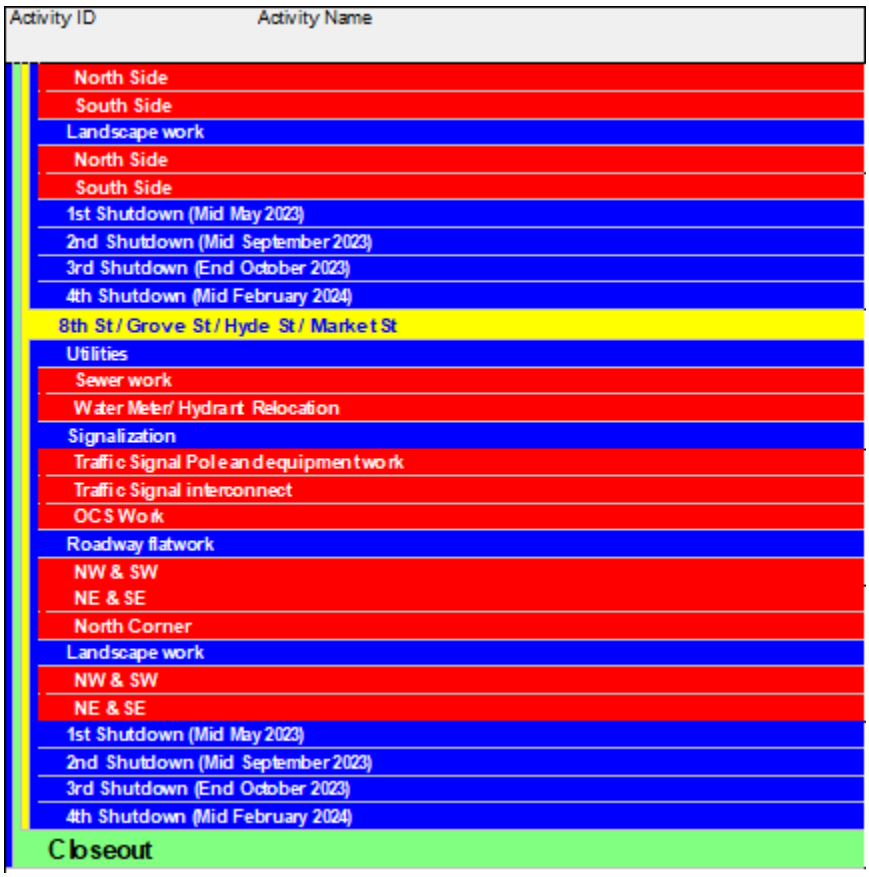


Figure 4: WBS 3of3

4. Activity ID

Abbreviation List	
5th CM	5th St / Cyril Magnin St / Market St
5th T/M	Between 5th St and Turk / Mason
M/T	Mason St / Turk St / Market St
T/M 6th	Between Turk / Mason and 6th St
6th G/T	6th St / Golden Gate Ave / Taylor / Market St.
6th Mc/J	Between 6th St and McAllister / Jones
Mc/J	McAllister St / Jones St / Market St
6th,7th	Between 6th St & 7th St
U. N	U.N. Plaza between 7th St & 8th St

8th G/H	8th St / Grove St / Hyde St / Market St

5. Calendars

This section contains details on the calendars which are assigned to all activities. The calendar usage and assignment demonstrate that the builder has taken into account all official holidays and weekends, and has scheduled the project activities efficiently to minimize any risk on project completion. The Calendars used in this project are:

- A 7-Day Workweek Calendar: the calendar is based on a 7-day week and is assigned on the milestones, procurement activities, curing activities, and closeout activities.
- A 5-Day Workweek Calendar: the calendar is based on a 5-day week and recognizes weekends, federal holidays, and shutdown periods and is assigned to construction activities.
- Shutdown Calendar: the calendar is assigned that no shutdowns can be from June through August, Thanksgiving, and Christmas.
- The moratorium period is assigned to the 5-day calendar from November 23rd, 2023 to January 1st, 2022.
- Weather days are also assigned on the 5-day calendar with total weather days of 17 days.

2022 Federal Holidays:

Date	Holiday
Friday, November 11	Veterans Day
Thursday, November 24	Thanksgiving Day
Monday, December 26	Christmas Day

2023 Federal Holidays:

Date	Holiday
Monday, January 15	Birthday of Martin Luther King, Jr.
Monday, May 27	Memorial Day
Thursday, July 4	Independence Day
Monday, September 2	Labor Day
Monday, November 11	Veterans Day
Thursday, November 28	Thanksgiving Day
Wednesday, December 25	Christmas Day

2024 Federal Holidays

Date	Holiday
Monday, January 15	Birthday of Martin Luther King, Jr.
Monday, May 27	Memorial Day

6. Working Hours

The working hours are 8 hours per day from Monday till Thursday, totaling 40 hours per week. These work durations have been used throughout all scheduled construction activities to calculate durations and remaining time to complete.

7. Weather Days

Weather days	Number of Days
January	3 days
February	3 days
March	3 days
April	1 days
May	0 days
June	0 days

8. Critical Path

The Critical Path starts in the preconstruction section in the preparation and submittal of the Traffic Signal Poles along with its review and approval and followed by the fabrication and delivery of the Traffic Signal poles installation of the “Mason St/ Turk St/ Market St” followed by the “5th St / Cyril Magnin St / Market St.” then the switch over of the same intersection. After that, the Excavation of the T-trench and conduit installation starts in the “6th St/Golden Gate Ave/ Taylor/ Market St” till the installation of the wire followed by “U.N. Plaza between 7th St and 8th St”. After completing the Traffic Signal Installation then comes the Furnishing of the same intersection in the South Side then the North Side with the tree planting of all the intersections to have the gap waiting for the last shutdown in February to start the first Traffic Signal Work in the 4th Shutdown (Mid-February) of the “5th St / Cyril Magnin St / Market St.” followed by the “Mason St / Turk St / Market St.” then the “6th St / Golden Gate Ave / Taylor / Market St.”. After that, the Traffic Signal Work in the “Between 6th St and McAllister / Jones.” Starts followed by 12" Base repair & temp pave, then the Grind and pave. After the Grind and Pave of “Between 6th St and McAllister / Jones.” Starts all the Traffic Signal Work and Paving of the “U.N. Plaza between 7th St & 8th St” and “8th St / Grove St / Hyde St / Market St.” Then finally, the

closeout phase till the substantial completion on final completion on April 8th, 2022, and the final completion on June 7th, 2022.

The following figure shows the critical path of the project:

9. Resources & Productivity rates

Resource ID	Max Units/Time	Calendar	Resource Name	Resource Type	Unit of Measure	Primary Role	Default Units / Time
BM ST-L-1	1/d	Standard 5 Day Workweek	BM ST - Electricians Crew	Labor			1/d
BM ST-EQ-1	1/d	Standard 5 Day Workweek	Back hoes	Nonlabor			1/d
BM ST-S/C-2	1/d	Standard 5 Day Workweek	EGP - Subcontractor	Nonlabor			1/d
BM ST-S/C-3	1/d	Standard 5 Day Workweek	JDB - Subcontractor	Nonlabor			1/d
BM ST-L-3	1/d	Standard 5 Day Workweek	BM ST - Plumbing Crew	Labor			1/d
BM ST-EQ-4	1/d	Standard 5 Day Workweek	Truck	Nonlabor			1/d
BM ST-S/C-5	1/d	Standard 5 Day Workweek	BAL - Subcontractor	Nonlabor			1/d
BM ST-S/C-6	1/d	Standard 5 Day Workweek	REL - Subcontractor	Nonlabor			1/d
BM ST-L-5	1/d	Standard 5 Day Workweek	BM ST - Excavation Crew	Labor			1/d
BM ST-L-6	1/d	Standard 5 Day Workweek	BM ST - Backfilling Crew	Labor			1/d
BM ST-L-7	1/d	Standard 5 Day Workweek	BM ST - Concrete Crew	Labor			1/d
BM ST-L-8	1/d	Standard 5 Day Workweek	BM ST - Demolition Crew	Labor			1/d
BM ST-EQ-9	1/d	Standard 5 Day Workweek	Concrete Vibrator	Nonlabor			1/d
BM ST-L-9	1/d	Standard 5 Day Workweek	BM ST - Maintenance of Traffic Crew	Labor			1/d
BM ST-L-10	1/d	Standard 5 Day Workweek	BM ST - Backfilling Crew	Labor			1/d
BM ST-L-11	1/d	Standard 5 Day Workweek	BM ST - Pavement Crew	Labor			1/d
BM ST-EQ-12	1/d	Standard 5 Day Workweek	Excavator	Nonlabor			1/d
BM ST-L-12	1/d	Standard 5 Day Workweek	BM ST - Landscape Crew	Labor			1/d
BM ST-EQ-13	1/d	Standard 5 Day Workweek	Crane	Nonlabor			1/d

DESCRIPTION	SUBCONTRACTOR	QUANTITY PER DAY	UNIT	NUMBER OF CREWS	EQUIPMENT USED	DESCRIPTION OF WORK
Hot Mix Asphalt	EGP	665	TONS	1	Paver machine, Back hoes, Rollers, Trucks, Bob cats.	Installation of hot mix asphalt and all equipment required including trucking.
full depth planning per 3 inch depth of cut	EGP	32300	SF	1	Grinder machine, semi trucks, Back hoes, Bob cats.	Grinding 3 inch depth of cut the existing asphalt pavement
Concrete base	EGP	1900	SF	1	Hoe ram, Back hoe, Semi trucks, push sawcut machine	Sawcut, demo 10" or 12" existing concrete base and pour back new concrete base

6 to 18 inch wide concrete curb	EGP	93	LF	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal of existing curb, excavation, backfill, frame and pour new concrete curb
wide granite curb	EGP	38	LF	1	Hoe ram, jack hammers, Back hoe, Bob tail, handsaw	provide and installation of granite curb
Remove and salvage existing granite curb and granite band	EGP	69	LF	1	Hoe ram, jack hammers, Back hoe, Bob tail, handsaw	Remove of existing granite curb or band and transport to Treasure Island Maintenance Yard
3 1/2 inch thick concrete sidewalk	EGP	540	SF	1	Hoe ram, jack hammers, Back hoe, Bob tail, handsaw	Sawcut, removal existing concrete sidewalk, excavate, backfill, form and pour back the concrete sidewalk
10 inch thick pavement, parking strip or gutter	EGP	515	SF	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal existing concrete pavement, parking strip or gutter, excavate, backfill, form and pour back the concrete.
10 inch thick charcoal integral color concrete pavement or parking strip	EGP	520	EA	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal existing concrete pavement or parking strip, excavate, backfill, form and pour back the concrete.
concrete curb ramp with cementitious detectable surface tiles	EGP	4.5	EA	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal existing concrete curb ramp, excavate, backfill, form and pour back the concrete.
cementitious directional texture tile	EGP	50	SF	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal and disposal of the existing pavement and install directional texture tile
Modification to curb ramp at boarding island	EGP	1	EA	1	Hoe ram, Back hoe, 10 wheeler trucks, push sawcut machine, concrete vibrator, generator	Sawcut, removal and disposal of existing granite and concrete sidewalk, curb and curb ramps for the construction of curb ramps.
Adjust city-owned manhole frame and catch basin frame and grate to grade	EGP	4	EA	1	Air compressor, jack hammer, bob tail	Manholes frames and catchbasin and castings to be adjusted in the field
Adjust city-owned hydrant and water main valve box casting cover to grade	EGP	15	EA	1	Air compressor, jack hammer, bob tail	Water valve box castings to be adjusted in the field
Tree removal and slump grinding	Arborist Now	5 or 6	EA	1	chainsaw, wood chipper, stump grinder	removal of trees and stump grinding
Tree protection and temporary fencing	EGP	8	EA	1	cordless drill, generator, skilsaw, pickup truck	installation of temporary fencing/protection of the trees
Concrete finishes	EGP	584	SF	1	Hoe ram, jack hammers, Back hoe, Bob tail, handsaw	Sawcut, removal existing concrete sidewalk, excavate, backfill, form and pour back the concrete sidewalk

Brick paving	EGP	380	SF	1	Hoe ram, jack hammers, Back hoe, excavator, Bob tail, handsaw	Sawcut, removal and siposal of existing brick sidewalk and base, excavate, backfill, compact and install brick paving in the sidewalk.
Concrete unit pavers	EGP	385	SF	1	Hoe ram, jack hammers, Back hoe, excavator, Bob tail, handsaw	Sawcut, removal and disposal of existing brick sidewalk and base, excavate, backfill, compact and install brick pavers in the sidewalk.
Granite bands	EGP	105	LF	1	Hoe ram, jack hammers, Back hoe, excavator, Bob tail, handsaw	Sawcut, removal and disposal of existing brick sidewalk and base, excavate, backfill, compact and install new granite bands in the sidewalk.
Bronze street name plaques	EGP	2	EA	1	Jack hammers, excavator, Bob tail, handsaw	Bronze street name plaque installation
Precast street name plaques	EGP	6	EA	1	Jack hammers, excavator, Bob tail, handsaw	Precast street name plaque installation
bicycle racks	EGP	10	EA	1	Bobtail, hand tools	Bicycle racks intallation
Single bench	EGP	6	EA	1	Bobtail, hand tools	Single bench installation
Double bench	EGP	6	EA	1	Bobtail, hand tools	Double bench installation
Box street trees	LONESTAR LANDSCAPE	5	EA	1	Reach lift, skid steer, mini excavator	Preparation of tree pit, soil amendments, excavating, backfiling and isntallation of new trees.
Soil cells	EGP / LONESTAR LANDSCAPE	1	EA	1	hand saw, hoe ram, jack hammers, excavator, back hoe, Skid steer	Saw cut, demo existing sidewalk, excavation and installation of soil cells, geogrid, geotextile, aggregate base, metal tree grate, compaction backfilling, brick paving, and concrete base.
Ductile iron pole base plate	BAL	TBD	LS	1	N/A	Pole base installation
Landscape painting	BAL	TBD	LS	1	Bucket truck	Paint poles
3-year longterm plant establishment period	LONESTAR LANDSCAPE	TBD	Year	1	watering truck, hand tools.	maintenance of new planting areas: watering, pruning, replacing declining plant material, etc.
Charcoal grey colored track concrete pavement	EGP	800	SF	1	Hoe ram, jack hammers, Back hoe, excavator, Bob tail, handsaw	Sawcut, removal and disposal of existing trackway pavement, excavate, backfill, compact and pour charcoal grey concrete pavement between rails, tracks and outside of rails.

Trench and excavation support for sewer work	JDB	N/A	LS	1	CAT 305 Excavator or other Mini. Exc., Crew Trucks	Installing shoring
tandard concrete manhole for 12 to 14 inch diameter sewers with frame and cover	JDB	1	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore excavation, pour concrete base, stack manhole, backfill excavation, install frame & cover & T Trench Street
Concrete sand trape manhole with frame and grated cover	JDB	1	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore excavation, pour concrete base, stack manhole, backfill excavation, install frame & cover & T Trench Street
Cncrete catch basin without curb inlet and with new frame and grating per SFPDW standard plant 87,188	JDB	1	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore excavation, pour concrete base, install catch basin, backfill excavation, install frame & cover & T Trench Street
Catch basin with curb inlet and manhole cover	JDB	1	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore excavation, pour concrete base, install catch basin, backfill excavation, install frame & cover & T Trench Street
Storm water inlet per standing plant 87,189	JDB	1	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore excavation, pour concrete base, install RCP, backfill excavation, install frame & cover & T Trench Street
Remove existing catch basin or storm water inlet	JDB	2	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, demo catch basin, backfill, street restoration
10 inch diameter VCP side sewer or culvert	JDB	16	LF	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore trench, install pipe, backfill trench & T Trench Street
12 inch nominal SDR 17 HDPE sewer	JDB	23	LF	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Install HDPE inside Casing
Furnish and install 16 inch diameter steel casing	JDB	11.5	LF	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore trench, install casing, backfill trench & T Trench Street
Post construction television inspection of newly constructed main sewers	JDB	1	LF	1	CCTV Crew Truck	TV inspect new sewer mains
Post construction television inspection of newly constructed Culverts	JDB	8	EA	1	Crew Truck	TV inspect new culverts

Furnish and install slip resistant sewer manhole cover at the northwest corner of 5th st and market st	JDB	1	EA	1	Crew Truck, Skidsteer, Trailer	Install MH F&C
Allowance to perform necessary work due to unforseen conditions related to sewer work	JDB	TBD	AL	TBD	TBD	TBD
Excavation and backfill for 4-6 and 8 inch pipe trench	JDB	20	LF	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore trench, install pipe & T Trench Street
Furnish import sand backfill	JDB	10	US SHORT TON	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Backfill w/ sand
Additional excavation and backfill	JDB	10	CY	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Excavate, shore trench, install pipe & T Trench Street
Removal and installation of meter box	JDB	4	EA	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Remove meter box & install meter box
Removal of SFWD owned valve boxes and covers	JDB	1	EA	1	Crew Truck, Skidsteer, Trailer	Remove valve box cover
Allowance for unforseen conditions related to water work	JDB	TBD	AL	TBD	TBD	TBD
Allowance for working outside normal work hours	JDB	TBD	AL	TBD	TBD	TBD
12 inch vehicle signal face with type 1 LED red, yellow and green	BAL	4	EA	1	Bucket truck	Signal installation
13 inch vehicle signal face with type 1 LED red bicycle, yellow bicycle and yellow flashing bicycle	BAL	2	EA	1	Bucket truck	Signal installation
12 inch vehicle signal face with type 1 LED red	BAL	4	EA	1	Bucket truck	Signal installation
one-way post top-mounted vehicle signal mounting with terminal compartment	BAL	4	EA	1	Bucket truck	Signal installation
Two-way post top-mounted vehicle signal mounting with terminal compartment and san francisco 45 degree angle	BAL	1	EA	1	Bucket truck	Signal installation
One way side mounted vehicle signal mountiing with terminal compartment	BAL	4	EA	1	Bucket truck	Signal installation

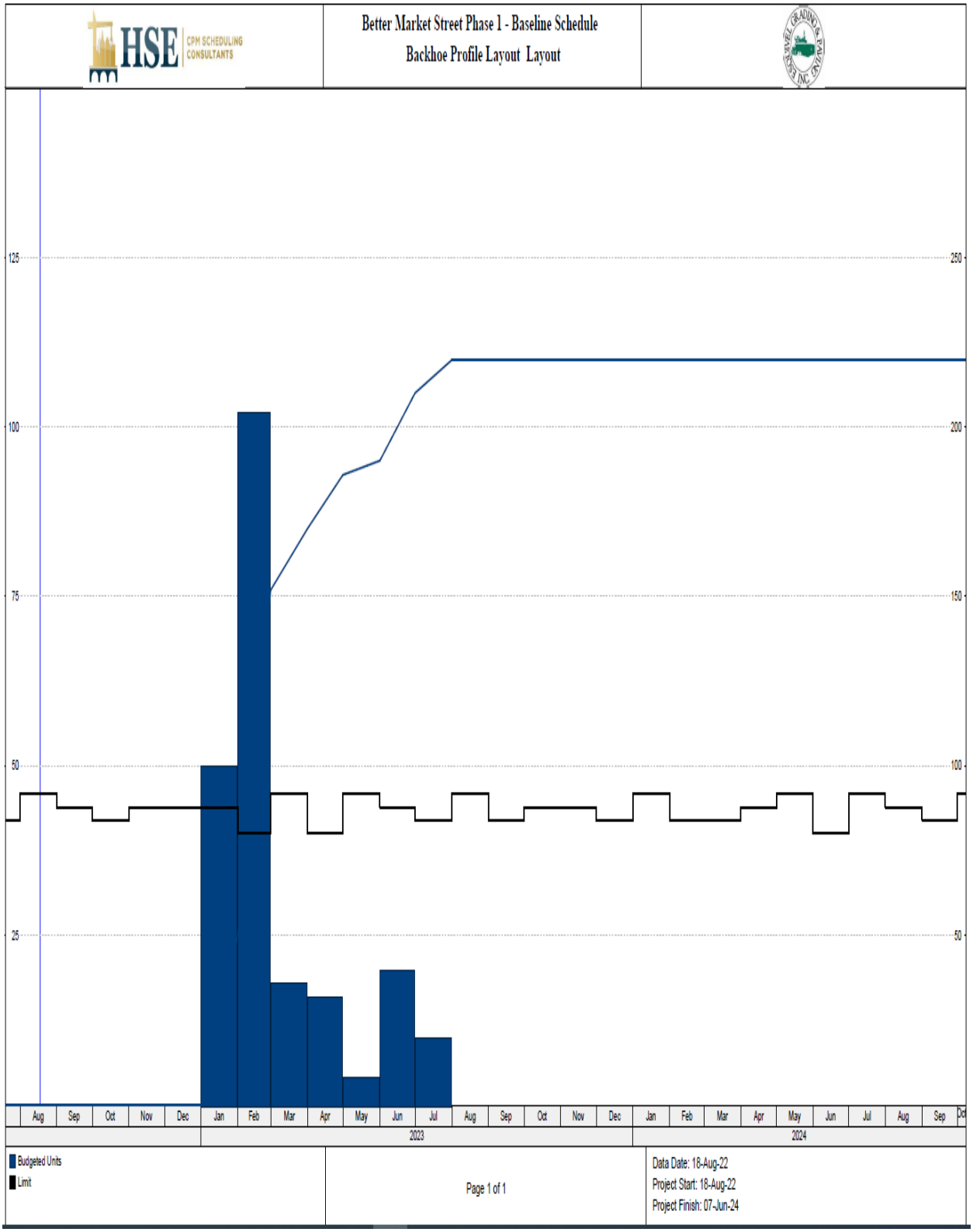
One way side mounted vehicle signal mountiing with terminal compartment with 22" nipples	BAL	1	EA	1	Bucket truck	Signal installation
Two way side mounted vehicle signal mountiing with terminal compartment in sf configuration A	BAL	3	EA	1	Bucket truck	Signal installation
Two way side mounted vehicle signal mountiing with terminal compartment in sf configuration with 22" nipples	BAL	1	EA	1	Bucket truck	Signal installation
Signal backplate	BAL	6	EA	1	Bucket truck	Backplate installation
One section led pedestrain countdown signal housing	BAL	6	EA	1	n/a	Signal installation
Labor cost only to install city furnished , one section led pedestrain cunt down signal module	BAL	6	EA	1	n/a	Signal installation
one way post side mounted pedestrain signal mounting with terminal compartment	BAL	6	EA	1	Bucket truck	Signal installation
two way post side mounted pedestrain signal mounting with terminal compartment	BAL	2	EA	1	Bucket truck	Signal installation
two way post side mounted pedestrain signal mounting with terminal compartment in sf configuration	BAL	1	EA	1	Bucket truck	Signal installation
Guard posts (bollards) with concrete foundation	BAL	0.5	EA	1	Skid steer	Dig hole, set bollard, and pour concrete
type 1-A pole with concrete foundation	BAL	Fnd. 3 Pole 4	EA	Fnd. 2 Pole 1	Foundation: Skidsteer - Pole installed by hand	Fnd. Drill/ dig foundation, set reinforcements, and pour concrete Pole installation
Type 16-2-100 pole with 8" signal, MAST ARM, MAC mounting and cncrete foundation	BAL	Fnd. 2 Pole 2	EA	Fnd. 2 Pole 1	Fnd. Skidsteer and excavator Pole crane and bucket truck	Fnd. Drill/ dig foundation, set reinforcements, and pour concrete Pole installation
steel street light pole with 6 luminaire arm led luminaire and concrete foundation	BAL	Fnd. 3 Pole 4	EA	Fnd. 2 Pole 1	Fnd. Skidsteer and excavator Pole crane and bucket truck	Fnd. Drill/ dig foundation, set reinforcements, and pour concrete Pole installation
Pedestrain push button pole with concrete foundation	BAL	Fnd. 4 Pole 4	EA	Fnd. 2 Pole 1	Fnd. Skidsteer. Pole installed by hand	Fnd. Drill/ dig foundation, set reinforcements, and pour concrete Pole installation

Case load signal MAST ARM and MAC mounting to be installed on MUNI 770 OCS pole	BAL	2	EA	1	Bucket truck and crane	Pole arm installation
6" Luminaire ARM and LED luminaire to be installed on MUNI OCS 770 pole	BAL	6	EA	1	Bucket truck and crane	Pole arm installation
Tupe 1-A pole without foundation	BAL	6	EA	1	Pole installed by hand	Pole installation
Type 16-2-100 pole with" signal, MAST ARM, MAC mounting without foundation	BAL	2	EA	1	Bucket truck and crane	Pole installation
Type 16-3-100 pole with " signal, MAST ARM, MAC mounting without foundation	BAL	2	EA	1	Bucket truck and crane	Pole installation
Type 18-3-100 pole with " signal, MAST ARM, MAC mounting without foundation	BAL	2	EA	1	Bucket truck and crane	Pole installation
Pedestrain push button pole without foundation	BAL	4	EA	1	Bucket truck and crane	Pole installation
steel street light pole with 6 luminaire arm led luminaire without concrete	BAL	3	EA	1	Bucket truck and crane	Pole installation
Basement pull box	BAL	1	EA	1	n/a	Pullbox installation
Pull box type	BAL	3	EA	2	n/a	Pullbox installation
PVC schedule 80 conduit (underground)	BAL	75	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
GRS Conduit	BAL	60	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
PVC Schedule conduit and GRS Conduit	BAL	50	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
3.2" GRS conduit and PVC schedule 80 cnduit	BAL	50	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
1.3 PVC schedule 80 conduit	BAL	70	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
1.3" and 1.3" PVC schedule 80 colnduit	BAL	60	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
4.2" conduit	BAL	60	LF	2	Skidsteer and excavator	Demo streetbase, dig trench, and install conduit
Cpnstruction its model 342/modified traffic signal controller concrete foundation	BAL	1	EA	2	Skidsteer	Dig foundation, set reinforcements, and pour concrete

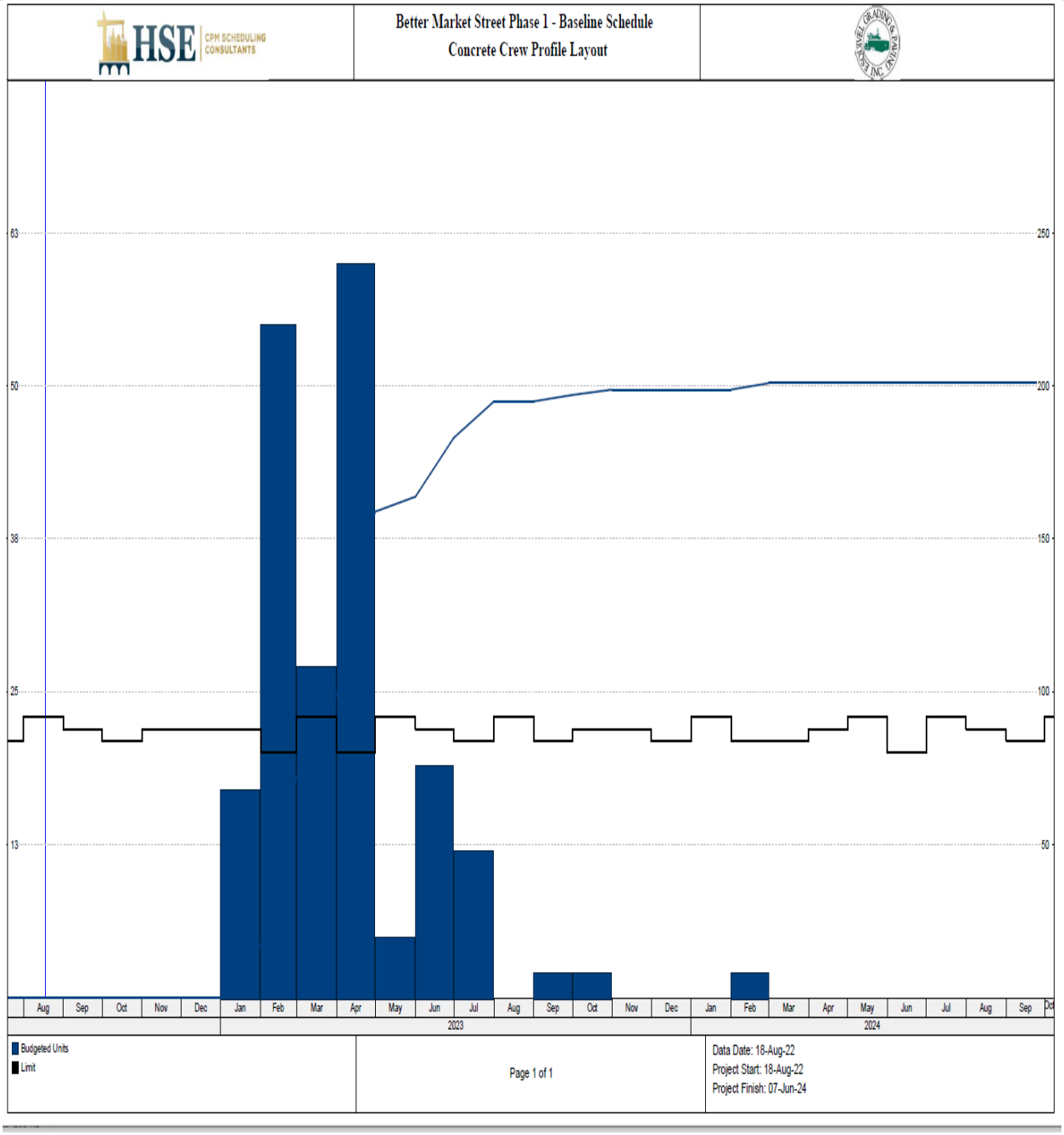
Labor cost only to install city furnished 2070 intersection controller	BAL	2	EA	2	Crane	Cabinet installation
Remove as contractor's property	BAL	TBD	LS	2	Bucket truck and crane	Pole and signal removal
Remove and salvage as city's property	BAL	TBD	LS	2	Bucket truck and crane	Pole and signal removal and return the material to the City
Conduit installation underneath streetcar tracks	BAL	0.25	EA	2	Torpedo mole and compressor	Dig pits on either side of the tracks and torpedo mole from one pit to the other
Provide steel type 770	BAL	1	EA	1	Bucket truck and crane	Installation of steel pole type 770
Prospect hole for depth up to 3 feet	BAL	4	EA	1	Hand dig	Pothole
Prospect hole for depth greater than 3 feet	BAL	4	EA	1	Excavator	Pothole more than 3'
Provide grounding of new trolly pole	BAL	6	EA	1	n/a	Ground trolley pole
Foundation for OCS poles with traffic signal mast arm - CIDH concrete pier	BAL	2	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Foundation for OCS poles with traffic signal mast arm - spread footing	BAL	1	EA	2	Skidsteer and excavator	Dig pit, form exterior dimensions, set reinforcements, and pour concrete
Foundation for OCS poles with traffic signal mast arm - 24' CIDH concrete pier	BAL	1	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Type 770 OCS pole foundations - CIDH concrete pier	BAL	1	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Type 770 OCS pole foundations - spread footing	BAL	1	EA	2	Skidsteer and excavator	Dig pit, form exterior dimensions, set reinforcements, and pour concrete
Type 770 OCS pole foundations - 24' CIDH concrete pier	BAL	1	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Traffic signal pole foundations - spread footing	BAL	1	EA	2	Skidsteer and excavator	Dig pit, form exterior dimensions, set reinforcements, and pour concrete
Traffic signal pole foundations - 24' CIDH concrete pier	BAL	1	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Traffic signal pole foundations - 30' CIDH concrete pier	BAL	1	EA	2	Skidsteer and excavator	Drill foundation, set reinforcements, and pour concrete
Type 1A pole foundations - spread footing	BAL	2	EA	2	Skidsteer and excavator	Dig pit, form exterior dimensions, set reinforcements, and pour concrete
Streetlight pole foundations - spread footing	BAL	2	EA	2	Skidsteer and excavator	Dig pit, form exterior dimensions, set reinforcements, and pour concrete

Demolition of existing traffic signal poles and foundations	BAL	Fnd. 4 Pole 4	EA	1	Skidsteer and crane	Pole and foundation removal
Demolition of existing type 1A poles and foundations	BAL	Fnd. 6 Pole 4	EA	1	Skidsteer and crane	Pole and foundation removal
Demolition of existing trolley poles with MAST ARMS and foundations	BAL	Fnd. 3 Pole 4	EA	1	Skidsteer and crane	Pole and foundation removal
Demolition of existing trolley poles with MAST ARMS and foundations	BAL	Fnd. 3 Pole 4	EA	1	Skidsteer and crane	Pole and foundation removal
Demolition of existing trolley pole MAT ARMS	BAL	3	EA	1	Skidsteer and crane	Pole arm removal
Demolition of existing trolley poles and foundations	BAL	Fnd. 4 Pole 4	EA	1	Skidsteer and crane	Pole and foundation removal
Investigation, Removal and disposal of unclamed/abandoned man-made obstructions at direction of city representative	JDB	10	LF	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Sawcutting, conduit / pipe removal
Exploratory holes/ slot trenches at direction of city representative depth 0" to 5"/ 5" to 10"	JDB	5	CY	1	CAT 305 Excavator or other Mini. Exc., Skidsteers, Crew Trucks, Trailer	Demo, Excavate, shore excavation, exc at utilities, backfill excavation, temp. reinstate street
Allowance to remove unforseen metal related to steel plates steel beams etc	JDB	TBD	AL	TBD	TBD	TBD
Traffic control work	CMC	TBD	LS	2	Signs, Cones Barricades, Arrowboards	Implement Traffic Control
Traffic supervisors provided by traffic control sub-conractor	CMC	16	HR	1	Arrowboard	Provide supervision for Traffic Control
Temporary pavement markings	EGP	1000	LF	1	broom	Installation of temporary 4" tape traffic stripe on the pavement.
Changeable message signs	CMC	2	EA	0	CMS Boards	Advanced warning signs

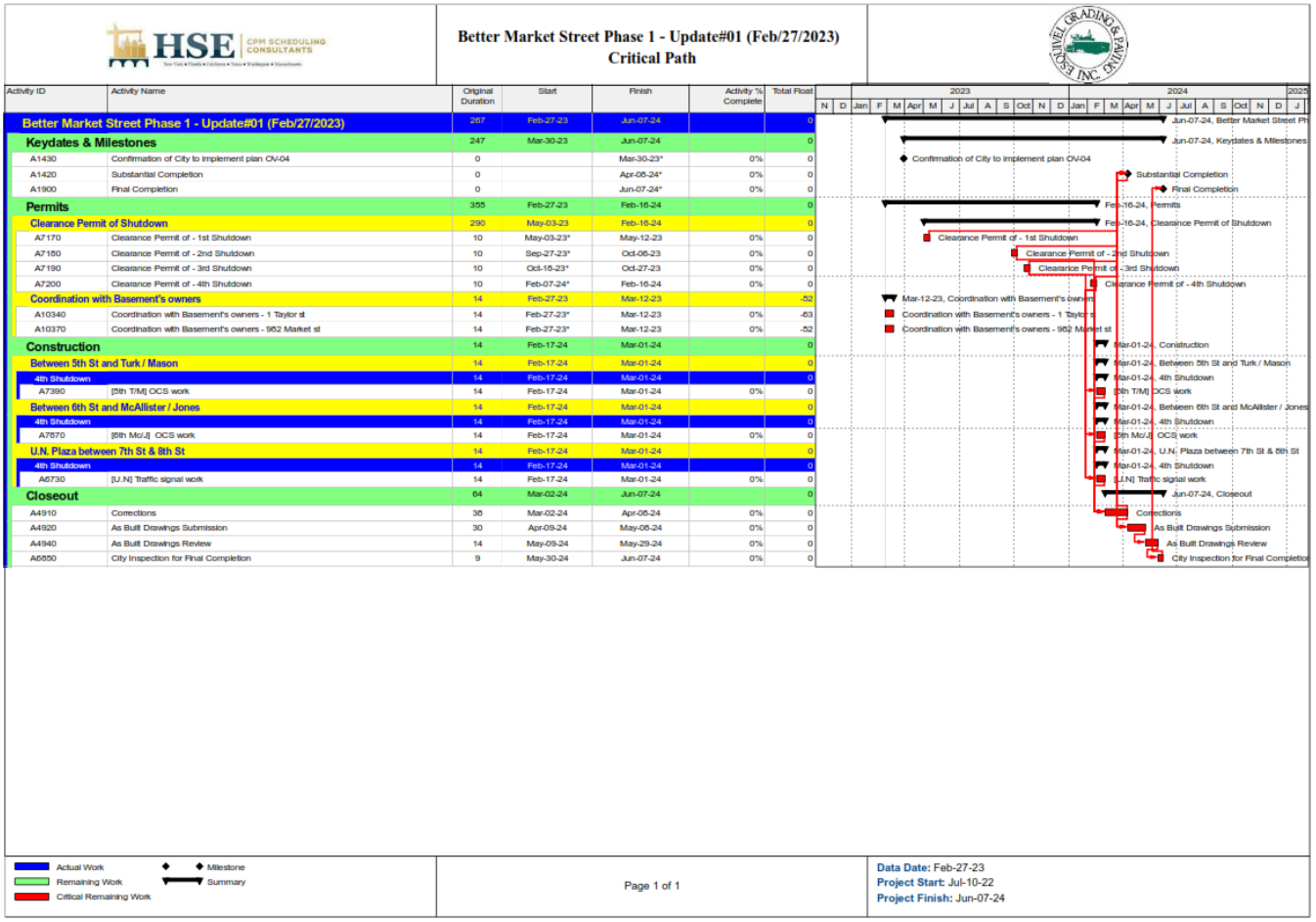
10. Backhoe profile Layout



11.Concrete Crew profile Layout



12.Critical Path Layout



13.Conclusion

The Baseline Schedule shows Underground utilities of Sewer and Water work, Traffic Signal Poles and equipment work, OCS installation, Structural Work of shoring, demolition, framing, and pouring concrete in specific locations in the street, Restoration of the Roadway Pavements and Sidewalks, and Landscaping. The schedule has been assigned a 7-day and 5-day calendar including the federal holidays for the construction period.

Furthermore, the project exhibit works in open areas throughout its total duration which requires having specific calendars to match the working conditions of weather days, environmental safety, and traffic road closures. This is reflected in the schedule as demonstrated in the detailed sequencing operations of the schedule and this narrative report. This reflects on the schedule as demonstrated in the detailed sequencing operations of the schedule and this narrative report.

All the detailed Information about the project is discussed in the above sections. The overall strategy is to have the schedule match the construction logic along with maintaining it ahead of schedule and under budget.