



# City of Sandy

## Agenda

### City Council Meeting

Meeting Date: Monday, March 6, 2023

Meeting Time: 7:00 PM

Page

#### **1. CITY COUNCIL EXECUTIVE SESSION - 6:00 PM**

The City Council will meet in executive session pursuant to ORS 192.660(2)(h)

#### **2. CITY COUNCIL REGULAR MEETING - 7:00 PM**

This meeting will be conducted in a hybrid in-person / online format. The Council will be present in-person in the Council Chambers and members of the public are welcome to attend in-person as well. Members of the public also have the choice to view and participate in the meeting online via Zoom.

##### To attend the meeting in-person

Come to Sandy City Hall (lower parking lot entrance).  
39250 Pioneer Blvd., Sandy, OR 97055

##### To attend the meeting online via Zoom

Please use this link: <https://us02web.zoom.us/j/87178434220>  
Or by phone: (253) 215-8782; Meeting ID: 87178434220

Please also note the public comment signup process below.

#### **3. PLEDGE OF ALLEGIANCE**

#### **4. ROLL CALL**

#### **5. CHANGES TO THE AGENDA**

#### **6. PUBLIC COMMENT**

The Council welcomes your comments at this time.

##### If you are attending the meeting in-person

Please submit your comment signup form to the City Recorder before the regular meeting begins at 7:00 p.m. Forms are available on the table next to the Council Chambers door.

If you are attending the meeting via Zoom

Please complete the [online comment signup webform](#) by 3:00 p.m. on the day of the meeting.

The Mayor will call on each person when it is their turn to speak for up to three minutes.

## **7. RESPONSE TO PREVIOUS PUBLIC COMMENTS**

## **8. CONSENT AGENDA**

- |      |   |          |
|------|---|----------|
| 8.1. | <b><u>City Council Minutes</u></b>  | 3 - 27   |
|      | <a href="#">City Council Goal Setting - 18 Feb 2023 - Minutes - Pdf</a>         |          |
|      | <a href="#">City Council - 21 Feb 2023 - Minutes - Pdf</a>                      |          |
| 8.2. | <b><u>Budget Committee Appointments</u></b>                                     | 28 - 32  |
|      | <a href="#">Budget Committee Member Appointments - Pdf</a>                      |          |
| 8.3. | <b><u>Amendment No. 5 – Collection System Rehabilitation: Basin 2 and 8</u></b> | 33 - 47  |
|      | <a href="#">Oxbow CMGC Amdendment No 5. - Pdf</a>                               |          |
| 8.4. | <b><u>Contract for Sandercock Reservoir Repairs</u></b>                         | 48 - 283 |
|      | <a href="#">Contract for Sandercock Reservoir Repairs - Pdf</a>                 |          |

## **9. NEW BUSINESS**

- |      |  |           |
|------|--|-----------|
| 9.1. | <b><u>Draft 2023-25 City Council Goals</u></b>         | 284 - 286 |
|      | <a href="#">Draft 2023-25 City Council Goals - Pdf</a> |           |

## **10. REPORT FROM THE CITY MANAGER**

## **11. COMMITTEE /COUNCIL REPORTS**

## **12. STAFF UPDATES**

- |       |                                 |
|-------|---------------------------------|
| 12.1. | <a href="#">Monthly Reports</a> |
|-------|---------------------------------|

## **13. ADJOURN**



**MINUTES**  
**City Council Goal Setting**  
**Saturday, February 18, 2023 9:00 AM**  
**Sandy Fire Annex**  
**17459 Bruns Ave, Sandy, OR 97055**

**COUNCIL PRESENT:** Chris Mayton, Councilor; Laurie Smallwood, Council President; Richard Sheldon, Councilor; Kathleen Walker, Councilor; Carl Exner, Councilor; Don Hokanson, Councilor; and Stan Pulliam, Mayor

**COUNCIL ABSENT:** (none)

**STAFF PRESENT:** Jordan Wheeler, City Manager; Jeff Aprati, City Recorder; Tyler Deems, Deputy City Manager; Angie Welty, Human Resources Director; Ernie Roberts, Police Chief; Greg Brewster, IT/SandyNet Director; Kelly O'Neill Jr., Development Services Director; and Sarah McIntyre, Library Director

**MEDIA PRESENT:** (none)

**1. CITY COUNCIL GOAL SETTING**

**2. Introduction**

- The **Mayor** provided introductory remarks on the value of goal setting
- The **City Manager** provided an overview of the agenda and the goal setting process, and observations on policy making versus operations. He recognized the importance of city staff and volunteers in accomplishing the goals set by the Council. Presentation slides that accompanied his remarks are attached to these minutes.

**3. Goal Setting Overview**

- 3.1.
  - Goal Setting Process
  - Council and Staff Roles
  - Budget Process and Goal Alignment

9 - 18

[Goal Setting Overview Slides](#)

**4. Break**

**5. Department Updates**

- 5.1. **Police**

The **Police Chief** provided the Council with an update on the department's 2021-22 accomplishments, performance statistics, department goals for 2023-24, and anticipated challenges and constraints. Presentation slides were included in the agenda packet.

The following issues were discussed during the presentation:

- Status of body camera implementation; logistics of officers being able to view footage
- Possibilities for making policies available to the public on the website
- Disclosure of body camera footage via records requests
- Clarification on traffic officer duties
- Challenges re: training of reserve officers
- Impacts of the 12 hour schedule
- Urgency of adopting new RV parking regulations
- Suggestion for amending the word 'citizen' in the mission statement
- Importance of staggering fleet replacements
- Metrics used to determine when functions are understaffed
- Need for more code enforcement staffing; workloads of land-use violations versus other violations
- Observations on mental health related calls for service and needs for social work expertise
- Challenges related to the proper balance of carrots versus sticks in code enforcement
- Impacts of Measure 114 on the budget

5.2. **SandyNet / IT**

The **SandyNet / IT Director** provided the Council with an update on the department's 2021-22 accomplishments, performance statistics, department goals for 2023-24, and anticipated challenges and constraints. Presentation slides were included in the agenda packet.

The following issues were discussed during the presentation:

- Approaches to cyber security and cyber insurance
- Dangers of phishing
- Importance of robust backup processes
- Need for security training for elected and appointed officials
- Security of the City's data systems
  
- Opportunities to upgrade the speed of the fiber network
- Details on service provision processes outside of city limits



- Decision making processes and logistics for future expansion in rural areas
- Details of the ACP program
- Take rate in lower income areas
- Slowing rate of instalations
- Facility needs and the importance of a master plan
- Staffing competition with the private sector; importance of a rate study
- Importance of becoming revenue-neutral, achieving sustainable staffing, and addressing rate study and facility needs

5.3. **Development Services**

The **Development Services Director** provided the Council with an update on the department's 2021-22 accomplishments, performance statistics, department goals for 2023-24, and anticipated challenges and constraints. Presentation slides were included in the agenda packet.

The following issues were discussed during the presentation:

- Number of units expected with Cedar Creek Heights
- Discussion on mixed use; concerns about residential develop on top of storage units
- Impacts of impending state legislation; particularly HB 2889
- Opportunities to reimagine department staffing with turnover
- Workload of the Building Division
- Impacts on response time given limited staffing
- Department FTE changes over time
- Safe Routes to School opportunities
- Needs related to remediating derelict buildings

5.4. **Library**

The **Library Director** provided the Council with an update on the department's 2021-22 accomplishments, performance statistics, department goals for 2023-24, and anticipated challenges and constraints. Presentation slides were included in the agenda packet.

The following issues were discussed during the presentation:

- Separation of Sandy and Hoodland information in the upcoming budget
- Observations on the following programs: easy reader, civics challenge, and internet basics
- Possibilities for securing grant funding or Federal appropriations for a pop-up outreach vehicle

- Opportunities to work with Transit to connect more residents with Library resources
- Suggestions to track online users in addition to in-person
- Needs for more access to electronic resources
- Strategies for improving the City's IGA with the County related to the Hoodland branch

5.5. **Other Departments**

2021-22 accomplishments, performance statistics, department goals for 2023-24, and anticipated challenges and constraints for indirect service departments were included in the agenda packet.

The following issues were discussed:

- The need for economic development staff to focus on larger strategic business recruitment efforts, rather than focusing on a small business liaison activities
- Satisfaction with improvements to the City's communications
- Needs for more intergovernmental coordination and information exchange

6. **Lunch**

7. **City Council Goal Setting**

7.1.

The following topics were identified as important priorities during the goal setting discussions for each department. A specific list of goals for official Council adoption will be compiled by staff separately.

**Organization-Wide**

- Develop and implement a sustainable staffing plan to retain talented staff and attract quality applicants.
  - Pursue options to address the City's facility needs, including ensuring sufficient work space to meet the City's staffing needs

**Police**

- Create and fund an additional staff position to enhance the City's capacity to enforce the Municipal Code; focus the new position on enforcement matters related to planning and building to allow other code enforcement staff to focus on other matters
- Explore opportunities to diversify Sandy's police force
- Proactively pursue grant opportunities

**Public Works**

- Continue to plan and provide sustainable infrastructure
  - Continue work on ongoing critical public works infrastructure projects, including for the wastewater system and drinking water system.
- Strengthen the Stormwater Fund to prepare for developing a stormwater master plan in the future
- Work to improve the City's street system
  - Lower speed limits on certain streets to promote safety
  - Adopt and implement the Transportation System Plan and address needs at key intersections
    - Plan a solution to address safety concerns at the intersection of Hwy 211 and Dubarko
  - Implement reimbursement districts to recoup street investment costs
  - Pursue next steps in planning for a Hwy 26 bypass
  - Explore options to fund additional pavement maintenance; study possibilities for long term alternatives to gas tax revenue

**Parks and Recreation**

- Explore ways to connect Sandy residents with aquatic opportunities provided by other agencies
- Develop Winter Fest as a premier holiday event that drives tourism to Sandy, stimulates the local economy, and provides a first class festival for Sandy residents
  - Develop a program to encourage local businesses to participate in holiday lighting and decorations
- Develop Deer Pointe Park
- Pursue acquiring land for ball fields
- Secure a better agreement with OTSD for community access to facilities
- Implement a new volunteer program
- Empower parks staff to identify new homeless camps within and report them to police

**SandyNet**

- Develop a SandyNet master plan, including strategies for becoming revenue-neutral, achieving sustainable staffing, and addressing rate study and facility needs

**Development Services**

- Complete ongoing master plans

- Ensure fees cover the cost of service delivery
- Package regular code updates together in the interest of efficiency
- Ensure the City Attorney is keeping the City informed on new case law, legislation, and regulations
- Explore opportunities to control whether existing hotels within the city can be converted into homeless shelters
- Pursue strategies for preserving local control generally

**Transit**

- Explore strategies to limit impacts that homelessness originating elsewhere may have on Sandy via the transit system
- Pursue the possibility of a transit connection to Oregon City
- Increase branding and marketing efforts; leverage new holiday events
- Continue to implement the Transit Master Plan

**Library**

- Reduce dependency on the General Fund
- Pursue Federal funds to acquire an outreach vehicle
- Work with the County on a sustainable future for the Hoodland branch
- Increase the diversity of collection materials
- Work to ensure patrons can access more electronic resources

**8. Break**

**9. City Council Housekeeping**

**9.1. General Housekeeping Discussion**

The Council reviewed the upcoming schedule of meetings, and agreed to cancel meetings on July 3rd and August 21st.

Increased use of the Consent Agenda was discussed, and suggestions were made to send items to the Council in advance via email to receive early feedback.

The **Mayor** mentioned his intent to occasionally use virtual meetings when appropriate.

The Council agreed with the importance of improving the audio/visual infrastructure in the Council Chambers.

The **City Manager** suggested providing the Council with a draft schedule of upcoming meeting topics and items.

The Council expressed a desire to receive more frequent updates on new business activity.

It was suggested to hold an upcoming work session to review 2021-23 goals not yet accomplished.

9.2. **Council Rules**

The **Mayor, Councilor Hokanson, and Councilor Sheldon** will work with the **City Recorder** to develop a recommended update of the Council Rules.

The Council discussed roles and expectations vis a vis policy making versus operations. The following issues were raised during the conversation:

- The proper role of the Council versus advisory boards, and references to a specific instance in which a Councilor participated in an advisory board discussion
- Proper ways and times to provide input as Councilors
- Recognition that Councilors represent the City in the community
- Ways in which Sandy's governance approach has and should evolve as the city modernizes
- Concerns about serial meetings
- The importance of ensuring the full Council is informed of answers to policy questions
- Ways to leverage the knowledge and experience of Councilors without crossing the line into operations
- The process for requesting new agenda items, and concerns about recent parks SDC increases
- Consensus that Councilors should cc the entire Council when emailing staff with questions about an upcoming agenda item

10. **Wrap Up and Adjourn**

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Mayor, Stan Pulliam

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City Recorder, Jeff Aprati

Draft



# City Council Goal Setting

## Goal setting process and implementation

City Council Goal Setting | February 18, 2023

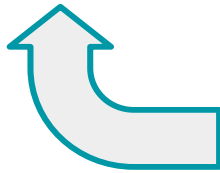
# Setting the Foundation

- Goal Setting Process
- Council and Staff Roles and Work Alignment
- City of Sandy Organizational Chart
- Budget Cycle





# Goal Setting and Implementation Process



Councilor priorities  
Community input  
Staff input and information  
Regulations/mandates  
Adopted policies and plans



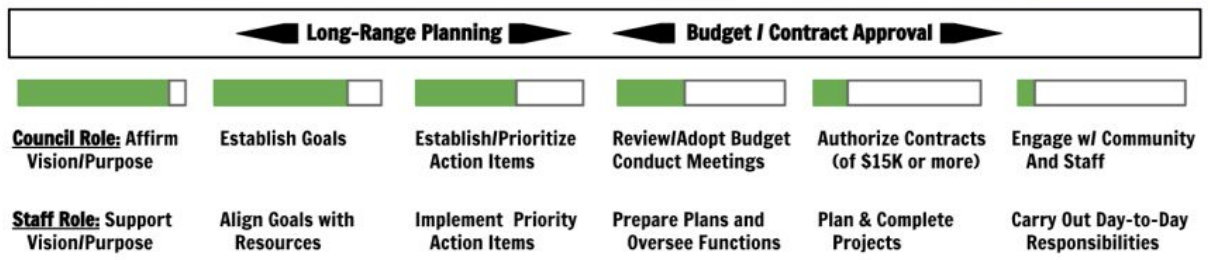


### **City Council Goals and Initiatives**

Charting the course + creating policies,  
new programs or services, special projects

#### **Core and Baseline Services & Ongoing Projects:**

- Administration
- Public safety
- Public Works and utilities
- Parks maintenance
- Recreation and special events programs
- Community development and planning
- Library services and programs
- Economic development
- Transit
- Code enforcement
- SandyNet municipal fiber internet
- Senior center and services
- Capital improvement planning and projects



Adapted from Deputy Village Manager Mike Baker, Village of Downers Grove, IL

# Local Governance System

## City Council Policy Level

- “Why”
- “What”
- “When”

## Administrative Level

- How
- Who



# Example Tasks and Responsibilities

Council examples	Staff examples
Create Vision and Goals	Provide guidance and advise
Adopt Budget	Develop budget
Approve contracts	Manage contractors and deliver projects
Appoint members to Boards and Commissions	Staff boards and commissions, assist with recommendations
Pass Resolutions and Ordinances	Draft reports, implement policy, create procedures
Identify and approve new programs, projects	Align resources, oversee procurement, issue RPPs, draft contracts
Monitor and review performance	Hire and develop staff, develop work plans

- Boards and Commissions**
- Planning Commission
  - Budget Committee
  - Parks & Trails Advisory Board
  - Library Advisory Board
  - Transit Advisory Board
  - SandyNet Advisory Board
  - Economic Development Advisory Board
  - Public Arts Advisory Board

**Citizens of Sandy**  
12,991

**Mayor & City Council**  
Stan Pulliam, Laurie Smallwood, Carl Exner, Rich Sheldon,  
Don Hokanson, Kathleen Walker, Chris Mayton

**Sandy Urban Renewal Agency Board**  
City Council + Fire District + Chamber of Commerce

**City Manager**  
Jordan Wheeler

**Director of Policy and Community Relations**  
Jeff Aprati  
2 FTE

City Recorder

Economic Development

Communications

**Deputy City Manager/Finance Director**  
Tyler Deems  
4.5 FTE

**Information Technology/SandyNet**  
Greg Brewster  
7.6 FTE

SandyNet

IT

**Municipal Court**  
Judge Karen Brisbin

**Finance**

**Human Resources**  
Angie Welty

**Police**  
Chief Ernie Roberts  
20 FTE

**Public Works**  
Jenny Coker, PE  
11.5 FTE

**Public Works Operations (Water, Sewer, Streets, Storm)**  
Ryan Wood

Engineering

Water and Wastewater Treatment Plants (Veolia)

**Development Services**  
Kelly O'Neill  
5.5 FTE

Planning

Building

**Parks & Recreation**  
Rochelle Anderholm-Parsch  
10.58 FTE

Recreation

Parks and Facilities Maintenance

Senior Center & Services

Special Events

**Transit**  
Andi Howell  
3 FTE

**Library**  
Sarah McIntyre  
12.17 FTE

Sandy Public Library

Hoodland Public Library



# Goal and City Workplan Alignment

- City Council agrees on new and continuing goals for the biennium, setting the direction and agenda for the next two years.
- Staff develops a work plan identifying the actions, schedule and milestones, department responsibilities, and resources needed.
- Identify resource needs and incorporate goals into Proposed Budget



# Budget Cycle

- City Council Sets Goals
  - Staff Develops Budgets
    - City Manager Proposes Budget to Budget Committee
      - Budget Committee Reviews and Approves Budget
        - City Council Adopts Budget
          - Budget management and reporting





**MINUTES**  
**City Council Meeting**  
**Tuesday, February 21, 2023 6:00 PM**

**COUNCIL PRESENT:** Chris Mayton, Councilor; Laurie Smallwood, Council President; Kathleen Walker, Councilor; Carl Exner, Councilor; Don Hokanson, Councilor; and Stan Pulliam, Mayor

**COUNCIL ABSENT:** Richard Sheldon, Councilor

**STAFF PRESENT:** Jordan Wheeler, City Manager; Jeff Aprati, City Recorder; Tyler Deems, Deputy City Manager; Rochelle Anderholm-Parsch, Parks and Recreation Director; and Ernie Roberts, Police Chief

**MEDIA PRESENT:** (none)

**1. CITY COUNCIL WORK SESSION - 6:00 PM**

**1.1. Community Campus Park Development Plan Update**

Staff Report - 0667

The **Parks and Recreation Director** provided introductory remarks. Representatives of Lango Hansen and American Ramp Company were present to provide an update to the Council on the planning and community engagement process for the new community park. Their presentation slides, along with a staff report, were included in the agenda packet.

During the consultant presentation, the Council asked questions on the following topics:

- Site grading challenges presented by the park's topography
- Relative sizes of the playground and skate park
- Location of the restroom
- Whether some combination of the presented concepts can be achieved
- Whether embankment slides can be incorporated into all concepts

Council discussion ensued on the following issues:

- Concern about the distance between the playground and parking area
- Desire to have multiple entrances to the parking area
- Importance of garden areas and art
- Importance of incorporating community input into the process

- Concerns about noise impacts
- Importance of access to/from Pleasant Street
- Importance of line of sight for public safety purposes
- Concern about not building large enough to meet future needs
- Capacity for beginner, intermediate, and advanced users of facilities
- Concern about the amount of grass to maintain
- Concern the size of the pump track; possibilities to position the facilities for future expansion
- Square foot cost estimates of different park facilities
- Intent of staff to continue working closely with stakeholder groups
- Importance of ensuring year round use of facilities, including in winter; potential for sledding
- Space for users to play flag football and similar activities

**2. CITY COUNCIL REGULAR MEETING - 7:00 PM**

**3. Pledge of Allegiance**

**4. Roll Call**

**5. Changes to the Agenda**  
(none)

**6. Public Comment**

Michael Kays: owner of the boardshop. Supports the skatepark; is excited to participate in the Community Campus Park planning process which will be great for local kids. Skateboarding is becoming an Olympic sport. The new skatepark could put Sandy on the map; he is very supportive; this will benefit the community.

Adam Nielson: moved here from Baker City two years ago; is active with skating; is concerned that plans for the park may have moved too far along before incorporating public input. Skaters of Sandy was created to serve as a liaison group; is excited about this opportunity and will stay very involved.

Scott Minton: Involved with Skaters of Sandy, which has over 100 years worth of knowledge and experience with skating. Its mission is to provide a unified voice for skaters in the area. Skaters are a worldwide community. Skateparks with unique features are especially important as a draw; the park needs to be a destination. Wants to serve as a conduit between the City, designers, and the skater community. Will advocate for best use of funds and land for skating. Will help with developing contests and events. The skatepark needs sufficient size; the ideal would be 40,000 square feet. Newberg's is 29,000. Wants more access to survey data.

Mike Sheer: is very excited; has lots of skating experience; the size of the skatepark needs to accommodate all skill levels; is concerned current plans do not meet that need. Planning needs to be done correctly.

**7. Response to Previous Public Comments**

**7.1. Mt. Hood Birth Center**

A letter from the Council was sent to Legacy Health executives and to the Oregon Health Authority.

Members of the Council met with Legacy managers, who stated that the birth center was losing money and there were insufficient births to support the facility, and that staff were displeased with alternative care options and chose to leave the facility. **Councilor Hokanson** noted the lack of clarity on the OHA approval process for the closure, and the large challenges involved to secure a waiver, particularly in demonstrating that a closure would not jeopardize patient safety. Legacy staff indicated their intention to divert patients if a waiver is not secured.

**7.2. Bill Leslie**

City staff toured the site, and a majority of the water is from County roads. The County needs to be involved in the solution. Past actions of the City did play a role as well. The City plans to install a flow plug to mitigate immediate impacts. The Shalimar area needs a stormwater engineer to develop a long term plan to fix the situation, along with County assistance. Ultimately a much more substantial stormwater facility is needed in that area. The City will hire the consultant. Mr. Leslie will be provided with the City's intentions and plans in writing. The matter needs to be escalated with the County.

Mr. Leslie provided the following response: no thought was given to stormwater improvements when the adjacent development took place. A temporary flow plug is of no interest to him. A permanent solution is needed now. Private property was taken for public use. He disputed the assertion that it is a natural flow of water.

**8. Consent Agenda**

**8.1. City Council Minutes**

February 6, 2023

**8.2. Planning Commission Appointments**

Staff Report - 0665

**Moved by Kathleen Walker, seconded by Carl Exner**

***Adopt the Consent Agenda***

**CARRIED. 6-0**

Ayes: Chris Mayton, Laurie Smallwood, Kathleen Walker, Carl Exner, Don Hokanson, and Stan Pulliam

Absent: Richard Sheldon

**9. Ordinances**

**9.1. PUBLIC HEARING: Sandy Municipal Code Chapter 10 Amendments**

Staff Report - 0662

Staff Report

The **City Manager** summarized the staff report, which was included in the agenda packet.

Public Testimony

(none)

Council Discussion

In response to a Council question, it was noted that the 9:00 - 6:30 time period was chosen to align with the City's camping ordinance. It was also noted that the new requirements should be advertised in the city newsletter.

**Moved by Laurie Smallwood, seconded by Don Hokanson**

***Close the public hearing***

**CARRIED. 6-0**

Ayes: Chris Mayton, Laurie Smallwood, Kathleen Walker, Carl Exner, Don Hokanson, and Stan Pulliam

Absent: Richard Sheldon

**Moved by Don Hokanson, seconded by Carl Exner**

***Approve the first reading of Ordinance 2023-05***

**CARRIED. 6-0**

Ayes: Chris Mayton, Laurie Smallwood, Kathleen Walker, Carl Exner, Don Hokanson, and Stan Pulliam

Absent: Richard Sheldon

**Moved by Laurie Smallwood, seconded by Chris Mayton**

***Approve the second reading of Ordinance 2023-05***

**CARRIED. 6-0**

Ayes: Chris Mayton, Laurie Smallwood, Kathleen Walker, Carl Exner, Don Hokanson, and Stan Pulliam

Absent: Richard Sheldon

**10. New Business**

**10.1. Cedar Ridge Vacant Building Demolition and Site Preparation**

Staff Report - 0664

The **City Manager** summarized the staff report, which was included in the agenda packet.

Council discussion ensued on the following topics:

- Logistics of the RFP process, and whether the City is required to begin the process again
- Possible synergies with improvements currently taking place with the Community Campus Park development process
- Note that a contract would need to be brought to the SURA Board
- Suggestion to attempt to retain and preserve timbers from the existing aquatic center

**Moved by Carl Exner, seconded by Laurie Smallwood**

***Direct staff to proceed with planning for demolition of vacant buildings at the Community Campus***

**CARRIED. 6-0**

Ayes: Chris Mayton, Laurie Smallwood, Kathleen Walker, Carl Exner, Don Hokanson, and Stan Pulliam

Absent: Richard Sheldon

**11. Report from the City Manager**

- Thanks for the recent goal setting session; staff will write up and bring back goal language for official Council adoption
- Upcoming meeting with AMR on level of service needs
- County is willing to be helpful with Hoodland Library's rent
- Council input on the Comprehensive Plan update is needed

The Council engaged in a discussion on HB 2889, and raised serious concerns about preemption of local control of land use decisions, especially as a large amount of residential growth has already happened in Sandy in recent years. The Council discussed sending a letter to the League of Oregon Cities on the need to preserve home rule authority, as well as a letter to the Governor on the need for infrastructure funding assistance. After concerns were raised by the City's government relations consultant on possibly detracting from the City's capital funding request before the legislature, and after further discussion and consideration, the Council decided to proceed with the two letters; the **Mayor** and **Councilor Walker** were designated to review initial language.

**12. Committee /Council Reports**  
**Councilor Hokanson**

- Thanks to the individuals who provided comments on the skatepark
- Suggestion to look for sponsorship opportunities
- Need for more conversation on potential tourism draw opportunities related to skating (competitions, etc.)

**Councilor Exner**

- Thanks to the individuals who provided comments on the skatepark
- Debrief on recent Sandy Fire District Board meeting; concerns about the intergovernmental agreement with Clackamas Fire District; details about the planned arrangement between the agencies and logistics; upcoming vacancies on the Sandy Fire District Board; comments on the possible impact of the arrangement on the Sandy Urban Renewal Agency.

**Councilor Walker**

- Thanks to the individuals who provided comments on the skatepark; emphasis on the importance of tourism
- Need for prioritization of urban renewal projects, and to recruit businesses that would further the Economic Development Strategic Plan
- Welcome to new Planning Commissioners
- Thanks to the **Mayor** for his work on the Hoodland Library issue

**Council President Smallwood**

- Thanks to the individuals who provided comments on the skatepark
- Will be speaking at an upcoming Chamber of Commerce event on homelessness
- Assisted **Councilor Hokanson** with recent birth center conversations with Legacy Health

**Councilor Mayton**

- Thanks to **Councilor Hokanson** for his work on the birth center issue
- Welcome to new Planning Commissioners
- Economic Development Advisory Board meeting upcoming

**Mayor Pulliam**

- Thanks to the individuals who provided comments on the skatepark; encouragement for them to continue to be involved
- Exciting opportunities exist with the Community Campus Park to drive and catalyze amenity improvements
- City Attorney time needs to be spent investigating ways to control whether local hotels are able to be converted into homeless shelters

**13. Staff updates**

13.1. [Monthly Reports](#)

**14. Adjourn**

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Mayor, Stan Pulliam

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City Recorder, Jeff Aprati



## Staff Report

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**Meeting Date:** March 6, 2023  
**From** Tyler Deems, Deputy City Manager  
**SUBJECT:** Budget Committee Appointments

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**BACKGROUND / CONTEXT:**

Since the last Budget Committee meeting in May 2021, several terms have expired and positions have become vacant. Local Budget Law states that the Budget Committee is comprised of the governing body and an equal number of electors appointed by the governing body. These electors must live within city limits, and be registered voters. In Sandy's case, the committee requires seven citizens.

There are currently four openings on the committee. Staff has advertised the vacancies in a variety of ways, including the City's website, Facebook, and the Sandy Source. As of February 24, 2023 at 5:00 pm, staff had received four applications from citizens who met the minimum qualifications. Since that time, one application needed to withdraw their application due to scheduling conflicts with the upcoming meetings. The three citizens and the respective position they will fill, if appointed, are as follows:

<b>Position Number</b>	<b>Name</b>	<b>Term Ending</b>
1	Jan Lee	June 30, 2026
3	Jeremy Pietzold	June 30, 2026
5	Greg Becker	June 30, 2024

All terms are four years in length and staggered. Please note that applicants have been placed into positions in the order that applications were received (i.e. the first applicant has been placed in position one, the second in position three, etc.).

Per Local Budget Law, if qualified citizens apply and there are vacancies on the committee, these citizens should be appointed to fill the vacancies. As such, there is no need to conduct interviews for these three citizens.

**RECOMMENDATION:**

Staff recommends that Council appoint Jan Lee, Jeremy Pietzold, and Greg Becker to the Budget Committee with the respective terms identified above.

**SUGGESTED MOTION LANGUAGE:**

"I move to appoint Jan Lee, Jeremy Pietzold, and Greg Becker to the Budget Committee, as identified in the staff report."



**LIST OF ATTACHMENTS/EXHIBITS:**

- Budget Committee Application Forms



Tyler Deems <tdeems@ci.sandy.or.us>

**Form submission from: Budget Committee Application**

1 message

**Sandy Oregon** <sandy-or@municodeweb.com>  
Reply-To: Sandy Oregon <sandy-or@municodeweb.com>  
To: tdeem @ci andy or u

Fri, Oct 7, 2022 at 9:49 AM

Submitted on Friday, October 7, 2022 9:49am

Submitted by anonymous user 173 241 170 85

Submitted value are

First Name Jan  
Last Name Lee  
Email [REDACTED]  
Phone Number [REDACTED]  
Address [REDACTED]  
City Sandy  
State OR  
Zip Code 97055

Mailing Address (if different)

Please explain your interest in serving on the Budget Committee

The budget is the backbone of the work that needs to be accomplished for our city and having members on the budget committee that have experience in working with the city is important. I continue to follow city activities and programs, so I could take part with knowledge of issue and need

What knowledge, education, or skills would you bring to the Committee?

I have served on the city's budget committee in the past, as well as being a prior member of the city council and a current member of the planning commission. I have an undergrad degree (BS in Management) and a Masters in Public Administration, both degree including work in budgeting and economic I have been on the county budget committee, one of the 5 lay persons working with the 5 commissioners, for 5 years.

Upload Current Resume [resume\\_-\\_lee\\_2022.docx](#)

By checking this box, I agree to the following: I certify that the information contained in this application is correct to the best of my knowledge. I understand that to falsify information in regard for refusing to appoint me, or for removal should I be appointed. I also affirm that I have read and understand the Sandy Code of Conduct for members of Boards and Commissions (available as a Supporting Document on this webpage), and I understand its application to my role and responsibilities while serving on a City Board. I pledge to conduct myself according to the Sandy Boards and Commission Code of Conduct, and I understand that the City Council may remove me from my position if my conduct falls below these standards.

The results of this submission may be viewed at:

<https://www.ci.sandy.or.us/node/21535/submission/19068>

[resume\\_-\\_lee\\_2022.docx](#)  
1454K



Tyler Deems <tdeems@ci.sandy.or.us>

**Form submission from: Budget Committee Application**

1 message

**Sandy Oregon** <sandy-or@municodeweb.com>  
Reply-To: Sandy Oregon <sandy-or@municodeweb.com>  
To: tdeem @ci andy or u

Mon, Jan 2, 2023 at 4:33 PM

Submitted on Monday, January 2, 2023 4:33pm

Submitted by anonymous user 198.236.3.254

Submitted value are

First Name Jeremy  
Last Name Pietzold  
Email [REDACTED]  
Phone Number [REDACTED]  
Address [REDACTED]  
City Sandy  
State OR  
Zip Code 97055

Mailing Address (if different)

Please explain your interest in serving on the Budget Committee

I would like to continue to serve my community on the budget committee. I have served on it for the last 16 years as a City Councilor and feel I have a good perspective of how the City works.

What knowledge, education, or skill would you bring to the Committee?

I have served on the budget committee for the last 16 years as a City Councilor and feel I have a good perspective of how the City works. I also work in the public sector and participate from a staff level on the budget at Clackamas ESD.

Upload Current Resume [jeremy\\_pietzold\\_resume\\_city\\_of\\_sandy\\_budget\\_committee\\_jan\\_2023.pdf](#)

By checking this box, I agree to the following: I certify that the information contained in this application is correct to the best of my knowledge. I understand that to falsify information is grounds for refusing to appoint me, or for removal should I be appointed. I also affirm that I have read and understand the Sandy Code of Conduct for members of Boards and Commissions (available as a Supporting Document on this webpage), and I understand its application to my role and responsibilities while serving on a City Board. I pledge to conduct myself according to the Sandy Board and Commissions Code of Conduct, and I understand that the City Council may remove me from my position if my conduct falls below these standards.

The results of this submission may be viewed at:

<https://www.ci.sandy.or.us/node/21535/submission/19373>

[jeremy\\_pietzold\\_resume\\_city\\_of\\_sandy\\_budget\\_committee\\_jan\\_2023.pdf](#)  
60K



Tyler Deems <tdeems@ci.sandy.or.us>

**Form submission from: Budget Committee Application**

1 message

**Sandy Oregon** <sandy-or@municodeweb.com>  
Reply-To: Sandy Oregon <sandy-or@municodeweb.com>  
To: tdeem @ci andy or u

Mon, Jan 23, 2023 at 4:49 PM

Submitted on Monday, January 23, 2023 4:49pm

Submitted by anonymous user 173.241.172.59

Submitted value are

First Name Greg  
Last Name Becker  
Email [REDACTED]  
Phone Number [REDACTED]  
Address [REDACTED]  
City Sandy  
State Or  
Zip Code 97055

Mailing Address (if different) [REDACTED] Sandy Or 97055

Please explain your interest in serving on the Budget Committee

I want to see how the taxes are spent and believe that I may help in possible savings

What knowledge, education, or skills would you bring to the Committee?

I had been a part of building budget for a major truck top corp for 25 year Budget con i ting of 1 to 10 million dollar each. Afterwards I looked over and made reccomendation on a school district budget for 10 years and made recommendation to OSEA's budget for 5 years. I am familiar with both private sectors and government budgets.

Upload Current Resume

By checking this box, I agree to the following I certify that the information contained in this application is correct to the best of my knowledge. I understand that to falsify information is grounds for refusing to appoint me, or for removal should I be appointed. I also affirm that I have read and understand the Sandy Code of Conduct for members of Boards and Commissions (available as a Supporting Document on this webpage), and I understand its application to my role and responsibilities while serving on a City Board. I pledge to conduct myself according to the Sandy Board and Commissions Code of Conduct, and I understand that the City Council may remove me from my position if my conduct falls below these standards.

The results of this submission may be viewed at:

<https://www.ci.sandy.or.us/node/21535/submission/19463>



## Staff Report

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**Meeting Date:** March 6, 2023

**From** Jenny Coker, Public Works Director

**SUBJECT:** Amendment No. 5 – Collection System RDII Basin 2 and 8

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**DECISION TO BE MADE:**

Whether to authorize the City Manager to sign an agreement with Oxbow Construction for Amendment No.5 to the contract for the Collection System Rehabilitation for Inflow and Infiltration Reduction Project for Basins 2 and 8.

**PURPOSE / OBJECTIVE:**

This final amendment will close out the project for Basins 2 and 8. The net change amount is \$230,216.06.

**BACKGROUND / CONTEXT:**

This amendment includes the net change contract amount between the current contract value and closeout project costs with Oxbow Construction, the Construction Manager/General Contractor (CM/GC) for the Collection System Rehabilitation for Inflow and Infiltration Reduction Project (RDII) Basin 2 and 8.

Oxbow's closeout project costs of \$7,879,841.10 included two Guaranteed Maximum prices (GMP)s and three Change Orders.

The cost of work breaks down as follows:

- GMP-1 and GMP-2 for rehabilitation of Collection System Basin 2 and 8: Total costs \$7,451,589.64.
- Change Order 02 for the added scope to rehabilitate the Tupper Road Storm Sewer in the total of \$151,959.60. This change order was approved in Amendment No. 3.
- Change Order 03 for additional work on the Tupper Road Storm Sewer. Tupper Road Storm Sewer collapsed before the initially schedule lining repair. The storm sewer failure cause damage to the roadway and made it necessary for more extensive repairs on an emergency basis. The additional cost of repairs totaled \$198,035.40.
- Change Order 04 for the additional contingency use and closeout quantities. This change order totals \$39,324.51 as described below:

- There were unexpected out-of-scope work items completed on the project that were paid from contingency. These out-of-scope work items included additional manhole grouting, the Sandy Community Center lateral reconstruction, locating unknown laterals, and the additional tee liners on lateral connections. The contingency use overage total is \$17,264.84.
  - The original Guaranteed Maximum Price (GMP) was based on engineer measurements of various rehabilitation items (for example, rehabilitation of pipe is paid by linear feet). For the closeout of the project, several rehabilitation items required additional quantities over the engineer's estimate. This change order included additional funding for these additional quantities, totaling \$26,423.20.
  - Contract values awarded to the CM/GC had mathematical errors. The closeout value must match the total work done, and to get this value there was a discrepancy of \$-4,363.53.
- A 10% CM/GC fee for Change Orders, totaling \$38,931.95.

The unit prices and subcontractor/equipment supplier quotes for all Change Orders have been reviewed by the design engineer, Leeway Engineering Solutions.

The City originally entered a Construction Manager / General Contractor (CM/GC) contract with Oxbow Construction on November 25, 2020. Two Guaranteed Maximum Prices (GMP)s and two Amendments were previously approved by Amendment No.4 for a total contract value of \$7,649,625.04. This Amendment (No.5) includes the net change contract amount that totals the closeout project cost of \$7,879,841.10.

Contract	GMP Value
Current Contract Value	\$ 7,649,625.04
Project Closeout/Total Cost of Work	\$ 7,879,841.10
<b>Net Change</b>	<b>\$ 230,216.06</b>

This contract amendment includes the net change contract amount of \$230,216.06 for a final total guaranteed maximum price of \$7,879,841.10. The project completed in May 2022 and this amendment will close out the project.

**RECOMMENDATION:**

Authorize the City Manager to sign an agreement with Oxbow Construction for Amendment No.5.

**BUDGETARY IMPACT:**

The proposed Amendment, which totals \$230,216.07, is covered by the City's Clean Water State Revolving Fund (CWSRF) loan and will have no impact to the rate model.

**SUGGESTED MOTION LANGUAGE:**

"I move to authorize the City Manager to sign an agreement with Oxbow Construction for Amendment No.5 to the contract for the Collection System Rehabilitation for Inflow and Infiltration Reduction Project (Basins 2 and 8), in the amount of \$230,216.07."

**LIST OF ATTACHMENTS/EXHIBITS:**

- Oxbow Construction's Amendment No. 5

AMENDMENT NO. 5  
to the  
CONSTRUCTION MANAGER/GENERAL CONTRACTOR (“CM/GC”) CONTRACT  
Between  
CITY OF SANDY and IRON HORSE EXCAVATION, LLC DBA OXBOW CONSTRUCTION

**AMENDMENT No. 5**

**for the following PROJECT:**

2020 Sanitary Sewer Rehabilitation for Inflow and Infiltration Reduction Project

**THE CM/GC:**

Iron Horse Excavation, LLC dba Oxbow Construction  
June L. Kalkhoven  
31005 E Historic Columbia River Hwy.  
Troutdale, OR 97060  
503-816-1312  
Oregon CCB License Number: 166020

THIS AMENDMENT is made and entered into this 20th day of February 2023, by and between the City of Sandy, OR (hereinafter “City”), whose address for any formal notice is 39250 Pioneer Blvd. Sandy OR, 97055 and Iron Horse Excavation, LLC (hereinafter “Oxbow”) with offices at 31005 E Historic Columbia River Hwy Troutdale, OR 97060. This is Amendment No. 5 to the Agreement dated November 25, 2021 between City and Oxbow.

Now Therefore, City and Leeway agree to amend the Agreement as follows:

1. The Contract is amended to include the following:

**Deleted Work Items:**

- Amendment No. 3 Net change contract amount of \$151,859.60

Contract	GMP Value
Amendment No. 2 (Inclusive of GMP1 and GMP2)	\$7,451,589.64
Amendment No.3 (Inclusive of GMP1, GMP2, and Amendment No.3)	\$ 7,603,449.24
<b>Net Change</b>	<b>\$ 151,859.60</b>

- Amendment No. 4 Net change contract amount of \$46,175.80

Contract	GMP Value
Amendment No. 3 (Inclusive of GMP1, GMP2, and Amendment No.3)	\$ 7,603,449.24
Amendment No.4 (Inclusive of GMP1, GMP2, Amendment No.3, Amendment No.4)	\$ 7,649,625.04
<b>Net Change</b>	<b>\$ 46,175.80</b>



TOTAL DELETED: - \$198,035.40

**Added Work Items:**

- Change Order No. 2, \$151,959.60 48” Inch CMP Liner Rehabilitation Project as described in Exhibit A attached to this Amendment.
- Change Order No. 3, \$198,035.40 48” Culvert Pipe Repair as described in Exhibit A attached to this Amendment.
- Change Order No. 4, \$39,324.51 miscellaneous final closeout quantities as described in Exhibit A attached to this Amendment.
- 10% CM/GC fee for Change Order No.2 through No.4 of \$38,931.95.

TOTAL ADDITIONAL: \$428,251.46

**Net Change Contract Amount: \$230,216.06**

2. The Guaranteed Maximum Price (GMP) in Section 2, inclusive of GMP1, GMP2, Amendment No.3, Amendment No.4, Amendment No.5 is changed to \$7,879,841.10.

Both parties indicate their approval of this Amendment by their signatures below.

IRON HORSE EXCAVATION, LLC  
DBA OXBOW CONSTRUCTION

CITY OF SANDY, OREGON

Authorized signature:

Authorized signature:

\_\_\_\_\_  
Name: June L Kalkhoven, Managing Member

\_\_\_\_\_  
Name: Jordan Wheeler, City Manager

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Appendix A – Change Order Attachments

- Change Order No. 2, 48” Inch CMP Liner Rehabilitation Project
- Change Order No. 3, 48” Culvert Pipe Repair
- Change Order No. 4, Miscellaneous Final Closeout Quantities



**Oxbow Construction**  
 A dba of Iron Horse Excavation, LLC  
 31005 E Historic Columbia River Hwy  
 Troutdale, OR 97060  
 503-816-1319-office  
 CCB #166020, WA Lic. #OXBOWC\*894C8  
 DBE/WBE #7618

### Change Order Request

**Date:** 2023-02-15

**Project:** Sandy RDII Sewer Project Basin 8/2

**Contractor:** Oxbow Construction

**Change Order No.:** 2

**Contract No.:** 371

**Reference:** 48" culvert liner repair

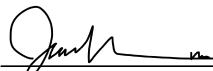
*This is to request a Change Order to the subject Contract as described as follows:*

*A 48-inch stormwater culvert pipe was failing and required rehabilitation. Oxbow agrees to perform the work requested at the below unit prices for culvert liner rehabilitation. The following quantities and unit prices cover the entire added work:*

**Added Work Items:** See Attachment for quantities and unit prices.

<b>Total Additional Work:</b>	<b>\$ 151,959.60</b>
-------------------------------	----------------------

*To the best knowledge and belief, I certify all information above is true and correct and agree to the terms set forth herein.*

  
 \_\_\_\_\_  
 by, June L Kalkhoven, Managing Member  
 Contractor Signature

2-17-2023  
 \_\_\_\_\_  
 Date

**APPROVED OWNER:**

By: \_\_\_\_\_

Title: Public Works Director

Date: 2/21/2023

**APPROVED OWNER REP:**

By:  \_\_\_\_\_

Title: Owners Representative

Date: 2/20/2023

*Quality ~ Integrity ~ Experience*

**EXHIBIT A**  
**48 Inch CMP Liner Rehabilitation Project**

**Oxbow Construction**

**31005 East Historic Columbia River Hwy  
 Troutdale OR 97060**

**Contact: Jim Hall, Estimator**

**Phone: 503-766-8635**

**Fax:**

Quote To: Rob Lee, Leeway Engineering  
 Mike Walker, City of Sandy

Job Name: Sandy 48" CMP Liner Rehabilitation  
Date of Plans: 12-14-21

Phone:

Revision Date: N/A

Fax:

See Assumptions, Clarifications, Exclusions

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1010	Supervision	1.00	LS	4,690.89	4,690.89
1015	Prep Access/Steel Plates	1.00	LS	5,010.65	5,010.65
1020	Procure Liner	1.00	LS	52,191.00	52,191.00
1025	Bypass Pumping/Diversion	10.00	DAY	1,130.31	11,303.10
1027	Construct Access to 48" For Insertion	1.00	LS	2,191.18	2,191.18
1030	Exc and Repair Spots	2.00	EA	12,187.50	24,375.00
1040	Grout Fill Bottom of Pipe	150.00	LF	71.73	10,759.50
1045	Exc/Prep Pulling Pit/Anchor Block	1.00	LS	2,125.51	2,125.51
1050	Liner Prep Work	1.00	LS	9,248.16	9,248.16
1055	Remove Protruding Taps	3.00	EA	452.37	1,357.11
1060	Install and Inflate Liner	1.00	LS	7,579.30	7,579.30
1070	Cure Liner	1.00	LS	3,048.04	3,048.04
1080	Complete End Seals	2.00	EA	2,439.31	4,878.62
1090	Third Party Testing	1.00	LS	1,250.00	1,250.00
1093	TV Post Liner Installation Inpection	1.00	LS	1,562.50	1,562.50
1095	Reconstruct 48" Pipe at Insertion	1.00	LS	5,421.16	5,421.16
1100	Remove Access/Demobe	1.00	LS	3,025.25	3,025.25
1110	Minor Restoration	1.00	LS	1,942.63	1,942.63

**GRAND TOTAL** **\$151,959.60**

**NOTES:**

Assumptions:

- Oxbow will construct a steel plated access to the Manhole located in the park area
- In order to provide access for insertion of the 48" lining cans and liner materials into the 48" CMP storm pipe, Oxbow will excavate down to the top of the 48" CMP pipe and expose the pipe. The top one-half of the pipe will be cut and removed for a length of about 6ft-8ft.

This access opening will be used to insert the liner into the pipe and allow for preparation for lining.

Following the liner installation, the removed pipe section will be replaced and welded into its original position and then backfilled with concrete light fill (CLSM). Following the CLSM curing, the pipe will be backfilled with native spoils and the area restored.

In order to facilitate the pulling of the liner into position, Oxbow will excavate at one end of the pipe in the invert area, prior to repairing/grouting the invert, and will construct a 12" x 12" x 5ft deep concrete anchor block. The anchor block will be fitted with a pulling point to allow the liner to be pulled into position.

Following pulling the liner into position, the pulling point will be cut flush to the invert of the pipe.

Additionally, Oxbow may construct 2-3 insert-a-tee connections to the pipe in order to allow for feeding hoses and cords into the pipe to further facilitate the lining process. Following the work, these access ports will be cut below grade and capped/plugged. 2x4 markers will be placed similar to lateral markers at these locations.

The base grouting of the pipe invert will be completed by cleaning the entire pipe section and removing any deleterious/loose materials from the bottom area. A 1/2" pea rock mix will be placed in the bottom section only to provide a firm, uniform surface to line against. This is not intended to be water tight nor provide any structural integrity as there is no structural design to adhere to in completing this task.

The liner will be terminated at each Manhole end using a Weco Seal.

The estimate includes a contingency amount of 1250.00 for third party CIPP Liner testing if required.

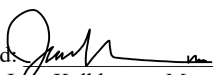
This proposal is good for 30 days following receipt and as dated below.

-----  
Proposal includes:

BOLI Wages as of July 2021.  
All work as noted.  
Third Party Testing if required.  
Post TV liner Inspection.

-----  
Proposal excludes:

Liner Engineering, structural engineering.  
Surveying  
Contaminated materials handling, removal, treatment, disposal.  
Tree removal  
Landscaping other than hand-cast seeding.  
Leak testing, pressure testing, etc.  
Pre-TV Inspection  
Groundwater/perched water dewatering.  
Welding inspection of CMP pipe.  
Concrete inspection/testing  
Permits of any kind.  
Bonds  
Special insurance above Oxbow's Standard Construction policies and limits.

Signed:   
June Kalkhoven, Managing Member

Dated: 2-17-2023

Iron Horse Excavation LLC dba Oxbow Construction  
CCB #166020  
DBE/WBE #7618  
Proposal good for 30 days

DBE/WBE/#7618

Proposal good for 30 days following date above.

## Change Order Request

Date: 2022-08-01

Project: Sandy RDII Sewer Project Basin 8/2

Contractor: Oxbow Construction

Change Order Request No.: 3

Contract No.: 371

Reference: 48" Culvert Pipe Repair

**This is to request a Change Order to the subject Contract as described as follows:**

During the work, the atmospheric river came through Sandy and a stormwater culvert pipe completely failed that was initially scheduled for a lining repair. This failure made it necessary for Oxbow to do more extensive repair and delete the install work initially planned that was deemed not feasible given the condition of the culvert following the recent significant storm event. Oxbow proposes to insert a liner into the pipe to allow for preparation for lining, after which, a section of pipe removed would be replaced and welded into its original position before pulling the liner into position. In order to correctly account for the work, Oxbow requests a formal change order to the Contract. Oxbow agrees to perform the work requested at the below unit prices for culvert repair and liner rehabilitation. The following quantities and unit prices cover the entire added work:

**Added Work Items:**

48-inch Stormwater Culvert Emergency Repair	\$ 255,695.00
48-inch CMP Liner Rehab	\$ 94,300.00
<b>TOTAL ADDITIONAL:</b>	<b>\$ 21,700.00</b>

**Deleted Work Items:**

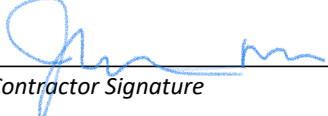
48-inch CMP Liner Rehabilitation Project	\$ 151,959.60
<b>TOTAL ADDITIONAL:</b>	<b>- (\$ 151,959.60)</b>

**Net Change Contract Amount:** **\$ 198,035.40**

**Schedule**

No Schedule change related to this work.

This Change Order Request will be codified in a subsequent Change Order to the Contract. To the best knowledge and belief, I certify all information above is true and correct and agree to the terms set forth herein.

  
Contractor Signature

2/20/23  
Date

**APPROVED:**

Engineer of Record Recommendation:

By: \_\_\_\_\_

Title: Principal

Date: August 9, 2022

By: \_\_\_\_\_

Title: Public Works Director

Date: 8/3/22



**Oxbow Construction**  
 A dba of Iron Horse Excavation, LLC  
 31005 E Historic Columbia River Hwy  
 Troutdale, OR 97060  
 503-816-1319-office  
 CCB #166020, WA Lic. #OXBOWC\*894C8  
 DBE/WBE #7618

## Change Order Request

**Date:** 2023-01-30

**Change Order No.:** 4

**Project:** Sandy RDII Sewer Project Basin 8/2

**Contract No.:** 371

**Contractor:** Oxbow Construction

**Reference:** Misc. Final Closeout Quantities

***This is to request a Change Order to the subject Contract as described as follows:***

*This change order request document is submitted based on previously submitted and accepted work scopes and added work directed in the field during the life of the Basin 2 and 8 project. The work is described within each line item as noted below:*

**Added Work Items:**

<b>ITEM NO.</b>	<b>Change Order Item Description</b>	<b>QTY</b>	<b>UNIT</b>	<b>UNIT PRICE</b>	<b>Total difference between SOV and total work complete</b>
1b	B8 - QC - Compaction Testing	66	DAY	\$181.82	-\$12,000.00
3b	B8- Traffic Control Flagging	110	HRS	\$65.94	\$7,253.40
3c	B8 - Traffic Signage and Devices	0	DAY	\$75.45	-\$0.75
10a	B8 - Pothole Service Lats Public Side	20	EA	\$750.00	-\$15,000.00
10b	B8 - Pothole Service Lats - Private Side	6	EA	\$450.00	\$2,700.00
12	B8 - Video Launch/Locate Laterals - Pipe Bursting	63	EA	\$175.00	-\$11,025.00
13	B8 - Push Cam Launch/Locate Laterals - Pipe Bursting	213	EA	\$100.00	\$21,300.00
14	B8 - Private Property Restoration - Pipe Bursting Scope	8	EA	\$666.67	-\$5,333.33
15	B8 - Bursting Pit Excavation/Backfilling <8ft Deep	32	EA	\$1,500.00	\$48,000.00
16	B8 - Bursting Pit Excavation/Backfilling 8-12ft Deep	8	EA	\$2,000.00	-\$16,000.00
17	B8 - Bursting Pit Excavation/Backfilling >12ft Deep	4	EA	\$3,000.00	-\$12,000.00
18	B8 - Burst 6" with 8" HDPE DR17	363	LF	\$80.00	\$29,040.00
19.1	B8 - Burst 8" HDPE DR17 in 8" Existing - Initial Install	27	LF	\$52.50	-\$1,417.50
19.2	B8 - Burst 8" Pipe - Final Acceptance	27	LF	\$17.50	-\$472.50
21.1	B8 - Burst 12" HDPE DR17 in 12" Existing - Initial Install	246	LF	\$60.00	-\$14,760.00
21.2	B8 - Burst 12" Pipe - Final Acceptance	246	LF	\$20.00	-\$4,920.00
22	B8 - Individual Service Lateral Cleanout (CIPP Lats)	9	EA	\$1,000.00	-\$9,000.00
23	B8 - Individual Service Lateral Cleanout (Burst Lats)	43	EA	\$350.00	-\$15,050.00
24	B8 - Saddle Conn for HDPE Main to Lateral	156	EA	\$2,149.33	\$335,295.48



	(<8ft Deep)				
25	B8 - Saddle Conn for HDPE Main to Lateral (8-12ft Deep)	50	EA	\$2,800.00	-\$140,000.00
26	B8 - Saddle Conn for HDPE Main to Lateral (>12ft Deep)	1	EA	\$3,200.00	-\$3,200.00
27	B8 - Burst Lateral from Main to Property Line 6"	1839	LF	\$65.00	\$119,535.00
28	B8 - Continue Bursting Lat from Prop Line to Structure	1686	LF	\$45.00	\$75,870.00
29.1	B8 - CIPP Main Line Rehab, 6" - Initial Install	482	LF	\$57.69	-\$27,806.58
28.1	B8 - CIPP Main Line Rehab, 8" - Initial Install	360	LF	\$54.00	-\$19,440.00
34a	B8 - Reconn CIPP - 18" CIPP Lateral Line - Internal Con	12	EA	\$1,250.00	-\$15,000.00
34b	B8 - Reconn CIPP - 18" CIPP Lateral Line- Oxbow	18	EA	\$1,400.00	-\$25,200.00
35	B8 - Reconstruct Public Lat CIPP - ProPipe Scope	2000	LF	\$81.00	-\$162,000.00
36	B8 - Reconstruct Public Lat CIPP - Oxbow Scope	1703	LF	\$80.00	\$136,240.00
37	B8 - Reconstruct Private Lat CIPP - ProPipe Scope	3314	LF	\$74.00	-\$245,206.40
38	B8 - Reconstruct Private Lat CIPP - Oxbow Scope	2376	LF	\$45.00	\$106,920.00
39	B8 - Rebuild MH Base	1	EA	\$1,476.96	-\$1,476.96
40a	B8 - MH Grouting	18	EA	\$1,500.00	\$27,000.00
40b	B8 - MH Grouting - Over 5ft Deep	104	VF	\$125.00	-\$12,962.50
41a	B8 - 48" San MH, std Precast, 0-8ft	3	EA	\$7,000.00	\$21,000.00
41b	B8 - 48" San MH, Std Precast, Over 8ft	8	VF	\$300.00	-\$2,520.00
46	B8 - Inside PVC Drop without Bowl	1	EA	\$1,057.73	-\$1,057.73
48	B8 - Cleanout On Main - New	1	EA	\$2,500.00	\$2,500.00
GMP2	Basin 2				
1b	B2 - QC - Compaction Testing	5	DAY	\$181.82	-\$909.10
3b	B2 - Traffic Control Flagging	335	HRS	\$65.94	\$22,089.90
3d	B2 - Traffic Control - PCMS Boards	2	EA	\$3,500.00	-\$7,000.00
10a	B2 - Pothole Service Lats Public Side	6	EA	\$750.00	-\$4,500.00
10b	B2 - Pothole Service Lats - Private Side	4	EA	\$450.00	-\$1,800.00
12	B2 - Video Launch/Locate Laterals - Pipe Bursting	24	EA	\$175.00	-\$4,200.00
13	B2 - Push Cam Launch/Locate Laterals - Pipe Bursting	75	EA	\$100.00	\$7,500.00
15	B2 - Bursting Pit Excavation/Backfilling <8ft Deep	2	EA	\$1,500.00	\$3,000.00
16	B2 - Bursting Pit Excavation/Backfilling 8-12ft Deep	1	EA	\$2,000.00	-\$2,000.00
18	B2 - Burst 6" with 8" HDPE DR17	48	LF	\$80.00	\$3,840.00
19.1	B2 - Burst 8" HDPE DR17 in 8" Existing - Initial Install	26	LF	\$52.50	-\$1,365.00
22	B2 - Individual Service Lateral Cleanout (CIPP Lats)	4	EA	\$1,000.00	-\$4,000.00
23	B2 - Individual Service Lateral Cleanout (Burst Lats)	34	EA	\$350.00	\$11,900.00
24	B2 - Saddle Conn for HDPE Main to Lateral	18	EA	\$2,149.33	\$38,687.94

	(<8ft Deep)				
25	B2 - Saddle Conn for HDPE Main to Lateral (8-12ft Deep)	1	EA	\$2,800.00	-\$2,800.00
26	B2 - Saddle Conn for HDPE Main to Lateral (>12ft Deep)	38		\$3,200.00	\$121,600.00
27	B2 - Burst Lateral from Main to Property Line 6"	373	LF	\$65.00	-\$24,245.00
28	B2 - Continue Bursting Lat from Prop Line to Structure	987	LF	\$45.00	-\$44,415.00
34	B2 - Reconn CIPP Main to Lat; 8-12ft Deep (Insr-Tee)	71	EA	\$2,250.00	-\$159,750.00
36	B2 - Reconn CIPP - 18" CIPP Lateral Line - Internal Con	11	EA	\$1,650.00	-\$18,150.00
37	B2 - Reconstruct Public Lat CIPP - By CIPP	255	LF	\$81.00	-\$20,655.00
38	B2 - Reconstruct Private Lat CIPP - By CIPP	332	LF	\$74.00	-\$24,568.00
39	B2 - Rebuild MH Base	4		\$1,476.96	\$5,907.84
40a	B2 - MH Grouting	1	EA	\$1,500.00	-\$1,500.00
40b	B2 - MH Grouting - Over 5ft Deep	208	VF	\$125.00	-\$26,050.00
<b>Sub-total:</b>					<b>\$ 26,423.20</b>
Contingency Use Overage total					<b>\$17,264.84</b>
Mathematical Errors – these were spreadsheet errors in the original GMP-1 and GMP-2 Schedule of Values					<b>-\$4,363.53</b>
<b>Total Additional Work:</b>					<b>\$ 39,324.51</b>

To the best knowledge and belief, I certify all information above is true and correct and agree to the terms set forth herein.

  
 By June L Kalkhoven, Managing Member  
 Contractor Signature

**APPROVED OWNER:**

2-17-2023  
 Date

By: \_\_\_\_\_

**Public Works Director**

Title: \_\_\_\_\_

Date: 2/23/2023

**APPROVED OWNER REP:**

By:  \_\_\_\_\_

Title: Owners Representative

Date: 2/20/2023

Quality ~ Integrity ~ Experience

**Sandy CS Basin 2 and 8  
Contingency Request Log**

CONTINGENCY		
	CM/GC	OWNER
ORIGINAL CONTINGENCY:	\$ 161,000.00	\$ -
CONTINGENCY USED:	\$ 178,264.84	\$ -
CURRENT BALANCE:	\$ (17,264.84)	\$ -

CONTINGENCY ITEM DESCRIPTION	NO.	PROJECT CTN NO.	OWNER CTR NO.	ATN NO.	CONTRACT/ACTIVITY ITEM	DATE CTR/ATR/PCO SUBMITTED	SUBMITTED AMOUNT	CTR/ATR/PCO STATUS	DATE CTR/ATR/PCO APPROVED	APPROVED CTR/ATR/PCO AMOUNT	CMIC BTN/PCO #	PAY APP
Added MH grout Basin 5	1	1		1	GMP 1		\$ 21,700.00	APPROVED		\$ 21,700.00		
Raise MH to grade, adjust fence/rebuild	2	TBD		TBD	GMP2		\$ 4,912.12	APPROVED		\$ 4,912.12		
Tupper rd HDD install	3	TBD		TBD	GMP1		\$ 70,125.00	APPROVED		\$ 70,125.00		
tee liners/lateral	3	TBD		TBD	GMP1		\$ 56,500.00	APPROVED		\$ 56,500.00		
sandy community center lateral private reconstruct	3	TBD		TBD	GMP1		\$ 11,576.00	APPROVED		\$ 11,576.00		
unknown laterals	3	TBD		TBD	GMP2		\$ 13,451.72	APPROVED		\$ 13,451.72		
Submitted/In Review:							\$ 178,264.84		Approved:	\$ 178,264.84		



## Staff Report

---

**Meeting Date:** March 6, 2023  
**From** Jenny Coker, Public Works Director  
**SUBJECT:** Contract for Sandercock Reservoir Repairs

---

### **DECISION TO BE MADE:**

Whether to authorize the City Manager to sign an agreement with The Saunders Company for the Sandercock Reservoir Repair Project.

### **BACKGROUND / CONTEXT:**

The Sandercock reservoir was taken offline and inspected in 2022 in order to address a large leak of drinking water from the tank's floor. In coordination with Keller and Associates, the tank was inspected and a report was provided. In this report, Keller recommended fixing the leak around the location of the overflow pipe penetration as well as rehabilitating the floor and filling the voids in the center of the foundation support ring. While the tank is offline, other repairs to the roof and coatings will be performed. Outside of the tank, a new access platform will be constructed to improve safe operating practices at the tank.

This work was put out to bid Friday, February 3rd and bids were opened Friday, February 24th.

The low bidder for this project was The Saunders Company with a bid of \$775,500.00. The bid is balanced and the contractor is prepared to do the work. Included in this bid price is a \$30,000 contingency. This project has been forecasted at roughly this dollar figure and has been included in previous water system improvement cost estimates provided to the Council.

### **KEY CONSIDERATIONS / ANALYSIS:**

The contractor will make the required repairs to a critical piece of infrastructure which will make it more resilient. Additionally, this will stop a large leak and the associated loss of treated drinking water. Completion of this project will help improve the resiliency of the water system, especially in the upper zones. This project will be the first step toward shoring up our water system before improvements are made to Alder Creek and the new filtered water connection is made. The increased efficiency and reliability of this reservoir will help to reduce the City's risk as future projects are completed.

See the Keller report for more specific details.

### **RECOMMENDATION:**

Authorize the City Manager to sign an agreement with The Saunders Company for the Sandercock Reservoir Repairs project.

**BUDGETARY IMPACT:**

The proposed project, which totals \$775,500, is funded by a Business Oregon Loan. City of Sandy received notice from Business Oregon of the loan award on February 17, 2023, and is currently working through the loan contracting process.

**SUGGESTED MOTION LANGUAGE:**

"I move to accept the low bid of \$775,500 with The Saunders Company for the Sandercock Reservoir Repairs project."

**LIST OF ATTACHMENTS/EXHIBITS:**

- Complete bid package including contract documents and plan set.
- Bid Opening Summary
- Bid Tabulation
- Keller Report on the Sandercock Reservoir
- Business Oregon Loan Award Letter

Bid Opening Summary  
2/24/2023

2023 Sandercock Reservoir Repairs  
2:00 PM

Bidder	Signed	Bond	First Teir	Addendum	Bid
MJ Hughes	X	X	X	X	\$ 1,098,500.00
The Saunders Co	X	X	X	X	\$ 775,500.00

---

Apparent Low Bidder: Saunders Company(\$775,500.00)

---



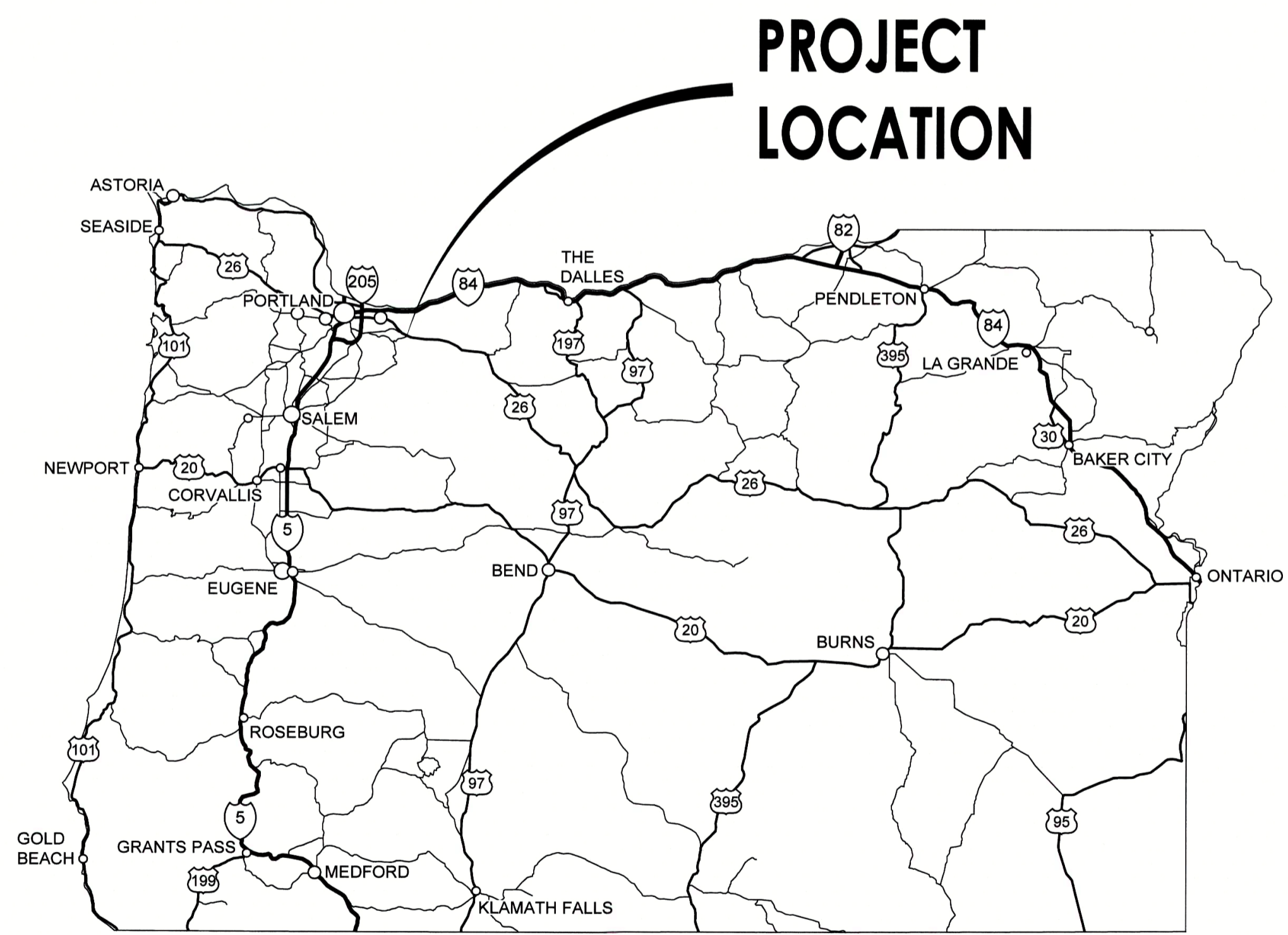
City of  
**SANDY, OREGON**  
**SANDERCOCK RESERVOIR REPAIRS**

JANUARY 2023

**LIST OF DRAWINGS**

- G-001 - COVER SHEET
- S-501 - STRUCTURAL DETAILS
- S-502 - STRUCTURAL DETAILS
- S-503 - STRUCTURAL DETAILS
- S-504 - STRUCTURAL DETAILS
- S-505 - STRUCTURAL DETAILS
- S-506 - STRUCTURAL DETAILS

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 PRINTED: 2/1/2023 10:51 AM



**A1** LOCATION MAP  
 N.T.S.

**OWNER**  
 CITY OF SANDY  
 44300 SANDERCOCK LN.  
 SANDY, OR 97055  
 CONTACT: JENNY COKER, P.E.  
 PHONE: 503-668-6927  
 EMAIL: jcoker@ci.sandy.or.us

**CIVIL ENGINEER**  
 KELLER ASSOCIATES, INC.  
 100 EAST BOWER ST., SUITE 110  
 MERIDIAN, ID 83642  
 CONTACT: JASON KING, P.E.  
 PHONE: 208.288.1992  
 EMAIL: jking@kellerassociates.com



**A3** VICINITY MAP  
 N.T.S.



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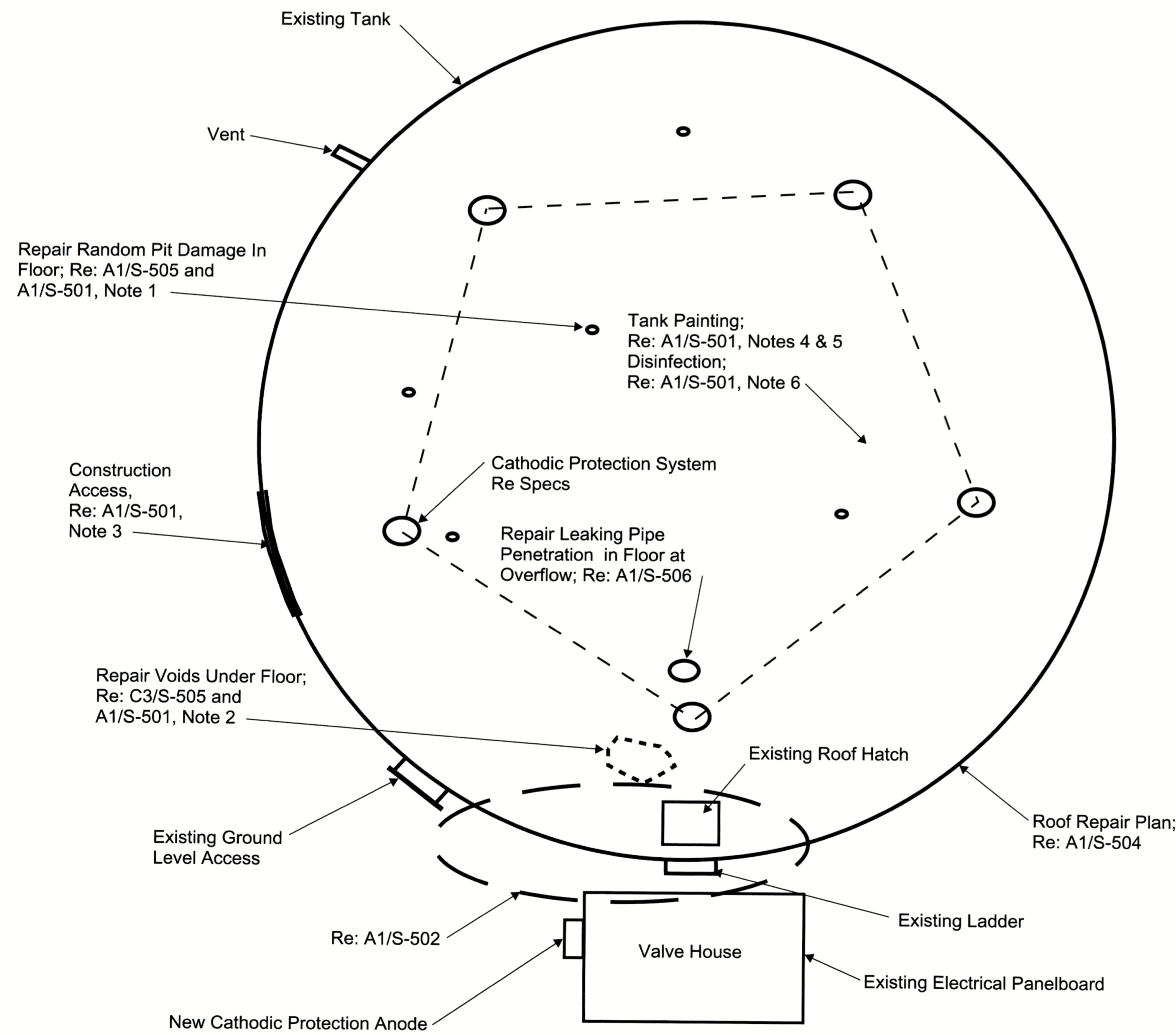
**SANDERCOCK RESERVOIR REPAIR**  
**COVER SHEET**

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SHEET NO. G-001	

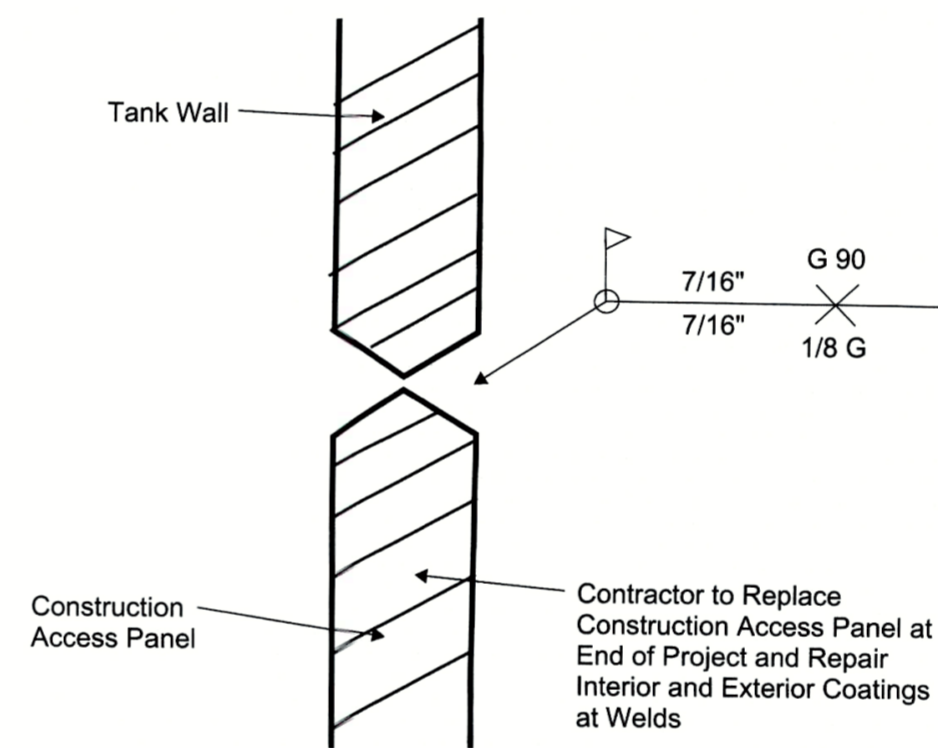


**Tank Repair Notes**

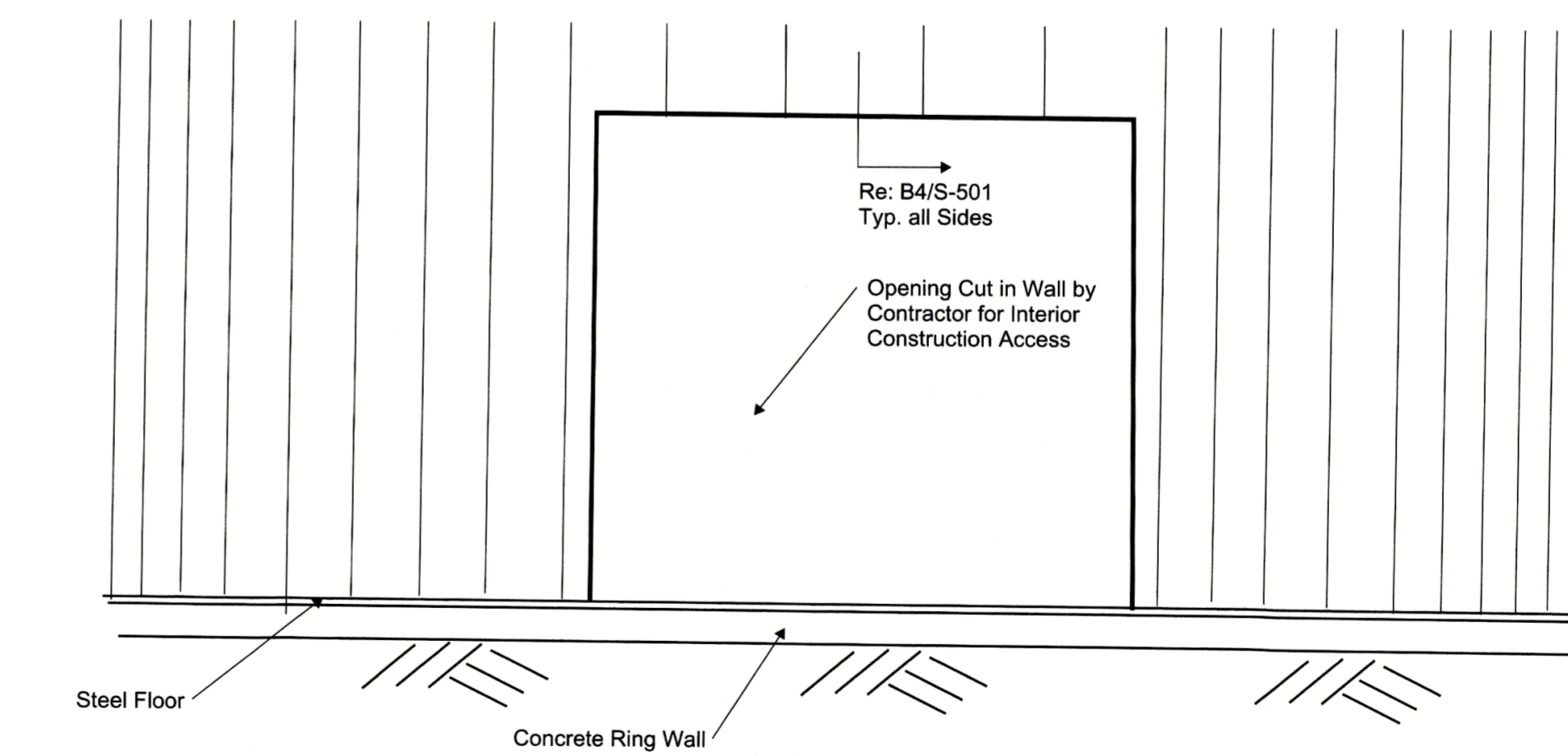
- 1 Pit damage is shown graphically and has not been located in field. The contractor is to locate the pit damage by visual inspection at the time of implementing the repair work.
- 2 The underfloor void areas have not been located in the field. The contractor is to cut inspection holes 1 foot inside the perimeter wall at 10' OC and on a 10 feet by 10 feet grid throughout the floor to locate the voids. Most steel tank floors do not completely contact the ground at all locations; voids with depths of less than 0.65 inches below the bottom of floor do not require repair. Follow Detail A4/S-505 and B4/S-505 to repair the voids. Follow Detail C1/S-505 to repair the inspection holes.
- 3 The contractor may cut an opening in the side of the tank at ground level for access to the inside of the tank during construction. The contractor must replace the access panel and restore the interior and exterior coating at the end of construction; Re: A4/S-501 and B4/S-501.
- 4 Paint tank exterior to repair paint damage due to other repair work done by the contractor on the tank including paint damage due to welding. Refer to Specifications for old paint removal, surface preparation and painting requirements.
- 5 Paint tank interior including (1) entire floor and riser pipes, (2) top 12 feet of the walls completely around tank, (3) underside of roof plates including rafters, (4) the entire center column, (5) intermediate rafter braces from the center column to rafters, (6) damage to the interior paint due to exterior welding. Refer to Specifications for old paint removal, surface preparation and painting requirements.
- 6 Clean and disinfect interior of tank at completion of work. Refer to Specifications for disinfection requirements.



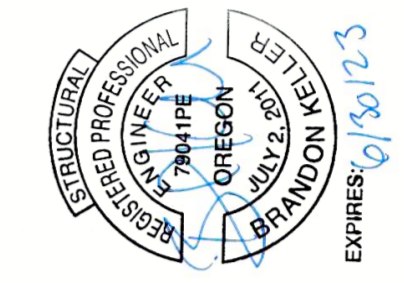
**A1 TANK REPAIR PLAN**  
N.T.S.



**B4 CONSTRUCTION PANEL REPLACEMENT**  
N.T.S.



**A4 CONSTRUCTION ACCESS PANEL**  
N.T.S.



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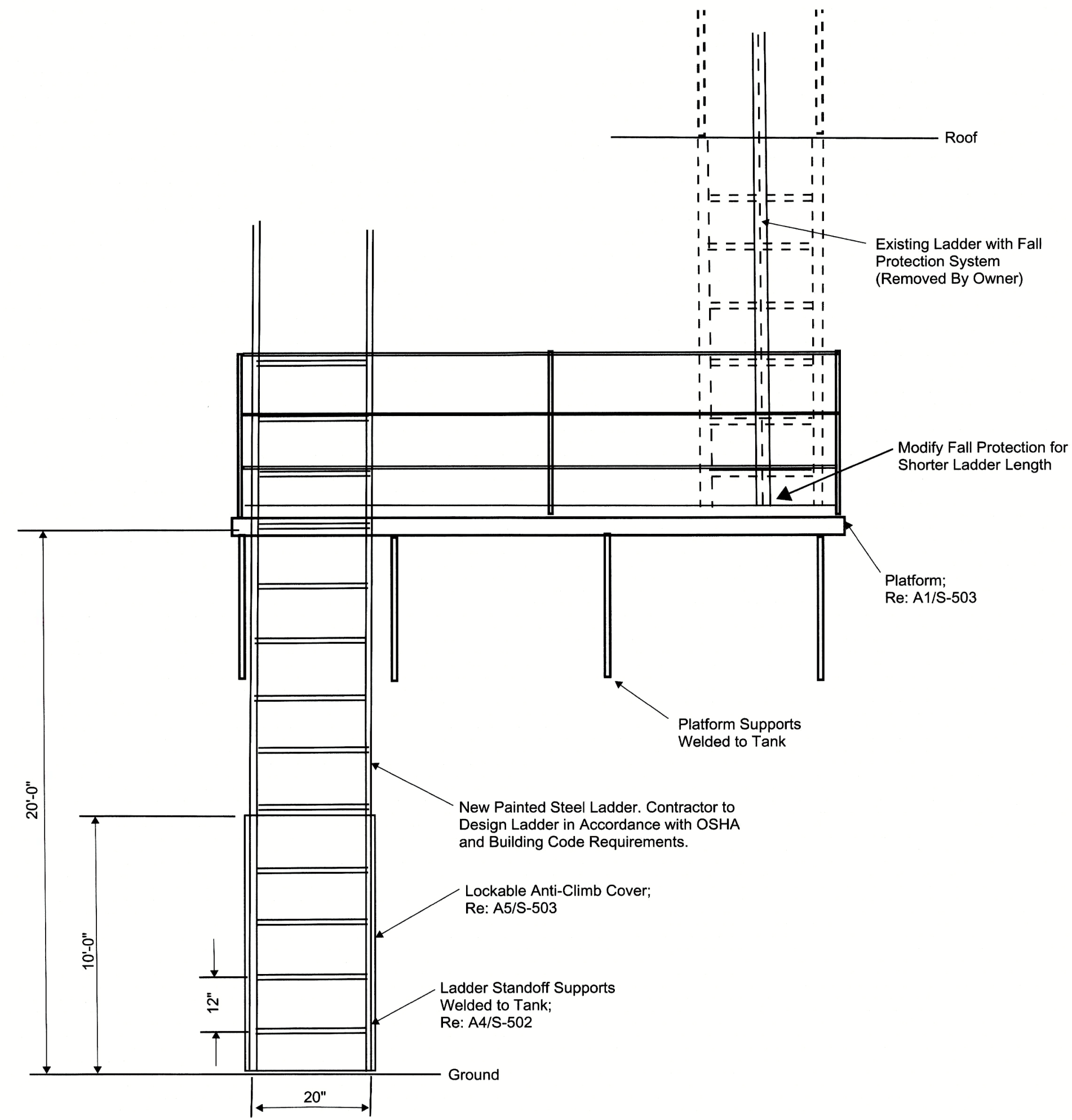
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**STRUCTURAL DETAILS**

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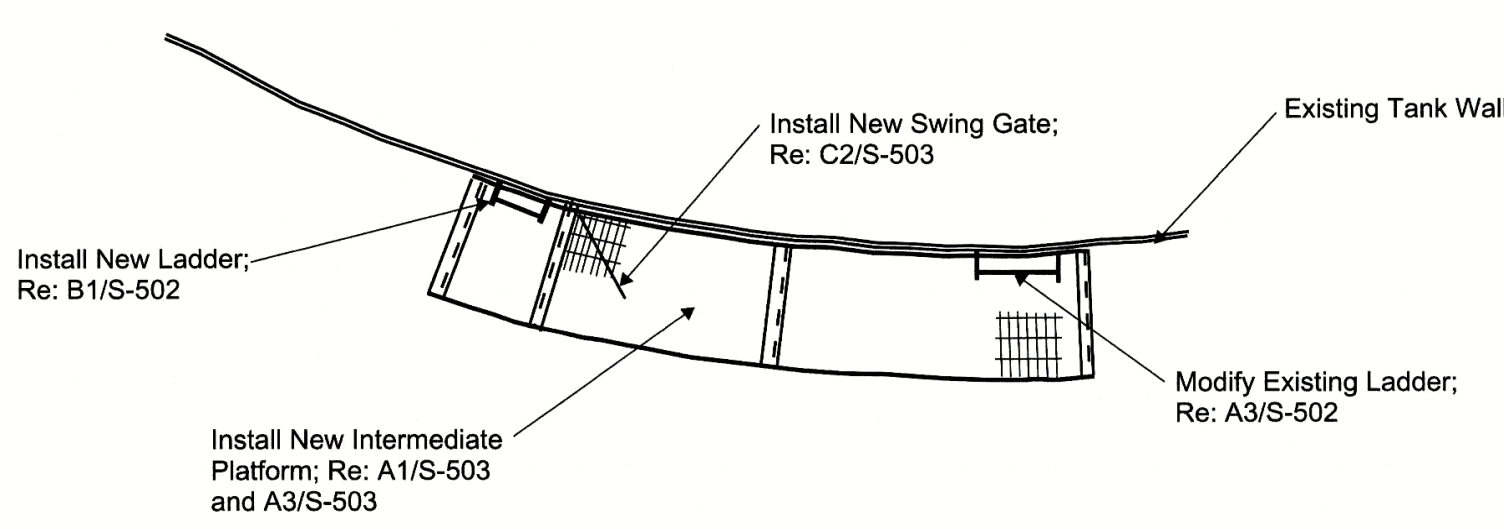
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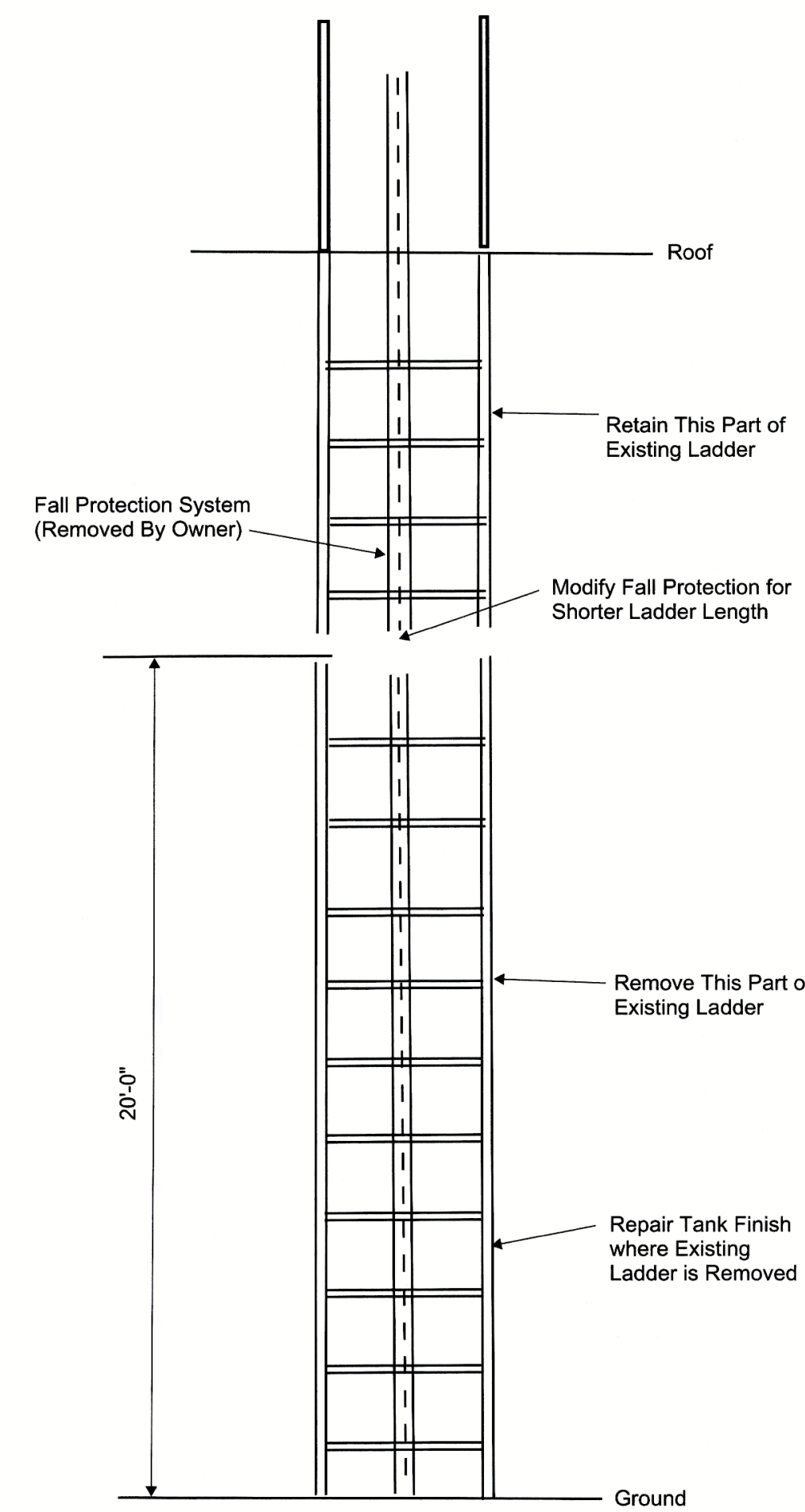
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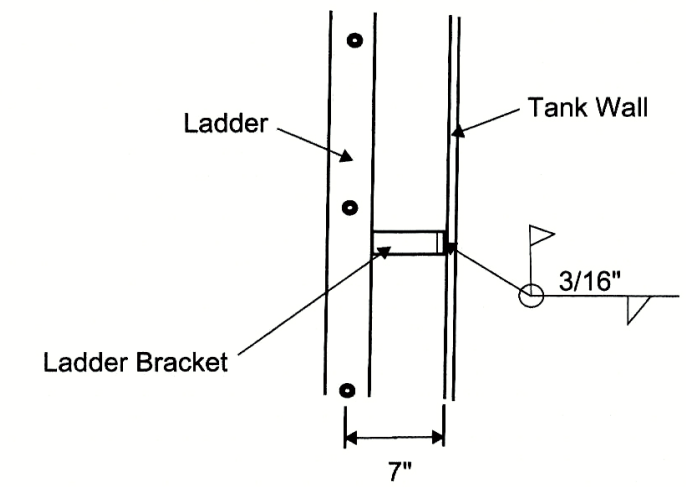
**B1** LADDER  
N.T.S.



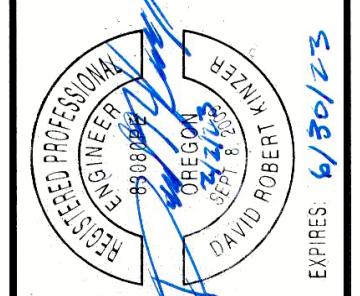
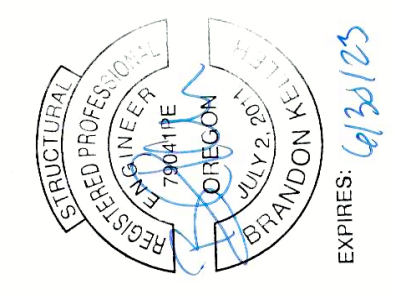
**A1** ENLARGED TANK LADDER PLAN  
N.T.S.



**A3** EXISTING LADDER MODIFICATION  
N.T.S.



**A4** LADDER ATTACHMENT  
N.T.S.



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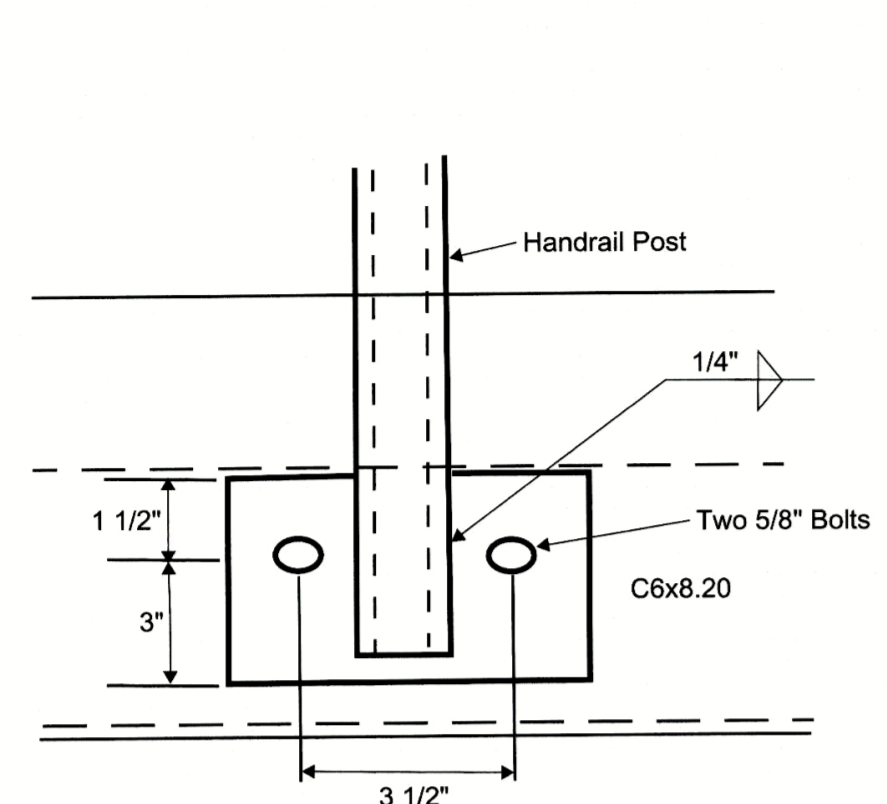


**SANDERCOCK RESERVOIR REPAIR**  
**STRUCTURAL DETAILS**

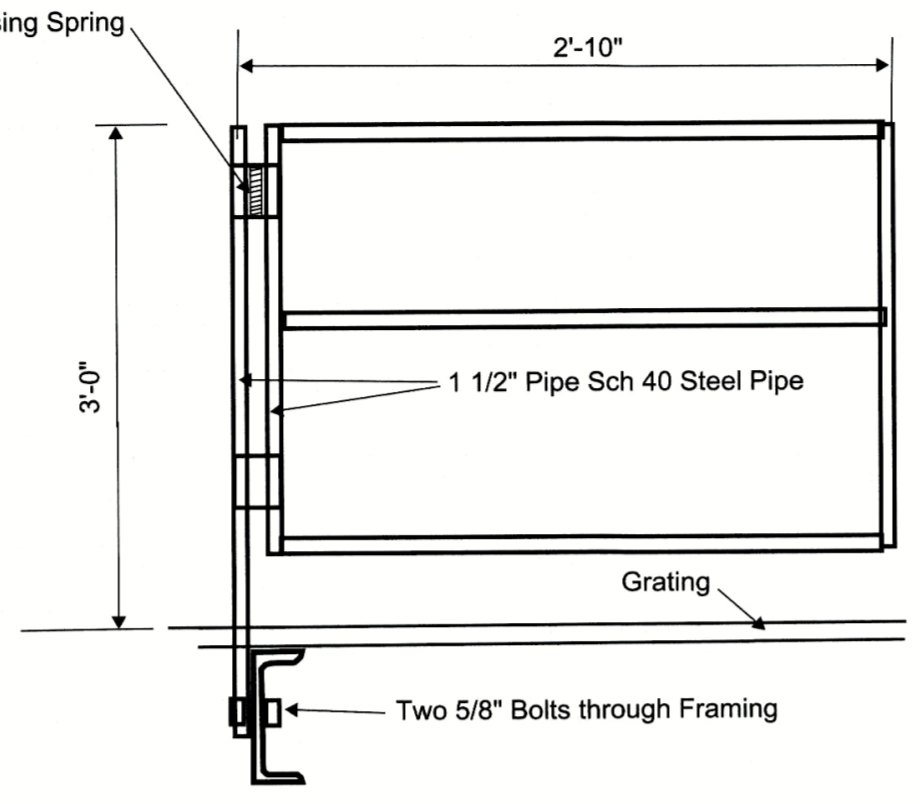
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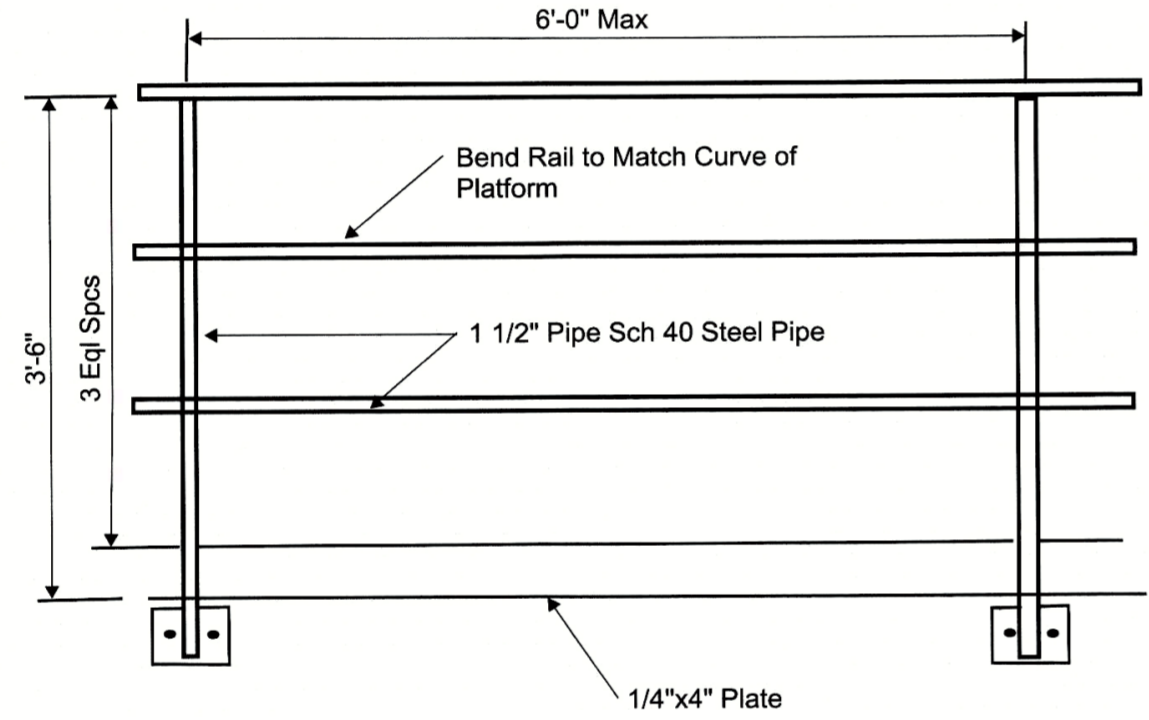
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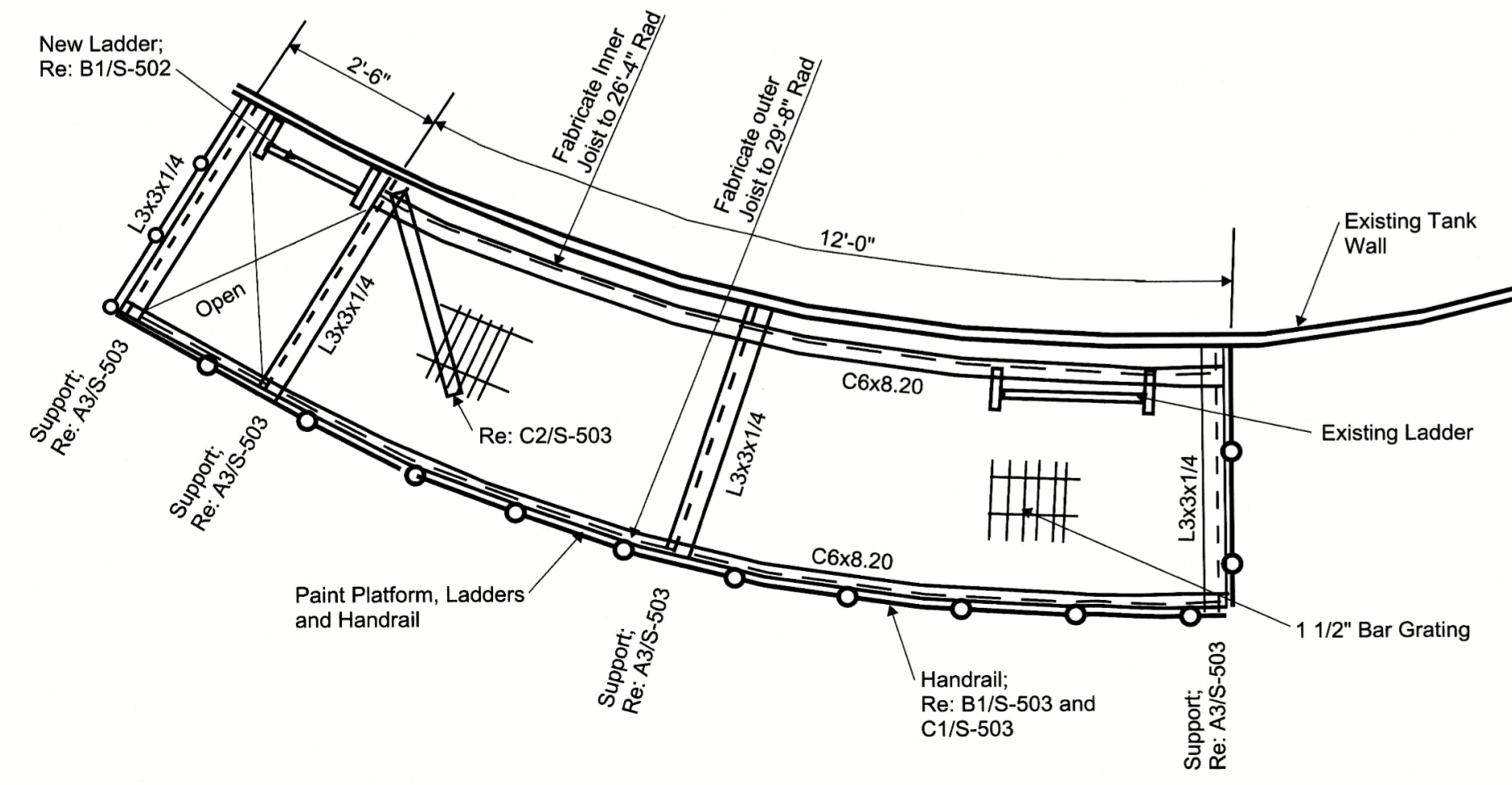
**C1** HANDRAIL POST DETAIL  
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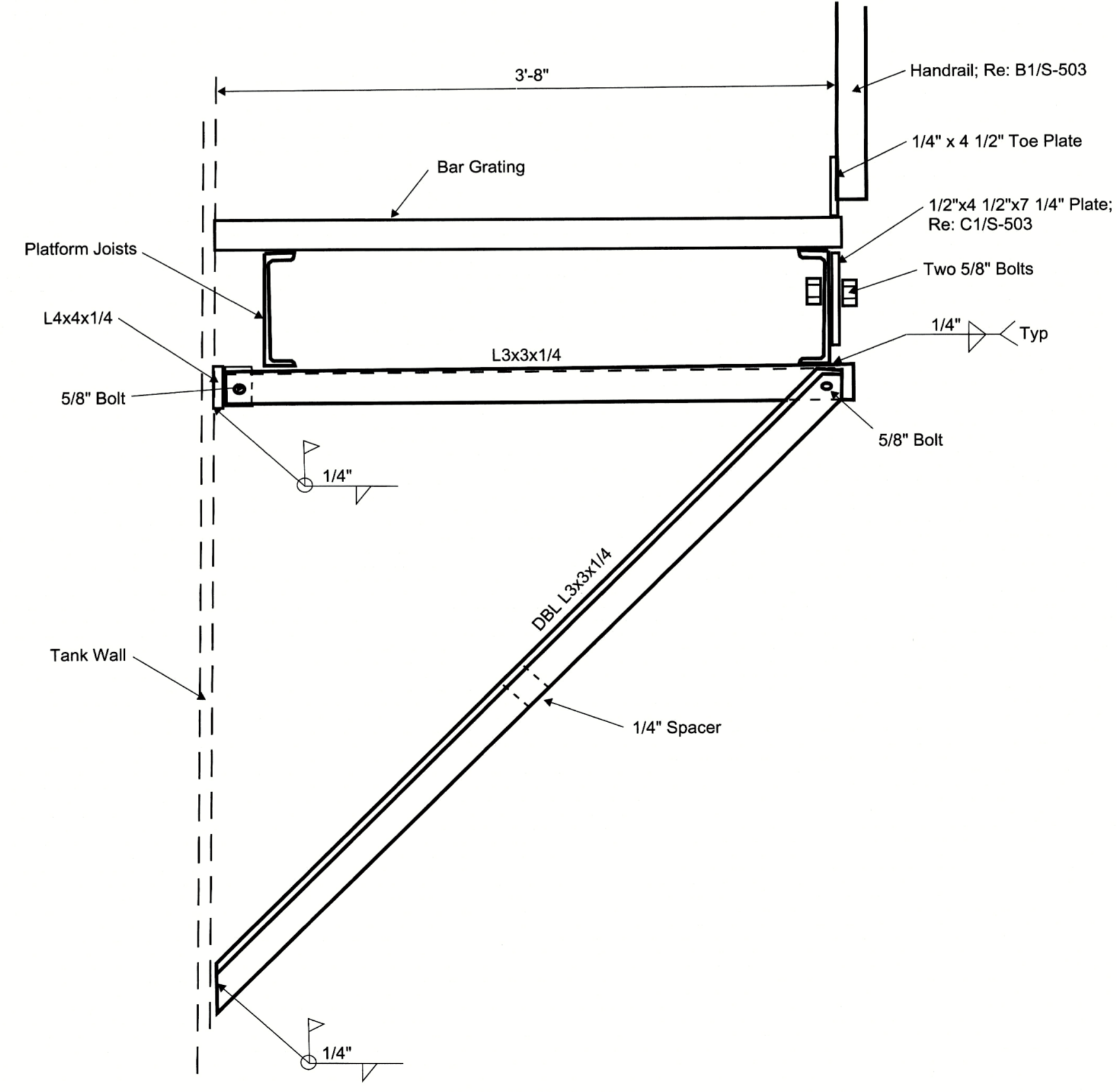
**C2** SWING GATE  
N.T.S.



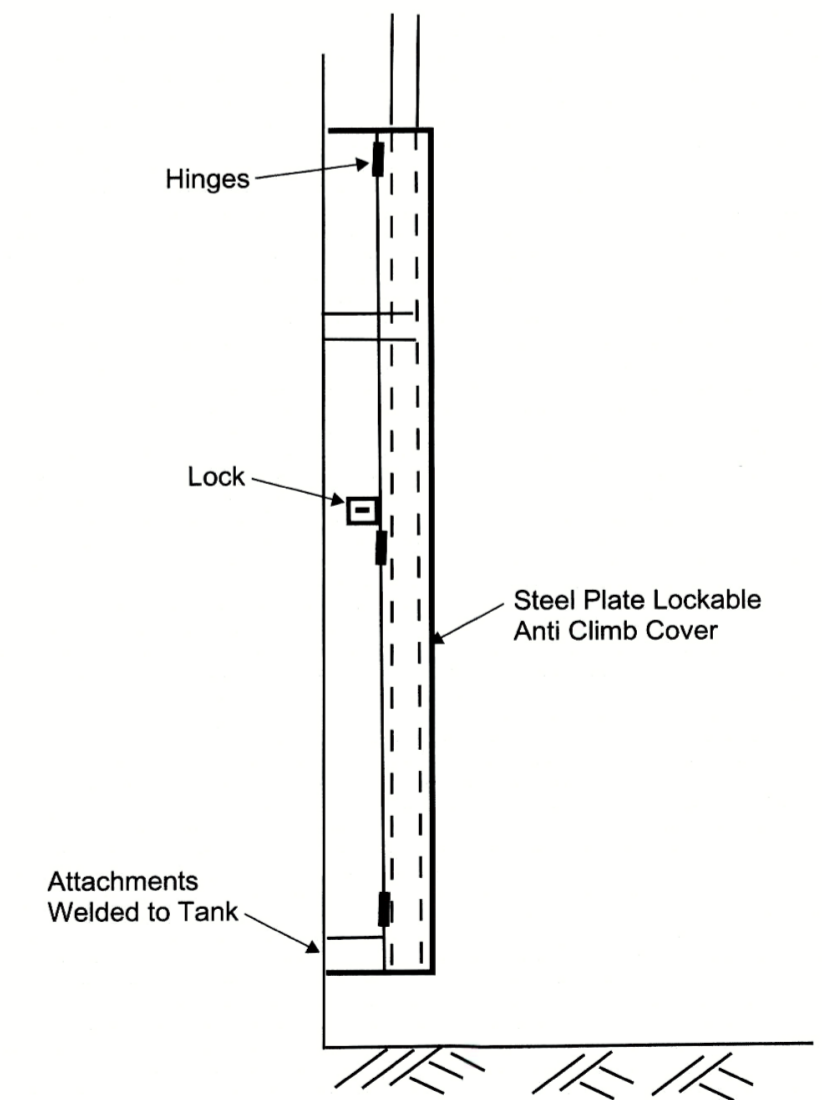
**B1** HANDRAIL  
N.T.S.



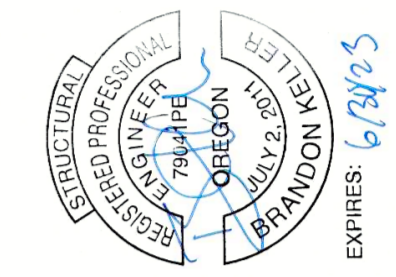
**A1** PLATFORM PLAN  
N.T.S.



**A3** NEW PLATFORM SUPPORT  
N.T.S.



**A5** LADDER ANTI-CLIMB COVER  
N.T.S.



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**SANDERCOCK RESERVOIR REPAIR**  
**STRUCTURAL DETAILS**

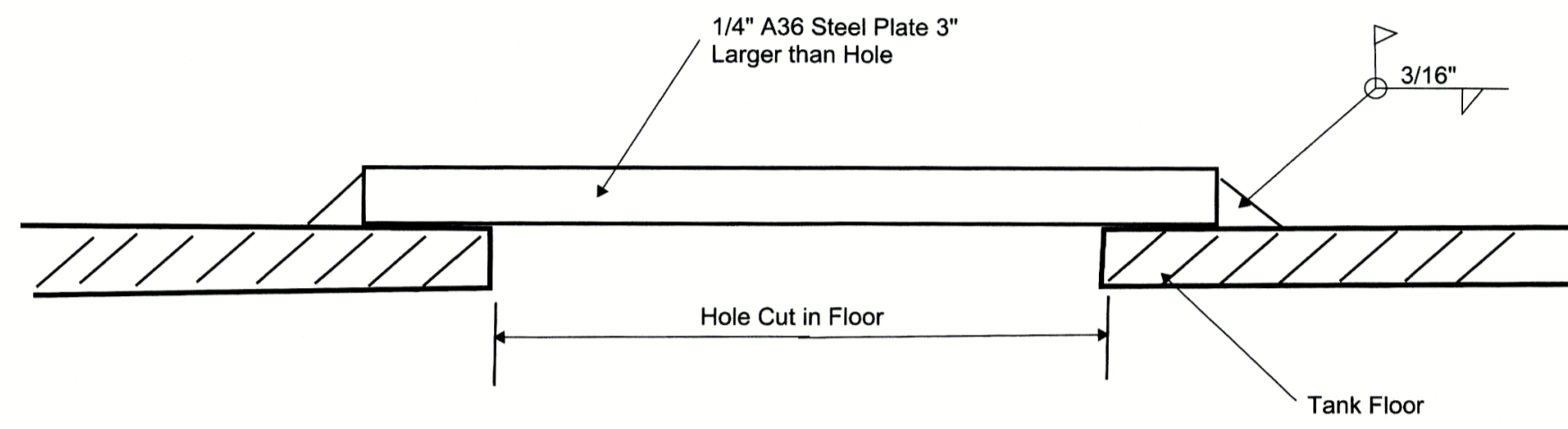
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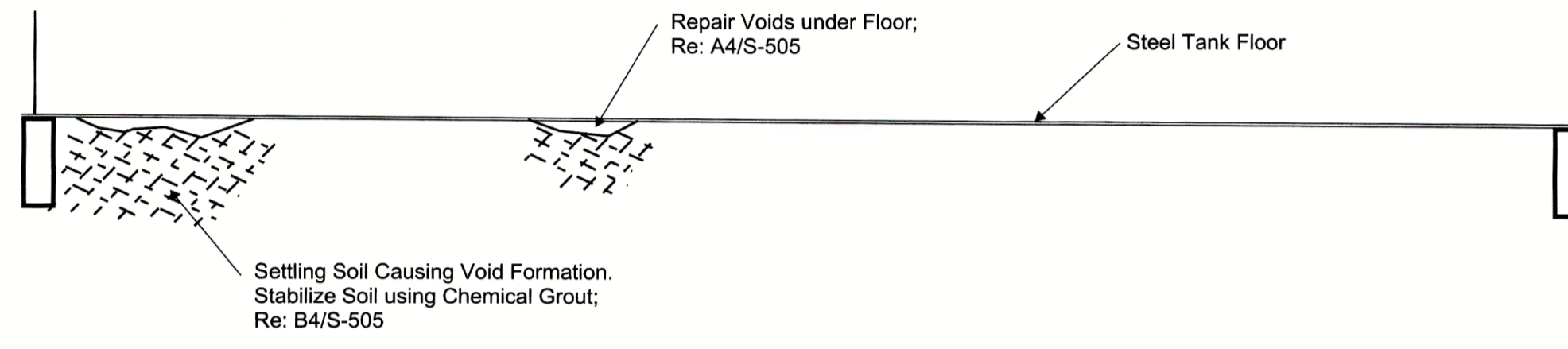




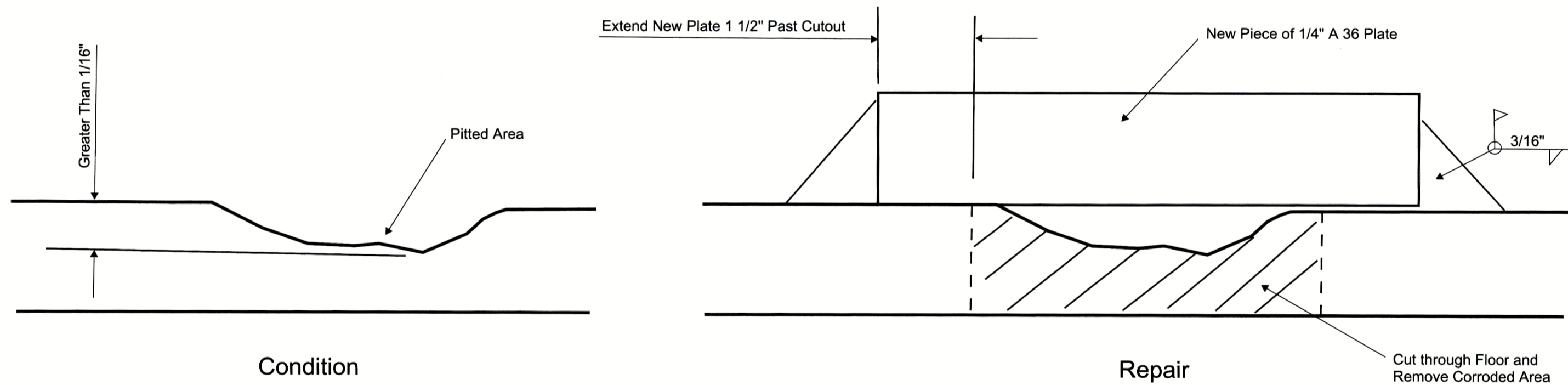
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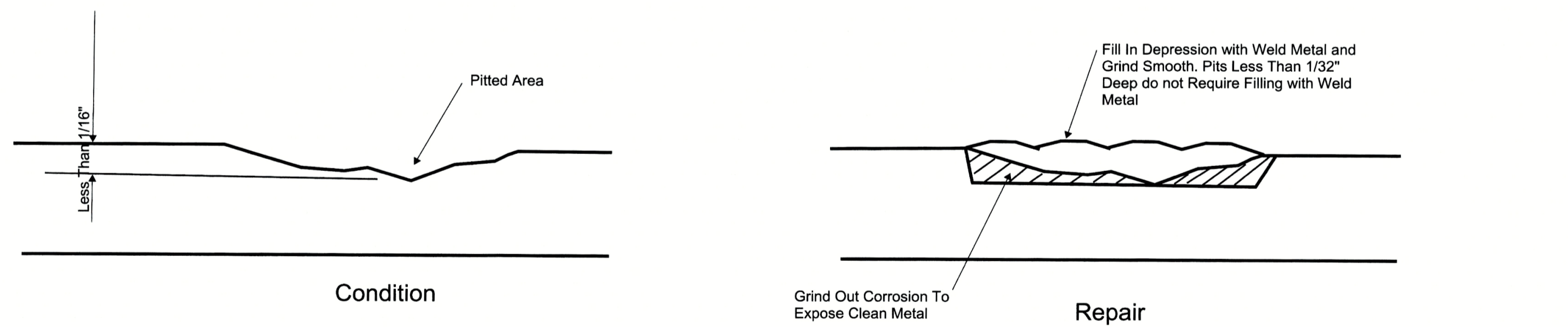
**C1** GROUTING HOLE REPAIR  
N.T.S.



**C3** FLOOR VOIDS  
N.T.S.

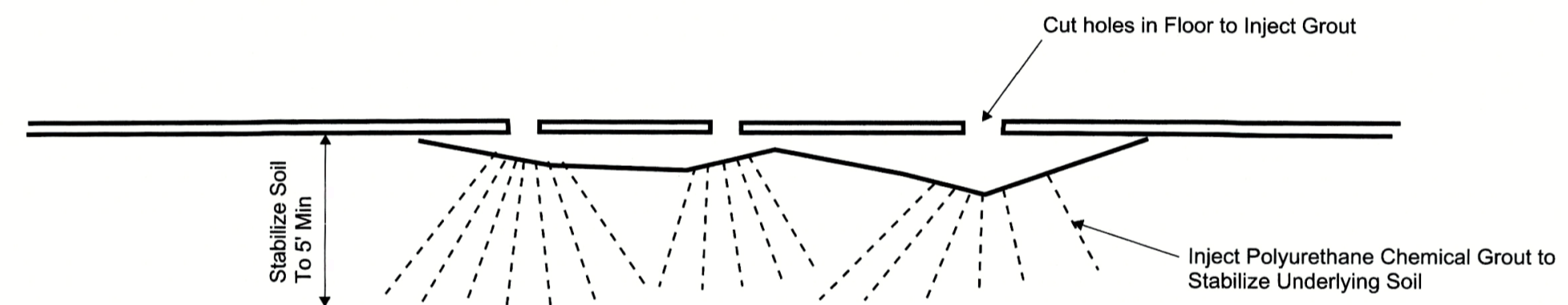


Pits Greater Than 1/16" Deep

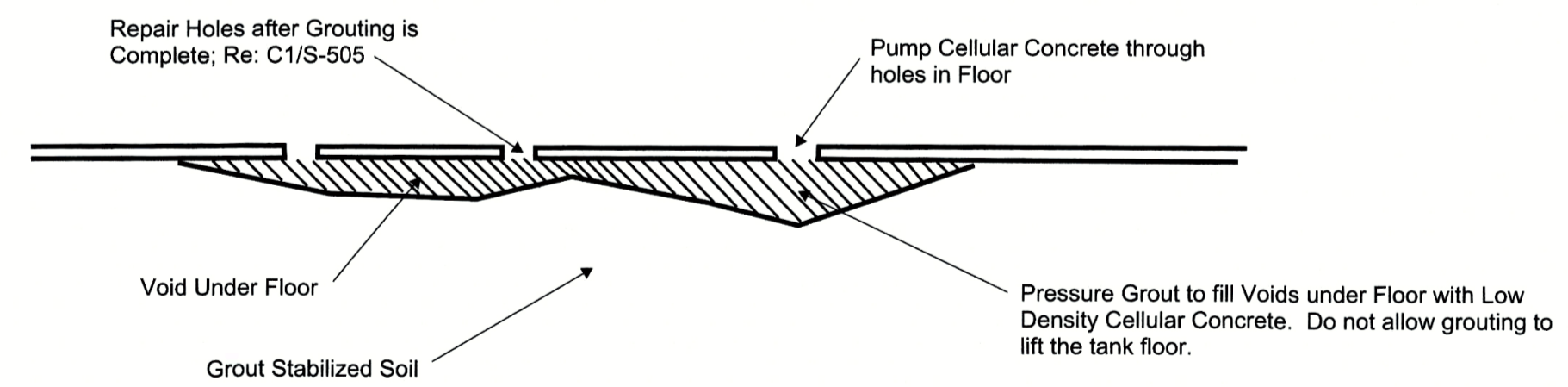


Pits Less Than 1/16" Deep

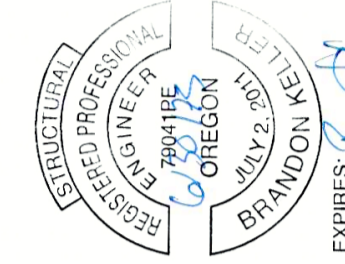
**A1** FLOOR PIT DAMAGE REPAIR  
N.T.S.



**B4** SOIL SETTLEMENT REPAIR  
N.T.S.



**A4** UNDERFLOOR VOID REPAIR  
N.T.S.



**KELLER ASSOCIATES**  
 2485 Commercial St., Suite 210  
 Salem, Oregon 97301  
 (503) 364-2002



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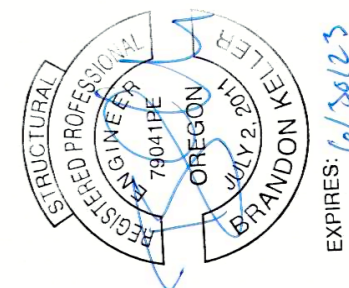
City of  
**SANDY OREGON**

SANDERCOCK RESERVOIR REPAIR

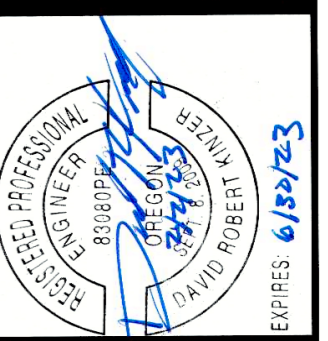
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SHEET NO. <b>S-505</b>	





**KELLER ASSOCIATES**  
 245 Commercial St., SE, Suite 210  
 Salem, Oregon 97301  
 (503) 364-2002



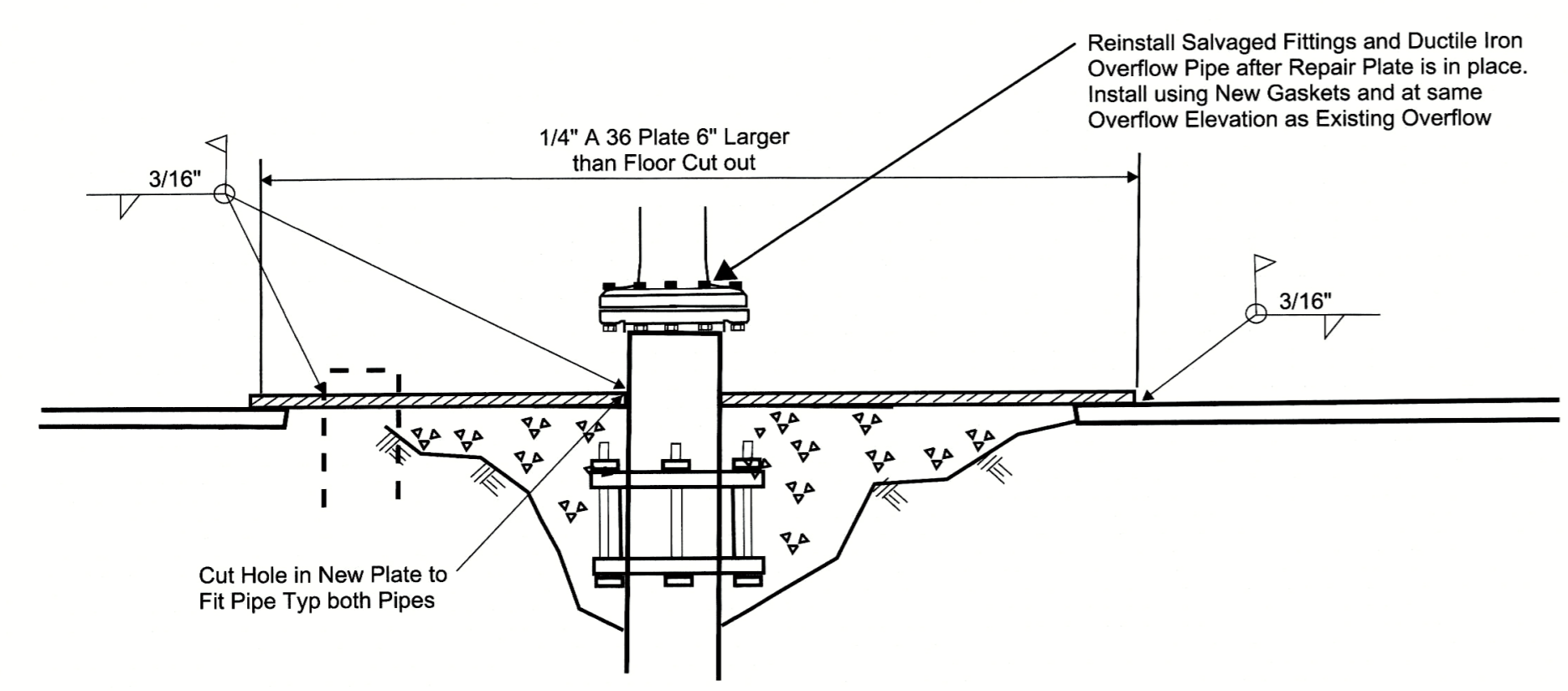
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City of **SANDY OREGON**

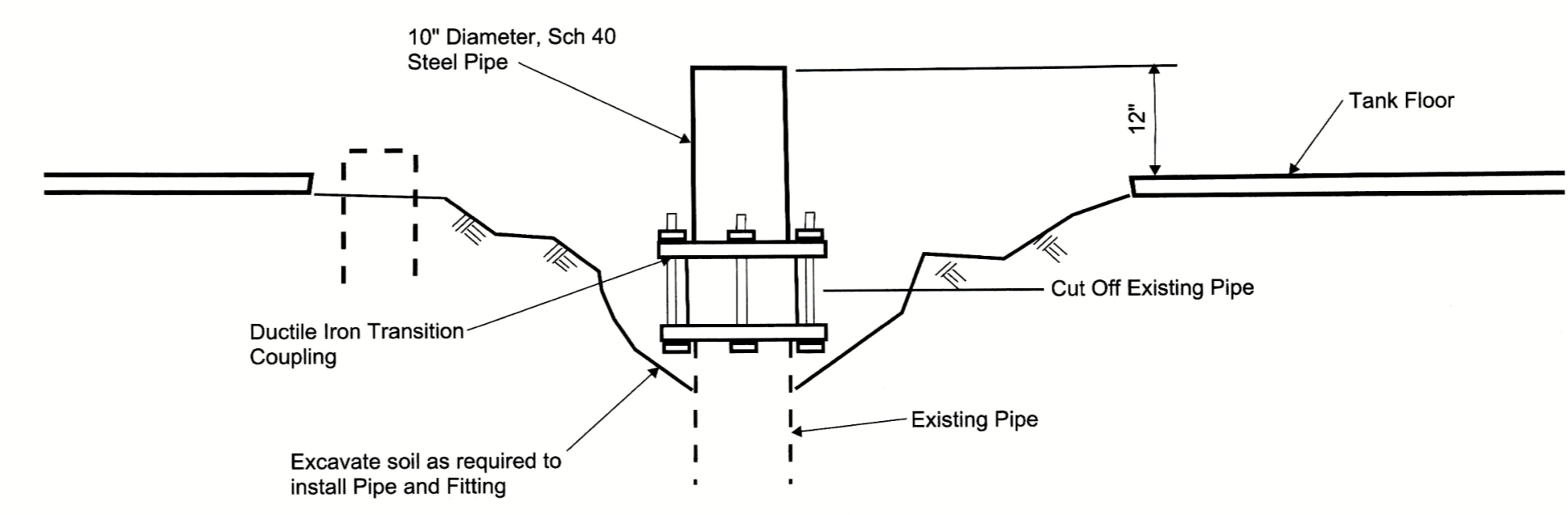
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**STRUCTURAL DETAILS**

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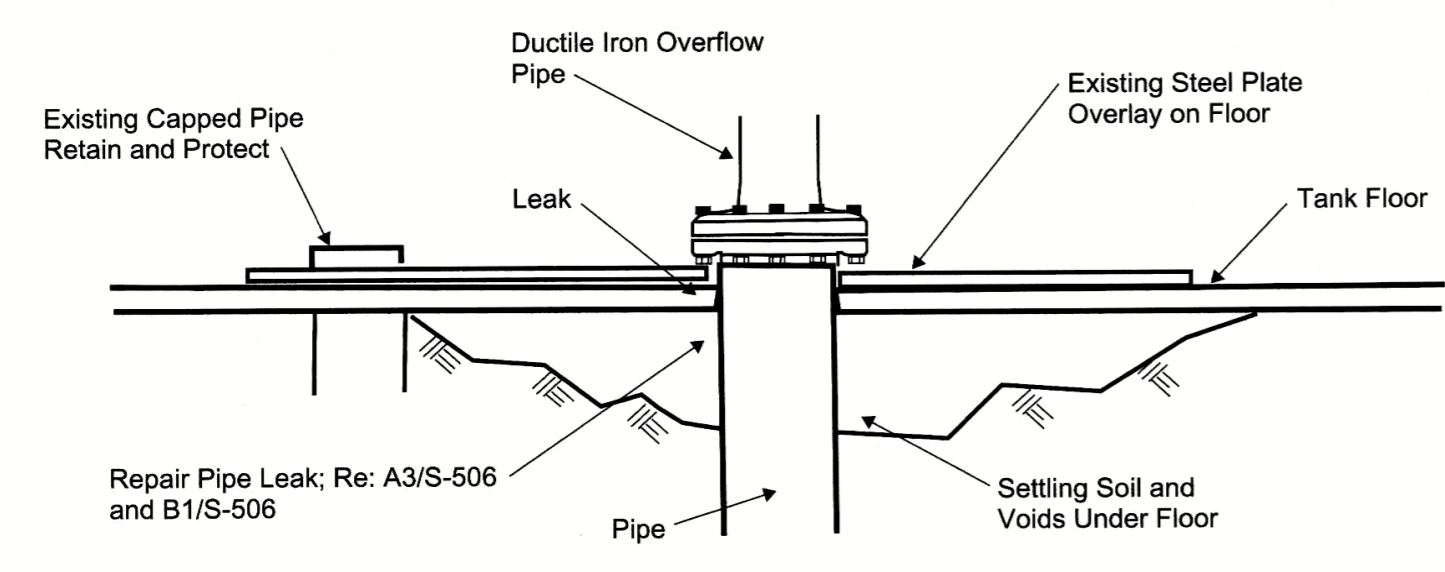
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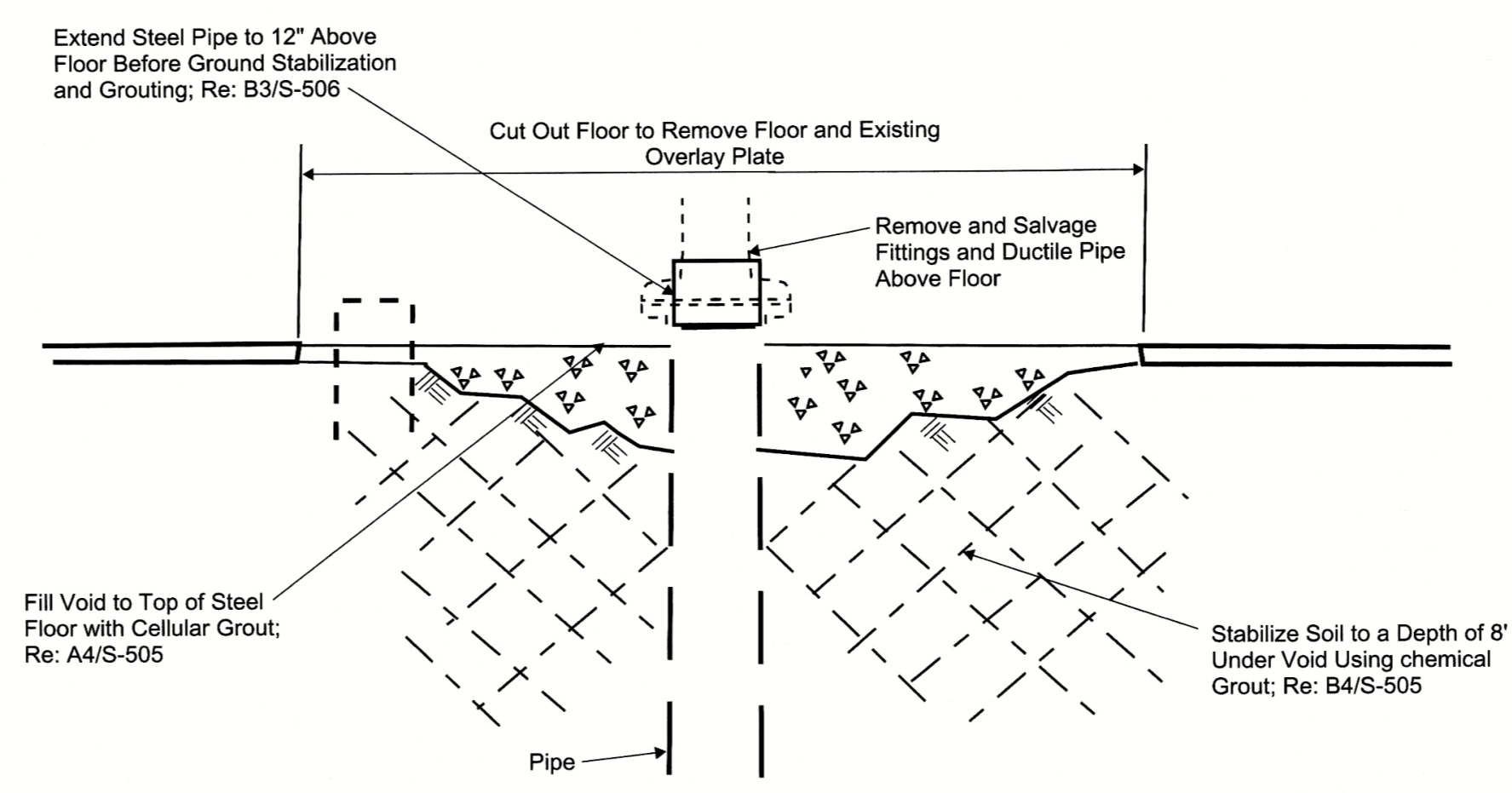
**B1** PIPE LEAK REPAIR FINISHING  
 N.T.S.



**B3** OVERFLOW PIPE EXTENSION  
 N.T.S.



**A1** PIPE LEAK  
 N.T.S.



**A3** PIPE LEAK REPAIR  
 N.T.S.

FEBRUARY 2023  
PROJECT NO. 222200-000

**CITY OF SANDY**  
**BIDDING, CONTRACT DOCUMENTS, AND**  
**TECHNICAL SPECIFICATIONS**  
Volume 1 of 2

**Sandercock**  
**Reservoir Repairs**



PREPARED BY



100 E Bower St., Suite 110  
Meridian, ID 83642  
(208) 288-1992

PREPARED FOR



39250 Pioneer Blvd  
Sandy, OR 97055  
(503) 668-8714



**TABLE OF CONTENTS**

**VOLUME 1**

**DIVISION 00: BIDDING REQUIREMENTS, CONTRACT FORMS, & CONDITIONS OF THE CONTRACT**

BIDDING DOCUMENTS

00100	Advertisement for Bids
C-200	Instructions to Bidders
C-410	Bid Form
C-430	Bid Bond
00440	Name of Subcontractors Form

CONTRACT FORMS

C-510	Notice of Award
C-520	Agreement between Owner and Contractor
C-610	Performance Bond
C-615	Payment Bond
C-550	Notice to Proceed
C-620	Application for Payment
C-940	Work Change Directive
C-941	Change Order
C-942	Field Order
C-625	Certificate of Substantial Completion

CONDITIONS OF THE CONTRACT

C-700	Standard General Conditions of the Construction Contract
C-800	Supplementary Conditions

**TECHNICAL SPECIFICATIONS**

DIVISION 01 - GENERAL REQUIREMENTS

01110	Summary of Work
01200	Measurement & Payment
01300	Submittals
01375	Reference Standards
01450	Special Inspections
01500	Temporary Construct Facilities
01560	Project Signs
01700	Contract Closeout

DIVISION 02 – SITEWORK

02320	Soil Stabilization
02830	Paint Removal
02900	Disinfection Water Utility Storage Tank

DIVISION 03 - CONCRETE

03520	Lightweight Cellular Concrete
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DIVISION 05 - METALS

05500	Metal Fabrications
05520	Metal Railings
05530	Metal Grating and Floor Plates

CITY OF SANDY  
SANDERCOCK RESERVOIR REPAIRS

222200-000

DIVISION 09 - FINISHES

09980 Steel Water Storage Tank Painting

DIVISION 15 - MECHANICAL

15080 Steel Process Pipe

15713 Cathodic Protection



SECTION 00100 - ADVERTISEMENT FOR BIDS

**ADVERTISEMENT FOR BIDS FROM PREQUALIFIED CONTRACTORS**

Separate sealed Bids for City of Sandy Sandercock Reservoir Repairs project will be received until 2:00 p.m. Local Pacific Time on **Friday, February 24, 2023**, by the City of Sandy (Owner) at the following location:

Public Works (City Hall)  
39250 Pioneer Blvd.  
Sandy, OR 97055

Bid proposal documents shall be provided in a sealed envelope or container prominently marked on the outside "Bid Documents Enclosed." The bids will be publicly opened and read at the City Public Works Office, shortly after 2:00 p.m. Local Pacific Time. The Bidder shall guarantee Bid Pricing for a period of 60 calendar days from the date of proposal opening.

The project consists of repairs to the existing Sandercock Reservoir. The existing reservoir is a 0.5-million-gallon welded steel tank with a ring foundation. The tank has a diameter of 52 feet and a height of 32 feet. Project includes cellular/chemical grout to repair voids below the floor; preparation and interior coating of the floor, roof/rafters, and the portion of the sidewall above water level; cathodic protection; repairs to roof rafters; repair of existing leak near overflow piping; new exterior ladder and raised platform; and appurtenant work.

This project was funded in part with a financial award from the Special Public Works Fund, funded by the Oregon State Lottery and administered by the Oregon Infrastructure Finance Authority.

This project is public work and is subject to Oregon prevailing wage rates in accordance with ORS 279C.800 to 279C.870. In accordance with Executive Order 11246 (Equal Employment), as amended, the Contractor shall not discriminate on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin in the performance of this contract.

A mandatory pre-bid conference shall be held onsite at the Sandercock Reservoir (44300 Sandercock Lane, Sandy, OR 97055) at **1:00 p.m.** on **Wednesday, February 15, 2023**. Representatives of Keller Associates and the City will be present to discuss the project.

Bidding documents and drawings may be purchased electronically from Keller's website (<https://goo.gl/VWGYy7>) through Quest CDN for a non-refundable fee of \$22.00. Prospective bidders shall purchase digital documents from Quest CDN to receive addenda postings. Updated plan holders list may also be obtained from Quest CDN.

All Bidders shall submit qualifications of the Bidder to demonstrate that the Bidder is a Responsible Bidder as defined in ORS 279C.375 for the performance of the work outlined in the Bid Documents. The information shall be submitted with the Bid and contain items listed in Section C-200 Instructions to Bidders.

The Owner reserves the right to reject any or all Bid Proposals, to waive any formality in the Bidding Contract Documents, and to make selection to the lowest responsive, responsible, and qualified Bidder as it may best serve the interest of the Owner.

Questions shall be referred to the Project Engineer, Mr. Jason King, P.E., Keller Associates, Inc. at (208) 288-1992.

**INSTRUCTIONS TO BIDDERS**

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**ARTICLE 1 – DEFINED TERMS**

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

**ARTICLE 2 – COPIES OF BIDDING DOCUMENTS**

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

**ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

3.01 All Bidders shall submit qualifications of the Bidder to demonstrate that the Bidder is a Responsible Bidder as defined in ORS 279C.375 for the performance of the work outlined in the Bid Documents. The form of the summary submitted is the responsibility of the Bidder; however it shall generally contain the information below. The information shall be submitted with the Bid and contain items listed under “Minimum Qualifications”. If the information provided by a Bidder is incomplete or does not contain the required information, the OWNER will not be able to make a positive determination that the Bidder is Responsible and the Bid will be determined to be not Responsive. The Owner does not require confidential financial or planning strategies regarding the bidder’s business operation to make this determination.

3.02 Minimum Qualifications – Contractors shall provide with the Bid a statement of qualification with information that verifies the items below are met.

A. Contractor shall, at the time of bid, hold a current Oregon contractor’s license in a classification appropriate to the project.

B. Contractor shall have \$2 million minimum available bonding capacity at the time of bidding.

C. Contractor shall provide the following documentation:

Similar Experience – Contractor and/or subcontractors shall have significant experience in the construction and repair of water storage reservoirs, including coating, repairing of floor voids, and tank roof rafter repair. Provide a minimum of three (3) similar projects, completed in the past seven (7) years. The list shall include the following information, at a minimum:

- Name of project and year completed.
- Dollar value of work performed.
- Owner – include name, address, and telephone number.

- Brief description of project including whether it was completed on time (if not, explain) and if any claims or disputes were filed (if yes, explain).
- D. Contractor shall have a proven track record of completed projects without unresolved, unrealistic, and unnecessary claims. Outstanding or frequent claims resulting in arbitration, mediation, or litigation may be grounds for disqualification.
- 3.03 Qualification Evaluation
- A. Statements of qualification will be evaluated based on meeting the preceding minimum qualifications. The Owner reserves the right to award the Contract to the bidder that meets the determination of Responsibility as defined in ORS 279C.375 and as determined by the Owner using the information provided by the Bidder.

**ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE**

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
1. The Supplementary Conditions identify:
    - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
    - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
    - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
    - d. Technical Data contained in such reports and drawings.
  2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
  3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- B. In the course of conducting such examinations, investigations, explorations, tests, and studies, Bidder shall not disturb any ongoing operations at the Site.
- C. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to

examine such contracts (other than portions thereof related to price and other confidential matters), if any.

**ARTICLE 5 – BIDDER’S REPRESENTATIONS**

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without

exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

**ARTICLE 6 – PRE-BID CONFERENCE**

- 6.01 A mandatory pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are required to attend and participate in the conference. Bidders not in attendance at the pre-Bid conference will be considered non-responsive. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

**ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. The Addenda will only be available at the QuestCDN site and bidders are cautioned to continuously monitor the site for Addenda. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.
- 7.03 Questions shall be referred to the Project Engineer, Jason King, P.E., Keller Associates, Inc. at 208-288-1992, or email [jking@kellerassociates.com](mailto:jking@kellerassociates.com).

**ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all additive bid items) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

**ARTICLE 9 – CONTRACT TIMES**

- 9.01 The number of days within which, or the dates by which, milestones are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

**ARTICLE 10 – LIQUIDATED DAMAGES**

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

**ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 10 days prior to the date for receipt of Bids. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

**ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for additional portions of the Work not on the Bidders List.



If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

#### **ARTICLE 13 – PREPARATION OF BID**

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
  - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.04 A Bid by an individual shall show the Bidder's name and official address.
- 13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.06 All names shall be printed in ink below the signatures.
- 13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

- 13.09 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

**ARTICLE 14 – BASIS OF BID**

14.01 Base Bid

- A. Bidders shall submit a Bid on a lump sum basis for Bid Items #1 and #4 and unit price basis for Bid Items #2 and #3 as described in the Bidding Documents and as provided in the Bid Form. Refer to C-410 - Bid Form and Section 01200 – Measurement and Payment, of the specifications.

**ARTICLE 15 – SUBMITTAL OF BID**

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to City of Sandy, Public Works, 39250 Pioneer Blvd., Sandy, OR 97055.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

**ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID**

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

**ARTICLE 17 – OPENING OF BIDS**

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and additive bid items, if any, will be made available to Bidders after the opening of Bids.

**ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

**ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work. Any bidder who wishes to protest the rejection of their bid proposal, or the waiver of a bid irregularity of an apparent low bid, shall submit a protest in writing to the Owner within two working days of the bid opening.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider only the bids of those Contractors who meet the requirements of Article 3.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.
- 19.06 **Basis of Award.** The Contract consists of the Base Bid. The Contractor with the lowest costs for the Base Bid will be considered the low Bidder. The Owner reserves the right to make selection to the lowest responsive, responsible, and qualified Bidder as defined in ORS 279C.375.

**ARTICLE 20 – BONDS AND INSURANCE**

- 20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

**ARTICLE 21 – SIGNING OF AGREEMENT**

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

**ARTICLE 22 – WAGE RATE REQUIREMENTS**

22.01 The prevailing wage rates of the Department of Labor do apply to this project. The Labor Standards Provisions found in ORS 279C.800 to 279C.870 apply to this project. If the contract cost is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act also apply.

**BID FORM**

**PROJECT IDENTIFICATION: City of Sandy, Sandercock Reservoir Repairs**

The Project shall include all Work as defined in the Contract Documents & Specification and Drawings; a summary of the Work included in the Base Bid is as follows (also see Section 01110 – Advertisement for Bids):

**Base Bid.** Work includes repairs to the existing Sandercock Reservoir. Project involves repairs to the floor, roof rafters, overflow pipe and associated leak, interior coating, cathodic protection, new exterior access ladder and platform, disinfection of tank/piping, and appurtenant work. Basis of bid is lump sum with the exception of unit price for the cellular and chemical grout required to fill voids below tank floor.

**CONTRACT IDENTIFICATION AND NUMBER:**

**City of Sandy, Oregon  
Sandercock Reservoir Repairs  
Project No. 222200**

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**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

**City of Sandy  
Public Works (City Hall)  
39250 Pioneer Blvd.  
Sandy, OR 97055**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder agrees that a completed First-Tier Subcontractor Disclosure Form is either included with this bid submission or will be provided within the time frame prescribed in these Bidding Documents. Bidder agrees that substitution of First-Tier Subcontractors will be made only in accordance with the provisions of ORS 279C.585.
- E. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at



artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 5 – BASIS OF BID**

5.01 BASE BID: Bidder will complete the Base Bid Work in accordance with the Contract Documents for the following price(s):

Item No.	Description*	Unit	Quantity	Bid Unit Price	Bid Price
1	Reservoir Repairs	Lump Sum	1		
2	Lightweight Cellular Concrete (Floor Voids)	Cubic Foot	450		
3	Soil Stabilization (Floor Voids)	Gallons	500		
4	Contingency Allowance	Lump Sum	1	\$30,000	\$30,000
<b>Total Bid Price (Amount in Figures)</b>					\$
(Amount in Words)					
(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.)					

BIDDER ACKNOWLEDGES THAT (1) EACH BID UNIT PRICE INCLUDES AN AMOUNT CONSIDERED BY BIDDER TO BE ADEQUATE TO COVER CONTRACTOR'S OVERHEAD AND PROFIT FOR EACH SEPARATELY IDENTIFIED ITEM, AND (2) QUANTITIES FOR BID ITEMS 2 AND 3 ARE NOT GUARANTEED, AND ARE SOLELY FOR THE PURPOSE OF COMPARISON OF BIDS, AND FINAL PAYMENT FOR ALL UNIT PRICE BID ITEMS WILL BE BASED ON ACTUAL QUANTITIES, DETERMINED AS PROVIDED IN THE CONTRACT DOCUMENTS.

\*Refer to Section 01200 – Measurement and Payment, for Bid Item Descriptions and use of Contingency Allowance.

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 – OREGON SPECIFIC BIDDER INSTRUCTIONS**

7.01 The undersigned agrees to comply with the provisions of ORS 279C.800 to 279C.870, the Oregon Prevailing Wage law. The undersigned, as bidder, acknowledges that provisions of ORS 279C.800

-279C.870 relating to workers on public works to be paid not less than prevailing rate of wage shall be included in the contract. The undersigned Contractor agrees to be bound by and will comply with the provisions of ORS 279C.838, 279C.840 or 40 U.S.C. 3141 to 3148. [OAR 137-049-0200(I)(a)(J)].

- 7.02 The undersigned certifies that the undersigned Contractor is not ineligible to receive a contract for a public work pursuant to ORS 279C.860. Bidder further agrees, if awarded a contract, that every subcontractor will be eligible to receive a contract for a public work pursuant to ORS 279C.860.
- 7.03 The undersigned certifies that the undersigned Contractor has not discriminated against minority, women or emerging small businesses enterprises in obtaining any required subcontracts. The bidder understands and acknowledges that it may be disqualified from bidding on this public improvement project as set forth in OAR 137-049-0370, including but not limited to City discovery a misrepresentation or sham regarding a subcontract or that the Bidder has violated any requirement of ORS 279A.110 or the administrative rules implementing the Statute.
- 7.04 The undersigned bidder is registered with the Oregon Construction Contractors Board (CCB), the registration is current and valid, and the bidder's registration number is stated below. [OAR 137-049-230(1)] Bidder understands that failure to have a current CCB license shall result in rejection of this bid.
- 7.05 "Resident bidder" of Oregon means a bidder that has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid, has a business address in this state and has stated in the bid that the bidder is a "resident bidder" of the State of Oregon. The undersigned represents him/her self in this bid to be either a Resident or a Nonresident bidder by completing the appropriate blank below.
- The Bidder is \_\_\_ or is not \_\_\_ a resident Bidder as defined in ORS 279A.120.
- 7.06 The undersigned confirms that this firm has a Qualified Drug Testing Program for employees in place and will demonstrate this prior to award of contract. [OAR 13 -049-02.00 1 (c)(B)].
- 7.07 The undersigned confirms that if this contract involves asbestos abatement or removal, the bidder is licensed under ORS 468A.710 for asbestos removal. Asbestos abatement is not implicated in this contract.
- 7.08 The bidder understands that the City will be awarding the contract to the Responsible Bidder with the lowest Responsive Bid. OAR 137-049-0200(I)(b)(C). Whether a bidder is responsible will be determined by ORS 279C.375 and the City's review of the Minimum Bidder Qualifications included in Section C-200 – Instructions to Bidders, Article 3.

#### **ARTICLE 8 – ATTACHMENTS TO THIS BID**

- 8.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
  - B. First-Tier Subcontractor Disclosure Form;
  - C. Qualifications of Bidders (Section C-200 – Instructions to Bidders, Article 3)

**ARTICLE 9 – DEFINED TERMS**

9.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**ARTICLE 10 – BID SUBMITTAL**

BIDDER: *[Indicate correct name of bidding entity]*

\_\_\_\_\_

By:

*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_

*(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest:

*[Signature]* \_\_\_\_\_

*[Printed name]* \_\_\_\_\_

Title: \_\_\_\_\_

Submittal Date: \_\_\_\_\_

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Bidder's License No.: \_\_\_\_\_

**BID BOND**

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

\_\_\_\_\_  
BIDDER (Name and Address):

\_\_\_\_\_  
SURETY (Name, and Address of Principal Place of Business):

\_\_\_\_\_  
OWNER (Name and Address):

**BID**

Bid Due Date: \_\_\_\_\_  
Description (Project Name— Include Location): \_\_\_\_\_

**BOND**

Bond Number: \_\_\_\_\_  
Date: \_\_\_\_\_  
Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

**BIDDER** \_\_\_\_\_ (Seal) **SURETY** \_\_\_\_\_ (Seal)  
Bidder's Name and Corporate Seal Surety's Name and Corporate Seal

By: \_\_\_\_\_ By: \_\_\_\_\_  
Signature Signature (Attach Power of Attorney)  
\_\_\_\_\_  
Print Name Print Name  
\_\_\_\_\_  
Title Title

Attest: \_\_\_\_\_ Attest: \_\_\_\_\_  
Signature Signature  
Title Title

*Note: Addresses are to be used for giving any required notice.  
Provide execution by any additional parties, such as joint venturers, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

**FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM  
 (OAR 137-049-360)**

PROJECT NAME: **City of Sandy, Sandercock Reservoir Repairs**  
 BID CLOSING: Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 DISCLOSURE DEADLINE: Date: \_\_\_\_\_ Time: \_\_\_\_\_

This form must be submitted at the location and in the manner specified in the Invitation to Bid within two (2) working hours of the advertised bid closing date and time; no later than the DISCLOSURE DEADLINE stated above. Unless otherwise specified in the Invitation to Bid, this disclosure form shall either be submitted in the same envelope as the bid, or shall be submitted in a separate sealed envelope clearly marked “**Disclosure Form for City of Sandy, Sandercock Reservoir Repairs**”, showing the date and time of the disclosure submittal deadline, as well as the Bidders name.

This form shall be submitted regardless of the bid total. Unless otherwise stated in the Invitation to Bid, this document shall not be faxed. It is the responsibility of the Bidder to submit this Disclosure Form and any additional sheets.

Deliver Form to same address as the bid.

Form Submitted By (Bidder Name): \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone #: \_\_\_\_\_

Is the bid total greater than \$100,000? YES  NO  (If NO, bidder is not required to provide 1<sup>st</sup> tier subcontractor information below).

Bids which are submitted by Bid Closing, but for which the separate and sealed Disclosure has not been submitted by the specified deadline, will be considered Non-Responsive and will not be considered for award!

If bid total is greater than \$100,000, list below the Name, Address, and Category of work of each 1<sup>st</sup> tier subcontractor that will be furnishing labor or labor and materials that are required to be disclosed. Enter ‘NONE’ if there are no subcontractors that need to be disclosed. (IF NEEDED ATTACH ADDITIONAL SHEETS).

1 <sup>st</sup> Tier Subcontractor Name	Subcontract Dollar Value	Category or Categories of Work Each Subcontractor will be Performing	**Subcontractor CCB #

The above listed first-tier subcontractor(s) are providing labor or labor and materials with a Dollar Value equal to or greater than:

- a) 5% of the total Contract Price, but at least \$15,000 (including all alternates). If the Dollar Value is less than \$15,000 do not list the subcontractor above; or
- b) \$350,000 regardless of the percentage of the total Contract Price.

\*\*\*Per ORS 701.005(5)(a), ORS 701.021(1) and ORS 701.026(1), any contractor or subcontractor must be licensed through the Oregon Construction Contractor Board (CCB) in order to “undertake, offer to undertake or submit a bid to do work” in the State of Oregon. Contractor registration “at the time the offer is made” is a matter of bid responsiveness under OAR 137-049-0230(1).

### INSTRUCTIONS FOR FIRST-TIER SUBCONTRACTOR DISCLOSURE

All Bidders are required to submit the First Tier Subcontractor Disclosure Form, regardless of the Bid Total.

In addition, when the contract value for a Public Improvement is greater than \$100,000, bidders are required to disclose information about certain first-tier subcontractors (see ORS 279C.370(3)). Specifically, when the contract amount of a first-tier subcontractor is greater than or equal to: (i) 5% of the project bid, but at least \$15,000, or (ii) \$350,000 regardless of the percentage, the Bidder must disclose the following information about that subcontract within two (2) hours of bid closing:

- The subcontractor's name, and
- The dollar value of each subcontract, and
- The category or categories of work that each subcontractor will be performing

**If the Bidder will not be using any subcontractors that are subject to the above disclosure requirements, the Bidder is required to indicate "NONE" on the First Tier Subcontractor Disclosure Form.**

To determine disclosure requirements, it is recommended that the Bidder disclose subcontract information for any subcontractor as follows:

- (1) Determine the lowest possible contract price. That will be the base bid amount (exclusive of any options that can only be exercised after contract award, if any).
- (2) Provide the required disclosure information for any first-tier subcontractor whose potential contract services (subcontractor base bid amount, exclusive of any options that can only be exercised after contract award, if any) are greater than or equal to:
  - (i) 5% of that lowest contract price, but at least \$15,000, or
  - (ii) \$350,000 regardless of the percentage.

Total all possible work for each subcontractor in making this determination (ie. if a subcontractor will provide \$15,000 worth of labor or labor and materials in one category of work and \$40,000 on another category of work, then the potential amount of subcontractor's labor or labor and materials is \$55,000. Assuming that \$55,000 exceeds 5% of the lowest contract price, provide the disclosure for both the \$15,000 and the \$40,000).

**SUBMISSION.** A Bidder shall submit the disclosure form within two (2) working hours of Bid Closing in the manner specified by the Invitation To Bid. See instructions on the SUBCONTRACTOR DISCLOSURE FORM.

**RESPONSIVENESS.** Compliance with the disclosure and submittal requirements outlined herein and in ORS 279C.370(3) is a matter of Responsiveness. As required by OAR 137-049-360(5), bids that are submitted by Bid Closing, but for which the separate and sealed Disclosure has not been submitted by the specified deadline, will be considered Non-Responsive and will not be considered for Contract award.



**CONTRACT  
FORMS**

**NOTICE OF AWARD**

---

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

**TO BIDDER:**

You are notified that Owner has accepted your Bid dated [\_\_\_\_\_] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

\_\_\_\_\_  
*[describe Work, alternates, or sections of Work awarded]*

The Contract Price of the awarded Contract is: \$\_\_\_\_\_ *[note if subject to unit prices, or cost-plus]*

unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [\_\_\_\_\_] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Certifications of Representation
4. IRS Form W-9
5. Funding Agency Forms

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

---

Owner:

By:

Signature:

Title:

Copy: Engineer

---

EJCDC® C-510, Notice of Award.

Prepared and published 2013 by the Engineers Joint Contract Documents Committee.

Page 1 of 1

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**AGREEMENT  
BETWEEN OWNER AND CONTRACTOR  
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between the City of Sandy, an Oregon municipal corporation (“Owner”) and \_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby agree as follows:

**ARTICLE 1 – WORK**

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work generally consists of repairs to the existing Sandercock Reservoir. The existing reservoir is a 0.5-million-gallon welded steel tank with a ring foundation. The tank has a diameter of 52 feet and a height of 32 feet. Project includes cellular/chemical grout to repair voids below the floor; preparation and interior coating of the floor, roof/rafters, and the portion of the sidewall above water level; cathodic protection; repairs to roof rafters; repair of existing leak near overflow piping; new exterior ladder and raised platform; and appurtenant work.
- 1.02 Work shall include Base Bid Items.

**ARTICLE 2 – THE PROJECT**

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

City of Sandy, Oregon  
Sandercock Reservoir Repairs  
Project No. 222200

**ARTICLE 3 – ENGINEER**

- 3.01 The Project has been designed by Keller Associates.
- 3.02 The Owner has retained Keller Associates, Inc. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

**ARTICLE 4 – CONTRACT TIMES**

- 4.01 *Time of the Essence*
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times:*

- A. The Work will be substantially completed by April 26, 2023, after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions May 10, 2023 after the date when the Contract Times commence to run.
  - 1. This schedule is based off the Contractor being issued the Notice to Proceed by March 15, 2023.
- B. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
  - 1. Substantial and Final Completion: Contractor shall pay Owner \$1,000.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial and Final Completion until the Work is complete.
  - 2. Liquidated damages for failing to timely attain Substantial Completion and Final Completion are not additive and will not be imposed concurrently.

**ARTICLE 5 – CONTRACT PRICE**

- A. For all Work, at the prices stated in Contractor’s Bid, attached hereto as an exhibit. The total contract price is \_\_\_\_\_.

**ARTICLE 6 – PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor’s Applications for Payment on or about the \_\_30th\_\_ day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
  - a. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

**ARTICLE 7 – INTEREST**

- 7.01 All amounts not paid when due shall bear interest at the rate of 6.0 percent per annum.

**ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
  - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
  - D. Contractor has carefully studied all: reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

#### ARTICLE 9 – CONTRACT DOCUMENTS

##### 9.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to [ ] , inclusive).
  - 2. Performance bond (pages [ ] to [ ] , inclusive).
  - 3. Payment bond (pages [ ] to [ ] , inclusive).
  - 4. Other bonds.
    - a. [ ] (pages [ ] to [ ] , inclusive).
  - 5. General Conditions (pages [ ] to [ ] , inclusive).
  - 6. Supplementary Conditions (pages [ ] to [ ] , inclusive).
  - 7. Specifications as listed in the table of contents of the Project Manual.
  - 8. Drawings (not attached but incorporated by reference) consisting of [ ] sheets with each sheet bearing the following general title: [ ]
  - 9. Addenda (numbers [ ] to [ ] , inclusive).
  - 10. Exhibits to this Agreement which are fully incorporated herein by this reference (enumerated as follows):

- a. Contractor's Bid (pages [ ] to [ ], inclusive).
- 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
  - a. Notice to Proceed.
  - b. Work Change Directives.
  - c. Change Orders.
  - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

**ARTICLE 10 – MISCELLANEOUS**

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Governing Law*

- A. The Contract shall be governed by the laws of the State of Oregon without regard to conflict of laws principles. Exclusive venue for litigation of any action arising under this Contract shall be in the Circuit Court of the State of Oregon for Clackamas County unless exclusive jurisdiction is in federal court, in which case exclusive venue shall be in the federal district court for the district of Oregon. Each party expressly waives any and all rights to maintain an action under this Contract in any other venue, and expressly consents that, upon motion of the other party, any case may be dismissed or its venue transferred, as appropriate, so as to effectuate this choice of venue.

10.07 *Effective Date*

- A. The Contract shall become effective on the date of execution on behalf of the Owner, as set forth below (the "Effective Date").



IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement as of the dates set forth below.

OWNER:

CONTRACTOR:

\_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

*(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_  
*(where applicable)*

*(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*

**PERFORMANCE BOND**

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

**CONSTRUCTION CONTRACT**

Effective Date of the Agreement:

Amount:

Description *(name and location):*

**BOND**

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_  
Contractor's Name and Corporate Seal *(seal)*

\_\_\_\_\_  
Surety's Name and Corporate Seal *(seal)*

**By:** \_\_\_\_\_  
Signature

**By:** \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Attest:** \_\_\_\_\_  
Signature

**Attest:** \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

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- 7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
- 7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement

shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
- 14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
- 14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
- 14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:

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**PAYMENT BOND**

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

**CONSTRUCTION CONTRACT**

Effective Date of the Agreement:

Amount:

Description *(name and location):*

**BOND**

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_  
Contractor's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
  - 5.1 Claimants who do not have a direct contract with the Contractor,
    - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

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10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
  - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
    1. The name of the Claimant;
    2. The name of the person for whom the labor was done, or materials or equipment furnished;
    3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    4. A brief description of the labor, materials, or equipment furnished;
    5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
    6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
    7. The total amount of previous payments received by the Claimant; and
    8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
  - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
  - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction

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Contract or to perform and complete or  
comply with the other material terms of the  
Construction Contract.

- 16.5 **Contract Documents:** All the documents that  
comprise the agreement between the Owner  
and Contractor.
17. If this Bond is issued for an agreement between a  
contractor and subcontractor, the term Contractor in  
this Bond shall be deemed to be Subcontractor and  
the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

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**NOTICE TO PROCEED**

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Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:
	Effective Date of Contract:

---

**TO CONTRACTOR:**

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [\_\_\_\_\_, 20\_\_]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is \_\_\_\_\_, and the date of readiness for final payment is \_\_\_\_\_] **or** [the number of days to achieve Substantial Completion is \_\_\_\_\_, and the number of days to achieve readiness for final payment is \_\_\_\_\_].

Before starting any Work at the Site, Contractor must comply with the following:  
*[Note any access limitations, security procedures, or other restrictions]*

---

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

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Contractor's Application for Payment No. \_\_\_\_\_

Application Period:		Application Date:
To (Owner):	From (Contractor):	Via (Engineer):
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

Application For Payment  
Change Order Summary

Approved Change Orders			
Number	Additions	Deductions	
			1. ORIGINAL CONTRACT PRICE..... \$ _____
			2. Net change by Change Orders..... \$ _____
			3. Current Contract Price (Line 1 ± 2)..... \$ _____
			4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates)..... \$ _____
			5. RETAINAGE:
			a. X _____ Work Completed..... \$ _____
			b. X _____ Stored Material..... \$ _____
			c. Total Retainage (Line 5.a + Line 5.b)..... \$ _____
			6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)..... \$ _____
			7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... \$ _____
			8. AMOUNT DUE THIS APPLICATION..... \$ _____
			9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above)..... \$ _____
TOTALS			
NET CHANGE BY CHANGE ORDERS			

**Contractor's Certification**

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

---

**Contractor Signature**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Payment of: \$ \_\_\_\_\_  
(Line 8 or other - attach explanation of the other amount)

is recommended by: \_\_\_\_\_ (Engineer) \_\_\_\_\_ (Date)

Payment of: \$ \_\_\_\_\_  
(Line 8 or other - attach explanation of the other amount)

is approved by: \_\_\_\_\_ (Owner) \_\_\_\_\_ (Date)

Approved by: \_\_\_\_\_ Funding or Financing Entity (if applicable) \_\_\_\_\_ (Date)









**Change Order No.**

Date of Issuance:	Effective Date:
Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Title: \_\_\_\_\_





**CERTIFICATE OF SUBSTANTIAL COMPLETION**

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Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:

---

**This [preliminary] [final] Certificate of Substantial Completion applies to:**

- All Work  The following specified portions of the Work:

**Date of Substantial Completion**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities:  None  As follows

Amendments to Contractor's responsibilities:  None  As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

---

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

---

**CONDITIONS  
OF THE CONTRACT**

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



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1015 15th Street N.W., Washington, DC 20005  
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**ARTICLE 1 – DEFINITIONS AND TERMINOLOGY**

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance

with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*:
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day*:
  1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective*:
  1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### 2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract

available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  2. a preliminary Schedule of Submittals; and
  3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

**ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
  1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.



2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

**ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the

sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete

the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  2. abnormal weather conditions;
  3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
  3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
  2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
    - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
    - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.



- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
    - d. Contractor gave the notice required in Paragraph 5.05.B.
  2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against

Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

#### **ARTICLE 6 – BONDS AND INSURANCE**

##### **6.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining

the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
  - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
  - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.

2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the

Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
  2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
  - 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).



6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat,

telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      - 3) it has a proven record of performance and availability of responsive service; and
      - 4) it is not objectionable to Owner.
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
      - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
  - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design,
      - 2) be similar in substance to that specified, and
      - 3) be suited to the same use as that specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

- 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
  - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
- c. will identify:
- 1) all variations of the proposed substitute item from that specified, and
  - 2) available engineering, sales, maintenance, repair, and replacement services.
- d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
  - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or



resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during

construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and

Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
  2. *Samples:*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
  8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
  2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
  3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

**7.19 Delegation of Professional Design Services**

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

**ARTICLE 8 – OTHER WORK AT THE SITE**

**8.01 Other Work**

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this



paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

#### **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

##### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

**ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
  - 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

- a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
- b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
  1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and

Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.



11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

**ARTICLE 12 – CLAIMS**

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

#### **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

##### **13.01 Cost of the Work**

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on

Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the

deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
  - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  - 2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

**ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the

Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude



Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

**ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  - 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

- e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
  - 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
  - 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
    - a. the Work is defective, requiring correction or replacement;
    - b. the Contract Price has been reduced by Change Orders;
    - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
    - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
    - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.
- D. *Payment Becomes Due:*
- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.
- E. *Reductions in Payment by Owner:*
- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
    - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
    - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
    - c. Contractor has failed to provide and maintain required bonds or insurance;
    - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
    - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
    - f. the Work is defective, requiring correction or replacement;

- g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or

corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of

completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner

against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be

defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
  2. correct such defective Work;
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

#### **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

##### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.



16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

**ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

**ARTICLE 18 – MISCELLANEOUS**

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

### SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

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#### ARTICLE 2 – PRELIMINARY MATTERS

##### SC-2.01 *Delivery of Bond and Evidence*

SC-2.01.D Add the following subparagraph immediately after 2.01.C:

- D. The Contractor, hereby certifies that the Contractor is licensed with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 and, further, that all subcontractors performing work as described in ORS 701.005(2) (i.e., construction work) will be licensed with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under the contract.

##### SC-2.02 *Copies of Documents*

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor three (3) copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Plans provided by Owner shall be half-size only.

#### ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

##### SC-301 *Intent*

SC-3.01.A Add the following to Paragraph 3.01.A.:

- 1) In the event of conflict or discrepancy in the requirements and provisions as set out by the contract, or the specifications, or the plans, such conflict shall be reconciled by the acceptance of the following order of precedence for the various contract documents:
  1. Change orders and written amendments to the Agreement;
  2. The Agreement bearing the signature of the Owner and Contractor;
  3. Addenda, with those of later date having precedence over those of earlier date;
  5. The General Conditions of the Construction Contract as modified by Supplementary Conditions;
  6. Division 01 of the Technical Specifications;

7. Divisions 02-17 of the Technical Specifications;
8. Drawings, including notes written thereon;
9. Other documents specifically enumerated in the Agreement as part of the Contract Documents.

SC-3.01.F Add the following subparagraph immediately after Paragraph 3.01.E:

All work products of the Contractor that result from this contract, including but not limited to background data, documentation and staff work that is preliminary to final reports, are the property of Owner. Draft documents and preliminary work submitted to the Owner for review and comment shall not be considered as owned, used or retained by the Owner until the final document is submitted.

The Owner shall own all proprietary rights, including but not limited to copyrights, trade secrets, patents and all other intellectual or other property rights in and to such work products. Preexisting trade secrets of the Contractor shall be noted as such and shall not be considered as a work product of this contract. All such work products shall be considered "works made for hire" under the provisions of the United States Copyright Act and all other equivalent laws.

Use of any work product of the Contractor by the Owner for any purpose other than the use intended by this contract is at the risk of the Owner. Use of any work product by Contractor is prohibited without the written consent of the Owner. All documents or other materials submitted to Owner by Contractor shall become the sole and exclusive property of Owner. Such materials are subject to Oregon Public Records laws.

*SC-3.02 Reference Standards*

SC-3.02.A.3 Add the following subparagraph immediately after Subparagraph 3.02.A.2:

The provisions of this contract shall be construed in accordance with the laws of the State of Oregon and ordinances of the City of Sandy, Oregon. Any action or suits involving any question arising under this contract must be brought in the appropriate court in Clackamas County, Oregon. If the claim must be brought in a federal forum, then it shall be brought and conducted in the United States District Court for the District of Oregon. Contractor, by the signature herein of its authorized representative, hereby consents to the *in personam* jurisdiction of said courts. In no event shall this section be construed as a waiver of the Owner of any form of defense or immunity.

*SC-3.04 Requirements of the Contract Documents*

SC-3.04.D Add the following new paragraphs immediately after Paragraph 3.04.C:

- D. 1. Contractor shall certify to the Owner that it has a drug-testing program in place for all its employees that includes, at a minimum, the following:
  - a. A written employee drug-testing policy,
  - b. Required drug testing for all new Subject Employees or alternatively, required testing of all Subject Employees every 12 months on a random selection basis, and
  - c. Required testing of a Subject Employee when the Contractor has reasonable cause to believe the Subject Employee is under the influence of drugs.

2. A drug-testing program that meets the above requirements will be deemed a "Qualifying Employee Drug-testing Program." For the purposes of this section, an employee is a "Subject Employee" only if that employee will be working on the Public Improvement project job site.
3. By executing and returning this contract the Contractor certifies, represents and warrants to the Owner that a Qualifying Employee Drug-testing Program is in place at the time of execution, will continue in full force and effect for the duration of this contract. Further, the Owner's performance obligation (which includes, without limitation, the Owner's obligation to make payment) is contingent on Contractors compliance with this representation and warranty.
4. Contractor will require each subcontractor providing labor for the project to:
  - a. Demonstrate to the Contractor that it has a Qualifying Employee Drug-testing Program for the subcontractor's Subject Employees, and represent and warrant to the Contractor that the Qualifying Employee Drug-testing Program is in place at the time of subcontract execution and will continue in full force and effect for the duration of the subcontract; or
  - b. Require that the subcontractor's Subject Employees participate in the Contractor's Qualifying Employee Drug-testing Program for the duration of the subcontract.
- E. No person shall be subject to discrimination in the receipt of the benefits of any services or activities made possible by or resulting from this Agreement on the grounds of sex, race, color, creed, marital status, age, sexual orientation or national origin. Contractor shall comply with provisions of Owner's Equal Opportunity Policy and comply with ORS Chapter 659 and ORS Chapter 659A relating to unlawful employment practices and discrimination by employers against any employee or applicant for employment because of race, religion, color, sex, national origin, marital status or age if the individual is 18 years of age or older. Particular reference is made to ORS 659A.030, which states that it is unlawful employment practice for any employer, because of the race, religion, color, sex, national origin, marital status or age if the individual is 18 years or older or because of the race, religion, color, sex, national origin or age of any other person with whom the individual associates, or because of a juvenile record that has been expunged pursuant to ORS 419A.260 and ORS 419A.262 of any individual, or to refuse to hire or employ or to bar or discharge from employment such individual or to discriminate against such individual in compensation or in terms, conditions or privileges of employment. Any violation of this provision shall be considered a material violation of the Agreement and shall be grounds for cancellation, termination, or suspension in whole or in part.

#### **ARTICLE 6 – BONDS AND INSURANCE**

##### *SC-6.03 Contractor's Liability Insurance*

SC-6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

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1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State: Statutory

Federal, if applicable (e.g., Longshoreman's): Statutory

Jones Act coverage, if applicable:

Bodily injury by accident, each accident \$ 1,000,000

Bodily injury by disease, aggregate \$ 1,000,000

Employer's Liability:

Bodily injury, each accident \$ 1,000,000

Bodily injury by disease, each employee \$ 1,000,000

Bodily injury/disease aggregate \$ 1,000,000

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of: \$ 1,000,000

Foreign voluntary worker compensation Statutory

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate \$ 2,000,000



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Products - Completed Operations Aggregate      \$ 2,000,000  
\_\_\_\_\_

Personal and Advertising Injury      \$ 1,000,000  
\_\_\_\_\_

Each Occurrence (Bodily Injury and Property  
Damage)      \$ 1,000,000  
\_\_\_\_\_

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person      \$ 1,000,000  
\_\_\_\_\_

Each accident      \$ 1,000,000  
\_\_\_\_\_

Property Damage:

Each accident      \$ 1,000,000  
\_\_\_\_\_

Combined Single Limit of      \$ 1,000,000  
\_\_\_\_\_

4. Excess or Umbrella Liability:

Per Occurrence      \$ 5,000,000  
\_\_\_\_\_

General Aggregate      \$ 5,000,000  
\_\_\_\_\_

**ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES**

*SC-7.02 Labor; Working Hours*

SC-7.02.A Replace 7.02.A and 7.02.B with the following Paragraphs:

- A.** Pursuant to ORS 279C.520, no person may be employed for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency or when the public policy absolutely requires it, and in such cases, except in cases of contracts for personal services, the employee shall be paid at least time and a half pay:
1. For all overtime in excess of eight hours in any one day or 40 hours in any one week when the work week is five consecutive days, Monday through Friday; or for all overtime in excess of 10 hours in any one day or 40 hours in any one week when the work week is four consecutive days, Monday through Friday; and
  2. For all work performed on Saturday and on any legal holiday specified in ORS 279C.540.
  3. Collective bargaining and negotiated labor agreements may provide exceptions to the requirements of this section and from ORS 279C.520 and ORS 279C.540.
  4. When labor is employed by the Owner through another as a contractor, any worker employed by the contractor shall be foreclosed from the right to collect for any overtime provided in ORS 279C.540 unless a claim for payment is filed with the contractor within 90 days from the completion of the contract, providing the contractor has:
    - a. Caused a circular clearly printed in boldfaced 12-point type and containing a copy of this section to be posted in a prominent place alongside the door of the timekeeper’s office or in a similar place that is readily available and freely visible to workers employed on the work.
    - b. Maintained the circular continuously posted from the inception to the completion of the contract on which workers are or have been employed.
  5. At or before the commencement of work, the Contractor shall give notice in writing to employees or by posting, of the number of hours and days per week the employees may be required to work. [279C.520(2)(5)]
  6. Pursuant to ORS 279C.530(1), Contractor shall promptly, as due, make payment to any person, co-partnership, association or corporation furnishing medical, surgical and hospital care services or other needed care and attention, incident to sickness or injury, to the employees of the contractor, of all sums that the contractor agrees to pay for the services and all moneys and sums that the contractor collected or deducted from the wages of employees under any law, contract or agreement for the purpose of providing or paying for the services.
  7. Pursuant to ORS 279C.530(2), All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers Compensation coverage unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its subcontractors complies with these requirements.

SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.A:

1. Regular working hours will be 7:00 a.m. to 5:00 p.m., Monday through Friday.

2. No work shall be performed on Owner's legal holidays. The City of Sandy observes the following ten (11) holidays: New Year's Day, Martin Luther King's Birthday, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the Friday after Thanksgiving, Christmas Eve Day, and Christmas Day.

*SC-7.06 Concerning Subcontractors, Suppliers, and Others*

SC-7.06.E Add the following subparagraph immediately in front of Paragraph 7.06E and rename the existing paragraph to subparagraph E.2:

E.1 Owner consents in writing to an assignment, sale, disposal or transfer of the Contractor's rights or delegation of Contractor's duties, the Contractor and its Surety, if any, shall remain liable to the Owner for complete performance of the Contract as if no such assignment, sale, disposal, transfer or delegation had occurred unless the Owner otherwise agrees in writing. [OAR 137-049-0200(2)]

SC-7.06.M Add the following subparagraph immediately in front of Paragraph 7.06.M and rename the existing paragraph to subparagraph M.2:

M.1 Contractor further agrees that if subcontractors are employed in the performance of this contract, the Contractor and its subcontractors are subject to the requirements and sanction of ORS Chapter 656, Workers' Compensation.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

*SC-10.03 Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
  1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
  2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
  3. Conferences and Meetings: As invited, attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
  4. Liaison:
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing

information regarding the provisions and intent of the Contract Documents.

- b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
  - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed, and transmit to Contractor clarifications and interpretations as issued by Engineer.
6. Shop Drawings and Samples:
- a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
  - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
  - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
8. Review of Work and Rejection of Defective Work:
- a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Start-ups:
- a. Observe that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
  - b. Record names, addresses, e-mail addresses, web site locations, and telephone numbers of Contractors, Subcontractors, and major Suppliers of materials and equipment.
  - c. Maintain records for use in preparing Project documentation.
11. Reports:
- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
  - b. Recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
  - c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
13. Certificates, Operation and Maintenance Manuals: During the course of the Work, observe if materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
14. Completion:
- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.

- b. Participate in Engineer’s final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
  - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including “or-equal” items).
  - 2. Exceed limitations of Engineer’s authority as set forth in the Contract Documents.
  - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor’s work.
  - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  - 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
  - 8. Authorize Owner to occupy the Project in whole or in part.

**ARTICLE 14 – TESTS & INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

*SC-14.02 Tests, Inspections, and Approvals*

SC-14.02.B Replace Paragraph 14.02.B with the following:

14.02.B Contractor shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspection and tests expressly required by the Contract Documents as identified in Paragraph 14.02.D.

**ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

*SC-15.01 Progress Payments*

SC-15.01.D Change “Ten” to “Thirty” in Paragraph 15.01.D.1. Payments shall become due thirty days after Engineer’s recommendation for payment.

**END OF SUPPLEMENTARY CONDITIONS**

# TECHNICAL SPECIFICATIONS

SECTION 01110 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The Work to be performed under this Contract shall consist of furnishing tools, equipment, materials, supplies, and manufactured articles, and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the Work in good faith shall be provided by the Contractor as though originally so indicated, at no increase in cost to the Owner.
- B. The Contractor is responsible to follow the provisions of these Contract Documents, including but not limited to: the following of Plans and Specifications; the timely, complete, and accurate submittal of shop drawings; the work of and correlation with his subcontractors and suppliers, timely performance of the Contract, and timely payment of suppliers and subcontractors. Nothing stated in the Contract Documents or Specifications shall be construed to relieve the Contractor of these basic responsibilities.
- C. Contractor shall furnish an erosion and sediment control plan for Owner and Engineer review. The controls may include silt fences, straw wattles, rock berms, diversion dikes, interceptor swales, sodding, mulching, soil retention blankets, or other structural or non-structural stormwater pollution controls.
- D. This project was funded in part with a financial award from the Special Public Works Fund, funded by the Oregon State Lottery and administered by the Oregon Infrastructure Finance Authority.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Overview: The project consists of repairs to the existing Sandercock Reservoir. The existing reservoir is a 0.5-million-gallon welded steel tank with a ring foundation. The tank has a diameter of 52 feet and a height of 32 feet. Project includes cellular/chemical grout to repair voids below the floor; preparation and interior coating of the floor, roof/rafters, and the portion of the sidewall above water level; cathodic protection; repairs to roof rafters; repair of existing leak near overflow piping; new exterior ladder and raised platform; NACE Inspection of the coatings; coordination with Owner provided Special Inspector, and appurtenant work.
- B. Owner Supplier Materials: The Owner has procured one stick of 10-inch ductile iron pipe for the project. Contractor to utilize pipe in the repair of the leaking overflow pipe penetration. Contractor shall be responsible for procuring approximately a 2-foot section of 10-inch schedule 40 steel pipe as indicated in the Drawings for welding the new tank floor plate to this section of pipe.



1.3 CONTRACT METHOD

- A. The Work hereunder will be constructed under a combination of lump sum and unit price bid items as indicated in Division 00.

1.4 WORK BY OTHERS

- A. Interference with Work on Utilities: The Contractor shall cooperate fully with all utility forces of the Owner or forces of other public or private agencies engaged in the construction, relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said construction.

1.5 CONSTRUCTION PROGRESS SCHEDULE

- A. Work under the contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the existing facilities. Contractor shall not operate any existing valves, pumps, or other components associated with operation of the reservoir. The Contractor shall submit to the Engineer a construction schedule covering the entire work before any work is commenced. The schedule shall be a detailed construction schedule in graphic form showing duration and proposed dates of starting and completing each major division of the work. The schedule is to be consistent with the time and order of work requirements of the specifications, and is to be the basis of the Contractor's operations. Prepare the schedule utilizing a Gantt chart (bar type) or similar method.
- B. To minimize the period of disruption of facility operation, all new piping and/or facilities should be constructed and all preparations shall be made for fast connection to existing piping and facilities.
  - 1. Contractor shall be responsible for sequencing the Work. Owner's suggested sequence is summarized below and provided for general guidance. Contractor to identify proposed sequence of construction as part of the construction schedule. Owner and Engineer to review proposed sequence as part of construction schedule submittal.
    - a. Owner's Suggested Sequence
      - 1) Mobilization/Submittals
      - 2) Coordinate with Owner to drain reservoir and cut entrance into reservoir once completely drained
      - 3) Foundation exploration including soil stabilization, chemical grout, and pitting repairs; special inspections per Specification 01450
      - 4) Roof rafter repairs and repair existing leak at overflow pipe; special inspections per Specification 01450
      - 5) Coating preparation and application; NACE Inspections

- 6) Repair construction access on reservoir sidewall; clean and disinfect reservoir
  - 7) Exterior ladder and platform installation
- C. Submit preliminary construction progress schedules as required in the General Conditions within ten (10) days after the award of the contract. The progress schedule is to be in reproducible form and subject to the approval of the Engineer.
- D. Commence work on or before a date to be specified in a written "Notice to Proceed" and complete all phases of the work as specified in Contract Form C-520, Agreement between Owner and Contractor.
- 1.6 PUBLIC WORKS CONTRACTOR'S LICENSE
- A. Any Contractor, Subcontractor, or Specialty Contractor is required to have a current license as a Public Works Contractor in the State where the work is to be completed in order to submit a bid or proposal on this contract.
- 1.7 CODES AND STANDARDS
- A. Where codes and standards are referred to, they are the current approved codes. It is the duty of the Contractor to obtain from its supplier any material on this work to submit evidence, if requested, that provided material is in compliance with the applicable codes and standards.
- 1.8 STATE AND LOCAL LAWS
- A. Conform to all applicable State and local laws in carrying out obligations under the contract.
- B. Meet the requirements and recommendations of the Manual of Accident Prevention in Construction; Associated General Contractors of America, Inc., and Occupational Safety and Health Act.
- 1.9 PRODUCT SUBSTITUTIONS
- A. Use equipment and materials specified by name in these Specifications or on Plans. Alternative equipment suppliers shall be reviewed after bid opening during the shop drawing review process as outlined in Section 01300 - Submittals.
- B. Request approval for substitutions by submitting written evidence and convincing Engineer of equality of item and suitability for the service and/or construction conditions anticipated.
- C. If alternative equipment or materials are approved, make required changes in structures, buildings, piping, systems, etc., necessary to accommodate alternate items without additional cost to the Owner.

1.10 SPECIAL INSPECTIONS

- A. The Contractor shall be responsible for retaining, and paying for, a NACE Inspector for the preparation and application of coatings. The Owner will be responsible for retaining, and paying for, other special inspections as identified in Specification 01450. Contractor to coordinate and schedule special inspections with Owner and Engineer a minimum of 48 hours prior to special inspection/testing being required.

1.11 PERMITS

- A. The Contractor shall be responsible to obtain and pay for all construction and inspection permits required by the State of Oregon, Clackamas County, and the City of Sandy, and shall include permit fees in Bid.
- B. The Contractor is required to have an active City of Sandy Business License.

PART 2 - PRODUCTS            NOT USED

PART 3 - EXECUTION        NOT USED

END OF SECTION 01110

SECTION 01200 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Measurement and payment will be made as specified in this Section and in accordance with the provisions of the General Conditions.

1.2 SCHEDULE OF VALUES

- A. The Contractor shall prepare and submit a detailed Schedule of Values to the Engineer within 15 days from the date of Notice to Proceed. The detailed Schedule of Values shall be based on the values listed in the Bid Schedule. Because the ultimate requirement is to develop a detailed Schedule of Values, sufficient detailed breakdown shall be provided to meet this requirement. The Engineer shall be the sole judge of acceptable numbers, details and description of values established. If, in the opinion of the Engineer, a greater number of Schedule of Values items than proposed by the Contractor is necessary, the Contractor shall add the additional items so identified by the Engineer.
- B. The minimum detail of breakdown of the major Work components is indicated.
  - 1. Mobilization and demobilization up to 10% of contract amount - no breakdown required.
  - 2. Reservoir Repairs shall be broken down into individual components such as installing access to reservoir interior, exterior ladder and platform installation, coating, pipe penetration leak, floor pitting, cathodic protection, lightweight cellular concrete, soil stabilization, roof rafter repair, and disinfection.
  - 3. All other Work not specifically included in the above items shall be broken down as necessary for establishment of pay items.
- C. The Contractor and Engineer shall jointly review the detailed Schedule of Values within 20 days from the date of Notice to Proceed. The value allocations and extent of detail shall be reviewed to determine any necessary adjustments to the values and to determine if sufficient detail has been proposed. Any adjustments deemed necessary to the value allocation or level of detail shall be made by the Contractor and a revised detailed Schedule of Values shall be submitted within 25 days from the date of Notice to Proceed.

1.3 CHANGES TO SCHEDULE OF VALUES

- A. Changes to the schedule of values shall be made to reflect Owner approved change orders.
- B. In the event that the Contractor and Engineer agree to make adjustments to the original Schedule of Values because of inequities discovered in the original accepted detailed Schedule of Values, increases and equal decreases to values.

1.4 BID ITEM DESCRIPTIONS

A. Item No. 1 – Reservoir Repairs

1. This item includes all reservoir repair work as identified in the plans and specifications except Lightweight Cellular Concrete (specification 03520) and Soil Stabilization (specification 02320). The reservoir repairs in this lump sum bid item are generally described as mobilization, installing access to reservoir interior, exterior ladder and platform installation, coating, pipe penetration leak, floor pitting, cathodic protection, roof rafter repair, NACE inspections, independent special inspections, and disinfection. Contractor to complete all repairs, including appurtenances and incidental items, for the lump sum bid amount as identified in the plans and specifications.

B. Item No. 2 – Lightweight Cellular Concrete (Floor Voids)

1. This item includes injecting lightweight cellular concrete to repair floor voids. This unit price item will be paid based on cubic feet of material pumped below the floor. Unit price to include all work identified in Specification 03520.

C. Item No. 3 – Soil Stabilization (Floor Voids)

1. This item includes injecting polyurethane chemical grout to stabilize underlying soil to repair floor voids. This unit price item will be paid based on gallons of material injected below the floor. Unit price to include all work identified in Specification 02320.

D. Item No. 4 – Contingency Allowance

1. This is a contingency item to be paid on a time and materials charge account basis to reimburse the Contractor for work not identified or implied in the contract documents. This bid item is intended to address unanticipated items such as unspecified exploratory excavations, unmarked utilities, unforeseeable subsurface conditions, and conditions that are clearly different than those indicated in the contract documents. This item is not intended to cover incidental items that should be accounted for in other bid items, conditions common for construction activities in the City of Sandy, or conditions that could be determined by a thorough walkthrough of the project.
2. All work is at the directive of the Engineer. Any work completed without the written authorization of the City of Sandy and the Engineer will be denied payment.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED

END OF SECTION 01200

MEASUREMENT & PAYMENT

01200 - 2

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Wherever submittals are required hereunder, all such submittals by the Contractor shall be submitted to the Engineer as delineated in this section.
- B. At the Pre-Construction Conference, the Contractor shall submit the following items to the Engineer for review:
  - 1. A preliminary progress schedule.
  - 2. A preliminary schedule of Shop Drawings, Samples, and proposed Substitutes ("Or-Equal") submittals listed in the Bid.

1.2 SUBMITTAL PROCEDURES

- A. Verify that the material or equipment described in each submittal conforms to all requirements of the Specifications and drawings. Where the detailed specifications require specific submittal data, submit all data at the same time. The submittals are to be accompanied by the transmittal form attached at the end of this Section. The Engineer will return for resubmittal any information not accompanied by the specified transmittal form, properly completed.
- B. The submittals shall be numbered as XXXXX-YY-Z., where XXXXX is the specification section number, YY is the sequential number of the submittal, and Z is A through Z for each resubmittals. For example, the first submittal of an item from Section 03520 – Lightweight Cellular Concrete would be numbered 03520-1; the first resubmittal of that submittal would be numbered 03520-1-A. A separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be rejected. A multiple page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the Engineer.
- C. Identify Project, Contractor, Subcontractor or supplier, pertinent Drawing sheet and detail number(s), and specifications Section number, as appropriate.
- D. All Contractor shop drawings submittals shall be carefully reviewed by an authorized representative of the Contractor, prior to submission to the Engineer. Each submittal shall be dated, signed, and certified by the Contractor, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the Engineer of any Contractor submittals will be made for any items which have not been so certified by the Contractor. All non-certified submittals will be returned to the Contractor without action taken by the Engineer, and any delays caused thereby shall be the total responsibility of the Contractor.

- E. Do not mark the submittals in red. Ensure that any marks are duplicated on all copies submitted. Outline the marks on reproducible transparencies in a rectangular box.
- F. Schedule submittals to expedite the Project, and deliver to:  
Keller Associates, Inc.  
c/o Jason King  
100 East Bower Street, Suite 110  
Meridian, ID 83642  
jking@kellerassociates.com
- G. Coordinate submission of related items.
- H. Identify variations from Contract Documents and product or system limitation which may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Architect/Engineer Review stamps.
- J. The Contractor shall submittals to the Engineer electronically.
  - 1. Engineer will return comments only.
  - 2. Contractor is responsible for distributing copies of the submittal and Engineer's comments to concerned parties.
  - 3. Engineer may require hard copies in lieu of an electronic submittal if, in the opinion of the Engineer, the electronic submittal is difficult to read.
- K. Revise and resubmit submittals as required, identify all changes made since previous submittals.
- L. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.3 SHOP DRAWINGS

- A. Wherever called for in the Contract Documents, or where required by the Engineer, the Contractor shall furnish to the Engineer for review an electronic submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items. Whenever the Contractor is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise directed.
- B. Except as may otherwise be indicated herein, the Engineer will return submittal to the Contractor with comments. The Contractor shall make a complete and acceptable submittal to the Engineer by the second submission of a submittal item. The Owner reserves the right to withhold monies due to the Contractor to cover additional costs of the Engineer's review beyond the second submittal.

- C. If submittal is returned to the Contractor marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.
- D. If submittal is returned to the Contractor marked "APPROVED AS NOTED," formal revision and resubmission of said submittal will not be required.
- E. If submittal is returned to the Contractor marked "REVISE AND RESUBMIT," the Contractor shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the Engineer.
- F. If submittal is returned to the Contractor marked "REJECTED-RESUBMIT," the Contractor shall revise said submittal and shall resubmit the required number of copies of, said revised submittal to the Engineer.
- G. Fabrication of an item shall be commenced only after the Engineer has reviewed the pertinent submittals and returned copies to the Contractor marked either "NO EXCEPTIONS TAKEN" or "APPROVED AS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the contract requirements.

#### 1.4 ORGANIZATION

- A. A single submittal transmittal form shall be used for each technical specification section or item or class of material or equipment for which a submittal is required. A single submittal covering multiple sections will not be acceptable, unless the primary specification references other sections for components. Example: if a pump section references other sections for the motor, shop-applied protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be acceptable. A single submittal covering vertical turbine pumps and horizontal split case pumps would not be acceptable.
- B. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components. Relate the submittal components to specification paragraph and subparagraph, drawing number, detail number, schedule title, room number, or building names, as applicable.
- C. Unless indicated otherwise, terminology and equipment names and numbers used in submittals shall match those used in the Contract Documents.

#### 1.5 EFFECT OF ACCEPTANCE OF CONTRACTOR INFORMATION

- A. Acceptance by the Engineer of any drawings, method of work, or any information regarding materials or equipment the Contractor proposes to provide shall not relieve the Contractor of his responsibility for any errors therein and shall not be regarded as an assumption of risk or liability by the Engineer or Owner, or by any officer or employees thereof, and the Contractor shall have no claim under the contract on account of the failure or partial failure or inefficiency of any plan or method of work or material or equipment so accepted. Such acceptance shall be considered to mean merely that the Engineer has no objection to the Contractor using, upon his own full responsibility, the plan or method of work proposed, or providing the materials or equipment proposed.



- B. Approval of shop drawings by the Engineer is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the Plans and Specifications. The Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication process and techniques of construction, coordination of his work with that of all other trades and the satisfactory performance of his work.

1.6 DEVIATIONS FROM CONTRACT

- A. If the Contractor proposes to provide material or equipment which does not conform to all of the Specifications and Drawings, the transmittal form accompanying the submittal copies shall indicate under "comments" the deviations.

1.7 PRODUCT DATA AND SAMPLES

- A. Where required in the Specifications and as determined by the Engineer, test specimens or samples of materials, appliances and fittings to be used or offered for use in connection with the work shall be submitted to the Engineer at the Contractor's expense. Specimen or sample submittals shall be made with information as to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination and tests to establish the quality or equality thereof, as applicable.
- B. All samples and test specimens are to be submitted in ample time to enable the Engineer to make any tests or examinations necessary, without delay to the work. The Contractor will be held responsible for any loss of time due to the neglect or failure to deliver the required samples to the Engineer as specified.
- C. Samples are also to be taken during the course of the work, as required by the Engineer.
- D. Laboratory tests and examinations that the Owner elects to make will be made at no cost to the Contractor, except that, if a sample of any material or equipment proposed for use by the Contractor fails to meet the Specifications, the cost of testing subsequent samples will be borne by the Contractor.
- E. All tests required by the Specifications to be performed by an independent laboratory are to be made, and the samples therefore furnished shall be at the sole expense of the Contractor.
- F. Material used in the work is to conform to the submitted samples and test certificates as approved by the Engineer.

PART 2 - PRODUCTS            NOT USED

PART 3 - EXECUTION        NOT USED

END OF SECTION 01300

SUBMITTALS

01300 - 4

STANDARD SUBMITTAL FORM

**Transmittal of Shop Drawing or Submittal**

CONTRACTOR: **<CONTRACTOR NAME>**

Tracking No. **XXXXXX**

Item covered by this submittal

*Refer to the following attachment(s) for a detailed description of the item.*

Applicable specification section(s)

- First Submittal                      OR                       Resubmittal No. \_\_\_\_\_
- This item is as specified                      OR                       This item is a substitution/or equal
- Supplier/Subcontractor certifies:
- Conforms to contract
  - Minor deviations as specifically noted
  - Major deviations as specifically noted

Review Priority:     1     2     3

Due Date: **XX-XX-XX**

Notes to Engineer:

Date Received by Contractor: \_\_\_\_\_ Date Returned to Subcontractor/Supplier \_\_\_\_\_

Contractor Comments:

Deviations Specifically Noted

SECTION 01375 - REFERENCE STANDARDS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.
- B. Applicable Publications: Whenever Specification references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids shall apply. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- C. Specialists' Assignments: In certain instances, specification text requires specific work be assigned to specialists or expert entities who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work. In addition, these requirements are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents:
  - 1. References herein to "Building Code" shall mean current International Building Code (IBC).
  - 2. References to "Mechanical Code" or "Uniform Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "Uniform Fire Code," shall mean International Mechanical Code, Uniform Plumbing Code and International Fire Code of the International Conference of the Building Officials (ICBO).
  - 3. "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA).

4. The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the Work is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto (Oregon Standard Specifications for Construction).

B. In case of conflict between codes, reference standards, drawings, and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer for clarification and directions prior to ordering or providing any materials or furnishing labor. The Contractor shall bid for the most stringent requirements.

C. The Contractor shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.

D. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

E. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

1.3 REGULATIONS RELATED TO HAZARDOUS MATERIALS

A. The Contractor shall be responsible that all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of - hazardous materials, including petroleum products.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED

END OF SECTION 01375

SECTION 01450 - SPECIAL INSPECTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide special inspections during construction for the items listed below. Employ one or more qualified special inspectors to provide the inspections. Keep records of the inspections and furnish copies to the owner.
- B. Where fabrication of structural assemblies are being preformed in a fabricators shop, provide special inspection at the point of fabrication.
- C. Coordinate all testing. Do not proceed with subsequent work until the inspection and testing have been approved.

1.2 SPECIAL INSPECTIONS

<b>SCHEDULE OF SPECIAL INSPECTIONS</b>			
<b>PROJECT</b>	<b>Sandercock Ln Reservoir Repairs</b>		
<b>MATERIAL / ACTIVITY</b>	<b>SERVICE</b>	<b>O/C*</b>	<b>EXTENT</b>
<b>Inspection of Plant Fabrications</b>		C	
Verify fabrication/quality control procedures	In-plant review (2)	C	Periodic
<b>Welding and Steel Construction</b>		O	
1. Welding Procedures	Verify Proper Welding Procedures and Consumable Certificates	O	Continuous
2 Material Identification	Verify Type and Material Grade	O	Periodic
a Manufacturer's certified test reports	Provide Reports	O	Periodic
3 Welder Identification	Maintain a System where a Welder who has Welded a Joint Can be Identified	O	Periodic
4 Inspection of Welding	Verify Quality by Field Inspection	O	Periodic
a Groove Welds	Verify Fit, Preparation Size and Backing	O	Periodic
b Fillet Welds	Verify Alignment, Fit, Gaps, Preparation and Weld Quality	O	Periodic

<b>SCHEDULE OF SPECIAL INSPECTIONS</b>			
<b>PROJECT</b>	<b>Sandercock Ln Reservoir Repairs</b>		
<b>MATERIAL / ACTIVITY</b>	<b>SERVICE</b>	<b>O/C*</b>	<b>EXTENT</b>
<b>Inspection after Welding</b>		O	
1. Size, Length and Location	Shop (2) and field inspection	O	Periodic
2. Visual Inspection Verification	Shop (2) and field inspection	O	Periodic
3. Repair Work to Welds	Shop (3) and field inspection	O	Periodic
4 Welds Cleaned	Verify Interpass and Final Cleaning	O	Periodic
<b>Weld Testing</b>		O	Periodic
1 Groove Welds	Perform Ultrasonic Testing Ten Percent of the Length of Groove Welds	O	Increase Ultrasonic Testing to Fifteen Percent if any Welds Tested have Unacceptable Results
2 Fillet Welds on Material 5/16" thick and thicker	Perform Ultrasonic Testing on Ten Percent of the Length Fillet Welds	O	Periodic
7. Fillet Welds on Material less than 5/16" thick.	Visual Inspection for Size, Length and Location	O	Periodic
<b>Bolting</b>		O	
1 Certification of Fasteners	Provide Certifications	O	Continuous
2 Bolt Marking	Verify Fasteners have been Marked with Type and Grade	O	Periodic
3 Proper fasteners per Joint	Verify Length and Thread Projection	O	Periodic
4 Connected Elements	Verify Faying Surfaces are Clean, Rust free and Smooth	O	Periodic
5 Proper Tightening	Verify Bolts are Tightened to Snug Tight Condition.	O	Periodic
<b>Chemical Grout</b>		O	
1 Chemical Grout Composition	Verify Resin, Catalysts and Water are measured and added in Accordance with Manufacturer's Instructions	O	Continuous
2 Chemical Grout Quality	Verify Quality by Testing for Viscosity, Gelation and Decantation	O	Periodic
3 Gelation	Verify Proper Gelation of Each Batch of Grout.	O	Periodic
4 Injection Rates	Verify and Record Injection Rates and Pressures	O	Periodic

SCHEDULE OF SPECIAL INSPECTIONS			
PROJECT	Sandercock Ln Reservoir Repairs		
MATERIAL / ACTIVITY	SERVICE	O/C*	EXTENT
5 Injection Overlap	Verify Injection Point Spacing Provide Adequate Overlap of Injection Cylinders	O	Periodic
<b>Cellular Concrete</b>		O	
1 Use of Mix Design	Verify Mix Used Conforms to the Approved Submittals	O	Periodic
2 Cellular Concrete Sampling for Strength, Air and Unit Weight.	Sample Cellular Concrete Mix for Mix Properties	O	Continuous
3 Cellular Concrete Placement	Verify Concrete is being Placed before Initial Set and Target Density of Mix is Maintained After Adding Foaming Agent.	O	Continuous
4 Curing	Verify Concrete is moist and above 50 Degrees F for 7 Days.	O	Periodic
5 Strength and Unit Weight Verification	Verify that Adequate Strength and Density after Foaming is Maintained.	O	Periodic
<b>Surface Preparation and Painting</b>		C	
1 Surface Preparation	Refer to Specification Section 09970 for NACE Special Inspection during Surface Preparation	C	Continuous
2 Painting	Refer to Specification Section 09970 for NACE Special Inspection during Painting	C	Continuous
<p>Notes:</p> <p>1. The qualifications of the Special Inspectors and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional and shall be qualified person(s) from an independent testing agency.</p> <p>2. Special Inspections for fabricators are not required where the fabricator is approved in accordance with IBC.</p>			

\*O/C: "O" indicates special inspection paid for by Owner and scheduled by Contractor; "C" indicates special inspection paid for by Contractor.

END OF SECTION 01450

SECTION 01500 - TEMPORARY CONSTRUCTION FACILITIES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall be responsible to provide all equipment including that required for office, sanitation, signage, lighting, etc.

1.2 SAFETY

- A. The Contractor shall comply with "Safety and Protection" requirements as described in paragraph 7.12. and 7.13 of the General Conditions.
- B. Appropriate first aid facilities and supplies shall be kept and maintained by the Contractor at the site of the work. All persons within the construction area shall be required to wear protective helmets and eye protection. In addition, all employees of the Contractor and his subcontractors shall be provided with, and required to use, personal protective and life saving equipment as set forth in "Subpart E" of the OSHA Safety and Health Standards for Construction (29CFR 1926) including all of its amendments.
- C. During the performance of the Work, the Contractor shall erect and maintain temporary railings and barriers and shall take all other necessary precautions and place proper guards for the prevention of accidents and he shall erect and maintain suitable and sufficient lights and other signals.

1.3 TEMPORARY UTILITIES

- A. Types: The types of utility services required for general temporary use at the Site include the following:
  - 1. Water service (potable for certain uses, including fire protection)
  - 2. Sanitary sewer
  - 3. Electric power service
- B. Scheduled Uses: The Contractor shall, in conjunction with establishment of job progress schedule, establish a schedule for implementation and termination of service for each temporary utility at the earliest feasible time, and when acceptable to Owner and Engineer, change over from use of temporary utility service to permanent service.

1.4 TEMPORARY FACILITIES

- A. Contractor shall obtain all necessary permits, arrange for connection of utilities, and pay all required fees and utility costs associated with the work site during the construction activities.
  - 1. Contractor to coordinate use of water with City. City shall waive the fee associated with water usage.



2. Contractor shall coordinate with electrical and pay all require fees and utility costs associated with temporary utilities during construction.
- B. Contractor shall set up and maintain in a neat and orderly manner all temporary construction facilities. Locations shall be subject to Owner's approval, but shall remain the responsibility of the Contractor.
- C. Contractor shall be responsible for maintaining staging area near the tank. Staging area to be coordinated with Owner's Staff and limited to paved area around the reservoir. Contractor shall be responsible for returning staging area to original, pre-construction condition. If additional unpaved area is used for staging Contractor shall provide submittal to for Owner and Engineer review and repair site to original condition upon completion of the project. If offsite staging area is required, additional staging is available at the intersection of Pleasant Street and Smith Avenue.

#### 1.5 CULTURAL RESOURCES

- A. The Contractor's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called cultural resources.).
- B. The Contractor shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.
- C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, the following procedures shall be instituted:
  1. The Engineer will issue a Field Order directing the Contractor to cease all construction operations at the location of such potential cultural resources find.
  2. Such Field Order shall be effective until such time as a qualified archaeologist can be called to assess the value of these potential cultural resources and make recommendations to the Engineer.
- D. If the archaeologist determines that the potential find is a bona fide cultural resource, at the direction of the Oregon State Preservation Office, the Contractor shall suspend work at the location of the find under the provisions for changes contained in the General Conditions.

#### 1.6 RUBBISH CONTROL

- A. During the progress of the Work, the Contractor shall keep the Site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the Site in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws,

and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.

#### 1.7 CHEMICALS

- A. All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. The Contractor shall provide either new or used materials and equipment, which are in substantially undamaged condition and without significant deterioration and which are recognized in the construction industry, by compliance with appropriate standards, as being suitable for intended use in each case. Where a portion of temporary utility is provided by utility company, the Contractor shall provide the remaining portion with matching and compatible materials and equipment and shall comply with recommendations of utility company.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION OF TEMPORARY UTILITY SERVICES

- A. Wherever feasible, the Contractor shall engage the utility company to install temporary service to project, or as a minimum, to make connection to existing utility service; locate services where they will not interfere with total project construction Work, including installation of permanent utility services; and maintain temporary services as installed for required period of use; and relocate, modify or extend as necessary from time to time during that period as required to accommodate total project construction Work.
- B. Temporary connections for electricity shall be subject to approval of the Engineer and the power company representative, and shall be removed in like manner at the Contractor's expense prior to final acceptance of the Work.
- C. Separation of Circuits: Unless otherwise permitted by the Engineer, circuits used for power purposes shall be separate from lighting circuits.
- D. Construction Wiring: Wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. Electrical facilities shall conform to the requirements of Subpart K of the OSHA Safety and Health Standards for Construction.

3.2 WATER SUPPLY

- A. The Contractor shall coordinate with the Utility he is obtaining water service connection from. The Contractor shall provide all facilities necessary to convey the water from the source to the points of use in accordance with the requirements of the Contract Documents; this includes back flow prevention in accordance with the Utilities requirements.
- B. The Contractor shall not make connection to or draw water from any fire hydrant or pipeline without first obtaining permission of the Owner. For each such connection made, the Contractor shall first attach to the fire hydrant or pipeline a valve, meter, and backflow prevention device acceptable to the Owner.

3.3 INSTALLATION OF SANITARY FACILITIES

- A. Fixed or portable chemical toilets shall be provided wherever needed for the use of Contractor's employees. Toilets at construction job sites shall conform to the requirements of Subpart C Section 1926.51 of the OSHA Standards for Construction.
- B. The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the Site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.
- C. The Contractor shall coordinate with the Owner for obtaining sewer connection and shall pay all permit and sewer usage charges. The sewer capacity charges will be paid by the Owner.

3.4 OPERATIONS AND TERMINATIONS

- A. Prior to placing temporary utility services into use, the Contractor shall inspect and test each service and arrange for governing authorities' required inspection and tests, and obtain required certifications and permits for use thereof.
- B. The Contractor shall maintain distinct markers for underground lines, and protect from damage during excavating operations.
- C. When need for a temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than time of substantial completion, the Contractor shall promptly remove installation unless requested by Engineer to retain it for a longer period. The Contractor shall complete and restore Work which may have been delayed or affected by installation and use of temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces.

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- D. Before final acceptance of the Work on the project, all temporary connections and piping installed by the Contractor shall be entirely removed, and all affected improvements shall be restored to original condition or better, to the satisfaction of the Engineer and to the Owner.

END OF SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

01500 - 5

SECTION 01560 – PROJECT SIGNS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall maintain signs identifying the project and funding agencies. The signs will be provided by the Owner to the Contractor at the preconstruction meeting.
- B. The Contractor may furnish and install temporary sign identifying Contractor and Sub-Contractor businesses.

1.2 SUBMITTALS

- A. Provide submittal indicating proposed installation location of signs.

1.3 REFERENCE STANDARDS

- A. Infrastructure Finance Authority and Oregon Health Authority – Drinking Water Program

PART 2 - PRODUCTS

2.1 GENERAL

- A. Funding Agency Signs (Provided by Owner)
  - 1. The Contractor shall install the signs at locations acceptable to Owner. The signs will be provided to the Contractor when available.

PART 3 - EXECUTION

3.1 GENERAL

- A. Signs shall be installed prior to commencement of construction at a location which is near the project site and amenable to public viewing.
- B. Signs shall be displayed continuously throughout project construction. Vandalized and/or damaged signs shall be repaired or replaced immediately, and meet the same specifications as the original sign.
- C. Signs shall be returned to the Owner upon completion of the project.

3.2 INSTALLATION

- A. Signs shall be located near the main construction access to the project and be visible from the main public access corridor to the site.
- B. Signs and supports shall not impede access to or from site.

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- C. Fasten signs securely in level and plumb positions.
- D. The sign will be adequately supported with regard to site conditions and will be an adequate distance above the prevailing grade to permit public viewing.

END OF SECTION 01560

PROJECT SIGNS

01560 - 2

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Comply with requirements stated in conditions of the contract and in Specifications for administrative procedures in closing out the work.
- B. Furnish lien waivers, bond extensions, and other required data.
- C. Satisfy conditions of the contract, fiscal provisions, legal submittals and additional administrative requirements.

1.2 SUBSTANTIAL COMPLETION

- A. When substantially complete, the Contractor shall submit to the Owner:
  - 1. A written notice that the Work, or designated portion thereof, is substantially complete.
  - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, Engineer will perform an inspection to determine the status of completion. If the Work is not deemed substantially complete, the following will occur:
  - 1. Owner will promptly notify the Contractor in writing, given the reasons therefore.
  - 2. The Contractor shall remedy the deficiencies in the work, and send a second written notice of Substantial Completion to the Owner.
  - 3. Owner will request the Engineer to re-inspect the work.
  - 4. Once the work is deemed substantially complete and after review and approval, the Engineer will execute and deliver to the Owner and the Contractor, the Certificate of Substantial Completion with a final list of items to be completed or corrected prior to release of final payment.

1.3 PROJECT RECORD DOCUMENTS

- A. Maintain at Project site, available to Owner and Engineer, one copy of the Contract Documents, shop drawings and other submittals, in good order.
  - 1. Mark and record field changes and detailed information contained in submittals and change orders.

2. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
  3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
  4. Identify location of spare conduits including beginning, ending, and routing through pull boxes and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
  5. Provide schedules, lists, layout drawings, and wiring diagrams.
  6. Make annotations with erasable colored pencil conforming to the following color code:
    - a. Additions - Red
    - b. Deletions - Green
    - c. Comments - Blue
    - d. Dimensions – Graphite
  7. Make all annotations on one set of drawings.
- B. Maintain documents separate from those used for construction.
1. Label documents “RECORD DRAWINGS.”
- C. Keep documents current.
1. Record required information at the time the material and equipment is installed and before permanently concealing.
  2. During progress meetings, record documents will be reviewed to ascertain that changes have been recorded.
- D. Submit record documents for Review. Submittal shall include transmittal letter to the Engineer containing date, project title, Contractor’s name and address, list of documents, and signature of Contractor.

1.4 FINAL SUBMITTALS

- A. The Contractor, prior to requesting final payment, shall obtain and submit the following items to the Engineer for transmittal to the Owner:
1. Written guarantees, where required.
  2. Completed record drawings.



3. Bonds for roofing, maintenance, etc., as required.
4. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
5. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
6. Letter from bonding company stating that bonds will be extended for one year after substantial completion.

B. Owner will prepare a final Change Order, reflecting approved adjustments to the contract sum which were not previously made by Change Orders.

1.5 FINAL CLEANUP

A. The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the Owner will be withheld until the Contractor has satisfactorily performed the final cleanup of the Site.

1.6 MAINTENANCE AND GUARANTEE

A. The Contractor shall comply with the maintenance and guarantee requirements contained in the General Conditions.

B. The Contractor shall make all repairs and replacements promptly upon receipt of written order from the Owner. If the Contractor fails to make such repairs or replacements promptly, the Owner reserves the right to do the Work and the Contractor and its surety shall be liable to the Owner for the cost thereof.

1.7 FINAL PAY ESTIMATE

A. Submit final pay estimate and supporting data to Owner.

B. Final estimates shall reflect all adjustments to the contract sum:

1. The original contract sum
2. Additions and deductions resulting from:
  - a. Previous Change Orders
  - b. Allowances
  - c. Unit prices
  - d. Deductions for uncorrected work
  - e. Penalties and bonuses

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- f. Deductions for liquidated damages
- 3. Total contract sum, as adjusted
- 4. Previous payments
- 5. Sum remaining due

PART 2 - PRODUCTS            NOT USED

PART 3 - EXECUTION        NOT USED

END OF SECTION 01700

CONTRACT CLOSEOUT

01700 - 4

SECTION 02320 - SOIL STABILIZATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish and install material and equipment needed to install chemical grout to stabilize the earth in variety of soils to prevent settlement.

1.2 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data:
  - 1. Submit manufacturer's product information brochures.
  - 2. Submit MSDS of each relevant product used on the job site.
  - 3. Submit manufacturer's product data sheets per grout product used.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Contractor should demonstrate adequate experience applying polyurethane hydrophobic chemical grout.

1.4 DELIVERY, STORAGE & HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage and Protection:
  - 1. Refer to the manufacturer's product data sheet and material safety data sheets (MSDS) for storage and handling instructions.
  - 2. Site Precautions: OSHA guidelines and local restrictions, as applicable, must be followed at all times.
  - 3. Information, instructions and warnings on all MSDS, labels and product data sheets must be adhered to.
  - 4. This material is intended to be used by trained individuals with the proper equipment.
  - 5. Environmental waste—liquid, solid or vapor—must be contained within the job site and disposed of in accordance with state, province and local regulations. See the manufacturer's literature for removal information.

PART 2 - PRODUCTS

2.1 GROUT

- A. Material: Hydrophobic polyurethane injection material that is used to harden soils in foundations and stabilize soil under foundations and floors.
- B. Accessories:
  - 1. Catalyst to increase the grout's setup time. As recommended by the grout manufacturer.
  - 2. Flush agent is recommended for purge cleaning of the grout injection pumps.
- C. Equipment:
  - 1. Two airless injection pumps (1,500 psi). Use one injection pump for adding water to the soil (if necessary), and a separate injection pump for the actual grout injection.
  - 2. Drill with capability to drill into soil as needed per job application.
  - 3. Machette tubes for injection of grout
  - 4. Inflatable seal or sliding seal packers.
  - 5. Provide equipment with a metering device to measure the volume of chemical used for grouting before adding water or catalyst.

2.2 PRODUCT SUBSTITUTIONS

- A. Substitutions: Contractor must submit a product data sheet of an equivalent product to ensure similar viscosity levels for a suitable substitution.

2.3 INJECTION

- A. Field Application: Inject product in compliance with grout manufacturer's recommendations. See the product data sheet and brochure for details.

2.4 SOURCE QUALITY CONTROL

- A. Tests, Inspection: Ensure manufacturer is in compliance with ISO registration procedures for the production of the specified grout.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with the instructions and recommendations of the grout manufacturer. Refer to the product data sheet for further instruction.

3.2 EXAMINATION AND PREPARATION

A. Site Verification of Conditions:

1. Verify that site conditions are acceptable for product installation in accordance with installer's recommendation. Applications for soil stabilization to prevent settlement.
2. The method of stabilizing the surrounding soil uses drilling holes through the floor into the soil and injecting chemical grout at pre-determined intervals utilizing Machette tubes and inflatable packers.
3. The material penetrates the ground and encapsulates the granules by reacting with the water present solidifying into a stable mass of soil and rigid foam.
4. The contractor is responsible to determine the best method for injection and the spacing of injection holes to obtain stable soil after injection.

3.3 GROUT PREPARATION

- A. Perform a pre-blend of grout product using on-site water to ensure the desired gel time meets the requirements for the application.
- B. Catalyst can be added prior to mixing with water to accelerate the reaction time.
- C. Follow the recommended procedure from the manufacturer generally as follows:
  1. Add grout and catalyst and allow the two to homogenize.
  2. Add water and mix thoroughly.
  3. Using the start time as the time mixing begins after the addition of water:
    - a. Determine the cream time – the time in which the material just begins to foam.
    - b. Determine the tack-free time – the time in which the surface of the material is no longer tacky.
- D. The temperature of the materials when mixed and the temperature of the soil into which the material is introduced can also control the speed of the reaction.

3.4 APPLICATION AND INSTALLATION

- A. Premix as needed for the desired gel time.
- B. Start with a quantity of material that can be used in a reasonable amount of time.
- C. If the soil is dry, inject water first using a separate injection pump. The use of a second injection pump for injecting water reduces the risk of having a reaction that would result in a clogged pump.

- D. Inject premixed grout using an injection pump.
- E. Refer to the manufacturer's product data sheet, MSDS guidelines and product information brochure for more information about the injection procedure.

3.5 GROUND STABILIZATION GROUTING

- A. Drill the hole pattern for grout material injection in accordance with the contractor's injection plan. Ensure that holes do not exceed 1 inch in diameter, and are drilled vertically to a depth sufficient to penetrate below the floor and into the subgrade to be stabilized. Clean holes to remove any obstructions to allow flow of grout. Insert injection tubes of sufficient length into the drill holes to the required depths.

3.6 CLEANING

- A. Flush the injection pumps and all mechanical components of all residual grout when injection is finished with recommended flush agent
- B. Refer to the manufacturer's product data sheet, MSDS guidelines and product information brochure for more information about the cleaning procedure.

3.7 MEASUREMENT AND PAYMENT

- A. Measurement and payment shall be on a unit rate for the number of gallons of grouting chemical injected before adding water or catalyst. The unit rate shall include materials, production, placement and clean up. Placed volumes of grout shall be determined by the metering device on the grout injection pump.

END OF SECTION 02320

SECTION 02830 - PAINT REMOVAL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This work shall consist of the containment, collection, temporary storage, transportation and disposal of waste from paint removal. Waste requiring containment and control includes, but is not limited to, old paint, spent abrasives, corrosion products, mill scale, dirt, dust, grease, oil, salts, and water used for cleaning the surface of existing coatings prior to painting.

1.2 CONDITION OF STRUCTURES

- A. Owner assumes no responsibility for actual conditions of items or the structure where work is shown. Conditions existing at time of commencement of contract will be the responsibility of the Contractor.

1.3 GENERAL

- A. The existing coatings may contain toxic metals. This specification provides the requirements for containment and for the protection of the public, and the environment from exposure to harmful levels of toxic metals that may be present in the paint being removed or repaired. The Contractor shall take reasonable and appropriate precautions to protect the public from the inhalation or ingestion of dust or debris from the operations, and is responsible for the clean-up of all spills of waste at no additional cost to the owner.
- B. The Contractor shall comply with the requirements of this Specification and all applicable Federal, State, and Local laws, codes, and regulations, including, but not limited to the regulations of the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA).
- C. The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or Local regulation is more restrictive than the requirements of this Specification, the more restrictive requirements shall prevail.

1.4 SUBMITTALS

- A. The Contractor shall submit the following before accomplishing the work. The submittals shall be provided within 30 days of execution of the contract. Work cannot proceed until the submittals are accepted. Details for each of the plans are presented within the body of this specification.
  - 1. Containment Plans. The containment plans shall include drawings, equipment specifications with air flow and ventilation when negative pressure on the interior. The plans shall include copies of the manufacturer's specifications for the containment materials and equipment that will be used to accomplish containment and ventilation.

2. Environmental Monitoring Plan. The Environmental Monitoring Plan shall address the visual inspections and clean up of the soil and water that the Contractor will perform, including final project inspection and cleanup. The plan shall address the daily visible emissions observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur. The plan shall include: A site sketch shall be included, indicating sensitive receptors, monitor locations, and distances and directions from work area. Equipment specification sheet for monitors being used. Include a procedure for operation of monitors per 40 CFR 50, Appendix B. The name, contact information (person's name and number), and certification of the laboratory performing the filter analysis. Laboratory shall be accredited by one of the following: 1) the American Industrial Hygiene Association (AIHA) for lead (metals) analysis, 2) Environmental Lead Laboratory Accreditation Program (ELLAP) for metals analysis, 3) or 3) the EPA National Lead Laboratory Accreditation Program (NLLAP) for lead analysis. The laboratory shall provide evidence of certification, a sample laboratory chain-of-custody form, and sample laboratory report that provides the information required by this specification. The laboratory shall do the analysis per 40 CFR 50, Appendix G.
  3. Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling and disposal. Include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. Submit the name and qualifications of the laboratory proposed for Toxicity Characteristic Leaching Procedure (TCLP) analysis. If the use of abrasive additives is proposed, provide the name of the additive, the premixed ratio of additive to abrasive being provided by the supplier, and indicating IEPA acceptance of the material. Note that the use of any steel or iron based material, such as but not limited to grit, shot, fines, or filings as an abrasive additive is prohibited.
  4. Contingency Plan. The Contractor shall prepare a contingency plan for emergencies including fire, accident, failure of power, failure of dust collection system, failure of supplied air system or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency.
- B. When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any work until acceptance of the submittals. Acceptance does not imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the plans does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.



- C. Quality Control (QC) Inspections. The Contractor shall perform QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted submittals. Contractor QC inspections shall include, but not be limited to the following:
- D. Proper installation and continued performance of the containment system(s) in accordance with the approved drawings.
- E. Visual inspections of emissions into the air and verification that the cause(s) for any unacceptable emissions is corrected.
- F. Set up, calibration, operation, and maintenance of the ambient air monitoring equipment, including proper shipment of cassettes/filters to the laboratory for analysis. Included is verification that the Engineer receives the results within the time frames specified and that appropriate steps are taken to correct work practices or containment in the event of unacceptable results.
- G. Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the cause(s) of unacceptable releases is corrected.
- H. Proper implementation of the waste management plan including laboratory analysis and providing the results to the Engineer within the time frames specified herein.
- I. Proper implementation of the contingency plans for emergencies. The personnel providing the QC inspections shall possess current SSPC-C3 certification or equal, including the annual training necessary to maintain that certification (SSPC-C5 or equal)

PART 2 - PRODUCTS            NOT USED

PART 3 - EXECUTION

3.1 PAINT REMOVAL METHODS

- A. Abrasive blasting: the use of either air pressure or a centrifugal wheel and abrasive particles to remove surface coatings or to prepare a surface for paint application.
- B. Wet abrasive blasting: abrasive blasting with the addition of water to the air abrasive stream.
- C. Power tool: an electric or pneumatic rotary peening tool, needle gun or other tool that breaks and removes a coating, or an electric or pneumatic tool that abrades the coating and is equipped with a high efficiency particulate air (HEPA) filter vacuum.
- D. Vacuum blasting: dry abrasive blasting with either a blast nozzle that is surrounded by a chamber evacuated with negative air pressure, and that is held against the coated surface.

3.2 CONTAINMENT REQUIREMENTS

- A. The Contractor shall install and maintain containment systems surrounding the work for the purpose of controlling emissions of dust and debris according to the requirements of this specification. Working platforms and containment materials that are used shall be firm and stable and platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g., abrasives), and equipment during all phases of surface preparation and painting. Platforms, cables, and other supporting structures shall be designed according to OSHA regulations. If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited.
- B. The containment system shall maintain the work area free of visible emissions of dust and debris with no debris permitted outside of the regulated area at any time. All debris within the regulated area and within the containment shall be collected at the end of the last shift each day, and properly stored in sealed containers. Cleaning shall be accomplished by HEPA vacuuming unless it is conducted within a containment that is designed with a ventilation system capable of collecting the airborne dust and debris created by sweeping and blowing with compressed air. The ventilation system shall be in operation during the cleaning.
- C. The containment systems shall meet the following requirements:
1. Dry Abrasive Blast Cleaning - Full Containment with Negative Pressure (SSPC Class 1A) Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to OSHA regulations. The blast enclosure shall have an airlock or resealable door entryway to allow entrance and exit from the enclosure without allowing the escape of blasting residue. If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. The equipment shall be enclosed if visible dust and debris are being emitted and/or the regulated area or high volume monitor lead levels are not in compliance. Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.
  2. Vacuum Blast Cleaning within Containment (SSPC-Class 4A) Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide a closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive, and stored for disposal. The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud.
  3. Vacuum-Shrouded Power Tool Cleaning within Containment (SSPC-Class 3P) The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters.

4. Power Tool Cleaning without Vacuum, within Containment (SSPC-Class 2P)  
The Contractor shall securely install containment around the work area to capture and collect all debris that is generated.
5. Water Washing, Water Jetting or Wet Abrasive Blast Cleaning within Containment (SSPC Class 2W-3W)  
Water washing for the purpose of removing chalk, dirt, grease and other surface debris, and water jetting or wet abrasive blast cleaning for the purpose of removing paint and surface debris shall be conducted within a containment designed, installed, and maintained in order to capture and contain all water and waste materials. When water is used for surface cleaning, the collected water shall be filtered to separate the particulate from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification. When a slurry is created by injecting water into the abrasive blast stream, the slurry need not be filtered to separate water from the particulate.

### 3.3 CONTAINMENT

- A. The basic components that make up containment systems are defined below.
  1. Containment Materials - Rigid containment materials consist of solid panels of plywood, aluminum, rigid metal, plastic, fiberglass, composites, or similar materials. Flexible materials consist of screens, tarps, drapes, plastic sheeting, or similar materials.
  2. Permeability of Containment Materials - The containment materials are identified as air impenetrable if they are impervious to dust or wind such as provided by rigid panels, coated solid tarps, or plastic sheeting. Air penetrable materials are those that are formed or woven to allow air flow. Water impermeable materials are those that are capable of containing and controlling water when wet methods of preparation are used. Water permeable materials allow the water to pass through. Chemical resistant materials are those resistant to chemical and solvent stripping solutions. Use fire retardant materials in all cases.
  3. Support Structure - Rigid support structures consist of scaffolding and framing to which the containment materials. Use fire retardant materials in all cases.
  4. Containment Joints - Fully sealed joints require that mating surfaces between the containment materials and to the structure being prepared are completely sealed.
  5. Entryway - An airlock entryway involves a minimum of one stage that is full sealed to the containment and which is maintained under negative pressure using the ventilation system of the containment. Resealable door entryways involve the use of flexible or rigid doors capable of being repeatedly opened and resealed. Sealing methods include the use of zippers, Velcro, clamps, or similar fasteners. Overlapping door tarpaulin entryways consist of two or three overlapping door tarpaulins.

6. Mechanical Ventilation - The requirement for mechanical ventilation is to ensure that adequate air movement is achieved to reduce worker exposure to toxic metals to as low as feasible according to OSHA regulations (e.g., 29 CFR 1926.62), and to enhance visibility. Design the system with proper exhaust ports or plenums, adequately sized ductwork, adequately sized discharge fans and air cleaning devices (dust collectors) and properly sized and distributed make-up air points to achieve a uniform air flow inside containment for visibility. The design target for airflow shall be a minimum of 100 ft. per minute cross-draft or 60 ft. per minute downdraft. Increase these minimum airflow requirements if necessary to address worker lead exposures.
7. Negative Pressure - Achieve a minimum of 0.05 in. water column (W.C.) relative to ambient conditions.
8. Exhaust Ventilation -Provide exhaust filtration of the exhaust air, to achieve a filtration efficiency of 99.9 percent at 0.02 mils (0.5 microns).

### 3.4 MONITORING

- A. The Contractor shall prepare an Environmental Monitoring Plan. The purpose of the plan is to address the observations and equipment monitoring undertaken by the Contractor to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.
  1. Soil and Water. Containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil and pavements. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future. At the end of each workday at a minimum, the work area inside and outside of containment, including ground tarpaulins, shall be inspected to verify that paint debris is not present.
  2. Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean up, waste handling, and containment dismantling or relocation. If visible emissions in excess of SSPC Guide 6, Level 1 or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.
  3. Ambient Air Monitoring. The Contractor shall perform ambient air monitoring according to the following:
  4. Equipment Provided by Contractor. The Contractor shall provide up to 4 monitors at the work site and all necessary calibration and support equipment, filters, flow chart recorders and overnight envelopes for shipping the filters to the laboratory. Each monitor shall be tagged with the calibration date.

- B. Monitoring shall be performed for the duration of dust-producing operations (e.g., paint removal, waste handling, containment clean-up and movement, etc.) or a minimum of 8 hours each day (when work is performed). The monitoring schedule shall be as follows:
  - 1. For dry abrasive blast cleaning monitoring shall be conducted full time during all days of dust-producing operations (e.g., paint removal, waste handling, containment movement, etc.).
  - 2. For wet abrasive blast cleaning, water jetting, or power tool cleaning, monitoring shall be conducted for the first 5 days of dust producing operations. If the results after 5 days are acceptable, monitoring may be discontinued. If the results are unacceptable, corrective action shall be initiated to correct the cause of the emissions, and monitoring shall continue for an additional 5 days. If the results are still unacceptable, the Engineer may direct that the monitoring continue full time.

3.5 DISPOSAL OF WASTE MATERIALS:

- A. The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. The Contractor shall provide a Waste Management Plan that addresses all aspects of waste handling, storage, and testing, and provides the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities. All surface preparation/paint residues shall be collected daily and deposited in all-weather containers supplied by the Contractor as temporary storage. The storage area shall be secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g., fenced in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g., securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Waste shall be collected and transferred to bulk containers taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. Acceptable containers include covered roll-off boxes and 55-gallon drums. The Contractor shall ensure that no breaks and no deterioration of these containers occur. The containers shall be kept closed and sealed from moisture except during the addition of waste. The Contractor shall have each waste stream sampled for each project and tested by TCLP and according to EPA and disposal company requirements. If approved abrasive additives are used that render the waste non-hazardous as determined by TCLP testing, the waste shall be classified as a non-hazardous special waste, transported to a disposal facility.
- B. When paint is removed without the use of abrasive additives, the paint, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of the TCLP results. The waste shall be transported by a licensed hazardous waste transporter, treated by a treatment facility to a non-hazardous special waste and disposed at a disposal facility.

- C. The Contractor shall make arrangements to have other hazardous waste, which he/she generates, such as used paint solvent, transported to the Contractor's facility at the end of each day that this waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers. The Contractor is responsible for the payment of any fines and undertaking any clean up activities mandated by State or federal environmental agencies for improper waste handling, storage, transportation, or disposal. Contractor personnel shall be trained in the proper handling of hazardous waste, and the necessary notification and clean up requirements in the event of a spill.

3.6 CLEANUP AND REPAIR

- A. Upon completion of demolition work, remove tools, equipment, and waste materials from site.

3.7 REPAIR

- A. Repair any damage performed in excess of that required and any areas that are damaged by the contractors operation as a result of the demolition work. Return reservoir and surrounding area to a condition equal to that existing prior to commencement of construction.

END OF SECTION 02830

SECTION 02900 - DISINFECTION OF WATER UTILITY STORAGE TANK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Disinfect the interior of the water reservoir after work is complete.
- B. Work shall be completed in accordance with Oregon Health Authority (OHA), construction standard OAR 333-061-0050 (10).

PART 2 - MATERIALS

2.1 DISINFECTION CHEMICALS

- A. Conform to AWWA B300.

2.2 WATER

- A. The OWNER will provide project water at no cost to the CONTRACTOR. Project water includes water used by the CONTRACTOR for washing and cleaning the reservoir and for filling the reservoir after disinfection. Transport of the water will be the responsibility of the CONTRACTOR. CONTRACTOR shall not waste construction water.

PART 3 - EXECUTION

3.1 DISINFECTION

- A. After all work is complete, all surfaces of walls and floor of the reservoir shall be cleaned by using water jet to effectively remove all materials accumulated during the roof replacement work.
- B. The CONTRACTOR shall use calcium hypochlorite conforming to AWWA B 300 in granular form to disinfect the interior of the reservoir. A solution 200 milligrams per liter of chlorine shall be directly spray applied to all parts of the interior of the reservoir. Spray all surfaces on the inside of the reservoir including interior appurtenances. All interior wall and floor surfaces shall also be sprayed with chlorine solution. After applying the chlorine solution, the solution shall remain in contact with the surfaces for a minimum of 30 minutes and have a residual chlorine concentration of 10 mg/l. After disinfection, the CONTRACTOR shall fill the reservoir to the overflow level. After filling the tank the contractor shall obtain and pay for the necessary bacteriological tests as stated in paragraph 3.2 below.

3.2 BACTERIOLOGICAL TESTING

- A. After cleaning and disinfection are complete and the reservoir has been filled with water, perform bacteriological sampling and testing before placing the reservoir in service. Water from the reservoir shall be sampled and tested for coliform organisms in accordance with the Standard Methods for Examination of Water and Waste Water.
- B. If the test for coliform organisms is negative, the reservoir may be placed in service.
- C. If the test shows the presence of coliform organisms, the reservoir shall be drained and disinfected again. The CONTRACTOR shall continue the disinfection and testing until the tests indicate a negative test for coliform organisms. Contractor shall arrange and pay for a laboratory considered acceptable by the Engineer to conduct all bacteriological testing. Do not put tank in service until satisfactory bacteriological test results have been obtained.

3.3 DISPOSAL OF WATER

- A. Coordinate disposal of water in this manner with the OWNER. Comply with all environmental and local regulations. CONTRACTOR is responsible for water testing and monitoring costs. CONTRACTOR is responsible for procuring chlorine neutralization chemicals and neutralizing the water prior to discharge.
- B. Waste water contaminated by sediments, chemicals or debris shall be disposed of by the CONTRACTOR at a waste site located by the CONTRACTOR. The CONTRACTOR's waste site and disposal method for contaminated waste water shall conform to environmental and local regulations. All cost associated with the disposal shall be borne by the CONTRACTOR.

END OF SECTION 02900



SECTION 03520 - LIGHTWEIGHT CELLULAR CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish and install lightweight cellular concrete as shown on the drawings and specified herein.
- B. Supervise the mixing, transporting, placing, finishing, and testing of the low density concrete.
- C. Cellular concrete is a slurry of Portland Cement, supplementary cementing materials, and water combined with a foaming agent and air to create closed cell cellular concrete.

1.2 STANDARDS

- A. ACI 523.1, Guide for Cast-in-Place Low Density Cellular Concrete
- B. ASTM C495, Standard Test Method for Compressive Strength of Lightweight Insulating Concrete
- C. ASTM C869, Standard Specification for Foaming Agents Used in Making Preformed Foam for Cellular Concrete
- D. ASTM C796, Standard Test Method for Foaming Agents for Use in Producing Cellular Concrete Using Preformed Foam

1.3 PERFORMANCE REQUIREMENTS

- A. The contractor producing and placing cellular concrete shall have a record of experience in similar applications with compressive strength reports that show the quality of work has been achieved in these applications. The contractor must be capable of developing a mix design, batching, mixing, handling, and placing cellular concrete. The contractor shall have fully qualified workers who are thoroughly trained and experienced in the production, placement and quality control of cellular concrete.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of cellular concrete injection points and access for equipment and material sources.

PART 2 - PRODUCTS

- A. Submit drawings indicating shop and erection details the systems proposed to be used. Show on the drawings access cuts, vent holes cut-outs and injection points.

- B. Establish the strength qualities of the low density concrete proposed for use from manufacturer's submitted data prior to the beginning of construction operations. Perform the preparation of the design mix and subsequent testing through an approved testing laboratory capable of performing such services or by the manufacturer of the low density concrete.
- C. Prepare trial design batches with the same materials proposed for use in the work. Make and test Cylinders in accordance with ASTM ASTM C796 for cellular concrete. Proportion low density concrete for a minimum oven-dry unit weight of 30 pcf and the minimum average 120 psi. Submit copies of the design mix report for low density concrete indicating mixture proportions, average compressive strength in psi, and wet unit weight at point of placement for the type proposed for the project. Make allowances for any unit weight changes resulting from handling and placing methods.
- D. Provide trial batch placement to determine the expansion ratio of the proposed mix. Calculate the expansion ratio by dividing the average slurry density by the average cellular concrete density.

### PART 3 - MATERIALS

#### 3.1 ADMIXTURES

- A. Provide air-entraining admixtures conforming to ASTM C260. Do not use admixtures containing chloride ions.

#### 3.2 AGGREGATE

- A. Provide light weight aggregate free of asbestos and conforming to ASTM C332, Group I.

#### 3.3 FOAMING AGENT

- A. Provide foaming agents, for making cellular concrete, conforming to ASTM C869. Foaming agents shall conform to the requirements of ASTM C 869 when tested in accordance with the provisions of ASTM C 796. The density of the cellular concrete shall be maintained within +/- 10% of the design density.

#### 3.4 CEMENTITIOUS MATERIAL

- A. Provide portland cement conforming to ASTM C150, Type I, III; or ASTM C595, Type IS.

PART 4 - EXECUTION

4.1 INSTALLATION

- A. Use specialized batching, mixing, and placing equipment automated for the purpose by the manufacturer of the cellular concrete material. Dry-mix equipment must be able to receive bulk cement installed with a dust suppression system to conform to OSHA 29 CFR 1926 and 1910. The dry-mix unit must be capable of producing on-site, continuously, from one piece of equipment, and pump through hoses or pipes. Bulk cement weight measurements shall be determined by onboard instrumentation that operates within a tolerance of one and one-half percent (1.5%) per batch. Wet-mix production units manufacture cellular concrete utilizing slurry supplied from a ready-mix plant that has the required dust suppression system to create the slurry. Wet-mix equipment must be able to receive slurry on-site into the equipment and process it continuously during ready-mix supply, and pump through hoses or pipes. Each unit must be capable of producing cellular concrete and pumped by a positive displacement pump (Peristaltic or similar).
- B. A foam generator shall be used to continuously produce pre-formed foam, which shall be injected and mixed with the cementitious slurry downstream of the positive displacement slurry pump. The equipment shall be calibrated to produce a precise and predictable volumetric rate of foam with stable uniform microbubbles.
- C. Ready-mix drum-delivered cellular concrete, or mixing using bagged cement is not permitted. Any items to be fully or partially encased in the cellular concrete shall be properly set and stable prior to the installation of the cellular concrete. Formwork should be installed to withhold cellular concrete, and may require lining with poly sheeting or similar impermeable membrane to prevent leakage. Cellular concrete may be placed during freezing conditions, provided measures are taken to prevent damage to the cellular concrete until sufficient strength has been attained. Care should be taken to avoid freezing before initial set. Once mixed, the cellular concrete shall be conveyed promptly to the location of placement without excessive handling. The Constructor shall determine the maximum lift thickness based on density and any other considerations that may impact placement. Cellular concrete shall be cast in a formed or confined area within 1 to 2 hours, to permit an undisturbed setting.
- D. Convey low density concrete from the mixer to place of deposit by methods that will prevent segregation and loss of material. Use equipment for conveying concrete of such size and design to ensure uniform, continuous placement of concrete. Deposit low density concrete through a pump to assure concrete completely fills the voids. Do not use rodding, tamping, vibrating, or steel troweling.
- E. Provide equipment to accurately measure the volume of slurry being placed.

4.2 GROUND VOID GROUTING

- A. Completely fill voids caused by caving or collapse of ground. Fill with gravity or pressure installed cellular grout to fill void.
- B. Take care in grouting operations to prevent damage to adjacent utilities or structures. Grout at pressure that shall not distort or imperil portion of the work or existing installations or structures.

- C. Verify that void has been filled by visual inspection. In case of settlement under existing floors, take cores, at no additional cost to the City, to demonstrate that void has been filled.
- D. Provide field-control tests performed by an approved commercial testing laboratory and consisting of wet-density at time of placement and compressive strength tests. Prepare and test cylinders in accordance with ASTM C796.

4.3 MEASUREMENT AND PAYMENT

- A. Measurement and payment shall be on a unit rate basis for the number of cubic feet of cellular concrete placed. The unit rate shall include materials, production, placement, and testing of cellular concrete materials. Placed volumes shall be determined by multiplying the known volume of slurry by the ratio of slurry density to average cellular concrete density (expansion ratio).

END OF SECTION 03520

SECTION 05500 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish and install miscellaneous metal items as shown on the drawings and specified herein.
- B. Provide shop fabricated and manufactured steel including, but not limited to the following:
  - 1. Ledge angles, shelf angles, channels, and plates for structural framing.
  - 2. Steel framing and supports.

1.2 STANDARDS

- A. AISC “Code of Standard Practice.”
- B. ANSI A14.3 – American National Standard for Ladders – Fixed – Safety Requirements
- C. ASTM A36 – Specification for Carbon Structural Steel
- D. AWS D1.1 – Structural Welding Code – Steel
- E. SSPC-SP 11 – Power Tool Cleaning to Bare Metal
- F. SSPC-SP 2 – Hand Tool Cleaning
- G. SSPC-SP 6 – Commercial Blast Cleaning

1.3 SUBMITTALS

- A. General: All submittals shall be submitted in accordance with the requirements of Section 01300 – Submittals.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
  - 1. Prepare shop drawings from field measurements where possible.
  - 2. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Welder’s Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.

1.4 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
  - 1. Temperature Change: 120 degrees Fahrenheit, ambient; 180 degrees Fahrenheit, material surfaces.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Quality procedures and personnel according to the following:
  - 1. AWS D1.1 – Structural Welding Code – Steel.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Transport, handle, store and protect products with special custom wrapping and handling procedures to protect and touch-up shop primers at every stage of shipping.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.8 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturer's written recommendations to ensure that shop primers and topcoats are compatible with one another.

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

- A. HSS (Hollow Structural Shapes): ASTM A500 Grade B
- B. Bars, plates, miscellaneous shapes: ASTM A36
- C. Plates: ASTM A283
- D. Welding Materials: AWS D1.1; type required for materials being welded.

2.2 BOLTS AND ANCHORS

- A. Standard Service (Non-Corrosive Application): Unless otherwise indicated, bolts, anchor bolts, washers, and nuts shall be steel as indicated herein. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. Except as otherwise indicated, steel for bolt material, anchor bolts and cap screws shall be in accordance with the following:

Structural Connections	ASTM A307, Grade A or B
Pipe and Equipment Flange Bolts	ASTM A193, Grade B- 7

2.3 FABRICATION

- A. Workmanship: Conform to accepted shop practices. Form work true to details, with clean, straight, sharply defined profiles.
- B. Fit and shop assemble items in largest practical sections, for delivery to site. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- C. Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for intended use and, where applicable, to meet performance requirements.
- D. Fabricate items with joints tightly fitted and secured.
- E. Continuously seal joined members by continuous welds, unless otherwise indicated on Drawings.
- F. Joints and Connections: Weld all joints, unless other fastening methods are shown, specified or specifically approved. Close fit exposed joints; making joints where least conspicuous. Unless otherwise shown or specified, use flat and countersunk beaded bolts or screws in exposed connections.
- G. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- H. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- I. Cutting, Drilling; Perform cutting, drilling, punching required for accurate fitting and assembly work. In addition, perform similar operations as required for attachment of work of other trades, provided that directions for such work are supplied prior to shop drawing approvals.
- J. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
  - 1. Provide anchor bolts for connecting to other work.
    - a. Drill and tap steel as required to receive bolted connections.
    - b. Make bolt holts 1/16-inch large than nominal bolt diameter.
- K. Provisions for Attachment to Structure: Furnish miscellaneous metal items complete with framing, supports, hangers, bracing, anchors, and other devices shown specified or necessary for reinforcement and proper, secure setting or attachment to building construction.

- L. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- M. Dissimilar Materials Protection: Insulate aluminum surfaces in contact with metals other than galvanized or stainless steel, or with plaster or concrete, by means of chromate gasketing or heavy coat of alkali-resistant bituminous paint.
- N. Workmanship: Fabricate all items neatly and rigidly in accordance with details in first-class finished, workmanlike manner. Form curved work neatly to radii indicated. Provide members of sizes indicated and weld, bolt or rivet securely together. Furnish bolts, nuts, washers, and other fastening devices required for anchoring and securing work.
- O. Welding: Use electric shielded-arc process in accordance with Welding Specifications of American Welding Society. Use only welding operators properly trained and highly skilled in arch welding. Grind smooth surface welds exposed to view.

#### 2.4 SHOP FINISHING

- A. Steel Metal Items: Galvanize all iron or steel items. Prior to galvanizing, all items after fabrication shall be cleaned thoroughly, removing scale, flux deposits, rust, oil, dirt, and other foreign matter. Except as otherwise indicated, iron or steel items specified to be galvanized shall be hot-dip galvanized after fabrication in accordance with ASTM A123. Fabricate units complete or in largest practical sections before galvanizing.

#### 2.5 FINISHES – STEEL

- A. Galvanizing and prime paint all exterior steel items.
- B. Prime paint all steel items.
  - 1. Exceptions: Galvanized items to be embedded in concrete and items to be embedded in masonry.
- C. Prepare surfaces to be primed in accordance with SSPC-SP 2 where indicated to receive manufacturer's standard primer.
- D. Prepare surfaces to be primed in accordance with SSPC-SP 6 where indicated to receive high-performance coating finish.
- E. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- F. Prime Painting: One coat of specified primer applied in strict accordance with primer manufacturer's instructions.
- G. Galvanizing: Galvanize after fabrication to ASTM A123 requirements.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Clean and strip primed steel items to bare metal where site welding is required.



- C. Coat all aluminum surfaces in contact with concrete with an approved bituminous coating or zinc chromate primer.

3.2 GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, thru bolts, lag screws, wood screws, and other connectors.
- C. Install items plumb and level, accurately fitted, free from distortion or defects.
- D. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- E. Field weld components as indicated.
- F. Perform field welding in accordance with AWS D1.1
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- G. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
- H. Field Touch-up: After installation of miscellaneous metal items, touch-up field bolts, field welds, uncoated connections and abrasions with shop protective coatings. Clean items of mud, dirt, and other objectionable foreign matter.
- I. Finishing: Where indicated, metal fabrication items shall be painted after installation in accordance with project drawings and specifications.

END OF SECTION 05500

SECTION 05520 – METAL RAILINGS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish all labor, materials and equipment as required to install all pipe and tube handrails, balusters, and fittings, as shown on the Plans.

1.2 REFERENCE STANDARDS

- A. ADA Standards – Americans with Disabilities Act (ADA) Standards for Accessible Design
- B. ASTM A53 – Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
- C. ASTM A123 – Specification for Zinc (Hot-Dip, Galvanized) Coatings on Iron and Steel Products
- D. ASTM A500 – Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- E. ASTM A780 – Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
- F. ASTM C1107 – Specification for Packaged, Dry, Hydraulic-Cement Grout (Nonshrink)
- G. AWS D1.1 – Structural Welding Code – Steel
- H. AWS D1.3 – Structural Welding Code – Sheet Steel
- I. IBC – International Building Code
- J. OSHA Safety Requirements.
- K. SSPC-PA-1 – Shop, Field, and Maintenance Painting of Steel
- L. SSPC-SP 1 – Solvent Cleaning
- M. SSPC-SP 11 – Power Tool Cleaning to Bare Metal
- N. SSPC-SP 6 – Commercial Blast Cleaning

1.3 SUBMITTALS

- A. General: All submittals shall be submitted in accordance with the requirements of Section 01300 – Submittals.

- B. Shop drawings: Indicate profiles, railing layouts, post locations, and gate locations. Indicate component details, materials, finishes, connection and joining methods, attachment to supporting structure, and the relationship to adjoining work.
  - 1. Submit design calculations for all handrail and guardrail shop drawings stamped by a professional engineer in the State where Work is to be done.
  - 2. Submit design calculations for anchorage of railing stamped by a professional engineer in the State where Work is to be done.
- C. Submit manufacturer's instructions for installation and connecting methods.

#### 1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Quality procedures and personnel according to the following:
  - 1. AWS D1.1, "Structural Welding Code – Steel".
  - 2. AWS D1.3, "Structural Welding Code – Sheet Steel".

### PART 2 - PRODUCTS

#### 2.1 RAILINGS – GENERAL REQUIREMENTS

- A. Allow for expansion and contraction of members and building movement without damage to connections or members.
- B. Dimensions: See drawings for configurations and heights.
- C. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated.

#### 2.2 STRUCTURAL PERFORMANCE

- A. Code Requirements: All railings, guardrails and handrails shall conform to the code requirements for IBC and the State-approved OSHA. Railings, guardrails, and handrails, when part of the means of egress as defined by the governing codes, shall conform to the requirements of the most stringent of the codes or reference standards. The project shall conform to the code and State-approved OSHA for industrial-commercial, non-public use unless otherwise indicated.

#### 2.3 STEEL MATERIALS

- A. Steel Tube: ASTM A500, Grade B cold-formed structural tubing.
- B. Stainless Steel Tube: Type 316 grade stainless steel.
- C. Steel Pipe: ASTM A53 – Grade B Schedule 40, black finish.
- D. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

- E. Exposed Fasteners: No exposed bolts or screws.
- F. Galvanizing: in accordance with requirements of ASTM A123.
  - 1. Touch up abraded areas after fabrication using specified touch-up primer for galvanized surfaces.
  - 2. Galvanize all exterior members.

#### 2.4 RAILING SYSTEM

- A. Rail Section: Railing and handrails shall be round pipe design railing system unless otherwise indicated. Provide three (3) rails plus metal kickplate.
- B. Rail and Post: Pipe rail shall be not less than 1-1/2-inch diameter, Schedule 40 pipe. Pipe Post shall be not less than 1-1/2-inch diameter, Schedule 80 pipe.
- C. Weld Rods: Aluminum weld rods shall be a type recommended by the aluminum manufacturer for anodized finished products.
- D. Sleeves: Sleeves shall be formed with galvanized steel or PVC. Sleeves for removable posts shall be of steel, hot-dip galvanized after fabrication. Galvanizing of steel sleeves shall be done after fabrication to prevent raw steel from being exposed to the elements.
- E. Fasteners: Fasteners, screws, and bolts shall be of stainless steel or aluminum. Handrail bracket fasteners and fasteners over water basins shall be stainless steel.
- F. Brackets: Handrail brackets shall match the material and finish of the handrail or railing of which they are a part.
- G. Toeboards: Toeboards shall be extruded (match railing system) aluminum or steel of not less than 4-inches in height. Toeboards for pipe railing shall be channel section for strength.

#### 2.5 FINISHES

- A. Pipe railing system includes handrails, railing, tube caps, and other miscellaneous parts of rails shall be provided with a 0.7-mil clear anodized finish.

#### 2.6 FABRICATION

- A. Verify dimensions on site prior to shop fabrication. Fit and shop assemble sections in largest practical sizes for delivery and installation at site.
- B. Accurately form components to suit specific project conditions and for proper connection to building structure
- C. Supply components required for secure anchorage or handrails and railings.
- D. Welded Joints:
  - 1. Continuously seal joined pieces by continuous welds.

2. Grind exposed joints flush and smooth with adjacent surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Fit and shop assemble components in largest practical sizes for delivery to site.
- F. Galvanize all iron or steel items. Prior to galvanizing, all items after fabrication shall be cleaned thoroughly, removing scale, flux deposits, rust, oil, dirt, and other foreign matter. Except as otherwise indicated, iron or steel items specified to be galvanized shall be hot-dip galvanized after fabrication in accordance with ASTM A123. Fabricate units complete or in largest practical sections before galvanizing.

### PART 3 - EXECUTION

#### 3.1 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery of Materials: Manufactured materials shall be delivered in original, unbroken packages, containers, or bundles bearing the label of the manufacturer.
- B. Storage: All materials shall be carefully stored in a manner that will prevent damage and in an area that is protected from the elements.

#### 3.2 PREPARATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Supply items to be mounted to concrete, embedded in masonry, or place in partitions with setting templates and erection drawings to appropriate sections.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor hand railings securely to structure. Install in accordance with shop drawings, approved anchorage calculations, and manufacturer's instructions.
- D. All exposed welds shall be ground smooth and flush and shall be polished and anodized. Discoloration on exposed metal surfaces, whether or not due to welding, shall constitute a basis for rejection of the entire assembly.
- E. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A780.
  1. Clean surfaces of weld seams according to SSPC-SP 11, "Power Tool Cleaning to Bare Metal".

END OF SECTION 05520

SECTION 05530 – METAL GRATINGS AND FLOOR PLATES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish all labor, materials and equipment as required to install all grating and floor plates as shown on the Plans. Coordinate Work with other contractors.
- B. Furnish seats for all grating and floor plates, as shown on the Plans.

1.2 SUBMITTALS

- A. Shop Drawings: Shop Drawings of all miscellaneous metalwork shall be submitted in accordance with Section 01300 – Submittals.
- B. Prior to ordering or fabrication of grating, floor plates, or seats, submit shop drawings of all pieces with positioning diagram to the Engineer for approval. Layout drawings for grating shall be submitted showing the direction of span, type and depth of grating, size and shape of grating panels, seat angle details, and details of grating hold down fasteners. Load and deflection table shall be submitted for each style and depth of grating used. Submit design calculations for all drawings stamped by a professional engineer licensed in the State where Work is to be done.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Dissimilar Materials Protection: Insulate aluminum surfaces in contact with metals other than galvanized or stainless steel, or with plaster or concrete, by means of chromate gasketing or heavy coat of alkali-resistant bituminous paint.
- B. Load/Deflection Requirements: Grating shall be capable of spanning the distances indicated with a minimum safety factor of 3 for all stresses and without exceeding a deflection equal to the lesser of 1/4 inch or the span divided by 180. The loading used for determining stresses and deflections shall be the uniform live load of the adjacent floor area or 100 pounds per square foot, whichever is greater, and/or a concentrated load of 1000 pounds at the center of the span, whichever is greater unless otherwise indicated.
- C. Design: All grating shall be of modular construction, capable of being removed in sections for inspection or to gain access to the structure below. Each operation shall not weigh more than 80 pounds and shall be provided with a 316 stainless steel or Aluminum lifting handles.

2.2 METAL GRATING

- A. Provide steel grating where steel grating is shown on the drawings.
  - 1. Steel Grating: Provide galvanized steel rectangular welded steel non-slip bar grating. Bearing bars shall be 1-1/2" deep and 3/16" wide. Spacing of bearing bars shall be 1-3/16".
- B. Grating shall be completely banded at all edges and cutouts using material and cross section equivalent to the bearing bars. Such banding shall be welded to each cut bearing bar. Grating shall be supported on all sides of an opening by support members.
- C. Where grating is supported on concrete, stainless steel embedded support angles shall be used on all sides, unless indicated otherwise. Such angles shall be mitered and welded at corners. Make provisions for attachment of grating in two locations of each support.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install gratings, floor plates and seats, as shown on the Plans.
- B. Workmanship: Fabricate all items neatly and rigidly in accordance with details in first-class finished, workmanlike manner. Form curved work neatly to radii indicated. Provide members of sizes indicated and weld, bolt or rivet securely together. Furnish bolts, nuts, washers, and other fastening devices required for anchoring and securing work.
- C. Galvanizing: Galvanize all iron or steel items. Prior to galvanizing, all items after fabrication shall be cleaned thoroughly, removing scale, flux deposits, rust, oil, dirt, and other foreign matter. Except as otherwise indicated, iron or steel items specified to be galvanized shall be hot-dip galvanized after fabrication in accordance with ASTM A123. Fabricate units complete or in largest practical sections before galvanizing.

END OF SECTION 05530

SECTION 09970 - STEEL WATER STORAGE TANK PAINTING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish all labor, materials and equipment as required to furnish and apply all paint and coatings as specified herein.

1.2 DEFINITIONS

- A. The term paint, coatings, or finishes as used herein, shall include surface treatments, emulsions, enamels, paints, epoxy resins, and all other protective coatings, excepting galvanizing or anodizing, whether used as a pretreatment, primer, intermediate coat, or finish coat.
- B. Dry Film Thickness (DFT): The minimum dry film thickness, without any negative tolerance.
- C. Volatile Organic Compound (VOC): Content of air polluting hydrocarbons in uncured coating product measured in units of grams per liter or pounds per gallon, as determined by EPA Method 24.
- D. Where SSPC surface preparation standards are specified or implied for ductile iron pipe or fittings, the equivalent NAPF surface preparation standard shall be substituted for the SSPC standard.

1.3 REFERENCE STANDARDS

- A. Codes and Standards: In addition to the requirements of these Specifications, the work to be performed under this Section is to comply with the following codes and regulations:
  - 1. Steel Structure Painting Council Specifications (SSPC):
    - a. SSPC SP-1 Solvent Cleaning.
    - b. SSPC SP-2 Hand Tool Cleaning.
    - c. SSPC SP-3 Power Tool Cleaning.
    - d. SSPC SP-5 White Metal Blast Cleaning.
    - e. SSPC SP-6 Commercial Blast Cleaning.
    - f. SSPC SP-7 Brush-Off Blast Cleaning.
    - g. SSPC SP-10 Near-White Blast Cleaning.
    - h. SSPC SP-11 Power Tool Cleaning to Bare Metal.
    - i. SSPC-SP-12 High- and Ultrahigh-pressure Water Jetting.



2. Underwriters' Laboratory (UL):
  - a. UL 3P83 Drinking Water System Components - Health Effects.
3. National Association of Corrosion Engineers Standards (NACE):
  - a. RP0188-99 Discontinuity (Holiday) Testing of Protective Coatings.
4. Applicable Standards of American National Standards Institute, Inc. (ANSI)
5. National Association of Pipe Fabricators (NAPF):
  - a. NAPF 500-03 Surface Preparation Standard for Ductile Iron Pipe and Fittings Receiving Special External Coatings and/or Special Internal Linings.
6. NSF International (NSF):
  - a. NSF 61 Drinking Water System Components - Health Effects.
7. American Society for Testing and Materials (ASTM):
  - a. ASTM D 4262-83 Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
  - b. ASTM D 4263-83 Test Method for indicating Moisture in Concrete by the Plastic Sheet Method.
  - c. ASTM D4285-83 Test Method for indicating Oil or Water in Compressed Air.
  - d. ASTM D4541-93 Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.

#### 1.4 QUALITY ASSURANCE

- A. Painter's Qualifications: The work specified under this Section shall be performed by or under the supervision of a qualified painter. The Contractor shall be required to document the painter's experience, competence and ability to comply with the requirements of these Specifications and to complete the work in a timely manner. The Painter or Applicator shall have the following qualifications:
  1. Minimum of 5 years of experience applying specified type or types of coatings under conditions similar to those of the Work. Provide qualifications of applicator and references listing five similar projects completed in the past two years.
  2. Manufacturer approved applicator when manufacturer has approved applicator program.

- B. Standard Products: All paints in a paint system are to be the products of a single manufacturer. The standard product of manufacturers other than those specified will be accepted when it is demonstrated they are equal to the product specified. All paint and coating products available in selectable colors shall be supplied in the color selected by the Owner from the manufacturer's standard color charts.

1.5 SUBMITTALS

- A. Before any paint materials are ordered, submit a complete list of all materials proposed to be furnished and applied under this Section. Any coating or paint materials ordered by Contractor prior to receiving submittal response from Engineer indicating that the submitted material is accepted shall be at the risk of the Contractor.
- B. For each paint, furnish the paint manufacturer's specific application instructions and surface preparation requirements and the following information:
  - 1. Paint manufacturer's data sheet for each product proposed, including statements on the suitability of the materials for the intended use.
  - 2. Type of primer, if required.
  - 3. Maximum dry and wet mil thickness per coat.
  - 4. Minimum and maximum curing time between coats, including atmospheric conditions for each.
  - 5. Curing time before submergence in water.
  - 6. Thinner to be used with each paint.
  - 7. General ventilation requirements.
  - 8. Atmospheric conditions during which the paint is not to be applied
  - 9. Maximum, allowable moisture content.
  - 10. Compatibility of shop and field applied coatings (where applicable).
- C. Submit a quality control plan that outlines the sequence of activities, quality control instruments, third party quality control **NACE inspections**, monitoring program, and other measures to document compliance with applicable standards and specifications.
- D. Reports: Submit the following reports to the Engineer:
  - 1. Reports on visits to project site to observe and approve coating application procedures.
  - 2. Reports on visits to coating plants to observe and approve surface preparation and coating application on items that are "shop coated."

1.6 DELIVERY AND STORAGE

- A. Deliver, store, and handle products in accordance with manufacturer’s requirements. All materials are to be delivered to the job site in their original, unopened containers bearing the manufacturer's name, brand, batch number, date of manufacture, and any special directions.
- B. Only the approved material shall be stored at the job site and stored only in designated areas restricted to the storage of paint materials and related equipment. All paint is to be stored in enclosed structures and protected from weather and excessive heat or cold. Store coatings in well-ventilated facility that provides protection from the sun weather, and fire hazards. Maintain ambient storage temperature between 45 and 90 degrees Fahrenheit, unless otherwise recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 PAINT AND COATING SYSTEM APPLICATIONS

- A. Prepare surfaces and apply paint and coating systems in accordance with the following Schedule for all surfaces.

PAINT AND COATING APPLICATION SCHEDULE

Surface to be Painted or Coated	Surface Preparation	Paint System
Reservoir Exterior (Repair and touch painting of damaged areas due to reservoir repair work)	SSPC – SP-6	System 1
Reservoir Interior (in areas shown on the drawings)	SSPC – SP-10\ 2.0 – 3.0 mil profile	System 2

2.2 PAINT AND COATING SYSTEMS

- A. Furnish primers and finish coatings as shown on the coating table schedule below. Paint used on the interior of the reservoir shall be NSF 61 certified by the manufacturer.
- B. Where dry film thickness of the coating is not shown in the table below, the dry film thickness shall be as recommended by the manufacturer.
- C. Paint and Coating Systems, or Equal:

System	Tnemec	Devcoe Coatings	Sherwin Williams
1	Chem Prime HS Hi Build Tneme Gloss	Devguard 4160 Primer Devguard 4308	Kem Bond HS Primer Urethane Alkyd Enamel
2	Pota-Pox Plus Two coats to 12 mils DFT total thickness	Devcoe Bar Rust 233H Strip coat plus two coats to 15 mils DFT total thickness	Macropoxy 646 NSF (Potable Water) Strip coat plus two coats to 15 mils DFT total thickness

\*System 1 paint shall be tinted to match existing color of the tank exterior.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Refer to Section 02830 – Paint Removal for removal of old paint and surface preparation. Comply with surface preparation requirements of the Steel Structures Painting Council (SSPC), the paint manufacturer's instruction. If the paint or coating manufacturer recommends a surface preparation different than that shown, follow the more stringent surface preparation requirement.
1. ASTM D4259 – Wet Abrasive Blasting, Vacuum Assisted Dry Abrasive Blasting or Centrifugal Shot Abrasive Blasting
  2. Shot Blasting –Blast with dustless steel shot and grit combination per equipment manufacturer recommendations to remove laitance, residue and loose material, and to roughen the surface to achieve a 2.0-3.0 mil angular profile (equivalent to a texture of No. 40 to 60 grit sandpaper). After blasting fill defects and holes with filler recommended by the coating manufacturer.
  3. Surface preparation requirements of the Steel Structures Painting Council (SSPC) are as follows:
    - a. SSPC – SP-1 Solvent Cleaning
    - b. SSPC – SP-2 Hand Tool Cleaning
    - c. SSPC – SP-3 Power Tool Cleaning
    - d. SSPC – SP-5 White Metal Blast Cleaning
    - e. SSPC – SP-6 Commercial Blast Cleaning
    - f. SSPC – SP-13 Mechanical or Chemical Cleaning

3.2 APPLICATION

- A. Workmanship: All work shall be done in a workmanlike manner so that the finished surface will be free from runs, drips, ridges, waves, laps and unnecessary brush marks. All coats shall be applied in such a manner as to produce an even film of uniform thickness, completely coating all corners and crevices.
- B. The Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in a first-class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Spray equipment shall be equipped with mechanical agitators, pressure gauges, and pressure regulators. Spray nozzles shall be of the proper sizes.
- C. Each coat of paint shall be applied evenly and sharply cut to line. Care shall be exercised to avoid overspraying or spattering paint on surfaces not to be coated. Glass, hardware, floors, roofs and other adjacent areas and installation shall be protected by taping, drop cloths or other suitable measures.

- D. **Paint Properties, Mixing and Thinning.** All paint, when applied, shall provide a satisfactory film and smooth, even surface. Glossy undercoats shall be lightly sanded to provide a surface suitable for the proper application, adhesion and subsequent coats. Paints shall be thoroughly stirred, strained and kept at a uniform consistency during application. Coatings consisting of two (2) or more components shall be mixed in accordance with manufacturer's instructions. Where necessary to suit conditions of the surface, temperature, weather and method of application, and with the Engineer's approval, the paint may be thinned immediately prior to use by the addition of not more than one pint per gallon of the proper thinner; provided that in no case shall the paint be reduced more than necessary to obtain the proper application characteristics. Where specifically permitted by the Specifications, certain paints may be thinned more than the maximum indicated above. Paint thinner shall be as recommended by the paint manufacturer.
- E. **Atmospheric Conditions:** Except as specified or required for certain water-thinned paints, paints shall be applied only to surfaces that are thoroughly dry and only under such combination of humidity and temperatures of the atmosphere and surfaces to be painted as will cause evaporation rather than condensation. In no case shall any paint be applied during rainy, misty weather, or to surfaces upon which there is frost or moisture condensation without suitable protection, as accepted by the Engineer. Where painting is permitted during damp weather or when the temperature is at or below 40 degrees F, the surfaces shall be heated to prevent moisture condensation thereof. Bar metal surfaces, except those which may be warped by heat, may be dehydrated by flame-heating devices immediately prior to paint application. While any painting is being done and for a period of at least eight (8) hours after the paint has been applied, the temperature of the surfaces to be painted, the painted surfaces and the atmosphere in contact therewith shall be maintained at or above 40 degrees F and 5 degrees above the dew point. All paint, when applied, shall be approximately the same temperature as that of the surface on which it is applied. The use of fans or heaters shall be required in enclosed areas where conditions causing condensation are severe.
- F. **Method of Paint Application:** Where two (2) or more coats are required, alternate coats shall contain sufficient compatible color additive to act as indicator of coverage, or the alternate coats shall be of contrasting colors.
- G. Unless otherwise specified, do not apply finish coats until all other work in the area is done and until the prime and intermediate coats have been inspected by the Engineer.
- H. **Film Thickness and Continuity:** All paint and coating thickness stated in this specification are dry film thickness. The first coat on metal surfaces refers to the first full paint coat and not to conditioning or other pretreatment applications. All coatings shall be applied to the thickness in accordance with these Specifications. The minimum thickness at any point shall not deviate more than 25 percent from the required average. Except as specified, no less than two (2) coats shall be applied.
- I. In testing for continuity about welds, projections such as bolts, nuts, and crevices, the Engineer will determine the minimum conductivity for smooth areas of like coating where the dry mil thickness has been found adequate. This conductivity shall then be taken as the minimum required for these rough irregular areas. All pinholes and holidays shall be repainted to the required coat coverage. All ferrous metal surfaces shall meet minimum continuity requirements.

- J. It is intended that the dry film thickness and the continuity of painted ferrous metal surfaces be subject to continual field check by the Contractor's quality control subcontractor. Dry-film thickness will be measured by an Elcometer or Mikrotest magnetic type dry-film thickness gauge. Continuity will be tested by a low voltage wet sponge transistorized device, as manufactured by Tinker-Razor (Model M-1), or equal. The Contractor's quality control subcontractor shall use inspection devices that are in good working condition for detection of holidays and measurement of dry-film thickness. The Contractor's subcontractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge and certified instrumentation to test accuracy of holiday detectors. Provide safe and suitable ladders or temporary scaffolding and adequate illumination to facilitate inspection.

3.3 CLEANUP

- A. Upon completion of all painting, remove all surplus materials, protective coverings and accumulated rubbish and thoroughly clean all surfaces and repair any overspray or other paint-related damage.

END OF SECTION 09970

SECTION 15080 – STEEL PROCESS PIPE

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall furnish and install all pipe fittings, closure pieces, bolts, nuts, gaskets, jointing materials, and appurtenances as shown and specified, and as required for a complete piping system.

1.2 REFERENCE STANDARDS

- A. ASTM A 53 Pipe, Steel, Black and Hot-Dipped, Zinc, Coated Welded and Seamless
- B. ASTM A 106 Seamless Carbon Steel Pipe for High Temperature Service, Grade B
- C. ANSI/ASME B 1.20.1 Pipe Threads, General Purpose (Inch).
- D. ANSI/ASME B 16.1 Cast Iron Pipe Flanges and Flanged Fittings, class 25, 125, 250, and 800,
- E. ANSI/ASME B 16.3 Malleable-Iron Threaded Fittings, Classes 150 and 300,
- F. ANSI/ASME B 16.4 Cast Iron Threaded Fittings, Class 125 and 250,
- G. ANSI/ASME B 16.5 Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys

1.3 SUBMITTALS

- A. Submit to the Engineer shop drawings in accordance with Section 01300 – Submittals.

PART 2 - PRODUCTS

2.1 PIPE MATERIAL

- A. Unless otherwise indicated, black steel pipe shall conform to ASTM A 53 - Pipe, Steel, Black, Welded and Seamless or ASTM A 106 - Schedule 40.

2.2 PIPE JOINTS

- A. Black steel pipe for general service shall have welded joints, or flanged joints.

2.3 SLEEVE-TYPE COUPLINGS

- A. Sleeve-type couplings shall be provided where indicated. The Contractor will not be allowed to substitute a sleeve-split coupling for the sleeve coupling unless approved by the Engineer.
- B. Construction: Sleeve couplings shall be in accordance with AWWA C219 - Standard for Bolted Sleeve- Type Couplings for Plain-End Pipe. Couplings shall be steel with steel bolts, without pipe stop. Couplings shall be of sizes to fit the pipe and fittings indicated.
  - 1. The middle ring shall be not less than 1/4-inch thick or at least the same wall thickness as the pipe to which the coupling is connected. If the strength of the middle ring material is less than the strength of the pipe material, the thickness of the middle ring shall be increased to have the same strength as the pipe. Buried sleeve-type couplings shall be epoxy-coated at the factory as indicated.
  - 2. The coupling shall be either 5- or 7- inches long for sizes up to and including 30-inches and 10-inches long for sizes greater than 30-inches, for standard steel couplings, and 16-inches long for long-sleeve couplings.
  - 3. The followers shall be single-piece contoured mill sections welded and cold-expanded as required for the middle rings, and of sufficient strength to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket.
  - 4. Bolts and nuts shall conform to the requirements of Section 05500 – Metal Fabrications.

2.4 FITTINGS

- A. The following fittings shall be provided for galvanized or black steel pipe, as indicated in the schedule below:

Fitting Type	Standard
Butt Welding	ANSI/ASME B 16.9
Flanged Steel	ANSI/ASME 16.5

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All steel pipes shall be installed in a neat and Workmanlike manner, properly aligned, and cut from measurements taken at the site, to avoid interferences with structural members, architectural features, openings, and equipment. Exposed pipes shall afford maximum headroom and access to equipment, and where necessary, all piping shall be installed with sufficient slopes for venting or drainage of liquids and condensate to low points. All installations shall be acceptable to the Engineer.



3.2 PIPE JOINTS

- A. Welded Joints: Welded joints shall conform to the specifications and recommendations of ANSI/ASME B 31.1 - Power Piping. All welding shall be done by skilled and qualified welders.

END OF SECTION 15080

SECTION 15713 - CATHODIC PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. General provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Work includes: Furnish and install galvanic cathodic protection system for tank on this project.
- B. Design and layout of the cathodic system is included in the work under this Section. The cathodic protection design/install constructor shall provide all engineering services, materials, equipment, labor, and supervision for the installation of an automatically controlled galvanic cathodic protection system to provide corrosion control for the interior surface of the project tank. The system shall be designed by a corrosion specialist with experience in cathodic protection for water storage tanks.
- C. All work furnished shall be in accordance with A.W.W.A. Standard D104, ANSI/NSF 61 and features included in this specification. All engineering services shall be provided by a corrosion specialist who is accredited by the National Association of Corrosion Engineers International.

1.3 DESIGN CRITERIA

- A. Tank-to-water potential, within a range of -0.850 volts to - 1.050 volts relative to a stationary copper-copper sulfate reference electrode.
- B. Minimum anode design life of twenty (20) years.
- C. Minimum current density of 0.5 MA/ft<sup>2</sup> bare surface area.
- D. Total bare surface area to be protected will be a minimum of 25% of total surface area.

1.4 SUBMITTALS

- A. Provide catalog cuts, dimensions, characteristics, and ratings information for all materials to be used. Submittals must be made in accordance with Section 01300 – Submittals.
- B. Cathodic Protection Specialist: The Contractor must submit the credentials of the Corrosion Specialist to the Engineer for review prior to starting the work. The submittal must include the following:
  - 1. Name of individual, current NACE International Cathodic Protection Specialist certificate or Professional Engineer's license.
  - 2. Titles and dates of projects (minimum of 5 projects).

1.5 QUALITY ASSURANCE

- A. General: The cathodic protection specialist must be responsible to the Contractor to ensure compliance with these specifications, and to inspect and perform testing services specified herein. The Contractor must provide the services of the cathodic protection specialist at the Contractor's sole expense.
- B. Cathodic protection specialist must be present at the project site during the installation of cathodic protection anodes. Additional visits to the jobsite must be made by the cathodic protection specialist as required to determine compliance with these specifications and as necessary to resolve field problems.

1.6 COORDINATION

- A. Coordinate cathodic protection system with the general contractor and painting contractor to assure cathodic protection work is done before tank finishing including welding, surface preparation and painting work begins.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The use of a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired only. Products of other manufacturer's will be considered in accordance with the General Conditions.

2.2 MATERIAL

- A. Use suppliers that usually supply the types of materials specified in this Section suitable for cathodic protection systems.

2.3 RECTIFIER

- A. The rectifier unit shall perform in accordance with ANSI/AWWA Standard D104 and shall include:
  - 1. Transformer
  - 2. Silicon rectifying elements
  - 3. Circuit breaker(s)
  - 4. Lighting, surge, and overload protection
  - 5. Provision for air-cooling operation
  - 6. Digital voltmeter(s), ammeter(s) and potential meter(s)
  - 7. Weatherproof cabinet in accordance with NEMA 4 requirements
  - 8. Provision to vary current output from 0% to 100% of rated capacity.

9. Provisions for mounting, grounding, and locking.
10. Provision for 110-120 volt, 60 Hz, single phase A.C. power.
11. D.C. output capacity in volts and amperes in accordance with Design
12. Number of circuits in accordance with Design
13. Automatic controller shall adjust current output to compensate for changes in water level, temperature of water, water chemistry, and cathodic polarization, and shall include the following provisions:
  - a. Utilize long-life reference electrode(s) installed within the tank
  - b. Monitor the tank-to-water potential, free of IR drop
  - c. Automatically adjust the tank-to-water potential, free of IR drop, to a preset value d. Operate within 25MV of preset value
  - d. Limit current to a preset value
  - e. Utilize digital potential meter(s) to display tank-to-water potential, free of IR drop
  - f. The rectifiers must be UL listed or NRTL/ETL certified and the product of a company currently engaged in the manufacture of cathodic protection equipment and must conform in all respects to NEMA and NEC Standards.

#### 2.4 REFERENCE ELECTRODES

- A. The permanent reference electrode shall consist of a copper-copper sulfate electrode which is manufactured to remain stable (plus or minus 10MV) for minimum of ten (10) years. The reference electrode to lead wire connection shall be encapsulated to prevent water migration. Provide at least two stationary reference electrode positioned within the tank to provide the most representative measurements for the submerged surface area(s).

#### 2.5 ANODE SUSPENSION SYSTEM

- A. The anode suspension system shall be in accordance with ANSI/AWWA Standard D104, Section 4.2.4.2.2 Type C, Vertical System. The anode lead wire for vertical suspension shall be attached to a porcelain insulator bracket bolted to the interior of the tank roof. Handhole assemblies used for the installation of vertical anode suspension systems from the roof of the tank shall consist of a 6" diameter acrylic plastic cover, rubber gasket, and an acrylic plastic bar with a stainless steel bolt assembly for each 5" diameter access opening.

#### 2.6 ANODES

- A. Extruded magnesium rod 2.00" Diameter with 0.188 diameter steel core wire. Supply Magnesium Anodes with NSF 61 Certification.

2.7 POWER SERVICE

- A. Branch panel must be NEMA 3R wall/post mounted fabrication, 100 ampere commercial grade and a disconnect switch with voltages and current as required.

2.8 SOLAR PV SYSTEM

- A. Provide a complete Solar PV System to provide power to the cathodic protection system with a 120 volt AC back up power system for the cathodic protection system.
  - 1. Solar system consisting of required number of PV Modules.
  - 2. Efficient On-Grid/Hybrid Inverters
  - 3. Mounting structures
  - 4. Cables and hardware
  - 5. Miscellaneous Item
    - a. Junction box and distribution boxes
    - b. Earthing kit
    - c. Lightning arrestors
    - d. PVC pipes and accessories

2.9 PANEL MOUNTING STRUCTURE

- A. The PV solar panel mounting metallic structure shall be fixed mount structure with 12 Gauge thickness, mounted on concrete base 6 inches above ground level. The tilt angle should set to year round compromise (Equal to latitude).
- B. Provide the entire mechanical structure hot dipped galvanized and powder coated .
- C. The Surface azimuth angle of PV Module 180o and the Tilt angle (slope) of PV Module should be according to the site location.
- D. Construct he mounting structure for wind resistance and safety as per location of site.

2.10 GROUNDING

- A. DC Ground-Fault Protector:
  - 1. Shall be listed per UL 1703.
  - 2. Shall comply with requirements of the NEC.

2.11 PHOTOVOLTAIC ARRAY CIRCUIT

- A. Shall be listed to UL 1741.
- B. Shall include internal overcurrent protection devices with dead front.
- C. Shall be contained in non-conductive NEMA Type 4X enclosure.
- D. Up to 48 volts DC: Shall use UL-listed DC breakers that meet NEC requirements for overcurrent protection.
- E. Ground and pole-mounted arrays shall have a separate combiner box mounted to the pole itself.

2.12 2.11 SWITCH/DISCONNECT

- A. Shall be UL-listed, in accordance with the NEC.
- B. Disconnect Switch provide if required for small solar photovoltaic systems if the inverter provides the same function per NEC.

2.13 WIRING SPECIALTIES

- A. Direct Current Conductors:
  - 1. Exposed: Shall be USE-2, UF (inadequate at 60°C [140°F]), or SE, 90°C [194°F] wet-location rated and sunlight-resistant.
  - 2. In Conduit: Shall be RHW-2, THWN-2, or XHHW-2 90°C [194°F], wet-location rated.
- B. Conduits and Raceways:
  - 1. Shall use steel conduit listed per UL 6, UL 1242, UL 797. Weathertight EMT installations shall be allowed for DC wiring in weather-protected areas.
  - 2. Shall use expansion joints on long conduit runs.
  - 3. Shall not be installed on photovoltaic modules.
- C. Enclosures subject to weather shall be rated NEMA 3R.
- D. Cable Assemblies and Junction Boxes:
  - 1. Shall be UL-listed.

2.14 DC-AC INVERTER

- A. Shall be listed to UL 1741.
- B. Shall comply with IEEE 519 and IEEE 1547.

- C. Shall be listed per FCC Part 15 Class A.1.
- D. Provide a hybrid type inverter that using AC coupling inface between the solar DC power and the AC back up power to automatically from Ac to solar to meet the power demand of the cathodic protection system

2.15 SOLAR PHOTOVOLTAIC (PV) MODULES

- A. Minimum Performance Parameters as per IBC 1509.7.4, IRC M2302.3, UL 1703.
- B. Photovoltaic Panel Types:
  - 1. Monocrystalline: Listed to UL 1703.
  - 2. Polycrystalline: Listed to UL 1703.
  - 3. Thin-Film/Flexible: Listed to UL 1703.
  - 4. Building-Integrated & Solar Shingles: Listed to UL 1703.
- C. Module and System Identification
  - 1. Module or Panel:
    - a. Listed to UL 969 for weather resistance.
    - b. Listed to UL 1703 for marking contents and format.
  - 2. Disconnect: per NEC.
  - 3. Identification for DC Conduit, Raceways, Enclosures, Cable Assemblies, and Junction Boxes: IFC 605.
  - 4. Identification for Inverter: per NEC.
- D. Bypass diodes shall be built into each PV module either between each cell or each string of cells.
- E. Other Components: per UL 1703.
- F. Hail Protection: Compliant with testing procedure per ASTM E-1038.
- G. Lightning Protection: Shall ground according to manufacturer instructions per UL 1703.

2.16 GROUND WIRE ANDCLAMP

- A. No. 4 AWG continuous from ground rods to the service equipment, no breaks bare stranded copper wire with a high copper content alloy or bronze bolt-on ground rod clamp or Cadweld Type GR or GT, or approved equal.

2.17 CONDUIT, LOCKNUTS, ANDSTRAPS

- A. PVC Schedule 80 conduit. Conduit and fittings must meet the requirements of NEMA TC and TC3, Federal Specification W-C-1094, and NEC.
- B. Locknuts, Two-Hole Straps, and Miscellaneous Hardware: Hot-dipped galvanized steel.
- C. Conduit Bushings: Rigid galvanized steel fitting and bonding per current NEC and drawings as shown.
- D. Rigid galvanized steel conduits for all underground bends, stub-up, and above grade installations.

2.18 ELECTRICAL WIRE

- A. Conductors must be NO. 2 AWG stranded copper with 600- volt rated, high molecular weight polyethylene (HMWPE) insulation. HMWPE insulation must be a minimum of 7/64-inch thick. All wiring within the tank shall be insulated to prevent copper conductor to water contact. All wiring on the exterior of the tank shall be insulated and run in rigid steel conduit.
- B. Current Anode Leads: Single conductor NO. 8 AWG stranded copper with a 20- mil thick Halar primary insulation and a 65-mil HMWPE outer jacket. Acceptable anode wire is Rome Halar/HMW Polyethylene Cathodic Protection Cable, as manufactured by Rome Cable, or approved equal.
- C. Distributed Anode Header Cables must be NO. 2 AWG stranded copper with 600 volts rated, HMWPE insulation.
- D. AC Conductors: All AC wire used within the rectifier must be copper wire with XHHW or THWN insulation and sized per system maximum ampere capacity. Run in rigid steel conduit above grade and SCH 80 PVC conduit below grade.

2.19 WIRE CONNECTORS

- A. One-piece, tin-plated crimp-on lug connector as manufactured by Burndy Co., Thomas and Betts, or approved equal.
- B. Anode Splice Encapsulation Kit:
  - 1. "C"-Taps COPPER PRESS-ONS Type CCT for connection of distributed anode lead wire to header cable
  - 2. Epoxy splice kit or anode splice encapsulation kit using heat shrinkable sleeve internally coated with self-encapsulating adhesive insulations, as manufactured by 3M or approved equal.
- C. Header Cable Splice:
  - 1. Heat-shrinkable wrap-sleeve with insulation stop or black insulation tape for inline header cable connection.



PART 3 - EXECUTION

3.1 GENERAL

- A. The cathodic protection constructor shall have a minimum of five (5) years experience installing and servicing the types of system described in this specification. The system shall be installed by personnel specifically trained by the constructor to provide all workmanship required for corrosion control performance.

3.2 PERFORMANCE

- A. Components of the cathodic protection system shall be installed in the manner and at the locations as shown on the design drawings prepared by the Corrosion Specialist.

3.3 INSTALLATION

- A. Welding, cutting, and coating shall be in accordance w/AWWA Standards D100, D102 & D105.
- B. Welding of rectifier hardware shall be performed by the prime contractor prior to coating the tank. The cutting of 5" diameter access openings for vertical anode suspension shall be performed by the prime contractor prior to coating. The cathodic protection constructor shall furnish drawings and materials to the prime contractor prior to coating.
- C. Materials and equipment shall be inspected prior to installation. Any defective component shall be repaired or replaced.
- D. Electrical work shall be in accordance with the National Electrical Code.
- E. Lead wires shall be installed to prevent damage from abrasion.
- F. Electrical connections within the tank shall be sealed to prevent water migration.
- G. The rectifier shall be mounted at a convenient height (eye level) above grade for monitoring and service purposes. A.C. power to the rectifier shall be responsibility of the contractor. Coordinate AC power source with the owner.
- H. Disinfection of the tank shall be the responsibility of the contractor after the cathodic system installation is complete.

3.4 CONDUITS

- A. Provide rigid galvanized steel for exposed conduits used within cathodic protection system.
- B. Conduit must be sized per the number of conductors in accordance with the NEC or as indicated on the drawings.
- C. Use conduit hubs to secure conduits entering cabinets, junction boxes, or terminal boxes.
- D. Use watertight couplings and connections. Install and junction boxes and fittings to prevent water from entering the conduit or electrical panel. Seal all unused openings.

3.5 PANEL INSTALLATION

- A. Connect the rectifier positive lead and anode wires to the anode terminal panel with the shunts, bus bars, and appropriate fasteners.
- B. Label all wires in the terminal panel with heat-shrink tags identifying the anode number and associated depth. Connect numbered anodes in consecutive order to anode terminals starting with number 1 at the top left-hand side. Maintain sufficient slack (12-inch minimum) to keep the wire from being unduly stressed, damaged, or broken during backfill.

3.6 RECTIFIER INSTALLATION

- A. Contractor to verify rectifier dimensions and align anchor bolts and conduit stub-ups prior to forming rectifier concrete foundation.
- B. Provide conduits, conductors, and electrical hardware necessary for the rectifier installation.
- C. Install raceway system for all power conductors within rectifier cabinet.
- D. Rectifier negative terminal must be terminated the NO. 2 AWG wire from the protected pipelines. Rectifier positive terminal must connect to distributed anode header cables or to the anode terminal panel.

3.7 AC POWER SERVICE

- A. The Contractor must coordinate the installation and inspection of branch circuit at least three weeks prior to the construction schedule and notify the Engineer of the schedule a minimum of one week prior to inspection taking place. The contractor is responsible for connection fees and inspection services that are required.
- B. Provide conduit, conductors and circuit breaker to connect the cathodic protection to AC power. The AC power source is the existing panel board to the valve house on site. Coordinate the location, conduit routing and repairs to the building after installation with the owner.

3.8 CONDUCTOR INSTALLATION

- A. Header cable suspended by hangers.
- B. AC power conductors must be continuous, no underground splices, and installed in a raceway system buried at 30 inches depth minimum.
- C. No wire bend must have a radius of less than 8 times the diameter of the wire. Copper or bronze offset pressure tongue with hex head solderless lugs must be used to make all cable connections to terminal studs.
- D. Conduits are installed with ¼" pull strings and no wire must be drawn into conduit until conduit system is complete. Lubricant must be approved by wire manufacturer.

- E. Arrange conductors neatly in rectifier and junction or terminal box. Cut to proper length, remove surplus wire, and attach terminal or connect to appropriate junction box or rectifier terminals.
- F. Seal all below ground conduit to prevent intrusion of foreign material after wire is in place.
- G. Bury warning tape approximately 12 inches below finished grade to all underground conductors and conduits. Align parallel to and within two inches of the centerline of the conduit or conductor run.

### 3.9 WIRE CONNECTIONS

- A. The electrical connection of copper wire to steel, ductile and cast iron surfaces must be by the thermite weld method. Observe proper safety precautions, welding procedures, thermite weld material selection, and surface preparation as recommended by the welder manufacturer. Assure that the pipe or fitting wall thickness is of sufficient thickness that the thermite weld process will not damage the integrity of the pipe or fitting wall or protective lining.
- B. Before the connection is made, the surface must be cleaned to bare metal by making a 2-inch by 2-inch window in the coating, and then filing or grinding the surface to produce a bright metal finish. Use grinding wheels that do not leave residual material on metal surface that could affect thermite weld, as approved by the thermite weld manufacturer. The prepared metal surface must be dry.
- C. Wire sleeves must be installed on the ends of the wires before welding to the metal surface. Thermite welding must be performed in strict accordance with the manufacturer's written instructions. After the weld connection has cooled, remove slag and physically test wire connection by striking the weld with a 2-pound hammer around the weld at an angle of 45 degrees to the surface while pulling on the wire; remove and replace any defective connections. Thin wall steel pipe with high pressure, new weld must be applied at 4 inches away from the defective weld.

### 3.10 START UP

- A. After the system is installed and the tank is filled, the cathodic protection constructor shall provide start-up service which includes energizing, testing, and adjusting the system for optimum performance of the cathodic protection system. This start-up service shall be in performed in accordance with ANSI/AWWA D104 Section 5.2 Testing.
- B. All tank-to-water potential measurements shall be conducted with a calibrated portable copper-copper sulfate reference electrode and a portable high impedance voltmeter.
- C. A minimum of five (5) locations shall be measured. All test data shall be reviewed and evaluated by the Corrosion Specialist.
- D. The final test and adjustment of the system shall be conducted approximately twelve (12) months after the start-up service.

3.11 MONITORING

- A. The cathodic protection constructor shall furnish self-addressed report cards to be completed by the owner. Report cards received by the cathodic protection constructor during the guarantee and service period(s) shall be evaluated for system performance.

END OF SECTION 15713



100 E Bower St., Suite 110 | Meridian, ID 83642 | (208) 288-1992



### Technical Memorandum

**TO:** City of Sandy – Jenny Coker, Public Works Director

**FROM:** Keller Associates, Inc. – Jason King, PE; Jesse Fields, PE

**DATE:** September 30, 2022

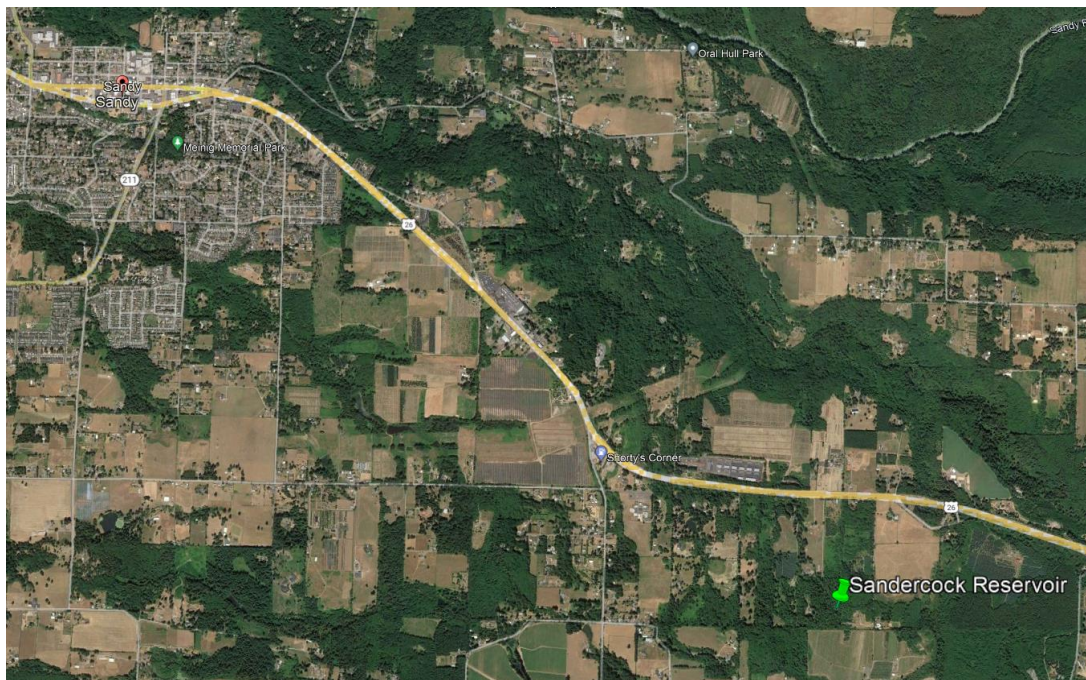
**SUBJECT:** Sandercock Reservoir Inspection and Recommendations



### BACKGROUND

The Sandercock Lane Reservoir is a 0.5-million-gallon welded steel, ring foundation water storage tank in Sandy, Oregon. It has a diameter of 52 feet and a height of 32 feet. The tank was built by American Tank Company in 1966. The exterior was painted eighteen years ago and has not been cleaned since. The tank inlet and outlet were previously replumbed to penetrate the tank at the side wall, and the existing floor penetrations were sealed. The City noted severe leaking from the tank and wishes to discover the cause of the leak and perform the repairs necessary to stop it. On June 15<sup>th</sup>, 2022, an inspection of the reservoir interior was completed by attendees from Cathodic Protections Engineering (CPE), The Saunders Company, MJE Industrial, and Keller Associates. The findings of this inspection and an additional exterior surface inspection, performed by CPE, are summarized in the proceeding sections along with recommendations for improvements and repairs.

FIGURE 1 – VICINITY MAP







## OBSERVATIONS

The site is accessed by a gravel road, extending from Sandercock Lane off Highway 26. The tank sits on a forested lot, and the site around the tank is well maintained. An emergency overflow and drain line extend from the tank to a drainage way located on site. The City indicated the lot size is large enough that another tank could be constructed on the site to supply water for current and future development. The tank appears in good general condition for its age.

The City staff discussed the process to drain the tank and keep it offline. Currently, there is no SCADA operational scenario programmed to bypass this tank. Operators manually bypass relays at the pump station that feeds the tank's distribution network to maintain system pressures and adjust field valve positions to take the tank offline.

Appendix A contains additional inspection photos.

FIGURE 2 - TANK EXTERIOR



The exterior of the tank showed visible signs of dirt accumulation but did not show any indications of major paint degradation except in spots on the exterior roof access ladder. A simple tank wash down will remove the soil accumulation and facilitate future external coating assessment. Access to the roof ladder requires walking on the corrugated roof of the adjacent valve shed. This presents a safety concern and fall hazard. The roof appears in excellent condition. Several low points on the roof retain water and soil/debris.

Visual inspection of the tank ring foundation indicates good condition with very minor cracking, and no upheaving or differential settlement was observed. The tank is not anchored to the foundation, but there is



no indication of slippage. Discussions with City staff revealed that the tank visibly leaks from between the tank wall-to-floor seal and the foundation to the point of saturating the soil, pooling on the ground, and filling the valve shed with water. Vegetation in the vicinity of the leak was bleached. The City tested the water, confirming it contains traces of chlorine, suggesting the water is, in fact, coming from the water system and not a groundwater source.

#### *Tank Interior*

Minimal coating loss or damage was observed on the inside tank walls in the water storage zone. The atmospheric zone above the water storage zone showed signs of metal loss in the form of dark rust staining and delamination of the structural steel, and several of the vertical support rods used for the original installation were corroded to the point of separation.

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FIGURE 3 – DELAMINATION OF TANK STEEL AT ROOF ACCESS HATCH

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The tank floor was littered with random material deposits, approximately one inch in diameter, several of which showed signs of significant wall loss, up to a quarter inch deep. This likely results from galvanic corrosion from exposed steel coating pinholes. The welds for the tank floor panels all appeared to be in good condition.

A leak was identified in the tank floor at the overflow pipe penetration. Water and debris were visibly passing through a crack between the tank floor and overflow pipe at the time of inspection. A previous attempt to seal the penetration with epoxy made it difficult to identify the extent of the leak. The newer inlet and outlet penetrations in the tank wall and sealed penetrations at the tank floor all appeared intact and free of leaks.

While walking around inside the tank, there were noticeable areas where the tank floor deflected from the weight, indicating the foundation material beneath the tank floor had settled and/or been washed away, presumably magnified by the leaking water.





FIGURE 4 - TANK FLOOR PITTING

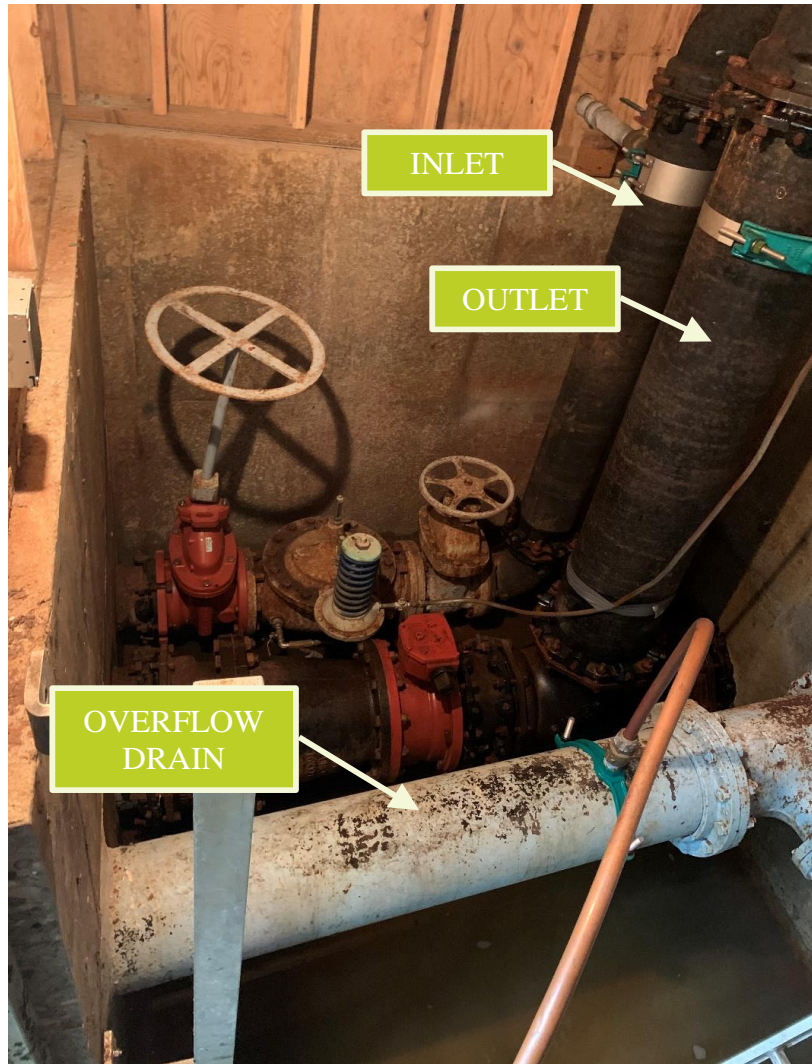


*Valve Shed*

The valve shed is constructed of an open concrete vault foundation with an enclosed wood framed structure built over the top. Mechanical components inside include a dedicated inlet (looked to be 8-inch diameter), with a piloted control valve and two gate valves for isolation; a dedicated 12-inch outlet (increases to 16-inch before penetrating vault wall), with a butterfly valve for isolation; and a combined drain/overflow line that discharges to an onsite drainage way. A telemetry panel with a pressure transducer for monitoring tank level is also located in the valve shed. At the time of the inspection, a sump pump was hard piped into the reservoir drain line to remove leaked water from the vault. City staff indicated that the vault has a floor drain, but it is currently clogged.



FIGURE 5 - VALVE SHED MECHANICAL



## RECOMMENDATIONS

### *Tank Exterior*

The exterior of the tank, ladder, and ring wall should be cleaned and pressure washed for general maintenance. A safer means for accessing the ladder, such as a raised platform or catwalk type scaffolding, should be constructed to eliminate the existing fall hazard. In lieu of a raised platform or catwalk, the existing ladder could potentially be relocated to avoid the need for gaining access from above the valve house, these alternatives should be evaluated for cost/benefit in future design phases. In either alternative, the existing fall protection track should be removed as it is not in use and is now a hazard.



While the exterior coating appears to be in decent condition, the cost estimate shown in **Figure 6** includes an optional coating cost for City consideration.

### *Tank Interior*

The internal surfaces of the tank walls and structural supports above the water storage zone should be sandblasted clean, inspected further, and repaired, as needed based upon the inspection results. Once repairs are completed, all surfaces in the atmospheric zone should be primed and painted with a high-quality NSF 61 coating system. The tank floor and walls should be pressure washed to remove the material deposits, and the integrity of the steel wall loss and corrosion locations should be evaluated. Areas identified with substantial floor and wall pitting should be repaired, prepped, and coated a high-quality NSF 61 coating system.

Repair the overflow pipe floor penetration. At the time of inspection, it was difficult to determine the condition of the overflow pipe. However, based on available information, it is assumed that a section of the pipe will need to be replaced to complete the repair. Additionally, the floor-to-pipe penetration should be reinforced to prevent future separation. A section of the tank floor plate around the overflow pipe should be removed and below grade piping inspected for condition and material type. The under-reservoir piping should be replaced if heavy corrosion or damage is observed. The pipe penetrating the tank floor must be steel for a proper weld. After repair or approval of the overflow piping, it should be backfilled with sand or controlled density fill before repairing the tank floor. Repair of the tank floor around the overflow piping should include a thick steel plate (thickness TBD) with a lap joint weld. The weld at the pipe penetration should be of a complete joint penetration type to ensure a strong bond between the pipe and the tank floor. All repairs must be recoated with an NSF 61 coating system.

Areas of the foundation material beneath tank floor (likely sand) have either been wash away or settled, resulting in floor deflection when walked on during the inspection. When the tank is full, the floor will also deflect, which may cause the separation between the tank floor and the overflow penetration and, thus, cause the leak. It is recommended that the tank floor support be improved by filling the void areas with injected grout or epoxy.

### *Cathodic Protection*

Cathodic protection is commonly used in conjunction with coating systems to protect damaged coating areas where bare steel is exposed to water (i.e., installation damage or coating pinholes). To maximize the useful life of this tank, installation of a low maintenance galvanic cathodic protection system is recommended. The system would consist of magnesium anodes and an anode control box. If installed, a site-specific inspection training should be performed to train the utility operators to monitor the system performance and identify abnormal operating conditions.

### *Foundation*

Evaluation of the ring foundation condition did not indicate any immediate need for improvements. Ring foundations typically require additional anchorage or reinforcement, if the height to diameter ratio is greater than 0.70. The existing tank has a height to diameter ratio of 0.61. Additionally, the visual inspection of the foundation did not reveal any issues with tank slipping, upheaving, or significant cracking/settlement. If seismic conditions are considered in the future, the final section of the report discusses methods to increase resiliency.



FIGURE 6 – OPINION OF PROBABLE COST



245 Commercial Street SE, Suite 210, Salem, OR 97301  
 Phone: 503.364.2002 - kellerassociates.com

**PRELIMINARY OPINION OF PROBABLE COST**

<b>CLIENT:</b> City of Sandy, OR	<b>AACE Estimate Class:</b> 5
<b>PROJECT :</b> Sandercock Reservoir Recommended Repairs	<b>ACCURACY HIGH:</b> 50%
<b>KA JOB # :</b> 222200-001	<b>ACCURACY LOW:</b> -50%
<b>LOCATION :</b> Sandercock Lane, Sandy, OR	<b>DATE :</b> 18-Oct-2022
	<b>REVIEWED:</b> J. King

Project Element	Cost
Exterior cleaning	\$ 12,000
Raised platform	\$ 15,000
Tank surface prep and coating - full exterior <i>(Optional)</i>	\$ 140,000
Tank surface prep and coating - interior atmospheric zone only	\$ 190,000
Overflow pipe leak repairs and coating - assumes adequate existing overflow pipe	\$ 25,000
Floor repairs and coating	\$ 30,000
Floor support material injection	\$ 20,000
Cathodic protection system	\$ 20,000
	<b>Subtotal:</b> \$ 460,000
Contractor Overhead and Profit	10% \$ 46,000
Contingency	30% \$ 138,000
	<b>Subtotal:</b> \$ 650,000
Mobilization	10% \$ 65,000
	<b>Total Project Cost:</b> \$ 720,000
	<b>Total Project Cost (Minus Exterior Coating):</b> \$ 500,000

Estimated Range of Cost		
Low	Mid	High
50%	100%	150%
\$ 360,000	\$ 720,000	\$ 1,080,000

The cost estimate herein is based on our perception of current conditions at the project location. This estimate reflects our professional opinion of accurate costs at this time and is subject to change as the project design matures. This cost opinion is in 2022 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids or actual construction costs will not vary from the costs presented herein.



## MATERIAL LEAD TIMES

In the current market of municipal utility improvements, material leads times must be taken into consideration during the design of projects. Municipal water system components that have recently been creating project delays due to lead times include, but are not limited to gate and butterfly valves, control valves, ductile iron pipe and fittings, steel pipe and fittings, electrical components, and controls. For this repair project, steel pipe potentially needed for the overflow repair may possess a lead time consideration. Current discussions as of the date of this report with steel pipe suppliers is that lead times are very much specification dependent and are frequently subject to change. Specification can be flexible within feasibility to accommodate lead times for the low-pressure application of the overflow pipe penetration to mitigate potential delays in this project.

## FUTURE CONSIDERATIONS

### *Seismic Considerations*

The height to diameter ratio is such that foundation anchorage is likely not required for seismic conditions; however, the existing freeboard may be inadequate for seismic sloshing. Further analysis is required to determine adequate tank freeboard. If available tank freeboard is not adequate, potential solutions include raising the roof, reinforcing the roof, or lowering the high-water level.

The existing pipe connections are not suitable for seismic conditions. Seismic pipe assemblies are recommended for the inlet and outlet pipes. Seismic valves and sensors detect seismic events and will automatically close the inlet and outlet to prevent loss of the stored water in the event of a line break. The tank vent should be evaluated to ensure proper venting and to avoid tank collapse if the tank drained during a seismic pipe break event. A SCADA system should be installed to monitor a seismic condition and allow remote actuation of valves.





February 17, 2023

Jordan Wheeler, City Manager  
City of Sandy  
39250 Pioneer Blvd.  
Sandy, OR 97055

RE: Award for Special Public Works Fund, Sandercock Reservoir Improvement Project,  
Project Number L23011, 02/17/2023

Dear Mr. Wheeler:

Congratulations on your successful application for the above-referenced project. Enclosed please find a summary showing the funding amount and special terms and conditions of the award. The financing contract will contain the full terms and conditions of your award and will be sent to you for proper signatures. Please note that the legal obligations for funding and for reimbursement of project expenses are subject to execution of the contract.

The project must comply with all applicable state laws, regulations and procurement requirements. As a reminder, you must provide copies of all solicitations at least 10 days before advertising, and all draft contracts at least 10 days before signing.

We encourage you to offer appropriate media opportunities to help build public awareness of your project's purposes and benefits. Please notify us of any event celebrating your project. As always, we are available to answer questions that may arise during the implementation of your project. If you need assistance, please contact me at 503-856-2306, or via email to [Matthew.Mattia@biz.oregon.gov](mailto:Matthew.Mattia@biz.oregon.gov).

Sincerely,

Matt Mattia, Regional Project Manager  
Business Oregon

c: Jennifer Coker, Public Works Director  
AJ Thorne, Assistant Public Works Director  
Colin Sears, Regional Development Officer  
Representative James Hieb  
Senator Daniel Bonham

## SUMMARY OF AWARD

**Project Number:** L23011 **Date of Award:** 02/17/2023  
**Recipient:** City of Sandy  
**Project Name:** Sandercock Reservoir Improvement Project

Source of Funding (Grant/Loan/Forgivable Loan)	Award Amount
OBDD – SPWF – Loan, Public Tax Exempt	\$1,008,000
<b>Total</b>	<b>\$1,008,000</b>

General Description of Loan	
<b>Interest Rate</b>	3.65%
<b>Maximum Term</b>	20 years

Approved Project Description
<p>The Recipient will, with the assistance of a professional engineer licensed in Oregon, repair the leaking Sandercock Reservoir, a 0.5-million-gallon welded steel water storage tank with a diameter of 52 feet and a height of 32 feet, located approximately five miles southeast of the City of Sandy. Repairs/improvements include, but are not limited to, cellular/chemical grout to repair voids below the floor; preparation and interior coating of the floor, roof/rafters, and the portion of the sidewall above water level; cathodic protection; repairs to roof rafters; repair of existing leak near overflow piping; new exterior ladder and raised platform; and appurtenant work.</p>

**Note: The full terms and conditions will be contained in the contract.**



## Staff Report

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**Meeting Date:** March 6, 2023  
**From** Jordan Wheeler, City Manager  
**SUBJECT:** Draft 2023-25 City Council Goals

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**DECISION TO BE MADE:**

Review the draft goals and actions developed from the February 18 City Council Goal Setting session.

**PURPOSE / OBJECTIVE:**

The City Council adopts goals every two years to set priorities and strategic direction for the City. The goals identify the major initiatives, projects, and policies that the Council and staff will be dedicating time and resources over the next two years to achieve the Council's vision for the community. Once adopted, staff develops a work plan for advancing and executing on the goals and aligns resources towards the goals in the Proposed Budget for the upcoming biennium.

**BACKGROUND / CONTEXT:**

The City Council met for an all day goal setting session on [Saturday, February 18](#). For background, city departments provided updates on current projects and initiatives and challenges and opportunities. The Council then developed a draft list of goals and actions by Department.

**RECOMMENDATION:**

Staff recommends the Council review and discuss the draft goals and direct staff to bring back final goals for City Council adoption on March 20.

**BUDGETARY IMPACT:**

Resource and budget needs will be developed with the work plans for incorporation into the Proposed Budget.

**LIST OF ATTACHMENTS/EXHIBITS:**

1. Draft 2023-35 City Council Goals





## 2023-25 Sandy City Council Goals

### Public Safety and Community Livability

1. Enhance public safety and community livability through enforcement of the municipal code.
  - a. Develop a budget proposal for adding a second code enforcement position.
  - b. Reinststate the traffic officer program.
2. Continue addressing homelessness through partnerships with local and regional partners.
  - a. Explore partnerships and shared costs for staffing related to behavioral health needs.

### Public Works

1. Continue investments in the city's critical public utilities for system resilience, expanded capacity, and environmental protection.
2. Increase pedestrian safety, trail and local road connectivity, and traffic efficiency through high priority projects in the City's Transportation System Plan.
  - a. Adopt the updated Transportation System Plan.
  - b. Complete speed limit studies for Bluff Road and Highway 211.
  - c. Construct intersection and pedestrian safety improvements to the Dubarko Road/Highway 211 intersection.

### Community Planning and Economic Development

1. Foster community and economic development and tourism opportunities through events that promote and leverage the City's storied history and natural beauty.
  - a. Expand on the Holidays Lights at Meinig Park to create a Winterfest event throughout the holiday season.
2. Manage responsible growth through engaging the public in community visioning and long range planning, and implementing code updates.
  - a. Complete the Envision Sandy 2050 and adopt the Comprehensive Plan update.
  - b. Implement policy changes and new and emerging state regulations through code amendments that are responsible and reflect the community values.
  - c. Pursue code options to retain local control of decision making over shelters and transitional housing.
  - d. Continue to update the planning and building development fees to increase cost recovery.

### Parks & Recreation

1. Invest in our park system for current and future residents of Sandy and continue expansion of recreational opportunities for the community.

- a. Design and construct the Community Campus Park improvements.
- b. Complete design and construct park improvements at Deer Point Park.
- c. Research and act on the purchase of park land for future park facilities and/or natural area and open space preservation.
- d. Work with the Oregon Trail School District for developing a new facility use agreement.
- e. Explore ways to connect Sandy residents with aquatic opportunities.

#### **SandyNet**

1. Complete a long term sustainable utility plan for SandyNet that includes a rate study, staffing needs analysis, and permanent facility plan.

#### **Library**

1. Advocate for the financial sustainability for the Sandy and Hoodland Libraries and expand access to materials and enrichment programs.
  - a. Seek funding for a community outreach and engagement vehicle.
  - b. Work with the County on the long term plans for the Hoodland Library.

#### **Transit**

1. Promote SAM as a safe and efficient transportation option and increase system ridership.
  - a. Ensure the proposed Clackamas County Town Center route is appropriately planned, safe, and efficient.
  - b. Increase marketing for SAM.
  - c. Continue modernization of the fleet and operations.

#### **City Operations**

1. Develop a Sustainable Staffing Plan for the City of Sandy.
  - a. Continue investing in the city's workforce to retain talented and community oriented employees through competitive compensation and recognition.
  - b. Forecast current and future staffing needs to maintain service levels, mitigate operational risks, and adequately manage key projects and priorities.
  - c. Develop an achievable plan for accommodating current and future space needs for city staff and operations.