



City of Arvada

City Council Agenda

MAY 1, 2023

CITY COUNCIL CHAMBERS

Regular Business

Councilmembers:

Marc Williams, Mayor
David Jones, Mayor Pro-Tem
Bob Fifer, At large
John Marriott, District 3
Randy Moorman, District 1
Lauren Simpson, District 2
Lisa Smith, At large

Staff Members Usually Present:

Lorie Gillis, City Manager
Linda Haley, Deputy City Manager
Don Wick, Deputy City Manager
Rachel Morris, City Attorney
Jacqueline Rhoades, Director of Public Works
Sharon Israel, Director of Utilities
Ryan Stachelski, Dir. of Community & Economic Development
Bryan Archer, Director of Finance
Gabriella Bommer, Director of Human Resources
Rob Smetana, Manager of City Planning & Development
Rachael Kuroiwa, Director of Communications & Engagement
Kristen Rush, City Clerk

Info: 720-898-7550

THIRD FLOOR CONFERENCE ROOM

EXECUTIVE SESSION

3:00 P.M.

Personnel Matter, Pursuant to CRS 24-6-402(4)(f) relating to City Council Appointee evaluations

ARVADA HOUSING AUTHORITY SPECIAL MEETING

CITY COUNCIL CHAMBERS 6:00 P.M.

CITY COUNCIL MEETING – CITY COUNCIL CHAMBERS
6:00 PM

1. Call to Order - 6:00 PM
2. Moment of Reflection and Pledge of Allegiance - Councilmember Smith
3. Roll Call of Councilmembers
4. Approval of Minutes
 - A. April 17, 2023 City Council Meeting
5. Recognitions and Communications
 - A. Proclamation for Poppy Month - Presented by Mayor Pro Tem Jones
 - B. Proclamation for National Preservation Month - Presented by Councilmember Fifer
 - C. Proclamation for Arbor Day - Presented by Councilmember Marriott
 - D. Proclamation for Provider Appreciation Day - Presented by Councilmember Moorman
 - E. Proclamation for Mental Health Month - Presented by Councilmember Smith

- F. Proclamation for Building Safety Month - Presented by Mayor Pro Tem Jones
- 6. Presentations - None
- 7. Public Comment on Issues not Scheduled on Agenda - Three Minute Limit
- 8. New Business
 - A. Consent Agenda
 - 1. R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00
 - 2. R23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision
 - 3. R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation
 - B. Resolutions
 - 1. R23-043, A Resolution Authorizing the Fourth Revision to the City of Arvada City Council Strategic Plan 2020-2025 (Presenter: Lorie Gillis, City Manager)
 - C. Ordinances (First Reading)
 - 1. CB23-010, An Ordinance Repealing and Reenacting Article XIII, National Electric Code, Section 18-570, Adopted, of Chapter 18, Buildings and Building Regulations, of the Arvada City Code Through the Adoption, by Reference, of the 2023 National Electrical Code, and the Adoption of Penalties for Violations Thereof (Public Hearing to be set for May 15, 2023 at 6:15 p.m.)
- 9. Other
 - A. Motion to Cancel the June 26, 2023 City Council Business Meeting
- 10. Public Hearings - 6:15 PM
 - A. CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023 (Ordinance No. 4842) (Presenter: Bryan Archer, Director of Finance)
- 11. Public Comment - Five Minute Limit
- 12. Reports from City Council
 - A. Council Committee Reports
- 13. Reports from City Manager
 - A. Review of Future Workshops and Presentations
- 14. Reports from City Attorney
- 15. Adjournment



SUMMARY OF MINUTES OF THE MEETING OF THE ARVADA CITY COUNCIL HELD APRIL 17, 2023

1. Call to Order - 6:00 p.m.

This Arvada City Council meeting was a hybrid meeting using webinar technology. Mayor Williams, Councilmember Fifer, Councilmember Marriott, Councilmember Moorman, Councilmember Simpson and Councilmember Smith were all present in chambers.

Members of the public were given notice with instructions on how to participate with public comment.

2. Moment of Reflection and Pledge of Allegiance

3. Roll Call of Councilmembers

Those Present: Mayor Marc Williams, Councilmember Bob Fifer, Councilmember John Marriott, Councilmember Randy Moorman, Councilmember Lauren Simpson and Councilmember Lisa Smith.

Also Present: Lorie Gillis, City Manager, Rachel Morris, City Attorney; Linda Haley, Deputy City Manager; Don Wick, Deputy City Manager; Bryan Archer, Director of Finance; Ryan Stachelski, Director of Community and Economic Development; Rachael Kuroiwa, Director of Communications and Engagement and Kristen Rush, City Clerk.

4. Approval of Minutes – April 3, 2023

The minutes stand approved.

5. Recognition and Communication –

A. Proclamation for National Crime Victims' Rights Week - Presented by Councilmember Simpson

Councilmember Simpson said that City Council proclaims the week of April 23-29, 2023 as National Crime Victims' Rights Week. Commander Anthony Baros, Arvada Police Department and Cin Chapman, Executive Director of Victim Outreach were present to accept the Proclamation.

6. Presentations –

A. 2022 Year End Financial Report

Bryan Archer, Director of Finance and Debra Nielson, Deputy Director of Finance, presented the 2022 year-end financial report. Mr. Archer and Ms. Nielson gave updates on specific performance measures, an overview of the major revenue categories in the General Fund, a high level look at the other Major Funds including: Parks, Tax Increment, Water, Wastewater, Stormwater, Solid Waste and Golf, and a reviewed the City's investment portfolio.

7. Public Comment –

- A. Ace King, Arvada resident, addressed council regarding dangerous animals.

8. New Business

A. Consent Agenda –

1. R23-035 A Resolution Deleting and Reenacting Policy No. 400.1 - Proclamations, Recognitions, and Awards of the City Council Policy Manual

Councilmember Marriott moved that R23-035, A Resolution Deleting and Reenacting Policy No. 400.1 - Proclamations, Recognitions, and Awards of the City Council Policy Manual, be approved.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

B. Resolutions –

1. R23-036 A Resolution Authorizing the Naming of the City Park Located North of the Van Bibber Creek Trail and Southeast of the Intersection of Ward Road and W. 58th Avenue

Enessa Janes, Director of Vibrant Community and Neighborhoods, reviewed this resolution with council.

Councilmember Marriott moved that R23-036, A Resolution Authorizing the Naming of the City Park Located North of the Van Bibber Creek Trail and Southeast of the Intersection of Ward Road and W. 58th Avenue, be alternative number 3, Little Raven Park.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

2. R23-037 A Resolution Authorizing a First Amendment to the Master Intergovernmental Agreement by and between Apex Park and Recreation District and the City of Arvada Governing the Lease and Maintenance of Certain Facilities and Parks and Amending the Ground Lease for the Indoor Turf Fields on the Stenger/Lutz Sports Complex

Enessa Janes, Director of Vibrant Community and Neighborhoods, reviewed this resolution with council.

Councilmember Marriott moved that R23-037, A Resolution Authorizing a First Amendment to the Master Intergovernmental Agreement by and between Apex Park and Recreation District and the City of Arvada Governing the Lease and Maintenance of Certain Facilities and Parks and Amending the Ground Lease for the Indoor Turf Fields on the Stenger/Lutz Sports Complex, be approved.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

3. R23-038 A Resolution Authorizing the First Amendment to a Construction Management Agreement for Pre-Construction Services for the Meyer's Pool Replacement Project to Expand the Scope of Work to Include Phase I(A), Parking Lot Construction, and Granting Saunders Construction, Inc. the General Contractor Agreement for Phase I(A)

Bryan Archer, Director of Finance, reviewed this resolution with council.

Councilmember Moorman moved that R23-038, A Resolution Authorizing the First Amendment to a Construction Management Agreement for Pre-Construction Services for the Meyer's Pool Replacement Project to Expand the Scope of Work to Include Phase I(A), Parking Lot Construction, and Granting Saunders Construction, Inc. the General Contractor Agreement for Phase I(A), be approved.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

C. Ordinances (First Reading) –

1. CB23-009 An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023 (Public Hearing to be set for May 1, 2023 at 6:15 p.m.)

Councilmember Fifer moved that An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, be approved on first reading, ordered published in full, and a public hearing date be set for May 1, 2023 at 6:15 p.m.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

9. Other

- A. Appointment to the Metro Water Recovery Board

Councilmember Marriott moved to Appoint Sharon Israel as Director to the Metro Water Recovery Board for a term beginning July 1, 2023 and ending June 30, 2025.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

B. Appointments to Boards and Commissions

Arvada Arts and Culture Commission

Councilmember Simpson moved to Reappoint Judy Gardner and Evelyn Miner for 4-year terms ending April 30, 2027.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Arvada Festivals Commission

Councilmember Moorman moved to Appoint Larkin Rau, Jenine McQuaid, Adrienne Gomez and Rachel Ulrich to full terms ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Moorman moved to Appoint Fay Skaggs and Alison Butler to unexpired terms ending April 30, 2025.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Moorman moved to Appoint Lisa Garza, and Barret Wolf for unexpired terms ending April 30, 2024.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Moorman moved to Reappoint Stefanie Bednar, Rebekah Lovisone and Kimberly Major for 3 year terms ending April 30, 2026. Arvada Liquor Licensing Authority

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Arvada Liquor Licensing Authority

Councilmember Fifer moved to Appoint Tom Tennesen to a full term ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Fifer moved to Appoint Eric Anderson to an unexpired term ending April 30, 2025.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Fifer moved to Appoint Steven Aldrich to an unexpired term ending April 30, 2024.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Fifer moved to Reappoint David Caulder for a 1-year term ending April 30, 2024.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Arvada Urban Renewal Authority –

Mayor Williams moved to Appoint Daria Drago to the Arvada Urban Renewal Authority for a 5-year term ending April 30, 2028.

Councilmember Marriott moved to ratify Mayor Williams' appointment of Daria Drago to the Arvada Urban Renewal Authority for a 5-year term ending April 30, 2028.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Building Code Advisory Board

Councilmember Smith moved to Appoint Sherryn Hensley and Bill DeKam to the Building Code Advisory Board for full terms ending April 30, 2026.

Councilmember Smith moved to Reappoint Cheryl Cheney and Daniel Yeager for 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Design Review Advisory Committee –

Councilmember Simpson moved to Appoint Danielle Vorthmann to the Design Review Advisory Committee to an unexpired term ending April 30, 2024.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Simpson moved to Reappoint Steve Byers, Peter Kazura, Fong Lee and Deborah Pearson to 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Golf Advisory Committee –

Councilmember Moorman moved to Appoint Eric Berger to the Golf Advisory Committee for a full term ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Moorman moved to Appoint Karolina Triska to an unexpired term ending April 30, 2024.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Moorman moved to Reappoint Ali Brady and Julianne Renny to 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Housing Advisory Committee -

Councilmember Marriott moved to Appoint Lisa Smith to the Housing Advisory Committee for a 4-year term ending April 30, 2027.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Paul Bunyard for a 4-year term ending April 30, 2027.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Mindy Mohr for a 2-year term ending April 30, 2025.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Matt Wedell for a 4-year term ending April 30, 2027.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Roger Jones for a 2-year term ending April 30, 2025.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Harrison Wilterdink for a 3-year term ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Tim Rogers for a 3-year term ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Pat Noonan for a 3-year term ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Smith moved to Appoint Andrew Heesacker for a 2-year term ending April 30, 2025.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Human Services Advisory Committee

Councilmember Fifer moved to Appoint William Morgenstern to the Human Services Advisory Committee for a full term ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Fifer moved to Appoint Melissa Jamieson for an unexpired term ending April 30, 2024.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Councilmember Fifer moved to Reappoint Laura Andes, Shelly Beasley and Tracy Brooks to 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:
Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith
Those Absent: Jones
The Motion was Approved

Park Advisory Committee –

Councilmember Marriott moved to Appoint Karen Miller, Rebecca Hoeschen, and Caron Holmes to the Park Advisory Committee for full terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Marriott moved to Appoint Karen Gerbatsch and John LaCroix to unexpired terms ending April 30, 2025.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Marriott moved to Reappoint Myra Grace Dowling to a 3-year term ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Sustainability Advisory Committee –

Councilmember Simpson moved to Appoint Miles Hayes to the Sustainability Advisory Committee for a full term ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Simpson moved to Appoint Alex Pray to an unexpired term ending April 30, 2024.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Simpson moved to Reappoint Dar-Lon Chang, Elissa Hardy and Laurel Mattrey to 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Transportation Committee –

Councilmember Moorman moved to Appoint Paola Massoli and Michael Koslow to the Transportation Committee for full terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

Councilmember Moorman moved to Reappoint Terri Binder, Jon Girand and Cyndi Stovall to 3-year terms ending April 30, 2026.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

10. Public Hearings –

- A. R23-039 A Resolution Approving the First Amendment to Amended and Restated Service Plan for Sabell Metropolitan District Formerly Known as Sabell Metropolitan District No. 2

Mayor Williams opened the public hearing for R23-039.

Ryan Stachelski, Director of Community and Economic Development, reviewed this resolution with council.

No one wishing to speak for or against, the public hearing was closed.

Councilmember Fifer moved that R23-039, A Resolution Approving the First Amendment to Amended and Restated Service Plan for Sabell Metropolitan District Formerly Known as Sabell Metropolitan District No. 2, be approved.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

- B. CB23-007 An Ordinance Authorizing an Intergovernmental Programmatic Agreement by and between the City of Arvada and the Colorado State Historic Preservation Officer ("SHPO") Regarding the Administration of U.S. Department of Housing and Urban Development ("HUD") Programs (Ordinance No. 4840)

Mayor Williams opened the public hearing on CB23-007.

Carrie Espinosa, Manager of Preservation and Resources, reviewed this ordinance with council.

Councilmember Simpson moved that CB23-007, An Ordinance Authorizing an Intergovernmental Programmatic Agreement by and between the City of Arvada and the Colorado State Historic Preservation Officer ("SHPO") Regarding the Administration of U.S. Department of Housing and Urban Development ("HUD") Programs, be approved on final reading numbered 4840 and ordered published by title only.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

- C. CB23-008 An Ordinance Authorizing an Additional Appropriation for Fiscal Year 2023
(Ordinance No. 4841) (Presenter: Bryan Archer, Director of Finance)

Mayor Williams opened the public hearing on CB23-008.

Bryan Archer, Director of Finance, reviewed this ordinance with council.

Councilmember Marriott moved that CB23-008, An Ordinance Authorizing an Additional Appropriation for Fiscal Year 2023, be approved on final reading, numbered 4841 and ordered published by title only.

The following votes were cast on the Motion:

Those voting Yes: Williams, Fifer, Marriott, Moorman, Simpson, Smith

Those Absent: Jones

The Motion was Approved

11. Public Comment - Five Minute Limit –
 - A. Lynn Clemens, Arvada resident, addressed council regarding Traffic affecting West 63rd and McIntyre Street.
12. City Council Reports –
 - A. Councilmember Simpson congratulated the Arvada Center for the Gala they held on Saturday.
 - B. Councilmember Marriott congratulated the Arvada Center and Councilmember Simpson for Emceeding the Gala.
13. City Manager Reports –
 - A. Lorie Gillis, City Manager, thanked the city team for all their hard work on the Bulky Item Drop Off and the Kite Festival.
14. City Attorney Reports – none
15. Adjournment at 7:20 p.m.

Marc Williams, Mayor

SEAL:

Kristen R. Rush, City Clerk



REPORT TO CITY COUNCIL

AGENDA ITEM
5.A.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for Poppy Month - Presented by Mayor Pro Tem Jones

Report in Brief

City Council will proclaim May, 2023 as Poppy Month in Arvada.

The poppy flower adorned the battlefields of Flanders Field in France during World War I, and was looked upon by those serving as a living symbol of their fallen comrades' sacrifices. In 1920, after World War I, the poppy became the official flower of The American Legion Family to memorialize the soldiers who fought and died during the war, and distribution of poppies became a Legion national program in 1924. To this day, thanks in large part to the American Legion Auxiliary, the poppy is nationally recognized and worn as a symbol of sacrifice made by the men and women who served and died for their country during a time of war.

Members of the American Legion Auxiliary Wilmore-Richter Unit 161 will be present to accept the proclamation.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Toni Riebschlager, Law Office Administrator 4/7/2023
Laura Hemler, Assistant City Attorney 4/7/2023

Approved by:

Rachel Morris, City Attorney 4/10/2023
Linda Haley, Deputy City Manager 4/10/2023
Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, the sacrifices of those who have lost their lives, their health, or their livelihood as a result of their military service are rightly the concern of all citizens; and

WHEREAS, the annual sale of poppies by the American Legion Auxiliary Unit 161 offers an opportunity for the people of this community to express their solicitude for those unfortunate persons who have paid more than their share of the cost of freedom; and

WHEREAS, the proceeds of this worthy fund-raising campaign are used exclusively for the benefit of disabled and needy veterans, and the widows and orphans of deceased veterans, in the desire to “Honor the Dead by Helping the Living”;

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado that the month of May, 2023 be designated:

Poppy Month in Arvada

Section 1. The Arvada City Council encourages all Arvada residents to participate in Poppy Month and to wear a poppy as mute evidence of our gratitude to the men and women of this country who have risked or lost their lives in fulfilling their obligations as American citizens.

Section 2. The Arvada City Council recognizes the merits of the American Legion Auxiliary Unit 161.

Dated this 1st day of May, 2023

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
5.B.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for National Preservation Month - Presented by Councilmember Fifer

Report in Brief

The National Historic Preservation Act of 1966 created incentives for individuals and organizations across the United States to preserve local historical assets, especially important structures that often stand in the path of growth and development.

In Arvada, citizens acted on this mandate. They collectively worked to place the historic Arvada Flour Mill on the National Register of Historic Places in 1975, the first such entry from our community. These citizens enjoyed the effort, and saw the need for more work to document Arvada history. They established the Arvada Historical Society to facilitate these preservation efforts 50 years ago, in 1972.

This example illustrates the long-term impact that individual efforts can have to educate and inform current residents and future generations about our shared foundation that has enabled the community to grow and thrive over the decades. Preservation also has economic benefits, like the revival of Olde Town Arvada where our City was born.

Historic preservation needs someone to care. National Preservation Month is your opportunity to care, to learn and to become aware of local preservation efforts. Every citizen can play a role in making history by helping to preserve it. Karen Miller will be present to accept the Proclamation.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Toni Riebschlager, Law Office Administrator 4/10/2023
Laura Hemler, Assistant City Attorney 4/10/2023

Approved by:

Rachel Morris, City Attorney 4/17/2023
Linda Haley, Deputy City Manager 4/17/2023
Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, The National Trust for Historic Preservation declared the month of May as National Preservation Month; and
WHEREAS, Arvada is a community rich in history, both physical assets and events that have shaped our lives today; and
WHEREAS, Preserving this history informs the community about our foundation, enriching current and future residents; and
WHEREAS, the City of Arvada is committed to preserving our history, as documented in official Plans and Ordinances;

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado, that May 2023 be designated National Preservation Month to acknowledge the importance of preserving our historic legacy and encourage citizens to learn about, and contribute to, our historic legacy.

Dated this 1st day of May, 2023

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
5.C.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for Arbor Day - Presented by Councilmember Marriott

Report in Brief

City Council will designate May 11, 2023 as Arbor Day in Arvada. Enessa Janes, Director of Vibrant Community and Neighborhoods, will be present to accept the Proclamation.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Toni Riebschlager, Law Office Administrator 4/10/2023
Laura Hemler, Assistant City Attorney 4/10/2023

Approved by:

Rachel Morris, City Attorney 4/17/2023
Linda Haley, Deputy City Manager 4/17/2023
Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, in 1872, J. Sterling Morton proposed to the Nebraska Board of Agriculture that a special day be set aside for the planting of trees; and

WHEREAS, this holiday, called Arbor Day, was first observed with the planting of more than a million trees in Nebraska; and

WHEREAS, Arbor Day is now observed throughout the nation and the world; and

WHEREAS, trees can reduce the erosion of our precious topsoil by wind and water, cut heating and cooling costs, moderate the temperature, clean the air, produce oxygen, and provide habitat for wildlife; and

WHEREAS, trees are a renewable resource giving us paper, wood for our homes, fuel for our fires, and countless other wood products; and

WHEREAS, trees in our city increase property values, enhance the economic vitality of business areas, and beautify our community; and

WHEREAS, trees are a source of joy and spiritual renewal;

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado that May 11, 2023 be designated Arbor Day and urge all citizens to support efforts to protect our trees and woodlands, and further, we urge all citizens to plant trees to gladden the heart and promote the well-being of this and future generations.

Dated this 1st day of May, 2023

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
5.D.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for Provider Appreciation Day - Presented by Councilmember Moorman

Report in Brief

City Council will designate May 12, 2023 as Provider Appreciation Day. The Proclamation will be mailed to Sarah Hewitt, representing the Angel Hugs Daycare in Arvada and the Jefferson County Childcare Association.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Toni Riebschlager, Law Office Administrator 4/10/2023
Laura Hemler, Assistant City Attorney 4/10/2023

Approved by:

Rachel Morris, City Attorney 4/17/2023
Linda Haley, Deputy City Manager 4/17/2023
Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, Child Care Aware® of America and other organizations nationwide are recognizing Child Care Providers on this day; and

WHEREAS, over half the children under the age of six nationwide are estimated to spend some time in a nonparental care arrangement on a weekly basis, which provides critical enrichment opportunities and nurtures development for children of all backgrounds and is a vital building block of our state economy; and

WHEREAS, Colorado recognizes these hardships and has provided much-needed relief to providers to help sustain the viability of child care; and

WHEREAS, our future depends on the quality of the early childhood experiences provided to young children today; support for high-quality child care represents a worthy commitment to our children's future;

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado, that May 12, 2023 be designated as Provider Appreciation Day in Arvada and urge all citizens to recognize Child Care Providers for their important work.

Dated this 1st day of May, 2023

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
5.E.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for Mental Health Month - Presented by Councilmember Smith

Report in Brief

City Council will proclaim the month of May, 2023 as Mental Health Month. Taylor Clepper, Director of Navigation and Housing Services for the Jefferson Center for Mental Health will be present to accept the Proclamation.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:
Toni Riebschlager, Law Office Administrator 4/10/2023
Laura Hemler, Assistant City Attorney 4/10/2023

Approved by:

Linda Haley, Deputy City Manager 4/10/2023
Rachel Morris, City Attorney 4/17/2023
Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, good mental health is essential to the overall health and emotional wellbeing of all children, youth, adults and families; and promotes a healthy community and one in five people in our communities experience a mental health condition each year; and

WHEREAS, 16.5% of individuals in our communities experience substance use disorder each year and an increased focus on the prevention of mental health conditions and substance use disorders among children and adolescents through screening and early intervention helps improve lives, and

WHEREAS, the stigma against mental health conditions and substance use disorders prevents many people from accessing care; and when mental health problems and substance use disorders are detected early and treated, people can recover and maintain a healthy and independent life, and the City of Arvada is dedicated to improving the health and wellbeing of its citizens by ending stigma and focusing on the integrated role of mental health in all our lives,

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado, that May 2023 be designated as Mental Health Month and call upon all citizens, government agencies, public and private institutions, businesses, and schools to recommit our communities and resources to increasing awareness and understanding of mental health, providing appropriate and accessible services for all citizens, and making mental health a priority.

Dated this 1st day of May, 2023.

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
5.F.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Proclamation for Building Safety Month - Presented by Mayor Pro Tem Jones

Report in Brief

The month of May is recognized as Building Safety Month. The theme for this year is "It Starts with You", it encourages us all to raise awareness about building safety on a personal, local and global scale. This is an opportunity to acknowledge building safety and fire prevention officials, architects, engineers, builders, tradespeople, laborers and others in the construction industry and the role they play in ensuring that the places where we live, learn, work, worship and play are safe and sustainable.

Representatives from the Arvada Fire Protection District and Justin Clark, Chief Building Official will be present to accept the Proclamation.

Prepared by:

Josie Suk, Development Systems and Administrative Manager

Reviewed by:

Approved by:

Justin Clark, Chief Building Official	4/10/2023
Ryan Stachelski, Director of Community and Economic Development	4/12/2023
Gail Walker, Legal Specialist-Contracts	4/12/2023
Emily Grogg, Senior Assistant City Attorney	4/12/2023
Rachel Morris, City Attorney	4/17/2023
Linda Haley, Deputy City Manager	4/17/2023
Lorie Gillis, City Manager	4/19/2023

Enclosure, exhibits & attachments required to support the report

WHEREAS, our City is committed to recognizing that our growth and strength depends on the safety and essential role our homes, buildings and infrastructure play, both in everyday life and when disasters strike; and our confidence in the resilience of these buildings that make up our community is achieved through the devotion of vigilant guardians—building safety and fire prevention officials, architects, engineers, builders, tradespeople, design professionals, laborers, plumbers and others in the construction industry – who work year-round to ensure the safe construction of buildings; and

WHEREAS, these guardians are dedicated members of the International Code Council, a nonprofit that brings together local, state, territorial, tribal and federal officials who are experts in the built environment to create and implement the highest-quality codes to protect us in the buildings where we live, learn, work and play, and these modern building codes include safeguards to protect the public from hazards such as hurricanes, snowstorms, tornadoes, wildland fires, floods and earthquakes, and;

WHEREAS, Building Safety Month is sponsored by the International Code Council to remind the public about the critical role of our communities’ largely unknown protectors of public safety – our local code officials – who assure us of safe, sustainable and affordable buildings that are essential to our prosperity, and

WHEREAS, “It Starts with You,” The theme for Building Safety Month 2023, encourages us all to raise awareness about building safety on a personal, local and global scale and each year, in observance of Building Safety Month, people all over the world are asked to consider the commitment to improve building safety, resilience and economic investment at home and in the community, and to acknowledge the essential service provided to all of us by local and state building departments, fire prevention bureaus and federal agencies in protecting lives and property.

NOW, THEREFORE, BE IT PROCLAIMED by the Mayor and City Council of the City of Arvada, Colorado, that the month of May 2023 be designated Building Safety Month and we encourage our citizens to join us as we participate in Building Safety Month activities.

Dated this 1st day of May, 2023.

Marc Williams, Mayor

David Jones, Mayor Pro Tem

Bob Fifer, Councilmember

John Marriott, Councilmember

Randy Moorman, Councilmember

Lauren Simpson, Councilmember

Lisa Smith, Councilmember



REPORT TO CITY COUNCIL

AGENDA ITEM
8.A.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Consent Agenda

Report in Brief

1. R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

2. R23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision

3. R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation

Suggested Motion: Moved by: _____ I move that the Consent Item(s),
Number(s) _____ be
(Removed from the Consent Agenda and Heard Upon Item _____) (Referred to a Workshop) (Postponed
Indefinitely). YES _____ NO _____ ABSENT _____

That All/Remaining Consent Items be (Approved) (Rejected).
YES _____ NO _____ ABSENT _____

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Enclosure, exhibits & attachments required to support the report



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.1.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

Report in Brief

Arvada's Ralston Water Treatment Plant (RWTP) requires significant reinvestment to provide sufficient capacity to maintain treatment of seasonal water quality changes and to provide resilience in total treatment capacity. Specifically, the filter media and associated equipment are beyond their useful life, and need to be replaced. Additionally, the solids handling system is undersized.

The Arvada team recommends that the City Council approve R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

Financial Impact

The RWTP Solids Handling and RWTP Filter Improvements projects are being funded by the Water Bonds, and are sourced from 97610. The total amount allocated for the projects previously mentioned is \$21,405,284. This amount is allocated to piloting, engineering, construction, and dewatering services required to complete the projects.

The work included in GMP 4, not to exceed \$1,781,824.00, is allocated in the following amounts to the CIP projects: RWTP Solids Handling has a total budgeted amount of \$8,007,865.00. GMP 4 includes \$1,542,716 of the total budgeted amount.

RWTP Filter Improvements: 97591 has a total budgeted amount of \$13,397,419.00. GMP 4 includes \$239,108 of the total budgeted amount.

The Arvada team will capitalize each project above independently, although they are included in the same CM/GC.

Background

The RWTP was assessed in the 2019 Water Treatment Master Plan. The 2019 Master Plan identified the filter and solids handling systems at the RWTP as two of the priority projects. Additionally, the Arvada team has identified the filter system as being significantly past industry standard life and the solids handling as being critically undersized. The Arvada team expends considerable effort and money maintaining and operating the RWTP filter and solids handling systems to provide for needed potable water capacity from the RWTP. Under typical seasonal water quality conditions, the Arvada team is challenged to maintain the designated Level of Service for treatment. Should water quality be degraded due to unusual conditions such as flood or fire, the Arvada team could not maintain the necessary treatment Level of Service.

The Arvada team has been implementing the design and construction of filter and solids improvements since 2021. The

SUBJECT: R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor’s Guaranteed Maximum Price No. 4 of the “Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant,” in an Amount not to Exceed \$1,781,824.00

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implementation has included Carollo Engineers supporting the study and design of the solids handling improvements (R21-032 and R22-104), Jacobs for the design of the filter improvements under the On-Call agreement (R21-089), and PCL as the CMGC.

PCL Construction was selected for CMGC Pre-Construction Phase Services not to exceed \$130,000 through a competitive bid process (RFP-22-Ralston Filter and Solids Handling Improvements). Since the award of the pre-construction phase services, three contract amendments have been approved: GMP 1 (R22-055) , GMP 2 (R22-104), and GMP 3 (R23-017).

As a part of their pre-construction phase services, PCL has provided the Arvada team with Guaranteed Maximum Price Packages (GMP) 1, 2, 3, and 4. GMP 1 was based on the 30% design of the filter improvements as provided by Jacobs and the preliminary design drawings from Carollo. GMP 1 included the purchase and installation of long lead items such as filter media, underdrains, valves, gates, actuators, pumps, coatings for the RWTP filters, work to repair three filters and concrete for a solids drying pad. Due to the level of design (10% - 30%), and escalation due to the geopolitical climate, PCL included contingencies for construction, design, escalation, and unforeseen conditions or repairs.

GMP 1 also included the emergency repair of the filter influent flume completed in July, purchase/rental of emergency isolation for the filter influent flume, and test holing activities to support detailed design of the solids handling improvements.

GMP 2 included construction of six filters, the purchase of all remaining items and equipment required for construction, and general conditions. GMP 2 was based on the 60% design of the Filter Improvements provided by Jacobs and the 60% design of the Solids Handling Improvements provided by Carollo.

GMP 3 included work in the oldest three filters and work associated with the solids drying beds. This GMP 3 was not included in GMP 2 to give time to the Arvada Team to identify additional funding for the project, and to allow PCL time to identify value engineering options. GMP 3 was based on 100% design of the Filter Improvements provided by Jacobs, and the 90% design of the Solids Handling Improvements provided by Carollo.

Discussion

PCL has been completing the rehabilitation of the RWTP Filter and Solids Handling Improvements as delineated in GMPs 1-3. GMP 4 will include a reconciliation of costs not included in GMPs 1, 2, and 3. GMP 4 is based on the 100% design of the Filter Improvements provided by Jacobs and the 100% design of the Solids Handling Improvements provided by Carollo.

GMP 4 includes coatings and the remaining work on the solids handling lagoons.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

None

Strategic Alignment

The recommended action aligns with the following Strategic Result within the Infrastructure Priority Area of the City Council Strategic Plan:

SR3 - By December 2023, update water, sewer, stormwater master plans and develop an implementation plan to address all findings.

SUBJECT: R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

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Alternative Courses of Action

None

Recommendation for Action

The Arvada team recommends that the City Council approve R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

Suggested Motion:

I move that R23-040, A Resolution Authorizing Amendment No. 4 to the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00, be (approved) (rejected).

Prepared by:

Bethany Yaffe, Civil Engineer

Reviewed by:

Approved by:

Mary Stahl, Senior Civil Engineer	4/10/2023
Jenny Wolfschlag, City Engineer	4/10/2023
Jacqueline Rhoades, Public Works Director	4/12/2023
Bryan Archer, Director of Finance	4/12/2023
Tammy Hedlund, Legal Specialist	4/13/2023
Kelsy Sargent, Assistant City Attorney	4/13/2023
Rachel Morris, City Attorney	4/19/2023
Don Wick, Deputy City Manager	4/20/2023
Lorie Gillis, City Manager	4/20/2023

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R23-040

A RESOLUTION AUTHORIZING AMENDMENT NO. 4
TO THE AGREEMENT BETWEEN THE CITY OF ARVADA AND PCL CONSTRUCTION,
INC. ESTABLISHING CONTRACTOR'S GUARANTEED MAXIMUM PRICE NO. 4 OF
THE "CONSTRUCTION MANAGEMENT/GENERAL CONTRACTOR AGREEMENT FOR
PRECONSTRUCTION SERVICES FOR THE REHABILITATION AND MODIFICATION OF
THE FILTER AND SOLIDS HANDLING SYSTEMS AT THE RALSTON WATER
TREATMENT PLANT," IN AN AMOUNT NOT TO EXCEED \$1,781,824.00

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, an Amendment No. 4, which is in substantially the same form as that attached hereto, by and between the City of Arvada and PCL Construction Inc. establishing the Guaranteed Maximum Price No. 4 of Phase II of the CM/GC Agreement for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant in an amount not to exceed \$1,781,824.00.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this _____ day of _____, 202__.

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

Rachel A. Morris, City Attorney

By: _____

AMENDMENT NO. 4
TO THE AGREEMENT BETWEEN THE CITY OF ARVADA AND PCL
CONSTRUCTION, INC. ESTABLISHING CONTRACTOR’S GUARANTEED
MAXIMUM PRICE NO. 4 OF THE “CONSTRUCTION MANAGEMENT/GENERAL
CONTRACTOR AGREEMENT FOR PRECONSTRUCTION SERVICES FOR THE
REHABILITATION AND MODIFICATION OF THE FILTER AND SOLIDS
HANDLING SYSTEMS AT THE RALSTON WATER TREATMENT PLANT,” IN AN
AMOUNT NOT TO EXCEED \$1,781,824.00

1. PARTIES.

- 1.1 The parties to this Amendment No. 4 are the City of Arvada, a Colorado home rule municipal corporation, whose mailing address is 8101 Ralston Road, Arvada, CO 80002 (“**Arvada**” or “**Owner**”) and PCL Construction, Inc. whose place of business is located at 2000 S. Colorado Blvd., Suite 2-500, Denver, Colorado 80222 (“**Contractor**”), collectively referred to as the “**Parties.**”

2. RECITALS AND PURPOSE.

- 2.1 On or about May 24, 2022, Arvada and Contractor entered into the Construction Management/General Contractor (“**CM/GC**”) Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant, in an Amount Not to Exceed \$130,000.00 (“**Original Agreement**”) wherein Contractor will provide preconstruction phase (“**Phase I**”) Construction Management (“**CM**”) services, including but not limited to cost estimating, constructability reviews, value engineering, development of a Guaranteed Maximum Price (“**GMP**”), and risk management.
- 2.2 On or about August 17, 2022, Arvada and Contractor executed Amendment No. 1 for the purpose of establishing GMP No. 1 in an amount not to exceed \$8,703,990.00 in order to secure purchases and procurement/fabrication for long-lead time equipment for the filter improvements and solids handling projects and related emergency repairs (“**Amendment No. 1**”). The cost of Amendment No. 1 was in addition to the cost of Phase I of the Original Agreement.
- 2.3 On or about January 26, 2023, Arvada and Contractor executed Amendment No. 2 for the purpose of awarding Contractor the Construction Phase (“**Phase II**”) of the Original Agreement and establishing GMP No. 2 in an amount to exceed \$4,381,518.00 (“**Amendment No. 2**”). The cost of Amendment No. 2 was in addition to the cost of the Original Agreement and Amendment No. 1.
- 2.4 On or about March 11, 2023, Arvada and Contractor executed Amendment No. 3 (“**Amendment No. 3**”) for GMP No. 3 for Phase II, in an amount not to exceed \$3,518,653.00. The cost of Amendment No. 3 was in addition to the costs of the Original Agreement and Amendments No. 1 and No. 2.

- 2.5 For the convenience of the Parties, and due to their voluminous nature, the Original Agreement and Amendments No. 1, No. 2, and No. 3 are not attached hereto but are incorporated herein by reference.
- 2.6 This Amendment No. 4 establishes Guaranteed Maximum Price No. 4 for Phase II, in an amount not to exceed **\$1,781,824.00** (“**GMP No. 4**”). The Cost of GMP No. 4 is in addition to the cost of Phase I of the Original Agreement and Amendments No. 1, No. 2, and No. 3 for a total contract amount of **\$18,385,986.00** for the project.

3. GUARANTEED MAXIMUM PRICE.

- 3.1 The Contractor’s Guaranteed Maximum Price for the Work, including the estimated Cost of the Work and General Conditions Costs as defined in Article 8, and the Contractor’s Fee as defined in Article 7 is **\$1,781,824.00**
- 3.2 This Price is for the performance of the Work in accordance with the Construction Contract Documents and the Exhibits listed below.

4. CONTRACT DOCUMENTS AND EXHIBITS. The Contract Documents shall consist of the Original Agreement, Amendment No. 1, No. 2, and No. 3, and this Amendment No. 4 together with the following, which shall be incorporated herein:

Exhibit A: Contractor’s GMP No. 4 Submission;

Exhibit B: Solids Handling 100% design submittal dated January 2023, completed by Carollo Engineers.

In the event any matter, term, provision, or condition that is the subject of this Amendment No. 4 requires clarification or is in dispute, or is the subject of a difference of opinion, the purpose and intent of the agreement shall be first ascertained by reference to the Contract Documents in their entirety. In the event of any dispute or differences between the respective documents that constitute the Contract Documents, then Contractor shall secure the written instructions from Arvada before proceeding with the performance of the services affected by such conflicts, omissions, or discrepancies. In no event may any contradictory term or provision contained in Exhibit A supersede the provisions of the Original Agreement. Any such contradictory term or provision shall be null and void including the technical clarifications and assumptions of Contractor’s GMP No. 4 and any terms and conditions of subcontractors.

5. CONTRACT TIME.

- 5.1 The Guaranteed Date of Substantial Completion established by this Amendment No. 4 is May 1, 2024.

(Signatures on next page)

CITY OF ARVADA, COLORADO

Marc Williams, Mayor
8101 Ralston Road
Arvada, CO 80002

ATTEST/WITNESS:

City Clerk

APPROVED AS TO FORM:
For Rachel A. Morris, City Attorney

By: _____

PCL CONSTRUCTION, INC.

Richard Hewitt, District Manager
2000 S. Colorado Blvd, Suite 2-500
Denver, CO 80222
rhewitt@pcl.com

Exhibit A

Amendment No. 4

To the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00



CONSTRUCTION

GMP 4

FILTER AND SOLIDS HANDLING IMPROVEMENTS CMGC

CITY OF ARVADA

March 21, 2023



Blunn Reservoir

**EXHIBIT
A**

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SCHEDULE	TAB 5
QUOTES	TAB 6

Technical Clarifications and Assumptions**1. General**

- o GMP 4 is based upon:
 - Solids Handling 100% design submittal dated January 2023, completed by Carollo Engineers.
 - Filter Improvements 100% design submittal dated October 2022, completed by Jacobs Engineers.
- o GMP 4 excludes AIS, BABA and all DBE/SBE requirements including all state or federal funding sources.
- o GMP 4 excludes Davis-Bacon wages.
- o GMP 4 assumes sand and filter media to be removed is nonhazardous.
- o GMP 4 does not include cost for remediation of hazardous waste materials or archeological mitigation.
 - Owner remains responsible as the generator for all pre-existing hazardous materials found on site, will sign applicable waste manifests and except for Contractor's own negligence, will be responsible for any pre-existing hazardous materials.
- o The Contractor shall be responsible for only those hazardous materials and/or chemicals as on site by contractor forces; and shall not be responsible for any existing hazardous conditions not known or foreseen prior to the start of construction.
- o If the Contractor encounters a Differing Site Condition, Contractor will be entitled to an adjustment to the Contract Price and/or Contract Time(s) to the extent contractor's cost and/or time of performance have been adversely impacted by the Differing Site Condition.
- o GMP 4 does not include any costs for utility relocations and concrete encasements not shown on the drawings and/or described within 100% design submittal.
- o GMP 4 excludes all dewatering with the exception of nuisance water.
- o GMP 4 Taxes are excluded.
- o GMP 4 excludes all costs associated with protecting migratory birds or endangered species.
- o GMP 4 assumes a standard 40 hour workweek, 5 days a week 7am-5pm.
- o GMP 4 assumes 12" of existing sand to be removed in Lagoon 3 & 4.
- o GMP 4 assumes screened native excavated material can be used for backfilling around the new cast in place diversion structures.
- o GMP 4 assumes 2 lagoons can be taken down at a time.

- o Contractor's Contingency. OWNER and CONTRACTOR shall agree upon the amount of CONTRACTOR'S contingency to be included within each GMP, as follows:
 - The CONTRACTOR's contingency amounts allowed for each GMP will be established by the CONTRACTOR and OWNER, and clearly listed in the CONTRACTOR's GMP proposal. By way of example, and not as a limitation, CONTRACTOR's contingency may be used for cost issues such as trade labor differentials, overtime, acceleration, costs in correcting defective, damaged or nonconforming Work, scope gaps, and Subcontractor defaults.
 - CONTRACTOR'S contingency amounts listed in each GMP proposal are cumulative and will be combined into a single contingency fund for CONTRACTOR's use on any portion of the Work.
 - CONTRACTOR's contingency is for the sole use of CONTRACTOR. CONTRACTOR's contingency shall not be used for changes in the Work that would require a Change Order or Amendment. CONTRACTOR may use the CONTRACTOR'S contingency for any reasonable purpose relating to the Project, excluding:

- Legal fees or costs related to claims arising from or related to this Agreement
 - Home office overhead (OH)
 - Should CONTRACTOR's contingency be used during execution of the Work, the amount charged shall include applicable mark-ups, such as pricing for bonds, insurances, and CONTRACTOR's fee.
 - CONTRACTOR'S contingency may be used to correct defective Work; however, no CONTRACTOR or Subcontractor fee shall be applied.
 - CONTRACTOR shall provide notice to OWNER of any charges against CONTRACTOR'S contingency with each Application for Payment and shall submit a contingency log showing the initial value of each contingency, any usage, and remaining value. CONTRACTOR shall submit backup documentation to OWNER showing the value and reason for each case of contingency usage. Backup documentation shall include summary of all pricing elements and applicable mark-ups.
 - Any balance remaining in CONTRACTOR'S contingency at the Final Completion of all Work under the Agreement shall be returned to OWNER by deductive reconciliation Change Orders.
- o Allowances. OWNER and CONTRACTOR shall agree upon the amount of allowances to be included in each GMP, as follows:
- The allowance amounts for each GMP will be established by OWNER and CONTRACTOR to address risks CONTRACTOR can identify, but not adequately quantify, prior to execution of the Agreement or subsequent amendments. Allowance amounts may also be established for scopes of work that cannot be adequately defined prior to execution of the Agreement or subsequent amendments. Allowance amounts shall be clearly listed in the CONTRACTOR's GMP proposal
 - Should allowance amounts be used during execution of the Work, the amount charged shall include applicable mark-ups, such as pricing for bonds, insurances, and CONTRACTOR's fee.
 - CONTRACTOR shall submit for OWNER's approval documentation showing value and reason for each case of allowance usage. OWNER's written approval will be required prior to CONTRACTOR's usage of any allowance amounts.
 - If an individual allowance amount is exceeded during execution of the Work, additional funds may be drawn from another allowance or OWNER'S contingency with written approval of OWNER, which will not be unreasonably withheld.
 - In the event allowance amounts listed in the GMP proposal are exceeded, a change order shall be issued by OWNER for an increase in Contract Price and/or Time.
 - Any balance remaining in designated Allowances at the Final Completion of all Work under the Agreement shall be returned to OWNER by deductive reconciliation Change Order.



City of Arvada Filer and Solids Improvements
GMP 4 - 100% Solids
March 21, 2023

- o GMP 4 includes the following contingencies and allowances: Design allowance is based on 100% evolution to 100% but any overruns will be the responsibility of the owner.

	GMP 4	Total Project
▪ Contractor Contingency:	\$0	\$337,944
▪ Design Allowance:	(\$307,944)	\$0
▪ Escalation Allowance:	(\$200,000)	\$148,534
▪ Estimator Allowance:	(\$135,000)	\$0
▪ Unforeseen Repairs Allowance:	\$150,000	\$250,000
▪ Clay lagoon Liner Repair Allowance:	\$0	\$50,000
▪ Coatings Allowance	\$0	\$270,000
▪ Owner Contingency	\$218,105	\$218,105

- o GMP 4 will be administered as a lump sum/stipulated price contract and not a cost reimbursable contract.
- o The lump sum price model provides for labor, small tools, insurances, bonds, and equipment for this project based on the following billable Rate Schedule. These rates will be used for any future change orders:

Craft Classification	Billable Hourly Rate (\$/HR)
Construction Manager	\$176.67
Project Manager	\$142.44
General Superintendent	\$150.07
Field Superintendent	\$136.74
Project Engineer	\$100.02
Field Engineer	\$88.42
Scheduler	\$144.40
Computer Modeler	\$105.90
HSE Coordinator	\$97.00
Foreman	\$75.05
General Foreman	\$82.30
Mason	\$63.37
Carpenter	\$63.37
Laborer	\$58.37
Pipe Layer	\$58.38
Pipe Fitter	\$63.37
Equipment Operator	\$75.05
Crane Operator	\$91.73





City of Arvada Filer and Solids Improvements
GMP 4 - 100% Solids
March 21, 2023

Small Tools Assessment / Insurance Rates / Bond Rates:

- | | |
|-------------------------------|----------------|
| • Small Tools Assessment | \$1.00/manhour |
| • Project Bond Rate | 1% |
| • Subcontract Bond Rate | 1.4% |
| • General Liability Insurance | 1% |
| • Builder's Risk Insurance | 0.4% |

Billable hourly equipment rates shall be FHWA operated rates published by Bluebook (penton) on equipmentwatch.com.





3/21/2023

PCL CONSTRUCTION, INC.

City of Arvada

Master Budget Worksheet
60%/GMP1/GMP2/GMP3/GMP4/Total Project

Arvada Ralston Filter & Solids Handling Improvements

<u>Bid Item</u>	<u>Description</u>	<u>60% Price Model</u>	<u>GMP 1</u>	<u>GMP 2</u>	<u>GMP 3</u>	<u>GMP 4</u>	<u>Total Project</u>
Filter Improvements Project							
Div.02	Existing Conditions	\$ 894,885	\$ 297,919	\$ 458,456	\$ 138,510	\$ -	\$ 894,885
Div.02.1	16" Pipe Replacement	\$ 289,679	\$ -	\$ -	\$ 287,965	\$ -	\$ 287,965
Div.03	Concrete	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Div.05	Metals	\$ 19,391	\$ -	\$ 20,000	\$ -	\$ -	\$ 20,000
Div.09	Finishes	\$ -	\$ 201,152	\$ (201,152)	\$ -	\$ -	\$ -
Div.26	Electrical	\$ 2,073,600	\$ -	\$ 2,073,600	\$ (95,360)	\$ -	\$ 1,978,240
Div.33	Utilities	\$ 5,000	\$ -	\$ 5,000	\$ -	\$ -	\$ 5,000
Div.35	Waterway and Marine Construction	\$ 431,080	\$ -	\$ 431,185	\$ -	\$ -	\$ 431,185
Div.40	Process Interconnections	\$ 1,082,323	\$ -	\$ 1,032,043	\$ 50,280	\$ -	\$ 1,082,323
Div.44	Pollution and Waste Control	\$ 2,883,759	\$ -	\$ 2,768,583	\$ 95,242	\$ -	\$ 2,863,824
	Total 100% Filter Improvements	\$ 7,679,718	\$ 499,071	\$ 6,587,715	\$ 476,637	\$ -	\$ 7,563,423
Solids Handling Project							
Div.2	Existing Conditions	\$ 268,320	\$ -	\$ 12,913	\$ 175,536	\$ 100,221	\$ 288,670
Div.3	Concrete	\$ 1,303,842	\$ 399,133	\$ 133,629	\$ 436,326	\$ 418,102	\$ 1,387,190
Div.5	Metals	\$ 90,577	\$ -	\$ -	\$ 90,577	\$ -	\$ 90,577
Div.6	FRP	\$ 13,042	\$ -	\$ -	\$ 13,042	\$ -	\$ 13,042
Div.7	Joint Sealants	\$ 5,000	\$ -	\$ 5,000	\$ -	\$ -	\$ 5,000
Div.9	Finishes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Div. 26	Electrical	\$ 666,762	\$ -	\$ -	\$ -	\$ 671,943	\$ 671,943
Div. 31	Earthwork	\$ 894,350	\$ 120,670	\$ 105,676	\$ 445,140	\$ 508,191	\$ 1,179,678
Div. 32	Seeding	\$ 25,000	\$ -	\$ 25,000	\$ -	\$ -	\$ 25,000
Div. 33	Utilities	\$ 523,941	\$ -	\$ 52,174	\$ 483,967	\$ -	\$ 536,141
Div. 35	Waterway and Marine Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Div. 40	Process Interconnections	\$ 711,292	\$ -	\$ -	\$ 570,712	\$ 125,690	\$ 696,402
Div. 44	Pollution and Waste Control	\$ 82,333	\$ -	\$ -	\$ 181,960	\$ -	\$ 181,960
	Total 100% Solids Handling	\$ 4,584,458	\$ 519,803	\$ 334,393	\$ 2,397,260	\$ 1,824,146	\$ 5,075,602
Contingency & Allowance							
CONT1	Construction Contingency	\$ 374,205	\$ 200,000	\$ 66,555	\$ 71,422	\$ -	\$ 337,976
CONT2	Design Contingency	\$ 374,205	\$ 250,000	\$ 16,555	\$ 56,422	\$ (307,944)	\$ -
CONT3	Escalation Allowance	\$ 409,750	\$ 500,000	\$ (192,912)	\$ 43,986	\$ (200,000)	\$ 151,074
CONT4	Estimator Allowance	\$ 135,000	\$ -	\$ 135,000	\$ -	\$ (135,000)	\$ -
CONT5	Unforeseen Conditions/Repair	\$ 100,000	\$ 150,000	\$ (50,000)	\$ -	\$ 150,000	\$ 250,000
CONT6	Clay Lagoon Liner Repair Allowance	\$ 50,000	\$ -	\$ -	\$ 50,000	\$ -	\$ 50,000
CONT7	Coatings Allowance	\$ 270,000	\$ -	\$ 270,000	\$ -	\$ -	\$ 270,000
CONT8	Long Lead Items GMP 1 Allowance	\$ -	\$ 5,405,516	\$ (5,405,516)	\$ -	\$ -	\$ -
CONT9	Owner Contingency	\$ -	\$ -	\$ -	\$ -	\$ 218,105	\$ 218,105
	Total Contingency & Allowance	\$ 1,713,160	\$ 6,505,516	\$ (5,160,318)	\$ 221,830	\$ (274,839)	\$ 1,292,188
General Requirements							
GR	General Requirements	\$ 708,282	\$ 244,803	\$ 430,471	\$ 40,062	\$ 8,871	\$ 724,207
	Total General Requirements	\$ 708,282	\$ 244,803	\$ 430,471	\$ 40,062	\$ 8,871	\$ 724,207
	Total Direct Cost	\$ 14,685,618	\$ 7,769,193	\$ 2,192,260	\$ 3,135,789	\$ 1,558,178	\$ 14,655,420
General Expense							
B	Bond	\$ 292,701	\$ 18,474	\$ 195,295	\$ 50,833	\$ 28,884	\$ 293,486
I	Insurance	\$ 257,404	\$ 25,282	\$ 157,915	\$ 49,261	\$ 24,946	\$ 257,404
PS	Project Staff	\$ 1,773,608	\$ 709,516	\$ 1,048,191	\$ 10,556	\$ -	\$ 1,768,262
F	FEE - 9%	\$ 1,376,655	\$ 181,526	\$ 787,858	\$ 272,215	\$ 169,816	\$ 1,411,415
	Total General Expense	\$ 3,700,368	\$ 934,798	\$ 2,189,258	\$ 382,864	\$ 223,646	\$ 3,730,566
	Total Price	\$ 18,385,986	\$ 8,703,991	\$ 4,381,518	\$ 3,518,653	\$ 1,781,824	\$ 18,385,986



General Estimate Summary & Item Analysis Sheet



CONSTRUCTION

BE Number GMP 4 100%

Opportunity No

Owner File No

Project New Blank Estimate

Location [ProjectLocation]

Summary Page 1 of 2

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General Estimate Summary

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Sheet Name	Description	Quantity UOM	Labor			Equipment			Services/ Tools / Supplies		Material		Subcontract		Total Price	
			Hours	Rate	Total	Hours	Unit	Total	Unit	Total	Unit	Total	Unit	Total	Unit	Total
DIRECT PRICES																
100 % Solids Handling Project1 LS																
Div.2	Division 02—Existing Conditions-Solids	1 LS	119	73.16	8,732	72	---	4,918	---	36,570	---	---	---	50,000	---	100,221
Div.3	Division 03—Concrete-Solids	1 LS	2,364	68.16	161,121	1,416	---	74,872	---	71,390	---	55,098	---	55,620	---	418,102
Div.26	Division 26—Electrical-Solids	1 LS	1,326	65.05	86,276	159	---	16,398	---	7,931	---	26,208	---	535,129	---	671,943
Div.31	Division 31 - Earthwork	1 LS	2,295	68.64	157,507	1,793	---	139,976	---	113,363	---	97,345	---	---	---	508,191
Div.40	Division 40—Process Interconnections-Solids	1 LS	1,350	71.78	96,910	301	---	27,980	---	500	---	300	---	---	---	125,690
100 % Solids Handling Project1 LS			7,455	---	510,546	3,740	---	264,145	---	229,755	---	178,951	---	640,749	---	1,824,146
Contingency & Allowance1 LS																
CONT1	Construction Contingency	1 LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CONT2	Design Allowance	--- LS	---	---	---	---	---	---	---	-307,944	---	---	---	---	---	-307,944
CONT3	Escalation Allownace	1 LS	---	---	---	---	---	---	---	-200,000	---	---	---	---	---	-200,000
CONT4	Estimator Allowance	--- LS	---	---	---	---	---	---	---	-135,000	---	---	---	---	---	-135,000
CONT 5	Unforeseen Conditions/Repairs Allowance	--- LS	---	---	---	---	---	---	---	150,000	---	---	---	---	---	150,000
CONT 9	Owner Contingency	1 LS	---	---	---	---	---	---	---	218,105	---	---	---	---	---	218,105
Contingency & Allowance1 LS			---	---	---	---	---	---	---	-274,839	---	---	---	---	---	-274,839
General Requirements1 LS																
GR	General Requirements	1 LS	---	---	---	---	---	---	---	8,871	---	---	---	---	---	8,871
General Requirements1 LS			---	---	---	---	---	---	---	8,871	---	---	---	---	---	8,871
DIRECT PRICES			7,455	---	510,546	3,740	---	264,145	---	-36,214	---	178,951	---	640,749	---	1,558,178
GENERAL EXPENSE PRICES																
FIXED GENERAL EXPENSE1 LS																
GE 8	F6 BOND	100 %	---	---	---	---	---	---	288.84	28,884	---	---	---	---	288.84	28,884
GE 9	F7 INSURANCE	100 %	---	---	---	---	---	---	249.46	24,946	---	---	---	---	249.46	24,946
FIXED GENERAL EXPENSE1 LS			---	---	---	---	---	---	---	53,830	---	---	---	---	---	53,830

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Proprietary and Confidential



GMP 4 100%

New Blank Estimate
[ProjectLocation]

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General Estimate Summary

[illegible]



BE Number GMP 4 100%
Opportunity No
Owner File No
Project **New Blank Estimate**
Location

Item Analysis Sheet

Detail Page 1 of 47
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Div.2	Division 02—Existing Conditions-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
02 41 00B Demolition				1 LS														
Demo Existing 12" BWR Pipe				120 LF														
4 Locations behind diversion box						120.00	LF											
DC01 Note 1																		
Demo Existing 12" BWR Pipe						120.00	LF											
Demo Foreman						120.00	LF	3.750			SU3							
Laborer						120.00	LF	1.250			LG5							
Bckho 329EL 2.5CY -O						120.00	LF	3.750			OP2					EX Cat 329		
Dumpster						1.00	EA					750.00						
Demo Existing 12" BWR Pipe				120.00 LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Demo Burried Electrical Conduit				705 LF														
DC01 Note 2						705.00	LF											
Demo Burried Electrical Conduit						705.00	LF											
Demo Foreman						705.00	LF	45.000			SU3							
Laborer						705.00	LF	15.000			LG5							
Bckho 329EL 2.5CY -O						705.00	LF	45.000			OP2					EX Cat 329		
Dumpster						1.00	EA					750.00						
Demo Burried Electrical Conduit				705.00 LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Demo 24" BWW Valve & Tee				3 EA														
DC02 Note 1&2																		
Demo 24" BWW Valve & Tee						3.00	EA											
Demo Foreman						3.00	EA	0.125			SU3							
Laborer						3.00	EA	0.042			LG5							
Bckho 329EL 2.5CY -O						3.00	EA	0.125			OP2					EX Cat 329		
Dumpster						1.00	EA					750.00						
Demo 24" BWW Valve & Tee				3.00 EA	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Div.2	Division 02—Existing Conditions-Solids	1.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project New Blank Estimate
Location

Item Analysis Sheet

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Div.2	Division 02—Existing Conditions-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Demo 12" Plug Valve	1	EA															
	Demo 12" Plug Valve					1.00	EA											
	Demo Foreman					1.00	EA		0.125		SU3							
	Laborer					1.00	EA		0.042		LG5							
	Bckho 329EL 2.5CY -O					1.00	EA		0.125		OP2						EX Cat 329	
	Demo 12" Plug Valve	1.00	EA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Demo 24" Filter Backwash Waste Line	240	LF															
	Assume Exoped																	
	Demo 24" Filter Backwash Waste Line					240.00	LF											
	Demo Foreman					240.00	LF		15.000		SU3							
	Laborer					240.00	LF		5.000		LG5							
	Bckho 329EL 2.5CY -O					240.00	LF		15.000		OP2						EX Cat 329	
	Cut Pipe					1.00	LS						1,500.00					
	Dumpster					2.00	EA						750.00					
	Demo 24" Filter Backwash Waste Line	240.00	LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Demo 8" Solids Blowdown Line	240	LF															
	Assume exposed																	
	Demo 8" Solids Blowdown Line					240.00	LF											
	Demo 8" Solids Blowdown Line					240.00	LF											
	Demo Foreman					240.00	LF		30.000		SU3							
	Laborer					240.00	LF		10.000		LG5							
	Bckho 329EL 2.5CY -O					240.00	LF		30.000		OP2						EX Cat 329	
	Dumpster					4.00	EA						750.00					
	Demo 8" Solids Blowdown Line	240.00	LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Demo Basin Exposed Drain 6" Lines	1,440	LF															
	Lagoon 3 & 4																	

Div.2	Division 02—Existing Conditions-Solids	1.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project New Blank Estimate
Location

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Item Analysis Sheet

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Div.2	Division 02—Existing Conditions-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Exposed on sand bed PVC or HDPE ?																	
	Demo Basin 6" Lines					1,440.00	LF											
	Demo Foreman					1,440.00	LF		45.000		SU3							
	Laborer					1,440.00	LF		15.000		LG5							
	Skidsteer Ldr Cat 246C					1,440.00	LF		45.000		OP2					Skidsteer	Ldr C	
	Dumpster					4.00	EA					750.00						
Demo Basin Exposed Drain 6" Lines		1,440.00	LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Demo Sand Layer 3 Clay Lined		533.50	CY															
	Assume 1' of sand removal																	
	240x60- 2 Each					533.50												
	Assume 1' Sand					533.50	CY											
	Demo Foreman					533.50	CY		22.350		SU3							
	Laborer					533.50	CY		22.350		LG5							
	Cat 416F2 Skiploader-0					533.50	CY		22.350		OP2					Cat 416F2	Skip	
	Cat, 938G Loader					533.50	CY		22.350		OP2					Ldr Cat938		
	Trac JD450G 70hp -0					533.50	CY		22.350		OP2					Dozer JD450		
	30% Swell Factor for hauling					693.55	EA											
	Trucking 13cy Loads					69.00	EA											
	Hour Trucking					138.00	HR					120.00						
	Tipping Fee					69.00	EA					450.00						
Demo Sand Layer 3 Clay Lined		533.50	CY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Demo Sand Layer 4 Clay Lined		533.50	CY															
	Assume 1' of sand removal																	
	240x60- 2 Each					533.50												
	Assume 1' Sand					533.50	CY											
	Demo Foreman	533.50	CY	22.350	0.045	24	SU3 82.30	1,965	---	---	---	---	---	---	---	---	3.68	1,965
	Laborer	533.50	CY	22.350	0.045	24	LG5 58.37	1,393	---	---	---	---	---	---	---	---	2.61	1,393
	Cat 416F2 Skiploader-0	533.50	CY	22.350	0.045	24	OP2 75.05	1,791	83.70	1,998	---	---	---	---	---	---	7.10	3,789
	Cat, 938G Loader	533.50	CY	22.350	0.045	24	OP2 75.05	1,791	95.79	2,287	---	---	---	---	---	---	7.64	4,078

Div.2	Division 02—Existing Conditions-Solids	1.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project New Blank Estimate
Location

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Item Analysis Sheet

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Div.2	Division 02—Existing Conditions-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Trac JD450G 70hp -O	533.50	CY	22.350	0.045	24	75.05	1,791	26.56	634	---	---	---	---	---	---	4.55	2,425
	30% Swell Factor for hauling					693	.55											
	Trucking 13cy Loads					53	.00	EA										
	Hour Trucking	106	HR	---	---	---	---	---	---	---	120.00	12,720	---	---	---	---	120.00	12,720
	Tipping Fee	53	EA	---	---	---	---	---	---	---	450.00	23,850	---	---	---	---	450.00	23,850
	Demo Sand Layer 4 Clay Lined	533.50	CY	4.470	0.224	119	73.16	8,732	9.22	4,918	68.55	36,570	---	---	---	---	94.13	50,221
	Demo Concrete Diversion Structures	130	CY															
	Demo Concrete Diversion Structures					32	.40	CY										
	4 Structures					130	.00	CY										
	Demo Structure 1 & 3					1	.00	LS							40,000	.00		
	Demo Structure 2 & 4	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	40,000	---	40,000
	Demo Structure 1&2 Concrete Slab	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	10,000	---	10,000
	Demo Concrete Diversion Structures	130.00	CY	---	---	---	---	---	---	---	---	---	---	---	384.62	50,000	384.62	50,000
	Pretreatment BLDG Demo	1	LS															
	Pretreatment BLDG Demo					1	.00	EA										
	Demo Foreman					1	.00	EA	0.031		SU3							
	Laborer					1	.00	EA	0.010		LG5							
	Gantry					1	.00	LS					2,500	.00				
	Pretreatment BLDG Demo	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	02 41 00B Demolition	1.00	LS	---	---	119	73.16	8,732	---	4,918	---	36,570	---	---	---	50,000	---	100,221

Div.2	Division 02—Existing Conditions-Solids	1.00
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Opportunity No

Project

New Blank Estimate

Mar 14, 2023

Justin McRae

Item Analysis Sheet

Proprietary and Confidential

Div.2	Division 02—Existing Conditions-Solids	1.00	LS
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[illegible]



BE Number GMP 4 100%
Opportunity No
Owner File No
Project **New Blank Estimate**
Location

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Item Analysis Sheet

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Div.3	Division 03—Concrete-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor		Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit
CONCRETE - Diversion Structures 1 & 3				152	CY												
Sub Grade Prep				3,064	SF												
Quantities						3,064.00											
3	Foundation Prep	3,064	SF	190.000	0.005	48 ^{WKS}	63.37	3,066	---	---	---	---	---	---	---	1.00	3,066
	Bckho-Ldr Ct 420C 1.0cy	3,064	SF	190.000	0.005	16 ^{OP2}	75.05	1,210	72.69	1,172	---	---	---	---	---	0.777563	2,382
	Trench Compactor 24"-33"	3,064	SF	190.000	0.005	---	---	---	27.44	443	---	---	---	---	---	0.144430	443
	Cold Weather Slab Protection	3,064	SF	---	---	---	---	---	---	---	2.00	6,128	---	---	---	2.00	6,128
Sub Grade Prep				3,064.00	SF	47.500	0.021	65	66.29	4,276	0.526993	1,615	2.00	6,128	---	3.92	12,019
Concrete Formwork				3,982	SF												
Fab Formwork				1,183	SF												
Fab SOG & Ftg Forms				144	SF												
Rental SOG Forms						144.00											
4	1. Diversion Structure (2/ea)	144	SFM	---	---	---	---	---	---	---	3.50	2,016	---	---	---	---	2,016
	Form Hardware	144	SF	---	---	---	---	---	---	---	0.600000	86	---	---	---	---	86
	Dimen. Lumber (2x4-2x10)	316.80	BF	---	---	---	---	---	---	---	2.50	792	---	---	---	---	792
Fab SOG & Ftg Forms				144.00	SF	---	---	---	---	---	20.10	2,894	---	---	---	---	2,894
Fab Wall Forms				1,039	SF												
Rental Wall Forms						1,039.00											
4	1. Diversion Structure (2/ea)	1,039	SFM	---	---	---	---	---	---	---	3.50	14,546	---	---	---	---	14,546
	Mob in/Mob Out Rental Forms					4.00	LDS					2,000.00					
	Load/Unload Rental Forms					32.00	HR		1.000			WK5					

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Div.3	Division 03—Concrete-Solids	1.00
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Item Analysis Sheet

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Div.3	Division 03—Concrete-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Assemble/ Disassemble Form Sys					1,039.00	SF		8.000			WK5						
	Form Hardware					1,039.00	SF						T3160.100					
	Scaffold Planks					240.00	LF						T3110.210					
	Fab Wall Forms	1,039.00	SF	---	---	---	---	---	---	---	14.00	14,546	---	---	---	---	14.00	14,546
	Fab Formwork	1,183.00	SF	---	---	---	---	---	---	---	14.74	17,440	---	---	---	---	14.74	17,440
	Erect and Strip Formwork	3,982	SF															
	Totals Formwork					3,982.00	sf											
	Form Oil	3,982	SF	---	---	---	---	---	---	---	0.030000	119	---	---	---	---	0.030000	119
	Erect and Strip Supplies	3,982	SF	---	---	---	---	---	---	---	0.250000	996	---	---	---	---	0.250000	996
	1. Diversion Structure (2/ea)	3,982	SF															
	1. Diversion Structure (2/ea)					3,982.00	SF											
	SOG & Ftgs (4/ea)	288	SF	2.000	0.500	144	WKS 63.37	9,125	---	---	---	---	---	---	---	---	31.69	9,125
	Sloped Slab (4/ea) Against Existing 3 Sides	84	SF	1.500	0.667	56	WKS 63.37	3,549	---	---	---	---	---	---	---	---	42.25	3,549
	Walls 2' (4/ea) Stem	216	SF	3.000	0.333	72	WKS 63.37	4,563	---	---	---	---	---	---	---	---	21.12	4,563
	Walls 13' (4/ea) Box	2,808	SF	6.000	0.167	468	WKS 63.37	29,657	---	---	---	---	---	---	---	---	10.56	29,657
	Walls Slopped 13' to 0' (8/ea)	308	SF	4.000	0.250	77	WKS 63.37	4,879	---	---	---	---	---	---	---	---	15.84	4,879
	CJ	32	SF	1.500	0.667	21	WKS 63.37	1,352	---	---	---	---	---	---	---	---	42.25	1,352
	Blockouts	178	SF	1.500	0.667	119	WKS 63.37	7,520	---	---	---	---	---	---	---	---	42.25	7,520
	Stairs	68	SF	1.000	1.000	68	WKS 63.37	4,309	---	---	---	---	---	---	---	---	63.37	4,309
	1. Diversion Structure (2/ea)	3,982.00	SF	3.885	0.257	1,025	63.37	64,954	---	---	---	---	---	---	---	---	16.31	64,954
	Loose Formwork	494	SF															
	Edge Materials					100.00												
	Form Ply 3/4"	110	SF	---	---	---	---	---	---	---	3.00	330	---	---	---	---	3.00	330
	Dimen. Lumber (2x4-2x10)	220	BF	---	---	---	---	---	---	---	2.50	550	---	---	---	---	2.50	550
	Wall Sitck Built Materials					216.00												

Div.3	Division 03—Concrete-Solids	1.00
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Item Analysis Sheet

Justin McRae

Div.3 **Division 03—Concrete-Solids** **1.00** **LS**

Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Form Ply 3/4"	237.60	SF	---	---	---	---	---	---	---	3.00	713	---	---	---	---	3.00	713
	Dimen. Lumber (2x4-2x10)	475.20	BF	---	---	---	---	---	---	---	2.50	1,188	---	---	---	---	2.50	1,188
	Handrail Lumber 4 Bf per lf					240.00	1f											
	Dimen. Lumber (2x4-2x10)	960	BF	---	---	---	---	---	---	---	2.50	2,400	---	---	---	---	2.50	2,400
	Handrails	240	LF	5.000	0.200	48	63.37	3,042	---	---	---	---	---	---	---	---	12.67	3,042
	Blockouts					178.00	SF											
	Form Ply 3/4"	195.80	SF	---	---	---	---	---	---	---	3.00	587	---	---	---	---	3.00	587
	Dimen. Lumber (2x4-2x10)	391.60	BF	---	---	---	---	---	---	---	2.50	979	---	---	---	---	2.50	979
	Loose Formwork	494.00	SF	10.292	0.097	48	63.37	3,042	---	---	13.66	6,747	---	---	---	---	19.82	9,789
	Erect and Strip Formwork	3,982.00	SF	3.711	0.269	1,073	63.37	67,996	---	---	1.97	7,862	---	---	---	---	19.05	75,858
	Concrete Formwork	3,982.00	SF	3.711	0.269	1,073	63.37	67,996	---	---	6.35	25,303	---	---	---	---	23.43	93,299
	03300 Cast In Place Concrete	152	CY															
	Concrete Materials	159.60	CY															
	TOTAL CONCRETE					152.00	Cy											
	CONC BASE BID					152.00												
	Conc.4000 Psi	152	CY	---	---	---	---	---	---	---	---	---	250.00	38,000	---	---	250.00	38,000
	Conc.4000 Psi Waste 5%	7.60	CY	---	---	---	---	---	---	---	---	---	250.00	1,900	---	---	250.00	1,900
	Short Load	10	EA	---	---	---	---	---	---	---	---	---	350.00	3,500	---	---	350.00	3,500
	Enviromental Fees	19	LD	---	---	---	---	---	---	---	---	---	35.00	665	---	---	35.00	665
	Fuel Surcharge	19	LD	---	---	---	---	---	---	---	---	---	35.00	665	---	---	35.00	665
	Hot Weather Concrete-Ice	---	CY	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Cold Weather Concrete	76	CY	---	---	---	---	---	---	---	---	---	75.00	5,700	---	---	75.00	5,700
	Escalation 2023	153	CY	---	---	---	---	---	---	---	---	---	20.00	3,060	---	---	20.00	3,060

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Div.3 **Division 03—Concrete-Solids** **1.00**



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Item Analysis Sheet

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Div.3	Division 03—Concrete-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Conc. Placing Supplies	152	CY	---	---	---	---	---	---	---	40.00	6,080	---	---	---	---	40.00	6,080
	Concrete Materials	159.60	CY	---	---	---	---	---	---	---	38.10	6,080	335.15	53,490	---	---	373.25	59,570
	Concrete Placement	152	CY															
	Total Concrete CY					152.00												
	1. Diversion Structure (2/ea)	152	CY															
	1. Diversion Structure (2/ea)					152.00	CY											
	SOG & Ftgs (4/ea)	36.50	CY	1.250	0.800	29	WKS 63.37	1,850	---	---	---	---	---	---	---	---	50.70	1,850
	Sloped Slab (4/ea) Against Existing 3 Sides	45	CY	1.000	1.000	45	WKS 63.37	2,852	---	---	---	---	---	---	---	---	63.37	2,852
	Sloped Slab Screedrail	1	LS	---	---	---	---	---	---	---	---	3,000	---	---	---	---	---	3,000
	Sloped Slab Screedrail	4	EA	0.125	8.000	32	WKS 63.37	2,028	---	---	---	---	---	---	---	---	506.96	2,028
	Walls 2' (4/ea) Stem	4	CY	0.250	4.000	16	WKS 63.37	1,014	---	---	---	---	---	---	---	---	253.48	1,014
	Walls 13' (4/ea) Box	52	CY	1.250	0.800	42	WKS 63.37	2,636	---	---	---	---	---	---	---	---	50.70	2,636
	Walls Slopped 13' to 0' (8/ea)	11.50	CY	1.250	0.800	9	WKS 63.37	583	---	---	---	---	---	---	---	---	50.70	583
	Stairs	3	CY	1.250	0.800	2	WKS 63.37	152	---	---	---	---	---	---	---	---	50.70	152
	1. Diversion Structure (2/ea)	152.00	CY	0.867	1.154	175	63.37	11,115	---	---	19.74	3,000	---	---	---	---	92.86	14,115
	Pumping	152	CY															
	Tailgate					0.00	CY											
	Crane & Bucket					0.00	CY											
	Concrete Pump					152.00	CY											
	36 M 120' Boom (Hourly Charge)	128	HR	---	---	---	---	---	---	---	195.00	24,960	---	---	---	---	195.00	24,960
	36 M 120' Boom (CY Charge)	152	CY	---	---	---	---	---	---	---	4.25	646	---	---	---	---	4.25	646
	Pumping	152.00	CY	---	---	---	---	---	---	---	168.46	25,606	---	---	---	---	168.46	25,606
	Concrete Placement	152.00	CY	0.867	1.154	175	63.37	11,115	---	---	188.20	28,606	---	---	---	---	261.32	39,721

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Div.3	Division 03—Concrete-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
03300	Cast In Place Concrete	152.00	CY	0.867	1.154	175	63.37	11,115	---	---	228.20	34,686	351.91	53,490	---	---	653.23	99,291
03251	Concrete Joints	152	CY															
	Concrete Joint Qty																	
	Joint Prep-Waterblast	400	SF															
	Vertical CJ Retardant Labor	32	SF	10.000	0.100	3	WKS 63.37	203	---	---	---	---	---	---	---	---	6.34	203
	Horizontal CJ Retardant Labor	368	SF	10.000	0.100	37	WKS 63.37	2,332	---	---	---	---	---	---	---	---	6.34	2,332
	Joint Prep (Waterblast)	400	SF	10.000	0.100	40	WKS 63.37	2,535	---	---	---	---	---	---	---	---	6.34	2,535
	Waterblast Equip. & STS	1	LS	---	---	---	---	---	---	---	---	1,500	---	---	---	---	---	1,500
	Vertical CJ + 10% Retardant Purchase	35.20	SF	---	---	---	---	---	---	---	0.600000	21	---	---	---	---	0.600000	21
	Horizontal CJ + 10% Retardant Purchase	404.80	SF	---	---	---	---	---	---	---	0.300000	121	---	---	---	---	0.300000	121
	Joint Prep-Waterblast	400.00	SF	5.000	0.200	80	63.37	5,070	---	---	4.11	1,643	---	---	---	---	16.78	6,712
	Waterstop Qty	162	LF															
	Waterstop Qty					162.00												
	Waterstop PVC	162	LF	---	---	---	---	---	---	---	---	---	9.00	1,458	---	---	9.00	1,458
	Hydro Waterstop	---	LF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Install Waterstops	162	LF	5.000	0.200	32	WKS 63.37	2,053	---	---	---	---	---	---	---	---	12.67	2,053
	Install Hydro Waterstop	---	LF	5.000	0.200	---	WKS 63.37	---	---	---	---	---	---	---	---	---	---	---
	Joint Sealants	162	LF	---	---	---	---	---	---	---	---	---	10.00	1,620	10.00	1,620	10.00	1,620
	Waterstop Qty	162.00	LF	5.000	0.200	32	63.37	2,053	---	---	---	---	9.00	1,458	10.00	1,620	31.67	5,131
03251	Concrete Joints	152.00	CY	1.352	0.739	112	63.37	7,123	---	---	10.81	1,643	9.59	1,458	10.66	1,620	77.92	11,843
	Conc Finishing	5,864	SF															
	Quantities					5,864.00	SF											
	Point and Patch Finish	2,496	SF	30.000	0.033	83	WKS 63.37	5,272	---	---	---	---	---	---	---	---	2.11	5,272

Div.3	Division 03—Concrete-Solids	1.00
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Justin McRae

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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Grout Finish	1,248	SF	15.000	0.067	83	63.37	5,272	---	---	---	---	---	---	---	---	4.22	5,272
	Finishing Supplies P&P	2,496	SF	---	---	---	---	---	---	---	0.030000	75	---	---	---	---	0.030000	75
	Finish Supplies Smooth Form	1,248	SF	---	---	---	---	---	---	---	0.100000	125	---	---	---	---	0.100000	125
	Wet Finish Supplies	2,120	SF	---	---	---	---	---	---	---	0.050000	106	---	---	---	---	0.050000	106
	Conc Finishing	5,864.00	SF	35.240	0.028	166	63.37	10,545	---	---	0.052128	306	---	---	---	---	1.85	10,850
	Curing	152 CY																
	Curing	7,495 SF																
	Quantities					7,495.00	SF											
	Curing Labor	7,495	SF	200.000	0.005	37	63.37	2,375	---	---	---	---	---	---	---	---	0.316850	2,375
	Water Curing Supplies	7,495	SF	---	---	---	---	---	---	---	0.100000	750	---	---	---	---	0.100000	750
	Curing	7,495.00	SF	200.000	0.005	37	63.37	2,375	---	---	0.100000	750	---	---	---	---	0.416850	3,124
	Curing	152.00	CY	4.056	0.247	37	63.37	2,375	---	---	4.93	750	---	---	---	---	20.55	3,124
	03200 Conc Reinforcement	17.86 TN																
	Rebar Sub: Supply & Install	17.86 TN																
	Rule of Thumb 235 Lbs per CY					35,720.00	Lbs											
	Purchase Form Savers																	
	Mech. Coupler #5	---	EA	---	---	---	---	---	---	---	---	---	26.70	---	---	---	---	---
	Rebar Subcontractor																	
	Concrete Rebar= \$3000 per TN					53,580.00	USD											
	03200 Concrete Rebar Sub	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	54,000	---	54,000
	Rebar Sub: Supply & Install	17.86	TN	---	---	---	---	---	---	---	---	---	---	---	3,023.52	54,000	3,023.52	54,000
	Install Formsavers/Drill Dowel	---	EA															

Div.3	Division 03—Concrete-Solids	1.00
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Justin McRae

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Div.3	Division 03—Concrete-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Install Formsavers																	
	Install No 5- 8 Form Savers	---	EA	4.000	0.250	---	WKS 63.37	---	---	---	---	---	---	---	---	---	---	---
	Drill & Dowel Rebar																	
	Drill in Dowels up to 12 " Depth	64	EA	2.000	0.500	32	WKS 63.37	2,028	---	---	---	---	---	---	---	---	31.69	2,028
	STS Dowels incl's Epoxy, Drills, Bits Etc.	64	EA	---	---	---	---	---	---	---	9.00	576	---	---	---	---	9.00	576
	Install Formsavers/Drill Dowel	---	EA	---	---	32	63.37	2,028	---	---	---	576	---	---	---	---	---	2,604
	03200 Conc Reinforcement	17.86	TN	0.558	1.792	32	63.37	2,028	---	---	32.25	576	---	---	3,023.52	54,000	3,169.31	56,604
	Concrete Equipment	1	LS															
	Concrete Foreman	---	MO	1.000	1.000	---	SU3 82.30	---	---	---	---	---	---	---	---	---	---	---
	Concrete Field Coordinator	0.50	MO	1.000	1.000	87	EN2 88.42	7,663	---	---	---	---	300.00	150	---	---	15,626.00	7,813
	Crane Ruff Ter 90 Ton	1	MO	1.000	1.000	173	OP4 91.73	15,900	126.10	21,815	---	---	---	---	---	---	37,714.37	37,714
	Forklift, RT 10,000# Reach	2	MO	1.000	1.000	347	OP2 75.05	26,017	121.50	42,039	---	---	---	---	---	---	34,028.19	68,056
	Comp 185 CFM Diesel	1	MO	1.000	1.000	---	---	---	27.26	4,716	---	---	---	---	---	---	4,716.31	4,716
	Scaffold	2	MO	1.000	1.000	---	---	---	8.67	3,000	---	---	---	---	---	---	1,500.00	3,000
	Gen Fldlites 5-10 KW	2	MO	1.000	1.000	---	---	---	4.88	1,688	---	---	---	---	---	---	843.85	1,688
	Concrete Equipment	1.00	LS	---	---	607	81.73	49,580	---	73,258	---	---	---	150	---	---	---	122,988
	CONCRETE - Diversion Structures	152.00	CY	0.067	14.920	2,268	68.36	155,038	492.58	74,872	456.52	69,390	362.49	55,098	365.92	55,620	2,697.49	410,018
	Hydro-Testing Structure	4	EA															
	Hydro-Testing Structure	4	EA	0.042	24.000	96	4.00 EA WKS 63.37	6,084	---	---	---	---	---	---	---	---	1,520.88	6,084
	Hoses & Pump STS	4	EA	---	---	---	---	---	---	---	500.00	2,000	---	---	---	---	500.00	2,000

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Div.3	Division 03—Concrete-Solids	1.00
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BE Number	GMP 4 100%
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Item Analysis Sheet

Div.3	Division 03—Concrete-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Hydro-Testing Structure	4.00	EA	0.042	24.000	96	63.37	6,084	---	---	500.00	2,000	---	---	---	---	2,020.88	8,084
	Division 03—Concrete-Solids	1.00	LS	---	---	2,364	68.16	161,121	---	74,872	---	71,390	---	55,098	---	55,620	---	418,102



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Item Analysis Sheet

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Div.26	Division 26—Electrical-Solids	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Duct Bank	481	LF															42.78
													CY		Formwork		Earthwork	
	A00E02 - 2.33' x 2.5'					77.00	LF						17.00		385.00		94.00	
	B00E02 - 1.6' x 1.75'					13.00	LF						1.00		45.50		16.00	
	C00E02 - 2.33' x 2.17'					117.00	LF						22.00		507.78		169.00	
	D00E02 - 1.6' x 1.75'					14.00	LF						1.00		49.00		17.00	
	E00E02 - 2' x 2.17'					117.00	LF						19.00		507.78		156.00	
	F00E02 - 1.6' x 1.75'					15.00	LF						2.00		52.50		18.00	
	G00E02 - 1.6' x 1.75'					128.00	LF						12.00		448.00		156.00	

						481.00	LF						74.00		1,996.00		626.00	
	Excavate Duct Bank	626	CY															
	Excavate Duct Bank					626.00	CY											
	Foreman	626	CY	20.000	0.050	31	SU3 82.30	2,576	---	---	---	---	---	---	---	---	4.12	2,576
	Laborer	626	CY	20.000	0.050	31	LG5 58.37	1,827	---	---	---	---	---	---	---	---	2.92	1,827
	Bckho 329EL 2.5CY -O	626	CY	20.000	0.050	31	OP2 75.05	2,349	174.34	5,457	---	---	---	---	---	---	12.47	7,806
	Cat, 938G Loader	626	CY	20.000	0.050	31	OP2 75.05	2,349	95.79	2,998	---	---	---	---	---	---	8.54	5,347
	Hour Trucking	12	HR	---	---	---	---	---	---	---	120.00	1,440	---	---	---	---	120.00	1,440
	Tipping Fee	6	EA	---	---	---	---	---	---	---	350.00	2,100	---	---	---	---	350.00	2,100
	Excavate Duct Bank	626.00	CY	5.000	0.200	125	72.69	9,101	13.51	8,455	5.65	3,540	---	---	---	---	33.70	21,096
	Form & Place Concrete Duct Bank	481	LF															
	Concrete					74.00	CY											
	Formwork					1,996.00	SF											
	Form & Place Concrete Duct Bank					1,996.00	SF											
	Duct Bank	1,996	SF	2.000	0.500	998	WKS 63.37	63,243	---	---	---	---	---	---	---	---	31.69	63,243



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Div.26 Division 26—Electrical-Solids 1.00 LS

Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Formwork 4 Uses					499.00												
	Form Ply 3/4"	548.90	SF	---	---	---	---	---	---	---	3.00	1,647	---	---	---	---	3.00	1,647
	Dimen. Lumber (2x4-2x10)	1,098	BF	---	---	---	---	---	---	---	2.50	2,745	---	---	---	---	2.50	2,745
	Rebar					6.00	TN											
	Rebar	6	TN	---	---	---	---	---	---	---	---	---	---	---	3,000.00	18,000	3,000.00	18,000
	Concrete					74.00	CY											
	Conc.4000 Psi	74	CY	---	---	---	---	---	---	---	---	---	250.00	18,500	---	---	250.00	18,500
	Conc.4000 Psi Waste 15%	11.10	CY	---	---	---	---	---	---	---	---	---	250.00	2,775	---	---	250.00	2,775
	Conc. Red Dye	85.10	CY	---	---	---	---	---	---	---	---	---	30.00	2,553	---	---	30.00	2,553
	Short Load	5	EA	---	---	---	---	---	---	---	---	---	350.00	1,750	---	---	350.00	1,750
	Enviromental Fees	9	LD	---	---	---	---	---	---	---	---	---	35.00	315	---	---	35.00	315
	Fuel Surcharge	9	LD	---	---	---	---	---	---	---	---	---	35.00	315	---	---	35.00	315
	Placement					74.00	CY											
	Duct Bank	74	CY	1.250	0.800	59	WKS 63.37	3,752	---	---	---	---	---	---	---	---	50.70	3,752
	Form & Place Concrete Duct Bank	481.00	LF	0.455	2.198	1,057	63.37	66,995	---	---	9.13	4,391	54.49	26,208	37.42	18,000	240.32	115,594
	Backfill Duct Bank	552	CY															
	Backfill Duct Bank					552.00												
	Backfill Duct Bank					552.00	CY											
	Foreman	552	CY	23.000	0.043	24	SU3 82.30	1,975	---	---	---	---	---	---	---	---	3.58	1,975
	Laborer	552	CY	11.500	0.087	48	LG5 58.37	2,802	---	---	---	---	---	---	---	---	5.08	2,802
	Bckho 329EL 2.5CY -O	552	CY	23.000	0.043	24	OP2 75.05	1,801	174.34	4,184	---	---	---	---	---	---	10.84	5,985
	Cat, 938G Loader	552	CY	23.000	0.043	24	OP2 75.05	1,801	95.79	2,299	---	---	---	---	---	---	7.43	4,100
	Trench Compactor 24"-33"	552	CY	23.000	0.043	---	---	---	27.44	659	---	---	---	---	---	---	1.19	659
	Trc Water-TA 2000 Gal -O	552	CY	23.000	0.043	24	OP2 75.05	1,801	33.37	801	---	---	---	---	---	---	4.71	2,602
	Backfill Duct Bank	552.00	CY	3.833	0.261	144	70.70	10,181	14.39	7,943	---	---	---	---	---	---	32.83	18,123

U01 STANDARD-LANDSCAPE-MASTER.RPT

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Div.26 Division 26—Electrical-Solids 1.00



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Proprietary and Confidential

Div.26	Division 26—Electrical-Solids	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Duct Bank	481.00	LF	0.363	2.758	1,326	65.05	86,276	34.09	16,398	16.49	7,931	54.49	26,208	37.42	18,000	321.86	154,814
	Division 26—Electrical	1	LS															
	Division 26 Electrical Solids	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	517,129	---	517,129
	Division 26—Electrical	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	517,129	---	517,129
	Division 26—Electrical-Solids	1.00	LS	---	---	1,326	65.05	86,276	---	16,398	---	7,931	---	26,208	---	535,129	---	671,943



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Div.31	Division 31 - Earthwork	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Earthwork GMP 3 Reconcile	1	LS															
	Diversion Structure Shoring	1	LS															
	Shoring Per Month per Unit					1.00	MO									21,222.10		
	2 Units Per Month					2.00	EA									42,444.20		

	Engineering					1.00	EA									2,800.00		
	Delivery & Pickup					2.00	EA						3,750.00			7,500.00		
	4 Months Rental 2 Units					4.00	MO						42,444.20			169,776.80		

	Total					1.00	LS									180,076.80		
	Shoring Box for Concrete Lined Beds	1	LS	---	---	---	---	---	---	---	---	-180,076	---	---	---	---	---	-180,076
	Diversion Structure Shoring	1.00	LS	---	---	---	---	---	---	---	---	-180,076	---	---	---	---	---	-180,076
	Diversion Structures Earthwork	1	LS															
	Excavate Structure for demolition in Div. 2																	
	Prep for new structure																	
	Excavation Each					179.00	CY											
	Total Ex					716.00	CY											
	Clay Lined Beds Repair	1	LS															
	Patch Clay Lined Pond					750.00	SF						15.00			11,250.00		
	Patch Clay Lined Pond					1.00	LS						11,250.00					
	Clay Lined Beds Repair	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Nuisance Dewatering For Excavations	1	LS															

Div.31	Division 31 - Earthwork	1.00
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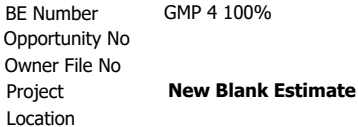
Item Analysis Sheet

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Div.31 Division 31 - Earthwork 1.00 LS

Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
-1	Pump 8" Trash)Hyd/Diesel) -O	6	MO	1.000	1.000	---	---	---	12.79	-13,276	---	---	---	---	---	---	-2,212.62	-13,276
-1	Fuel	150	GAL	---	---	---	---	---	---	---	5.00	-750	---	---	---	---	-5.00	-750
	Piping	1	LS	---	---	---	---	---	---	---	---	-500	---	---	---	---	---	-500
-1	Laborer	40	HR	1.000	1.000	-40	58.37	-2,335	---	---	---	---	---	---	---	---	-58.37	-2,335
Nuisance Dewatering For Excavations		1.00	LS	---	---	-40	58.37	-2,335	---	-13,276	---	-1,250	---	---	---	---	---	-16,861
Excavate Structures		716	CY															
4 Structures																		
2 Day per Structure																		
Install Slide Rail During Excavation																		
Excavate Structures		716.00	CY															
-0.5	Demo Foreman	716	CY	11.250	0.089	-32	82.30	-2,619	---	---	---	---	---	---	---	---	-3.66	-2,619
-0.5	Laborer	716	CY	5.625	0.178	-64	58.37	-3,715	---	---	---	---	---	---	---	---	-5.19	-3,715
-0.5	Bckho 349EL-3.0 cy-O	716	CY	11.250	0.089	-32	75.05	-2,388	192.26	-6,118	---	---	---	---	---	---	-11.88	-8,506
-0.5	Skidsteer Ldr Cat 246C	716	CY	11.250	0.089	-32	75.05	-2,388	63.25	-2,013	---	---	---	---	---	---	-6.15	-4,401
-0.5	Cat, 938G Loader	716	CY	11.250	0.089	-32	75.05	-2,388	95.79	-3,048	---	---	---	---	---	---	-7.59	-5,437
Export						216.00	CY											
Trucking 13cy Loads						17.00	EA											
-0.5	Hour Trucking	34	HR	---	---	---	---	---	---	---	120.00	-2,040	---	---	---	---	-60.00	-2,040
-0.5	Tipping Fee	17	EA	---	---	---	---	---	---	---	350.00	-2,975	---	---	---	---	-175.00	-2,975
Excavate Structures		716.00	CY	-3.750	-0.267	-191	70.70	-13,499	-15.61	-11,179	-7.00	-5,015	---	---	---	---	-41.47	-29,693
Subgrade Prep		1,824	SF															
36" Rockbase						202.67	CY											
-0.5	Rock	405	TN	---	---	---	---	---	---	---	---	---	30.00	-6,075	---	---	-15.00	-6,075
Subgrade Prep						1,824.00	SF											
-0.5	Foreman	1,824	SF	28.500	0.035	-32	82.30	-2,634	---	---	---	---	---	---	---	---	-1.44	-2,634
Div.31 Division 31 - Earthwork																	1.00	



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Item Analysis Sheet

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Div.31	Division 31 - Earthwork	1.00	LS
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No.	Description	Quantity UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
					Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
-0.5	Laborer	1,824 SF	14.250	0.070	-64 ^{LG5}	58.37	-3,736	---	---	---	---	---	---	---	---	-2.05	-3,736
-0.5	Bckho 349EL-3.0 cy-O	1,824 SF	28.500	0.035	-32 ^{OP2}	75.05	-2,402	192.26	-6,152	---	---	---	---	---	---	-4.69	-8,554
-0.5	Skidsteer Ldr Cat 246C	1,824 SF	28.500	0.035	-32 ^{OP2}	75.05	-2,402	63.25	-2,024	---	---	---	---	---	---	-2.43	-4,426
-0.5	Trench Compactor 24"-33"	1,824 SF	28.500	0.035	---	---	---	27.44	-878	---	---	---	---	---	---	-0.481434	-878
-0.5	Trc Water-TA 2000 Gal -O	1,824 SF	28.500	0.035	-32 ^{OP2}	75.05	-2,402	33.37	-1,068	---	---	---	---	---	---	-1.90	-3,469
Subgrade Prep		1,824.00 SF	-9.500	-0.105	-192	70.70	-13,574	-5.55	-10,122	---	---	-3.33	-6,075	---	---	-16.32	-29,771
Backfill Structures		412 CY															
		Remove Sliderail															
Backfill Structures		412.00 CY															
-0.5	Demo Foreman	412 CY	6.400	0.156	-32 ^{SU3}	82.30	-2,649	---	---	---	---	---	---	---	---	-6.43	-2,649
-0.5	Laborer	412 CY	3.200	0.313	-64 ^{LG5}	58.37	-3,758	---	---	---	---	---	---	---	---	-9.12	-3,758
-0.5	Bckho 349EL-3.0 cy-O	412 CY	6.400	0.156	-32 ^{OP2}	75.05	-2,416	192.26	-6,188	---	---	---	---	---	---	-20.88	-8,604
-0.5	Cat, 938G Loader	412 CY	6.400	0.156	-32 ^{OP2}	75.05	-2,416	95.79	-3,083	---	---	---	---	---	---	-13.35	-5,499
-0.5	Trench Compactor 24"-33"	412 CY	6.400	0.156	---	---	---	27.44	-883	---	---	---	---	---	---	-2.14	-883
-0.5	Trc Water-TA 2000 Gal -O	412 CY	6.400	0.156	-32 ^{OP2}	75.05	-2,416	33.37	-1,074	---	---	---	---	---	---	-8.47	-3,490
Backfill Structures		412.00 CY	-2.133	-0.469	-193	70.70	-13,654	-27.25	-11,229	---	---	---	---	---	---	-60.39	-24,883
Diversion Structures Earthwork		1.00 LS	---	---	-616	69.90	-43,061	---	-45,806	---	-6,265	---	-6,075	---	---	---	-101,208
Earthwork GMP 3 Reconcile		1.00 LS	---	---	-616	69.90	-43,061	---	-45,806	---	-186,341	---	-6,075	---	---	---	-281,284
Earthwork GMP 4 100%		1 LS															
Diversion Structure Shoring		1 LS															
		United															
		Shoring Per Month per Unit				1.00 MO											
		2 Units Per Month				1.00 MO											
		*****	*****	*****	*****	*****	*****	*****	*****	*****	*****						

Div.31	Division 31 - Earthwork	1.00
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Div.31	Division 31 - Earthwork	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Engineering					1.00	EA									2,800.00		
	Delivery & Pickup					2.00	EA						7,200.00			14,400.00		
	8 Months Rental 2 Units					8.00	MO						23,070.00			184,560.00		
	Drill Piers																	

	Total					1.00	LS									201,760.00		
	Keller																	
	Shoring Per Month per Unit					1.00	MO											
	2 Units at a time					4.00	EA						57,566.00			230,264.00		

	Engineering					1.00	EA									2,500.00		
	Delivery & Pickup					2.00	EA						7,500.00			15,000.00		
	2 Units at a time					1.00	LS						230,264.00			230,264.00		
	Guardrail					360.00	LF						16.00			5,760.00		

	Total					1.00	LS									253,524.00		
	Shoring Box Diversion Structures																	
	Shoring Box Diversion Structures	1	LS	---	---	---	---	---	---	---	---	253,524	---	---	---	---	---	253,524
	Sub Asist																	
	Laborer - Sub Asist	1	EA	0.005	200.000	200	LGS 58.37	11,674	---	---	---	---	---	---	---	---	11,674.00	11,674
	Cut Steel Piles																	
	Cut Steel Piles	4	EA	0.042	24.000	96	LGS 58.37	5,604	---	---	---	---	---	---	---	---	1,400.88	5,604
	Skidsteer Ldr Cat 246C	4	EA	0.125	8.000	32	OP2 75.05	2,402	63.25	2,024	---	---	---	---	---	---	1,106.44	4,426
	Temp Guardrail																	
	Temp Guardrail	360	LF	5.000	0.200	72	LGS 58.37	4,203	---	---	---	---	---	---	---	---	11.67	4,203
	Diversion Structure Shoring	1.00	LS	---	---	400	59.70	23,882	---	2,024	---	253,524	---	---	---	---	---	279,430
	Diversion Structures Earthwork	1	LS															
	Excavate Structure for demolition in Div. 2																	

Div.31	Division 31 - Earthwork	1.00
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Div.31	Division 31 - Earthwork	1.00	LS
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Prep for new structure Excavation Each Total Ex					256.00 1,024.00	CY											
	Clay Lined Beds Repair	1	LS															
	Patch Clay Lined Pond					750.00	SF						15.00		11,250.00			
	Patch Clay Lined Pond					1.00	LS						11,250.00					
	Clay Lined Beds Repair	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Nuisance Dewatering For Excavations	1	LS															
	Pump 8" Trash)Hyd/Diesel) -O	8	MO	1.000	1.000	---	---	---	12.79	17,701	---	---	---	---	---	---	2,212.62	17,701
	Fuel	150	GAL	---	---	---	---	---	---	---	5.00	750	---	---	---	---	5.00	750
	Piping	1	LS	---	---	---	---	---	---	---	---	500	---	---	---	---	---	500
	Laborer	40	HR	1.000	1.000	40	58.37	2,335	---	---	---	---	---	---	---	---	58.37	2,335
	Nuisance Dewatering For Excavations	1.00	LS	---	---	40	58.37	2,335	---	17,701	---	1,250	---	---	---	---	---	21,286
	Excavate Structures	1,024	CY															
	4 Structures 4 Day per Structure Install Shoring During Excavation					128.00												
	Excavate Structures					1,024.00	CY											
	Foreman	1,024	CY	8.000	0.125	128	82.30	10,534	---	---	---	---	---	---	---	---	10.29	10,534
	Laborer	1,024	CY	4.000	0.250	256	58.37	14,943	---	---	---	---	---	---	---	---	14.59	14,943
	Bckho 349EL-3.0 cy-O	1,024	CY	8.000	0.125	128	75.05	9,606	192.26	24,609	---	---	---	---	---	---	33.41	34,216
	Skidsteer Ldr Cat 246C	1,024	CY	8.000	0.125	128	75.05	9,606	63.25	8,097	---	---	---	---	---	---	17.29	17,703
	Cat, 938G Loader	1,024	CY	8.000	0.125	128	75.05	9,606	95.79	12,261	---	---	---	---	---	---	21.36	21,868

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Div.31	Division 31 - Earthwork	1.00
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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Export					251.00	CY											
	Trucking 13cy Loads					19.00	EA											
P	Hour Trucking	38	HR	---	---	---	---	---	---	---	120.00	4,560	---	---	---	---	120.00	4,560
P	Tipping Fee	19	EA	---	---	---	---	---	---	---	350.00	6,650	---	---	---	---	350.00	6,650
	Onsite Stockpile					773.00	CY											
	Trucking 13cy Loads					59.00	EA											
P	Hour Trucking	128	HR	---	---	---	---	---	---	---	120.00	15,360	---	---	---	---	120.00	15,360
	Stockpile Maintenance					1.00	LS						2,500.00					
Excavate Structures		1,024.00	CY	1.333	0.750	768	70.70	54,296	43.91	44,967	25.95	26,570	---	---	---	---	122.88	125,833
Subgrade Prep		2,172	SF															
	36" Rockbase					301.67	CY											
P	Rock	603	TN	---	---	---	---	---	---	---	---	---	30.00	18,090	---	---	30.00	18,090
	2 Days per Structure																	
	Subgrade Prep					2,172.00	SF											
	Foreman	2,172	SF	34.000	0.029	64	82.30	5,258	---	---	---	---	---	---	---	---	2.42	5,258
	Laborer	2,172	SF	17.000	0.059	128	58.37	7,458	---	---	---	---	---	---	---	---	3.43	7,458
	Bckho 349EL-3.0 cy-O	2,172	SF	34.000	0.029	64	75.05	4,794	192.26	12,282	---	---	---	---	---	---	7.86	17,076
	Skidsteer Ldr Cat 246C	2,172	SF	34.000	0.029	64	75.05	4,794	63.25	4,041	---	---	---	---	---	---	4.07	8,835
2	Trench Compactor 24"-33"	2,172	SF	34.000	0.029	---	---	---	27.44	3,506	---	---	---	---	---	---	1.61	3,506
	Trc Water-TA 2000 Gal -O	2,172	SF	34.000	0.029	64	75.05	4,794	33.37	2,132	---	---	---	---	---	---	3.19	6,926
Subgrade Prep		2,172.00	SF	5.667	0.176	383	70.70	27,098	10.11	21,961	---	---	8.33	18,090	---	---	30.92	67,149
Backfill Structures		562	CY															
	Remove Sliderail					562.00												
	4 Days per Structure																	
	Backfill Structures					562.00	CY											
	Foreman	562	CY	4.380	0.228	128	82.30	10,560	---	---	---	---	---	---	---	---	18.79	10,560
	Laborer	562	CY	2.190	0.457	257	58.37	14,979	---	---	---	---	---	---	---	---	26.65	14,979

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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Bckho 349EL-3.0 cy-O	562	CY	4.380	0.228	128	OP2 75.05	9,630	192.26	24,669	---	---	---	---	---	---	61.03	34,299
	Cat, 938G Loader	562	CY	4.380	0.228	128	OP2 75.05	9,630	95.79	12,291	---	---	---	---	---	---	39.00	21,921
2	Trench Compactor 24"-33"	562	CY	4.380	0.228	---	---	---	27.44	7,042	---	---	---	---	---	---	12.53	7,042
	Trc Water-TA 2000 Gal -O	562	CY	4.380	0.228	128	OP2 75.05	9,630	33.37	4,282	---	---	---	---	---	---	24.75	13,911
Native Screening @ Stockpile																		
	Cat, 938G Loader	562	CY	8.850	0.113	64	OP2 75.05	4,766	95.79	6,083	---	---	---	---	---	---	19.30	10,849
	Screening GRIZ	1	LS	---	---	---	---	---	---	---	---	3,000	---	---	---	---	---	3,000
P	Hour Trucking	128	HR	---	---	---	---	---	---	---	120.00	15,360	---	---	---	---	120.00	15,360
Backfill Structures																		
		562.00	CY	0.674	1.483	833	71.03	59,194	96.74	54,367	32.67	18,360	---	---	---	---	234.73	131,920
Diversion Structures Earthwork																		
		1.00	LS	---	---	2,025	70.59	142,923	---	138,995	---	46,180	---	18,090	---	---	---	346,189
Earthwork GMP 4 100%																		
		1.00	LS	---	---	2,425	68.80	166,805	---	141,019	---	299,704	---	18,090	---	---	---	625,619
Lagoon Sand																		
	Drain Rock 6"	3,200 CY																
	Lagoon 1 & 2					533.00	CY					24.30						
	Lagoon 3 & 4					533.00	CY											
	Tons Drain Rock					2,132.00	TN					30.00			63,960.00			
	SAND 12"																	
	Lagoon 1 & 2					1,067.00	CY											
	Lagoon 3 & 4					1,067.00	CY											
	Tons Sand					4,268.00	TN					25.00			106,700.00			
P	0.5 Lagoon Drain Rock Supply	2,132	TN	---	---	---	---	---	---	---	---	---	30.00	31,980	---	---	15.00	31,980
P	0.5 Lagoon Sand Supply	4,268	TN	---	---	---	---	---	---	---	---	---	25.00	53,350	---	---	12.50	53,350
Stockpile & Tram Sand																		
	0.5 Cat, 938G Loader	3,200	CY	40.000	0.025	40	OP2 75.05	3,002	95.79	3,832	---	---	---	---	---	---	2.14	6,834

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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
Lagoon 1 & 2 Drain Rock Infill		533	CY			533	0.00	CY										
0.5	Foreman	533	CY	22.000	0.045	12	SU3 82.30	997	---	---	---	---	---	---	---	---	1.87	997
0.5	Laborer	533	CY	7.333	0.136	36	LGS 58.37	2,121	---	---	---	---	---	---	---	---	3.98	2,121
0.5	Cat, 938G Loader	533	CY	22.000	0.045	12	OP2 75.05	909	95.79	1,160	---	---	---	---	---	---	3.88	2,069
0.5	Cat 416F2 Skiploader-0	533	CY	22.000	0.045	12	OP2 75.05	909	83.70	1,014	---	---	---	---	---	---	3.61	1,923
0.5	Telebelt 130'	533	CY	22.000	0.045	---	---	---	425.00	5,148	---	---	---	---	---	---	9.66	5,148
0.5	Telebelt 130'	533	CY	22.000	0.045	---	---	---	4.25	51	---	---	---	---	---	---	0.096591	51
0.5	Trc Water-TA 2000 Gal -O	533	CY	22.000	0.045	12	OP2 75.05	909	33.37	404	---	---	---	---	---	---	2.46	1,313
Lagoon 1 & 2 Drain Rock Infill		533.00	CY	6.286	0.159	85	68.94	5,846	14.59	7,778	---	---	---	---	---	---	25.56	13,624
Lagoon 3&4 Drain Rock Infill		533	CY			533	0.00	CY										
0.5	Foreman	533	CY	22.000	0.045	12	SU3 82.30	997	---	---	---	---	---	---	---	---	1.87	997
0.5	Laborer	533	CY	7.333	0.136	36	LGS 58.37	2,121	---	---	---	---	---	---	---	---	3.98	2,121
0.5	Cat, 938G Loader	533	CY	22.000	0.045	12	OP2 75.05	909	95.79	1,160	---	---	---	---	---	---	3.88	2,069
0.5	Cat 416F2 Skiploader-0	533	CY	22.000	0.045	12	OP2 75.05	909	83.70	1,014	---	---	---	---	---	---	3.61	1,923
0.5	Telebelt 130'	533	CY	22.000	0.045	---	---	---	425.00	5,148	---	---	---	---	---	---	9.66	5,148
0.5	Telebelt 130'	533	CY	22.000	0.045	---	---	---	4.25	51	---	---	---	---	---	---	0.096591	51
0.5	Trc Water-TA 2000 Gal -O	533	CY	22.000	0.045	12	OP2 75.05	909	33.37	404	---	---	---	---	---	---	2.46	1,313
Lagoon 3&4 Drain Rock Infill		533.00	CY	6.286	0.159	85	68.94	5,846	14.59	7,778	---	---	---	---	---	---	25.56	13,624
Lagoon 1 & 2 Sand Infill		1,067	CY			1,067	0.00	CY										
0.5	Foreman	1,067	CY	27.000	0.037	20	SU3 82.30	1,626	---	---	---	---	---	---	---	---	1.52	1,626
0.5	Laborer	1,067	CY	9.000	0.111	59	LGS 58.37	3,460	---	---	---	---	---	---	---	---	3.24	3,460
0.5	Cat, 938G Loader	1,067	CY	27.000	0.037	20	OP2 75.05	1,483	95.79	1,893	---	---	---	---	---	---	3.16	3,376
0.5	Cat 416F2 Skiploader-0	1,067	CY	27.000	0.037	20	OP2 75.05	1,483	83.70	1,654	---	---	---	---	---	---	2.94	3,137
0.5	Telebelt 130'	1,067	CY	27.000	0.037	---	---	---	425.00	8,398	---	---	---	---	---	---	7.87	8,398
0.5	Telebelt 130'	1,067	CY	27.000	0.037	---	---	---	4.25	84	---	---	---	---	---	---	0.078704	84

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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
0.5	Trc Water-TA 2000 Gal -O	1,067 CY		27.000	0.037	20	OP2 75.05	1,483	33.37	659	---	---	---	---	---	---	2.01	2,142
Lagoon 1 & 2 Sand Infill		1,067.00 CY		7.714	0.130	138	68.94	9,535	11.89	12,688	---	---	---	---	---	---	20.83	22,223
Lagoon 3 & 4 Sand Infill		1,067 CY																
Lagoon 3 & 4 Sand Infill						1,067.00 CY												
0.5	Foreman	1,067 CY		27.000	0.037	20	SU3 82.30	1,626	---	---	---	---	---	---	---	---	1.52	1,626
0.5	Laborer	1,067 CY		9.000	0.111	59	LG5 58.37	3,460	---	---	---	---	---	---	---	---	3.24	3,460
0.5	Cat, 938G Loader	1,067 CY		27.000	0.037	20	OP2 75.05	1,483	95.79	1,893	---	---	---	---	---	---	3.16	3,376
0.5	Cat 416F2 Skiploader-0	1,067 CY		27.000	0.037	20	OP2 75.05	1,483	83.70	1,654	---	---	---	---	---	---	2.94	3,137
0.5	Telebelt 130'	1,067 CY		27.000	0.037	---	---	---	425.00	8,398	---	---	---	---	---	---	7.87	8,398
0.5	Telebelt 130'	1,067 CY		27.000	0.037	---	---	---	4.25	84	---	---	---	---	---	---	0.078704	84
0.5	Trc Water-TA 2000 Gal -O	1,067 CY		27.000	0.037	20	OP2 75.05	1,483	33.37	659	---	---	---	---	---	---	2.01	2,142
Lagoon 3 & 4 Sand Infill		1,067.00 CY		7.714	0.130	138	68.94	9,535	11.89	12,688	---	---	---	---	---	---	20.83	22,223
Lagoon Sand		3,200.00 CY		6.581	0.152	486	69.44	33,763	13.99	44,763	---	---	26.67	85,330	---	---	51.21	163,856
Division 31 - Earthwork		1.00 LS		---	---	2,295	68.64	157,507	---	139,976	---	113,363	---	97,345	---	---	---	508,191



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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Install Piping (Exposed)	1	LS															
	Direct Manhours	1	LS															
	4-Man Crew																	
	- Outlet Boxes					192.00	mhr											
	- Solids Pump #1					183.00	mhr											
	- Solids Pump #2					192.00	mhr											
	Total Manhours					192.00	mhr											
	Pipe Foreman					48.00	HR		1.000		SU3							
	Pipefitter					192.00	HR		1.000		WK8							
	Underdrain System	4,100	LF															
	4-Man Crew																	
	Exposed 3" Slotted/4" HDPE, sitting 6" above FF on sand, 4 Lagoons																	
	- Underdrain System					356.00	mhr											
	- Underdrain System					124.00	mhr				Elevation		(6" off FF)					
	Total Manhours					480.00	mhr											
	Per Chart																	
	0.5 Pipe Foreman	120	HR	1.000	1.000	60	SU3 82.30	4,938	---	---	---	---	---	---	---	---	41.15	4,938
	0.5 Pipefitter	480	HR	1.000	1.000	240	WK8 63.37	15,209	---	---	---	---	---	---	---	---	31.69	15,209
	Per LF																	
	Pipe Foreman					4,100.00	LF		10.000		WK8							

Div.40 **Division 40—Process Interconnections-Solids** **1.00**



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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Underdrain System	4,100.00	LF	13.667	0.073	300	67.16	20,147	---	---	---	---	---	---	---	---	4.91	20,147
	Direct Manhours	1.00	LS	---	---	300	67.16	20,147	---	---	---	---	---	---	---	---	---	20,147
	Install Precast Concrete Stoppers	1	LS															
	Lagoon 1					285.00	EA											
	Lagoon 2					285.00	EA											
	Lagoon 3					285.00	EA											
	Lagoon 4					285.00	EA											
	Total					1,140.00	EA											
	0.5 Pipe Foreman	285	EA	4.000	0.250	36	82.30	2,932	---	---	---	---	---	---	---	---	10.29	2,932
	0.5 Pipefitter	1,140	EA	4.000	0.250	143	63.37	9,030	---	---	---	---	---	---	---	---	7.92	9,030
	Install Precast Concrete Stoppers	1.00	LS	---	---	178	67.16	11,962	---	---	---	---	---	---	---	---	---	11,962
	Adjustments	1	LS															
	- Outlet Boxes					64.00	mhr											
	- Solids Pump #1					41.00	mhr		Access		Egress		Tight Spaces					
	- Solids Pump #2					64.00	mhr		Access		Egress		Tight Spaces					
	- Underdrain System					160.00	mhr		1 Week per									
	Total Manhours					329.00	mhr											
	0.5 Pipe Foreman	82.25	HR	1.000	1.000	41	82.30	3,385	---	---	---	---	---	---	---	---	41.15	3,385
	0.5 Pipefitter	329	HR	1.000	1.000	165	63.37	10,424	---	---	---	---	---	---	---	---	31.69	10,424
	Adjustments	1.00	LS	---	---	206	67.16	13,809	---	---	---	---	---	---	---	---	---	13,809
	Pipe Testing	1	LS															

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No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Test Pipe Crew					10.00	EA		0.125			WK8						
	Comp 185 CFM Diesel					1.00	EA		0.125								Comp 185	CFM Di
	Pipe Testing	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Equipment	1	LS															
	Skidsteer Ldr Cat 246C	1	LS															
	(Direct MH+Adjustments)/4																	
	- Outlet Boxes					64.00	mhr											
	- Underdrain System					160.00	mhr											
	- Precast Concrete Stoppers					71.00	mhr											

	Total Hours					295.00	hr											
	0.5 Skidsteer Ldr Cat 246C	295	HR	1.000	1.000	148	OP2 75.05	11,070	63.25	9,330	---	---	---	---	---	---	69.15	20,400
	Skidsteer Ldr Cat 246C	1.00	LS	---	---	148	75.05	11,070	---	9,330	---	---	---	---	---	---	---	20,400
	Forklift, RT 10,000# Reach	1	LS															
	((Direct MH+Adjustments)/4)/2																	
	- Outlet Boxes					32.00	mhr											
	- Solids Pump #1					28.00	mhr											
	- Solids Pump #2					64.00	mhr											
	- Underdrain System					80.00	mhr											
	- Precast Concrete Stoppers					71.00	mhr											

	Total Hours					275.00	hr											
	0.5 Forklift, RT 10,000# Reach	275	HR	1.000	1.000	138	OP2 75.05	10,319	121.50	16,706	---	---	---	---	---	---	98.28	27,026

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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Forklift, RT 10,000# Reach	1.00	LS	---	---	138	75.05	10,319	---	16,706	---	---	---	---	---	---	---	27,026
	Equipment	1.00	LS	---	---	285	75.05	21,389	---	26,036	---	---	---	---	---	---	---	47,426
	Install Piping (Exposed)	1.00	LS	---	---	969	69.48	67,307	---	26,036	---	---	---	---	---	---	---	93,344
	Piping Subs	1	LS															
	Heat Tracing	1	LS															
	Radar Levels @ Outlet Boxes					4.00	EA											
	Heat Tracing Sub					1.00	LS							5,000.00				
	Heat Tracing	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Pipe Welding	1	LS															
	24" STL Butt Weld					8.00	ea									250.00		2,000.00
	Exposed Pipe Weld Sub					1.00	LS									2,000.00		
	Welding Sub Standby Time					16.00	HR									150.00		
	Assist Pipe Welder																	
	Yard Pipe Crew					16.00	HR		1.000		WK8							
	Pipe Welding	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Piping Subs	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



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Div.40 **Division 40—Process Interconnections-Solids** **1.00** **LS**

Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
40 05 59.20	Fabricated SS Slide Gates	1	LS															
	Lagoon Outlet Boxes																	
	3'x3' Slide Gate					4.00	EA								0.00			
	5'x5' Slide Gate					4.00	EA								0.00			

	Slide Gates					0.00												
	40 05 59.20 Fabricated SS Slide Gates																	
0.5	Foreman	8	EA	0.083	12.000	48	SU3 82.30	3,950	---	---	---	---	---	---	---	---	493.80	3,950
0.5	Gate Install	8	EA	0.028	36.000	144	WK8 63.37	9,125	---	---	---	---	---	---	---	---	1,140.66	9,125
0.5	Forklift, RT 10,000# Reach	8	EA	0.250	4.000	16	OP2 75.05	1,201	121.50	1,944	---	---	---	---	---	---	393.10	3,145
	STS	1	LS	---	---	---	---	---	---	---	---	500	---	---	---	---	---	500
40 05 59.20	Fabricated SS Slide Ga	1.00	LS	---	---	208	68.64	14,276	---	1,944	---	500	---	---	---	---	---	16,720
0.5	Mechanical Field Coordinator	2	MO	1.000	1.000	173	EN2 88.42	15,326	---	---	---	---	300.00	300	---	---	7,813.00	15,626
Division 40—Process Interconnections		1.00	LS	---	---	1,350	71.78	96,910	---	27,980	---	500	---	300	---	---	---	125,690



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CONT1	Construction Contingency	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Construction Contingency	1	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Construction Contingency	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

U01	STANDARD-LANDSCAPE-MASTER.RPT	C:\Users\JWMcRae\AppData\Local\BEST\LocalFiles\{f479af1e-4d2f-4d8a-94ef-53712b765653\	CONT1	Construction Contingency	1.00
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BE Number GMP 4 100%
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CONT2	Design Allowance	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Design Contingency	1	LS	---	---	---	---	---	---	---	---	-307,944	---	---	---	---	---	-307,944
													-307,944.00					
													1,781,823.96					
													1,781,824.00					
													0.04					
	Design Allowance	1.00	LS	---	---	---	---	---	---	---	---	-307,944	---	---	---	---	---	-307,944



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CONT3	Escalation Allownance	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Escalation Sub						SC							0.05				
	Escalation MAT						MC							0.05				
	Escalation Allownance	1	LS	---	---	---	---	---	---	---	---	-200,000	---	---	---	---	---	-200,000
	Escalation Allownance	1.00	LS	---	---	---	---	---	---	---	---	-200,000	---	---	---	---	---	-200,000

U01 STANDARD-LANDSCAPE-MASTER.RPT C:\Users\JWMcRae\AppData\Local\BEST\LocalFiles\{f479af1e-4d2f-4d8a-94ef-53712b765653\	CONT3 Escalation Allownance	1.00
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CONT4	Estimator Allowance	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Estimator Allowance	1	LS	---	---	---	---	---	---	---	---	-135,000	---	---	---	---	---	-135,000
Estimator Allowance				1.00	LS	---	---	---	---	---	---	-135,000	---	---	---	---	---	-135,000



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CONT 5	Unforeseen Conditions/Repairs Allowance	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Unforeseen Conditions/Repairs Allowance	1	LS	---	---	---	---	---	---	---	---	150,000	---	---	---	---	---	150,000
	Unforeseen Conditions/Repairs Allow	1.00	LS	---	---	---	---	---	---	---	---	150,000	---	---	---	---	---	150,000



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CONT 9	Owner Contingency	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Owner Contingency	1	LS	---	---	---	---	---	---	---	---	218,105	---	---	---	---	---	218,105
													1,781,824.00					
													1,781,823.96					
													-0.04					
	Owner Contingency	1.00	LS	---	---	---	---	---	---	---	---	218,105	---	---	---	---	---	218,105



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GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
01 41 26	Permits	1	LS															
	01 41 26 Permits					1.00	LS						5,000.00					
01 41 26	Permits	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
01 50 00	Temp Facilities & Controls	1	LS															
MOB / DEMOB	Equipment	1	LS															
Freight In		1	LS															
	Load at Yard					50.00	HR		1.000		WK5							
	Load Permits					1.00	EA						500.00					
	Form Material/Panels					2.00	EA						500.00					
	Misc. Loads					0.00	EA						500.00					
	Unload at Job Site					50.00	HR		1.000		WK5							
	ENTER PRICES From Equipment Freight Report																	
	Equipment Freight -IN					1.00	LS						15,000.00					
Freight In		1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Freight Out		1	LS															
	Load at Site					50.00	HR		1.000		WK5							
	Load Permits					1.00	EA						500.00					
	Form Material/Panels					2.00	EA						500.00					
	Plants					0.00	EA						0.00					
	Light Equipment					0.00	EA						250.00					
	Misc. Loads					0.00	EA						500.00					
	Unload at Yard					50.00	HR		1.000		WK5							
	ENTER PRICES From Equipment Freight Report																	
	Equipment Freight -OUT					1.00	LS						15,000.00					

GR	General Requirements	1.00
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BE Number GMP 4 100%
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GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Freight Out	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	MOB / DEMOB Equipment	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Set-Up Fuel Storage	1	LS															
	Tanks						LS						2,000.00					
	Hardware						LS						1,000.00					
	Berms & Liner																	
	Set-Up Fuel Storage	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Install Power	1	EA															
	Power Main Connection						LS						7,500.00					
	Water Main Connection						LS						2,500.00					
	Install Power	1.00	EA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dismantle Buildings	1	LS															
	Dismantle Office-Labor					75.00	HR		1.000		WK5							
	Dismantle Buildings	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dismantle Facilities	1	LS															
	Dismantle Facilities-Lab					50.00	HR		1.000		WK5							
	Dismantle Facilities	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Dismantle Utilities	1	LS															
	Dismantle Utilities-Labor					50.00	HR		1.000		WK5							
	Dismantle Utilities	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

U01 STANDARD-LANDSCAPE-MASTER.RPT	GR	General Requirements	1.00
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GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Cleanup & Restore Site	1	LS				LS						5,000.00					
	Cleanup & Restore Site																	
	Cleanup & Restore Site	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Snow Removal & Sanding	1	LS															
	Snow Removal																	
	Laborer					360.00	HR		1.000		LG5							
	Bckho-Ldr Ct 420C 1.0cy					180.00	HR		1.000		OP2						Backhoe	420
	Snow Removal & Sanding	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Oper Office Bldg	1	LS															
	PCL / Engineer Office	16	MO															
	PCL Trailer Office 12'x60'					16.00	MO		1.000									900.00
	Engineer Trailer Office 12'x44'					16.00	MO		1.000									800.00
	Mobs/Demob					1.00	EA						38,290.00					
	Temp Fencing					1.00	LS						7,500.00					
	Furniture PCL					1.00	LS						5,000.00					
	Furniture Engineer					1.00	LS						5,000.00					
	Office Equipment PCL					16.00	MO						550.00					
	Office Equipment Engineer					16.00	MO						550.00					
	T1 Connection and Virtual Private Network																	
	Internet Installation						LS						1,500.00					
	Computer Software						LS						500.00					
	Office Supplies PCL					16.00	MO						350.00					
	Office Supplies Engineer					16.00	MO						350.00					
	Post & Courier					16.00	MO						200.00					
	Audit Fees					0.00	EA						0.00					
	Construction Signs					1.00	LS						5,600.00					
	Sewage Billing					16.00	MO						500.00					
	PCL / Engineer Office	16.00	MO	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

GR	General Requirements	1.00
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Office Laydown & Parking	12,450	SF															
	Area 1 100' x 100'					10,000	.00 SF											
	Area 2 70'x35'					2,450	.00 SF											
	Clear & Grub	12,450	SF															
	6"					230	.56 CY											
	Clear & Grub					12,450	.00 SF											
	Foreman					12,450	.00 SF		500	.000		SU3						
	Laborer					12,450	.00 SF		500	.000		LG5						
	Cat, 938G Loader					12,450	.00 SF		500	.000		OP2					Ldr Cat938	
	Bckho-Ldr Ct 420C 1.0cy					12,450	.00 SF		500	.000		OP2					Backhoe420	
	Trucking 13cy Loads					18	.00 EA											
	2 Hour Trucking					36	.00 HR						120	.00				
	Tipping Fee					18	.00 EA						350	.00				
	Clear & Grub	12,450.00	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Subgrade Prep	12,450	SF															
	Excavation					12,450	.00 SF											
	Foreman					12,450	.00 SF		800	.000		SU3						
	Laborer					12,450	.00 SF		800	.000		LG5						
	Cmpt Vib Pdft Ct CP-433 66"-O					12,450	.00 SF		800	.000		OP2					Cmpt Vib Pdft C	
	Bckho-Ldr Ct 420C 1.0cy					12,450	.00 SF		800	.000		OP2					Backhoe420	
	Subgrade Prep	12,450.00	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Rock Base	12,450	SF															
	8" Rock Base w/ Fabric					309	.00 CY											
	Structural Fill					618	.00 TN						30	.00				
	Fabric 1.25 Factor					15,562	.50 SF						0	.15				

GR	General Requirements	1.00
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GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Backfill					12,450.00	SF											
	Foreman					12,450.00	SF		500.000		SU3							
	Laborer					12,450.00	SF		500.000		LG5							
	Cat, 938G Loader					12,450.00	SF		500.000		OP2						Ldr Cat938	
	Bckho-Ldr Ct 420C 1.0cy					12,450.00	SF		500.000		OP2						Backhoe420	
	Cmpt Vib Pdft Ct CP-433 66"-O					12,450.00	SF		500.000		OP2						Cmpt Vib Pdft C	
	Trench Compactor 24"-33"					12,450.00	SF		500.000								Trench Compacto	
	Geofabric					12,450.00	SF											
	Laborer					12,450.00	SF		250.000		LG5							
Rock Base		12,450.00	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Remove Laydown 8"		12,450	SF			310.00	CY											
	Remove Laydown					12,450.00	SF											
	Foreman					12,450.00	SF		760.000		SU3							
	Laborer					12,450.00	SF		760.000		LG5							
	Cat, 938G Loader					12,450.00	SF		760.000		OP2						Ldr Cat938	
	Bckho-Ldr Ct 420C 1.0cy					12,450.00	SF		760.000		OP2						Backhoe420	
	Trucking 13cy Loads					24.00	EA											
	2 Hour Trucking					48.00	HR						120.00					
	Tipping Fee					24.00	EA						350.00					
Remove Laydown		12,450.00	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Office Laydown & Parking		12,450.00	SF	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Oper Office Bldg		1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Oper Radio System		1	LS															
	Site Radios					16.00	MO						40.00					



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GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Oper Radio System	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Site Services	1	LS															
	Portable Toilets					16.00	MO						250.00					
	Garbage Pickup					16.00	MO						800.00					
	Site Services	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Oper Trailers & Vans	1	LS															
	Tcon Tool 8'x40' - C					16.00	MO		1.000							Tcon Tool 8'x40		
	Oper Trailers & Vans	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Forklifts & Timespan Equipment	1	LS															
	Forklift, RT 10,000# Reach					5.00	MO		1.000							Forklift RT 10,		
	Timespan Equipment					1.00	LS									25,000.00		
	Forklifts & Timespan Equipment	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01 50 00 Temp Facilities & Control	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	01 57 13B Temporary Erosion and Sediment Control	1	LS															
	Project Dust Control /Streets																	
	Street Sweeper					16.00	EA						650.00					
	Concrete Washout					1.00	LS						5,000.00					
	Silt Fence					2,572.00	LF								3.00			
	Reinstall Silt Fence					2,572.00	LF								3.00			
	Remove Silt Fence					2,572.00	LF		25.000		LG5							
	Vehicular Tracking Control Device					1.00	LS						22,500.00					
	Inlet/Outlet Protection					1.00	LS						2,500.00					

U01 STANDARD-LANDSCAPE-MASTER.RPT

C:\Users\JWMcRae\AppData\Local\BEST\LocalFiles\479af1e-4d2f-4d8a-94ef-53712b765653\

GR	General Requirements	1.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project New Blank Estimate
Location

Item Analysis Sheet

Detail Page 43 of 47
Mar 14, 2023
10:39:22 AM

Justin McRae

GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	2-Hour WK Maintenance Erosion Control Maintenance					138.00	HR		1.000			LG5						
01 57 13B	Temporary Erosion and	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
01 91 14	Equipment Testing & Startup	1	LS															
	Foreman					80.00	HR		1.000			SU3						
	Laborer					80.00	HR		1.000			LG5						
01 91 14	Equipment Testing & Sta	1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Survey		1	LS															
	Survey Sub Contract					1.00	LS									0.00		
	Lasers Pipe					16.00	MO		1.000								Lasers Pipe	
	Lasers Vertical/Horizontal					16.00	MO		1.000								Lasers Vertical	
	Total Station, Robotic					10.00	MO		1.000								Total Station,	
	Survey Supplies					16.00	MO						150.00					
Survey		1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
First Aid & Safety STS		1	LS															
	Medical/Drug Testing					30.00	EA						75.00					
	*** Estimate for local requirements																	
	Training & Orientation					30.00	EA						35.00					
	*** Estimate for local requirements																	
	F.A. & Safety Supplies	7,455	MH	---	---	---	---	---	---	---	0.120000	895	---	---	---	---	0.120000	895
	*** Allow 0.120 per Total Man Hours																	
	Fire Protection	7,455	MH	---	---	---	---	---	---	---	0.070000	522	---	---	---	---	0.070000	522
	*** Allow 0.07 per Total Man Hours																	
	Water Coolers					4.00	EA						50.00					
	Drinking Water & Ice					16.00	MO						500.00					

U01 STANDARD-LANDSCAPE-MASTER.RPT

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GR	General Requirements	1.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project **New Blank Estimate**
Location

Item Analysis Sheet

Detail Page 44 of 47
Mar 14, 2023
10:39:22 AM

Justin McRae

GR	General Requirements	1.00	LS
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	Air Monitors					16.00	MO		1.000								AIR MONITORS	
	Rescue Tripod w/yo yo					16.00	MO		1.000								RESCUE TRIPOD W	
	Yo Yo Winch					16.00	MO		1.000								YO YO WINCH	
First Aid & Safety STS		1.00	LS	---	---	---	---	---	---	---	---	1,416	---	---	---	---	---	1,416
SMALL Tools-Expendables		1	LS															
	SMALL Tools-Expendables	7,455	MH	---	---	---	---	---	---	---	1.00	7,455	---	---	---	---	1.00	7,455
SMALL Tools-Expendables		1.00	LS	---	---	---	---	---	---	---	---	7,455	---	---	---	---	---	7,455
Warranty Work		1	LS															
	Warranty Work					1.00	LS						30,000.00					
Warranty Work		1.00	LS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
General Requirements		1.00	LS	---	---	---	---	---	---	---	---	8,871	---	---	---	---	---	8,871



BE Number GMP 4 100%
Opportunity No
Owner File No
Project **New Blank Estimate**
Location

Item Analysis Sheet

Detail Page 45 of 47
Mar 14, 2023
10:39:22 AM

Justin McRae

GE 8	F6 BOND	100.00	%
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
US CONTRACT BOND Class B		100	%															
	US CONTRACT BOND Class B	1,781,824	TB	---	---	---	---	---	---	---	0.010000	17,818	---	---	---	---	0.010000	17,818
US CONTRACT BOND Class B		100.00	%	---	---	---	---	---	---	---	178.18	17,818	---	---	---	---	178.18	17,818
SDI		100	%															
	SDI - Subcontractor	640,749	SC	---	---	---	---	---	---	---	0.013500	8,650	---	---	---	---	0.013500	8,650
	SDI - Equipment	178,951	MC	---	---	---	---	---	---	---	0.013500	2,416	---	---	---	---	0.013500	2,416
SDI		100.00	%	---	---	---	---	---	---	---	110.66	11,066	---	---	---	---	110.66	11,066
F6 BOND		100.00	%	---	---	---	---	---	---	---	288.84	28,884	---	---	---	---	288.84	28,884

GE 8	F6 BOND	100.00
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BE Number GMP 4 100%
Opportunity No
Owner File No
Project New Blank Estimate
Location

Item Analysis Sheet

Detail Page 46 of 47
Mar 14, 2023
10:39:22 AM

Justin McRae

GE 9	F7 INSURANCE	100.00	%
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
	=====																	
	Delete Insurance not applicable.																	
	Place * beside appropriate Insurance Required.																	
	=====																	
	General Liability	100 %																
	Gen Liab-USA 8.50/M	1,781,824	TB	---	---	---	---	---	---	---	0.010000	17,818	---	---	---	---	0.010000	17,818
	General Liability	100.00 %		---	---	---	---	---	---	---	178.18	17,818	---	---	---	---	178.18	17,818
	Builders Risk Insurance	100 %																
	Builders Risk	1,781,824	TB	---	---	---	---	---	---	---	0.004000	7,127	---	---	---	---	0.004000	7,127
	Builders Risk Insurance	100.00 %		---	---	---	---	---	---	---	71.27	7,127	---	---	---	---	71.27	7,127
	F7 INSURANCE	100.00 %		---	---	---	---	---	---	---	249.46	24,946	---	---	---	---	249.46	24,946

GE 9	F7 INSURANCE	100.00
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BE Number GMP 4 100%

Opportunity No

Owner File No

Project

Location

New Blank Estimate

Item Analysis Sheet

Detail Page 47 of 47

Mar 14, 2023

10:39:22 AM

Justin McRae

GE 17	V7 PROJECT STAFF	100.00	%
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Proprietary and Confidential

No.	Description	Quantity	UOM	Units Per Hours	ManHrs Per Unit	Labor			Equipment		Services/ Tools/Supplies		Perm. Material		SubContract		Total Price	
						Hours	\$ / hr	Total	\$ / hr	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	\$/ItemUnit	Total	Unit	Total
Management		100 %																
	SeniorPm / Const Mgr.					2.75 MO		1.000		ST4	1,300.00							
	Project Manager					6.00 MO		1.000		ST1	1,300.00							
	General Supt.					6.00 MO		1.000		ST3	300.00					Trc Pickup	4x4	
	Field Superintendent					16.00 MO		1.000		SU2	300.00					Trc Pickup	4x4	
	Startup Manager					2.00 MO		1.000		ST1	300.00					Trc Pickup	4x4	
	Site Truck - Foreman Use					16.00 MO		1.000								Trc Pickup	4x4	
	Safety					TC					0.01							
	Safety Supervisor					6.00 MO		1.000		OF6	300.00							
	Admin					12.00 MO		1.000		OF1	150.00							
Management		100.00 %		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Engineering & Survey		100 %																
	Proj Eng.					18.00 MO		1.000		EN1	300.00							
Engineering & Survey		100.00 %		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Management Assessment		100 %																
	Estimate Central Engineering Time Required for Project																	
	CED Mgmnt Assessment					TB					0.00							
Management Assessment		100.00 %		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
V7 PROJECT STAFF		100.00 %		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



SUBMITTAL REVIEW FORM (ATTACH TO EACH SUBMITTAL)		
CONTRACTOR: PCL Construction		OWNER: City of Arvada
EOR: Jacobs, Carollo, HDR		
SUBMITTAL REVISION:	☐ 1st ☐ 2nd ☐ 3rd ☐ Other:	
DATE: 11/7/2022	DUE: 11/28/2022	SUBMITTAL PACKAGE: 01 32 00 - 001
PROJECT NO.: 21WA52, 21WA50, 20WA54		SUBMITTAL NUMBER(S): 01
PROJECT NAME: Ralston Filter and Solids Handling Improvements		NO. OF PAGES: 8
SPECIFICATION SECTION AND SUBMITTAL DESCRIPTION: Construction Progress Documentation – Preliminary Schedule		PRIORITY: C
REVIEW ACTION: ☐ CODE 1: No Exceptions Taken – Approved - Work may proceed. ☐ CODE 1A: Approved as Noted – Work may proceed. Resubmittal not required. ☐ CODE 2: Partial Approval, Resubmit as Noted – Work may proceed subject to incorporation of changes indicated; resubmit for record. No payments shall be made until record is complete. ☐ CODE 3: Revise and Resubmit – Work may not proceed. ☐ CODE 4: For Record Only. Not subject to review by Engineer or Owner. By: _____ Date: _____ ENGINEER		
Engineer's review and acceptance of this submittal are expressly limited as provided in the Contract documents and are only to determine conformance with information given in the Contract documents and compatibility with the design concept for the completed project as functioning whole as indicated in the Contract documents. Contractor is, and Engineer is NOT, responsible for all matters relating to fabrication, shipping, handling, storage, assembly, installation, construction, (including all safety aspects of performing the Work), and for coordinating the Work. Engineer's review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all subtrades.		



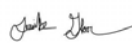
INSTRUCTIONS TO REVIEWER: Include submittal page number reference for each comment.

TECHNICAL REVIEW COMMENTS:

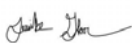


TECHNICAL REVIEW COMMENTS (CONTD.):



CONTRACTOR'S SUBMITTAL FORM (ATTACH TO EACH SUBMITTAL)		
CONTRACTOR: PCL Construction	OWNER: City of Arvada	EOR: Jacobs, Carollo, HDR
SUBMITTAL REVISION:	☐ 1st ☐ 2nd ☐ 3rd ☐ Other:	
DATE: 11/7/2022	SUBMITTAL PACKAGE: 01 32 00 - 001	
PROJECT NO.: 21WA52, 21WA50, 20WA54	SUBMITTAL NUMBER(S): 01	
PROJECT NAME: Ralston Filter and Solids Handling Improvements		NO. OF PAGES: 8
SPECIFICATION SECTION AND SUBMITTAL DESCRIPTION: Construction Progress Documentation – Preliminary Schedule		
SUBMITTED AS: ☐ Per Documents ☒ With Deviation (Submittal Deviation form attached) ☐ Proposed Substitution (Submittal Deviation form attached) ☐ Other:		
CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies. Reviewed By  By: <u>11/07/2022 7:44:27 AM</u> CONTRACTOR (Authorized Representative)		



SUBMITTAL DEVIATION FORM	
DATE: 11/7/2022	SUBMITTAL NUMBER: 01
PROJECT NO.: 21WA52, 21WA50, 20WA54	PROJECT NAME: Ralston Filter and Solids Handling Improvements
The following deviation is submitted in compliance with Section 01 33 00. DESCRIPTION OF PROPOSED DEVIATION: Specification section 01 31 13 section 1.05.A.3 – As discussed in previous schedule workshop and as detailed in GMP 01, schedule assumes six filters may be taken offline at one time during low flow seasons. Specification section 01 11 00 section 1.02.B – Please see schedule narrative for updated milestone dates The above proposed deviation will result in the following benefits to the Owner: MONETARY: _____ SCHEDULE: _____	
The undersigned will pay for changes to the design, including engineering design, detailing, and construction costs caused by the requested deviation.	
CONTRACTOR: PCL Reviewed By  By: _____ 11/07/2022 7:44:40 AM CONTRACTOR (Authorized Representative)	
DESIGN CONSULTANT RECOMMENDATION: ☐ Acceptable ☐ Not Acceptable _____ ENGINEER	
OWNER EVALUATION: ☐ Acceptable ☐ Not Acceptable _____ OWNER Comments: _____	
THIS FORM IS NOT APPROVED UNTIL SIGNED BY OWNER	



November 04, 2022

Re:

City of Arvada Filters, Solids Handling, and Clarifier Rehabilitation Project
Baseline Schedule – File: 5403253-2022-10

The schedule presented is the full baseline schedule. The schedule contains the use of WBS elements.

1. General Approach & Assumptions

- The schedule makes use of the WBS structure to define the work areas found in the Contract documents.
- The project design for the solids handling scope is still underway and full scope could change as design progresses. PCL has made assumptions based on the current and anticipated design. Some revisions could be required, and durations changed once full construction documents are issued.
- Activities are held on a working day calendar in order to easily track the paths of the project without float jumps due to changing calendars.
- The project holds an assumed allotment of 10 working days for inclement weather. Refer to the schedule and activity GR1120. If additional weather is incurred it will be requested on a case by case basis.
- Submittals have been included into the schedule and a 15-working day review time has been provided to accommodate the contractual review.
- The basis for the activity durations and sequencing has been derived from a combination of historical data and averages of time required for each task. We have taken into consideration the average crew size required in order to achieve optimal performance per item of work.
- The schedule assumes that two filter trains can be taken offline at one time from the window of November to the first week of April.
- This schedule shows a completion date of Filters 10-12 at the end of March 2023 and a completion date of Filters 4-6 the first week of April 2023. Per the demand data provided by Owner and Jacobs, this will result in a net production of 14 MGD with an anticipated maximum demand of 15 MGD for the month of March. PCL will present Owner with alternative options to allow start up of Filters 10-12 in February at the baseline schedule workshop.

PCL Construction, Inc.

2000 Colorado Blvd Ste 2-500

Denver, CO 80222

P: 303-365-6500 www.pcl.com

2. Abbreviations & Conventions

We have used the following abbreviations and conventions in the activity descriptions:

1. Forming, placing reinforcing, and placing concrete are typically carried as one activity and abbreviated as F/R//P.
2. Other abbreviations that appear are:
 - a. P&S Prepare & Submit
 - b. R&A Review & Approval
 - c. P&D Procure & Delivery

3. Longest Path

The longest path of the project is currently through the procurement and installation of electrical gear. Due to market conditions, the lead times of the equipment will not be finalized until PCL issues release letter. The procurement timeframes in the baseline schedule considers a moderately conservative timeframe for electrical gear and will be updated upon release. PCL and Weifield Group will work with plant operations for electrical MOPs to investigate and plumb electrical conduit ahead of the gear to shorten installation timeframes.

4. Project Completion Milestones

Milestone 1: Substantial Completion April 19th, 2024

Milestone 2: Six filters complete April 4th, 2023

Milestone 3: Nine filters complete July 5th, 2023

Milestone 4: Twelve filters complete January 22nd, 2023

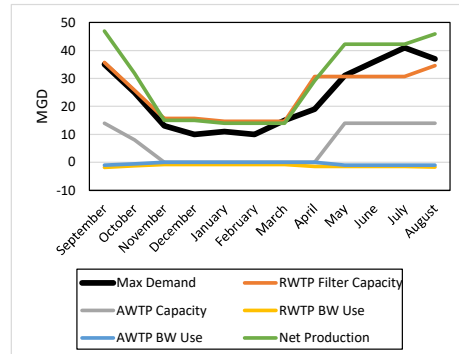
Milestone 5: Solids staging pad complete February 14, 2023

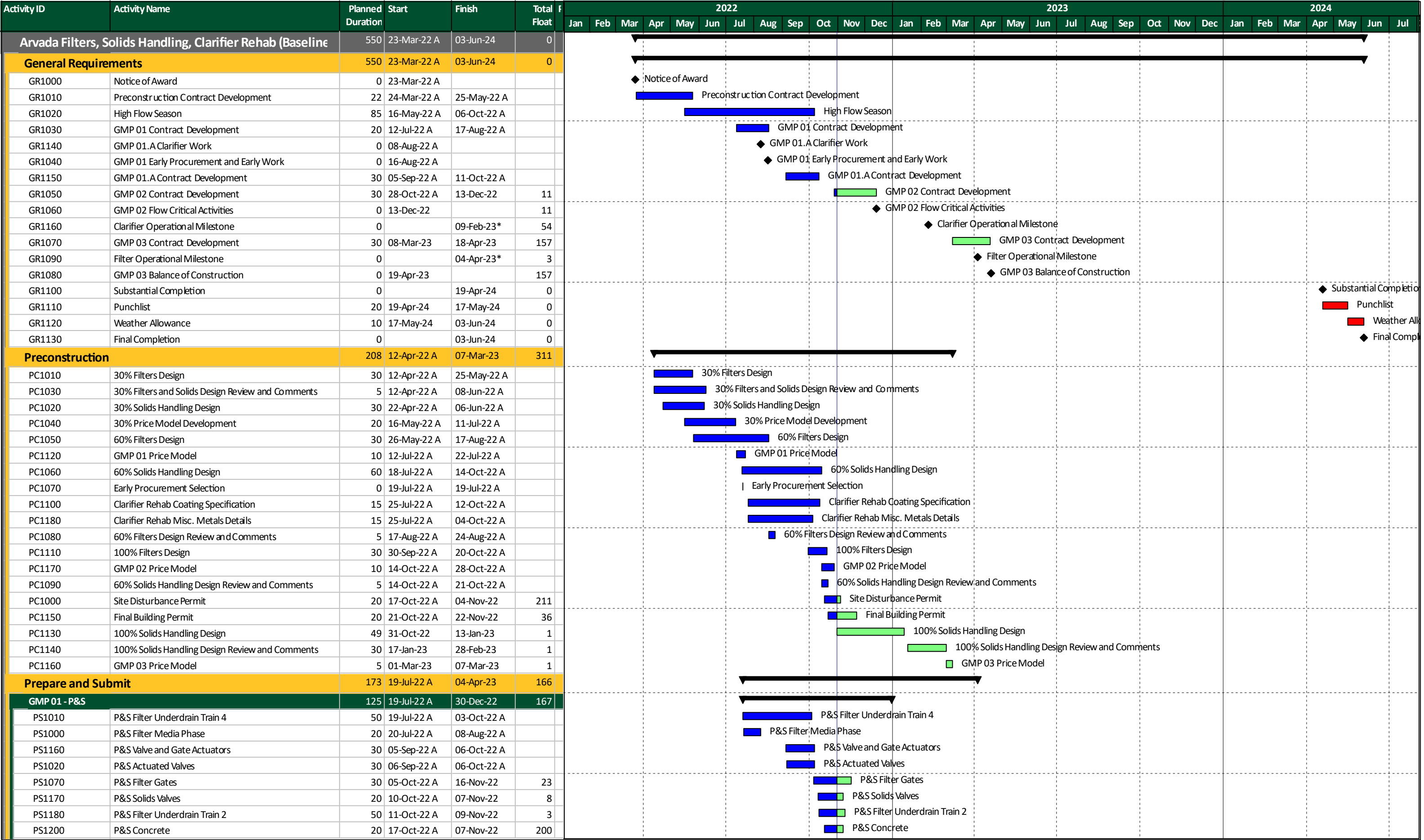
Milestone 6: Solids pretreatment piping complete March 15, 2023

Milestone 7: Lagoons 1&3 complete July 10, 2023

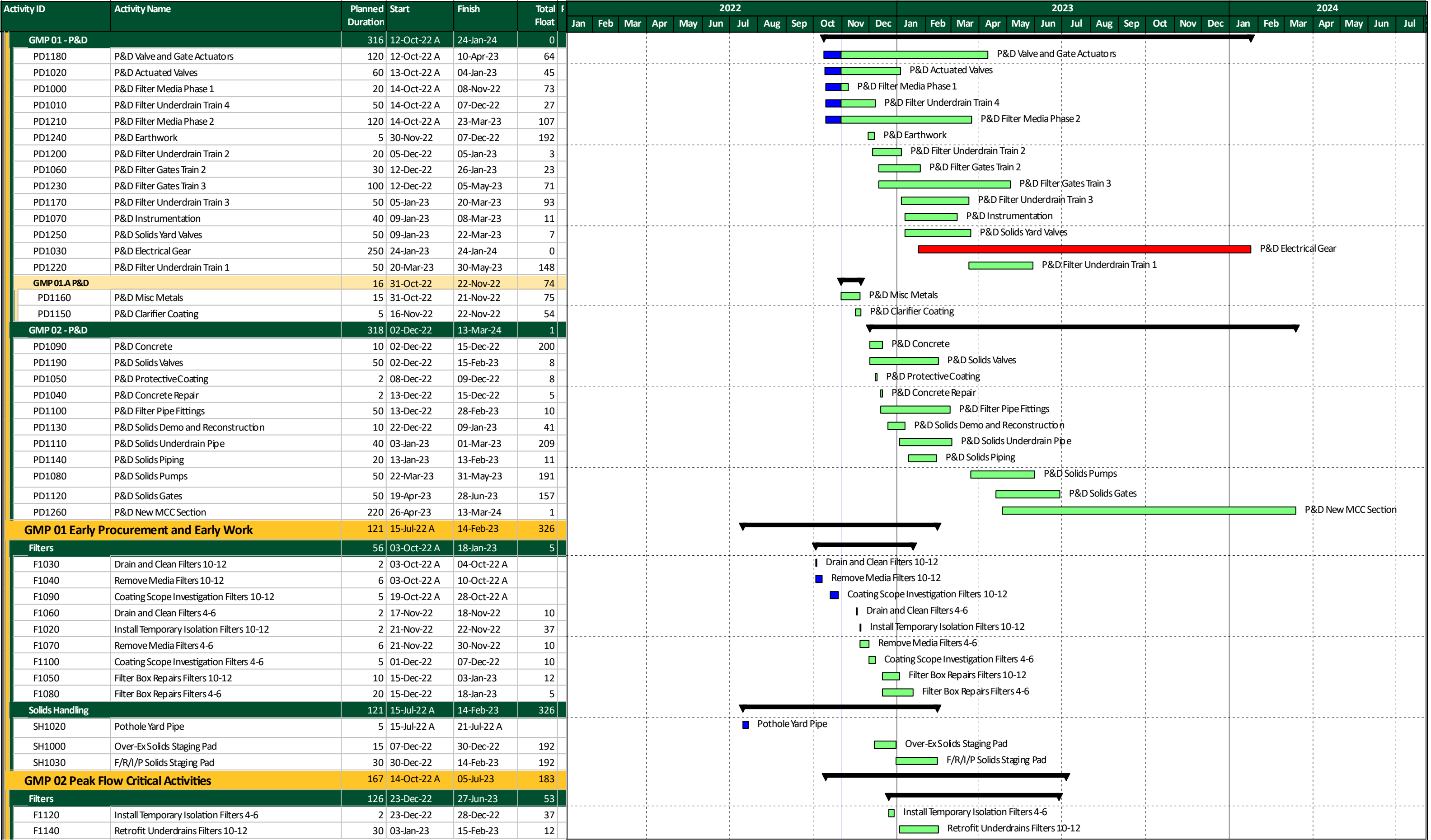
Milestone 8: Lagoons 2&4 October 12, 2023

	MGD						Filters 1-3				Filters 4-6				Filters 7-9				Filters 10-12				Largest Filter OOS Production (MGD)
	Max Demand	RWTP Filter Capacity	AWTP Capacity	RWTP BW Use	AWTP BW Use	Net Production	Number	Loading Rate (gpm/sf)	Area (sf)	Production (MGD)	Number	Loading Rate (gpm/sf)	Area (sf)	Production (MGD)	Number	Loading Rate (gpm/sf)	Area (sf)	Production (MGD)	Number	Loading Rate (gpm/sf)	Area (sf)	Production (MGD)	
September	35	36	14	-1.8	-1.0	47	3	5	420	9.072	3	5	462	9.9792	3	5	462	9.9792	3	5	462	9.9792	-3.3264
October	25	26	8	-1.3	-0.6	32	3	5	420	9.072	3	5	462	9.9792	3	5	462	9.9792	0	5	462	0	-3.3264
November	13	16	0	-0.8	0.0	15	3	5	420	9.072	0	5	462	0	3	5	462	9.9792	0	5	462	0	-3.3264
December	10	16	0	-0.8	0.0	15	3	5	420	9.072	0	5	462	0	3	5	462	9.9792	0	5	462	0	-3.3264
January	11	15	0	-0.7	0.0	14	3	5	420	9.072	0	5	462	0	3	5	462	9.9792	0	6.5	462	0	-4.32432
February	10	15	0	-0.7	0.0	14	3	5	420	9.072	0	6.5	462	0	3	5	462	9.9792	0	6.5	462	0	-4.32432
March	15	15	0	-0.7	0.0	14	3	5	420	9.072	0	6.5	462	0	3	5	462	9.9792	0	6.5	462	0	-4.32432
April	19	31	0	-1.5	0.0	29	3	5	420	9.072	3	6.5	462	12.97296	0	5	462	0	3	6.5	462	12.97296	-4.32432
May	31	31	14	-1.5	-1.0	42	3	5	420	9.072	3	6.5	462	12.97296	0	5	462	0	3	6.5	462	12.97296	-4.32432
June	36	31	14	-1.5	-1.0	42	3	5	420	9.072	3	6.5	462	12.97296	0	6.5	462	0	3	6.5	462	12.97296	-4.32432
July	41	31	14	-1.5	-1.0	42	3	5	420	9.072	3	6.5	462	12.97296	0	6.5	462	0	3	6.5	462	12.97296	-4.32432
August	37	35	14	-1.7	-1.0	46	0	5	420	0	3	6.5	462	12.97296	3	6.5	462	12.97296	3	6.5	462	12.97296	-4.32432
Completion		46	14	-2.3	-1.0	57	3	6.5	420	11.7936	3	6.5	462	12.97296	3	6.5	462	12.97296	3	6.5	462	12.97296	-4.32432





[illegible]



Activity ID	Activity Name	Planned Duration	Start	Finish	Total Float	2022												2023												2024							
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
B1510	Install Instrumentation Filters 1-3	5	09-Aug-23	16-Aug-23	134																																
	Demo Existing BWW Line Filters 1-3	5	16-Aug-23	23-Aug-23	134																																
	Install New BWW Pipe Filters 1-3	6	23-Aug-23	31-Aug-23	134																																
	Backfill BWW Line Filters 1-3	3	31-Aug-23	06-Sep-23	134																																
	Exterior Flume Repairs Filters 1-3	10	06-Sep-23	20-Sep-23	134																																
	Patch Asphalt and Clean - Flume Exterior 1-3	10	20-Sep-23	04-Oct-23	134																																
	Retrofit Underdrains Filters 1-3	15	12-Oct-23	02-Nov-23	53																																
	Install Gates and Actuators Filters 1-3	13	02-Nov-23	22-Nov-23	85																																
	Install New Media Filters 1-3	10	02-Nov-23	17-Nov-23	53																																
	Install Valves and Actuators Filters 1-3	15	17-Nov-23	12-Dec-23	53																																
	Install Gates Filters 1-3	5	12-Dec-23	19-Dec-23	53																																
	Recoat Exposed Pipe	10	12-Dec-23	28-Dec-23	78																																
	Interior Flume Repairs Filters 1-3	15	19-Dec-23	12-Jan-24	53																																
	Phased Install New Electrical Gear	21	24-Jan-24	23-Feb-24	0																																
	Phased Demo Existing Electrical Gear	21	31-Jan-24	01-Mar-24	35																																
	PLC Controls/Programming	30	23-Feb-24	05-Apr-24	0																																
	Solids Handling		304	10-Jan-23	27-Mar-24	41																															
SH1080	Demo Existing Pipe	7	10-Jan-23	19-Jan-23	41																																
SH1090	Remove Solids Lagoons 1&3	10	14-Feb-23	01-Mar-23	192																																
SH1150	Excavate Outlet Structures Lagoons 1&3	10	14-Feb-23	01-Mar-23	192																																
SH1170	Install Underdrains Lagoons 1&3	20	02-Mar-23	29-Mar-23	209																																
SH1070	Install 8" Interconnecting Piping	10	10-Mar-23	24-Mar-23	225																																
SH1240	Install Tie-In Lagoon 3 &4	8	10-Mar-23	22-Mar-23	7																																
SH1190	Install New Sand Lagoons 1&3	14	30-Mar-23	18-Apr-23	209																																
SH1110	Demo Outlet Structures Lagoons 1&3	10	19-Apr-23	02-May-23	157																																
SH1130	F/R/I/P Outlet Structure Lagoons 1&3	40	03-May-23	28-Jun-23	157																																
SH1210	Install Gates Lagoons 1&3	2	29-Jun-23	30-Jun-23	157																																
SH1100	Remove Solids Lagoons 2&4	10	11-Jul-23	24-Jul-23	157																																
SH1160	Excavate Outlet Structures Lagoons 2&4	10	11-Jul-23	24-Jul-23	157																																
SH1120	Demo Outlet Structures Lagoons 2&4	10	25-Jul-23	07-Aug-23	157																																
SH1180	Install Underdrains Lagoons 2&4	20	25-Jul-23	21-Aug-23	175																																
SH1140	F/R/I/P Outlet Structure Lagoons 2&4	40	08-Aug-23	03-Oct-23	157																																
SH1200	Install New Sand Lagoons 2&4	14	22-Aug-23	11-Sep-23	175																																
SH1220	Install Gates Lagoons 2&4	2	04-Oct-23	05-Oct-23	157																																
A1000	Install New MCC Section	10	14-Mar-24	27-Mar-24	1																																
Startup and Comissioning		286	01-Mar-23	19-Apr-24	30																																
SH1230	Final Startup and Comissioning - Lagoons	10	01-Mar-23	15-Mar-23	276																																
SH1250	Fill and Test Lagoons 1&3	5	03-Jul-23	10-Jul-23	157																																
B1950	Fill and Test Lagoons 2&4	5	06-Oct-23	12-Oct-23	157																																
F1000	Fill and Test Filters 1-3	5	12-Jan-24	22-Jan-24	53																																
SH1050	Startup and Comissioning - Solids Pumps	5	28-Mar-24	03-Apr-24	1																																
F1010	Final Startup and Comissioning - Electrical Gear	10	05-Apr-24	19-Apr-24	0																																

December 29, 2022

WGC# ICO14370-V4

PCL
2000 S. Colorado Blvd., Suite 500
Denver
Phone: 720-682-9371

Attn: Jessie Gloor

Reference: City of Arvada – Ralston WTP – Filter and Solids Handling Improvements – GMP – 2

Weifield Group Contracting, Inc. is pleased to provide our probable cost lump sum proposal on the referenced project.

PRICING (ELECTRICAL, INSTRUMENTATION, & CONTROL):

Filter Improvements	\$1,444,939.00
Solids Handling	\$517,129.00
Fixed General Expenses	\$86,293.00
Variable General Expenses	\$475,085.00
Temporary Power	\$12,283.00
Generator Quick Connect Switchboard	\$98,534.00
Suggested material escalation	\$45,000.00
Suggested estimating contingency	\$35,000.00

Weifield / Timber Line Scope Reductions

- Eliminate the addition for a new MCC-3 section at Solids Pumps and Replace with individual Mitsubishi VFD's Nema 12, which will be fed from the existing MCC-3 with the addition of new breaker buckets <\$10,397.00>
- Change Backwash 250HP VFD's Nema 12 manufacture to Mitsubishi \$12,515.00
- Use Rosemount radar units over the filters (No display) in lieu of EH Ultrasonics with controllers <\$16,745.00>
- Deletion for the Generator Quick Connection Cabinet <\$98,534.00>
- Deletion for the disconnect switches at motorized valves and gates <\$105,733.00>

CLARIFICATIONS:

1. In this proposal the term “provide” shall mean to furnish and install, complete and ready for intended use.
2. In this proposal the acronym “FBO” shall mean Furnished by Others.
3. In this proposal the acronym “PBO” shall mean Provided by Others.
4. Our proposal is based on the contract documents listed below:
 - a. Filter Specifications dated: October 2022
 - b. Filter Drawings dated: October 2022
 - c. Solids Specifications dated: October 2022
 - d. Solids Drawings dated: October 2022
5. Our proposal is based on a mutually agreeable lump sum contract to be determined.
6. Our proposal is based on a mutually agreeable schedule within 30 days of the Notice to Proceed.
7. Our proposal is based on a 40-hour work week and anticipates a construction duration of 16 months.
8. Our proposal remains valid for 60 days.
9. Others shall not hold Weifield Group Contracting, Inc. liable for errors, omissions, inadequacies of materials, or equipment specified or supplied by others.
10. We have not included provisions for differing site conditions.
11. We have not included temporary environmental controls, de-watering, surveying, utility locates, potholing, or traffic control.
12. We will provide cleanup of our own identifiable debris to onsite waste and recycle containers furnished by the General Contractor.
13. Our proposal is based on all electrical materials being stored on site. We anticipate up to 1 Conex storage containers for the duration of the project and to utilize sharing of office trailer with PCL.
14. We have offered an allowance for Temporary trailer construction power as an add.
15. Temporary construction power will utilize existing power sources
 - a. Task lighting and extension cord are provided by individual trades.
16. We have included Safe-Off only for all demolition.
17. Start-up and Commissioning of Filter Train is figure to be 5 working days per each.

INCLUSIONS:

1. Permit Fees
2. Sales Taxes (Non-Permanent material & equipment)
3. One Year Warranty
4. All safety equipment and tools for our scope
5. Mobilization of electrical equipment and supplies
6. All submittals, drawings, factory tests, field inspections, field testing, and operator/maintenance training for equipment furnished by WGC
7. Electrical and I&C Connections to Process Equipment
 - a. As indicated on drawings
8. Instrumentation and Controls
 - a. As indicated on drawings
 - b. Timber Line BOM
8. Selective Demolition of Electrical Systems
 - a. Render safe for mechanical equipment for removal and disposal by others
 1. Valves
 2. Inline instruments
 3. Sample Pumps
 4. Bubbler Panels
9. Heat Tracing
 - a. As indicated on drawings

EXCLUSIONS:

1. Bond premium (Can be added at \$34,063.00)
2. Sales Tax (Permanente materials)
3. Delays and/or extension of the project schedule
4. Builders Risk Insurance
5. Utility company development fees for permanent and temporary service and consumption charges
6. Handling or disposing of hazardous materials
7. Cut, patch, and replacement of concrete, asphalt, landscaping, and any other existing to remain surfaces
8. Excavation, backfill, export spoils, dewatering, concrete, and rebar
 - a. Trenching – 510'
 - b. Excavation cu/yds – 175
 - c. Export of spoils cu/yds – 99
 - d. Backfill cu/yds – 78
 - e. Concrete cu/yds – 80
 - f. Rebar
 - i. Horizontal – 3,513'
 - ii. Hoops – 255 at 1,953'
9. All concrete including housekeeping pads, protective bollards, etc.
 - a. MCC's – 2
 - b. Transformers – 2
 - c. VFD's – 2
10. Demolition of Concrete and Conduits embedded in Concrete
11. Painting
12. Cathodic Protection
13. Furnish and installation for Backwash Pumps 41-PMP-0101 and 41-PMP-0201, Insulated NDE Bearings and Shaft Grounding devices (Reference drawing F-E-1001 sheet Keyed Note 3)
14. Installation of any equipment or instruments into inline process piping (mag flow meters, flow tubes, etc.)
15. Furnish and Installation of Spool Pieces and Flanges for instruments
16. All taps or associated equipment (valves, pressure reducers, solenoids, etc.) needed in process piping including tubing for analytical instruments
17. Seismic Engineering and Calculation (Reference 01 88 15 Anchorage & Bracing and 01 81 50 Design Criteria)
18. Furnishing and Installation of all motors (Reference 26 20 00 Low-Voltage AC Induction Motors and 26 05 06 Voltage Motors up to 500 Horsepower)
19. Removal of existing owner items for new electrical installation requirements
20. Furnishing and Installation of Stilling Wells and blind flanges – 4 (Reference drawing 00TN01 detail NL900)
21. Grouting of equipment stands
 - a. Jacobs reference details 4091-163, 4091-382 and 4091-394G
 - b. Carollo reference drawing 00TE3 details EM202 and EM210

Sincerely,

WEIFIELD GROUP CONTRACTING

Robb Herder

Estimator
720.230.6374



ELECTRICAL CONTRACTING

Curtis Miller

VP of Industrial
Cell: 303.669.3702

Falcon Environmental Corp (FEC)

P.O. Box 710
Frederick, CO 80530

Quote

Date	Quote #
12/16/2022	1307

Name / Address
PCL CONSTRUCTION 711 W. GREENTREE DRIVE SUITE 201 TEMPE, AZ 85284

Rep	Project
JK	

Description	Qty	Total
Pump Model 33159 with 1/2 HP AC motor , 1/60/115/230 volts, 1750 RPM	2	4,065.00T
Mechanical seal p/n 3202424000	1	0.00T
Stator p/n 3403501120	1	0.00T
Standard Warranty		
Sales Tax		0.00
Freigh is included		
Phone #		
303-833-9998		
Total		\$4,065.00



Pioneer Equipment, Inc
3738 E. Miami Ave.
Phoenix, AZ 85040
Tel: 602-437-4312 Fax: 602-437-0174

SALES QUOTE

Page: 1 / 2
Sales Quote Number: 2221474
Sales Quote Date: 12/20/2022
Quote Valid To Date: 1/19/2023

To: Justin McRae
P.C.L. CONSTRUCTORS, INC.
1711 W. GREENTREE DR., STE 201
TEMPE, AZ 85284

Quoted By: ERIC LOCK

We are pleased to quote on the following equipment:

Qty.	Item No.	Description	Unit Price	Total Price
		City in Colorado 60% Budget Quote ONLY SECTION 43_23_13.35 HORIZONTAL NON-CLOG CENTRIFUGAL PUMPS		
1		Lot of 2 Flowserve 3MF11A FR3A Pumps with baseplates and 1.5hp motors. Notes/Comments/Exceptions: - Pump curve is per attached ONLY. - Installation NOT included. - Piping, reducers and valves are NOT included. - Mechanical seal flush piping/accessories NOT included. - Gauges, sensors & instrumentation NOT included. - Controls, VFD's, starters & panels NOT included. - Field tests are NOT included. - On-site representation is included but limited to 4 one day visits. - Shipping & Handling to street site is INCLUDED. - Any applicable taxes would be EXTRA. - Lubricants/oils (if required) are NOT included. - Standard domestic packaging ONLY. - Manufacturer's standard paint & prep ONLY. - Not responsible for any liquidated damages. - Not responsible for any consequential damages. - Manufacturer's standard warranty would apply. - Customer will be responsible for any cancellation charges billed to Pioneer Equipment by the manufacturer.		

Lead Time: 39 Weeks + transit
F.O.B.: Factory
Terms: NET 20 DAYS
Sales: Gary Denkler

Prices quoted are subject to adjustment to price in effect at time of shipment.
Orders which require financing are subject to the approval of our credit department.
Delivery date given on this order is contingent upon promised shipment from our suppliers and upon government restrictions or other factors beyond our control.
All applicable taxes to apply.



Pioneer Equipment, Inc
3738 E. Miami Ave.
Phoenix, AZ 85040
Tel: 602-437-4312 Fax: 602-437-0174

SALES QUOTE

Page: 2 / 2
Sales Quote Number: 2221474
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To: Justin McRae
P.C.L. CONSTRUCTORS, INC.
1711 W. GREENTREE DR., STE 201
TEMPE, AZ 85284

Quoted By: ERIC LOCK

We are pleased to quote on the following equipment:

Qty.	Item No.	Description	Unit Price	Total Price
		- See attached for details. 60% BUDGET quote only.		

Lead Time: 39 Weeks + transit
F.O.B.: Factory
Terms: NET 20 DAYS
Sales: Gary Denkler

Prices quoted are subject to adjustment to price in effect at time of shipment.
Orders which require financing are subject to the approval of our credit department.
Delivery date given on this order is contingent upon promised shipment from our
suppliers and upon government restrictions or other factors beyond our control.
All applicable taxes to apply.



Contact: Eric Lock
Address: Pioneer Equipment Inc
3738 E. Miami Ave.
Phoenix, AZ 85040
Phone: 602-437-4312

Proposal Summary

Customer: Pioneer Equipment Inc
Cust / Proj Ref: PCL
FLS # / Reference: 4328930637 /
Date: Dec 20, 2022

Primary Selection Summary - Centrifugal

Item No.	Qty	Capacity	Head	Pump	Driver power rating	Material	Avg Unit Price (USD)		Lead Time (weeks)
				Stages	Speed		Pump	Motor	
30P1000/30P2000	2	200.0 USgpm	13.00 ft	3MF11A FR3A	1.50 hp / 1.12 kW	CI		Included	39
				1	900 rpm				

Proposal Total: Pumps: 169,627 USD
Motor: Included
Grand Total: 169,627 USD

Comments: 60% Budget Quote ONLY



MF
***Solids-Handling
Pumps***



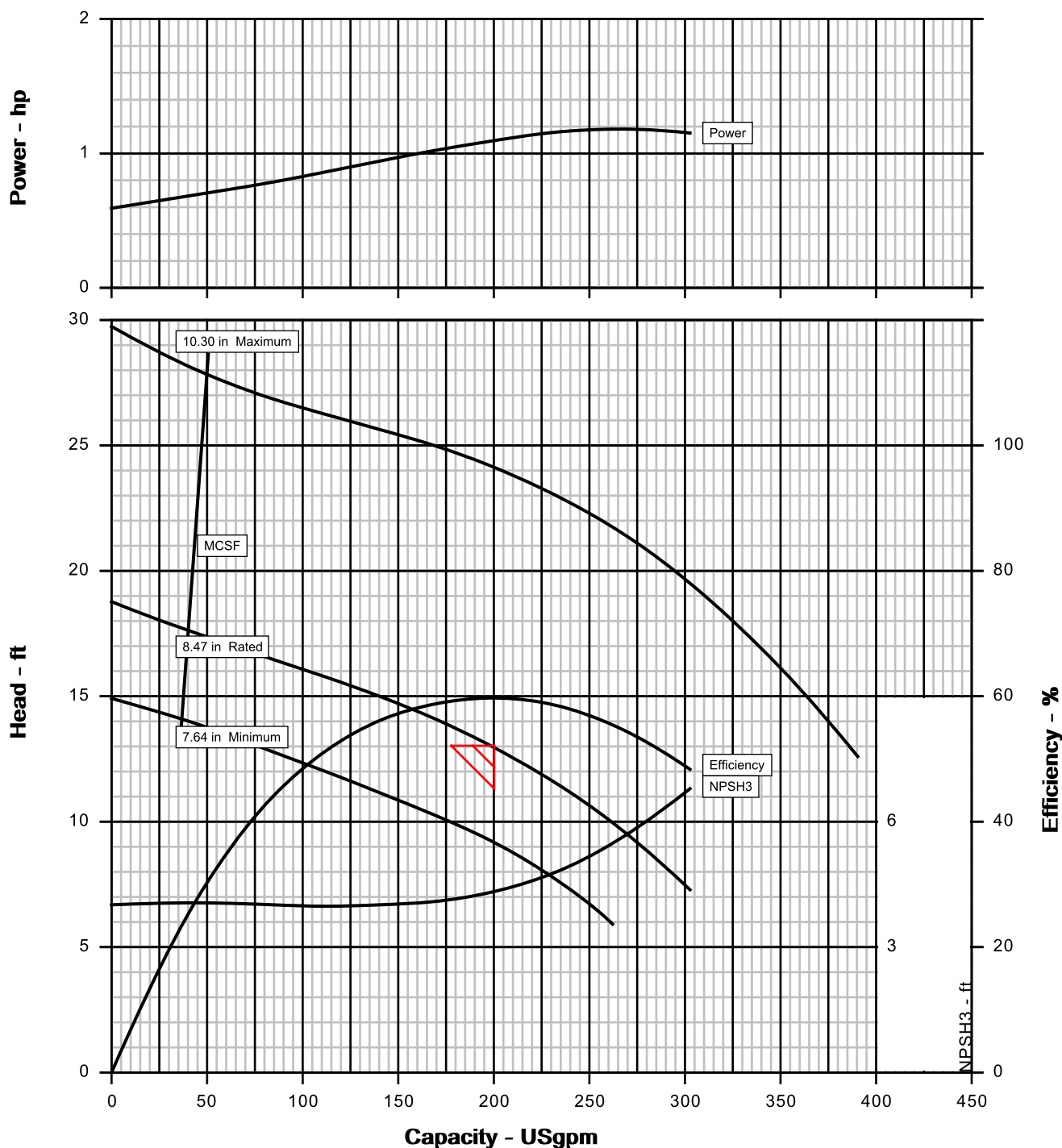


Pump size & type / Stages : 3MF11A FR3A / 1
Based on curve no. : 89116149
Impeller diameter : 8.47 in

Customer : Pioneer Equipment Inc
Item number : 30P1000/30P2000
Service : WTP Sedimentation Basin Solids
Flowserve reference : 4328930637
Date : December 20, 2022

Capacity : 200.0 USgpm
Head : 13.00 ft
Density / Specific gravity : - / 1.000
Pump speed : 880 rpm
Ns / Nss (per eye) : 1,438 / 4,260 (US)
Test tolerance : ANSI/HI 14.6 Grade 1U

CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY.

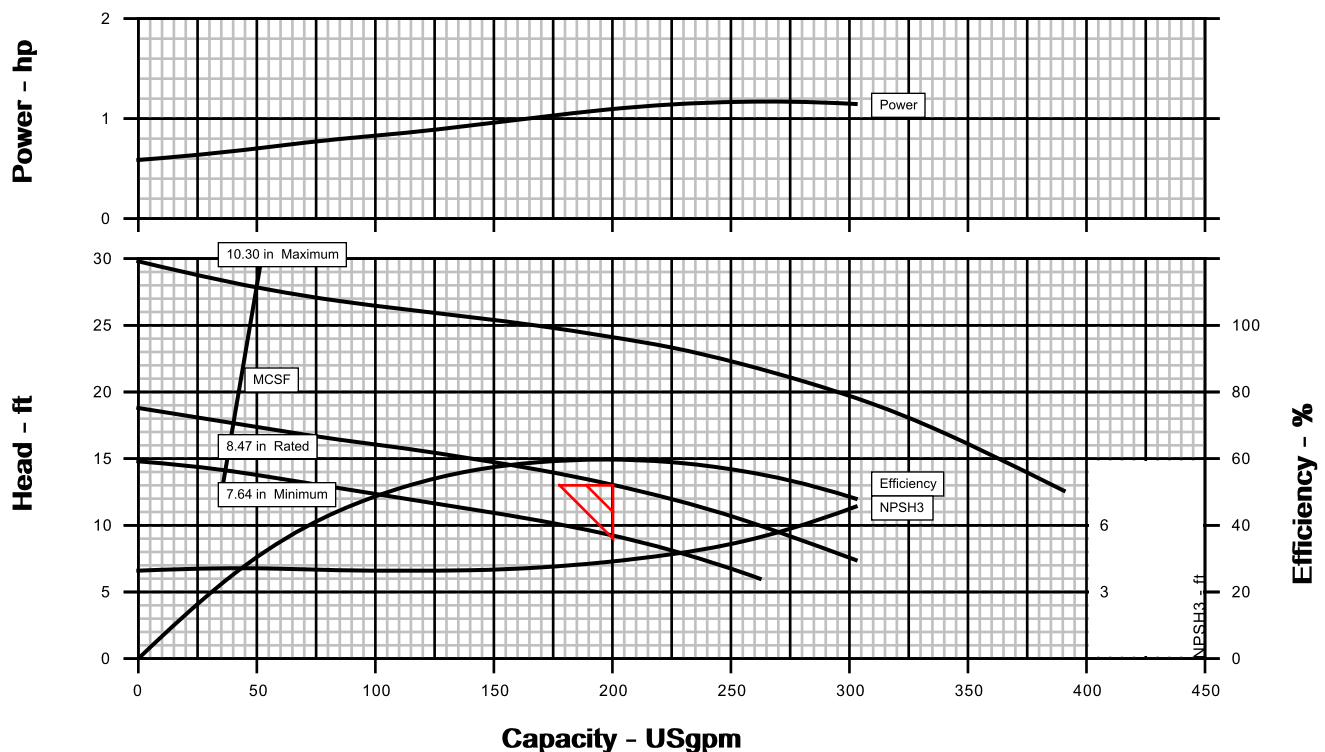


Customer	: Pioneer Equipment Inc	Pump / Stages	: 3MF11A FR3A / 1
Customer reference	: PCL	Based on curve no.	: 89116149
Item number	: 30P1000/30P2000	Flowserve reference	: 4328930637
Service	: WTP Sedimentation Basin Solids	Date	: December 20, 2022

Operating Conditions	Materials / Specification
Capacity (rated/normal) : 200.0 USgpm / -	Material column code : CI
Water capacity (CQ=1.00) : -	Pump specification : -
Total developed head : 13.00 ft	Other Requirements Hydraulic selection : No specification Construction : No specification Test tolerance : ANSI/HI 14.6 Grade 1U Driver Sizing : Max Power(MCSF to EOC) not using SF
Water head (CH=1.00) : -	
NPSHa/NPSHa less margin : 18.0 ft / -	
Maximum suction pressure : 0.0 psig	
Liquid	
Liquid type : Sewage	
Liquid description : 0-3% Solids	
Temperature : 85 °F	
Density / Specific gravity : - / 1.000	
Solid Size - Actual / Limit : - / 2.00 in	
Viscosity / Vapor pressure : 1.00 cP / -	

Performance			
Hydraulic power : 0.66 hp	Impeller diameter		
Pump speed : 880 rpm	Rated	: 8.47 in	
Pump overall efficiency (CE=1.00) : 60.0 %	Maximum	: 10.30 in	
NPSH required (NPSH3) : 4.3 ft	Minimum	: 7.64 in	
Rated brake power : 1.09 hp	Ns / Nss (per eye)	: 1,438 / 4,260 (US)	
	Minimum continuous flow	: 40.9 USgpm	
Maximum brake power : 1.19 hp	Maximum head at rated diameter	: 18.77 ft	
Driver power rating : 1.50 hp / 1.12 kW	Flow at BEP	: 198.4 USgpm	
Casing working pressure : 8.1 psig	Flow as % of BEP	: 100.8 %	
(based on shut off @ cut dia/rated SG)	Efficiency at normal flow	: -	
Maximum allowable : 75.0 psig	Impeller diameter ratio (rated/max)	: 82.2 %	
Hydrostatic test pressure : 100.0 psig	Head rise to shut off	: 44.4 %	
Estimated rated seal chamber pressure : -	Total head ratio (rated / max) / (max / rated)	: 53.9 % / 185.6 %	

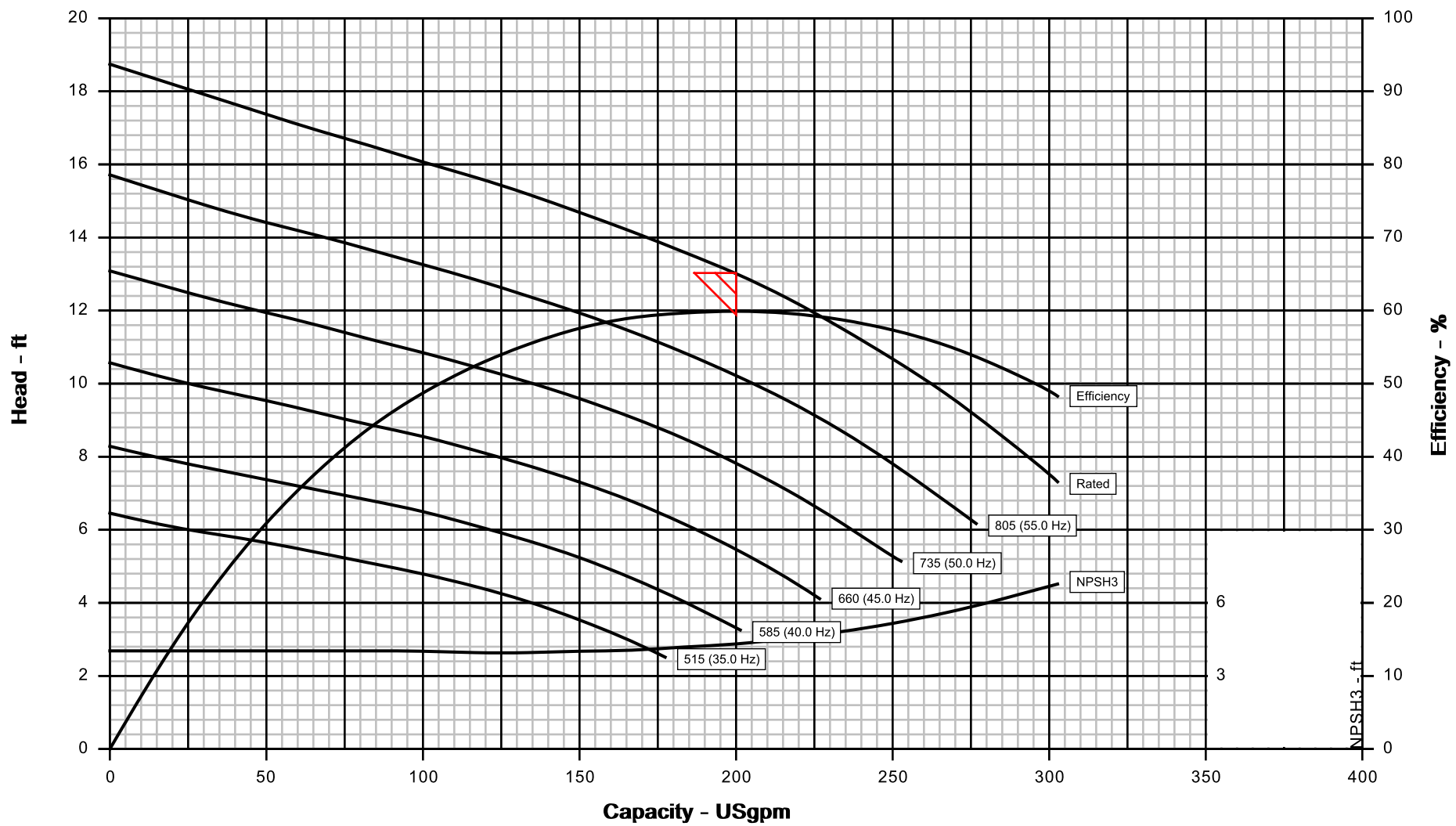
CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY.



Customer	: Pioneer Equipment Inc		Capacity	: 200.0 USgpm
Item number	: 30P1000/30P2000		Head	: 13.00 ft
Service	: WTP Sedimentation Basin Solids		Density / Specific gravity	: - / 1.000
Flowserve reference	: 4328930637		Pump speed	: 880 rpm
Pump size & type / Stages	: 3MF11A FR3A	/ 1	Ns / Nss (per eye)	: 1,438 / 4,260 (US)
Based on curve no.	: 89116149			
Impeller diameter	: 8.47 in		Date	: December 20, 2022



CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS: CAPACITY, HEAD, AND EFFICIENCY.





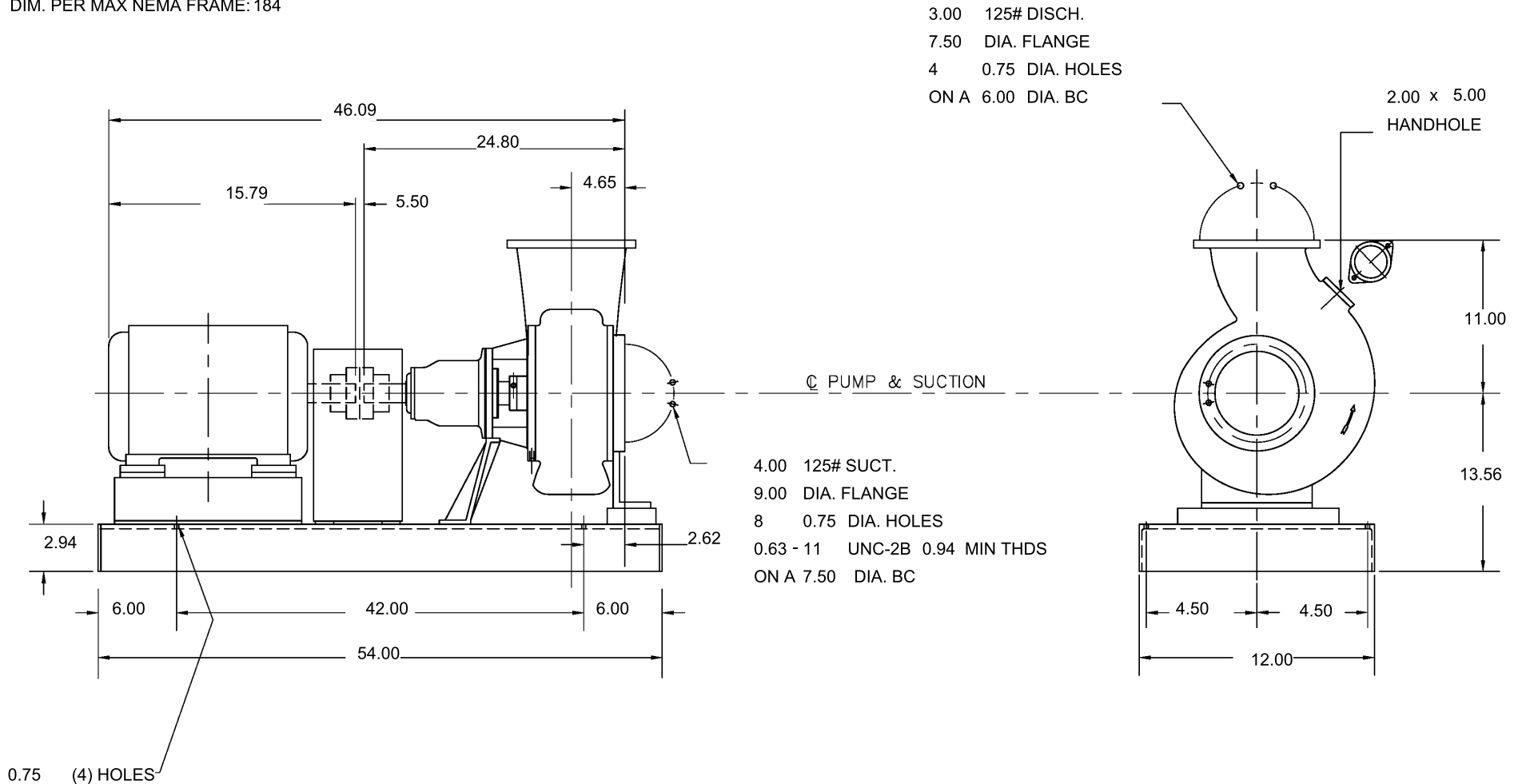
Construction Datasheet

Customer	: Pioneer Equipment Inc	Pump / Stages	: 3MF11A FR3A / 1
Customer reference	: PCL	Based on curve no.	: 89116149
Item number	: 30P1000/30P2000	Flowserve reference	: 4328930637
Service	: WTP Sedimentation Basin Solids	Date	: December 20, 2022

Construction					Driver Information	
Nozzles	Size	Rating	Face	Position	Manufacturer	: Baldor ECP
Suction	4.00 in	125#	FF	End	Power	: 1.50 hp / 1.12 kW
Discharge	3.00 in	125#	FF	Side	Service factor (requested / actual)	: 1.15 / 1.15
Casing mounting	: Foot				Synchronous speed	: 900 rpm
Casing split	: Radial				Orientation / Mounting	: Horizontal / Foot
Impeller type	: Enclosed				Driver type	: -
Bearing type (radial)	: Angular Contact				Frame-size / material	: 184T / -
Bearing number (radial)	: Refer				Enclosure	: TEFC
Bearing type (thrust)	: Angular Contact				Hazardous area class	: -
Bearing number (thrust)	: Refer				Explosion 'T' rating	: -
Bearing lubrication	: Grease				Volts / Phase / Hz	: 460 / 3 / 60 Hz
Rotation (view from coupling)	: CW per Hyd. Institute				Amps-full load/locked rotor	: - / -
Materials					Motor starting	: Direct on line (DOL)
Casing	: Cast Iron				Insulation	: -
Impeller	: Cast Iron				Temperature rise	: -
Case wear ring	: 400 Series Hard SS				Bearings	: -
Impeller wear ring	: CA15 SS				Lubrication	: -
Inducer	: N/A				Motor mounted by	: Flowserve
Shaft	: Gr. 1045 Carbon Steel				Sound Pressure (dBA @ 1.0 m)	
Sleeve	: 316L SS				Driver, expected	: -
Baseplate, Coupling and Guard					Pump & driver, estimated	: -
Baseplate type	: Channel				Seal Information	
Baseplate material	: Steel				Arrangement	: Double Mechanical
Coupling manufacturer	: Falk				Size	: As Required
Coupling size	: As Required				Manufacturer / Type	: Flowserve / Cartridge
Coupling / Shaft guard	: Plastic				Material code (Man'f/API)	: - / -
Weights (Approx.)					Internal neck bushing	: -
Bareshaft pump (net)	: 285.0 lb				Gland	
Baseplate (net)	: 187.0 lb				Gland material	: -
Driver (net)	: 110.0 lb				Flush	: -
Shipping gross weight/volume	: Refer / Refer				Vent	: -
Testing					Drain	: -
Hydrostatic test	: Non witnessed				Auxiliary seal device	: -
Performance test	: Non witnessed				Piping	
NPSH test	: None				Seal flush plan	: -
Paint and Package					Seal flush construction	: -
Pump paint	: Epoxy				Seal flush material	: -
Base grout surface prep	: N/A				Aux seal flush plan	: -
Shipment type	: Domestic				Aux seal flush construction	: -
					Aux seal flush material	: -
Notes						
Impeller Eye Area: 12.2 sq.in.						
-						
-						
-						
-						
-						

REFERENCE ONLY (NOT TO SCALE)

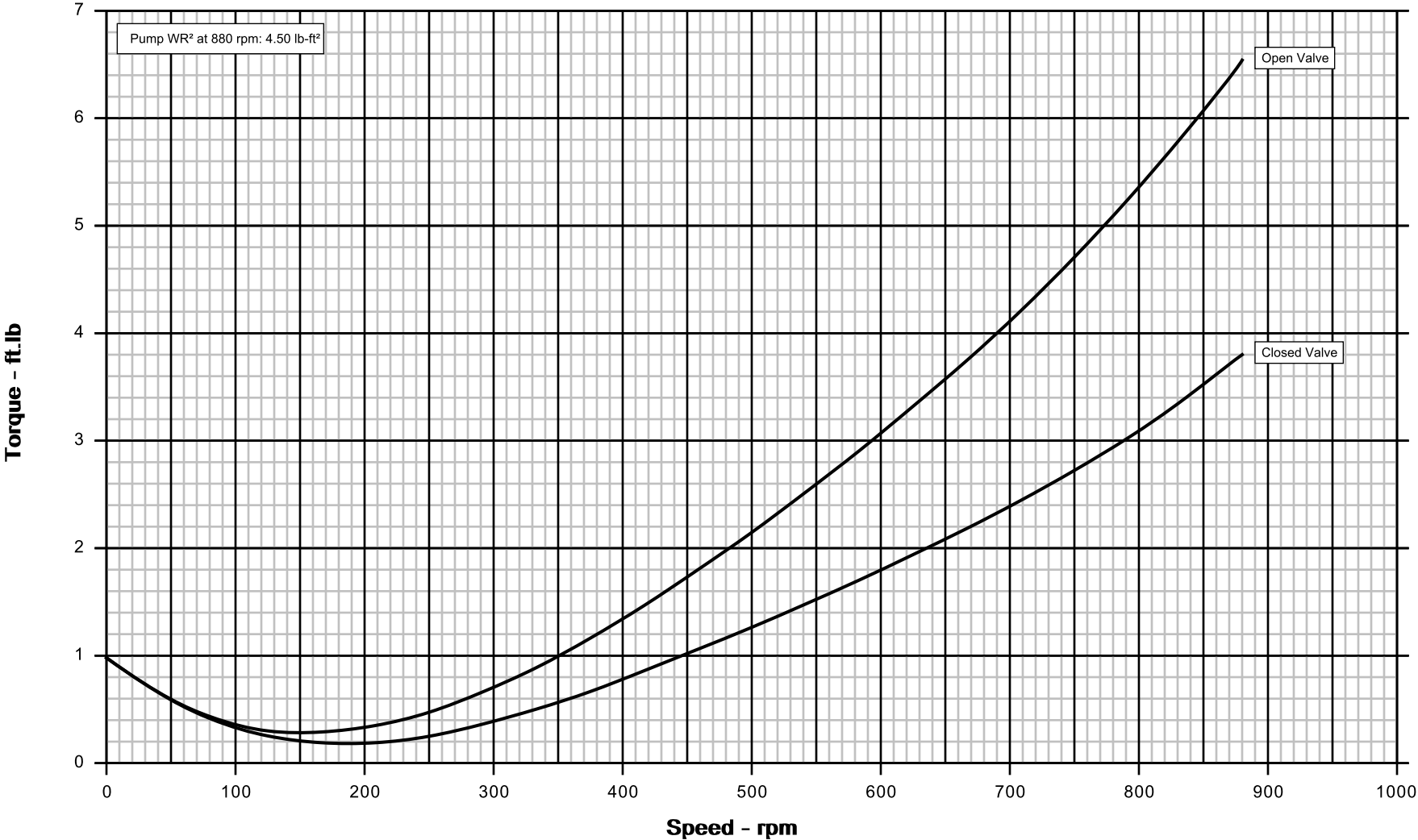
DIM. PER MAX NEMA FRAME: 184



Customer	: Pioneer Equipment Inc	Pump size & type	: 3MF11A FR3A	Drawing number	: -
Item number	: 30P1000/30P2000	Pump speed / Stages	: 880 rpm / 1	Date	: December 20, 2022
Service	: WTP Sedimentation Basin Solids	Flow / Head	: 200.0 USgpm / 13.00 ft	Certified by / Date	: -
Customer PO #	: -	Driver power / Frame	: 1.50 hp / 1.12 kW / 184T	Seal type	: Cartridge
Flowserve reference	: 4328930637	Volts / Phase / Hz	: 460 / 3 / 60 Hz	Seal flush plan	: -

Customer	: Pioneer Equipment Inc		Capacity	: 200.0 USgpm
Item number	: 30P1000/30P2000		Head	: 13.00 ft
Service	: WTP Sedimentation Basin Solids		Density / Specific gravity	: - / 1.000
Flowserve reference	: 4328930637		Pump speed	: 880 rpm
Pump size & type / Stages	: 3MF11A FR3A / 1		Ns / Nss (per eye)	: 1,438 / 4,260 (US)
Based on curve no.	: 89116149		Pump WR ² at 880 rpm	: 4.50 lb-ft ²
Impeller diameter	: 8.47 in		Date	: December 20, 2022

CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY.





Contact: Eric Lock

Address: Pioneer Equipment Inc
3738 E. Miami Ave.
Phoenix, AZ 85040

Phone: 602-437-4312

Scope of Supply

Customer: Pioneer Equipment Inc
Cust / Proj Ref: PCL
Item number: 30P1000/30P2000
Service: WTP Sedimentation Basin Solids

Pump / Stages: 3MF11A FR3A / 1
Based on curve no.: 89116149
FLS # / Reference: 4328930637 /
Date: Dec 20, 2022

Qty	Description		
2	3MF11A FR3A FPD - CI MF Solids Handling ----- SCOPE OF SUPPLY ----- "MF" Horizontal Pump No Horizontal Suction Head Discharge Nozzle- UP Viewed from Suction Bearing Frame Orientation/Speed Acceptable ----- MATERIAL MODIFICATIONS ----- Cast Iron ASTM 278 CI 30 Casing Cast Iron ASTM 278 CI 30 Impeller 11-14% Chr Stl A-487/CA-15 325-375 BHN W.R. 11-14% Chr Stl A-743/CA-40 400-450 BHN W.R. ASTM A108 Gr 1045 Shaft 316L Stainless Steel Shaft Sleeve No Lantern Ring ----- MECHANICAL MODIFICATIONS ----- Standard Balance Grease Lubrication Casing Drain 1/2" NPT (Plugged) Casing Vent 1/2" NPT (Plugged) Suction Gauge Connection 1/2" NPT (Plugged) Discharge Gauge Connection 1/2" NPT (Plugged) Lifting Lugs "Horizontal" Sleeve Type Stainless Steel Anchor Bolts ----- MECHANICAL SEALS & PACKING ----- Mechanical Seal Cartridge Seal Double Cartridge Flowserve ISC2 Double FLS Silicon/Silicon 316SS Viton (5Z4Z/5Z4T) Solids Exclusion Bushing (Reduced Flush Applications) ----- SEALING FLUSH SYSTEMS ----- Customer Supplied Seal Flush Seal Flush Plan 54 - Customer Supplied Mount Motor at Factory		

Feature quantities match pump quantity unless otherwise noted.

Proposal is valid for 30 days.

Customer: Pioneer Equipment Inc
 Cust / Proj Ref: PCL
 Item number: 30P1000/30P2000
 Service: WTP Sedimentation Basin Solids

Pump / Stages: 3MF11A FR3A / 1
 Based on curve no.: 89116149
 FLS # / Reference: 4328930637 /
 Date: Dec 20, 2022

Qty	Description		
	----- COUPLINGS -----		
	Falk "T" Type Spacer		
	----- GUARDS -----		
	Std. OSHA Non-Metallic (Safety Orange) Guard		
	Aluminum Mesh Stuffing Box Guard		
	----- BASEPLATE -----		
	Channel Baseplate		
	Flowserve Supplied Standard Shims		
	----- HYDROSTATIC TESTING -----		
	Hydrotest, Non-Witnessed (with Certificate)		
	----- PERFORMANCE TESTING -----		
	Performance Test, Non-Witnessed		
	Constant Speed Application		
	Factory Motor and Drive		
	Performance Test With Packed Gland		
	Noise Level Test		
1	On site representation		
	Vibration Test Supplied		
	----- ENGINEERING ANALYSIS -----		
1	Torsional Analysis		
1	Foundation Analysis		
1	Baseplate Analysis		
1	Anchor Bolt Analysis		
1	Lifting Lug Analysis		
1	Seismic Calculations		
1	Bearing Life Calculation		
1	Shaft Deflection and Stress Analysis		
1	Horz. Structural and Rotor Frequency		
	----- PAINTING & SURFACE PREPARATIONS -----		
	Flowserve Choice Epoxy		
	SSPC-SP-10 or 6 Surface Prep		
	----- COMMERCIAL OPTIONS -----		
	1 Year Extended Warranty		
	24 Mo. Installation or 30 Mo. Delivery		
	----- DOCUMENTATION -----		
	Submittal Package Required		
	For Information Only		
	Electronic Document Submittal (Flowserve STD Format)		
	Flowserve Detailed Doc. Package		
	+ General Arrangement Drawing, Certified		
	+ IOM		
	+ Bill of Materials		
	+ Scope of Supply		

Feature quantities match pump quantity unless otherwise noted.

Proposal is valid for 30 days.

Customer: Pioneer Equipment Inc

Cust / Proj Ref: PCL

Item number: 30P1000/30P2000

Service: WTP Sedimentation Basin Solids

Pump / Stages: 3MF11A FR3A / 1

Based on curve no.: 89116149

FLS # / Reference: 4328930637 /

Date: Dec 20, 2022

Qty	Description		
	+ Typical Performance Curve (Affinity) + Cross Sectional Drawing + Pump Material List + Spare Parts Furnished + Coating Information + Accessory Information + Pump Performance Test Procedure + Pump Nameplate Drawing + Motor Data Pack + Seal information ----- PACKAGING ----- Domestic Packaging ----- INCO & FREIGHT TERMS ----- FCA Factory ----- SPARE PARTS ----- Spare Pump Bearings Spare motor bearings Spare mechanical seal		
2	Driver ----- MOTORS ----- Driver by Flowserve Horizontal TEFC Corro Duty Motor 1.50 hp 900 RPM 184T Motor		

Customer Comments

Feature quantities match pump quantity unless otherwise noted.
Proposal is valid for 30 days.

Pump Supplier To The World

Flowserve is the driving force in the global industrial pump marketplace. No other pump company in the world has the depth or breadth of expertise in the successful application of pre-engineered, engineered, and special purpose pumps and systems.

Pumping Solutions

Flowserve is providing pumping solutions that permit customers to continuously improve productivity, profitability and pumping system reliability.

Market-Focused Customer Support

Product and industry specialists develop effective proposals and solutions directed toward market and customer preferences. They offer technical advice and assistance throughout each stage of the product life cycle, beginning with the inquiry.



Dynamic Technologies

Flowserve is without peer in the development and application of pump technology, including:

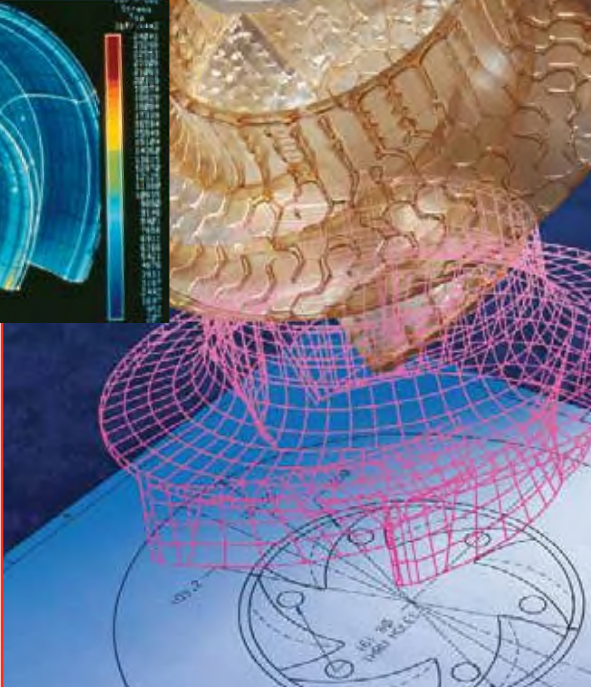
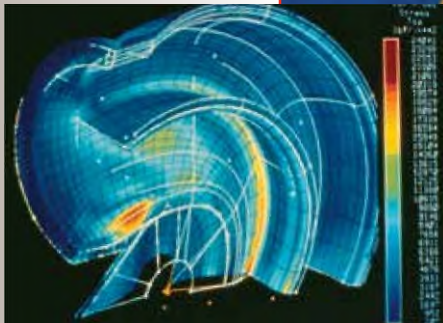
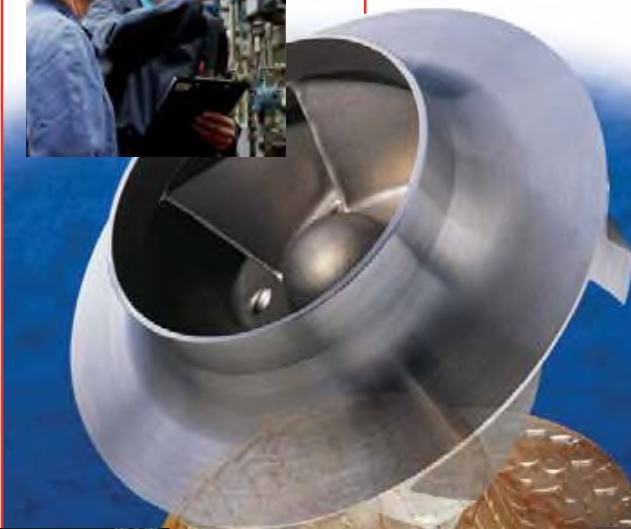
- Hydraulic engineering
- Mechanical design
- Materials science
- Intelligent pumping
- Manufacturing technology

Broad Product Lines

Flowserve offers a wide range of complementary pump types, from pre-engineered process pumps, to highly engineered and special purpose pumps and systems. Pumps are built to recognized global standards and customer specifications.

Pump designs include:

- Single-stage process
- Between bearing single-stage
- Between bearing multistage
- Vertical
- Submersible motor
- Positive displacement
- Nuclear
- Specialty



MF
Solids-Handling
Pumps

Rugged and Efficient Design

The Flowserve MF is an end-suction, side-discharge, mixed-flow, non-clog pump. It is specifically engineered for reliability, low cost and long life in demanding sewage handling services or where solids in suspension are of particular concern. The rugged MF is designed, manufactured and tested in conformance with the Standards of the Hydraulic Institute.

Performance Benefits

- Flexibility
 - Configurations
 - Motor mounts
 - Nozzle orientation
- Reliability
 - Robust construction
 - Special materials
- Efficiency
 - Broad hydraulic range
 - Reduced power consumption
- Easy maintenance

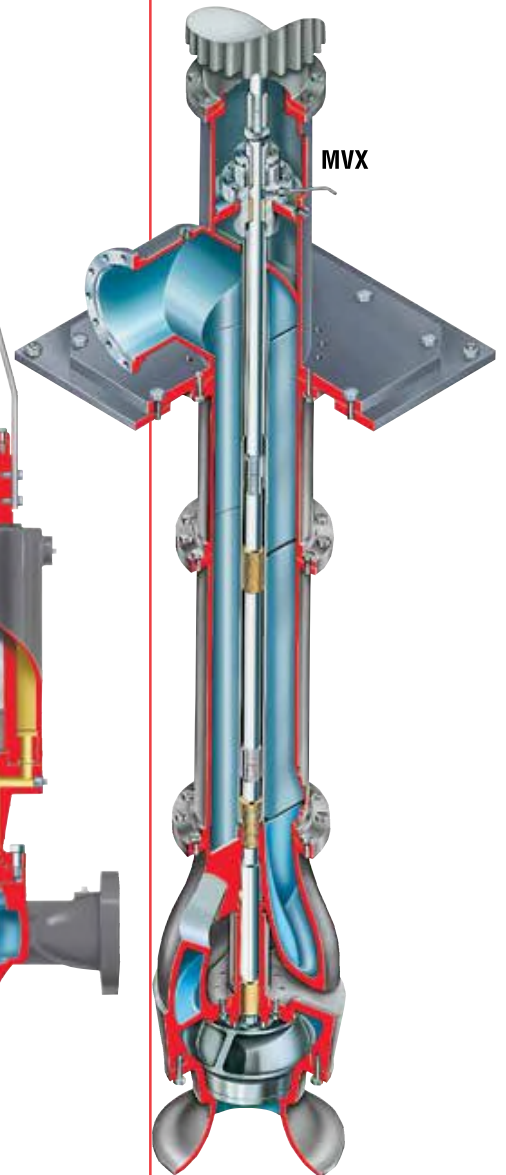
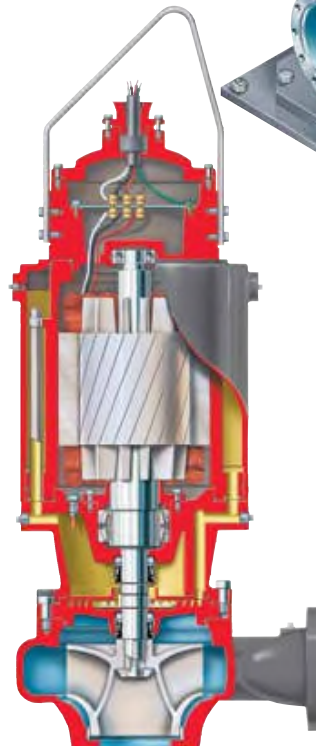
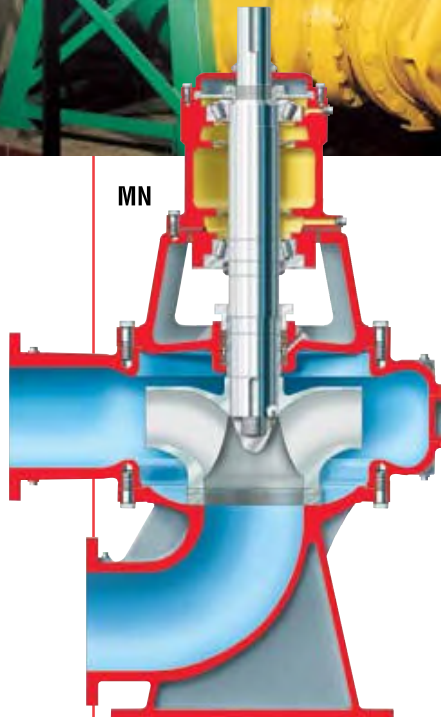
Typical Applications

- Sewage
- Storm water
- Industrial wastes

Complementary Pump Designs

Depending upon application requirements, Flowserve can also provide these pump designs:

- Dry-pit, solids-handling
- Vertical, wet-pit
- Submersible non-clog



**MF
Solids-Handling
Pumps**

Renowned for reliability, the rugged Flowserve MF solids-handling pump offers extraordinary flexibility and cost efficiency. Versatile performers, medium-capacity MF pumps can be found throughout the collection-treatment-effluent municipal cycle and in industrial waste services.

Operating Parameters

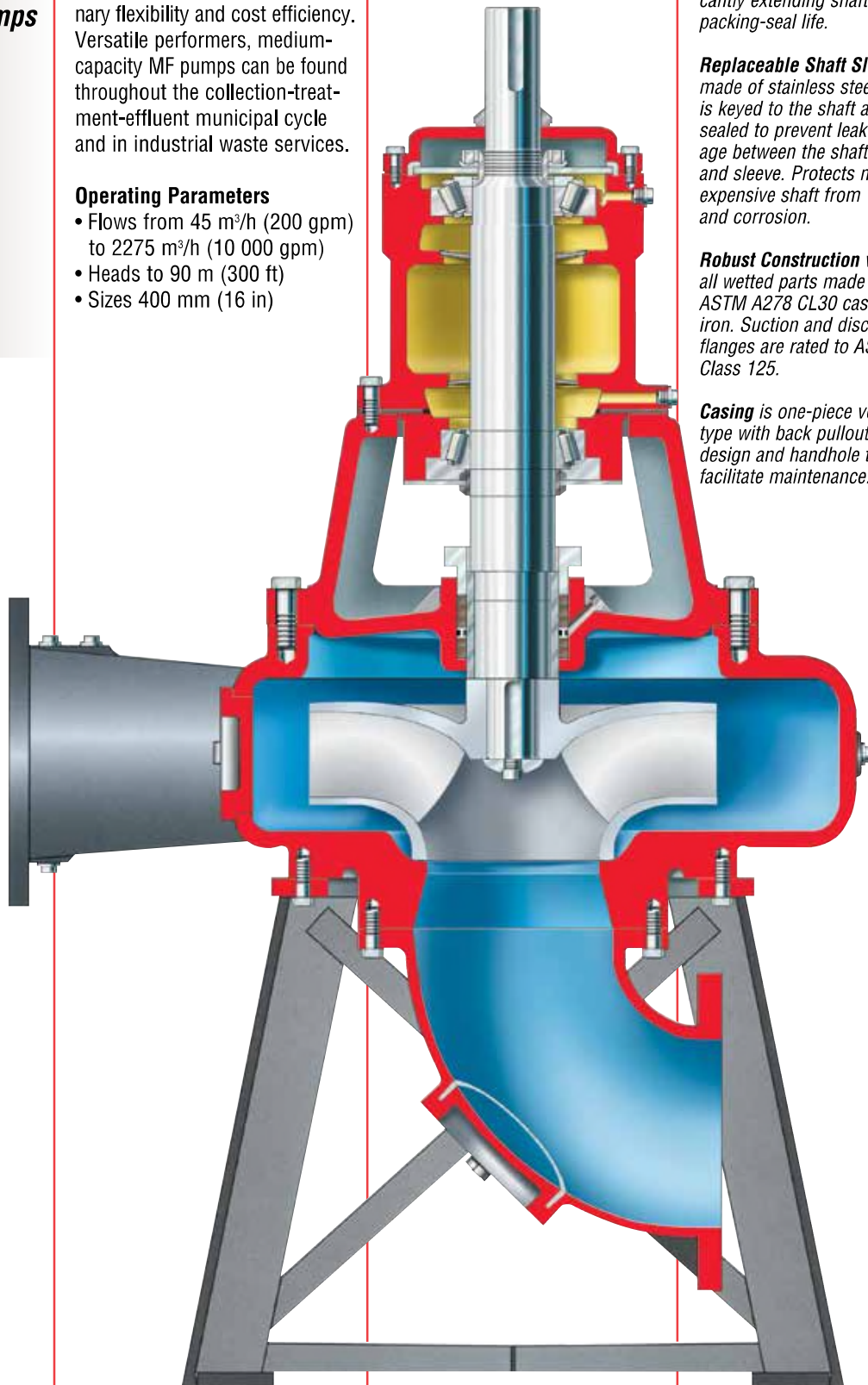
- Flows from 45 m³/h (200 gpm) to 2275 m³/h (10 000 gpm)
- Heads to 90 m (300 ft)
- Sizes 400 mm (16 in)

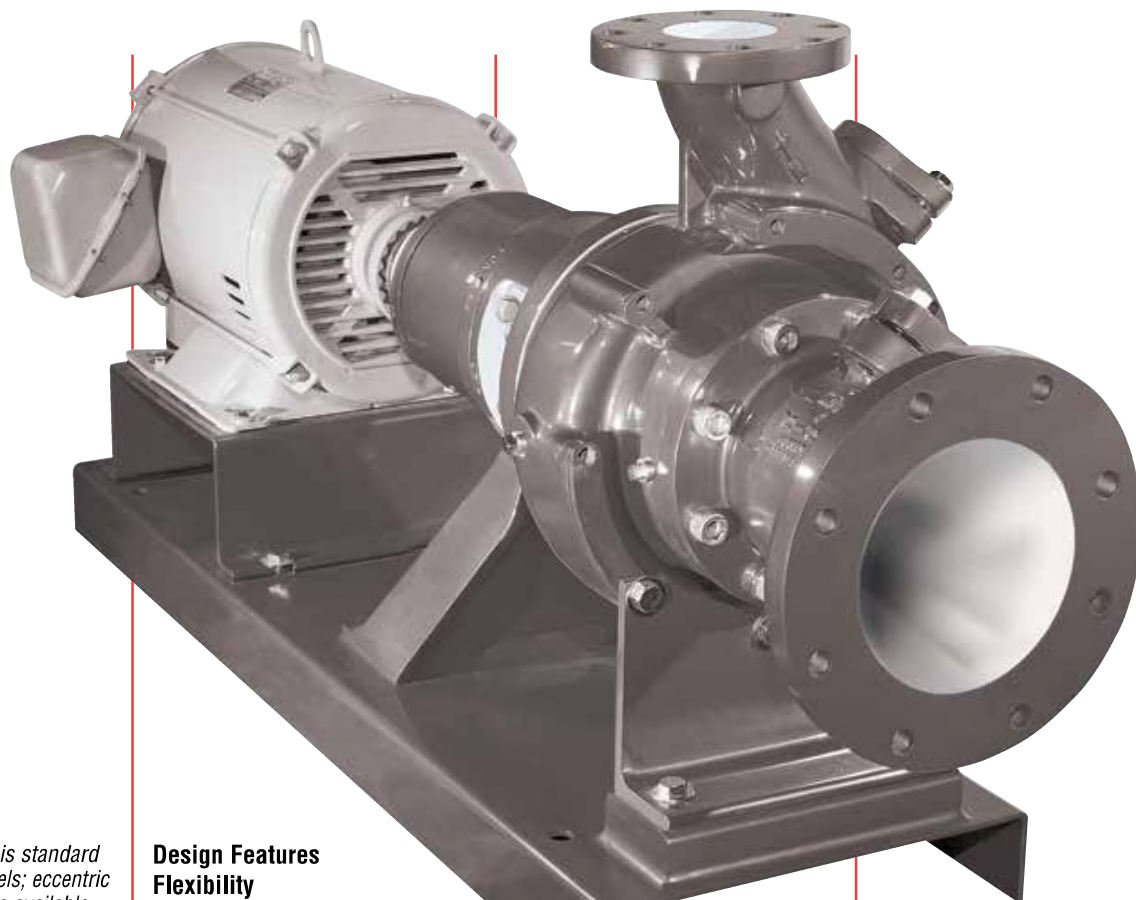
Carbon Steel Shaft with oversized dimensions is robust and rigid, significantly extending shaft and packing-seal life.

Replaceable Shaft Sleeve, made of stainless steel, is keyed to the shaft and sealed to prevent leakage between the shaft and sleeve. Protects more expensive shaft from wear and corrosion.

Robust Construction with all wetted parts made of ASTM A278 CL30 cast iron. Suction and discharge flanges are rated to ASME Class 125.

Casing is one-piece volute type with back pullout design and handhole to facilitate maintenance.





Suction Elbow is standard on vertical models; eccentric suction nozzle is available on horizontal models. Handhole access for inspection and cleaning is standard. Chrome steel wear rings are available.

Non-clog Impeller is key locked to the shaft to prevent loosening by torque from forward or reverse rotation. Chrome steel wear rings are available.

Stuffing Box readily accommodates packing or mechanical seals per customer preference.

Ball or Tapered Roller Bearings (grease lubricated) firmly support the shaft, virtually eliminate axial and radial thrust loads, and are designed for a minimum of 40 000 hours B_{10} life.

Bearing Housing With Integral Jacking Bolts permits axial adjustment of optional wear rings via a shim pack between the bearing housing and back head.

Design Features

- Flexibility
- Horizontal and vertical models
- Variety of mounting arrangements
- Variety of nozzle positions to suit most piping arrangements without special or costly modifications
- Direct or independent motor mounting

Reliability

- Minimal shaft deflection with oversized shaft and reduced overhang, virtually eliminating shaft failure and increasing packing or seal life
- Conservative bearing design arranged to eliminate all radial and axial play
- Hardened chrome steel shaft sleeve standard
- Supports to minimize vibration assure rigidity

Efficiency

- Maximum solids-handling capabilities
- Wide range of efficient operation and reduced power consumption



Ease of Maintenance

- Easy access to seal chamber through large openings in the bearing housing support
- Removable gland for easy packing adjustment or replacement
- Stuffing box arranged for either grease or water seal
- Wide variety of mechanical seal options

- Back pullout of entire rotating assembly without disturbing the casing or suction and discharge piping
- Readily accessible lubrication points in bearing housing

Technical Data and Options

Available Options

- Chrome steel wear rings of varying hardness
- 316 SS or hardened shaft sleeves
- Single, double, cartridge or split mechanical seals
- Bronze, nickel, cast iron or stainless steel castings
- Paint systems
- Baseplates
- Testing
 - Performance
 - Hydrostatic
 - Variable speed
- Coupling type
- Coupling guard

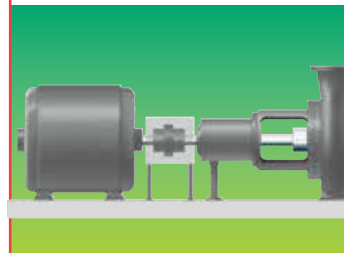
Configurations

MFV



Vertical With Motor Mounted on Separate Floor

MF



Horizontal End-Suction

MFC

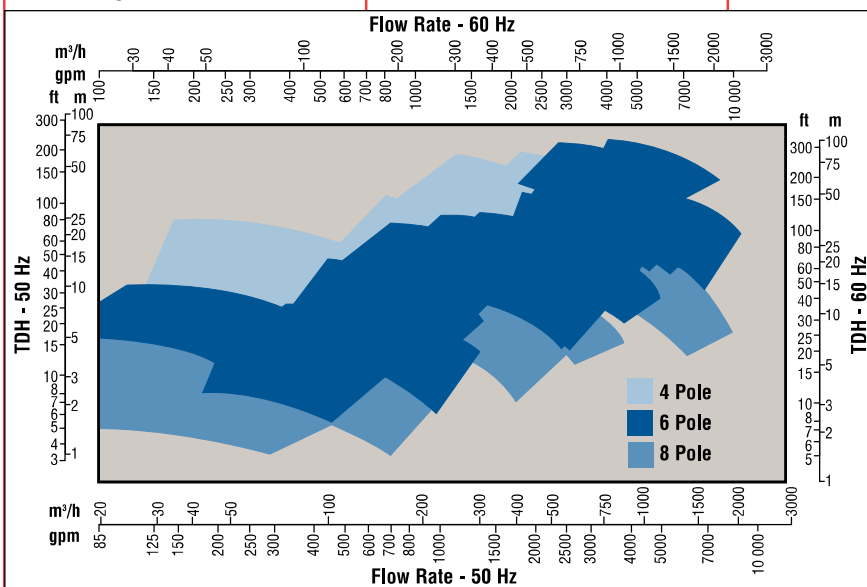


Vertical With Direct Connected Motor

Materials of Construction

Port	Standard Fitted	Optional Material
Casing	Cast Iron	1½% Ni Cast Iron Ductile Iron
Impeller	Cast Iron	1½% Ni Cast Iron Bronze 11–14% Cr Stl.
Impeller Wearing Ring	None	11–14% Cr Stl. 250–300 BHN
Casing Wearing Ring	None	15–18% Cr Stl. 300–350 BHN
Gland	Bronze	—
Shaft	Carbon Steel	Low Alloy Steel
Shaft Sleeve	11–14% Cr Stl. 325–400 BHN	450–500 BHN
Line Bearing	Ball or Tapered Roller	—
Thrust Bearing	Ball or Tapered Roller	—
Stuffing Box Head	Cast Iron	1½% Ni Cast Iron Ductile Iron
Suction Head or Elbow	Cast Iron	1½% Ni Cast Iron Ductile Iron
Seal Cage	PTFE	Bronze
Packing	Non-Asbestos	Mechanical Seals
Adjusting Shims	Plastic	—
Grease Fittings	Alemite	—
Coupling	All Metal Flexible	Refer to Factory
Horizontal Baseplates	Fabricated Steel	—
Vertical Motor Pedestal	Fabricated Steel	—

MF Range Chart



Global Engineered Services and Support

Total Cost Reduction

Asset Management

Product Life Cycle

Performance Re-rates

Site Diagnostics

Repair Services

Energy Management

Spare Parts

Maintenance Contracts

Materials Upgrades

Turnkey Services

Field Repairs

Installation

Project Supervision

Commissioning

Equipment Upgrades

Condition Monitoring

Systems Analysis

Field Machining

Service Dedication

Flowserve Engineered Services is focused on providing customers with uncompromising service and support, where and when needed. Dedicated to delivering the highest quality support, Engineered Services integrates its extensive pump and materials engineering knowledge with creative service solutions. Engineered Services fully understands the business challenges facing customers and is prepared to manage solutions to succeed as a team.

A worldwide network of service and repair centers staffed by highly skilled engineers and technicians is available around the clock, seven days a week to respond to customer queries, evaluate and troubleshoot problems, and provide reliable solutions.

Strength of Experience, Commitment to Excellence

Flowserve has long served industries requiring superior equipment performance and service life.

- Oil and gas production
- Hydrocarbon processing
- Chemical processing
- Water resources
- Power generation
- Nuclear
- Mining and mineral processing
- Pulp and paper
- General industry

Engineered Services is dedicated to maximizing equipment performance and providing reliability-centered maintenance programs for pumps and related equipment, regardless of manufacturer. Using the FlowStar™ asset management software, Engineered Services tracks performance and supports improvement programs using a service life cycle cost business approach. The results are improved reliability and increased profitability.

Your Business Partner

Flowserve partners with customers to respond to the dynamic business conditions that affect them. Flowserve will work with customers to drive efficiency, maximize throughput and control process quality. Whether user needs involve on-site technical assistance or broader project planning with full turnkey responsibility, Flowserve Engineered Services will deliver professional, reliable results.





Warranty

1. **WARRANTY:** Subject to the limitations in Section 2 herein, Seller warrants that the Equipment shall be free from defects in material, workmanship, and title. If it appears within twelve (12) months from the initial Equipment startup or until eighteen (18) months after shipment, whichever occurs first, that the Equipment or any part thereof does not conform to this warranty, and Buyer so notifies Seller within a reasonable time after discovery, Seller shall thereupon promptly correct such nonconformity by repair or replacement EXW Seller's factory or service center. Seller's sole obligation and Buyer's sole remedy under this warranty is repair or replacement at Seller's election. Seller's warranty obligation for Services shall be the earlier of either ninety (90) days from the date of initial startup or six (6) months after completion of the Service work. Seller shall not be responsible for any on-site costs, including removal and reinstallation of any warranted Equipment. Buyer agrees to provide Seller reasonable and clear access to its Equipment which may include removal of materials or structures not supplied by Seller as well as supplying any equipment, materials or structures which are necessary to provide reasonable access to the Equipment being repaired or replaced. All Equipment repaired or replaced will be re-warranted only for the remainder of the original warranty period. **THE EXPRESS WARRANTY SET FORTH HEREIN IS THE EXCLUSIVE WARRANTY OF SELLER, AND NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE, SHALL APPLY.** Seller is not responsible for repairs or alterations made by others without mutual written agreement between Seller and Buyer. Seller does not warrant the Equipment or any repair/replacement part against the effects of erosion, corrosion, or normal wear and tear due to operation or the environment. The warranty and remedies set forth herein are conditioned upon proper storage, installation, use and maintenance of the Equipment in all material respects, and in accordance with Seller's written recommendations. Replacement parts or repairs furnished under this warranty shall be subject to the warranty provisions herein for the remaining original warranty period.
2. **LIMITATION OF LIABILITY / EXCLUSION OF CONSEQUENTIAL LOSS:** The remedies set forth herein are exclusive, and the total liability of the Seller with respect to this Order, or any breach thereof, whether based on contract, warranty, tort (including negligence), indemnity, strict liability or otherwise, shall not exceed the Order price of the specific Equipment or Service which gives rise to the claim.

In all cases where Buyer claims damages allegedly arising out of defective or nonconforming Equipment or Services, Buyer's exclusive remedies and Seller's sole liability shall be those specifically provided for under Section 1 "Warranty".

IN NO EVENT, WHETHER ARISING BEFORE OR AFTER COMPLETION OF ITS OBLIGATIONS UNDER THE CONTRACT, SHALL SELLER BE LIABLE FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES OF ANY KIND (INCLUDING BUT NOT LIMITED TO LOSS OF USE, REVENUE OR PROFITS, INVENTORY OR USE CHARGES, COST OF CAPITAL, OR CLAIMS OF CUSTOMERS) INCURRED BY THE BUYER OR ANY THIRD PARTY.

3. **GENERAL PROVISIONS:** (a) No Action, regardless of form, arising out of transactions under the Order, may be brought by the Buyer more than one (1) year after the cause of action has accrued. (b) Any modification to these Terms must be set forth in a written instrument signed by a duly authorized representative of Seller. (c) In the event Buyer has reason to believe the Equipment could be subject to a claim for damages or personal injury, Buyer shall immediately provide Seller with written notice of such claim, and shall provide Seller reasonable opportunity to inspect said Equipment and/or investigate the basis for such potential claim. (d) **UNLESS OTHERWISE SPECIFICALLY PROVIDED IN SELLER'S QUOTATION, EQUIPMENT AND SERVICES HEREUNDER ARE NOT INTENDED FOR USE IN ANY NUCLEAR OR NUCLEAR RELATED APPLICATIONS. IF SELLER'S QUOTATION EXPRESSLY STATE THAT THE EQUIPMENT AND SERVICES ARE INTENDED FOR NUCLEAR OR NUCLEAR RELATED APPLICATIONS, SELLER'S ADDENDUM (P-62) FOR NUCLEAR LIABILITY PROTECTION IS HEREBY INCORPORATED.** Buyer (i) accepts the Equipment and Services in accordance with the restriction set forth in the immediately preceding sentences, (ii) agrees to communicate such restriction in writing to any and all subsequent purchasers or users, and (iii) agrees to defend, indemnify and hold harmless Seller from any and all claims, losses, liability, suits, judgments and damages, including incidental and consequential damages, arising from the use of the Equipment or Services in any nuclear or nuclear related applications, whether the cause of action be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability.

**Flowserve... Supporting Our Customers
With The World's Leading
Pump Brands**



USA and Canada

Flowserve Corporation
5215 North O'Connor Blvd.
Suite 2300
Irving, Texas 75039-5421 USA



Latin America

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Buenos Aires, Argentina
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Telefax: +54 11 4714 1610

Europe, Middle East, Africa

Flowserve Corporation
Parallelweg 13
4878 AH Etten-Leur
The Netherlands
Telephone: +31 76 502 8100

Your local Flowserve representative:



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Sales@pioneerequip.com

Asia Pacific

Flowserve Pte. Ltd.
10 Tuas Loop
Singapore 637345
Telephone: +65 6771 0600
Telefax: +65 6862 2329

Red Flint Sand & Gravel, LLC

1 American Blvd.
PO Box 688
Eau Claire, WI 54702
Phone: (715) 855-7600
Fax: (715) 855-7608



DATE: July 8, 2022
TO: Jessie Gloor
Pcl Construction
FROM: Kaylie Berlin
SUBJECT: Granular Filter Materials
QUOTE: QTE220706E12-02REV1

Phone: 720-682-9371
Email: jgloor@pcl.com

**BUDGETARY
ARVADA, CO**

Listed below is our quotation for the Red Flint products you requested, quoted Ex Works Eau Claire, WI. Sales tax, if applicable, has not been included in the quoted price. Our product pricing will remain valid for 30 days, however, Red Flint reserves the right to re-quote the media as conditions change and update the purchase order pricing accordingly. Our terms are net 30 days, with 1.5% interest charged per month on all account balances over 30 days. Red Flint imposes a surcharge of 2% on the transaction of Visa, MasterCard, Discover, and American Express credit cards, which is not greater than our cost of acceptance. We do not surcharge debit cards.

Red Flint granular filter materials have been used in municipal and industrial filtration applications since 1917. Red Flint filtration media is produced to meet exacting size and uniformity specifications and meets or exceeds the AWWA B100-16 Standard (Granular Filter Materials) and is NSF/ANSI Standard 61 (Drinking Water System Components – Health Effects) certified for quality and purity.

ITEM CODE	ITEM DESCRIPTION	QUANTITY
AB00000	Sand Blend	1250 tons
Lagoon 1 Material Subtotal:		\$ 69,000.00
AB00000	Sand Blend	1250 tons
Lagoon 2 Material Subtotal:		\$ 69,000.00
AB00000	Sand Blend	1250 tons
Lagoon 3 Material Subtotal:		\$ 69,000.00
AB00000	Sand Blend	1250 tons
Lagoon 4 Material Subtotal:		\$ 69,000.00
TOTAL USD:		\$ 276,000.00

Additional Notes:

1. The requested products will be scheduled for production upon receipt of a Purchase Order. We will notify you of the anticipated delivery date or delivery date range upon receipt of the Purchase Order. Red Flint can better accommodate your delivery schedule the earlier we receive the Purchase Order.
2. Independent Laboratory Testing is not included in the quoted price.
3. Bulk Density of Sand & Gravel = 100 lb/cubic foot.

4. Red Flint shall not be liable for any delay or failure in delivering any of the products if such delay or failure shall be due to one or more of the following causes: fire, strike, lockout, dispute with workmen, pandemic, flood, lightning, accident, delay in transportation, shortage of fuel, inability to obtain material within quoted prices, war, embargo, demand or requirement of the United States or any governmental or war activity, or any other cause whatsoever beyond the reasonable control of Red Flint. In addition, Red Flint shall not be liable for any delays or failure attributable to failure of any materials supplier or freight carrier to perform any of its obligations in a timely manner. In the event of any such delay, Red Flint's obligations related to such products shall be excused for the period of such delay and the time for the performance shall be extended by a period equivalent to such delay.

5. Material quoted based on the below specification:

Sieve Size	Percent by Weight Passing Sieve
3/8"	100
#4	95-100
#8	80-100
#16	50-85
#30	25-60
#50	5-30
#100	1-10
#200	0

Please advise if we can be of further assistance by calling Red Flint at (715) 855-7600 or you can email me at kaylie.berlin@redflint.com. Purchase orders can be sent to sales@redflint.com. Thank you for considering Red Flint Sand and Gravel.



AWI BUDGETARY PRICING

Owner..... City of Arvada, CO
Facility Name Ralston Water Treatment Plant
Consulting Engineer Jacobs
DateJune 23, 2022

Scope of Work

AWI ProductPanel Underdrains
Material of Construction 304L stainless steel (304 stainless steel fasteners)
Number of Filters..... See Budget Pricing Table for Quantities
Number of Cells per Filter Two (2)
Filter Cell Width 21 feet
Filter Cell Length 11 feet
Air Feed for Air Scour from N/A

Includes:

- Phoenix Filter Panel Underdrain Systems
- Cleaning of stainless steel using power wire brushing
- All necessary fasteners
- Anchors with adhesive
- Gaskets and sealants
- Installation and maintenance manuals
- Freight FOB jobsite
- Customary field service (10 days / 2 trips per cell)

Budgetary Pricing

AWI Scope of Work.....See the Budget Pricing Table that Follows

AWI BUDGETARY PRICING PHILOSOPHY

When preparing budgetary pricing for a project, the goal of AWI is to provide a price that conservatively reflects a reasonably accurate view of the scope of work for that project. By “conservative” we mean that in our view budgetary pricing should be higher by a small percentage than a bid day price at some reasonable point in the future allowing for minor changes in scope of supply.

AWI does not feel that comparison of budgetary pricing for capital equipment is a valid means to anticipate price competitiveness on bid day. When attempting to price-compete based upon budget pricing, the temptation is much too great to leave out or dramatically underestimate key components of a project such as freight and service. AWI includes full freight FOB jobsite and more than adequate field service by our exceptional Installation Supervisors in our budgetary pricing. In addition, comparison of budgetary pricing overlooks the substantial advantage AWI has when comparing the cost of equipment installation. We would welcome the opportunity to review installation of AWI Phoenix™ Underdrains Systems in greater detail.

In general, AWI welcomes the opportunity to provide budgetary pricing for our Products. We prefer to offer our underdrain systems on a standalone basis; however, when customer circumstances dictate, AWI does have the capability to furnish a broader package of filter equipment including such items as filter media, troughs, air scour blowers, etc.

In preparing budgetary pricing, the biggest variable that AWI confronts is the cost of stainless steel which has varied significantly over the years. AWI uses an index published by Global Stainless Steel, Inc. called “North American Surcharges” to monitor stainless steel costs. Fortunately, though the cost of stainless steel is a significant part of the overall cost of producing AWI Underdrain Systems, it is not the only cost. As a result, the cost of AWI Underdrain Systems is substantially less volatile than the cost of stainless steel.

Budget Pricing Table

At the time this budgetary pricing is being prepared, there is significant unknown – the quantity of filters for which underdrain systems will be being purchased.

Filter quantities have a significant impact upon the budgetary pricing provided by AWI based upon the following factors:

- Engineering costs are essentially the same for a single filter or multiple filters.
- Larger filter quantities facilitate more efficient raw material purchasing.

- Manufacturing set-up costs are essentially the same for a single filter or multiple filters.
- AWI can generally fit multiple filters on a single truck during shipping so shipping costs per filter will go up for small quantities.
- Field service costs can be spread more efficiently over multiple filters.

AWI is presenting budgetary pricing options multiple filter selections to provide perspective for decision making:

Budgetary Pricing	
Number of Filters	Budget
Filters 1 - 9	\$1,150,000
Filters 10 - 12	\$390,000



Red Flint Sand & Gravel, LLC

1 American Blvd.
 PO Box 688
 Eau Claire, WI 54702
 Phone: (715) 855-7600
 Fax: (715) 855-7608



DATE: June 28, 2022
TO: Jessie Gloor
 Pcl Construction
FROM: Kaylie Berlin
SUBJECT: Granular Filter Materials
QUOTE: QTE220516E12-01REV1

Phone: 480-582-2573
 Email: jgloor@pcl.com

ARVADA, CO

Listed below is our quotation for the Red Flint products you requested, quoted with delivery to Arvada, CO. Our product pricing will remain valid for 30 days; however, freight rate at time of shipping will apply. Our terms are net 30 days, with 1.5% interest charged per month on all account balances over 30 days. Red Flint imposes a surcharge of 2% on the transaction of Visa, MasterCard, Discover, and American Express credit cards, which is not greater than our cost of acceptance. We do not surcharge debit cards.

Red Flint granular filter materials have been used in municipal and industrial filtration applications since 1917. Red Flint filtration media is produced to meet exacting size and uniformity specifications and meets or exceeds the AWWA B100-16 Standard (Granular Filter Materials) and is NSF/ANSI Standard 61 (Drinking Water System Components – Health Effects) certified for quality and purity.

ITEM CODE	ITEM DESCRIPTION	QUANTITY
AC25022	Anthracite 1.00-1.10mm, UC<1.4	156 (45 cuft) super sacks
AB36010	Filter Sand 0.55-0.65mm, UC<1.4	65 (40 cuft) super sacks
PA13099	Pallets- Anthracite	156 pallets
PA11099	Industrial Pallets	65 pallets
Phase 1 Material Subtotal:		\$ 131,277.25
SV15099	Independent Laboratory Testing	1 lot *see note 2
Phase 1 Independent Laboratory Testing Subtotal:		\$ 1,365.00
TA12099	Estimated Shipping & Handling	6 flatbeds
TA13099	Estimated Shipping & Handling	8 flatbeds
Phase 1 Freight Subtotal:		\$ 83,200.00
AC25022	Anthracite 1.00-1.10mm, UC<1.4	156 (45 cuft) super sacks
AB36010	Filter Sand 0.55-0.65mm, UC<1.4	65 (40 cuft) super sacks
PA13099	Pallets- Anthracite	156 pallets
PA11099	Industrial Pallets	65 pallets
Phase 2 Material Subtotal:		\$ 187,138.25
SV15099	Independent Laboratory Testing	1 lot *see note 2
Phase 2 Independent Laboratory Testing Subtotal:		\$ 1,365.00
TA12099	Estimated Shipping & Handling	6 flatbeds
TA13099	Estimated Shipping & Handling	8 flatbeds
Phase 2 Freight Subtotal:		\$ 89,870.00
Total:		\$ 494,215.50

Additional Notes:

1. The requested products will be scheduled for production upon receipt of a Purchase Order. We will notify you of the anticipated delivery date or delivery date range upon receipt of the Purchase Order. Red Flint can better accommodate your delivery schedule the earlier we receive the Purchase Order.
2. Independent Laboratory Testing per Phase is included in the quoted price:

Test	Filter Sand	Anthracite
Gradations (ES, UC included)	1	1
Specific Gravity	1	1
Acid Solubility	1	1
Mohs' Hardness	---	1
Ash Content	---	1

- a. Please allow 3-4 weeks for testing results
 - b. No post shipment sampling or testing is included in the price
- 3. Shipping & Handling price is based on current rates and fuel surcharge. Actual rates and surcharge at the time of shipping will apply.** Delivery will be made via flatbed trucks; a forklift is needed to remove the pallets from the trucks. After the first hour of truck unloading, there is an \$85/hour demurrage charge for any further unloading time.
4. We advise all of our customers to account for the volatility of the shipping market in their project contingency plans. We will pass on increases, should they occur on this project, when we invoice. If reductions were to occur, we will also pass on those savings at invoice.
5. Bulk Density of Sand & Gravel = 100 lb/cubic foot.
6. Bulk Density of Anthracite = 50 lb/cubic foot.
7. Prior to accepting a purchase order, Red Flint will provide updated and current freight rates. The freight rates at time of shipping will apply; rates will be updated after purchase order no less than every 30 days for the duration of the project as freight rates change
- 8. Anthracite coal pricing and availability is extremely volatile, and pricing and availability are quoted based on current availability. This quotation is an estimate based on current pricing and availability and is not guaranteed. Actual anthracite price may change prior to shipment, and Red Flint will advise the customer of any anticipated price or lead time increases prior to shipment. Red Flint will immediately re-quote as conditions change and the purchase order pricing will be adjusted accordingly.**
9. Purchaser to verify quantities prior to placing an order
10. Quantity based on 12 filters: 3 filters with 440 sqft each and 9 filters 462 sqft each
11. An additional 1.5" filter sand and 3" anthracite included for skimming allowance.
12. Red Flint guarantees the media will meet the specifications before it leaves our facility and once it arrives onsite. Any post-shipment sampling and testing shall be performed by a technician familiar with sampling and testing water filtration media. Red Flint shall approve the laboratory selected for post-shipment testing. Post-shipment sampling and testing is not included in our proposal
13. All post-shipment sampling shall be performed prior to installation and handling of the media. If the sampling and testing is done after the media is installed, it shall be for the Owner/Engineer's records and not used as a basis for approval or rejection.

14. Red Flint shall not be liable for any delay or failure in delivering any of the products if such delay or failure shall be due to one or more of the following causes: fire, strike, lockout, dispute with workmen, pandemic, flood, lightning, accident, delay in transportation, shortage of fuel, inability to obtain material within quoted prices, war, embargo, demand or requirement of the United States or any governmental or war activity, or any other cause whatsoever beyond the reasonable control of Red Flint. In addition, Red Flint shall not be liable for any delays or failure attributable to failure of any materials supplier or freight carrier to perform any of its obligations in a timely manner. In the event of any such delay, Red Flint's obligations related to such products shall be excused for the period of such delay and the time for the performance shall be extended by a period equivalent to such delay.

Media Characteristics:

Filter Sand

- a. Specific Gravity: > 2.6
- b. Acid Solubility: < 5%
- c. Silica Content: > 85%

Anthracite

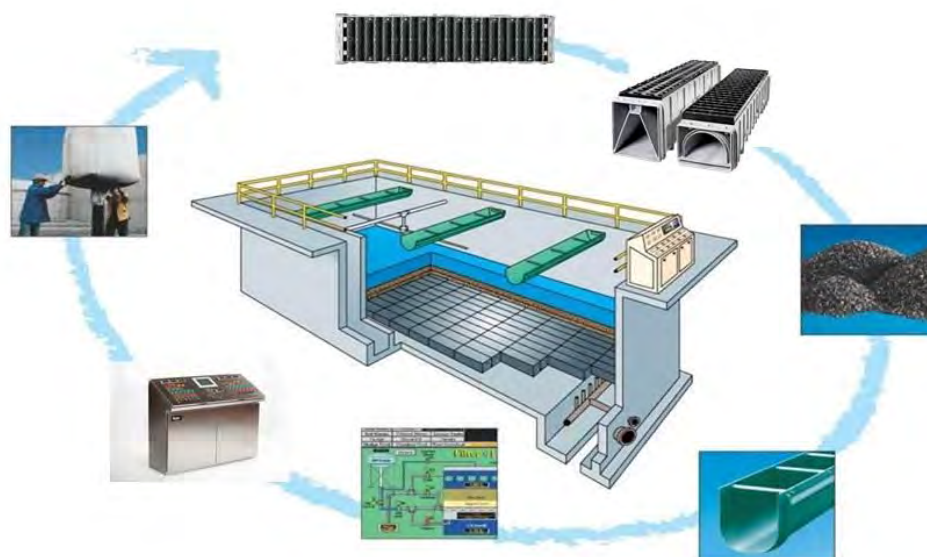
- a. Specific Gravity: > 1.55
- b. Acid Solubility: < 2%
- c. Mohs Hardness: > 2.7 (exception to the specification)
- d. Ash Content: < 15%

Please advise if we can be of further assistance by calling Red Flint at (715) 855-7600 or you can email me at kaylie.berlin@redflint.com. Purchase orders can be sent to sales@redflint.com. Thank you for considering Red Flint Sand and Gravel.

Firm Proposal – Filter Media

Ralston WTP

Arvada, CO



Prepared for:

PCL

7/6/2022



Xylem Water Solutions USA, Inc.
108 Tomlinson Dr – Suite 400
Zelienople, PA 16063
Mr. Wayne Steen
Direct: 724-453-2111
Mobile: 724-272-2905
Email: wayne.steen@xylem.com

7/6/2022

Project name : Arvada, CO
Project number : I19222

To Whom It May Concern:

Based on your inquiry, we are pleased to forward the following proposal to your attention. Thank you for the opportunity to offer our equipment and services for the Arvada, CO, Ralston WTP project.

We hope that our proposal meets your expectation. If you have any questions, please do not hesitate to contact me or our local representative.

Respectfully,

Wayne Steen
Senior Sales Engineer

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1 Technical Description

1.1 SCOPE OF SUPPLY

We are pleased to offer the following materials and services by Xylem Water Solutions USA, Inc. This quotation has been prepared using SECTION 44 43 30 FILTER MEDIA and the provided 30% drawings.

FILTER MEDIA:

	(9) filter cells, 462 square feet each TOTAL FILTER AREA: 4,158 square feet
4,184 cubic feet	SILICA SAND 10" Depth plus 1 1/2" skimming allowance and 5% extra Effective size: 0.55 mm to 0.65 mm Uniformity coefficient: 1.40 209 Tons
10,741 cubic feet	FILTER ANTHRACITE 28" Depth plus 3" skimming allowance Effective Size: 1.00 mm to 1.10 mm Uniformity coefficient: 1.40 269 Tons
	(3) filter cells, 420 square feet each TOTAL FILTER AREA: 1,260 square feet
1,268 cubic feet	SILICA SAND 10" Depth plus 1 1/2" skimming allowance and 5% extra Effective size: 0.55 mm to 0.65 mm Uniformity coefficient: 1.40 64 Tons
3,255 cubic feet	FILTER ANTHRACITE 28" Depth plus 3" skimming allowance Effective Size: 1.00 mm to 1.10 mm Uniformity coefficient: 1.40 82 Tons

Submittals:

Materials meet and/or exceed American Water Works Association Standard B100 (latest revision) for Filtering Material. Typical samples and/or test reports detailing the physical and chemical characteristics of the filtering material will be provided for review and approval as required by the specification. If independent testing is required per specification, test reports of the actual material produced will be submitted for approval prior to release for shipment.

Packaging and Placement of Materials:

Material will be packaged in semi-bulk containers, "Super Bags," with lifting sleeves and bottom discharge spout, containing approximately 2,000 to 4,000 pounds per sack. **Pallets are not included in this proposal and can be provided for an additional charge.**

Quantities:

Quantities indicated above are Xylem Water Solutions USA, Inc best calculations of the quantity requirements. Five percent (5%) extra sand is included to cover incidental damage or loss. Any additional loss of sand due to storage or handling is not covered by this proposal.

1.2 SERVICES

MANUFACTURER'S SERVICES:

Not Included. Services may be obtained at the current prevailing rate plus living and travel expenses.

2 Technical Clarification & Deviations

MEDIA AVAILABILITY FOR FIRST HALF SHIPMENT OF MATERIAL WOULD BE APPROXIMATELY NOV/DEC OF 2022 DUE TO PRIOR COMMITMENTS AND CURRENT WORKLOAD.

1. SECTION 44 43 30, 1.02, D, 2- Leopold does not perform delivered media testing or Installed media testing. Leopold performs pre-shipment testing only. Leopold takes exception to providing delivered and installed media testing. If you would like to witness sampling, you can visit our mill or do a zoom call to witness and you can watch the process.

Delivered or installed media sampling and testing must be performed by an independent laboratory experienced in both filter media sampling and testing and have the appropriate sampling tools. Leopold highly recommends Pennoni or GeoScience Engineering as

acceptable testing laboratories. Leopold is not providing cost for Delivered or installed media testing. This shall be provided by others. Additionally, delivered or installed media testing only needs to show that the delivered media meets the project specifications, as there are acceptable range(s) of test results allowed in many of the ASTM procedures of AWWA B100-16. Leopold is not responsible for delays due to onsite media acceptance testing variances from pre-shipment testing.

2. SECTION 44 43 30, 3.02, C, 4- Leopold does not perform delivered media testing or Installed media testing. Also, the act of skimming changes the gradation characteristics of the media since the finer grains (along with some coarse grains) are removed from the media. The media producers do not control the process nor the degree or effectiveness of the skimming. Typically installed media testing is conducted for informational purposes only, which would be acceptable. Leopold is not responsible for delays due to onsite media acceptance testing variances from pre-shipment testing.
3. SECTION 44 43 30, 3.02, D, 5- Leopold does not perform delivered media testing or Installed media testing. Also, the act of skimming changes the gradation characteristics of the media since the finer grains (along with some coarse grains) are removed from the media. The media producers do not control the process nor the degree or effectiveness of the skimming. Typically installed media testing is conducted for informational purposes only, which would be acceptable. Leopold is not responsible for delays due to onsite media acceptance testing variances from pre-shipment testing.

3 Price & Scope of Supply

3.1 MAIN SCOPE

BASIS of PRICING:

Any items and/or accessories not specifically called out in this quotation must be construed as being furnished by others.

This quotation is considered firm for 60 days. Any order received more than 60 days after the date of this quotation is reviewed by Xylem Water Solutions USA, Inc. before acceptance and is subject to changes in prices or delivery depending on conditions existing at the time of entry. Quoted prices are firm for delivery within 12 months from the delivery date stipulated in the plans & specifications or mutually agreed upon by Xylem Water Solutions USA, Inc. and Purchase Order issuer at time of order placement.

We do not include any applicable taxes.

Orders resulting from this quotation should be addressed to Xylem Water Solutions USA, Inc.
108 Tomlinson Drive Suite 400 – Zelienople, PA 16063, USA.

We propose to furnish the material described in this document for **a total selling price of \$549,890.00.**

Pricing for the equipment and field services outlined in this proposal, DAP Jobsite per Incoterms 2020.

For further information pertaining to the equipment contained in this proposal, please contact our area representative, who is:

isiWest
4175 Mulligan Dr.
Longmount, CO 80504
Phone: 970.535.0571
Cell: 970.691.0805

Attention: Chase Knox

Pricing is based on the following payment terms (net 30 days):
10% following initial submittal for approval
80% following the date of the respective shipments of the product
5% following installation, not to exceed 150 days after shipment of the product
(whichever comes first)

**5% following start-up, not to exceed 180 days after shipment of the product
(whichever comes first)**

4 Commercial Terms & Conditions

4.1 DELIVERY SCHEDULE

4.1.1 Production schedule

Submittal of mechanical drawings for approval 4 to 6 weeks after order acceptance.

4.1.2 Delivery time

See Media Availability note above. Pending timely receipt of PO.

FILTER MEDIA WARRANTY (if applicable): SELLER warrants that its filter media products will meet the standards established by the latest edition of AWWA (American Water Works Association) B100. SELLER shall be responsible for verifying that the filter media meets or exceeds the AWWA B100 Standard at the point of sale. Testing shall be by an independent laboratory, which regularly performs testing of filter media. BUYER shall notify Xylem Water Solutions USA, Inc. immediately upon discovery of any defective product. The SELLER shall have the right to inspect said product and BUYER shall, if requested, return the defective product to the SELLER with transportation prepaid. NO LIABILITY IS ASSUMED BY THE SELLER UNDER ANY CIRCUMSTANCES FOR LABOR, MATERIAL OR OTHER COSTS ASSOCIATED WITH THE REMOVAL OR REPLACEMENT OF MEDIA UNLESS PREVIOUSLY APPROVED IN WRITING BY AN AUTHORIZED EMPLOYEE OF THE SELLER.

4.2 TERMS AND CONDITIONS OF SALE – NORTH AMERICA

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted. Terms are available at <http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx> and incorporated herein by reference and made a part of the agreement between parties.

Different terms are hereby rejected unless expressly assented to in writing.

AGREEMENT TO PURCHASE: BUYER agrees to purchase the equipment and services herein in accordance with the terms and conditions set forth above.

ACCEPTANCE: SELLER hereby accepts BUYER'S offer to purchase.

(BUYER)

Xylem Water Solutions USA, Inc.

BY: _____

BY: _____

_____, 20 _____

_____, 20 _____



ARVADA FILTERS, SOLIDS HANDLING, AND CLARIFIER REHABILITATION PROJECT
FILTER MEDIA BID PACKAGE

EXHIBIT A

INSTRUCTIONS TO BIDDERS

1. Complete bid proposals will be received by PCL Construction, Inc, the Construction Manager at Risk for the referenced project, at no later than **July 6th, 2022 @ 11:00am** for the **Filter Media Supply** scopes complete as shown on the Contract Drawings and the Specifications. Proposals shall be submitted electronically via email to Justin McRae (jwmcrae@pcl.com). Contact Justin McRae or Jessie Gloor (jgloor@pcl.com) with any questions on how to submit your proposal. All scopes shall be in conformance to all requirements detailed in the drawings and specifications including but not limited to the following:

DIVISION 0 – PROCUREMENT & CONTRACTING REQUIREMENTS (As it pertains to the Supplier's scope)(Upcoming)

DIVISION 1 – GENERAL REQUIREMENTS (As it pertains to the Supplier's scope)(Upcoming)

DIVISION 44 – POLLUTION AND WASTE CONTROL EQUIPMENT (As it pertains to the Supplier's scope)

Scope Clarification(s):

Work shall include, but not be limited to, the furnish of all;

- Filter media scope, namely, but not limited to:
 - Supply of all sand and anthracite per the drawings and specifications.
 - Delivery to site at the Ralston Treatment Plant.
 - Any additional media required for testing per the specifications.
 - Testing services per section 2.04 Source Quality Control.

The following scope is provided by others:

- Installation of supplied filter media.

The following documents are referenced in the preparation of bid:

- WXXZ9601_City_of_Arvada_Ralston_WTP_30% Drawings_Client_Review_05.25.22
- WXXZ9601_City_of_Arvada_Ralston_WTP_30% Spec List
- 44_43_30B_Filter_Media

2. PCL reserves the right to hold bid clarification meetings with the bidders after the bid date to ensure scope coverage and understanding of the project. After holding this clarification meeting, PCL reserves the right to reject bids that do not cover the entire scope of work addressed in this bid package.



ARVADA FILTERS, SOLIDS HANDLING, AND CLARIFIER REHABILITATION PROJECT
FILTER MEDIA BID PACKAGE

3. All bids must be submitted on the enclosed Bid Proposal Form (Exhibit C) with no exceptions taken to the scope of work. Through submission of a proposal, the Subcontractor will be bound by the terms and conditions as indicated therein.
4. The Notice to Proceed (NTP) date is tentatively scheduled for September 16th, 2022 – specifically in order to expedite procurement of . Required date for Substantial Completion of the ATS installation and transformer relocation is May 15, 2023 which will start warranties for all items associated with this scope of work. The Final Completion date of the overall project is projected as September 22, 2023.
5. All pricing shall remain valid for (120) one-hundred-twenty calendar days. Include anticipated escalation, if any, in bid price.
6. Bid bond, builders risk insurance, performance and payment bonds, as well as Colorado Sales Tax on permanent materials are to be excluded from the bid.
7. PCL reserves the right to waive any and all informalities or irregularities in any bid proposal received. Furthermore, PCL, along with Owner's approval, reserves the right to reject any and all bids.
8. The bidder is responsible to review the following attachments:
 - a. Sample Purchase Order Terms and Conditions
 - b. Prime Contract
 - c. Preliminary Project Schedule
9. Questions and/or requests for additional information should be directed to both Jessie Gloor (jgloor@pcl.com) and Justin McRae (jwmcrae@pcl.com). All comments and/or questions should be submitted in writing to PCL and not to the Design Engineer or the Owner. Questions must be received 5 days prior to bid deadline to be considered. Written responses will be distributed as an addendum to all bidders. (Only communication between bidder and PCL addressed in a written addendum will be considered during contract negotiations).



**ARVADA FILTERS, SOLIDS HANDLING, AND CLARIFIER REHABILITATION PROJECT
FILTER MEDIA BID PACKAGE**

EXHIBIT B

SUPPLIER ACKNOWLEDGEMENT

The subcontractor shall demonstrate acceptance by initialing each of the following items:

Acknowledgement

Bidder Initial

Bidder acknowledges and accepts the PCL contract standard Terms and Conditions attached to bid documents.

To be negotiated and also please see
Mutual Waiver and Limitation of Liability
included below

Bidder has reviewed and accepts all applicable divisions of Specifications.

Refer to exceptions included in proposal
I19222

Bidder shall include all freight charges necessary per preliminary PCL Schedule for a total of 4 separate deliveries.

WRS

Bidder will begin submittal process after receiving a Letter of Intent but prior to receiving a subcontract.

Submittal process to start after receipt of
Purchase Order

Bidder has reviewed and agreed to durations listed in project schedule for delivery dates. If durations are not agreed upon, clarify with suggested durations and submit with bid pricing.

Refer to delivery dates included in proposal
I19222

Mutual Waiver and Limitation of Liability

BUYER and SELLER (inclusive of their respective officers, directors, members, partners, subcontractors, and employees) shall not be liable to each other for loss of profit or revenue, loss of use or business opportunity, loss of contract, cost of obtaining alternative performance, or for any indirect, consequential, special, incidental and punitive damages. The aggregate liability of each party, whether under contract law, in tort, or otherwise, is limited to the Purchase Order price ("Cap"). This Cap does not apply to: (a) costs, losses, or damages asserted by third parties for destruction of tangible property, bodily injury, sickness, or death; or (b) gross negligence or willful misconduct. To the extent the Purchase Order provides a remedy for a given default, it is the sole and exclusive remedy available in lieu of any/all other remedies available at law, in equity, or otherwise. This Clause prevails over all other Purchase Order clauses.

Instructions:

The highlighted language should be changed as appropriate to how Xylem and our Customer are referred to in their document

Example: Instead of Buyer and Seller it could be: Purchaser and Vendor; Buyer and Supplier; Contractor and Sub-Contractor

Example: Instead of Purchase Order it could be: Material Contract, Contract Agreement, Sub-Contract, Agreement



ARVADA FILTERS, SOLIDS HANDLING, AND CLARIFIER REHABILITATION PROJECT
FILTER MEDIA BID PACKAGE

EXHIBIT C

BID PROPOSAL FORM

Please indicate your quote in the spaces provided below:

Filter Media Supply Complete \$ 549,890.00

TOTAL BID PRICE \$ 549,890.00

Submittal Lead Time Please refer to proposal I19222

Procurement Lead Time Please refer to proposal I19222

SIGNED BY:

(Supplier) Xylem Water Solutions, USA Inc. (Leopold Brand)

(Print Name) Wayne Steen

(Title) Territory Manager

(Signature and Date) July 7, 2022

60% Filters

Project: Ralston WTP - Filters 60%
City of Arvada, CO

Pipe Scope Sheet

[illegible]

[illegible]

CUSTOM PIPING SYSTEMS L.L.C.

PROVIDING CUSTOM FABRICATIONS FOR THE WATER & WASTEWATER INDUSTRIES

4230 Milling Rd. San Antonio, Texas 78219

Ph: 210-867-6356

Barry@custompipingsystems.com

09/26/2022

Core and Main

Attn: Scot Andreano

Ralston Water Treatment Plant

Materials for this quotation are globally sourced.

Pipe: ASTM A53 Grade Std Wt. Carbon Steel

Fittings: ASTM A234 Std Wt. Carbon Steel

Flanges: AWWA Class D 150#

Linings: Cement mortar per AWWA C205

Coatings: Prime coated Tnemec N140 4-6 mils DFT

[Material is quoted FFA](#)

1. 2ea 24" FLG X FLG SPOOLS DWG F-D-2005
2. 6ea 12" FLG X FLG SPOOLS DWG F-D-3005
3. 3ea 16X12 TEE WITH 16X 1/2" BLIND DWG F-D-3004
4. 6ea 12" FLG X FLG SPOOLS DWG F-D-3003
5. 9ea 12" FLG X FLG SPOOLS DWG F-D-2002

[\\$45,783.00 Lot](#)

Quote does not include NBGK, couplings, valves, monitoring equipment or nondestructive testing.

Sincerely,



Barry Golobek

1

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A

B

C

D

PIPING SCHEDULE													
SERVICE	FLOW STREAM	SIZE(S) (INCHES) (NOTE 1)	EXPOSURE (NOTE 2)	PIPING MATERIAL (NOTE 3)	SPECIFICATION SECTION	JOINT TYPE (NOTE 4)	FLANGE	LINING (NOTE 5)	COATING (NOTE 6)	TEST PRESSURE AND TYPE (PSIG) (H = HYDROSTATIC, G = GRAVITY, P = PNEUMATIC) (NOTE 7)	PIPE / BACKGROUND COLOR (NOTE 8)	LETTER COLOR	NOTES
SURFACE WASH	SFW	ALL	IN EXP	CIP	40 27 00.06	FL, S	AWWA C115	N/A FOR NEW	SYSTEM 1	SERVICE	BLUE	WHITE	OUTSIDE FILTERS MATCH EXISTING COLOR
	SFW	ALL	SUB	CS	40 27 00.07	S	N/A	GALVANIZED	SYSTEM 10	SERVICE	BEIGE	WHITE	INSIDE FILTERS MATCH EXISTING COLOR
BACKWASH WASTE	BWW	ALL	SUB ENC	CS	40 27 00.03	W, FLG	AWWA C207 CLASS B	CML	SYSTEM 1 (SUBMERGED) SYSTEM 7 (ENCASED)	SERVICE	BROWN	WHITE	MATCH EXISTING COLOR
BACKWASH SUPPLY	BWS	ALL	IN EXP	CS	40 27 00.03	W, FLG	AWWA C207 CLASS B	CML	SYSTEM 6	SERVICE	BLUE	WHITE	MATCH EXISTING COLOR
FILTER EFFLUENT	FE	ALL	IN EXP	CS	40 27 00.03	W, FLG	AWWA C207 CLASS B	CML	SYSTEM 6	SERVICE	BLUE	WHITE	MATCH EXISTING COLOR
SAMPLE - FILTER EFFLUENT	SA/FE	ALL	IN EXP	CS	40 27 00.03	W, S	N/A	N/A	SYSTEM 6	SERVICE	BLUE	N/A	MATCH EXISTING COLOR
SAMPLE - COMBINED FILTER EFFLUENT	SA/CFE	ALL	IN EXP SUB	PVC	40 27 00.10	SLV, S	N/A	N/A	N/A	SERVICE	GRAY	N/A	
PLANT AIR	PA	ALL	IN EXP	COP	40 27 00.13	W, S	N/A	N/A	SYSTEM 10	PNEUMATIC SERVICE TEST, 135	GREEN	N/A	MATCH EXISTING COLOR

NOTES:

1. ">" GREATER THAN
" <" LESS THAN
" <=" LESS THAN OR EQUAL TO
">=" GREATER THAN OR EQUAL TO
"ALL" ALL SIZES

2. EXPOSURE TYPE:
ALL - ALL
BUR - BURIED
IN EXP - INSIDE EXPOSED
SUB -SUBMERGED
OUT EXP - OUTDOOR EXPOSED
ENC - ENCASED IN CONCRETE

3. PIPING MATERIAL:
CIP -CAST IRON PIPE
COP - COPPER
CPVC - CHLORINATED POLYVINYL CHLORIDE
CS - CARBON STEEL
DIP - DUCTILE IRON PIPE
DWCP - DOUBLE WALL CONTAINED PIPE
FRP - FIBERGLASS REINFORCED PLASTIC
HDPE - HIGH DENSITY POLYETHYLENE
PVC - POLYVINYL CHLORIDE
PVDF - POLYVINYLIDENE FLUORIDE
SST - STAINLESS STEEL
WS - WELDED STEEL

4. JOINT TYPE:
FB - FUSION BONDED
FLG - FLANGED
GE - GROOVED END
HU - HUB AND SPIGOT
MJ - MECHANICAL JOINT
PRJ - PROPRIATARY RESTRAINED JOINT
RGK - RUBBER GASKET
S - SCREWED
SLV - SOLVENT WELD OR ADHESIVE
W - WELDED, SOCKET WELDED, BRAZED/SOLDERED

5. LINING TYPE:
CML-CEMENT MORTAR LINED
GLASS - GLASS LINING
EPX - EPOXY

6. COATING SYSTEM NUMBER AS SPECIFIED IN SECTION 09 90 00, PAINTING AND COATING.

7. REFER TO SPECIFICATION SECTION 40 80 01 PROCESS PIPING LEAKAGE TESTING FOR PROCESS PIPING.

8. REFER TO IDENTIFICATION REQUIREMENTS SPECIFIED IN 40 27 00, PROCESS PIPING AND SECTION 09 90 00, PAINTING AND COATING. ALL SERVICES CONNECTED TO EXISTING PIPING IN THE PLANT SHALL MATCH EXISTING LABELING AND COLOR CODING SYSTEM. CONTRACTOR SHALL VERIFY ALL PIPE LABEL AND LETTERING COLORS WITH RESIDENT PROJECT REPRESENTATIVE PRIOR TO INSTALLATION.

Jacobs

GENERAL

PIPE SCHEDULE

FILTER IMPROVEMENTS PROJECT
RALSTON WATER TREATMENT PLANT
CITY OF ARVADA
ARVADA, COLORADO

NO. DATE

DR

CHK

REVISION

APVD

BY

APVD

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE AUGUST 2022

PROJ WXXZ9601

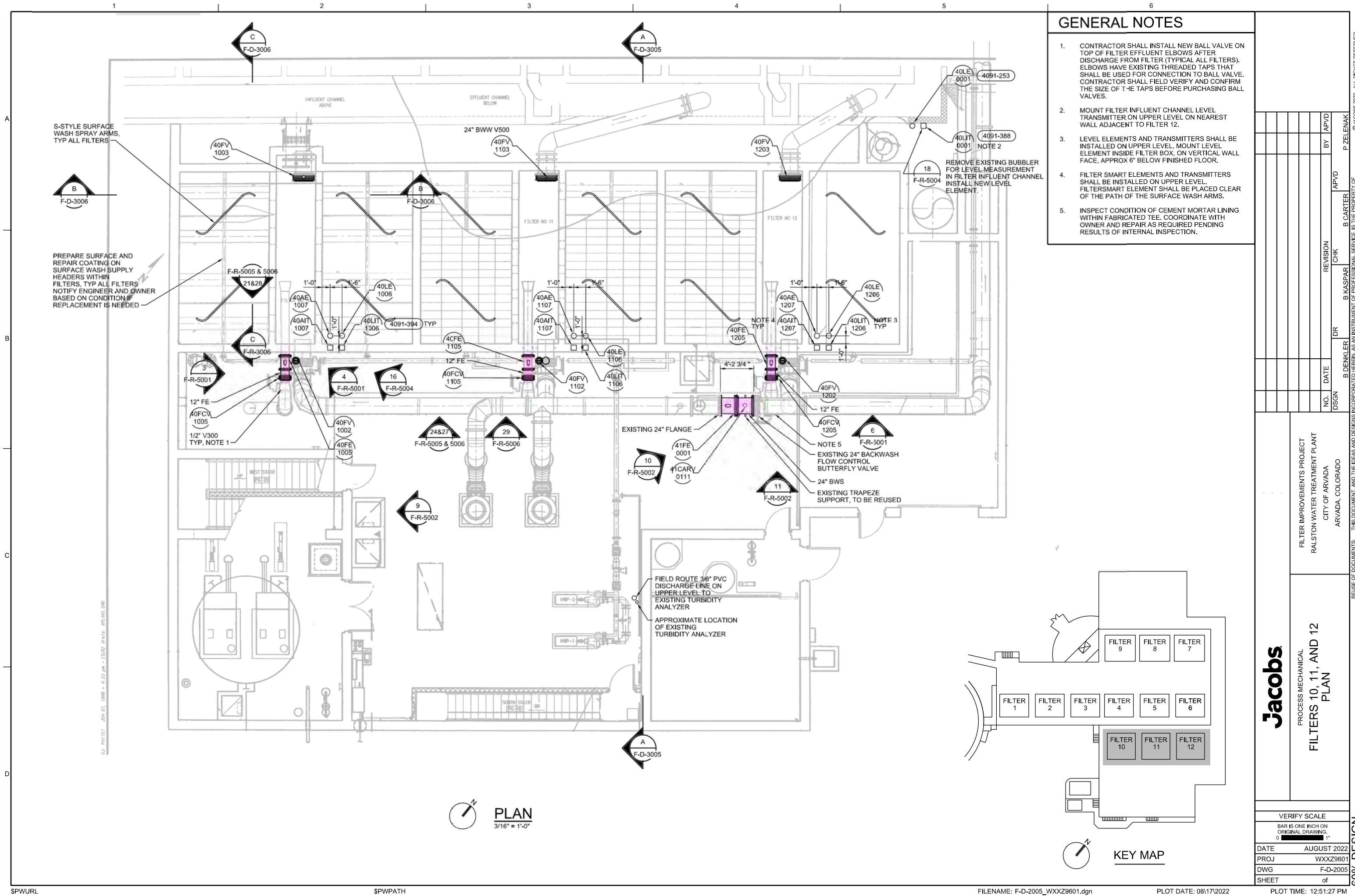
DWG F-G-0021

SHEET of

60% DESIGN

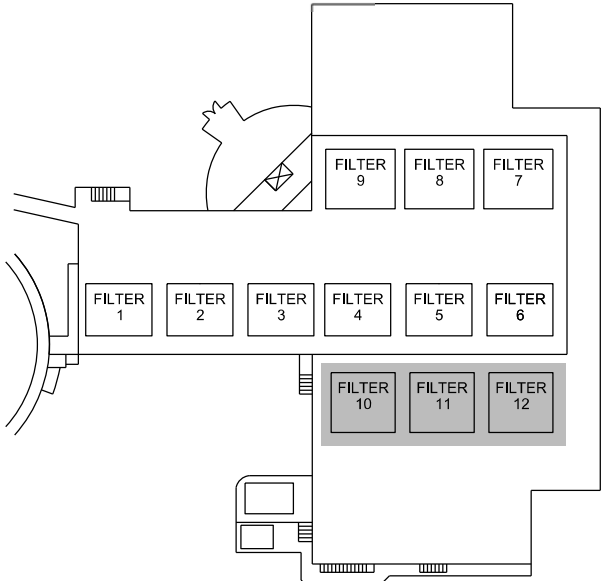
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GENERAL NOTES

- CONTRACTOR SHALL INSTALL NEW BALL VALVE ON TOP OF FILTER EFFLUENT ELBOWS AFTER DISCHARGE FROM FILTER (TYPICAL ALL FILTERS). ELBOWS HAVE EXISTING THREADED TAPS THAT SHALL BE USED FOR CONNECTION TO BALL VALVE. CONTRACTOR SHALL FIELD VERIFY AND CONFIRM THE SIZE OF TEE TAPS BEFORE PURCHASING BALL VALVES.
- MOUNT FILTER INFLUENT CHANNEL LEVEL TRANSMITTER ON UPPER LEVEL ON NEAREST WALL ADJACENT TO FILTER 12.
- LEVEL ELEMENTS AND TRANSMITTERS SHALL BE INSTALLED ON UPPER LEVEL. MOUNT LEVEL ELEMENT INSIDE FILTER BOX, ON VERTICAL WALL FACE, APPROX 6" BELOW FINISHED FLOOR.
- FILTER SMART ELEMENTS AND TRANSMITTERS SHALL BE INSTALLED ON UPPER LEVEL. FILTERSMART ELEMENT SHALL BE PLACED CLEAR OF THE PATH OF THE SURFACE WASH ARMS.
- INSPECT CONDITION OF CEMENT MORTAR LINING WITHIN FABRICATED TEE. COORDINATE WITH OWNER AND REPAIR AS REQUIRED PENDING RESULTS OF INTERNAL INSPECTION.



KEY MAP

Jacobs

PROCESS MECHANICAL
FILTERS 10, 11, AND 12
PLAN

VERIFY SCALE	
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PROJ	WXXZ9601
DWG	F-D-2005
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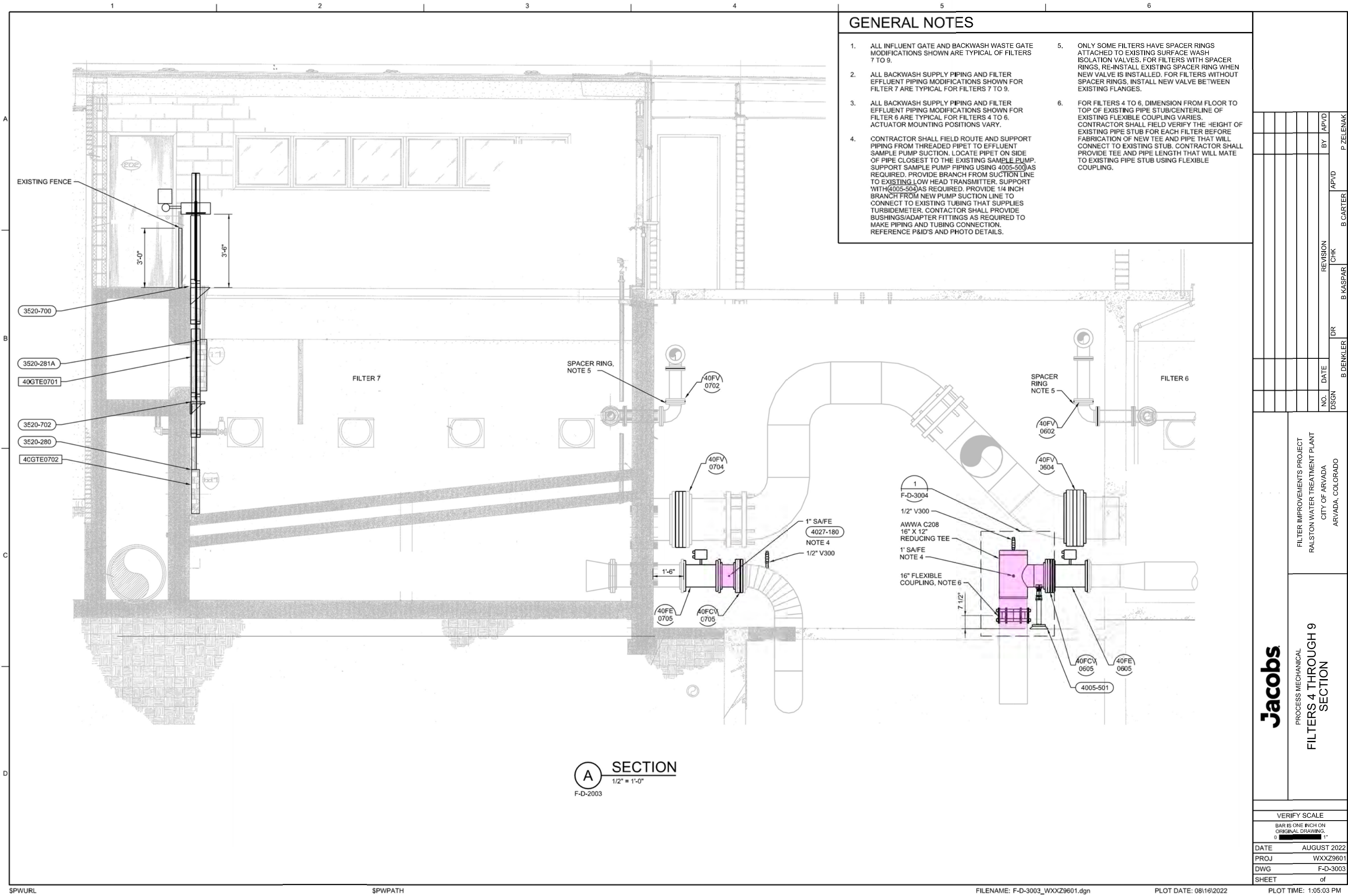
FILTER IMPROVEMENTS PROJECT
RALSTON WATER TREATMENT PLANT
CITY OF ARVADA
ARVADA, COLORADO

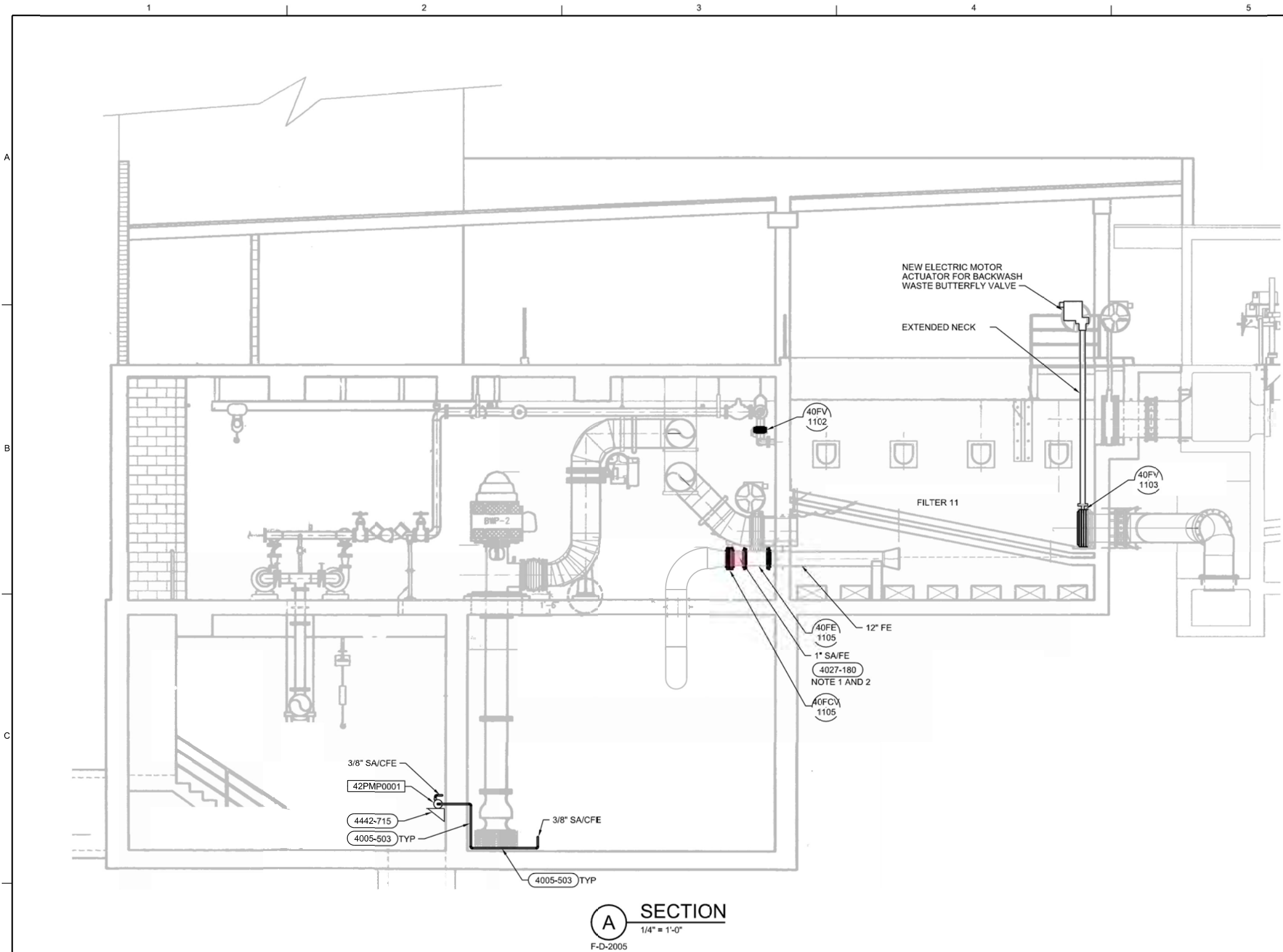
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B DENKLER
B KASPAR
P ZELENAK

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GENERAL NOTES

1. CONTRACTOR SHALL FIELD ROUTE AND SUPPORT PIPING FROM THREADED PIPET TO EFFLUENT SAMPLE PUMP SUCTION. LOCATE PIPET ON SIDE OF PIPE CLOSEST TO THE EXISTING SAMPLE PUMP. SUPPORT SAMPLE PUMP PIPING USING 4005-500 AND 4005-521 AS REQUIRED. REFERENCE P&IDS AND PHOTO DETAILS. REFERENCE P&IDS AND PHOTO DETAILS.
2. CONTRACTOR SHALL FIELD ROUTE AND SUPPORT 1/2 INCH PIPING FROM THREADED PIPET TO EXISTING TURBIDITY ANALYZER. PROVIDE BRANCH AND ROUTE TO EXISTING LOW HEAD TRANSMITTER. FIELD VERIFY REQUIRED SIZE OF CONNECTION TO LOW HEAD TRANSMITTER. SUPPORT PIPING USING 4005-500 AND 4005-521 AS REQUIRED.
3. MODIFICATIONS TO BWS, BWW, FE, AND SAMPLE PIPING AND VALVES SHOWN ON THIS SHEET ARE TYPICAL FOR FILTERS 10 THROUGH 12.

Jacobs

PROCESS MECHANICAL
FILTERS 10, 11, AND 12
SECTION

FILTER IMPROVEMENTS PROJECT
RALSTON WATER TREATMENT PLANT
CITY OF ARVADA
ARVADA, COLORADO

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	AUGUST 2022
PROJ	WXXZ9601
DWG	F-D-3005
SHEET	of

60% DESIGN

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B DENKLER
DR

B KASPAR
CHK

B CARTER
APVD

P ZELENAK
BY

APVD

60% Solids

Supplier: _____
Contact: _____
Phone: _____

Project:

Ralston WTP
Arvada, CO

Pipe Scope Sheet

Pipe Materials Takeoff

Row #	Description	Q-ty	Unit	Group	UNIT Price, USD	Total Price, USD	Comments
	3/4" Washer HDG	80.	EA			0.45	
	1" All-Thread Rod 316SS	46.	LF			34	
	1" Nut 316SS	92.	EA			4.4	
	1" Washer SS	92.	EA			1.5	
	3" B+N Set STL150# A193 GrB8M	16.	EA			34.025	
	3" Gasket SBR 150#	16.	EA			2.8	
	3" Flange Insulation Kit 150#	16.	EA			67.15	
	4" B+N Set STL150# A193 GrB8M	4.	EA			67.55	
	4" B+N Set STL150# A307 GrB	40.	EA			14.9	
	4" x 1/8" EPDM Gasket	40.	EA			8.15	
	4" Gasket SBR 150#	4.	EA			4.5	
	4" Flange Insulation Kit 150#	4.	EA			98.125	
	6" B+N Set STL150# A193 GrB8M	16.	EA			102.075	
	6" B+N Set STL150# A307 GrB	76.	EA			24.65	
	6" x 1/8" EPDM Gasket	71.	EA			13.75	
	6" Gasket SBR 150#	16.	EA			7.4	
	12" B+N Set STL150# A193 GrB8M	4.	EA			239.225	
	12" Gasket SBR 150#	4.	EA			14.775	
	24" B+N Set STL150# A193 GrB8M	20.	EA			972.4	
	24" x 1/8" EPDM Gasket	17.	EA			94.025	
	4" Carbon Steel Dismantling Joint	6.	EA			758.15	
	6" Carbon Steel Dismantling Joint	4.	EA			901.57	
	24" Flanged Coupling Adapter	8.	EA			4979.2	
	3" DI FLG C110 Blind Flange	16.	EA			51.86	
	4" DI FLG C110 Blind Flange CM/ Prime	4.	EA			90.36	
	4" DI FLG C110 Tee CM/ Prime	4.	EA			348.08	
	4"X10" FXF Spool CL53 CM/Prime	6.	EA			364.28	
	4"X16" FXF Spool CL53 CM/Prime	2.	EA			451.21	
	4"X2" DI FLG C110 Tapped Blind Flange CM/ Prime	4.	EA			128.86	
	4"X30" FXF Spool CL53 CM/Prime	4.	EA			524	
	6" DI FLG C110 Blind Flange CML/ Prime	16.	EA			134.36	
	6" DI FLG C110 22 Bend CM/ Prime	4.	EA			249.86	
	6" DI FLG C110 45 Bend CM/ Prime	10.	EA			262.43	
	6" DI FLG C110 90 Bend CM/ Prime	2.	EA			295.43	
	6" DI FLG C110 Long Radius 90 Bend CM/ Prime	2.	EA			370.86	
	6" DI FLG C110 Tee CM/ Prime	6.	EA			432.15	
	6"X10" FXF Spool CL53 CM/Prime	8.	EA			458.27	
	6"X10" TFXTF Wall Pipe CL53 CML/Prime	8.	EA			708.01	
	6"X100" FXF Spool CL53 CM/Prime	8.	EA			1320.74	
	6"X130" FXF Spool CL53 CM/Prime	1.	EA			1608.23	
	6"X160" FXF Spool CL53 CM/Prime	1.	EA			1895.72	
	6"X20" FXF Spool CL53 CM/Prime	2.	EA			554.1	
	6"X30" FXF Spool CL53 CM/Prime	2.	EA			649.93	
	6"X40" FXF Spool CL53 CM/Prime	2.	EA			745.76	
	6"X4" DI FLG C110 Concentric Reducer CM/ Prime	2.	EA			203.5	
	6"X4" DI FLG C110 Reducer Eccentric CM/ Prime	2.	EA			242	
	6"X4" DI FLG C110 Tee CM/ Prime	4.	EA			477.72	
	6"X50" FXF Spool CL53 CM/Prime	2.	EA			841.59	
	6"X70" FXF Spool CL53 CM/Prime	2.	EA			1033.25	
	12" MEGALUG	2.	EA			121.43	
	12" DI MJ Accy Set Less Gland - 316SS T-bolts	2.	EA			172.45	
	12" DI PIPE MJ CM/Tar	2.	LF			76.19	
	12"X10" DI MJ C110 Long Sleeve CML/ Tar	1.	EA			398.37	
	24" DI FLG C110 90 Bend CML/ Prime	2.	EA			4537.57	
	24" DI FLG C110 Tee CML/ Prime	2.	EA			6461.06	
	24" MEGALUG	8.	EA			540.28	
	24" DI MJ Accy Set Less Gland	6.	EA			115.51	
	24" DI MJ Accy Set Less Gland - 316SS T-bolts	2.	EA			253.01	
	24" DI PIPE MJ CM/Tar	2.	LF			171.73	
	24"X10" DI MJ C153 Long Sleeve CML/ Tar	2.	EA			1595.82	
	24"X10" DI MJ C110 Long Sleeve CML/ Tar	1.	EA			1595.82	
	24" DI MJ C153 Tee CML/ Tar	2.	EA			3382.57	
	24" DI Pipe TR-Flex PC350 CML/ Tar	204.	LF			275.44	
	24"X160" FXF Spool CL53 CML/Prime 8" Holes, 5' OC (9 Total), 1" Holes at 10' OC, Top & Bottom (18 Total)	4.	EA				
	24"X6" DI FLG C110 Tapped Blind Flange CML/ Prime	4.	EA			2757.14	
	6" 316SS Blind Flange	5.	EA			181.21	
	6" SS316L Fabricated Piping	85.	LF				
	3" HDPE 45 Ell DR35	24.	EA			17.74	
	3" HDPE 90 Ell	8.	EA			17.74	
	3" HDPE End Cap	16.	EA			8.91	
	3" HDPE Flange Adapter DR35	16.	EA	na			
	3" HDPE Tee	16.	EA			14.25	
	3" Perforated HDPE	4,012.	LF			2.01	ADS Discontinued the 3" ASTM F667, quoting all material as 4".
	4" HDPE Pipe DR35	140.	LF			3.77	4" PVC SDR-35
	4" HDPE 90 Ell	8.	EA			17.74	
	4" HDPE Flange Adapter DR35	4.	EA	na			
	4" HDPE Tee DR35	4.	EA			14.25	
	4" Corrugated Transition Coupling	8.	EA			24.93	
	4" Perforated HDPE	80.	LF			2.01	
	4"x3" HDPE Reducer	8.	EA			5.17	
	6" Flange Spacer Ring (.25" Thickness)	5.	EA				
	1/4" STL Trash Ring	5.	EA				
	1/2" Conc Anchor	10.	EA				
	3" Fernco Coupling	16.	EA			24.41	
	4" Harness Rod/Dog Ear KIT (2-rod) HDG	6.	EA			380.01	
	6" Harness Rod/Dog Ear KIT (2-rod) HDG	4.	EA			410.01	
	24" Harness Rod/Dog Ear KIT (4-rod) HDG	8.	EA			750.01	
	Rubber Valve Box Top Hat	5.	EA			75.01	
	Valve Box w.Cast Iron Frame & Lid	5.	EA			325	
	Buried Valve Operator Extension 7'	5.	EA			143.73	
	Buried Valve Operator Extension SST 15'	8.	EA			215.01	
	6"-10" Mech Seal (IL400 x 7ea) Set	8.	EA			140.63	
	12"-16" Mech Seal (IL360 x 22ea) Set	4.	EA			441.98	
	4" SS Wall Bracket Pipe Supp (CL 2')	16.	EA				
	6" HDG Wall Bracket Pipe Supp (CL 1')	20.	EA				
	16" U-Bolt SS	16.	EA				
	4" HDG Wall Bracket Pipe Supp (CL 1')	8.	EA				
	P666 Vertical Pipe Sway Brace	20.	EA				
	1/2" PVC SCH80 Pipe	100.	LF			1.2	
	1/2" PVC SCH80 SW 90 Bend	8.	EA			1.7	
	1/2" PVC SCH80 SW Male Adapter	34.	EA			3.61	
	1/2" PVC SCH80 SW Tee	6.	EA			4.81	
	1/2" PVC SCH80 SW Union	34.	EA			6.33	
	1/2" PVC SCH80 SW Coupl	8.	EA			3.09	
	1/2" PVC TU SW Y-Strainer	2.	EA			165.41	
	6" PVC DWV Pipe	35.	LF			12.25	

	1/2" Galv Sch80 Coupling THD	4.	EA		5.87
	1/2"x3" Galv S80 Nipple THD	4.	EA		3.51
	2"x3" Galv S80 Nipple THD	4.	EA		5.3
	1/2" Ball Valve Bronze THD	8.	EA		22.01
	1/2" Pressure Reducing Valve	2.	EA		443.51
	1/2" Bronze THD Globe Valve	2.	EA		74.01
	1/2" Solenoid Valve 2-Way THD NEMA 4	2.	EA		231.01
	2" Ball Valve Bronze THD	4.	EA		161.2
	4" Plug Valve FLG CI Body HW	6.	EA		1218.75
	4" Plug Valve FLG CI Body EMO	4.	EA		9862.5
	4" Check Valve FLG	2.	EA		1437.5
	6" Plug Valve FLG CI Body HW	4.	EA		1737.5
	12" Butterfly Valve FLG CI Body HW	4.	EA		2062.5
	12" Plug Valve MJ CI Body 2" Opt Nut	1.	EA		4087.5
	24" Butterfly Valve FLG CI Body Op Nut	2.	EA		8625
	24" Butterfly Valve MJ CI Body Op Nut	1.	EA		8625
	6"X10" SST Wall Sleeve W/Seep Ring	4.	EA		231.01
	14"X10" STL HDG Wall Sleeve W/Seep Ring	4.	EA		435.01
	12" DI PIPE MJ CM/Tar	50.	LF		76.19
	12" MEGALUG	12.	EA		121.43
	12" DI MJ Accy Set Less Gland	12.	EA		52.86
	12"X10" DI MJ C110 Long Sleeve CM/ Tar	4.	EA		386.37
	12" DI MJ C153 Flange Adapter CM/Tar	4.	EA		453.37
	12" Dresser Style Coupling	4.	EA		1039.76
	12"x8" DI MJ C153 TEE CM/Tar	2.	EA		566.51
	8" DI PIPE MJ CM/Tar	54.	LF		46.17
	8" DI MJ C153 Flange Adapter CM/Tar	2.	EA		204.29
	8" Megalug	6.	EA		56.39
	8" DI MJ Accy Set Less Gland	6.	EA		38.23

Andrew Greene

From: Andreano, Scot <Scot.Andreano@coreandmain.com>
Sent: Friday, September 16, 2022 9:20 AM
To: Andrew Greene
Subject: RE: Ralston WTP - Arvada, CO - Missing Steel Package Scope
Attachments: Missing 20 BWW.pdf

[External Email]

Andrew,

These are \$11,905 ea.

Please let me know if you have any questions.

Thanks,

Scot Andreano
Account Manager
Core & Main

9451 Yosemite Street
Henderson, CO. 80640
720-629-6281

scot.andreano@coreandmain.com



This message is for intended addressee(s) only and may contain confidential, proprietary or privileged information, exempt from disclosure, and subject to terms at: <http://emailterms.coreandmain.com> [emailterms.coreandmain.com]

From: Andrew Greene <AGreene@pcl.com>
Sent: Friday, September 9, 2022 2:29 PM
To: Andreano, Scot <Scot.Andreano@coreandmain.com>
Subject: Ralston WTP - Arvada, CO - Missing Steel Package Scope

CAUTION: External

Scot,

Taking a deeper look and asking questions to my lead I found (3) assemblies that I didn't add to the package. Attached is the information for those 3 lines.

Andrew Greene
Junior Estimator

PCL Construction, Inc.
1711 W. Greentree Drive, Suite 201
Tempe, AZ 85284
T : (480) 829-6333

W : (480) 763-2796

M: (442) 202-7415

agreene@pcl.com

www.pcl.com [nam04.safelinks.protection.outlook.com]

TOGETHER WE BUILD SUCCESS

PCL Construction, Ltd.
Proprietary and Confidential

Ralston WTP
City of Arvada, CO

30% Pipe Scope Sheet

Pipe Materials Takeoff

Supplier:
Contact:
Phone:

Description	Q-ty	Unit	Group	Combo	
				Unit Price	COMBO
6" B+N Set STL150# A307 GrB	67.	EA	BNG	\$ 16.43	\$ 1,100.81
12" B+N Set STL150# A307 GrB	42.	EA	BNG	\$ 39.90	\$ 1,675.80
8" B+N Set HDG150# A307 GrB	2.	EA	BNG	\$ 36.25	\$ 72.50
14" B+N Set HDG150# A307 GrB	18.	EA	BNG	\$ 100.22	\$ 1,803.96
16" B+N Set HDG150# A307 GrB	6.	EA	BNG	\$ 132.69	\$ 796.14
24" B+N Set HDG150# A307 GrB	18.	EA	BNG	\$ 326.26	\$ 5,872.68
6" B+N Set 316SS 150#	24.	EA	BNG	\$ 45.85	\$ 1,100.40
14" STUD+N Set 316SS 150#	6.	EA	BNG	\$ 288.43	\$ 1,730.58
20" B+N Set 316SS 150#	12.	EA	BNG	\$ 698.26	\$ 8,379.12
6" x 1/8" Buna-N Gasket	91.	EA	BNG	\$ 8.63	\$ 785.33
8" x 1/8" Buna-N Gasket	2.	EA	BNG	\$ 12.07	\$ 24.14
12" x 1/8" Buna-N Gasket	42.	EA	BNG	\$ 23.86	\$ 1,002.12
14" x 1/8" Buna-N Gasket	24.	EA	BNG	\$ 29.14	\$ 699.36
16" x 1/8" Buna-N Gasket	6.	EA	BNG	\$ 36.50	\$ 219.00
20" x 1/8" EPDM Gasket	12.	EA	BNG	\$ 39.74	\$ 476.88
24" x 1/8" Buna-N Gasket	18.	EA	BNG	\$ 67.71	\$ 1,218.78
				\$ -	\$ -
6" GxF Adapter	2.	EA	CPLG	\$ 303.22	\$ 606.44
14" Stainless Steel Dismantling Joint	12.	EA	CPLG	\$ 3,314.12	\$ 39,769.44
				\$ -	\$ -
3"X3'6" FXF Spool CL53 CM/Prime	2.	EA	DIP	\$ 744.77	\$ 1,489.54
4"X3'0" FXF Spool CL53 CM/Prime	2.	EA	DIP	\$ 466.12	\$ 932.24
6" DI FLG C110 Blind Flange CM/ Prime	2.	EA	DIP	\$ 119.70	\$ 239.40
6" DI FLG C110 45 Bend CM/ Prime	2.	EA	DIP	\$ 244.94	\$ 489.88
6" DI FLG C110 90 Bend CM/ Prime	3.	EA	DIP	\$ 275.74	\$ 827.22
6" DI FLG C110 Tee CM/ Prime	5.	EA	DIP	\$ 403.34	\$ 2,016.70
6"X11'0" FXF Spool CL53 CM/Prime	2.	EA	DIP	\$ 1,255.61	\$ 2,511.22
6"X3" DI FLG C110 Concentric Reducer CM/ Prime	2.	EA	DIP	\$ 198.74	\$ 397.48
6"X4'0" FXF Spool CL53 CM/Prime	2.	EA	DIP	\$ 661.63	\$ 1,323.26
6"X4" DI FLG C110 Concentric Reducer CM/ Prime	2.	EA	DIP	\$ 189.94	\$ 379.88
6"X6'0" FXG Spool CL53 CM/Prime	2.	EA	DIP	\$ 831.34	\$ 1,662.68
6"X7'0" FXF Spool CL53 CM/Prime	2.	EA	DIP	\$ 916.19	\$ 1,832.38
				\$ -	\$ -
4" STL Fab Pipe CML&C	480.	LF	STL	\$ 120.00	\$ 57,600.00
8" STL Fab Pipe CML&C	25.	LF	STL	\$ 312.00	\$ 7,800.00
12" STL Fab Pipe CML&C	45.	LF	STL	\$ 429.00	\$ 19,305.00
14" STL Fab Pipe CML&C	30.	LF	STL	\$ 390.00	\$ 11,700.00
16" STL Fab Pipe CML&C	15.	LF	STL	\$ 585.00	\$ 8,775.00
24" STL Fab Pipe CML&C	300.	LF	STL	\$ 630.00	\$ 189,000.00
				\$ -	\$ -
4" HDPE Perforated	4,000.	LF	HDPE	\$ 25.54	\$ 102,160.00
6" HDPE Perforated	260.	LF	HDPE	\$ 40.25	\$ 10,465.00
				\$ -	\$ -
1-1/2" Cam Lock	2.	EA	MISC	\$ 55.00	\$ 110.00
6"X 6" SST Tapping Sleeve	3.	EA	MISC	\$ 1,064.07	\$ 3,192.21
12" Flange Slip-On STL 150#	48.	EA	MISC	\$ 247.40	\$ 11,875.20
16"x2" Blind Tapped Flange STL 150#	3.	EA	MISC	\$ 747.14	\$ 2,241.42
16" Flange Slip-On STL 150#	6.	EA	MISC	\$ 302.86	\$ 1,817.16
Cast Iron Valve Box w/ 10'-0" Extension	1.	EA	MISC	\$ 788.79	\$ 788.79
Buried Valve Operator Extension 7'	12.	EA	MISC	\$ 175.00	\$ 2,100.00
Buried Valve Operator Extension 8'	4.	EA	MISC	\$ 195.00	\$ 780.00
				\$ -	\$ -
6"-10" Mech Seal (IL400 x 7ea) Set	4.	EA	MSEAL	\$ 145.81	\$ 583.24
12"-16" Mech Seal (IL360 x 22ea) Set	3.	EA	MSEAL	\$ 498.30	\$ 1,494.90
				\$ -	\$ -
1/2" HDG Unistrut Clamp	10.	EA	PS	\$ 1.76	\$ 17.60
1-3/8"x1-5/8" 316SS Uni Strut	17.	LF	PS	\$ 47.61	\$ 809.37
1-3/8"x1-5/8" HDG Uni Strut	10.	LF	PS	\$ 7.89	\$ 78.90
1" 316SS Unistrut Clamp	5.	EA	PS	\$ 11.16	\$ 55.80
1-1/4" 316SS Unistrut Clamp	12.	EA	PS	\$ 12.83	\$ 153.96

6" HDG Wall Bracket Pipe Supp (CL 1')	12.	EA	PS	\$	650.00	\$	7,800.00
12" SS Adjust Pipe Supp (CL 2')	9.	EA	PS	\$	842.44	\$	7,581.96
14" SS Adjust Pipe Supp (CL 2')	3.	EA	PS	\$	842.44	\$	2,527.32
24"x 2" SS Pipe Straps (Invert Pipe to Top)	40.	EA	PS	\$	250.00	\$	10,000.00
						\$	-
1/2" PVC SCH80 SW WYE	2.	EA	PVC	\$	28.31	\$	56.63
1/2" PVC SCH80 Pipe	100.	LF	PVC	\$	1.62	\$	162.00
1/2" PVC SCH80 SW Male Adapter	12.	EA	PVC	\$	3.81	\$	45.72
1/2" PVC SCH80 SW Union	12.	EA	PVC	\$	6.20	\$	74.40
1/2" PVC TU Ball Valve SW	10.	EA	PVC	\$	69.87	\$	698.70
1" PVC SCH80 Pipe	25.	LF	PVC	\$	3.20	\$	80.00
1" PVC SCH80 SW 90 Bend	4.	EA	PVC	\$	3.73	\$	14.92
1" PVC SCH80 SW Tee	3.	EA	PVC	\$	6.66	\$	19.98
1" PVC SCH80 SW Coupl	4.	EA	PVC	\$	4.56	\$	18.24
1" PVC TU Ball Valve SW	4.	EA	PVC	\$	98.35	\$	393.40
1-1/4" PVC SCH80 Pipe	62.	LF	PVC	\$	6.58	\$	407.96
1-1/4" PVC SCH80 SW 90 Bend	6.	EA	PVC	\$	4.97	\$	29.82
1-1/4" PVC SCH80 SW Coupl	6.	EA	PVC	\$	6.92	\$	41.52
1-1/4" PVC TU Ball Valve SW	1.	EA	PVC	\$	155.87	\$	155.87
1-1/4"X 1" PVC SCH80 Reducer Coupling	1.	EA	PVC	\$	15.84	\$	15.84
1"x6" PVC SCH80 Nipple THD	2.	EA	PVC	\$	11.24	\$	22.48
						\$	-
8" PVC SDR26 Pipe	30.	LF	SDR26	\$	18.04	\$	541.20
						\$	-
1/2" Galv Cap THD	24.	EA	SM	\$	4.45	\$	106.80
1/2"x3" Galv S80 Nipple THD	24.	EA	SM	\$	3.10	\$	74.40
1" Galv Union THD	3.	EA	SM	\$	28.70	\$	86.10
2"x1" THD Galv Reducer	3.	EA	SM	\$	24.64	\$	73.92
						\$	-
1" Air Release Valve	3.	EA	V	\$	722.00	\$	2,166.00
1/2" Ball Valve Bronze THD	3.	EA	V	\$	76.18	\$	228.54
6" Butterfly Valve Wafer SS Body EMO	12.	EA	V	\$	8,500.00	\$	102,000.00
8" Butterfly Valve FLG CI Body Op Nut	1.	EA	V	\$	1,600.00	\$	1,600.00
12" Butterfly Valve Wafer SS Body EMO	9.	EA	V	\$	12,500.00	\$	112,500.00
14" Butterfly Valve Wafer SS Body HW	3.	EA	V	\$	6,000.00	\$	18,000.00
20" Butterfly Valve FLG CI Body EMO	12.	EA	V	\$	12,000.00	\$	144,000.00
20" Butterfly Valve Lug CI Body EMO	3.	EA	V	\$	12,000.00	\$	36,000.00
24" Butterfly Valve Lug CI Body EMO	9.	EA	V	\$	14,000.00	\$	126,000.00
1/2" Check Valve THD	2.	EA	V	\$	244.75	\$	489.50
6" Check Valve FLG	2.	EA	V	\$	2,500.00	\$	5,000.00
1/2" Bronze THD Globe Valve	2.	EA	V	\$	235.80	\$	471.60
6" Plug Valve FLG CI Body HW	12.	EA	V	\$	1,100.00	\$	13,200.00
6" Plug Valve FLG CI Body CW	2.	EA	V	\$	1,300.00	\$	2,600.00
1/2" Pressure Regulating Valve THD	2.	EA	V	\$	337.80	\$	675.60
						\$	-
12"X2'0" Wall Pipe FxP Seep Ring 316SS	6.	EA	WP	\$	2,478.00	\$	14,868.00
						\$	-
6"X1'6" STL HDG Wall Sleeve W/O SR	4.	EA	WS	\$	295.00	\$	1,180.00
12"X1'0" STL HDG Wall Sleeve W/O SR	3.	EA	WS	\$	520.00	\$	1,560.00
Total						\$	1,127,907.33



Flo Trend LLC

WWW.FLOTRENDLLC.COM

Quote

Jul 7, 2022

Valid Until: Jul 14, 2022

Quote Number : Q22Q13813

Job Number: F

1400 Kowis St | Houston, TX 77093 | ph: 713-699-0152 | email: sales@flotrendllc.com

BILL TO:

PCL Construction
Raymond Torrejon
2000 S Colorado Blvd. Building 2 suite 500
Denver, CO 80222

Phone: 720.357.6253
Email: rtorrejon@pcl.com

SHIP TO:

PCL Construction

Engineered Drawing

N/A

Delivery

Currently in Stock

Please Note Our Terms Below:

Terms	FOB	Rep:	PO#
100% with PO		Chad Naquin	

#	Qty	Model #	Description	Unit Price (EA)	Ext Price
1.	28	MED-MVR-300-2.0	Media-Mover-300 with at 2.0 cy Chemical Feed Hopper Rental Unit (Billed on 28-day cycle) Media-Mover 300 with 2.0 cubic yard Chemical Feed Hopper Model: MED-MVR-300-2.0 Model 300 Jet Hopper with 3" eductor and 2.0 yd. hopper. Eductor will be made from carbon steel with a 3" npt inlet and pressure gauge and a 3" npt outlet. Inlet fitting will have four 1/2" outlets with ball valve and hoses that are attached to nozzles in the body of the hopper. Aluminum cam lock fittings will be provided on the inlet and outlets. Removable UHMW nozzle and venturi will be installed in the eductor body. A 2.0 cu. yd. carbon steel pyramid shaped hopper will be mounted on a forkliftable frame. The eductor will be attached to the bottom of the hopper with a 3" polypropylene ball valve.	\$ 95.00	\$ 2,660.00
2.	1	3" ID UHMW Nozzle to fit 3" Eductor	UHMW Nozzle to fit 3" Eductor 3" I.D. "UHMW" Nozzle to fit 3" Eductor	\$ 425.00	\$ 425.00
3.	1	3" ID "UHMW" Diffuse to fit 3" Eductor	"UHMW" Diffuse to fit 3" Eductor 3" I.D. "UHMW" Diffuser to fit 3" Eductor	\$ 480.00	\$ 480.00
4.	2	Estimated Freight	Delivery and Return Estimate. Actual Freight charges will be billed at readiness to ship and once shipping address has been confirmed.	\$ 2,800.00	\$ 5,600.00
5.	1	MED-MVR-300-2.0	Media-Mover-300 with at 2.0 cy Chemical Feed Hopper Purchase Option - Media-Mover 300 with 2.0 cubic yard Chemical Feed Hopper Model: MED-MVR-300-2.0 Model 300 Jet Hopper with 3" eductor and 2.0 yd. hopper. Eductor will be made from carbon steel with a 3" npt inlet and pressure gauge and a 3" npt outlet. Inlet fitting will have four 1/2" outlets with ball valve and hoses that are attached to nozzles in the body of the hopper. Aluminum cam lock fittings will be provided on the inlet and outlets. Removable UHMW nozzle and venturi will be installed in the eductor body. A 2.0 cu. yd. carbon steel pyramid shaped hopper will be mounted on a forkliftable frame. The eductor will be attached to the bottom of the hopper with a 3" polypropylene ball valve.	\$ 16,250.00	\$ 16,250.00

* All prices are in U.S. dollars unless otherwise noted.

* This is a preliminary quote. Prices and description are subject to change upon receipt of final specifications.

* Specialty Parts must be specified at the time of order to avoid production delays and surcharges.

* This quote is valid until the date that is listed above. If you desire to place an order past the "valid until" date, you must contact us to obtain another valid quote

* Transportation via contract truck; off-load equipment and labor by others; site preparation, electrical hookup, and sludge line connections by others. No cutoff valves, drainage hoses, or control hoses included.

* **Equipment Warranty/Rental Information:** begins upon the day of delivery. Rental period begins when equipment is loaded at Flo Trend LLC for delivery to job site and ends when loaded at job site for return to Flo Trend LLC. Failure to perform regular maintenance or use of the equipment in a way other than its intended purpose voids the manufacturer's warranty.



Kinetic Energy Services LLC
PO Box 530
Milliken, CO 80543
United States
(970) 775-3230
www.kineticindustry.com

Estimate
15892

Prepared For

PCL Construction Inc
1711 W Greentree Dr Ste 201
Tempe AZ 85284
United States

Date 07/05/2022
Expires 08/04/2022

Project Name	Company Man	Jobsite Address	AFE/PO/CC	Start Date	End Date
Media Filter Removal - Ralston Water Treatment Plant	Justin McRae	18975 W 66th Ave, Arvada, CO 80007			

Item	Quantity	Units	Rate	Amount
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Hydrovac Truck - Standard

RATE PER DAY (BASED ON A 10-HOUR PORT-TO-PORT DAY)
With 8-Hours Onsite. Includes Fuel Surcharge.

- Hydrovac Truck w/ Operator & Laborer

Filter Size: 31 CY Per Filter (Based on Client's Measurements) -
This quote is based on cleaning (1) Filter (which we anticipate taking (1) day to complete), however we are willing to clean additional filters at the same rate if the dimensions/cubic yardage/circumstances are all the same when ready.

Scope: Remove (31CY) consisting of 10" of Gravel, 4" of Garnet, 9" of Sand, 21" of Anthracite = 44" total. Non-Contaminated. All material to be taken off-site for disposal.
• Material beyond 31CY will be invoiced hourly at \$295/hr. + rates shown below.

RATE IS BASED ON ALL DISPOSALS TO BE MADE OFF-SITE

EQUIPMENT:

** All Kinetic trucks quoted above are top-of-the-line Hydrovac Trucks with 6000 CFM, 20 GPM Pumps, 13.5 CY Debris Tanks, 2200 Gallon Water Storage.

Please make sure any bids are apples-to-apples when assessing for value. Kinetic customers routinely experience faster project completion times which will save you time and money in overall completion allowing facility to be operational quicker, and less onsite supervision/labor hours needed.

Semi Transport

ROLL-OFF SEMI TRANSPORTATION - PER DAY FOR VAC BOXES TO BE TRANSFERRED TO DISPOSAL SITE.

**We anticipate taking (2) load (15 to 20 cu yds per each container) per day to disposal site (30 to 40 CY total per day). Based on 14-hour day and includes time at the beginning and end of day for on-boarding and off-boarding vacuum boxes at Kinetic yard.

Equipment Rental

ROLL-OFF CONTAINERS (2) (Per Day)

1	Dy	\$2,950.00	\$2,950.00
1	per	\$1,890.00	\$1,890.00
1	per	\$135.00	\$135.00



15892



Kinetic Energy Services LLC
PO Box 530
Milliken, CO 80543
United States
(970) 775-3230
www.kineticindustry.com

Estimate
15892

Item	Quantity	Units	Rate	Amount
Support Pickup - Flat Rate SUPPORT PICKUP & TRAILER - (Per Day) ● Support vehicle to bring Remote Hose, Confined Space Supervisor transportation, and Return of Hose.	1	per	\$250.00	\$250.00
Equipment Rental ADDITIONAL HOSE (Per Day) ● Remote Hose - 150' of 6" Hose	1	per	\$450.00	\$450.00
Water BOBTAIL TRUCK (Per Day) - For additional water if needed - Excludes Water	0	per	\$1,300.00	\$0.00
Water WATER - OFF-SITE PER LOAD (If needed) ● Water is assumed to be available onsite.	0	per	\$70.00	\$0.00
Misc Charge/Labor ANALYTICAL TESTING (If Needed) - Actual cost to be invoiced once known.	0	per	\$0.00	\$0.00
Disposal - Standard DISPOSAL (Per CY) - Based on 31 CY of Non-Contaminated/ Non-Hazardous spoils.	31	per	\$35.00	\$1,085.00
Confined Space Entry - Standard Confined Space Supervisor - Per Day (Based on 10-hours port to port)	1	Dy	\$550.00	\$550.00
Description **THE FOLLOWING ITEMS ARE CLARIFICATIONS AS TO THE INTENTIONS OF THIS PROPOSAL AND MUST BE ATTACHED TO ANY SUBCONTRACTS OR PURCHASE ORDERS IF KINETIC SHALL BE AWARDED THIS WORK. SCHEDULE DELAY - Rates above may apply for any delays caused by other trades not the fault of KES. EXCLUSIONS: Permits, Traffic Control, Contaminated Spoils Disposal, Protective Materials for Floor/Walls etc., or Night Work. **No inclusions have been provided for analytic testing of materials. If analytics are required by the Contractor or Owner, Contractor shall pay for testing. If testing indicates unacceptable levels NORM or other hazardous substances, the fees associated with this type of waste disposal is not included.**				

Subtotal	\$7,310.00
Tax Total (0%)	\$0.00
Total	\$7,310.00



15892



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PO Box 530
Milliken, CO 80543
United States
(970) 775-3230
www.kineticindustry.com

Estimate
15892

Terms and Conditions

1. Incorporation of Terms.

These terms and conditions govern the agreement formed by your acceptance of this estimate given to you by Kinetic Energy Services LLC ("KES"). These terms are incorporated by reference into this estimate and control over any inconsistent terms in your purchase order or other acceptance.

2. Services, Schedule and Specifications.

Upon acceptance by PCL Construction Inc, KES will perform the services described in this estimate. Any additional services requested by PCL Construction Inc and not covered by this estimate will incur additional charges. The services will be completed in accordance with the schedule in this estimate, or as otherwise approved by the parties in writing. The services will be performed in substantial conformity with the specifications in this estimate, or as otherwise approved by the parties in writing.

3. Changes.

This estimate provided is based entirely upon scheduling, quantities and specifications provided by PCL Construction Inc. PCL Construction Inc agrees that variances in actual quantities or specifications exceeding a comparative threshold of 5% or greater, whether intentional or unintentional, are not covered by this estimate and will incur additional charges. Changes requested or approved by PCL Construction Inc will be invoiced to PCL Construction Inc as a Change Order to the project.

4. Charges, Taxes and Payment Terms.

The charges for the services are described in this estimate, subject to adjustment as provided in these terms, PCL Construction Inc agrees to pay to KES for such charges. PCL Construction Inc will be responsible for payment of all applicable federal, state and local taxes and assessments (including sales, use and similar taxes) levied on the transaction contemplated by this estimate. No tax exemption will be recognized unless a valid exemption certificate is provided. **All invoices for services covered by this estimate are Due on receipt.**

5. Late Charges.

Past due invoices are subject to a late payment charge of 2.0% per month on any unpaid balances. PCL Construction Inc shall be responsible for all fees associated with the collection of unpaid balances.

6. Governing Law, Venue and Legal Fees.

This estimate and these terms will be interpreted and construed under the laws of the State of Colorado, without regard to its conflicts of laws provisions. Venue of any action to construe or enforce this estimate and these terms will lie in Weld County, Colorado. If either party brings an action or proceeding arising out of this estimate or these terms, or on account of any breach or default thereof, the prevailing party will be entitled to receive from the other party its reasonable attorneys' fees, expert witness fees, investigation fees and other related fees, costs and expenses incurred in connection with the proceeding.

Statement of Acceptance

I _____ (PRINTED NAME AND TITLE) represent that I am an authorized agent of PCL Construction Inc and that I accept this Estimate and related Terms and Conditions recorded above on _____ (DATE).

Kinetic Energy Services LLC

Signature

Printed Name and Title

Date

PCL Construction Inc

Signature

Printed Name and Title

Date

Justin McRae

From: Jessie Gloor <jgloor@pcl.com>
Sent: Thursday, July 7, 2022 2:44 PM
To: Justin McRae
Subject: Fwd: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget
Attachments: Arvada, CA Filter Media - Bid Package.pdf; I19222 Leopold Filtration Equipment (media) REV00 7-6-22.docx; I19222 Leopold Filtration Equipment (und for 10-12 agit for all) REV00 7-7-22.docx

Jessie Gloor
Project Engineer

PCL Construction, Inc.
2000 S Colorado Blvd.
Building 2 suite 500
Denver, CO 80222
T: 480-582-2573
M: 720-682-9371
jgloor@pcl.com

www.pcl.com
TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Thursday, July 7, 2022 2:32:50 PM
To: Jessie Gloor <jgloor@pcl.com>; Raymond Torrejon <rtorrejon@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Jessie,

Filter Media:
Complete quote and bid form attached.

Filtration Equipment:
A budgetary filtration equipment quote is also attached. A good budget for the filtration equipment is around \$900,000. Honestly I imagine that number will be less than the budget price, seeing as this is likely to bid by the end of the month. That said, I / Leopold really (REALLY) hates to give low budget numbers and then something changes, usually isn't "a good look" so to speak.

Can I ask, what is the intent with the existing underdrains and filtration equipment for filters 1-9? Are the original underdrains going to be used? Are there any plans for upgrading those underdrains as well?

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Jessie Gloor <jgloor@pcl.com>
Sent: Thursday, July 7, 2022 1:22 PM
To: Raymond Torrejon <rtorrejon@pcl.com>; Chase Knox <cknox@isiwest.com>
Subject: Re: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Hey chase can we bug you on this again? Any new updates? It's early in the day but just wanted to check in.
Thanks!

Jessie Gloor
Project Engineer

PCL Construction, Inc.
2000 S Colorado Blvd.
Building 2 suite 500
Denver, CO 80222
T: 480-582-2573
M: 720-682-9371
jgloor@pcl.com

www.pcl.com

TOGETHER WE BUILD SUCCESS

From: Raymond Torrejon <rtorrejon@pcl.com>
Sent: Wednesday, July 6, 2022 3:59:39 PM
To: Chase Knox <cknox@isiwest.com>; Jessie Gloor <JGloor@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Chase,

Thanks for the update.

Raymond Torrejon
Project Manager

PCL Construction, Inc.
2000 S Colorado Blvd. Building 2 suite 500
Denver, CO 80222
P: 720.357.6253
E: rtorrejon@pcl.com

www.pcl.com

TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Wednesday, July 6, 2022 3:59 PM
To: Raymond Torrejon <rtorrejon@pcl.com>; Jessie Gloor <JGloor@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Ray,

I just got an email from Leopold, they said they will have both proposals tomorrow (budget for underdrains, hard quote for media).

October 28, 2022

WGC# ICO14370-V2

PCL
2000 S. Colorado Blvd., Suite 500
Denver
Phone: 720-682-9371

Attn: Jessie Gloor

Reference: City of Arvada – Ralston WTP – Filter and Solids Handling Improvements

Weifield Group Contracting, Inc. is pleased to provide our probable cost lump sum proposal on the referenced project.

PRICING (ELECTRICAL, INSTRUMENTATION, & CONTROL):

Filter Improvements	\$1,444,939.00
Solids Handling	\$517,129.00
Fixed General Expenses	\$86,293.00
Variable General Expenses	\$475,085.00
Temporary Power	\$12,283.00
Generator Quick Connect Switchboard	\$98,534.00
Suggested material escalation	\$45,000.00
Suggested estimating contingency	\$35,000.00

Weifield / Timber Line VE options

- Eliminate custom MCC in Solids and replace with individual VFD's fed from MCC from existing spare breakers or add new breakers **<\$30,000.00>**
- Change 200HP VFD manufacture to Yaskawa **<\$10,000.00>**
- Utilize the exiting 400A circuit breakers and demo out starters for 200hp Pumps **<\$10,000.00>**
- Use Rosemount radar units over the filters (No display) in lieu of EH Ultrasonics with controllers **<\$15,000.00>**
- Generator Quick Connection Cabinet alternate manufacture **<\$17,000.00>**
(Based on final design utilize an OEM, Easter Owens or Metron)

CLARIFICATIONS:

1. In this proposal the term “provide” shall mean to furnish and install, complete and ready for intended use.
2. In this proposal the acronym “FBO” shall mean Furnished by Others.
3. In this proposal the acronym “PBO” shall mean Provided by Others.
4. Our proposal is based on the contract documents listed below:
 - a. Filter Specifications dated: October 2022
 - b. Filter Drawings dated: October 2022
 - c. Solids Specifications dated: October 2022
 - d. Solids Drawings dated: October 2022
5. Our proposal is based on a mutually agreeable lump sum contract to be determined.
6. Our proposal is based on a mutually agreeable schedule within 30 days of the Notice to Proceed.
7. Our proposal is based on a 40-hour work week and anticipates a construction duration of 16 months.
8. Our proposal remains valid for 60 days.
9. Others shall not hold Weifield Group Contracting, Inc. liable for errors, omissions, inadequacies of materials, or equipment specified or supplied by others.
10. We have not included provisions for differing site conditions.
11. We have not included temporary environmental controls, de-watering, surveying, utility locates, potholing, or traffic control.
12. We will provide cleanup of our own identifiable debris to onsite waste and recycle containers furnished by the General Contractor.
13. Our proposal is based on all electrical materials being stored on site. We anticipate up to 1 Conex storage containers for the duration of the project and to utilize sharing of office trailer with PCL.
14. We have offered an allowance for Temporary trailer construction power as an add.
15. Temporary construction power will utilize existing power sources
 - a. Task lighting and extension cord are provided by individual trades.
16. We have included Safe-Off only for all demolition.
17. Start-up and Commissioning of Filter Train is figure to be 5 working days per each.

INCLUSIONS:

1. Permit Fees
2. Sales Taxes (Non-Permanent material & equipment)
3. One Year Warranty
4. All safety equipment and tools for our scope
5. Mobilization of electrical equipment and supplies
6. All submittals, drawings, factory tests, field inspections, field testing, and operator/maintenance training for equipment furnished by WGC
7. Electrical and I&C Connections to Process Equipment
 - a. As indicated on drawings
8. Instrumentation and Controls
 - a. As indicated on drawings
 - b. Timber Line BOM
8. Selective Demolition of Electrical Systems
 - a. Render safe for mechanical equipment for removal and disposal by others
 1. Valves
 2. Inline instruments
 3. Sample Pumps
 4. Bubbler Panels
9. Heat Tracing
 - a. As indicated on drawings

EXCLUSIONS:

1. Bond premium (Can be added at \$34,063.00)
2. Sales Tax (Permanente materials)
3. Delays and/or extension of the project schedule
4. Builders Risk Insurance
5. Utility company development fees for permanent and temporary service and consumption charges
6. Handling or disposing of hazardous materials
7. Cut, patch, and replacement of concrete, asphalt, landscaping, and any other existing to remain surfaces
8. Excavation, backfill, export spoils, dewatering, concrete, and rebar
 - a. Trenching – 510'
 - b. Excavation cu/yds – 175
 - c. Export of spoils cu/yds – 99
 - d. Backfill cu/yds – 78
 - e. Concrete cu/yds – 80
 - f. Rebar
 - i. Horizontal – 3,513'
 - ii. Hoops – 255 at 1,953'
9. All concrete including housekeeping pads, protective bollards, etc.
 - a. MCC's – 2
 - b. Transformers – 2
 - c. VFD's – 2
10. Demolition of Concrete and Conduits embedded in Concrete
11. Painting
12. Cathodic Protection
13. Furnish and installation for Backwash Pumps 41-PMP-0101 and 41-PMP-0201, Insulated NDE Bearings and Shaft Grounding devices (Reference drawing F-E-1001 sheet Keyed Note 3)
14. Installation of any equipment or instruments into inline process piping (mag flow meters, flow tubes, etc.)
15. Furnish and Installation of Spool Pieces and Flanges for instruments
16. All taps or associated equipment (valves, pressure reducers, solenoids, etc.) needed in process piping including tubing for analytical instruments
17. Seismic Engineering and Calculation (Reference 01 88 15 Anchorage & Bracing and 01 81 50 Design Criteria)
18. Furnishing and Installation of all motors (Reference 26 20 00 Low-Voltage AC Induction Motors and 26 05 06 Voltage Motors up to 500 Horsepower)
19. Removal of existing owner items for new electrical installation requirements
20. Furnishing and Installation of Stilling Wells and blind flanges – 4 (Reference drawing 00TN01 detail NL900)
21. Grouting of equipment stands
 - a. Jacobs reference details 4091-163, 4091-382 and 4091-394G
 - b. Carollo reference drawing 00TE3 details EM202 and EM210

Sincerely,

WEIFIELD GROUP CONTRACTING

Robb Herder

Estimator
720.230.6374



ELECTRICAL CONTRACTING

Curtis Miller

VP of Industrial
Cell: 303.669.3702

City of Arvada Ralston WTP

Filter & Solids Handling Improvements

30% Design to Current Design

Carollo Design

1. Added electrical work for the Solids Handling Lagoons
 - a. New MCC section at MCC-3 and VFD's for Solids Handling Pumps
 - b. Demo of existing electrical, ductbank and Mini Power Center LPS
 - c. New requirements at MCC-4 and new Mini Power Center LPS
 - d. Ductbank
 - e. General Power Receptacles
 - f. Heat Tracing at Stilling Wells
 - g. Instrumentation
2. Generator Tap cabinet

Jacobs Design

1. New location for Backwash Pump VFDs
 - a. New Feeders (Primary and Secondary)
2. New breakers in MCC2
3. New Panelboard DP5
4. New Instrumentation Devices
 - a. 41FIT-0001
 - b. Second AE Instrumentation device associated with 40AIT TURB/Level at Filters
5. Deleted Instrumentation Devices
 - a. AIT/AE for Combined Effluent Sample Pump
 - b. 40FCV-0705 and similar valves at Filters 10, 11 and 12
6. Demolition
 - a. Combined Filter Sample Pump
 - b. Filter Influent Gate and Actuator
 - c. Bubbler Panels

7. Relocation of existing conduit at Filter 3 Surface Wash Piping location for Backwash Pumps
 - a. New Feeders
8. Demolition for feeders associated with MCC-1
9. Added Disconnects for Flow and Control Valves
10. New work at Reaction Basin
11. Added New Panelboards PP5-A, PP5-B and PP-3A
12. Demo work at Panelboard LP-1
13. Added Remote Staters for Air Compressor 2 and 3

Manual Motor Control Switches and Disconnects Square D™ MD Enclosed Motor Disconnect Switch

Square D™ MD Enclosed Motor Disconnect Switch



Schneider Electric's Square D brand has been an industry leader in safety switches for over 100 years and is recognized as the market leader in product quality, durability, and reliability. The latest addition to the MD motor disconnect family is a non-receptacle switch for UL 508 listed applications.

This MD motor disconnect switch serves as a local on/off switch for a motor when the motor branch circuit protection is in a central enclosure. It is in a compact NEMA 4X enclosure and is available in 30 A and 60 A versions.

Key Benefits

- Lowers costs—significantly less expensive than stainless steel motor disconnect switches.
- Enhances safety—handle interlock prevents cover from being removed while in the On position.
- Maximizes space—one of smallest footprints on the market.

Key Features

- Water-tight NEMA 4X polycarbonate enclosure—ideal for use in wash down or rugged industrial applications. Covers additional enclosure types, such as NEMA 1, 12, 3R, and 4.
- Standard 3-pole design—optional additional power pole
- Available in 30 A and 60 A sizes
- Horsepower rated
- Clear On/Off indication
- Front padlockable handle complies with OSHA lockout/tagout requirements—accepts up to three 8 mm padlocks
- cULus certified—UL File E164864

Table 45: NEMA 4X Enclosed Switches

Approvals	Maximum Horsepower Rating			Catalog Number
	Three Phase			
	220–240 Vac	440–480 Vac	600 Vac	
UL 508	7.5	20	25	MD3304X
UL 508	20	40	40	MD3604X

Table 46: Accessories

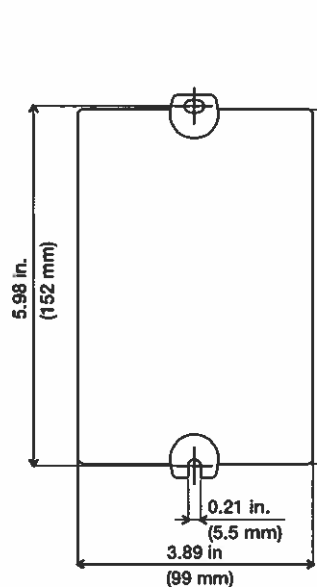
Description	Catalog Number
2 normally open auxiliary contact module	MDSAN20
1 normally open + 1 normally closed auxiliary contact module	MDSAN11
Additional 30 A power pole	MDS30P

} TBD

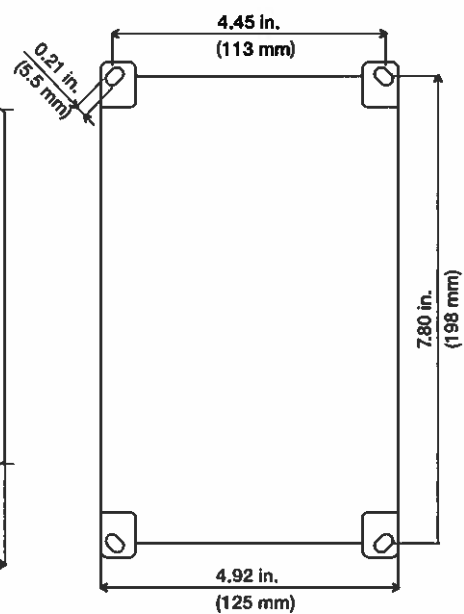
Manual Motor Control Switches and Disconnects

Square D™ MD Enclosed Motor Disconnect Switch

**30 A Enclosed Switch
Mounting Diagram**



**60 A Enclosed Switch
Mounting Diagram**



Justin McRae

From: Chase Knox <cknox@isiwest.com>
Sent: Monday, October 31, 2022 9:42 AM
To: Justin McRae
Cc: Frank Henderson
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators
Attachments: I19222 Leopold Filtration Equipment (60% p&s) REV00 10-27-22.docx

Justin,

Please see the attached Leopold filter agitators quote for the City of Arvada, Rolston WTP project.

The price for the attached scope is \$233,100.00

Please let me know if you have any questions.

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Justin McRae JWMcRae@pcl.com
Sent: Friday, October 28, 2022 2:35 PM
To: Chase Knox cknox@isiwest.com
Cc: Frank Henderson fhenderson@isiwest.com
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators

Rough Order of Magnitude

Basically an educated guess of the cost from your experience.

Let me know if they still plan on provide numbers today.

Thanks,

Justin McRae
Senior Estimator

PCL Construction, Inc.
1711 W. Greentree Drive Ste 201
Tempe, Arizona 85284
M: 407-427-0656
jwmcrae@pcl.com

www.pcl.com

TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Tuesday, October 25, 2022 10:28 AM
To: Justin McRae <JWMcRae@pcl.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators

Sorry, not familiar with ROM\$?

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Justin McRae <JWMcRae@pcl.com>
Sent: Tuesday, October 25, 2022 10:22 AM
To: Chase Knox <cknox@isiwest.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators

Can you provide of ROM\$ before that. I promised the City of Arvada a heads up on my final number for the entire project tomorrow?

Thanks

Justin McRae
Senior Estimator

PCL Construction, Inc.
1711 W. Greentree Drive Ste 201
Tempe, Arizona 85284
M: 407-427-0656
jwmcrae@pcl.com

From: Chase Knox <cknox@isiwest.com>
Sent: Tuesday, October 25, 2022 9:10 AM
To: Justin McRae <JWMcRae@pcl.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators

Justin,

I was just informed that Leopold is currently running around a two week lead time for proposals. That said, they have committed to having numbers by the end of the week. Is that acceptable?

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Chase Knox
Sent: Thursday, October 20, 2022 5:30 PM
To: Justin McRae <JWMcRae@pcl.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: RE: City of Arvada - Rolston WTP - Filter Agitators

I'm on it as well.

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Justin McRae <JWMcRae@pcl.com>
Sent: Thursday, October 20, 2022 4:50 PM
To: Chase Knox <cknox@isiwest.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: City of Arvada - Rolston WTP - Filter Agitators

Chase,

I need pricing on 44 31 31 Filter Agitators (L.B. Leopold; Palmer S Type).

See attached 90% specification and link to full docs.

Thanks

Justin McRae
Senior Estimator

PCL Construction, Inc.
1711 W. Greentree Drive Ste 201
Tempe, Arizona 85284
M: 407-427-0656
jwmcrae@pcl.com

www.pcl.com
TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Thursday, October 20, 2022 1:25 PM
To: Justin McRae <JWMcRae@pcl.com>
Cc: Frank Henderson <fhenderson@isiwest.com>
Subject: RE: City of Arvada - Rolston WTP - Slide Gates

[External Email]

Justin,

Please see the attached Rodney Hunt gate scope for the City of Arvada.

Pricing should be available in the coming days.

Please let me know if you have questions.

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Justin McRae <JWMcRae@pcl.com>
Sent: Thursday, October 13, 2022 2:05 PM

To: Chase Knox <cknox@isiwest.com>; Frank Henderson <fhenderson@isiwest.com>

Subject: FW: City of Arvada - Rolston WTP - Slide Gates

See attached specs and drawings.

Justin McRae
Senior Estimator

PCL Construction, Inc.
1711 W. Greentree Drive Ste 201
Tempe, Arizona 85284
M: 407-427-0656
jwmcrae@pcl.com

www.pcl.com
TOGETHER WE BUILD SUCCESS

From: Justin McRae

Sent: Thursday, October 13, 2022 1:01 PM

To: cknox@isiwest.com; fhenderson@isiwest.com

Cc: Andrew Greene <AGreene@pcl.com>

Subject: City of Arvada - Rolston WTP - Slide Gates

We have a project for the City of Arvada called Rolston WTP Solids Improvements. We are going to final GMP on the 60% documents due to schedule constraints.

Please see attached 40 05 59 Fabricated Stainless Steel Slide Gates specs and drawings and link below for full set of documents. The gates in question are in the SOLIDS Drawing package.

<https://pcl.egnyte.com/fl/j2kS8q5G4l> [pcl.egnyte.com]

I need pricing by 10/25.

SLIDE GATE SCHEDULE										
PROCESS UNIT #	TAG ID	LOCATION	SIZE (FEET)		HEAD (FEET)		CLOSURE TYPE	GATE TYPE	OPERATOR	REMARKS
			W	H	SEAT	UNSEAT				
70	70G0101	LAGOON 1 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0102	LAGOON 1 OUTLET STRUCTURE	3	3	10	10	FM	DO	HCN	TOP SEAL
70	70G0201	LAGOON 2 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0202	LAGOON 2 OUTLET STRUCTURE	3	3	10	10	FM	DO	HCN	TOP SEAL
70	70G0301	LAGOON 3 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0302	LAGOON 3 OUTLET STRUCTURE	3	3	10	10	FM	DO	HCN	TOP SEAL
70	70G0401	LAGOON 4 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0402	LAGOON 4 OUTLET STRUCTURE	3	3	10	10	FM	DO	HCN	TOP SEAL

NOTE: ALL GATES SHALL BE NONRISING STEM.

ABBREVIATIONS:
 CLOSURE TYPE: OF = OPEN FRAME (NON-SELF CONTAINED); FM = FRAME MOUNTED (SELF CONTAINED)
 GATE TYPE: DO = DOWNWARD OPENING; UO = UPWARD OPENING
 OPERATOR TYPE: HCN = HAND CRANK W/ 2" SQUARE NUT; HW = HANDWHEEL; PED = PEDESTAL; FBN = FLOOR BOX W/ 2" SQUARE NUT; M = MOTOR OPERATOR

Regards,

Justin McRae
Senior Estimator

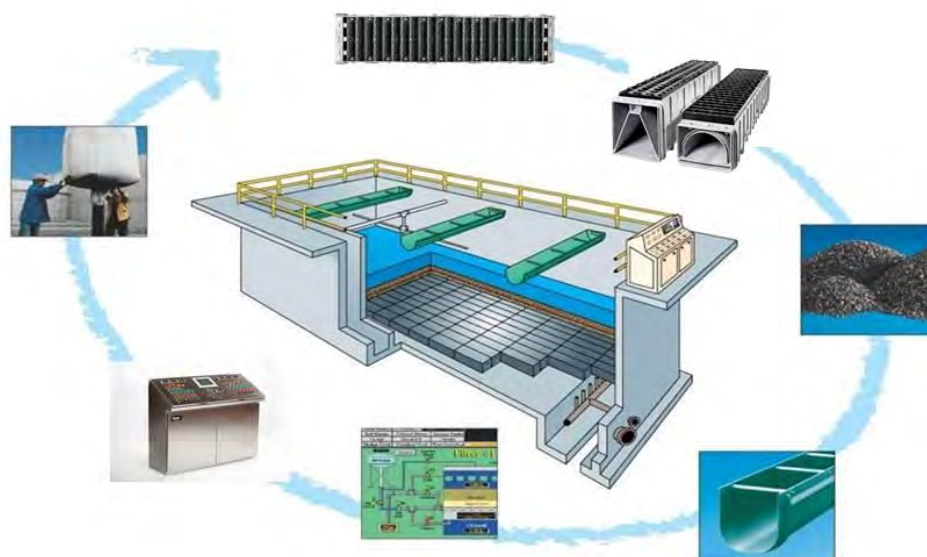
PCL Construction, Inc.
1711 W. Greentree Drive Ste 201
Tempe, Arizona 85284
M: 407-427-0656
jwmcrae@pcl.com

www.pcl.com
TOGETHER WE BUILD SUCCESS

Firm Proposal

Ralston WTP

Arvada, CO



Prepared for:

PCL

10/27/2022



Xylem Water Solutions USA, Inc.
108 Tomlinson Dr – Suite 400
Zelienople, PA 16063
Mr. Wayne Steen
Direct: 724-453-2111
Mobile: 724-272-2905
Email: wayne.steen@xylem.com

10/27/2022

Project name : Arvada, CO
Project number : I19222

To Whom It May Concern:

Based on your inquiry, we are pleased to forward the following proposal to your attention. Thank you for the opportunity to offer our equipment and services for the Arvada, CO, Ralston WTP project.

We hope that our proposal meets your expectation. If you have any questions, please do not hesitate to contact me or our local representative.

Respectfully,

Wayne Steen
Senior Sales Engineer

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1 Technical Description

1.1 SCOPE OF SUPPLY

We are pleased to offer the following materials and services by Xylem Water Solutions USA, Inc. This quotation has been prepared using specification section 44 43 31 along with the 60% drawings.

AGITATORS (Filters 1-3):

Under this section, we propose to furnish 12 Leopold Type S Filter Agitators, 8'-9" in diameter, with flexi-jet nozzles, and QJ end caps.

Agitators will have delrin center bearing assembly with type 316 stainless steel lateral arms.

Also included under this item will be 6' brass indicator rod with Lexan flag.

AGITATORS (Filters 4-12):

Under this section, we propose to furnish 36 Leopold Type S Filter Agitators, 10'-0" in diameter, with flexi-jet nozzles, and QJ end caps.

Agitators will have delrin center bearing assembly with type 316 stainless steel lateral arms.

Also included under this item will be 6' brass indicator rod with Lexan flag.

EXTRA MATERIALS:

Under this section, we propose to furnish 26 extra nozzles and 1 center bearing assembly per filter (12 total).

1.2 SERVICES

MANUFACTURER'S SERVICES (FILTER EQUIPMENT):

The services of a qualified Leopold technical representative to instruct the Contractor's personnel about the proper installation technique of the **agitator equipment** will be provided for a period of 3 days (8 hr/day) on site plus 2 days travel time to and from the job-site in 1 trip. Additional services may be obtained at the current prevailing rate plus living and travel expenses.

2 Technical Clarification & Deviations

1. Specification Section 44 43 31, 2.02,C,4- The center bearing shall have a 316 stainless steel Tee in lieu of a Bronze Tee.
2. Specification Section 44 43 31, 2.02,D,1- The lateral arms shall be type 316 stainless steel in lieu of type 304 stainless steel.

3 Price & Scope of Supply

3.1 MAIN SCOPE

BASIS of PRICING:

Any items and/or accessories not specifically called out in this quotation must be construed as being furnished by others.

This quotation is considered firm for 60 days. Any order received more than 60 days after the date of this quotation is reviewed by Xylem Water Solutions USA, Inc. before acceptance and is subject to changes in prices or delivery depending on conditions existing at the time of entry. Quoted prices are firm for delivery within 12 months from the delivery date stipulated in the plans & specifications or mutually agreed upon by Xylem Water Solutions USA, Inc. and Purchase Order issuer at time of order placement.

We do not include any applicable taxes.

Orders resulting from this quotation should be addressed to Xylem Water Solutions USA, Inc.
108 Tomlinson Drive Suite 400 – Zelienople, PA 16063, USA.

We propose to furnish the material described in this document for **a total selling price of**
\$ _____.

Pricing for the equipment and field services outlined in this proposal, DAP Jobsite per Incoterms 2020.

For further information pertaining to the equipment contained in this proposal, please contact our area representative, who is:

isiWest
4175 Mulligan Dr.
Longmount, CO 80504
Phone: 970.535.0571
Cell: 970.691.0805

Attention: Chase Knox

Pricing is based on the following payment terms (net 30 days):
10% following initial submittal for approval
80% following the date of the respective shipments of the product
5% following installation, not to exceed 150 days after shipment of the product
(*whichever comes first*)
5% following start-up, not to exceed 180 days after shipment of the product
(*whichever comes first*)

4 Commercial Terms & Conditions

4.1 DELIVERY SCHEDULE

4.1.1 Production schedule

Submittal of mechanical drawings for approval 4 to 6 weeks after order acceptance.

4.1.2 Delivery time

Delivery of fabricated items 12 to 16 weeks after drawing approval.

4.2 TERMS AND CONDITIONS OF SALE – NORTH AMERICA

This order is subject to the Standard Terms and Conditions of Sale – Xylem Americas effective on the date the order is accepted. Terms are available at <http://www.xyleminc.com/en-us/Pages/terms-conditions-of-sale.aspx> and incorporated herein by reference and made a part of the agreement between parties.

Different terms are hereby rejected unless expressly assented to in writing.

AGREEMENT TO PURCHASE: BUYER agrees to purchase the equipment and services herein in accordance with the terms and conditions set forth above.

ACCEPTANCE: SELLER hereby accepts BUYER'S offer to purchase.

(BUYER)

Xylem Water Solutions USA, Inc.

BY: _____

BY: _____

_____, 20 _____

_____, 20 _____



QUOTATION NO: 21969

Division of ISE METAL Inc.

20 Windsor Rd

Sherbrooke, QC

J1C 0E5

Ph.: 819-769-0157

www.ISEaquanox.com

info@ISEaquanox.com

Date: 2022-10-24

To: 0

Att of: 0

PROJECT: Ralston WTP Solids Improvements

Arvada, CO

IMPORTANT NOTICE

The current volatility of raw material cost, especially stainless steel, has reached a point that makes us unable to provide prices for our products that are fixed in time. It is therefore very important to note that the price presented in the attached quotation will not necessarily be maintained for the duration of this project. These prices can only be considered as an indication of the price that we think could apply to your project, based on our best estimations. Fontaine-Aquanox will not assume the risk of material cost escalation. Bidding contractors should take this risk into account in establishing their project cost. In order to help as much as we can, we offer the information to below describing the parameters that were used to prepare our quotation.

Quantity of material that will need to be used for this project:

	(Lb)	(Kg)
Grade: 316L	0	0
Grade: 304L	5637	2553
Aluminium	0	0

1. The cost in \$/lb used to prepare this quote is based on the peak (maximum) price forecasted by MEPS International 12 months prediction for Hot Rolled Coiled Plate
2. The cost in \$/lb used in this quotation will be made available before placing purchase order.
3. Any cost increase of more than 0.20\$/lb compared to the cost used in this quotation will have to be charged to the customer with a 15% margin.
4. The cost of the material used for fabrication will established 100 days before the ship date agreed at time of submittal approval. It will be based on ISE Metal's most recent purchase order of the same grade at that time.
5. A copy of purchase orders will be supplied on request at time of release for production.

Division of ISE METAL Inc.

20 Windsor Rd

Sherbrooke, QC

J1C 0E5

Ph.: 819-769-0157

www.ISEaquanox.com
info@ISEaquanox.com

Date: 2022-10-24

To:

Att of:

PROJECT: Ralston WTP Solids Improvements

Arvada, CO

Itm	Description	Qty	Unit USD	Total USD
01	Tag: 70G0101, 0201, 0301, 0401 Fontaine-Aquanox Series 40 Weir Gate Model: 402-Y2X-60x48-B-CW-8 Dimensions: 60in x 48in Design Pressure (On/Off): 8.0ft/8.0ft Installation depth: 6.50ft Self contained frame, Single Non-rising Stem Mounting: Face of Wall Material: 304L stainless steel Operator: Yoke mounted gearbox and crank Anchors included, hardware only, adhesive not included, 316s.s. (Dia.: 0.50in, Qty=32) Certification: AWWA C561-14	4	10 703	42 812
02	Tag: 70G0102, 0202, 0302, 0402 Fontaine-Aquanox Series 20 Inverted Slide Gate Model: 202-Y2X-36x36-B-CW-10-INV Dimensions: 36in x 36in Design Pressure (On/Off): 10.0ft/10.0ft Installation depth: 8.50ft Self contained frame, Single Non-rising Stem Mounting: Face of Wall Material: 304L stainless steel Operator: Yoke mounted gearbox and crank Anchors included, hardware only, adhesive not included, 316s.s. (Dia.: 0.50in, Qty=41) Certification: AWWA C561-14	4	7 730	30 920
Sub-Total:				73 732
Freight Charges:				5 069
Field Service: (2 visits, 5 days on site):				11 989
Total Net Price (USD):				90 790

NOTES:

1. 60% documents. This quotation is subject to change upon receipt of additional information and/or project specifications.
2. We quoted nonrising stem as per slide gates schedule, but we recommend rising stems. Price does not change.
3. Design and calculations signed by a professional engineer registered in Canada.
4. Bottom seal: We offer EPDM instead of neoprene.

CONDITIONS:

Lead Times:
Submittal Drawings: 3-4 Weeks
Gate(s) Shipment: 12-14 Weeks after approval

Above lead times are based on average shop loading and are subject to change depending on actual work load at the time of the order.

Taxes: All applicable taxes extra
Currency: USD
Payment Terms: Net 30 days
Freight (Incoterms): FCA (freight prepaid) to destination
Via LTL dry box, not unloaded.
Validity: 30 days
Field Service: Not included, unless indicated in price above
If required: 1200/day, plus travel and living expenses

Enrique Scoccimarro

Inside Sales Representative

enrique.scoccimarro@iseaquanox.com

819-769-0157 ext 371

For more information on this quote:

Scott Marshall

Misco Water

4670 S Ash Ave, Suite 103 Tempe, AZ, 85282

303-309-6150 Cell: 303-601-5215

smarchall@miscowater.com

QUOTE #2210047

Date: October 21, 2022

Project Name: Ralston WTP Solids Improvements – Arvada, CO

Bid Date: October 25, 2022

Representative: Beau Javernick – Municipal Treatment Equipment – 303-231-9175

We are pleased to offer for your consideration the following equipment for this project.

Quantities and descriptions listed in this quotation were based on the following:
Emailed information only. Specifications and drawings based on 60% design documents.

Please note these prices are based on receiving the entire order. Adjustments to item quantities or specifications may alter the pricing.

- Prices and lead times quoted are firm for acceptance within 30 days of the bid date and apply to this quotation only, subject to attached Terms & Conditions. Prices do not include sales or use tax. If this proposal is not accepted within 30 days after bid, Hydro Gate reserves the right to re-quote and price escalation may be necessary.

The equipment we have quoted meets or exceeds the specifications with the following clarifications:

NOTE: We have received no addendums for this project.

1. If awarded to Hydro Gate, we will need to be supplied with a full set of plans and specifications.
2. Prices do not include third party inspection services of gates and equipment unless specifically required by specifications that supplier (Hydro Gate) be responsible for cost of these inspections.
3. Hydro Gate will provide digital copies of all relevant Operation and Maintenance manuals. Contact Hydro Gate should custom manuals be required.
4. Please note these prices are based on receiving the entire order. Adjustments to item quantities or specifications may alter the pricing.
5. Prices do not include taxes.
6. Non-machined, submerged ferrous surfaces to be blast cleaned and painted with 2 shop coats of manufacturer's standard epoxy paint.

7. This quotation reflects our policy of sourcing raw materials in the most cost effective manner. Any requirement for specific U.S content shall require a revised quotation.
8. Prices do not include installation of gates and equipment or lubricants for stems, gear units and bearings.
9. Mastic, grout, gaskets and epoxy capsules for anchors not by Hydro Gate.
10. Upon placing an order with Hydro Gate, buyer must ensure that the approval of equipment be provided to Hydro Gate within 30 days of receiving submittals. Failure to do so may result in an increase of price in relation to market fluctuation of raw material costs.
11. **Please address all purchase orders to Henry Pratt Company, LLC 12000 East 47th Ave., Suite 200, Denver, CO 80239.**
12. Submittal and Production Lead times are subject to change at the time of order.
13. Hydro Gate Standard Terms and Conditions of Sale apply to this quotation and can be found at www.hydrogate.com/support.

Quotation Number: 2210047

Item Number : 01
Location : Lagoon Outlet Structures
Designation : 70G0101, 70G0201, 70G0301, & 70G0401
Qty/Size : 4 – 60" x 48"
Gate : Fabricated weir gate Model HG561 with type 304 stainless steel frame and slide, and stainless steel fasteners. Self-contained frame, polymer bearing bars in guide grooves, UHMW seals, and downward opening slide.
Mounting : Stainless Steel anchor bolts.
Lift : Yoke mounted offset lift with 2" square nut, non-rising type 304 stainless steel stem and tee wrench.
Frame Height: 9.50' (from centerline)
Gate Ship : 14-16 weeks after drawing and credit approval.
Price Each : \$ 11,263.00

Item Number : 02
Location : Lagoon Outlet Structures
Designation : 70G0102, 70G0202, 70G0302, & 70G0402
Qty/Size : 4 – 36" x 36"
Gate : Fabricated weir gate Model HG561 with type 304 stainless steel frame and slide, and stainless steel fasteners. Self-contained frame, polymer bearing bars in guide grooves, UHMW seals, and downward opening slide.
Mounting : Stainless Steel anchor bolts.
Lift : Yoke mounted offset lift with 2" square nut, non-rising type 304 stainless steel stem and tee wrench.
Frame Height: 11.00' (from centerline)
Gate Ship : 14-16 weeks after drawing and credit approval.
Price Each : \$ 7,412.00

Item Number : 03
Misc. : Field service will be provided for 3 trips and 5 days in compliance with specification section 40 05 59.20. If additional field service is required, please contact Hydro Gate for pricing adjustment.

Total price for items listed above: \$74,700.00

The delivery lead times are based on stock inventory at the time of quotation. Stock quantities and quoted delivery times must be re-evaluated and verified at time of order and/or time of release to manufacturing.

Please see notes 1 through 13 in this quotation.

Quotation No.: 2210047

FREIGHT:

F.O.B. shipping point, full freight allowed. Seller will pay freight charges for standard shipments. Additional freight cost incurred to comply with buyer's special requirements will be added to the invoice.

FIELD SERVICE:

Hydro Gate will make every effort to provide a representative to meet your schedule, but due to conflicting requirements a request should be made no later than fourteen (14) days before a representative is required. Where previous commitments have been made, some flexibility in your schedule should be anticipated. All field service trips will require a written confirmation prior to arriving at the site.

DRAWINGS:

Submittal drawing lead time is 8 to 10 weeks after receipt of your written purchase order.

Thank you for your interest in our product. If any questions arise regarding this quotation, please contact Hydro Gate.



Erik Mustain

Hydro Gate® Application Engineer

12000 E. 47th Avenue - Suite 200 Denver, Colorado 80239
office: 303.374.2169 | muellerwp.com



MUNICIPAL TREATMENT EQUIPMENT

Quote No:
2628

17301W. Colfax Ave, Unit 105, Golden, CO 80401
(303) 231-9175 | www.municipaltreatment.com

Sold To:

PCL CONSTRUCTION, INC
1711 W GREENTREE DRIVE, SUITE
TEMPE, AZ 85284

Ship To:

PCL-ARVADA WTP
18975 W 66TH AVE
ARVADA, CO 80007

Date	Ship Via	Terms	Taxable	Salesperson	Customer ID
10/09/2022	BEST WAY FFA	Net 30	N	BEAU	PCL2020

Product Code	Product Name	Quantity	Price	Extension
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ACTUATOR	IQ19, WT, FA TYPE A, 29 RPM, 480/3/60 - OPEN CLOSE WD#110B0000 DISCRETE CONTROL 120v LEAD TIME 18-20 WEEKS PRICE INCLUDES START-UP INSTALLATION AND WIRING IS BY OTHERS QUOTE VALID FOR 90 DAYS	15.00 EA	7,325.00	109,875.00
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Subtotal	USD	\$ 109,875.00
Total	USD	\$ 109,875.00



RW GATE COMPANY
79 102nd Street – Suite 100
TROY, NEW YORK 12180
OFFICE: 518-874-4750
FAX: 518-274-0210
WEBSITE: www.rwgate.com

QUOTATION

October 3, 2022

To: Jessie Gloor @ PCL Construction

Quotation #QT01023009 rev 2

Project: Arvada, CO – Ralston Filters & Solids Improvements Project – 60% Design
Jacobs / Carollo / HDR Engineers
Bid Date: 'already bid'

Dear Jessie:

Following is our quotation for **SECTION 35 20 16.25 – FABRICATED SLIDE GATES** on the referenced project. Our offering is as follows:

Item No. 01 – Filters 1 - 3

Qty. - Size: Three (3) Model RW750-S Slide Gates - 30" wide x 24" tall

Distance from the Invert of the Opening to the Operating Floor: 4.67' (approx.)

Design Seating Head / Design Unseating Head (invert to MWL): 3.75' / 3.25'

Tag No.: 40GTE0101, 40GTE0201, 40GTE0301

Dwg No.: F-D-2002, F-D-3002

Description: The AWWA C561 compliant, self-contained, upward-opening slide gates will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and top and an EPDM flush bottom invert seal. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided.

Operating Mechanism: floor stand mounted on yoke, Rotork IQ electric actuator (480v – 3 phase power, open-close duty, NEMA 4X housing)

Mounting Style: Gate frames will have wall surface mounted guides and a wall surface mounted top seal member with 316 stainless steel adhesive anchors and non-shrink grout. Additional bolt holes will be provided in the frame. If an existing wall thimble is present, the installer may have to drill through the flange of the thimble and the concrete behind the flange. Anchor studs, nuts and washers are included.

NOTE: Rotork IQ electric actuators to be provided by others. RW Gate will coordinate with Rotork local representative.

Item No. 02 – Filters 4 – 6

Qty. - Size: Three (3) Model RW750-S Slide Gates - 30" wide x 24" tall

Distance from the Invert of the Opening to the Operating Floor: 5.0' (approx.)

Design Seating Head / Design Unseating Head (invert to MWL): 3.75' / 3.25'

Tag No.: 40GTE0401, 40GTE0501, 40GTE0601

Dwg No.: F-R-2001, F-D-2003, F-D-3002, F-D-3004

Description: The AWWA C561 compliant, self-contained, upward-opening slide gates will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and top and an EPDM flush bottom invert seal. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided.

Operating Mechanism: floor stand mounted on yoke, Rotork IQ electric actuator (480v – 3 phase power, open-close duty, NEMA 4X housing)

Mounting Style: Gate frames will have one guide that is wall surface mounted and one guide that is in-channel mounted (low-profile design) and a wall surface mounted top seal member with 316 stainless steel adhesive anchors and non-shrink grout. Additional bolt holes will be provided in the frame. If an existing wall thimble is present, the installer may have to drill through the flange of the thimble and the concrete behind the flange. Anchor studs, nuts and washers are included.

NOTES:

1. Rotork IQ electric actuators to be provided by others. RW Gate will coordinate with Rotork local representative.
2. RW Gate will provide new lift nuts for the existing gearboxes attached to the Limitorque L120 electric actuators. The lift nuts will be machined with internal threads to match the stem threads.

Item No. 03 – Filters 7 - 9

Qty. - Size: Three (3) Model RW750-S Slide Gates - 18" wide x 24" tall

Distance from the Invert of the Opening to the Operating Floor: 5.0' (approx.)

Design Seating Head / Design Unseating Head (invert to MWL): 3.75' / 3.25'

Tag No.: 40GTE0701, 40GTE0801, 40GTE0901

Dwg No.: F-R-3001, F-D-2003, F-D-3003, F-D-3004

Description: The AWWA C561 compliant, self-contained, upward-opening slide gates will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and top and an EPDM flush bottom invert seal. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided.

Operating Mechanism: floor stand mounted on yoke, Rotork IQ electric actuator (480v – 3 phase power, open-close duty, NEMA 4X housing)

Mounting Style: Gate frames will have wall surface mounted guides and a wall surface mounted top seal member with 316 stainless steel adhesive anchors and non-shrink grout. Additional bolt holes will be provided in the frame. If an existing wall thimble is present, the installer may have to drill through the flange of the thimble and the concrete behind the flange. Anchor studs, nuts and washers are included.

NOTE: Rotork IQ electric actuators to be provided by others. RW Gate will coordinate with Rotork local representative.

Item No. 04 – Filters 4 - 6

Qty. - Size: Three (3) Model RW750-S Slide Gates - 21" wide x 24" tall

Distance from the Invert of the Opening to the Operating Floor: 10.5' (assumed)

Design Seating Head / Design Unseating Head (invert to MWL): 10' / 0'

Tag No.: 40GTE0402, 40GTE0502, 40GTE0602, 40GTE0702, 40GTE0802, 40GTE0902

Dwg No.: F-2-2001, F-R-3001, F-D-2003, F-D-3004

Description: The AWWA C561 compliant, non self-contained, upward-opening slide gates will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and top and an EPDM flush bottom invert seal. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided. 304L stainless steels stem guides with UHMWPE bushings will be provided.

Operating Mechanism: floor stand mounted, Rotork IQ electric actuator (480v – 3 phase power, open-close duty, NEMA 4X housing)

Mounting Style: Gate frames will have wall surface mounted guides and a wall surface mounted top seal member with 316 stainless steel adhesive anchors and non-shrink grout. Invert member will mount to the existing floor. Additional bolt holes will be provided in the frame. If an existing wall thimble is present, the installer may have to drill through the flange of the thimble and the concrete behind the flange. Anchor studs, nuts and washers are included.

NOTES:

1. Rotork IQ electric actuators to be provided by others. RW Gate will coordinate with Rotork local representative.
2. RW Gate will provide new lift nuts for the existing gearboxes attached to the Limitorque L120 electric actuators. The lift nuts will be machined with internal threads to match the stem threads.
3. The drawings are somewhat unclear but if the stem is to penetrate through an intermediate slab, we have not included any bushings to seal between the stem and cored opening in the floor.

Item No. 05 – Filters 7 - 9

Qty. - Size: Three (3) Model RW750-S Slide Gates - 21" wide x 24" tall

Distance from the Invert of the Opening to the Operating Floor: 10.5' (assumed)

Design Seating Head / Design Unseating Head (invert to MWL): 10' / 0'

Tag No.: 40GTE0402, 40GTE0502, 40GTE0602, 40GTE0702, 40GTE0802, 40GTE0902

Dwg No.: F-2-2001, F-R-3001, F-D-2003, F-D-3004

Description: The AWWA C561 compliant, non self-contained, upward-opening slide gates will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and top and an EPDM flush bottom invert seal. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided. 304L stainless steels stem guides with UHMWPE bushings will be provided.

Operating Mechanism: floor stand mounted, Rotork IQ electric actuator (480v – 3 phase power, open-close duty, NEMA 4X housing)

Mounting Style: Gate frames will have wall surface mounted guides and a wall surface mounted top seal member with 316 stainless steel adhesive anchors and non-shrink grout. Invert member will mount to the existing floor. Additional bolt holes will be provided in the frame. If an existing wall thimble is present, the installer may have to drill through the flange of the thimble and the concrete behind the flange. Anchor studs, nuts and washers are included.

NOTES:

1. Rotork IQ electric actuators to be provided by others. RW Gate will coordinate with Rotork local representative.
2. The drawings are somewhat unclear but if the stem is to penetrate through an intermediate slab, we have not included any bushings to seal between the stem and cored opening in the floor.

Item No. 06 – Filter Influent Channel to Isolate Filters 1 – 3

Qty. - Size: One (1) Model RW750-S Slide Gate - 48" wide x 57" tall

Distance from the Invert of the Opening to the Operating Floor: 6' (assumed)

Design Seating Head / Design Unseating Head (invert to MWL): 4.75' / 0'

Tag No.: 40GTE0001

Dwg No.: F-S-2001, F-D-2003

Description: The AWWA C561 compliant, self-contained, upward-opening slide gate will be constructed of 304L stainless steel with self-adjusting UHMWPE seals along the sides and an EPDM flush bottom invert seal. No top seal. Manual limit switches are included in accordance with Par. 2.05.A.7. A single, rising, 316 stainless steel operating stem and clear plastic stem cover with mylar indicator strips will be provided.

Operating Mechanism: yoke mounted, manual handwheel

Mounting Style: Gate frame will have in-channel mounted guides with 316 stainless steel adhesive anchors and non-shrink grout. Additional bolt holes will be provided in the frame. Anchor studs, nuts and washers are included.

Item No. 07– FIELD SERVICE

Two (2) trips consisting of a total of three (3) days at the project site is included in accordance with Par. 3.03.A. *Rotork field service to be provided by others.*

TOTAL SELLING PRICE: \$ _____

CLARIFICATIONS: RW Gate intends to use materials of construction that are known to comply with NSF requirements. RW Gate is not NSF 61 certified at this time. Manual gearboxes are being offered for temporary use until the electric actuators arrive onsite.

GENERAL: Our quotation is based on our best interpretation of the plans and specifications and the description listed herein. Please review the quotation and advise our local representative, **Brian Dieke at Engineering Equipment Solutions at 303-921-2846**, if there are any discrepancies between the details on this quotation and the actual requirements. The pricing and deliveries listed in the body of the quotation will be held for 120 days from the bid date on Page 1.

RW Gate is ISO 9001:2015 certified. RW Gate complies with AIS and Buy American requirements.

INCLUDED: Submittal drawings, installation instructions and O&M manuals. Installation instructions will be forwarded with the equipment. Information will be sent electronically unless otherwise indicated by the customer. Spare parts are included in accordance with Par. 1.05.A.

EXCLUDED: The following items are specifically excluded; demolition, installation, field measurements, seismic calculations, PE stamp on submittals, electric actuators, control panels, remote control stations, instrumentation, wiring, conduit, junction boxes, disconnects, wall thimbles, wall pipes, floor sleeves, bulkheads, blind flanges, plugs, concrete, grout, gaskets, mastic, lubricants, grating, handrail, cover plates, epoxy for anchors and all taxes including local and state sales tax.

PAYMENT: Net 30 days. Please contact RW Gate prior to payment via credit card. An additional charge may be necessary when paying by credit card.

FREIGHT: Full freight to project site is included. Please contact the factory if separate, partial shipments are necessary as a price adder will be required. Unloading by others.

STANDARD DELIVERY: Submittal drawings will ship within 4 weeks of receipt of a purchase order and detailed mechanical drawings. The gate assemblies will ship 14 weeks after receipt of approved submittal drawings. The electric actuators will ship "TDB by supplier" after receipt of approved submittal drawings. Electric actuators will ship direct to the project site from the original manufacturer. Please contact us for expedited delivery dates. A price adder will be required for expedited submittals and shipments.

FIELD SERVICE: Field service is included as described in Item No. 07. If additional field service is required, please contact our local representative for revised pricing. Please provide a 3-week notice for field service.

Best Regards,

Evan Whipps

Evan Whipps
RW Gate Company
ewhipps@rwgate.com



www.RWGATE.com

Justin McRae

From: Jessie Gloor <jgloor@pcl.com>
Sent: Thursday, July 7, 2022 2:44 PM
To: Justin McRae
Subject: Fwd: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget
Attachments: Arvada, CA Filter Media - Bid Package.pdf; I19222 Leopold Filtration Equipment (media) REV00 7-6-22.docx; I19222 Leopold Filtration Equipment (und for 10-12 agit for all) REV00 7-7-22.docx

Jessie Gloor
Project Engineer

PCL Construction, Inc.
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Denver, CO 80222
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M: 720-682-9371
jgloor@pcl.com

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TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Thursday, July 7, 2022 2:32:50 PM
To: Jessie Gloor <jgloor@pcl.com>; Raymond Torrejon <rtorrejon@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Jessie,

Filter Media:
Complete quote and bid form attached.

Filtration Equipment:
A budgetary filtration equipment quote is also attached. A good budget for the filtration equipment is around \$900,000. Honestly I imagine that number will be less than the budget price, seeing as this is likely to bid by the end of the month. That said, I / Leopold really (REALLY) hates to give low budget numbers and then something changes, usually isn't "a good look" so to speak.

Can I ask, what is the intent with the existing underdrains and filtration equipment for filters 1-9? Are the original underdrains going to be used? Are there any plans for upgrading those underdrains as well?

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Jessie Gloor <jgloor@pcl.com>
Sent: Thursday, July 7, 2022 1:22 PM
To: Raymond Torrejon <rtorrejon@pcl.com>; Chase Knox <cknox@isiwest.com>
Subject: Re: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Hey chase can we bug you on this again? Any new updates? It's early in the day but just wanted to check in.
Thanks!

Jessie Gloor
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From: Raymond Torrejon <rtorrejon@pcl.com>
Sent: Wednesday, July 6, 2022 3:59:39 PM
To: Chase Knox <cknox@isiwest.com>; Jessie Gloor <JGloor@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Chase,

Thanks for the update.

Raymond Torrejon
Project Manager

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Denver, CO 80222
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E: rtorrejon@pcl.com

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TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>
Sent: Wednesday, July 6, 2022 3:59 PM
To: Raymond Torrejon <rtorrejon@pcl.com>; Jessie Gloor <JGloor@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Ray,

I just got an email from Leopold, they said they will have both proposals tomorrow (budget for underdrains, hard quote for media).

That is a day late but that is what they have... I will send it the moment I get it.

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Raymond Torrejon <rtorrejon@pcl.com>

Sent: Wednesday, July 6, 2022 8:43 AM

To: Chase Knox <cknox@isiwest.com>; Jessie Gloor <JGloor@pcl.com>

Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Hey bud, any luck?

Raymond Torrejon
Project Manager

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TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>

Sent: Tuesday, July 5, 2022 4:12 PM

To: Raymond Torrejon <rtorrejon@pcl.com>; Jessie Gloor <jgloor@pcl.com>

Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

I followed up for an update. I haven't heard back from them yet.

They do know the bid is due tomorrow.

I will touch base with them again tomorrow as well.

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Raymond Torrejon <rtorrejon@pcl.com>

Sent: Tuesday, July 5, 2022 3:41 PM

To: Jessie Gloor <jgloor@pcl.com>; Chase Knox <cknox@isiwest.com>

Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Chase,

Do you have an update on the requested pricing? Are we tracking to have this in our court by tomorrow?

Thanks,

Raymond Torrejon
Project Manager

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From: Jessie Gloor <jgloor@pcl.com>
Sent: Wednesday, June 29, 2022 10:53 AM
To: Chase Knox <cknox@isiwest.com>; Raymond Torrejon <rtorrejon@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Chase,

I mis-typed below; sorry!

We are going to ask for a bid at 60%, which we expect on 7/27. We are pushing to beat that if we can, but that is what we're looking at right now. We'll be able to make a selection quickly after the pricing phase is complete and roll right into submittals. We did get some lead times from Frank a few months ago, but if you can update us on the current lead times we'd appreciate it.

Yes, please use the Leopold calcs below and disregard my initial quantity that I sent out.

Thank you,

Jessie Gloor
Project Engineer

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From: Chase Knox <cknox@isiwest.com>
Sent: Wednesday, June 29, 2022 10:36 AM
To: Jessie Gloor <jgloor@pcl.com>; Raymond Torrejon <rtorrejon@pcl.com>
Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Jessie,

Thanks!

A couple of quick follow-up questions.

- Any idea when 90% is scheduled to be completed? I only ask because of the delivery schedule you note below. I want to run it by Leopold so we are all on the same page there. That gives them an opportunity to look at current and anticipated backlog and make comments regarding deliver and timing.
- To be clear, you want us to make the Leopold calculations. I just want to get it right. I already feel bad that we are late.

Moving forward I'll be running with project so feel free to direct everything to me.

Thank you for your help.

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Jessie Gloor <jgloor@pcl.com>

Sent: Wednesday, June 29, 2022 10:22 AM

To: Chase Knox <cknox@isiwest.com>; Raymond Torrejon <rtorrejon@pcl.com>

Subject: Re: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Good morning Chase,

I can answer these for you.

This is budgetary at this point in time. The project is at 30% and we won't ask for the official bid until 90%.

Delivery timeframe would be this fall. If design progresses per schedule, we'll need these in September. This is a phased project and we can only take down a max of 6 filters at a time, so we don't need the complete length but we do need at least enough to do the first set of three filters. The next three will be taken offline in mid-October.

Please use the quantity in the specs to base your quote (higher quantity). There was a discrepancy between the specs and drawings. I had planned on sending out an update email today and extend the bid due date to this Friday.

Please let me know if there are any other open questions or anything requiring additional clarification.

Thank you,

Jessie Gloor
Project Engineer

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jgloor@pcl.com

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TOGETHER WE BUILD SUCCESS

From: Chase Knox <cknox@isiwest.com>

Sent: Wednesday, June 29, 2022 10:16:16 AM

To: Raymond Torrejon <rtorrejon@pcl.com>

Cc: Jessie Gloor <JGloor@pcl.com>

Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

[External Email]

Apparently the two gentlemen working on this at Leopold had a couple of questions and they both thought the other party had reached out to me / us. Obviously they hadn't.

They needed to confirm a couple of things.

- They asked for some clarity if this is an “official bid” or budgetary.
- Either way they wanted to know the time line, what the delivery time frame for this project would be. (FYI – Fright is really high right now so they are trying to make note of that as best they can).
- Finally, they had some discrepancies on the calculations. You requested 360 cy of anthracite and 70 cy of sand; however, when they do the calculations for the media required for all 12 filters as shown in the drawings. 28” anthracite and 10” sand. This comes to 273 tons sand and 351 tons anthracite. They use 50 lbs per cf for ant and 100 lbs per cf for sand.

Can you please confirm those items?

Thanks and again, sorry for the delay.

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Chase Knox

Sent: Tuesday, June 28, 2022 4:53 PM

To: Raymond Torrejon <rtorrejon@pcl.com>

Cc: Jessie Gloor <JGloor@pcl.com>

Subject: RE: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Ray,

I heard from Leopold on Friday morning that they had this in the queue to be done today.

I followed up with them again today and haven't seen anything. I touched base with Frank as well and he hadn't heard anything either.

Even if it is too late I will get you whatever they send me the moment I get it.

Thanks

Chase Knox | www.isiWEST.com [nam05.safelinks.protection.outlook.com] | c. 970.691.0805

From: Raymond Torrejon <rtorrejon@pcl.com>

Sent: Thursday, June 23, 2022 3:29 PM

To: Chase Knox <cknox@isiwest.com>

Cc: Jessie Gloor <JGloor@pcl.com>

Subject: FW: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Chase,

See attached.

Cheers,

Raymond Torrejon
Project Manager

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Denver, CO 80222
P: 720.357.6253
E: rtorrejon@pcl.com

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TOGETHER WE BUILD SUCCESS

From: Jessie Gloor <jgloor@pcl.com>
Sent: Thursday, June 23, 2022 8:25 AM
To: Raymond Torrejon <rtorrejon@pcl.com>
Subject: FW: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

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From: Jessie Gloor
Sent: Wednesday, June 15, 2022 12:38 PM
To: Frank Henderson <fhenderson@isiwest.com>
Subject: Arvada Filters, Solids Handling, and Clarifier Rehab - Media Quote and Underdrain Budget

Frank,

As discussed please see attached for our filter media spec and our 30% design drawings for the filter scope on the Arvada project.

I am looking for your best number for the filter media as this scope will be competitively bid and there will not be another round of pricing for this item. We will send out a formal bid package on Friday, but I wanted to get this in front of you ASAP. The quantities we are looking for are:

Anthracite: 360 CY
Sand: 77 CY

Please note, we will likely need two separate deliveries for this media. The first will likely be this fall and the second sometime in the winter.

We are also looking for a budgetary price for the Leopold underdrain system on Filters 10-12, as noted in the drawings. We are expecting to send out specs on this late next month.

I am looking for numbers on both no later than June 28th. If you have any questions please send them my way.

Thank you!

Jessie Gloor

Project Engineer

Upcoming PTO: June 20th to June 29th

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jgloor@pcl.com

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Exhibit B

Amendment No. 4

To the Agreement Between the City of Arvada and PCL Construction, Inc. Establishing Contractor's Guaranteed Maximum Price No. 4 of the "Construction Management/General Contractor Agreement for Preconstruction Services for the Rehabilitation and Modification of the Filter and Solids Handling Systems at the Ralston Water Treatment Plant," in an Amount not to Exceed \$1,781,824.00

Plot Date: 17-JAN-2023 2:16:16 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

trea

RALSTON WTP SOLIDS IMPROVEMENTS

CITY OF ARVADA, COLORADO

6750 DUNRAVEN STREET
ARVADA, CO 80007

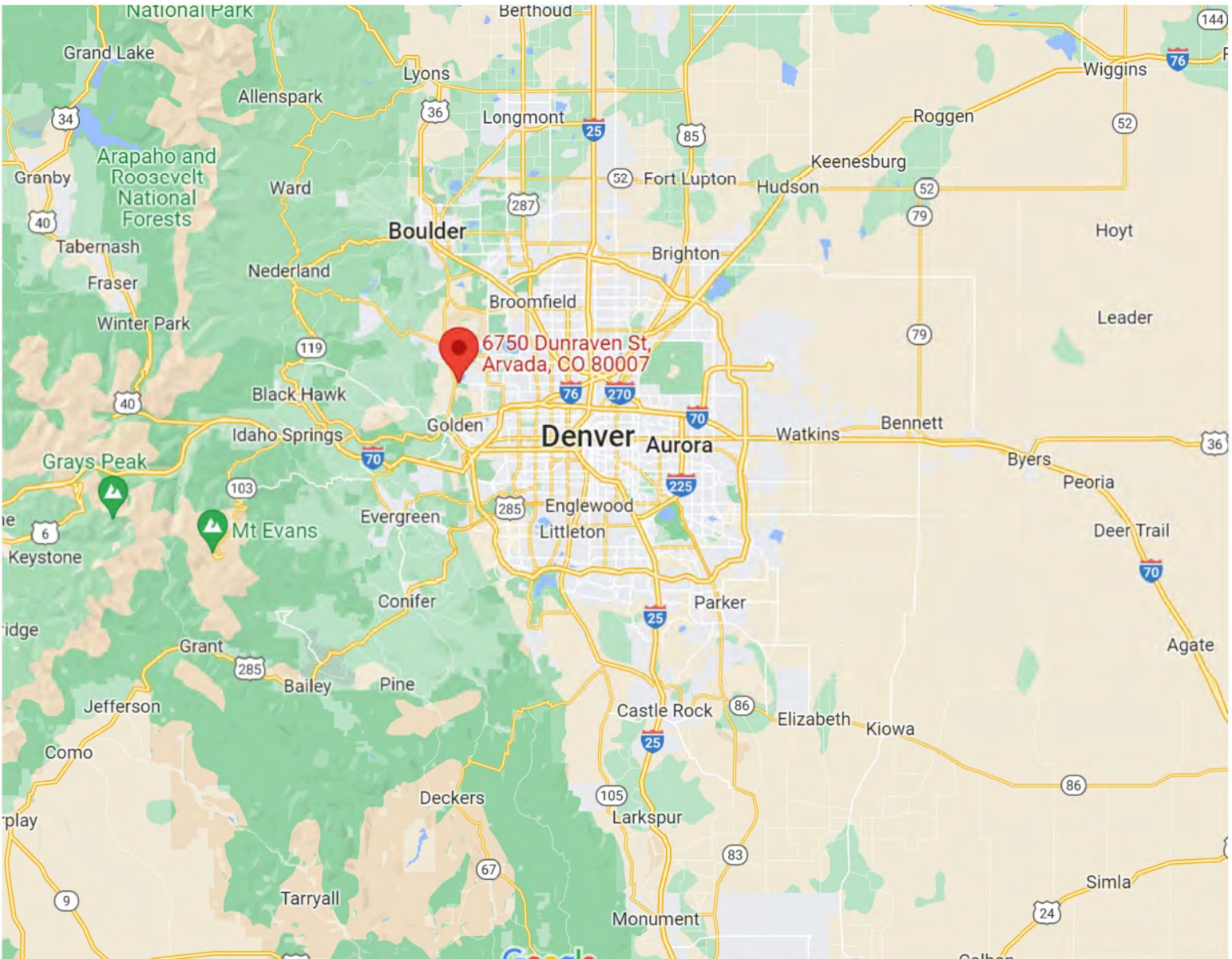
100% SUBMITTAL



390 INTERLOCKEN CRESCENT, SUITE 800
BROOMFIELD, COLORADO 80021

EXHIBIT
B

JOB NO. 201351
DRAWING NO. 00G01
SHEET NO. 1 OF 81



VICINITY MAP



LOCATION MAP

Plot Date: 17-JAN-2023 2:30:47 PM
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DesignScript: Carollo Std Pen_v0905.pen
PlotScale: 1:1
LAST SAVED BY: irea

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A	SHEET NO.				DRAWING NO.				SHEET DESCRIPTION					
	1	00	G	01	GENERAL									
	2	00	G	02	COVER SHEET									
	3	00	G	03	DRAWING INDEX 1									
	4	00	G	04	DESIGN CRITERIA									
	5	00	G	05	PROCESS FLOW DIAGRAM									
	6	00	G	06	GENERAL NOTES, LEGEND, AND SYMBOLS									
	7	00	GC	01	GENERAL ABBREVIATIONS									
	8	00	GC	02	CIVIL NOTES									
	9	00	GC	03	CIVIL LEGEND AND SYMBOLS									
	10	00	GS	01	OVERALL SITE, ACCESS, AND SURVEY CONTROL PLAN									
	11	00	GM	01	STRUCTURAL NOTES									
	12	00	GM	02	GENERAL MECHANICAL LEGEND AND SYMBOLS									
	13	00	GE	01	MECHANICAL SCHEDULES									
	14	00	GE	02	ELECTRICAL LEGEND									
	15	00	GE	03	ELECTRICAL ABBREVIATIONS									
	16	00	GE	04	MCC-3 ELEVATION									
	17	00	GE	05	MCC-3 ONE-LINE DIAGRAM 1									
	18	00	GE	06	MCC-3 ONE-LINE DIAGRAM 2									
	19	00	GE	07	MCC-4 ONE-LINE DIAGRAM AND ELEVATION									
	20	00	GN	01	ELECTRICAL SCHEDULES									
	21	00	GN	02	SYMBOLS AND ABBREVIATIONS 1									
	22	00	GN	03	SYMBOLS AND ABBREVIATIONS 2									
	23	00	GN	04	SYMBOLS AND ABBREVIATIONS 3									
	24	00	GN	05	SYMBOLS AND ABBREVIATIONS 4									
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DesignScript: Carollo Std Pen_v0905.pen
PlotScale: 1:1
LAST SAVED BY: trea

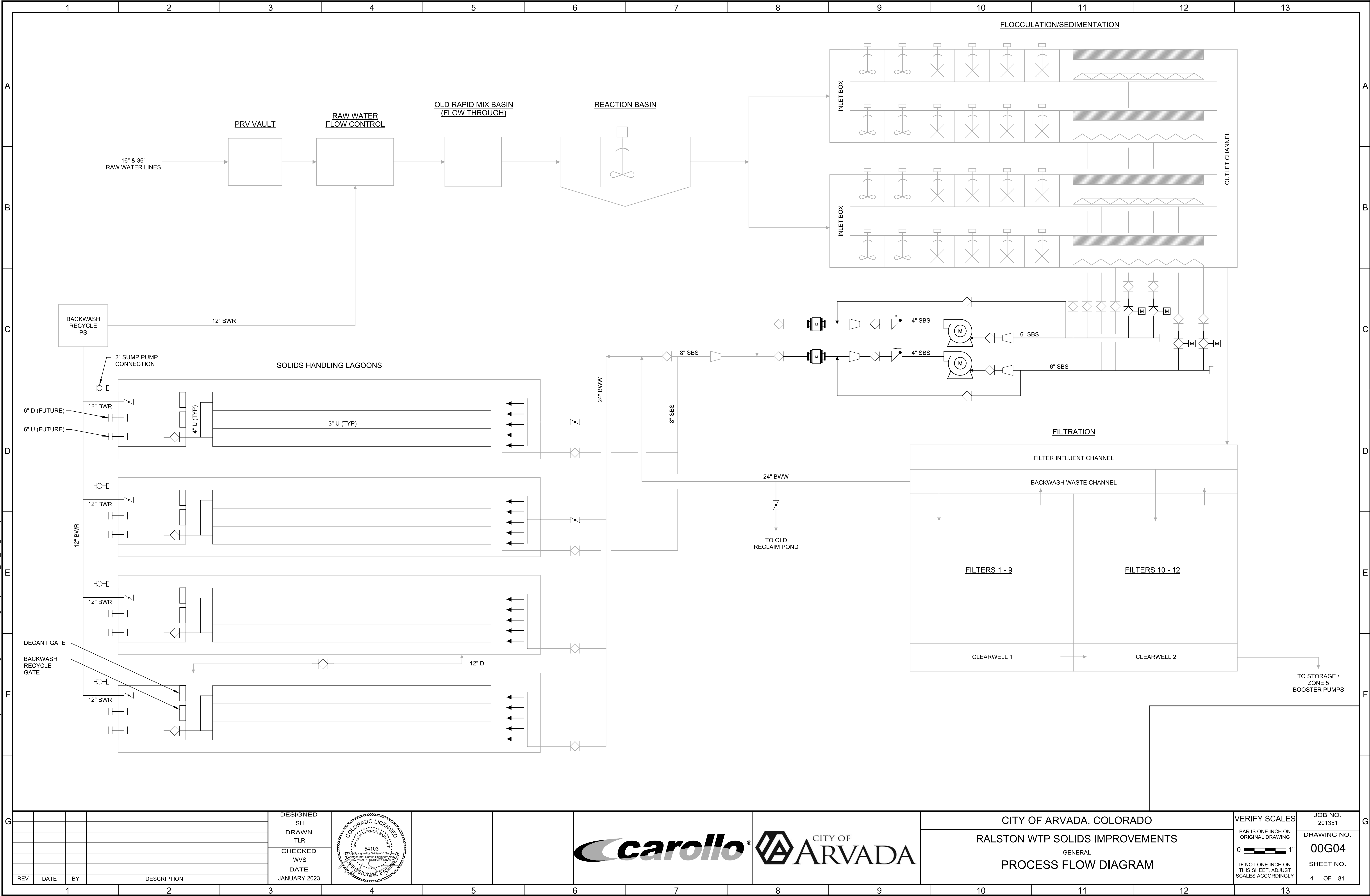
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<table><tr><th>DESCRIPTION</th><th>UNITS</th><th>CRITERIA</th></tr><tr><td colspan="3">PLANT FLOW RATES</td></tr><tr><td>MAXIMUM FLOW PRODUCED</td><td>mgd</td><td>36</td></tr><tr><td>MAXIMUM FLOW THROUGH PLANT</td><td>mgd</td><td>37.8</td></tr><tr><td>MAXIMUM FLOW PRODUCED (EMERGENCY CONDITION ONLY)</td><td>mgd</td><td>44</td></tr><tr><td>MAXIMUM FLOW THROUGH PLANT (EMERGENCY CONDITION ONLY)</td><td>mgd</td><td>46.2</td></tr><tr><td>HYDRAULIC CAPACITY</td><td>mgd</td><td>46.2</td></tr><tr><td>AVERAGE PLANT INFLUENT FLOW RATE</td><td>mgd</td><td>13.6</td></tr><tr><td>AVERAGE PLANT RECYCLE FLOW RATE</td><td>mgd</td><td>0.5</td></tr><tr><td>AVERAGE TOTAL PLANT FLOW RATE</td><td>mgd</td><td>14.1</td></tr><tr><td colspan="3">SEDIMENTATION BASINS (EXISTING)</td></tr><tr><td>SOLIDS REMOVAL TYPE: HOSELESS TRAVELING SOLIDS REMOVAL</td><td></td><td></td></tr><tr><td>NUMBER OF BASINS</td><td>No.</td><td>4</td></tr><tr><td>SEDIMENTATION BASIN SOLIDS PUMPS</td><td></td><td></td></tr><tr><td>NUMBER</td><td>No.</td><td>2</td></tr><tr><td>CAPACITY (TDH)</td><td>gpm (ft)</td><td>200 (13) - VFD</td></tr><tr><td>SIZE</td><td>hp</td><td>1.5</td></tr><tr><td colspan="3">FILTERS (EXISTING)</td></tr><tr><td>FILTER AREA, EACH (FILTERS 1 - 3)</td><td>sq ft</td><td>420</td></tr><tr><td>FILTER AREA, EACH (FILTERS 4 - 12)</td><td>sq ft</td><td>462</td></tr><tr><td colspan="3">FILTER BACKWASH (EXISTING)</td></tr><tr><td>TYPE: PUMPED</td><td></td><td></td></tr><tr><td>BACKWASH RATE, MAX</td><td>gpm/sq ft</td><td>19.6</td></tr><tr><td>NUMBER OF BACKWASH PUMPS</td><td>No.</td><td>2</td></tr><tr><td>PUMP CAPACITY, EACH</td><td>gpm</td><td>9,055</td></tr><tr><td>FILTER BACKWASH WASTE VOLUME</td><td></td><td></td></tr><tr><td>TOTAL VOLUME PER BACKWASH / ETSW</td><td>gal</td><td>162,000</td></tr><tr><td colspan="3">SOLIDS HANDLING LAGOONS</td></tr><tr><td>TYPE: RECTANGULAR WITH SLOPED SIDES</td><td></td><td></td></tr><tr><td>NUMBER</td><td>No.</td><td>4</td></tr><tr><td>GRAVEL DEPTH</td><td>ft</td><td>0.5</td></tr><tr><td>SAND DEPTH</td><td>ft</td><td>1</td></tr><tr><td>LAGOON DRYING AREA DIMENSIONS (W x L)</td><td>ft x ft</td><td>67'-6" x 255'-9"</td></tr><tr><td>AREA, EACH</td><td>sq ft</td><td>17,000</td></tr><tr><td>SIDE SLOPE</td><td>ft:ft</td><td>2.5:1</td></tr><tr><td>WATER DEPTH, MAX</td><td>ft</td><td>5.5</td></tr><tr><td>WATER DEPTH, AVG</td><td>ft</td><td>3.5</td></tr><tr><td>VOLUME, EACH (@ MAX DEPTH)</td><td>gal</td><td>885,000</td></tr><tr><td>VOLUME, EACH (@ AVERAGE DEPTH)</td><td>gal</td><td>506,000</td></tr><tr><td>OPERATING VOLUME, EACH (MAX VOLUME SUBTRACTING AVERAGE VOLUME)</td><td>gal</td><td>379,000</td></tr><tr><td>SLUDGE ZONE DEPTH (MAXIMUM)</td><td>ft-in</td><td>1'-0"</td></tr><tr><td>BACKWASHES STORED PER LAGOON (@ 162,000 GAL PER BACKWASH)</td><td>No.</td><td>2.3</td></tr><tr><td>SOLIDS LOADING RATE PER DRYING CYCLE, AVERAGE</td><td>lbs/sq ft</td><td>4</td></tr><tr><td>SOLIDS HANDLING CAPACITY, EACH CYCLE</td><td>lbs</td><td>68,000</td></tr><tr><td>CYCLES PER YEAR</td><td>No./yr</td><td>3</td></tr><tr><td>SOLIDS HANDLING CAPACITY, TOTAL (4 LAGOONS)</td><td>lbs/yr</td><td>816,000</td></tr><tr><td>DESIGN ANNUAL WATER PRODUCTION (@ 14.1 MGD)</td><td>Mgal</td><td>5,100</td></tr><tr><td>AVERAGE SOLIDS PRODUCTION RATE</td><td>dry lbs/Mgal</td><td>127</td></tr><tr><td>TOTAL ANNUAL SOLIDS PRODUCTION (@ 14.1 MGD)</td><td>dry lbs/yr</td><td>648,000</td></tr><tr><td colspan="3">DRYING PAD</td></tr><tr><td>TYPE: CONCRETE SLAB WITH THREE WALLS</td><td></td><td></td></tr><tr><td>DRYING PAD DIMENSIONS (W x L)</td><td>ft x ft</td><td>80'-0" x 120'-0"</td></tr><tr><td>WALL HEIGHT</td><td>ft</td><td>3</td></tr><tr><td>VOLUME AT MAX WALL HEIGHT</td><td>cu ft</td><td>28,800</td></tr><tr><td>STORAGE CAPACITY (@ 75 DRY LBS / CU FT SOLIDS DENSITY)</td><td>dry lbs</td><td>2,160,000</td></tr><tr><td colspan="3">BACKWASH RECYCLE PUMP STATION (EXISTING)</td></tr><tr><td>TYPE: VERTICAL TURBINE PUMPS, REINFORCED CONCRETE WET WELL</td><td></td><td></td></tr><tr><td>BACKWASH RECYCLE PUMPS</td><td></td><td></td></tr><tr><td>NUMBER</td><td>No.</td><td>3</td></tr><tr><td>CAPACITY (TDH)</td><td>gpm (ft)</td><td>1 @ 400 (95) 1 @ 800 (125) 1 @ 800 (125) - 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Plot Date: 17-JAN-2023 2:16:32 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: trea



REV	DATE	BY	DESCRIPTION

DESIGNED SH
DRAWN TLR
CHECKED WWS
DATE JANUARY 2023



CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351
RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00G04
GENERAL		0 1"	SHEET NO. 4 OF 81
PROCESS FLOW DIAGRAM		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

	GENERAL NOTES	LINE WORK	DETAIL REFERENCES	HATCH PATTERNS
A B C D E F	FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK. UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK. CONTRACTOR SHALL COMPLY WITH LOCAL CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS. PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID. EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE. CONTRACTOR SHALL VERIFY THAT PIPING SHOWN TO BE ABANDONED OR AS ABANDONED PREVIOUSLY IS NO LONGER IN SERVICE. LINES IN SERVICE SHALL BE MAINTAINED UNTIL NO LONGER REQUIRED BY THE PLANT. ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE PLANT. CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE. ALL SIDEWALKS TO BE 3'-0" WIDE UNLESS SHOWN OTHERWISE. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES. PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPES AND FACILITIES. CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY THE ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACTOR DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.	NEW EXISTING CONSTRUCTION FENCE GUARDRAIL FUTURE CONSTRUCTION CENTER LINE HIDDEN LINE REMOVE AND/OR ABANDON GATE MATCH LINE SAMPLE MATCH LINE SEE DWG ##X## SYMBOLS BRACKET BREAK LINE PIPE BREAK PLAN VIEW PIPE BREAK CROSS SECTION SCALE NORTH ARROW/PLANT NORTH EQUIPMENT/DEVICE TAG AND NUMBER PIPE TAG UNDERGROUND/OVERHEAD WARNING (STATE/REGION SPECIFIC) 811 Know what's below. Call before you dig. Call before you OVERHEAD Replace with Regional Phone Number PIPER CONTINUATION (SINGLE LINE) KEY TAG KEY NOTE REVISION DELTA EXISTING ELEVATION ELEVATION T.O.W. XXXX.X± (EXIST) TOC XXXX.XX DRAWING REFERENCE TYPICAL DETAIL # EXTERIOR ELEVATION VIEWS PHOTO LOCATION GRID BUBBLE LAYOUT SYMBOLS AREA DESIGNATOR (WHEN APPLICABLE) DISCIPLINE DESIGNATOR SHEET NUMBER (TYP) - INDICATES THE TYPICAL DETAIL IS USED IN MULTIPLE LOCATIONS WITHIN THE DRAWING SEE INDICATED DRAWING ARROW INDICATES POINT OF VIEW SEE INDICATED DRAWING TYPICAL DETAIL TITLE MODIFICATION NOTE S = STANDARD J = JOB SPECIFIC R = REVISED N = NOTE TO TYPICAL DETAIL USER INDICATES LOCATED ON TYPICAL DETAIL SHEETS SHOTS OF # SHEETS IN DETAIL DATE CREATED (REVISED)	VIEW DESCRIPTION, AS NECESSARY DESCRIPTION PLAN FILE: FILE PLAN NOT REFERENCED SECTION CUT VIEW - = SHOWN ON SAME DRAWING ##X## = SEE INDICATED DRAWING VIEW DESCRIPTION, AS NECESSARY ALPHA = SECTION NUMERIC = DETAIL DESCRIPTION SCALE: SCALE FILE: FILE DRAWING CUT ORIGINATION DETAIL OR ENLARGED PLAN CALL OUT SEE INDICATED DRAWING ALPHA = ENLARGED PLAN NUMERIC = DETAIL AGGREGATE BASE COURSE (ABC) GRAVEL ALUMINUM GRATING SPAN ASPHALT PAVING LANDSCAPING BEDROCK RUBBER BRICK OR BLOCK SAND OR GROUT BRONZE, BRASS, OR COPPER EXISTING/UNDISTURBED SOIL CAST IRON OR FIBERGLASS STRUCTURAL FILL OR BACKFILL CLSM STEEL CONCRETE (ALL CLASSES) TREAD PLATE DRAIN ROCK WOOD	MISCELLANEOUS
G	DESIGNED SH DRAWN TLR CHECKED WVS DATE JANUARY 2023 COLORADO LICENSED PROFESSIONAL ENGINEER 54103 William Vernoni-Schreyer carollo CITY OF ARVADA CITY OF ARVADA, COLORADO RALSTON WTP SOLIDS IMPROVEMENTS GENERAL GENERAL NOTES, LEGEND, AND SYMBOLS VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY JOB NO. 201351 DRAWING NO. 00G05 SHEET NO. 5 OF 81			

[illegible]

Plot Date: 1/17/2023 3:33:09 PM

FILE NAME: 201351-00GC01.dwg

PROJECT NO. 201351-100000

LAST SAVED BY: rfaik

	1	2	3	4	5	6	7	8	9	10	11	12	13
A	GENERAL YARD NOTES:				GRADING NOTES:								
	1. GENERAL YARD NOTES APPLY TO ALL DRAWINGS.				1. FIELD ADJUST HEIGHT OF ALL EXISTING AND NEW MANHOLES, VAULT ENTRANCES, ELECTRICAL BOXES, HAND HOLES, VALVE BOXES, PIPELINE CLEANOUTS, ETC., AS NEEDED FOR NEW FINISH GRADES REQUIRED.								
	2. ALL PIPING BEYOND THE LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE TRENCHED PER CITY OF ARVADA STANDARDS.				2. ALL GRADING SHALL BE LAID ON UNIFORM GRADES BETWEEN ELEVATIONS GIVEN UNLESS OTHERWISE SHOWN. IF NEW ELEVATIONS ARE NOT INDICATED, THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE BETWEEN EXISTING ADJACENT PAVEMENT IN THE DIRECTION OF THE PREVIOUS DRAINAGE COURSE.								
B	3. UNLESS SHOWN OTHERWISE, THE MINIMUM COVER OR BURY FROM FINISH GRADE TO TOP OF PIPING SHALL BE 48".				3. PROVIDE UNIFORM SLOPE BETWEEN ALL NEW GROUND CONTOUR LINES AND BETWEEN ALL EXISTING AND NEW GROUND CONTOUR LINES UNLESS OTHERWISE NOTED.								
	4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL PIPING AND DUCT BANKS SHALL HAVE A MINIMUM OF 18" VERTICAL CLEARANCE FROM NEAREST PIPELINE OR DUCT BANK.												
	5. ALL STATIONING SHOWN IS APPROXIMATE. CONTRACTOR SHALL VERIFY LENGTHS IN FIELD PRIOR TO FABRICATION OF PIPING AND SUBMIT SHOP DRAWINGS FOR REVIEW.												
C	6. ALL DUCTILE IRON, CAST IRON, PUSH-ON OR MECHANICAL JOINT PIPE SHALL BE MECHANICALLY RESTRAINED UNLESS NOTED OTHERWISE ON THE PIPE SCHEDULE. ALL FLEXIBLE COUPLINGS SHALL BE RESTRAINED PER APPLICABLE TYPICAL DETAIL P110.												
	7. ALL SEWER AND STORMWATER PIPES SHALL BE SEPARATED FROM POTABLE WATER PIPES BY A MINIMUM OF 10' HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION.												
	8. THE FIRST PIPE JOINT OUT OF STRUCTURES OR OUT OF CONCRETE ENCASEMENTS SHALL BE AT THE EDGE OF WALL, OR WITHIN TWO FEET OF THE EDGE OF WALL OR END OF CONCRETE ENCASEMENT. THE NEXT JOINT SHALL BE MAXIMUM 4 FEET ON CENTER UNLESS NOTED OTHERWISE.												
D	9. SEE CITY OF ARVADA STANDARDS AND SPECIFICATIONS FOR WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE FOR MORE REQUIREMENTS.												
	10. CONTACT UTILITY NOTIFICATION CENTER OF COLORADO 811 PRIOR TO BEGINNING ANY WORK, IN ORDER TO IDENTIFY UTILITIES IN THE WORK AREA WHICH MAY NOT BE SHOWN ON DRAWINGS. HOWEVER, UTILITY LOCATES CANNOT BE SOLELY RELIED UPON. POT HOLING MUST BE PERFORMED AS DESCRIBED BELOW AND IN THE SPECIFICATIONS.												
	11. AT CONNECTIONS TO EXISTING BURIED PIPING, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE, VERIFY LOCATION, INVERT, MATERIALS, DIMENSIONS AND SUBMIT A SHOP DRAWING OF THE PROPOSED CONNECTION FOR REVIEW PRIOR TO FABRICATION OF NEW PIPING. THE CONTRACTOR SHALL FURNISH ALL NECESSARY SLEEVES, FLANGES, NIPPLES, COUPLINGS, FITTINGS, TOOLS, LABOR, ETC. NEEDED TO COMPLETE THE CUT-IN OR CONNECTIONS AT NO ADDITIONAL COST TO THE OWNER, WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.												
E	12. WHENEVER NEW PIPING OR CONDUIT CROSSES EXISTING PIPING OR CONDUIT, THE CONTRACTOR SHALL EXPOSE THE EXISTING ITEMS, VERIFY LOCATION AND ELEVATION PRIOR TO FABRICATION OF NEW PIPING, AND SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER. SOME OF THE EXISTING PIPING OR CONDUITS AS SHOWN ON THE DRAWINGS ARE LOCATED FROM THE BEST AVAILABLE INFORMATION AND ARE SHOWN FOR THE CONTRACTOR'S CONVENIENCE. NOT ALL THE EXISTING PIPING OR CONDUITS ARE SHOWN ON THE DRAWINGS.												
	13. ALL EXISTING PIPING AND ELECTRICAL CONDUITS SHALL BE SUPPORTED IN PLACE DURING TRENCHING OR EXCAVATION WORK BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT DISTURB THE LOCATIONS, ALIGNMENTS AND ELEVATIONS OF THE EXISTING PIPING AND CONCRETE ENCASED ELECTRICAL CONDUITS, UNLESS OTHERWISE APPROVED BY ENGINEER.												
	14. THE CONTRACTOR SHALL REPLACE IN KIND OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES. NOT ALL THE EXISTING ITEMS ARE SHOWN ON THE DRAWINGS.												
F	15. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE DRAINAGE PATTERNS AT THE SITE. WATER SHALL NOT BE ALLOWED TO POND OR STAND DUE TO CONTRACTOR'S ACTIVITIES.												
	16. CONTRACTOR SHALL PROVIDE NECESSARY MEANS OF SHORING, BRACING, BARRICADING, ETC. IN ORDER TO PROVIDE EXISTING/NEW FACILITY AND UTILITY PROTECTION. SEE SPECIFICATION SECTION 31_23_35.												
	17. COVER OPEN TRENCH AREAS WITH TRAFFIC PLATES WHERE ACCESS IS IMPACTED BY CONSTRUCTION ACTIVITY. PROVIDE SIGNS AND BARRICADES TO DIRECT TRAFFIC, AS REQUIRED.												
G	18. EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATELY LOCATED BASED ON RECORD DRAWINGS AT SUE LEVEL D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF, AND PRESERVING ALL UTILITIES.												
	19. THE CONTRACTOR IS RESPONSIBLE TO LOCATE ALL NATURAL GAS PIPING USING VACUUM EXCAVATION POT HOLING PRIOR TO ANY UTILITY CROSSING. ALL NATURAL GAS PIPING SHALL BE PROTECTED IN PLACE.												
G													

Plot Date: 1/17/2023 3:38:49 PM
FILE NAME: 20135100GC03.dwg
PROJECT NO. 201351-100000
LAST SAVED BY: ralk



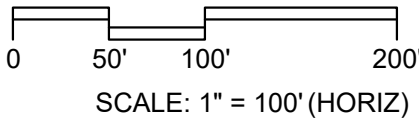
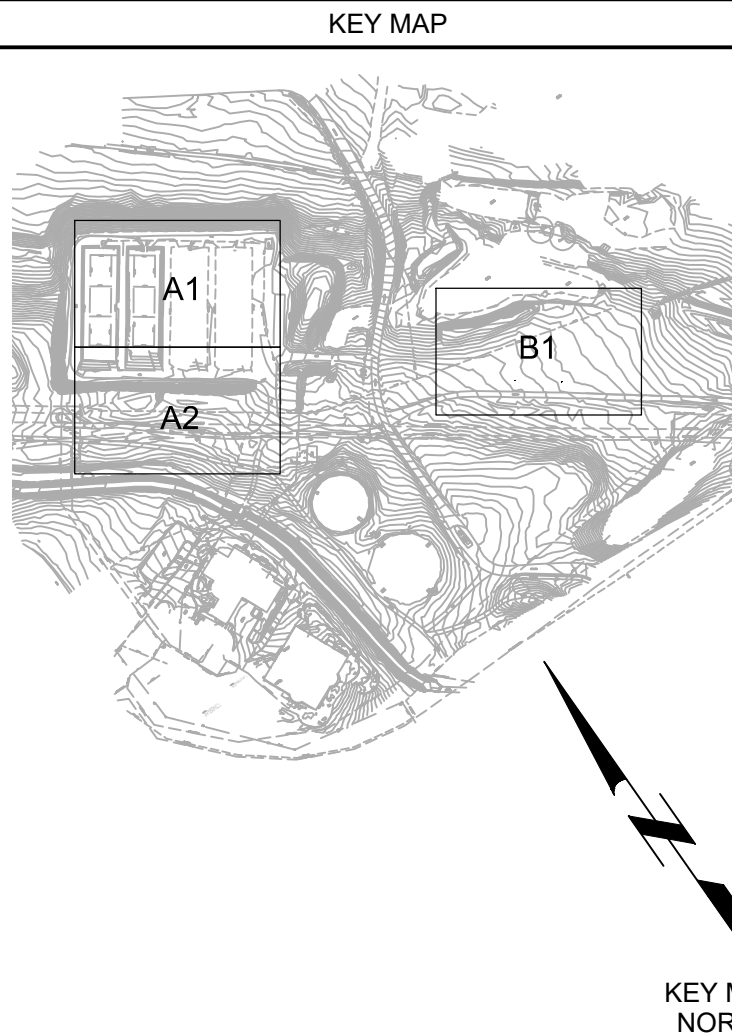
PLAN
FILE: 201351C0900

SURVEY CONTROL TABLE			
CONTROL POINT	NORTHING	EASTING	DESCRIPTION
104	123706.78	79648.23	CP 104 BK 365 PG 55
107	123499.10	79768.25	CP 107 BK 365 PG 55
120	123462.90	80689.58	CP 120
123	123079.97	80181.96	CP 123 BK 365 PG 55
124	122600.31	80183.17	CP 124 COA CAP 23FT OFF SE COR
125	122527.09	80005.51	CP 125 2.5IN CAP SW COR OF CHEM
126	122749.80	79897.91	CP 126 5 RBR 3.0 E OF TBC 7.9
127	122845.25	79718.91	CP 127 5 REBAR 25.8 WSW FH 6.5
128	123046.73	79906.80	CP 128 MAG NAIL E SIDE ENTRANCE
136	122604.48	79988.67	CP 136
139	123662.63	80594.65	CP 139
140	123913.42	80221.21	CP 140
202	123413.48	79716.29	CP 202 BK 365 PG 55
658	122999.35	80109.92	TBM 658 COA
1013	123741.95	79560.48	CP 1013 BK 365 PG 55, BENCHMARK
1074	123413.48	79716.32	OIP 1074 DEWBERRY

BASIS OF BEARING					
POINT	COLORADO CENTRAL STATE PLANE NAD88 COORDINATES		ELEVATION NAVD88	DEWBERRY PROJECT COORDINATES	
	NORTHING	EASTING		NORTHING	EASTING
C 1/4 SEC 3 T3S, R70W	1723706.44	3080830.04	N/A	123708.73	80970.99
CW 1/16 SEC 3 T3S, R70W	1723704.50	3079507.64	N/A	123706.78	79648.23
C 1/4 SEC 3 T3S, R70W	N/A	N/A	5829.91	123741.95	79560.48

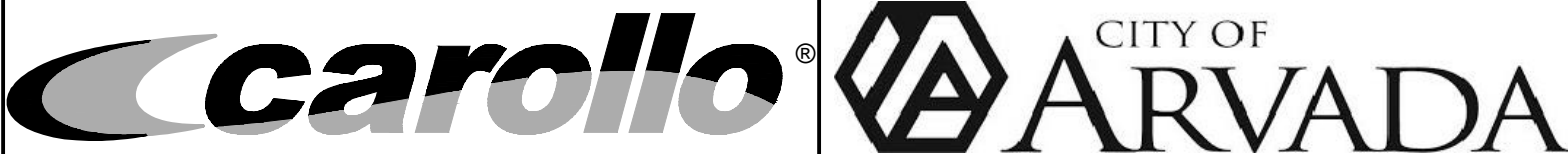
- SURVEY NOTES:**
- BENCHMARK #1013
ELEV = 5829.91 NAVD88
DESCRIPTION: CHISELED SQUARE ON TOP OF NORTHERLY WINGWALL OF OUTLET STRUCTURE ON THE SOUTH BOULDER DIVERSION CANAL.
 - PUBLISHED UNITS ARE IN U.S. SURVEY FEET: 1 SURVEY FOOT = (1200/3937) METERS.
 - PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN & SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS.

- GENERAL NOTES:**
- SEE EROSION CONTROL SHEET 00EC01 FOR REQUIRED CONSTRUCTION BMPS.
- KEY NOTES:**
- CONTRACTOR MATERIAL DELIVERY ROUTE.
 - BRIDGE NOT TO BE USED FOR CONSTRUCTION ACCESS OR DELIVERY.



REV	DATE	BY	DESCRIPTION

DESIGNED
RJF
DRAWN
JJP
CHECKED
BLG
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
OVERALL SITE, ACCESS, AND
SURVEY CONTROL PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00GC03
SHEET NO.
9 OF 81

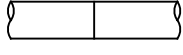
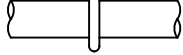
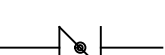
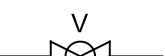
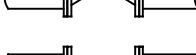
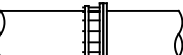
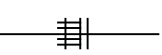
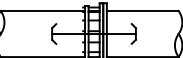
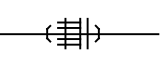
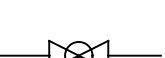
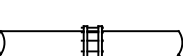
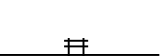
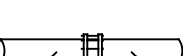
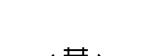
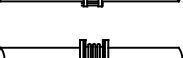
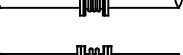
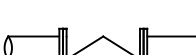
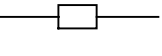
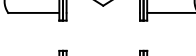
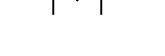
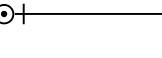
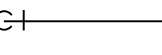
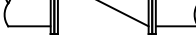
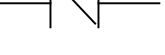
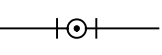
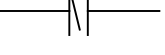
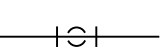
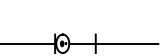
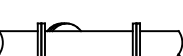
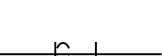
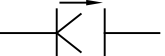
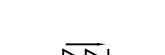
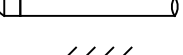
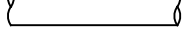
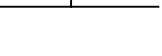
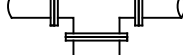
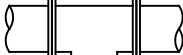
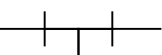
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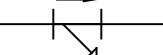
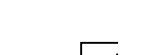
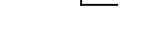
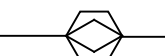
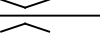
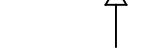
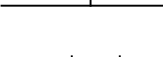
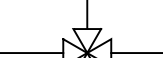
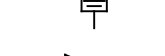
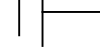
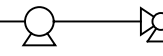
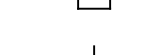
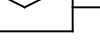
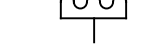
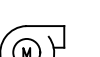
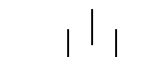
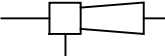
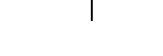
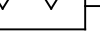
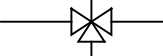
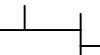
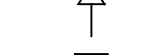
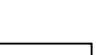
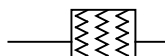
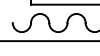
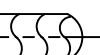
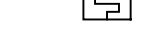
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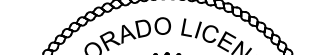
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LAST SAVED BY: trea

PIPING SYMBOLS					
DOUBLE LINE	SINGLE LINE	DESCRIPTION	DOUBLE LINE	SINGLE LINE	DESCRIPTION
		WELDED JOINT			GATE VALVE
		GROOVED END JOINT			KNIFE GATE VALVE
		FLANGED JOINT			BUTTERFLY VALVE
		HUB & SPIGOT JOINT (RUBBER GASKET)			CHARACTERIZED BALL CONTROL VALVE
		PUSH-ON JOINT (RESTRAINED)			BALL VALVE
		ADAPTER SIDE GROOVED END ADAPTER FLANGE			GLOBE VALVE
		FLANGED COUPLING ADAPTER			3-WAY VALVE
		FLANGED COUPLING ADAPTER WITH THRUST TIES			3-WAY GLOBE TYPE MIXING VALVE
		FLEXIBLE COUPLING			4-WAY VALVE
		FLEXIBLE COUPLING WITH THRUST TIES			DIAPHRAGM VALVE
		METAL BELLOWS EXP JOINT			PLUG VALVE
		ELASTOMER BELLOWS EXP JOINT			LUBRICATED PLUG VALVE
		FLEXIBLE COUPLING ADAPTER			CONCENTRIC PLUG VALVE
		DISMANTLING JOINT			LUBRICATED CONCENTRIC PLUG VALVE
		EXPANSION COMPENSATOR			SWING CHECK VALVE
		ELBOW UP			WAFER CHECK VALVE
		ELBOW DOWN			PINCH VALVE
		TEE UP			BALL CHECK VALVE
		TEE DOWN			DUAL CHECK VALVE
		LATERAL UP			SILENT CHECK VALVE
		LATERAL DOWN			MUD VALVE (PLAN VIEW)
		CONCENTRIC REDUCER			NEEDLE VALVE
		ECCENTRIC REDUCER (FOT, FOB)			CHECK BACKFLOW PREVENTER
		UNION			PIPE MATERIAL CHANGE
		CAP			FLOAT VALVE
		ANCHOR			3-WAY PLUG VALVE
		ELBOW, 90 DEGREE			BALL V-NOTCH VALVE
		CROSS			PUMP DISCHARGE
		TEE			
		ELBOW, 45 DEGREE			
		ELBOW, 22.5 DEGREE			
		ELBOW, 11.25 DEGREE			
		LATERAL			

MECHANICAL SYMBOLS					
SINGLE LINE	DESCRIPTION	SINGLE LINE	DESCRIPTION	SINGLE LINE	DESCRIPTION
	AIR OR CHEMICAL DIFFUSER		PRIMARY LEVEL ELEMENT: RADAR		STRAINER: WYE TYPE WITH BLOWOFF
	QUICK DISCONNECT HIGH PRESSURE AIR OR FLUSHING		PRIMARY LEVEL ELEMENT: ULTRASONIC		THERMOMETER
	BATCHMETER		PRIMARY FLOW ELEMENT: FLUME		VALVE: ANGLE
	AIR VENT		PRIMARY FLOW ELEMENT: X = C - CORIOLIS X = M - MAGNETIC X = P - PROPELLER X = PT - PITOT TUBE X = R - ROTAMETER X = T - TURBINE X = TH - THERMAL X = U - ULTRASONIC X = D - DENSITY		VALVE: AIR RELIEF
	BASKET STRAINER		PRIMARY FLOW ELEMENT: ORIFICE PLATE		VALVE: CONE
	BLOWER		PRIMARY FLOW ELEMENT: VENTURI TUBE		VALVE: FLAPPER CHECK
	CALIBRATION COLUMN		PRIMARY FLOW ELEMENT: WEIR		VALVE: FOUR WAY
	COMPRESSOR/TURBINE		PULSATION DAMPENERS		VALVE: HOSE
	COMPRESSOR: RECIPROCATING		PUMP: CENTRIFUGAL		VALVE: PLUG CONCENTRIC
	DIAPHRAGM SEAL		PUMP: DIAPHRAGM		VALVE: PRESSURE RELIEF PRESSURE-REDUCING REGULATOR
	DRAIN		PUMP: METERING		VALVE: TELESCOPING
	EJECTOR OR EDUCTOR		PUMP: PLUNGER		VALVE: THREE WAY AIR OPERATED
	ELECTRIC MOTOR		PUMP: PERISTALTIC TUBE METERING		VALVE: THREE WAY MOTOR OPERATED
	EQUIPMENT DRAIN		PUMP: PROGRESSIVE CAVITY		VALVE: THREE WAY SOLENOID OPERATED
	EXPANSION JOINT, FLEXIBLE VIBRATION JOINT		PUMP: RECIPROCATING		VALVE: VACUUM
	FAN: EXHAUST/SUPPLY		PUMP: ROTARY		BACKPRESSURE REGULATOR SELF-CONTAINED
	FILTER		PUMP: SCREW		BACKPRESSURE REGULATOR W/ EXTERNAL PRESSURE TAP
	FIRE HYDRANT		PUMP: SUBMERSIBLE		PRESSURE-REDUCING REGULATOR: SELF-CONTAINED
	FLAME ARRESTER		PUMP: VERTICAL LIFT		PRESSURE-REDUCING REGULATOR W/ EXTERNAL PRESSURE TAP
	FLAME ARRESTER WITH THERMALLY OPERATED VALVE		PIPE REDUCER: CONCENTRIC		
	FLOOR DRAIN		PIPE REDUCER: ECCENTRIC (FOT, FOB)		
	FLOW SWITCH		ROTARY CHEMICAL FEEDER		
	GAUGE: PRESSURE		RUPTURE DISK		
	GAUGE: DIFFERENTIAL PRESSURE		SAMPLE PORT		
	WEIR		SIGHT GLASS		
	MIXER		SLIDE GATE		
	OIL OR MOISTURE TRAP		SLUICE GATE		
	PRIMARY LEVEL ELEMENT: BUBBLER		STRAINER: WYE TYPE		
	PRIMARY LEVEL ELEMENT: ELECTRODE				
	PRIMARY LEVEL ELEMENT: FLOAT SWITCH				
	PRIMARY LEVEL ELEMENT: FLUID				
	PRIMARY LEVEL ELEMENT: INVERTED COLUMN				

11	12	13
IDENTIFICATION SYMBOLS		
CHEMICAL INJECTION POINT	CHEMICAL DWG NO.	
PIPE DESIGNATOR	PIPE SIZE FLOW STREAM X" XXX	
CONTINUATION TAG	UNIQUE IDENTIFIER CONTINUATION FROM DWG NO. CONTINUATION TO DWG NO. A B C	
EQUIPMENT / VALVE TAG	XXX-XX-XXXX	
KEY TAG	X	
LINE SYMBOLS		
PIPE ABOVE OR BELOW GROUND		
PIPE UNDERNEATH SLAB OR STRUCTURE		
FUTURE		
EXISTING		
DEMO		
PROCESS LINE SYMBOLS		
PRIMARY PROCESS FLOW IN PIPE		
SECONDARY PROCESS FLOW IN PIPE		
PRIMARY PROCESS FLOW IN CHANNEL		
SECONDARY PROCESS FLOW IN CHANNEL		

				DESIGNED SH							CITY OF ARVADA, COLORADO	VERIFY SCALES	JOB NO. 201351
				DRAWN TLR							RALSTON WTP SOLIDS IMPROVEMENTS	BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.
				CHECKED WVS							MECHANICAL	0 1"	00GM01
				DATE JANUARY 2023							GENERAL MECHANICAL LEGEND AND SYMBOLS	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 11 OF 81
REV	DATE	BY	DESCRIPTION										

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User: svcPW

PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen

LAST SAVED BY: trea

VALVE SCHEDULE (4-INCH AND LARGER)									
PROCESS UNIT #	TAG ID	LOCATION	SERVICE	TYPE	SIZE (IN.)	OPEN/CLOSE TIME (SEC)	OPERATOR	REMARKS	
00	00MV1000	YARD	BWW	BUTTERFLY (V500)	24	-	VB	BYPASS TO OLD RECLAIM POND, BURIED	
30	30FV0101	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	30	ED	REMOTE CONTROL STATION	
30	30FV0201	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	30	ED	REMOTE CONTROL STATION	
30	30FV0301	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	30	ED	REMOTE CONTROL STATION	
30	30FV0401	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	30	ED	REMOTE CONTROL STATION	
30	30MV1001	PRETREATMENT BUILDING	SBS	PLUG (V405)	6	-	HW	SOLIDS PUMP 1	
30	30CV1002	PRETREATMENT BUILDING	SBS	SWING CHECK (V608)	4	-	HC	SOLIDS PUMP 1	
30	30MV1003	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	-	HC	SOLIDS PUMP 1	
30	30MV1004	PRETREATMENT BUILDING	SBS	PLUG (V405)	6	-	HW	SOLIDS PUMP 1	
30	30MV2001	PRETREATMENT BUILDING	SBS	PLUG (V405)	6	-	HW	SOLIDS PUMP 2	
30	30CV2002	PRETREATMENT BUILDING	SBS	SWING CHECK (V608)	4	-	-	SOLIDS PUMP 2	
30	30MV2003	PRETREATMENT BUILDING	SBS	PLUG (V405)	4	-	HC	SOLIDS PUMP 2	
30	30MV2004	PRETREATMENT BUILDING	SBS	PLUG (V405)	6	-	HW	SOLIDS PUMP 2	
70	70MV0111	LAGOON 1 AND 2 INTERCONNECT	D	PLUG (V405)	12	-	VB	BURIED	
70	70MV0103	SOLIDS HANDLING LAGOON 1	U	PLUG (V405)	4	-	HW	EXTENSION BONNET	
70	70MV0104	SOLIDS HANDLING LAGOON 1	BWR	BUTTERFLY (V500)	12	-	HW	EXTENSION BONNET	
70	70MV0203	SOLIDS HANDLING LAGOON 2	U	PLUG (V405)	4	-	HW	EXTENSION BONNET	
70	70MV0204	SOLIDS HANDLING LAGOON 2	BWR	BUTTERFLY (V500)	12	-	HW	EXTENSION BONNET	
70	70MV0310	SOLIDS HANDLING LAGOON 3	BWW	BUTTERFLY (V500)	24	-	VB	BURIED	
70	70MV0303	SOLIDS HANDLING LAGOON 3	U	PLUG (V405)	4	-	HW	EXTENSION BONNET	
70	70MV0304	SOLIDS HANDLING LAGOON 3	BWR	BUTTERFLY (V500)	12	-	HW	EXTENSION BONNET	
70	70MV0410	SOLIDS HANDLING LAGOON 4	BWW	BUTTERFLY (V500)	24	-	VB	BURIED	
70	70MV0403	SOLIDS HANDLING LAGOON 4	U	PLUG (V405)	4	-	HW	EXTENSION BONNET	
70	70MV0404	SOLIDS HANDLING LAGOON 4	BWR	BUTTERFLY (V500)	12	-	HW	EXTENSION BONNET	

ABBREVIATIONS: ED=ELECTRIC DISCRETE; EM=ELECTRIC MODULATING; HC=HANDCHAIN; HW=HANDWHEEL; N=2" SQUARE NUT, VB=VALVE BOX W/ 2" SQUARE NUT, BURIED

SLIDE GATE SCHEDULE										
PROCESS UNIT #	TAG ID	LOCATION	SIZE (FEET)		HEAD (FEET)		CLOSURE TYPE	GATE TYPE	OPERATOR	REMARKS
			W	H	SEAT	UNSEAT				
70	70G0101	LAGOON 1 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	TOP SEAL
70	70G0102	LAGOON 1 OUTLET STRUCTURE	3	2.5	10	10	FM	DO	HCN	
70	70G0201	LAGOON 2 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0202	LAGOON 2 OUTLET STRUCTURE	3	2.5	10	10	FM	DO	HCN	TOP SEAL
70	70G0301	LAGOON 3 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	
70	70G0302	LAGOON 3 OUTLET STRUCTURE	3	2.5	10	10	FM	DO	HCN	
70	70G0401	LAGOON 4 OUTLET STRUCTURE	5	4	8	8	FM	DO	HCN	TOP SEAL
70	70G0402	LAGOON 4 OUTLET STRUCTURE	3	2.5	10	10	FM	DO	HCN	
NOTE: ALL GATES SHALL BE NONRISING STEM.										
ABBREVIATIONS:										
CLOSURE TYPE: OF = OPEN FRAME (NON-SELF CONTAINED); FM = FRAME MOUNTED (SELF CONTAINED)										
GATE TYPE: DO = DOWNWARD OPENING; UO = UPWARD OPENING										
OPERATOR TYPE: HCN = HAND CRANK W/ 2" SQUARE NUT; HW = HANDWHEEL; PED = PEDESTAL; FBN = FLOOR BOX W/ 2" SQUARE NUT; M = MOTOR OPERATOR										

PIPING SCHEDULE											
ABBR.	SERVICE	DIAMETER (INCHES)	MATERIAL	PRESSURE CL, SPECIAL THICKNESS CL, OR SCHEDULE	JOINTS/ FITTINGS	GASKET MATERIAL	TEST PRESSURE/ METHOD	LINING	COATING	PIPE SPEC SECTION	COMMENTS
BWR	BACKWASH RECYCLE										
	ALL	2	304SS	SCH 40S	SCRD	EPDM	25 PSIG / HH	NONE	NONE	40_05_23.01	LAGOON SUMP PUMP CONNECTION
	BURIED	3 TO 12	DIP	CL 350	RPO OR RMJ	EPDM	25 PSIG / HH	CM	DOUBLE PEN	40_05_19.01	
	EXPOSED	3 TO 12	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPU	40_05_19.01	
	SUBMERGED	3 TO 12	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPX	40_05_19.01	
BWW	BACKWASH WASTE										
	BURIED	10 TO 24	DIP	CL 350	RPO OR RMJ	EPDM	25 PSIG / HH	CM	DOUBLE PEN	40_05_19.01	
	SUBMERGED	10 TO 24	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPX	40_05_19.01	
D	DECANT										
	BURIED	6 TO 12	DIP	CL 350	RPO OR RMJ	EPDM	25 PSIG / HH	CM	DOUBLE PEN	40_05_19.01	
	SUBMERGED	6	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPX	40_05_19.01	
DR	PROCESS DRAIN										
	EXPOSED	3 & SMALLER	PVC	SCH 80	SW	EPDM	25 PSIG / HH	NONE	NONE	40_05_31.17	USE IPS TYPE 724 CEMENT
	EXPOSED	4 TO 6	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPU	40_05_19.01	
SBS	SEDIMENTATION BASIN SOLIDS										
	BURIED	4 TO 8	DIP	CL 350	RPO OR RMJ	EPDM	25 PSIG / HH	CM	DOUBLE PEN	40_05_19.01	
	EXPOSED	4 TO 8	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPU	40_05_19.01	
U	UNDERDRAIN										
	BURIED	3	HDPE, PERFORATED	ASTM F667	ES	EPDM	NONE	NONE	NONE	40_05_33.03	IN SOLIDS LAGOON ONLY
	BURIED	4	HDPE	ASTM F667	ES	EPDM	NONE	NONE	NONE	40_05_33.03	IN SOLIDS LAGOON ONLY
	BURIED	6	DIP	CL 350	RPO OR RMJ	EPDM	25 PSIG / HH	CM	DOUBLE PEN	40_05_19.01	YARD ONLY
	SUBMERGED	6	DIP	CL 53	FL	EPDM	25 PSIG / HH	CM	EPX	40_05_19.01	
W1	UTILITY WATER										
	EXPOSED	3 & SMALLER	PVC	SCH 80	SW	EPDM	150 PSIG / HH	NONE	NONE	40_05_31.17	USE IPS TYPE 724 CEMENT
	EXPOSED	3 & SMALLER	CUP	TYPE K	SOLDERED	NONE	150 PSIG / HH	NONE	NONE	40_05_17.05	

PIPE SCHEDULE ABBREVIATIONS	
ABBREVIATIONS TO DESIGNATE TEST PRESSURE/METHOD PER SPECIFICATION SECTION 40_05_00.09:	
AM	AIR METHOD
GR	GRAVITY METHOD
HH	HIGH HEAD METHOD
LH	LOW HEAD METHOD
SC	SPECIAL CASE
ABBREVIATIONS TO DESIGNATE PIPE MATERIAL:	
CI	CAST IRON
CUP	COPPER
DIP	DUCTILE IRON PIPING
FRP	FIBERGLASS REINFORCED PLASTIC
MDPE	MEDIUM DENSITY POLYETHYLENE
HDPE	HIGH DENSITY POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SST	STAINLESS STEEL
VCP	VITRIFIED CLAY PIPING
ABBREVIATIONS TO DESIGNATE CLASS, SCHEDULE, OR THICKNESS:	
CL	CLASS, FOLLOWED BY THE DESIGNATION
GA	GAUGE, PRECEDED BY THE DESIGNATION
SCH	SCHEDULE, FOLLOWED BY THE DESIGNATION
SDR	STANDARD DIMENSION RATIO
ABBREVIATIONS TO DESIGNATE PIPING JOINTS/FITTINGS:	
B&SP	BELL & SPIGOT
BFW	BUTT FUSION
CF	COMPRESSION FITTINGS
ES	EXTERNAL SNAP
FL	FLANGED
GE	GROOVED END
MJ	MECHANICAL JOINT
NH	NO HUB
PO	PUSH ON
RMJ	RESTRAINED MECHANICAL JOINT
RPO	RESTRAINED PUSH ON
SCRD	SCREWED
SFW	SOCKET FUSION
SLD	SOLDERED
SW	SOLVENT WELD (WITH OR WITHOUT UNIONS, SEE P&IDs)
WLD	WELDED
ABBREVIATIONS TO DESIGNATE GASKETS:	
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
NBR	NITRILE RUBBER (BUNA-N)
PTFE	TEFLON
ABBREVIATIONS TO DESIGNATE LINING AND COATINGS:	
CM	CEMENT MORTAR
EPU	EPOXY AND POLYURETHANE COATING SYSTEM PER SECTION 09_96_01
EPX	EPOXY COATING SYSTEM PER SECTION 09_06_01
PEN	POLYETHYLENE ENCASED
TW-CM	SHOP-APPLIED TAPE WRAP W/ CEMENT MORTAR OVERCOAT



CITY OF ARVADA, COLORADO

RALSTON WTP SOLIDS IMPROVEMENTS

MECHANICAL

MECHANICAL SCHEDULES

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

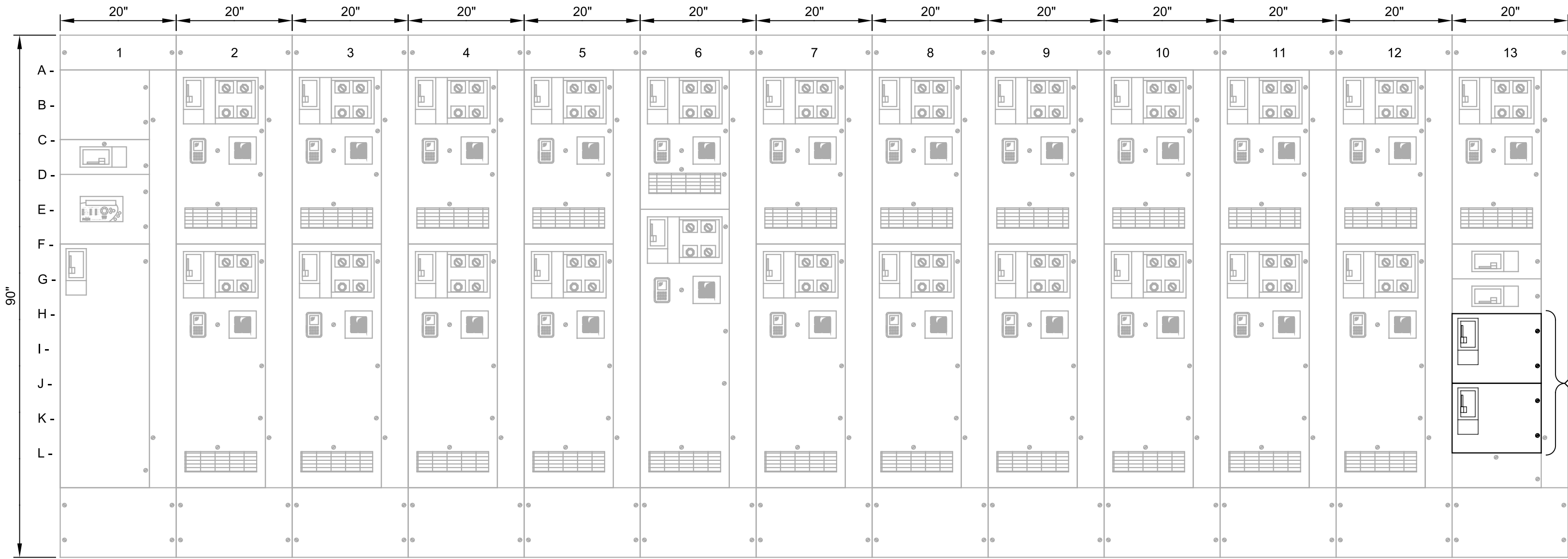
JOB NO.
201351

DRAWING NO.
00GM02

SHEET NO.
12 OF 81

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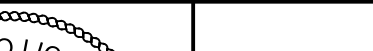


- GENERAL NOTES:**
1. THE EXISTING INFORMATION SHOWN IS BASED ON AS-BUILTS AND SHALL BE FIELD VERIFIED.
 2. REFER TO SPECIFICATION 01_31_13 FOR CONSTRUCTION SEQUENCING.
- KEY NOTES:**
1. INSTALL NEW BREAKER, EQUIPPED AS SHOWN MATCHING THE RATINGS OF THE EXISTING SQUARE D MODEL 6 MOTOR CONTROL CENTER F.O. 13541945-014. 480V, 3-PHASE, 4W, 60HZ.

FRONT VIEW
SCALE: 3/4" = 1'-0"
FILE: 2013510003E621

SIDE VIEW
SCALE: 3/4" = 1'-0"
FILE: 2013510003E621

1A- SPACE	2A- M-1-3 FLOCCULATORS	3A- M-2-3 FLOCCULATORS	4A- M-1-4 FLOCCULATORS	5A- M-2-4 FLOCCULATORS	6A- M-1-2 FLOCCULATORS	7A- M-4-2 FLOCCULATORS	8A- M-2-1 FLOCCULATORS	9A- M-3-1 FLOCCULATORS	10A- M-3-3 FLOCCULATORS	11A- M-4-3 FLOCCULATORS	12A- M-3-4 FLOCCULATORS	13A- M-4-4 FLOCCULATORS
1C- SPD	2F- RM-2A RAPID MIXER	3F- RM-2B RAPID MIXER	4F- RM-3A RAPID MIXER	5F- RM-3B RAPID MIXER	6E- M-2-2 FLOCCULATORS	7F- M-1-1 FLOCCULATORS	8F- RM-2C RAPID MIXER	9F- RM-2D RAPID MIXER	10F- RM-3C RAPID MIXER	11F- RM-3D RAPID MIXER	12F- M-4-1 FLOCCULATORS	13F- PNL-PP1
1D- POWER METER					6I- M-3-2 FLOCCULATORS	7J- PNL-PP2	8K- SPACE	9K- SPACE			12K- SPACE	13G TLP1 PNL- LP1
1F- MAIN BREAKER												13H- 30P-1000 SOLIDS PUMP NO. 1
												13J- 30P-2000 SOLIDS PUMP NO. 2
												13L- SPACE

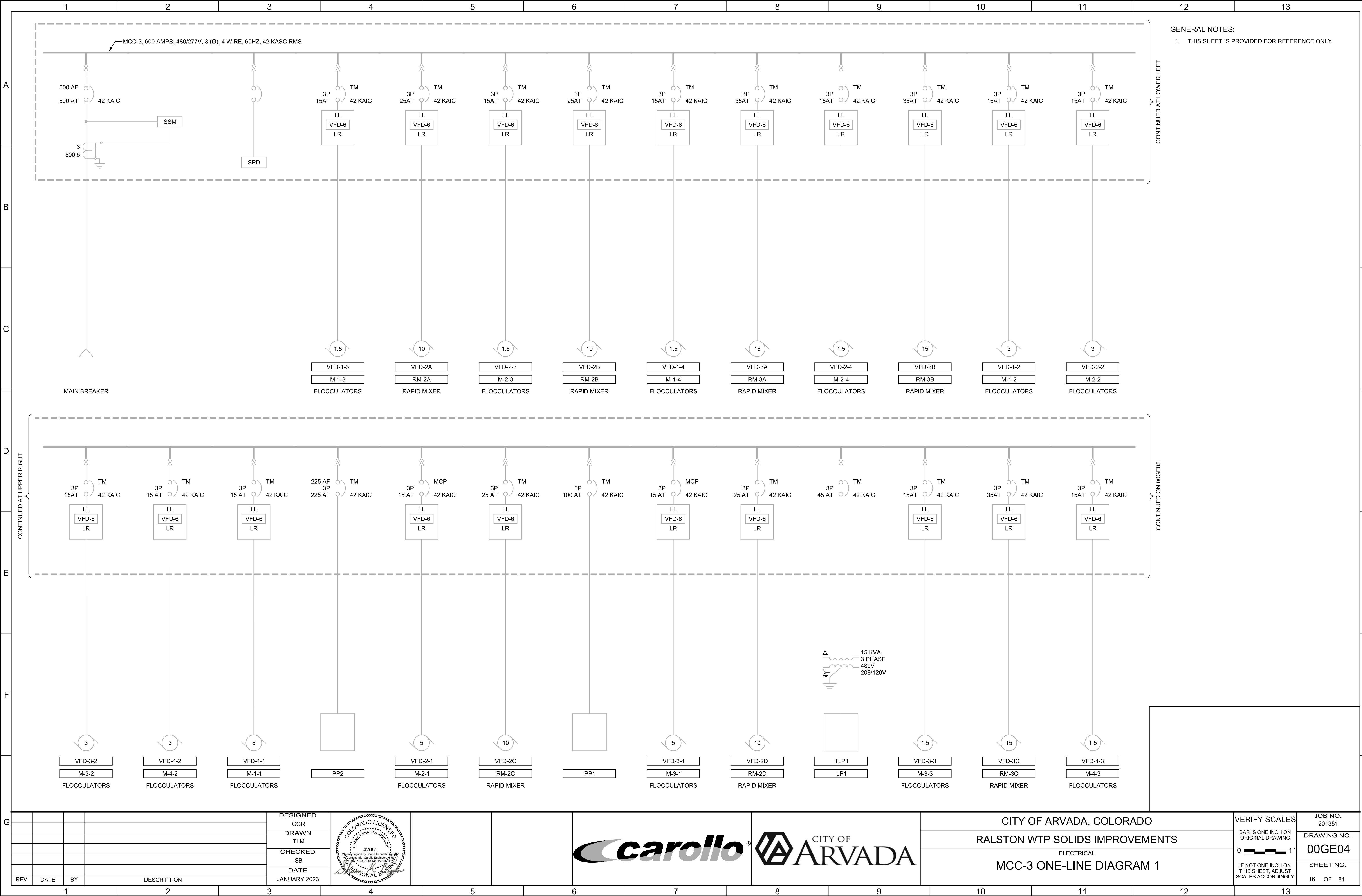
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				DRAWN TLM								RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.
				CHECKED SB								ELECTRICAL		0  1"	00GE03
				DATE JANUARY 2023								MCC-3 ELEVATION		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.
REV	DATE	BY	DESCRIPTION												15 OF 81

Plot Date: 18-JAN-2023 12:36:37 AM

User: svcPW

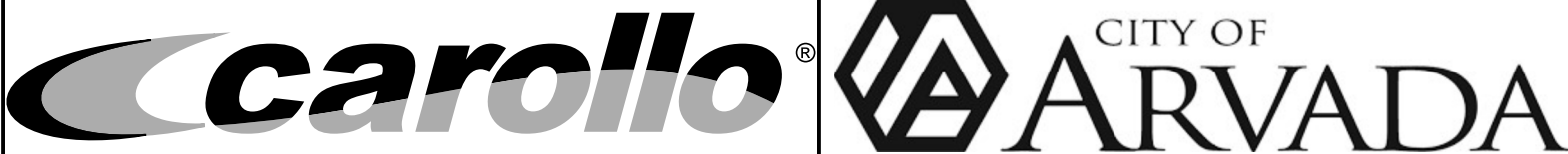
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: jsandoval



REV	DATE	BY	DESCRIPTION

DESIGNED CGR
DRAWN TLM
CHECKED SB
DATE JANUARY 2023

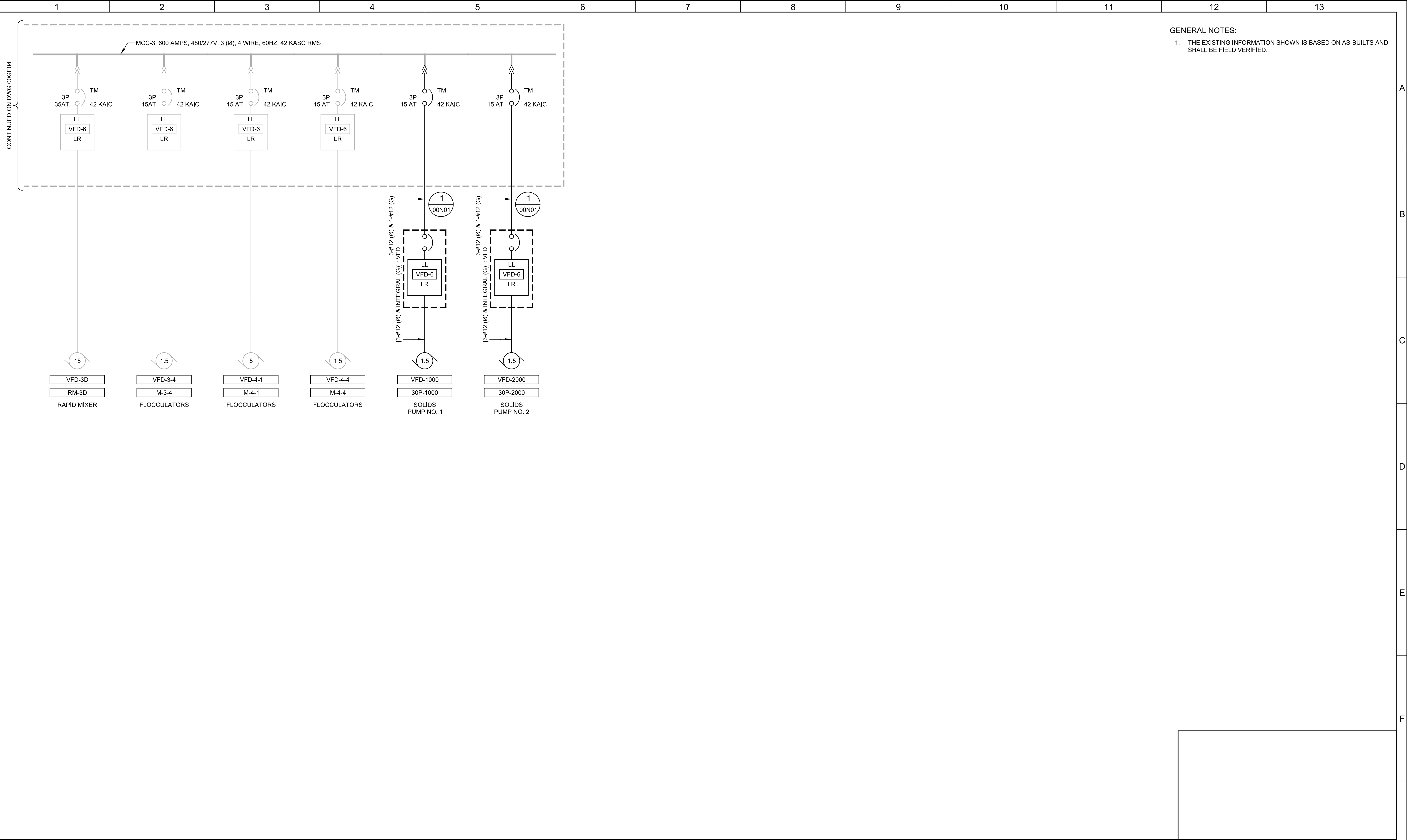


CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
ELECTRICAL
MCC-3 ONE-LINE DIAGRAM 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

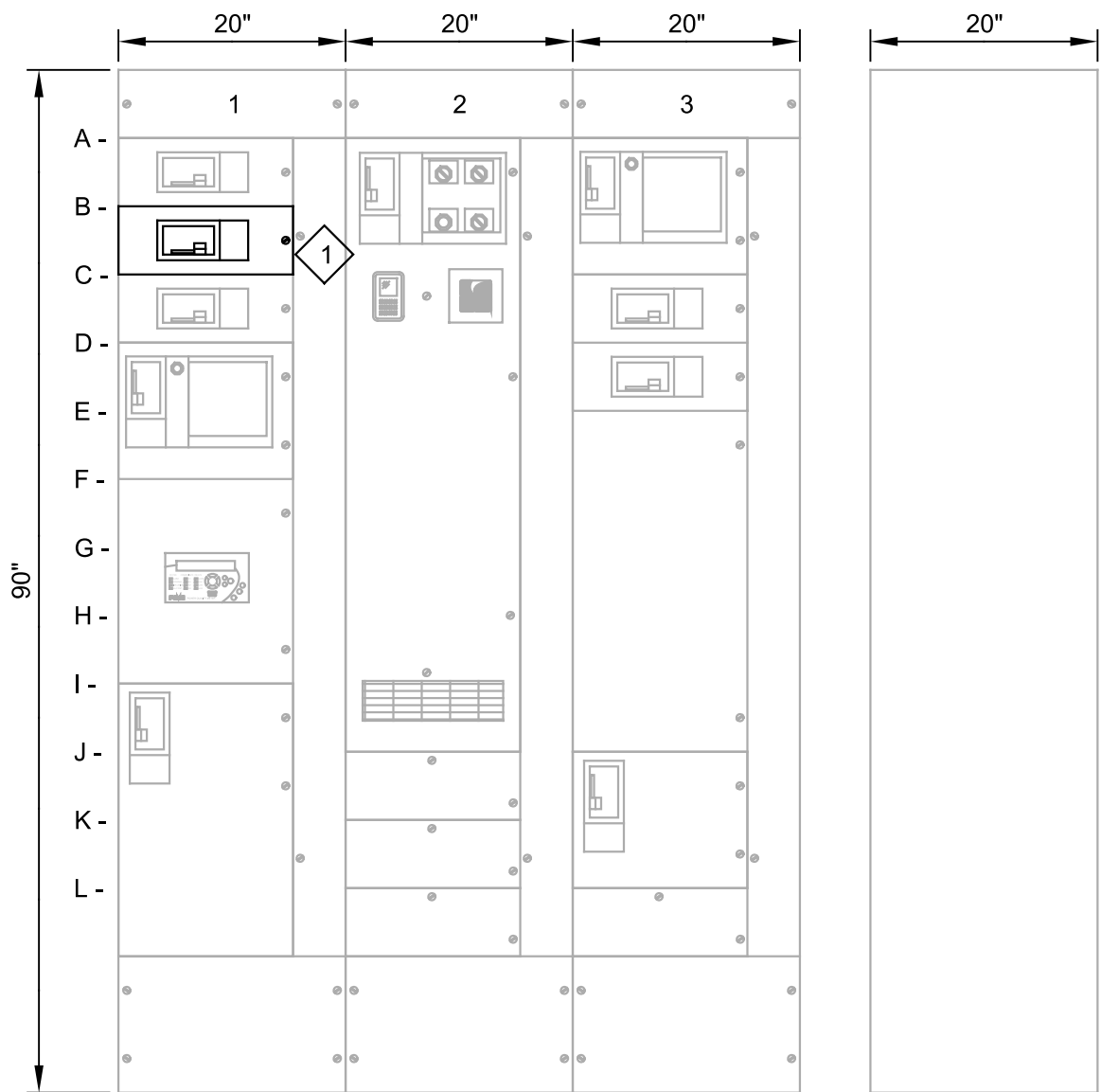
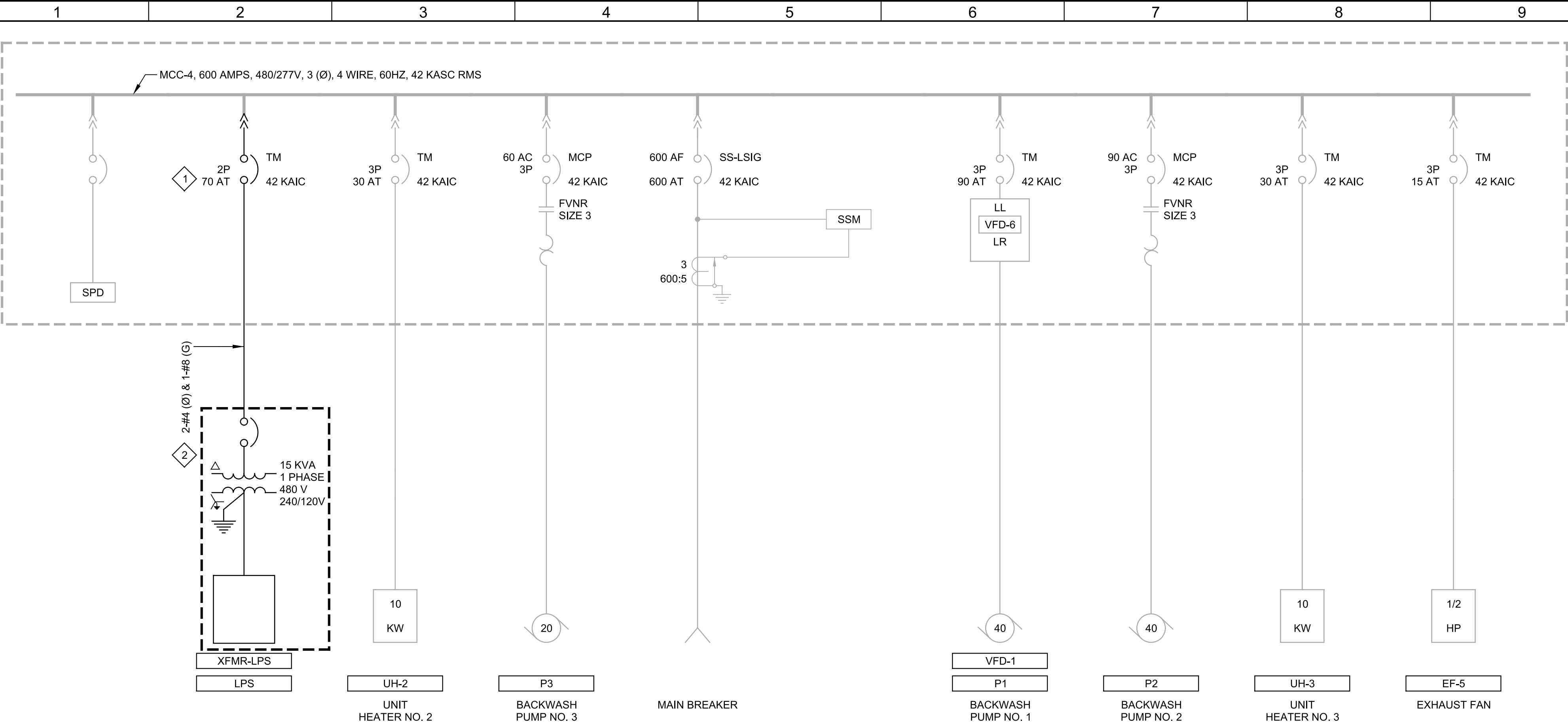
JOB NO.
201351
DRAWING NO.
00GE04
SHEET NO.
16 OF 81

Plot Date: 18-JAN-2023 12:36:44 AM User: svcPW Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: jsandoval



				DESIGNED CGR						CITY OF ARVADA, COLORADO			VERIFY SCALES	JOB NO. 201351	G
				DRAWN TLM						RALSTON WTP SOLIDS IMPROVEMENTS			BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
				CHECKED SB						ELECTRICAL			0 1"	00GE05	
REV	DATE	BY	DESCRIPTION	DATE JANUARY 2023				MCC-3 ONE-LINE DIAGRAM 2					IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 17 OF 81	
1				2	3	4	5	6	7	8	9	10	11	12	13

Plot Date: 18-Jan-2023 12:36:57 AM
User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: jsandoval



FRONT VIEW
SCALE: 3/4" = 1'-0"
FILE: 2013510003E622

SIDE VIEW
SCALE: 3/4" = 1'-0"
FILE: 2013510003E622

- GENERAL NOTES:**
- EXISTING MOTOR CONTROL CENTER IS SQUARE D MODEL 6 MOTOR CONTROL CENTER F.O. 13541945-015. 480V, 3 PHASE, 4W, 60HZ.
- KEY NOTES:**
- DEMOLISH THE EXISTING CIRCUIT BREAKER TO ACCOMMODATE THE NEW CIRCUIT BREAKER.
 - DEMOLISH THE EXISTING POWER CONDUCTORS AND EXISTING MINI POWER CENTER.

- 1A- SPD
- 2A- P1 BACKWASH PUMP NO. 1
- 3A- P2 BACKWASH PUMP NO. 2
- 1B- XFMR-LPS PNL-LPS
- 2J- SPACE
- 3C- UH-3 UNIT HEATER NO. 3
- 1C- UH-2 UNIT HEATER NO. 2
- 2K- SPACE
- 3D- EF-5 EXHAUST FAN
- 1D- P3 BACKWASH PUMP NO. 3
- 2L- SPACE
- 3J- SPACE
- 1F- POWER METER
- 3L- SPACE
- 1I- MAIN BREAKER

REV	DATE	BY	DESCRIPTION

DESIGNED
CGR
DRAWN
TLM
CHECKED
SB
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
ELECTRICAL
MCC-4 ONE-LINE DIAGRAM AND ELEVATION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00GE06
SHEET NO.
18 OF 81

1	2	3	4	5	6	7	8	9	10	
1										
PANEL LPS										
1/11/2023										
LOCATION:	SOLIDS HANDLING LAGOONS	NEMA:	1	PH A WEIGHTED VA	1860					
VOLTS:	240/120	FEED:	TOP	PH B WEIGHTED VA	1860					
PHASE & WIRE:	1 PH 3W	MTG:	SURFACE							
INTERRUPT:	10 KAIC	BUS RATING:	100							
OPTIONS:	SPD	MAIN:	CB	EQUIP SIZING VA	3720					
			MAIN RATING:	100 AF 70 AT	PANEL AMPS	15.5				
I/C/S	DESCRIPTION	LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION	I/C/S
	LIGHTING (EXISTING)		20A-1P	1	A	2	20A-1P		I/O PNL-LU-6 (EXISTING)	
	SLUDGE POND OUTLET (EXISTING)		20A-1P	3	B	4	20A-1P		I/O PNL-LS-8 (EXISTING)	
	SIREN		20A-1P	5	A	6	20A-1P		MILTRONICS PNL (EXISTING)	
C	70HTU-0111 - HEAT TRACE UNIT NO. 1	600	15A-1P	7	B	8	20A-1P		STROBE LIGHT (EXISTING)	
C	70HTU-0211 - HEAT TRACE UNIT NO. 2	600	15A-1P	9	A	10	20A-1P	180	LAGOON NO. 1 RECEPTACLE	I
C	70HTU-0311 - HEAT TRACE UNIT NO. 3	600	15A-1P	11	B	12	20A-1P	180	LAGOON NO. 2 RECEPTACLE	I
C	70HTU-0411 - HEAT TRACE UNIT NO. 4	600	15A-1P	13	A	14	20A-1P	180	LAGOON NO. 3 RECEPTACLE	I
	SPARE		20A-1P	15	B	16	20A-1P	180	LAGOON NO. 4 RECEPTACLE	I
	SPARE		20A-1P	17	A	18	20A-1P		SPARE	
	SPARE		20A-1P	19	B	20	20A-1P		SPARE	
	SPARE		20A-1P	21	A	22	20A-1P		SPARE	
	SPARE		20A-1P	23	B	24	20A-1P		SPARE	

PANEL PP1												1/11/2023
LOCATION:	PRETREATMENT BUILDING ELECTRICAL ROOM				NEMA:			PH A WEIGHTED VA	1525			
VOLTS:	480				FEED:			PH B WEIGHTED VA	1525			
PHASE & WIRE:	3 PH 3W				MTG:			PH C WEIGHTED VA	1525			
INTERRUPT:	22 KAIC				BUS RATING:	100						
OPTIONS:	SPD				MAIN:			EQUIP SIZING VA	4575			
					MAIN RATING:			PANEL AMPS	5.5			
I/C/S	DESCRIPTION		LOAD (VA)	BKR	CIR	Ø	CIR	BKR	LOAD (VA)	DESCRIPTION		I/C/S
	LTG - CHEM STORAGE			20A-1P	1	A	2	20A-1P		LTG - FLOC BASIN 1 & 2		
	LTG - PIPE CHASE			20A-1P	3	B	4	20A-1P		LTG - FLOC BASIN 3 & 4		
	LTG - STORAGE, ELEC & COAG FEED			20A-1P	5	C	6	20A-1P		LTG - SEDIMENTATION BASIN 1 & 2		
	LTG - ELEC/STORAGE ROOM			20A-1P	7	A	8	20A-1P		LTG - SEDIMENTATION BASIN 3 & 4		
	BASIN 1, 2, 3, & 4 FLOC LIGHTING			20A-1P	9	B	10	20A-1P		EXTERIOR LIGHT		
	SPARE			20A-1P	11	C	12	20A-1P		SPARE		
	SPARE			20A-1P	13	A	14	20A-1P		SPARE		
	SPARE			20A-1P	15	B	16	20A-1P		SPARE		
	SPARE			20A-1P	17	C	18	20A-1P		SPARE		
C			305		19	A	20		305			C
C	30EDR-0101 - SED BASIN NO. 1 SOLIDS VALVE		305	15A-3P	21	B	22	15A-3P	305	30EDR-0301 - SED BASIN NO. 3 SOLIDS VALVE		C
C			305		23	C	24		305			C
C			305		25	A	26		305			C
C	30EDR-0201 - SED BASIN NO. 2 SOLIDS VALVE		305	15A-3P	27	B	28	15A-3P	305	30EDR-0401 - SED BASIN NO. 4 SOLIDS VALVE		C
C			305		29	C	30		305			C

DISCONNECT SCHEDULE										10/13/2022
TAG	VOLTAGE	POLES	AMPS	NEMA TYPE	TYPE	HORSEPOWER	FUSE SIZE	BREAKER AF/AT	ACCESSORIES	
A	600 VAC	3P	30A	4	NON-FUSED					
Q	120 VAC	1P	30A	4	NON-FUSED	1				
ACCESSORIES										1= "B" TYPE ELECTRICAL INTERLOCK FOR POSITION INDICATION 2= INSULATED GROUNDABLE NEUTRAL KIT 3= DRAIN AND BREATHER KIT WHEN OUTDOORS 4= EARLY BREAK AUXILIARY CONTACT

◆ KEY NOTES:

1. PROTECT CONDUIT AND WIRE FOR ALL CIRCUITS DURING EXTRACTION OF EXISTING PANEL FOR INSTALLATION OF NEW PANEL. RE-CONNECT ALL EXISTING CIRCUITS AND INSTALL NEW CIRCUITS SHOWN.
2. UTILIZE SPARE BREAKER FOR NEW LOAD AS SHOWN.
3. METER LIGHTING PANEL FOR 30 DAYS TO CAPTURE PEAK DEMAND OF PANEL TO DETERMINE IF THERE IS ADEQUATE CAPACITY FOR THE NEW LOAD IN ACCORDANCE WITH NEC ARTICLE 220.87.

				DESIGNED CGR					 	CITY OF ARVADA, COLORADO RALSTON WTP SOLIDS IMPROVEMENTS ELECTRICAL ELECTRICAL SCHEDULES	VERIFY SCALES	JOB NO. 201351
				DRAWN TLM		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.					
				CHECKED SB			00GE07					
				DATE JANUARY 2023		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 19 OF 81					
REV	DATE	BY	DESCRIPTION									

Plot Date: 17-JAN-2023 3:38:47 PM

User: svcPW

Model: Layout1

ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1

Ibodelon

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
HMI/SCADA SYSTEM OPERATOR INTERFACE TERMINAL	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM SP - NUMERIC STATUS TREND	DESCRIPTION 2 5	DESCRIPTION	E - EXISTING F - FUTURE		
HARDWIRED I/O POINT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE 7 - IO TABLE	REFER 1 2 4	REFER 3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
NETWORK / SOFT I/O	1 - TAG 2 - LOOP NUMBER 3 - PROTOCOL 4 - PANEL 5 - PLC 6 - EXISTING/FUTURE 7 - IO TABLE 8 - SWITCH/SEGMENT	REFER 1 2	REFER 3	COMMUNICATION PROTOCOL CNET - CONTROLNET DNET - DEVCENET EIP - ETHERNET/IP FF - FOUNDATION FIELDBUS HART-IP - HART OVER ETHERNET MANF - MFR. PROPRIETARY MBRTU - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SNMP - SNMPv3 HTTP - WEB SERVER (TCP/IP)	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
LOCAL OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM SP - NUMERIC STATUS TREND	DESCRIPTION	LOI - LOCAL OPERATOR INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
PILOT DEVICE OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	AM - AUTO/MANUAL BYPASS - BY PASS E-STOP - EMERGENCY STOP FRLR - FIXED RATE/LEVEL RATE HOA - HAND/OFF/AUTO LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE NOOT - NO OFFLINE/OFFLINE OC - OPEN/CLOSE OLOL - ON LINE/OFFLINE OO - OFF/ON OSC - OPEN/STOP/CLOSE RST - RESET SAAM - SEMI AUTO/AUTO/MANUAL SEL - SELECT SPD - SPEED SS - START/STOP ST - STOP	DESCRIPTION 2 5	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER 3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		
POWER DEVICE AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE	DISC - DISCONNECT	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE		
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER FU - FUSE	REFER 3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 24VDC - 2P 24VAC - 1P 48VDC - 2P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		

SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	FIELD - 7	FIELD - 8
INSTRUMENT PRIMARY ELEMENT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION INT - INTEGRAL REM - REMOTE	E - EXISTING F - FUTURE		OUT - OUTDOOR
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
INSTRUMENT/ CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY XR - INTERPOSING RELAY	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
FIELD EQUIPMENT NON-POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT PRIMARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE		
FIELD EQUIPMENT AUXILIARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER 3	DESCRIPTION 5	DESCRIPTION 6 7	DESCRIPTION	E - EXISTING F - FUTURE		
FIELD EQUIPMENT STARTER/DRIVE CUBICLE/CABINET	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE-POLE 5 - POWER SOURCE 6 - EXISTING/FUTURE	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER 3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART WINDING STARTER RVAT - REDUCED VOLTAGE AUTO RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE		

INSTRUMENT BUBBLE LOCATIONS		NOTES	
PCS		1 INSTRUMENT TAG IDENTIFICATION LETTERS TABLE	6 FURNISHED BY: FBO FURNISHED BY OWNER FBV FURNISHED BY VENDOR
IO		2 OPERATOR PILOT DEVICE LEGEND	7 PROVIDED BY: PBO PROVIDED BY OWNER PBV PROVIDED BY VENDOR
OPERATOR/ CONTROL DEVICES		3 EQUIPMENT TAGGING TABLE	
POWER SOURCE		4 IO TYPE DESIGNATIONS	
FIELD		5 INSTRUMENT TYPE DESIGNATIONS TABLE	

REV	DATE	BY	DESCRIPTION	DESIGNED CE DRAWN CE CHECKED DB DATE JANUARY 2023				CITY OF ARVADA, COLORADO RALSTON WTP SOLIDS IMPROVEMENTS INSTRUMENTATION SYMBOLS AND ABBREVIATIONS 1	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 201351 DRAWING NO. 00GN01 SHEET NO. 20 OF 81
1										
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Plot Date: 17-JAN-2023 3:45:35 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1

Iboredon

INSTRUMENT TAG IDENTIFICATION LETTERS

MEASURED VARIABLE \ INSTRUMENT FUNCTION		ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	CONVERTER TRANSDUCER, RELAY SPECIAL DEVICES	INDICATOR	RECORDER	CONTROL/COMMAND	INDICATING CONTROLLER	RECORDING CONTROLLER	SWITCH	SWITCH LOW LOW	SWITCH LOW	SWITCH HIGH	SWITCH HIGH HIGH	SWITCH COMBINATION HIGH LOW	ACTION	ALARM LOW LOW	ALARM LOW	ALARM HIGH	ALARM HIGH HIGH	TOTALIZE INDICATOR TRANSMITTER	VALVE	GAUGE	LIGHT	SPEED SETTING
A	ANALYSIS	AE	AT	AIT	AY	AI	AR	AC	AIC	ARC	AS	ASLL	ASL	ASH	ASHH	ASHL		AALL	AAL	AAH	AAHH				AL	
B	BURNER FLAME	BE	BT	BIT	BY	BI	BR	BC	BIC	BRC	BS	BSLL	BSL	BSH	BSHH			BALL	BAL	BAH	BAHH				BL	
C	CONDUCTIVITY	CE	CT	CIT	CY	CI	CR	CC	CIC	CRC	CS	CSLL	CSL	CSH	CSHH	CSHL		CALL	CAL	CAH	CAHH				CL	
D	DENSITY	DE	DT	DIT	DY	DI	DR	DC	DIC	DRC	DS	DSLL	DSL	DSH	DSHH	DSHL		DALL	DAL	DAH	DAHH				DL	
E	VOLTAGE												ESL													
F	FLOW	FE	FT	FIT	FY	FI	FR	FC	FIC	FRC	FS	FSLL	FSL	FSH	FSHH	FSHL		FALL	FAL	FAH	FAHH	FQI	FCV	FG	FL	
FF	FLOW RATIO				FFY	FFI		FFC	FFIC		FFS														FFL	
H	HAND (MANUAL)*							HC			HS*						HA*						HV		HL	HSS
I	CURRENT		IT	IIT	IY	II	IR	IC	IIC	IRC	IS	ISLL	ISL	ISH	ISHH			IALL	IAL	IAH	IAHH				IL	
J	POWER																									
K	TIME				KY	KI	KR	KC	KIC	KRC	KS	KSLL	KSL	KSH	KSHH			KALL	KAL	KAH	KAHH		KV		KL	
L	LEVEL	LE	LT	LIT	LY	LI	LR	LC	LIC	LRC	LS	LSLL	LSL	LSH	LSHH	LSHL		LALL	LAL	LAH	LAHH		LCV	LG	LL	
M	MOISTURE OR HUMIDITY	ME	MT	MIT	MY	MI	MR	MC	MIC	MRC	MS	MSLL	MSL	MSH	MSHH			MALL	MAL	MAH	MAHH				ML	
N	USER'S CHOICE																									
P	PRESSURE OR VACUUM	PE	PT	PIT	PY	PI	PR	PC	PIC	PRC	PS	PSLL	PSL	PSH	PSHH	PSHL		PALL	PAL	PAH	PAHH		PCV		PL	
PD	DIFFERENTIAL PRESSURE		PDT	PDIT	PDY	POI	PDR	PDC	PDIC	PDRC	PDS	PDSLL	PDSL	PDSH	PDSHH			PDALL	PDAL	PDAH	PDAHH		PDCV		PDL	
Q	QUANTITY	QE	QT	QIT	QY	QI	QR				QS	QSLL	QSL	QSH	QSHH			QALL	QAL	QAH	QAAH					
R	RADIATION																									
S	SPEED	SE	ST	SIT	SY	SI	SR	SC	SIC	SRC	SS	SSLL	SSL	SSH	SSHH			SALL	SAL	SAH	SAHH					
T	TEMPERATURE	TE	TT	TIT	TY	TI	TR	TC	TIC	TRC	TS	TSLL	TSL	TSH	TSHH	TSHL		TALL	TAL	TAH	TAHH		TCV		TL	
TD	DIFFERENTIAL TEMPERATURE		TDT	TDIT	TDY	TDI	TDR	TDC	TDIC	TDRC	TDS	TDSLL	TDSL	TDSH	TDSHH			TDALL	TDAL	TDAH	TDAHH		TDCV		TDL	
U	MULTIVARIABLE					UI	UR	UC	UIC	URC	US														UL	
V	VISCOSITY	VE	VT	VIT	VY	VI	VR	VC	VIC	VRC	VS	VSLL	VSL	VSH	VSHH			VALL	VAL	VAH	VAHH				VL	
W	WEIGHT	WE	WT	WIT	WY	WI	WR				WS	WSLL	WSL	WSH	WSHH			WALL	WAL	WAH	WAHH					
X	UNCLASSIFIED	XE	XT	XIT	XY	XI	XR	XC	XIC	XRC	XS	XSLL	XSL	XSH	XSHH			XALL	XAL	XAH	XAAH		XCV	XG	XL	
XV	VIBRATION	XVE	XVT		XVY	XVI	XVR				XVS			XVSH	XVSHH					XVAH	XVAHH				XVL	
Y	STATUS***					YI																			YL	
Z	POSITION	ZE	ZT	ZIT	ZY	ZI		ZC**			ZS**											ZV			ZL**	

* REFER TO OPERATOR PILOT DEVICE LEGEND

** LETTER INDICATES POSITION (O=OPEN, C=CLOSED, R=RAISE, L=LOWER, ETC)

OPERATOR PILOT DEVICE LEGEND

OPERATOR PILOT DEVICE LEGEND																											
DEVICE TYPE	PILOT DEVICE FUNCTION																										
	LOCAL-OFF-REMOTE (LOR) OR LOCAL-STOP-REMOTE (LSR)	STOP (SP)	START (ST)	HAND-OFF-AUTO (HOA)	OFF-ON (OO)	SELECT (SEL)	OPEN-STOP-CLOSE (OSC)	JOG OPEN-HOLD-CLOSE (JOHC)	SEMI-AUTO-AUTO-MANUAL (SAAM)	LEAD-LAG-STANDBY (LLGS)	JOG OPEN-JOG CLOSE (JOJC)	ONLINE-OFFLINE (OLOF)	AUTO-MANUAL (AM)	FIXED RATE-LEVEL RATE (FRLR)	OPEN-CLOSE (OC)	NO OFFLINE-OFFLINE TRANSITION (NOOT)	LOW-HIGH (LH)	RESET (RST)	SPEED (SPD)	START-STOP (STSP)	E-STOP (E-SP)	BYPASS (BYP)			SILENCE	POSITION (POS)	
PILOT DEVICE TAG (HAND SWITCHES)	HAS*	HSB	HSC	HSD	HSE	HSF	HSG	HSJ	HIS	HSJ	HSK	HSL	HSM	HSN	HSO	HSP	HSQ	HSR	HSS	HST	HSU	HSV	HSW	HSX	HSY	HSZ	

I/O TYPE DESIGNATIONS

RNG	RUNNING	SPDC	SPEED COMMAND
FAIL	FAILED/FAULT	SPDF	SPEED FEEDBACK
FWD	RUNNING FORWARD	REM	LOR IN REMOTE
FAST	RUNNING HIGH	LOC	LOR IN LOCAL
SLOW	RUNNING LOW	AUTO	HOA IN AUTO
REV	RUNNING REVERSE	HAND	HOA IN HAND
SVC	SOLENOID VALVE CLOSE	RST	RESET
SVO	SOLENOID VALVE OPEN		
RUN	RUN		
SLWC	MOTOR START LOW		
REVC	MOTOR START REVERSE		

INSTRUMENT TYPE DESIGNATIONS

CGD	COMBUSTIBLE GAS DETECTOR	RTD	RESISTANCE TEMP DETECTOR
COND	CONDUCTIVITY	SB	SLUDGE BLANKET
DO	DISSOLVED OXYGEN	SC	STREAMING CURRENT
FMCW	FREQ. MODULATED CONT. WAVE	SD	SLUDGE DEPTH
IS	INTRINSIC SAFETY BARRIER	SH	SODIUM HYPOCHLORITE
LEL	LOWER EXPLOSIVE LIMIT	SO2	SULFUR DIOXIDE
MLSS	MIXED LIQUOR SUSPENDED SOLIDS	TDR	TIME DOMAIN REFLECTOMETRY
ORP	OXIDATION REDUCTION POTENTIAL	TOC	TOTAL ORGANIC CARBON
P-SUB	PRESSURE SUBMERSIBLE	TSS	TOTAL SUSPENDED SOLIDS
PC	PARTICLE COUNTER	UVI	UV INTENSITY
PTOF	PULSE TIME OF FLIGHT	UVT	UV TRANSMITTANCE

SPECIFIC ABBREVIATIONS

HTR	HEATER
HTU	HEAT TRACE UNIT
MWH	MOTOR WINDING HEATER
SV	SOLENOID VALVE
SPD	SURGE PROTECTIVE DEVICE
UPS	UNINTERRUPTIBLE POWER SUPPLY
YA	STATUS AUTO
YR	STATUS REMOTE
Y1	STATE RUNNING
Y2	ALARM FAILED/FAULT

P&ID LINE SYMBOLS

INSTRUMENT OR CONNECTION TO PROCESS	_____
PNEUMATIC SIGNAL	— # — # — # — # — # — # —
ELECTRIC SIGNAL	— — — — — — — — — — — — —
HYDRAULIC SIGNAL	- L - L - L - L - L - L - L - L - L - L -
CAPILLARY TUBE	— x — x — x — x — x —
ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)	— s — s — s — s — s —
ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)	— s — s — s — s — s —
INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)	— o — o — o — o — o — o — o — o — o — o —

PROCESS LINE SYMBOLS

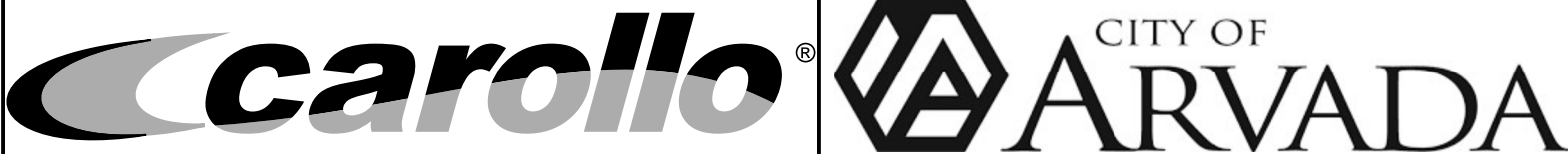
PRIMARY PROCESS FLOW IN PIPE	_____
SECONDARY PROCESS FLOW IN PIPE	_____
PRIMARY PROCESS FLOW IN CHANNEL	— — — — — — — — — — — — —
SECONDARY PROCESS FLOW IN CHANNEL	— — — — — — — — — — — — —

DESIGNATIONS

EQUIPMENT ENCLOSURE	— — — — — — — — — — — — —
EXISTING	_____
FUTURE	_____ FUTURE

MISCELLANEOUS P&ID SYMBOLS

PROCESS CONTINUATION	DESC2_# DWG NO. CONTINUATION SHEET
SIGNAL CONTINUATION	DESC2_# DWG NO. CONTINUATION SHEET
PIPE CALLOUT	PIPE SIZE
SCHEMATIC DETAIL	? -
TYPICAL DETAIL	* TYPNUM TYPNUM2 TYPNUM3 TYPNUM4 TYPNUM5 TYPNUM6



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
INSTRUMENTATION
SYMBOLS AND ABBREVIATIONS 2

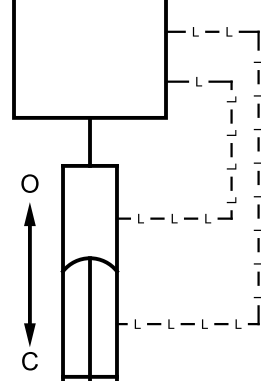
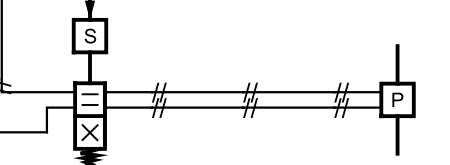
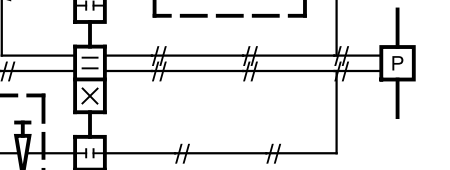
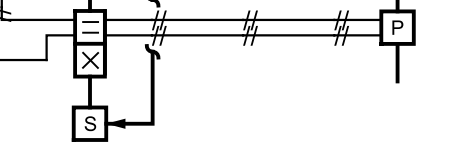
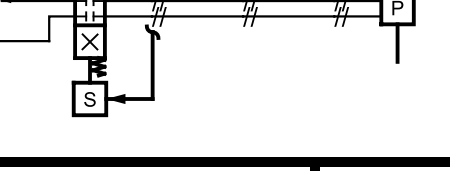
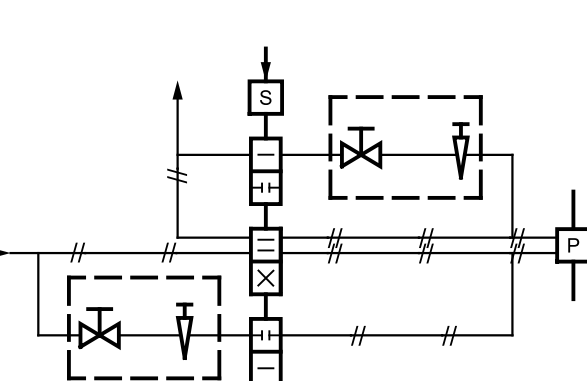
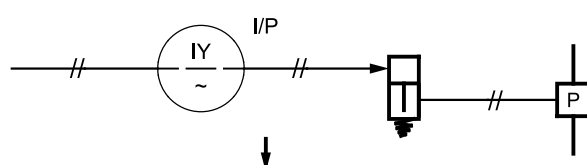
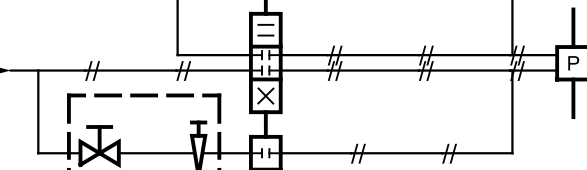
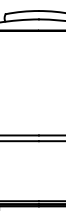
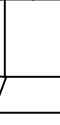
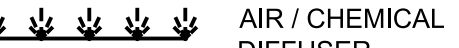
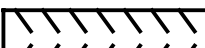
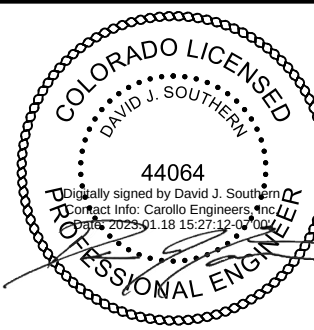
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 21 OF 81

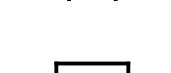
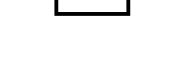
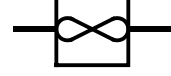
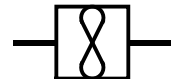
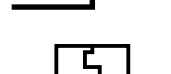
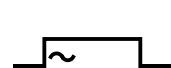
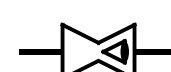
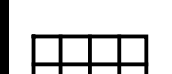
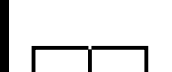
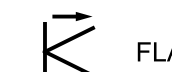
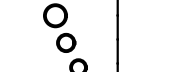
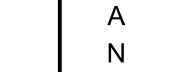
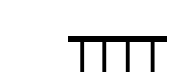
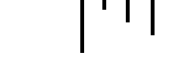
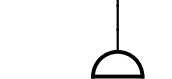
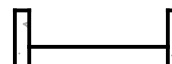
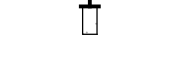
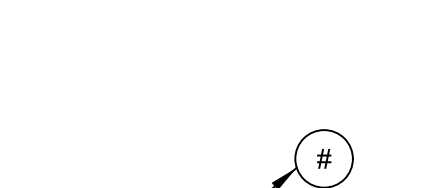
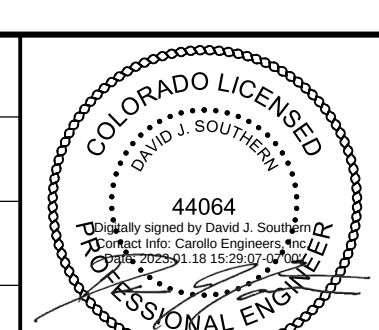
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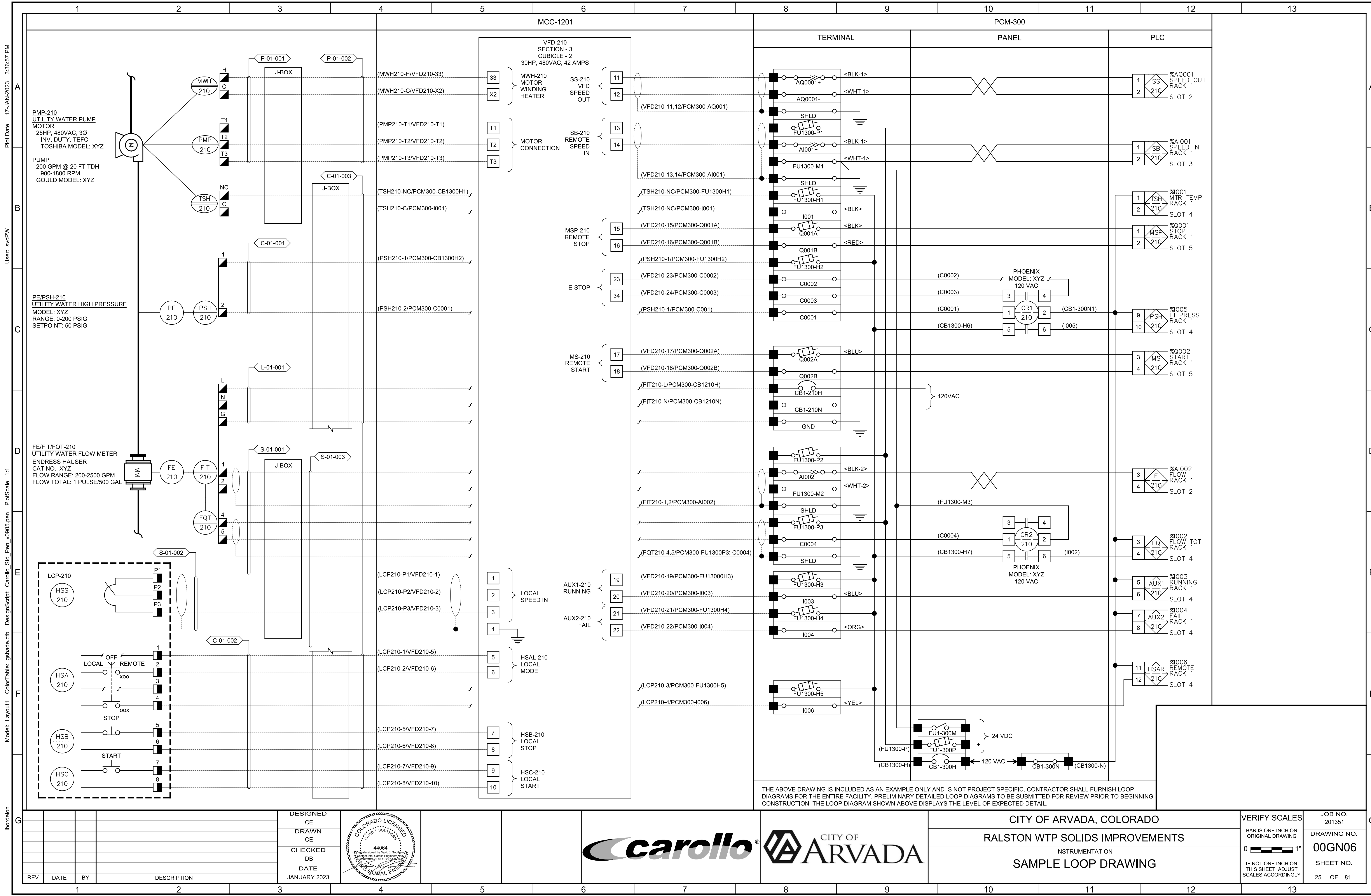
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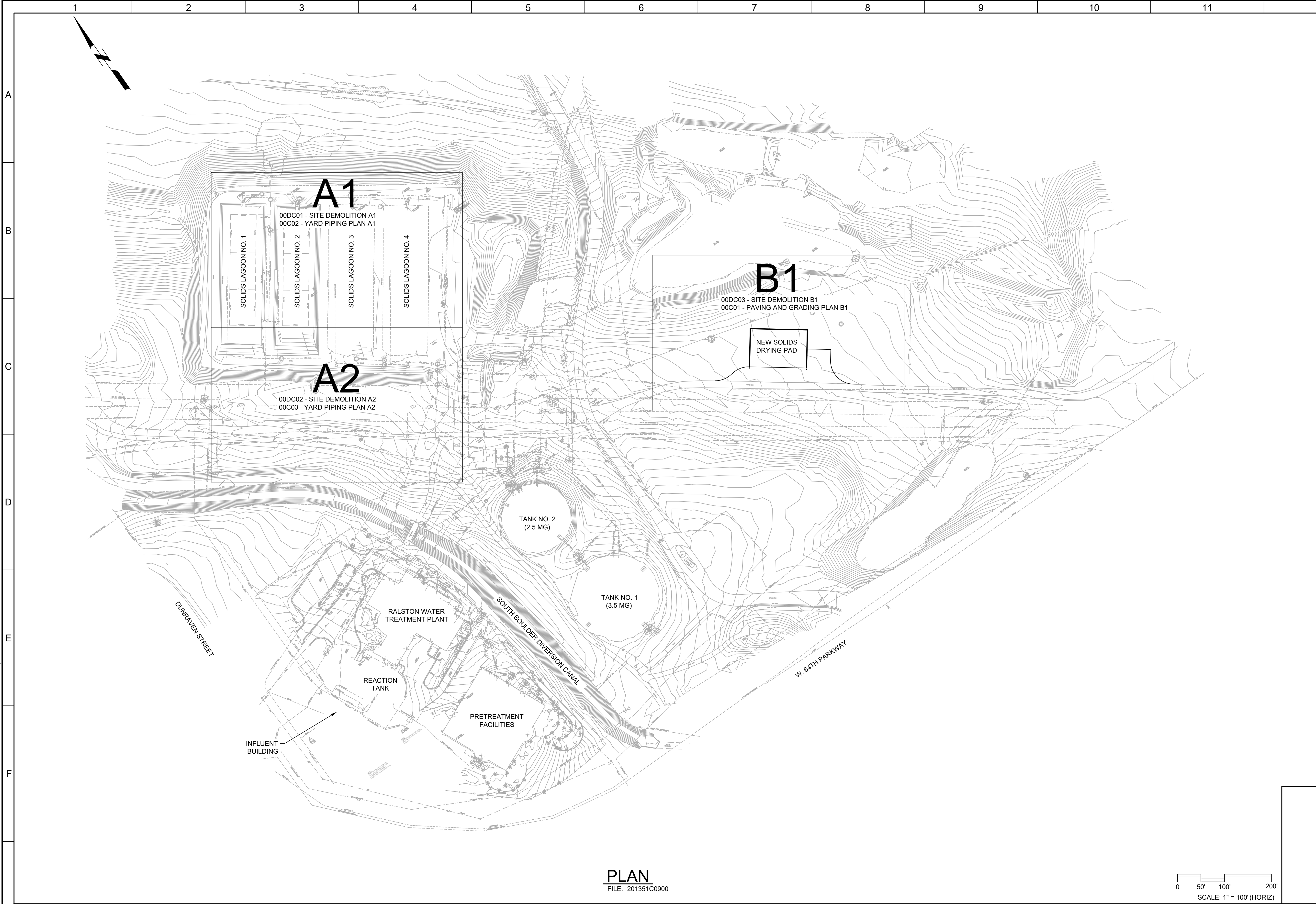
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		ACTUATORS												PIPING				PUMPS				BLOWERS/ COMPRESSORS																																																																																																																																																																	
		 DIAPHRAGM		 ELECTRIC DISCRETE		 ELECTRIC MODULATING		 ELECTRIC HYDRAULIC		 HAND		 HYDRAULIC		 PNEUMATIC		 SOLENOID																		 AIR GAP		 BLIND FLANGE		 CAPPED OR PLUGGED		 CONCENTRIC INCREASER		 CONCENTRIC REDUCER		 DRAIN		 ECCENTRIC INCREASER		 FLANGED CONNECTION		 TEE		 UNION		 ECCENTRIC REDUCER		 EXPANSION COUPLING		 EXPANSION JOINT VIBRATION CENTER		 FLEXIBLE CONNECTION		 QUICK DISCONNECT		 AIR DRIVEN		 CENTRIFUGAL		 CHEMICAL FEED DIAPHRAGM		 DIAPHRAGM		 GEAR		 PERISTALTIC OR HOSE		 PISTON		 PROGRESSIVE CAVITY		 SUBMERSIBLE		 VERTICAL TURBINE		 VERTICAL CHOPPER		 WATER CHAMP		 CENTRIFUGAL SINGLE STAGE BLOWER		 CENTRIFUGAL MULTI STAGE BLOWER		 RECIPROCATING COMPRESSOR		 SCREW COMPRESSOR		 FAN		 LIQUID RING COMPRESSOR		 ROTARY LOBE BLOWER																																																																																			
		CHECK VALVES		PRESSURE VALVES		VALVES		MISC																																																																																																																																																																															
		 BACK FLOW PREVENTER		 BALL		 DIAPHRAGM CHECK		 DOUBLE FLAP		 FLAPPER		 SLANTING CHECK VALVE		 SPRING LOADED GENERAL		 SPRING LOADED SWING		 SWING		 BACKPRESSURE REGULATING SELF CONTAINED		 BACKPRESSURE REGULATING EXTERNAL TAP		 PRESSURE REDUCING SELF CONTAINED		 PRESSURE REDUCING EXTERNAL PRESSURE TAP		 REGULATING		 PRESSURE RELIEF		 VACUUM RELIEF		 3-WAY		 3-WAY PLUG		 4-WAY		 AIR-RELIEF		 ANGLE		 BALL		 BALL V-NOTCH		 BUTTERFLY		 BUTTERFLY-BURIED VALVE BOX		 CONE		 DIAPHRAGM		 FLOAT		 GATE		 GATE-BURIED VALVE BOX		 GLOBE		 HOSE		 MUD		 NEEDLE		 PINCH		 PLUG ECCENTRIC		 PLUG ECCENTRIC w-VALVE BOX		 PLUG ECCENTRIC LUBRICATED		 PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX		 PLUG CONCENTRIC		 PLUG CONCENTRIC -BURIED VALVE BOX		 PLUG CONCENTRIC LUBRICATED		 PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX		 PUMP DISCHARGE		 TELESCOPING		 AIR / CHEMICAL DIFFUSER		 BASKET STRAINER		 BLOW-OFF SILENCER		 CALIBRATION COLUMN		 COALESCER		 DESICCANT DRYER		 EDUCTOR/EJECTOR		 EQUIPMENT/INSTRUMENT LOCATOR		 EXHAUST FAN		 EYEWASH		 FILTER		 FILTER SEPARATOR		 FINE FILTER		 FIRE ALARM/SENSOR		 FLAME ARRESTER		 FLAME ARRESTER w/THERMALLY OPERATED VALVE		 FLOW CONDITIONER		 GAS CANNON		 GRINDER		 HEAT EXCHANGER		 HOIST		 HORIZONTAL MIXER		 HOSE CONNECTION		 INLET STRAINER		 INLINE STATIC MIXER		 INLINE DUCT DAMPER		 LOUVER OR DAMPER		 MATERIAL CHANGE		 MIXER		 MOTOR		 NOZZLE		 ORIFICE RESTRICTION		 PERISTALTIC COMPOSITE SAMPLER		 PULSATION DAMPENER		 REFRIGERATED DRYER		 RUPTURE DISK		 SAMPLE PORT		 SIGHT TUBE		 SMOKE DETECTOR		 STRAINER - MECHANICALLY CLEANED		 STRAINER WITH BLOW OFF		 STRAINER WYE TYPE		 VAPOR HEATER		 VAPORIZER		 VENT		 VENT TO ATMOSPHERE	
		DESIGNED CE		DRAWN CE		CHECKED DB		DATE JANUARY 2023								CITY OF ARVADA, COLORADO		RALSTON WTP SOLIDS IMPROVEMENTS		INSTRUMENTATION		SYMBOLS AND ABBREVIATIONS 3		VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"		JOB NO. 201351		DRAWING NO. 00GN03		SHEET NO. 22 OF 81																																																																																																																																																									
REV		DATE		BY		DESCRIPTION																																																																																																																																																																																	

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A	FLOW			FLUMES	GATES	LEVEL			NETWORKS						
	 BATCH  CORIOLIS  MAGNETIC  ORIFICE  PADDLE WHEEL  PISTON  ANNUBAR  PITOT TUBE  POSITIVE-DISPLACEMENT  PROPELLER-TURBINE  ROTAMETER  THERMAL  ULTRASONIC  ULTRASONIC BIOGAS			 V-CONE  VENTURI TUBE OR FLOW NOZZLE  VORTEX	 LEOPOLD-LAGCO  PALMER-BOWLUS  PARSHALL  REGULAR CUTTHROAT  TRAPEZOIDAL	SIDE VIEW  SLIDE  SLUICE  STOP	PLAN VIEW  FLAP  KNIFE  SLIDE  SLUICE  STOP  WEIR  BUTTERFLY	 BUBBLER  CAPACITANCE  DIFFERENTIAL PRESSURE  ELECTRODE  FLOAT  INVERTED COLUMN  PROBE  RADAR PTOF  RADAR (FREQUENCY MODULATED CONTINUOUS WAVE)  RADAR TDR	 SUSPENDED/SUBMERSIBLE  TUNING FORK  ULTRASONIC	CABLE CALLOUTS AND ABBREVIATIONS 24/FO-SM (2) 24/FO-SM (1) 24/FO-SM EA. FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE FIBER LINE REPRESENTS TWO 24-STRAND FIBER OPTIC CABLES EACH FIBER LINE REPRESENTS ONE 24-STRAND FIBER OPTIC CABLE (4) (2) EA. COPPER LINE REPRESENTS FOUR COPPER ETHERNET CABLES EACH COPPER LINE REPRESENTS TWO COPPER ETHERNET CABLES FIBER ABBREVIATIONS ##/FO-XX ## = STRAND COUNT FO = FIBER OPTIC XX = MODE SM = SINGLE MODE MM = MULTIMODE NETWORK ABBREVIATIONS BMS = BUILDING MANAGEMENT SYSTEM BSN = BUSINESS NETWORK FCN = FIELD CONTROL NETWORK MIN = MAINTENANCE INFORMATION NETWORK PCN = PROCESS CONTROL NETWORK PLCN = PLC NETWORK SCN = SECURITY CONTROL NETWORK PCN-W = WIRELESS PROCESS CONTROL NETWORK NR = NETWORK RACK NP = NETWORK PANEL ES = ETHERNET SWITCH FPP = FIBER PATCH PANEL WIRELESS PROCESS CONTROL NETWORK MAINTENANCE INFORMATION NETWORK PLC NETWORK FIELD CONTROL NETWORK					
	B														
C															
D															
E	PRESSURE/VACUUM			TEMPERATURE	WEIRS			MISCELLANEOUS NETWORK SYMBOLS							
	PRESSURE	DIFFERENTIAL PRESSURE	PRESSURE SEALS	TEMPERATURE w/THERMOWELL TEMPERATURE GAUGE THERMOMETER	SIDE VIEW	PLAN VIEW	NETWORK CABLE CONTINUATIONS								
	 GAUGE  MANOMETER  PRESSURE SWITCH  PRESSURE TRANSMITTER  PRESSURE TRANSMITTER	 GAUGE DIFFERENTIAL INDICATOR  DIFFERENTIAL PRESSURE SWITCH  DIFFERENTIAL PRESSURE TRANSMITTER  DIFFERENTIAL PRESSURE TRANSMITTER	 SEAL ANNULAR  SEAL DIAPHRAGM  SEAL SANITARY EXAMPLE  PRESSURE SWITCH  PRESSURE TRANSMITTER  PRESSURE TRANSMITTER		 RECTANGULAR w/o END CONTRACTIONS  RECTANGULAR w/ END CONTRACTIONS 	 RECTANGULAR w/o END CONTRACTIONS  RECTANGULAR w/ END CONTRACTIONS 	BOTTOM/LEFT OF PAGE STYLE CONTINUATION  UNIQUE IDENTIFIER # DWG NO. DESC 1 DESC 2 DESC 3 CONTINUATION SHEET TOP OF PAGE STYLE CONTINUATION DESC 3 DESC 2 DESC 1 DWG NO. CONTINUATION SHEET UNIQUE IDENTIFIER #								
							FIELD NETWORK DEVICE								
							PLC TAG PANEL TAG PROTOCOL SEGMENT # DEVICE SPECIFIC SYMBOL TAG DESC 1 DESC 2 DESC 3 P&ID DRAWING REFERENCE								
							NETWORK EQUIPMENT CALLOUT								
							TAG DESC 1								
F															
G				DESIGNED CE DRAWN CE					 			CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351
				CHECKED DB		RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING				DRAWING NO. 00GN04			
				DATE JANUARY 2023		SYMBOLS AND ABBREVIATIONS 4		0 1"				SHEET NO. 23 OF 81			
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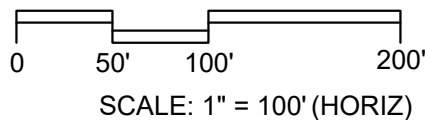
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PLAN
FILE: 201351C0900

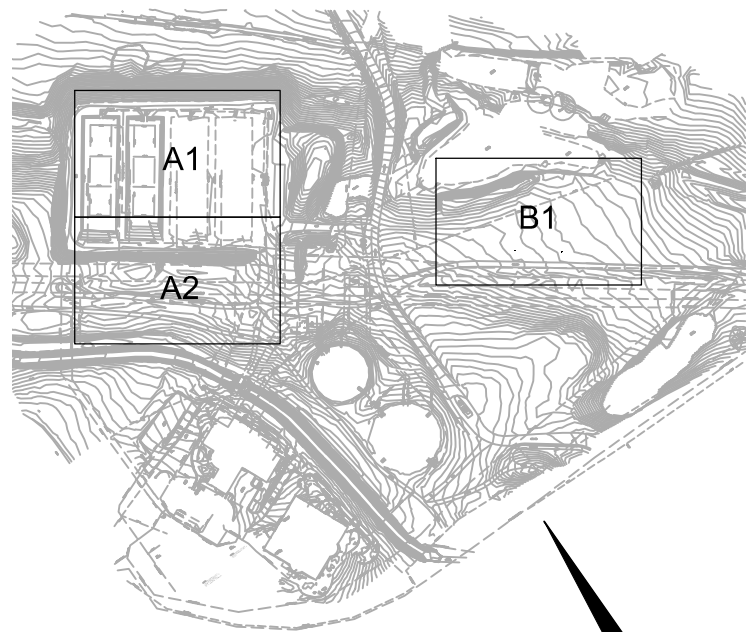


- GENERAL NOTES:
- PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.



Know what's below.
Call before you dig.

KEY MAP



KEY MAP
NORTH

REV	DATE	BY	DESCRIPTION

DESIGNED
RJF
DRAWN
JJP
CHECKED
BLG
DATE
JANUARY 2023



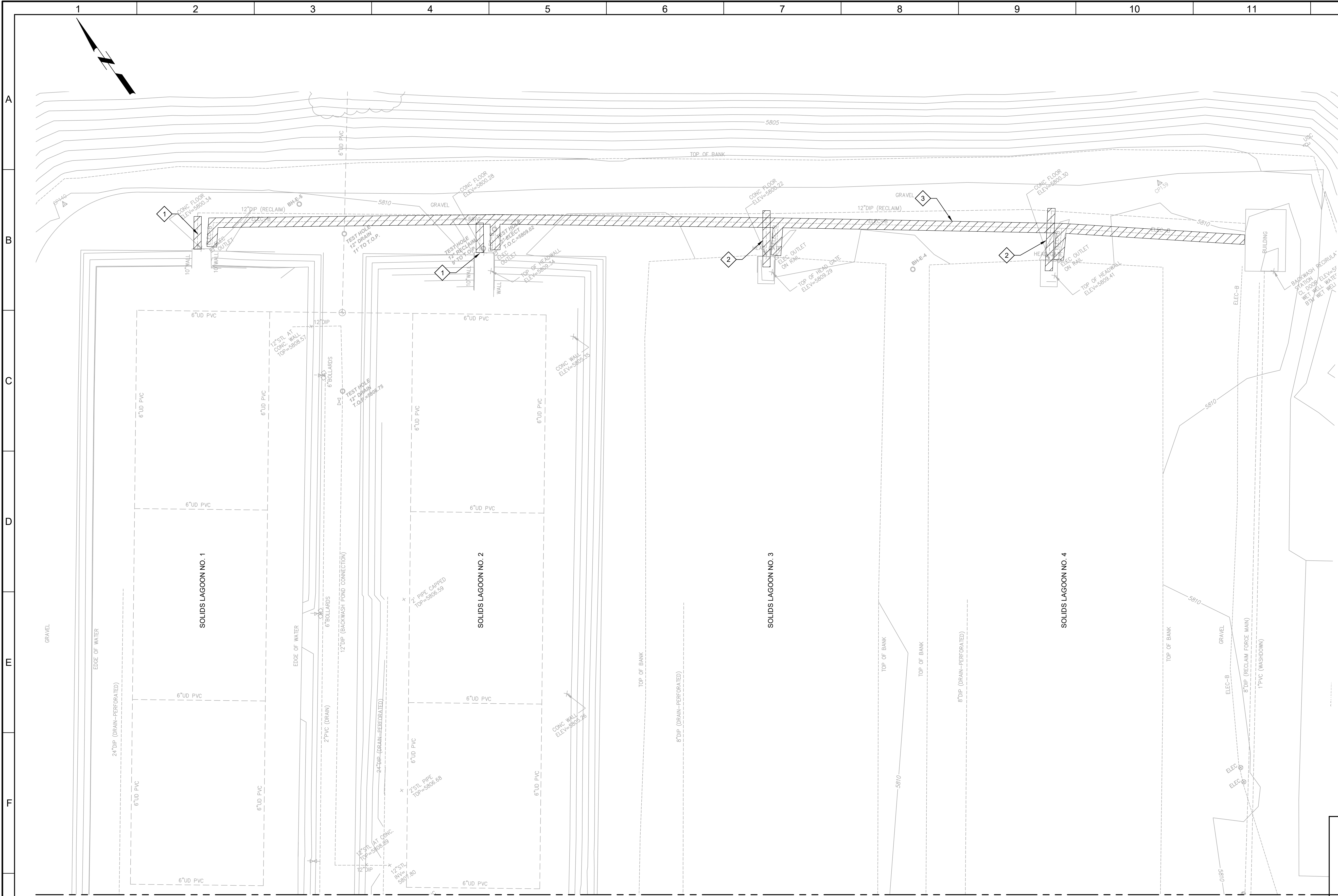
CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
CIVIL DRAWING KEY PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

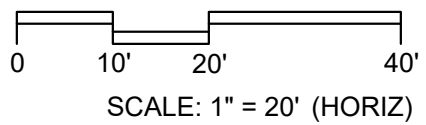
JOB NO.
201351
DRAWING NO.
00C00
SHEET NO.
26 OF 81

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LAST SAVED BY: ralk



MATCH LINE SEE DWG 00DC02
PLAN
FILE: 201351C0900



REV	DATE	BY	DESCRIPTION

DESIGNED RJF
DRAWN JJP
CHECKED BLG
DATE JANUARY 2023



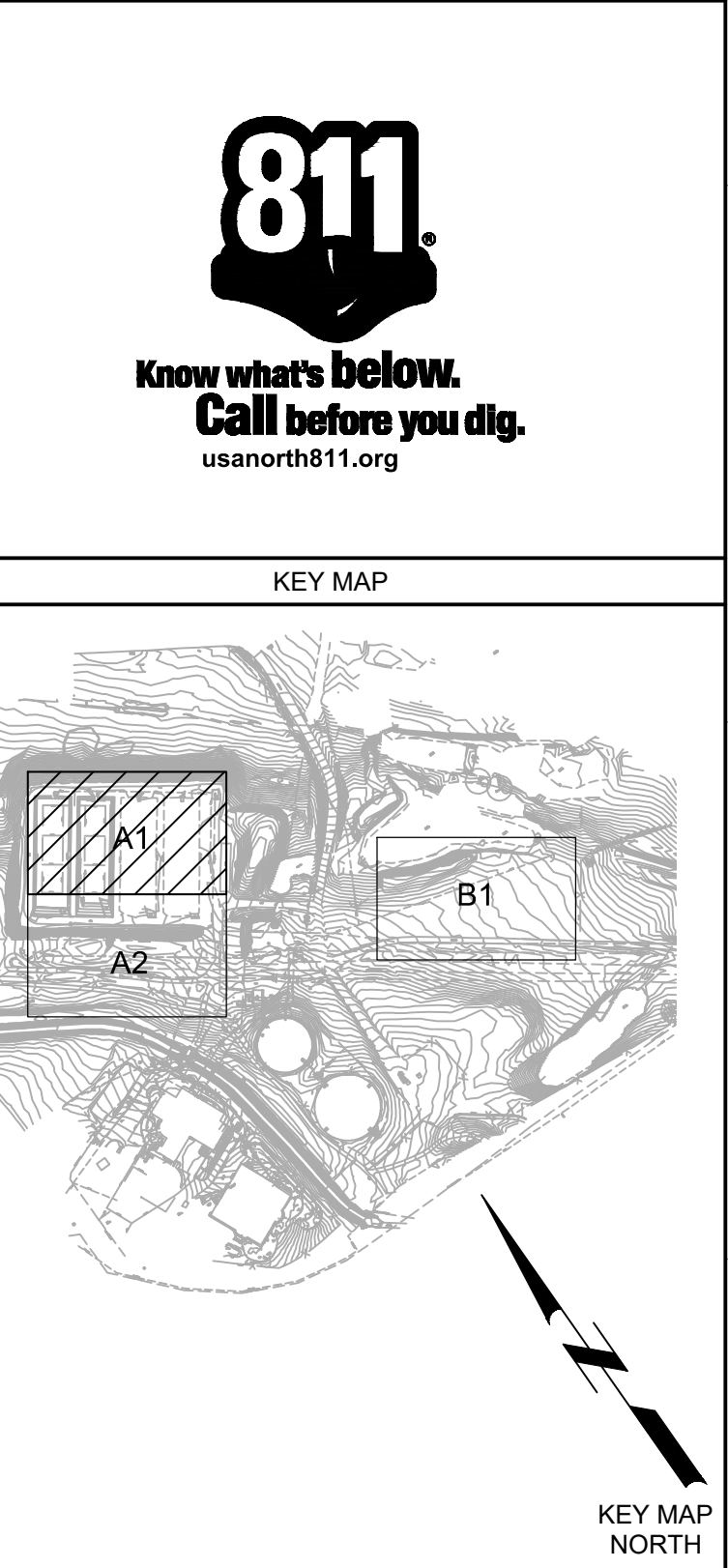
CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
**SITE DEMOLITION
PLAN A1**

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201351
DRAWING NO. 00DC01
SHEET NO. 27 OF 81

- GENERAL NOTES:**
- PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.

- KEY NOTES:**
- DEMOLISH EXISTING 12" BWR, SEE SHEET 70D02 FOR CONTINUATION.
 - DEMOLISH EXISTING 8" BWR AND 12"x12"x8" TEE.
 - DEMOLISH EXISTING BURIED ELECTRICAL CONDUIT.

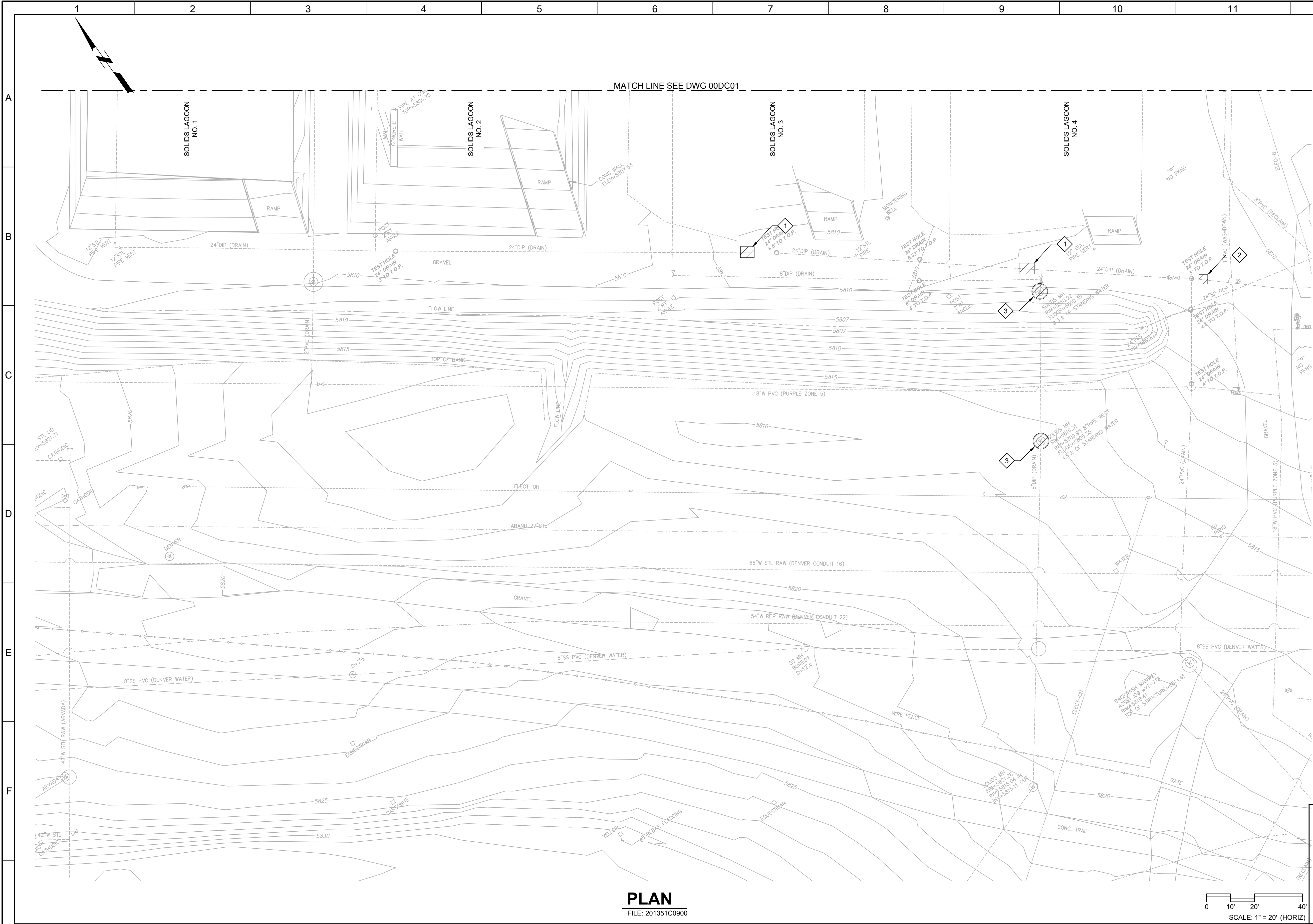


Know what's below.
Call before you dig.
usanorth811.org

KEY MAP

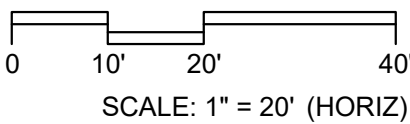
Plot Date: 1/17/2023 4:01:25 PM

LAST SAVED BY: ralk



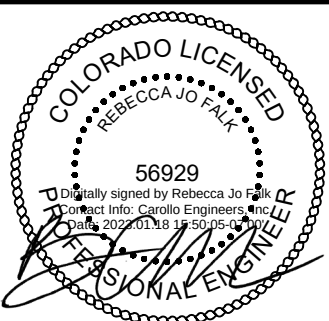
PLAN

FILE: 201351C0900



REV	DATE	BY	DESCRIPTION

DESIGNED
RJF
DRAWN
JJP
CHECKED
BLG
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
SITE DEMOLITION
PLAN A2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00DC02
SHEET NO.
28 OF 81

GENERAL NOTES:

- PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.



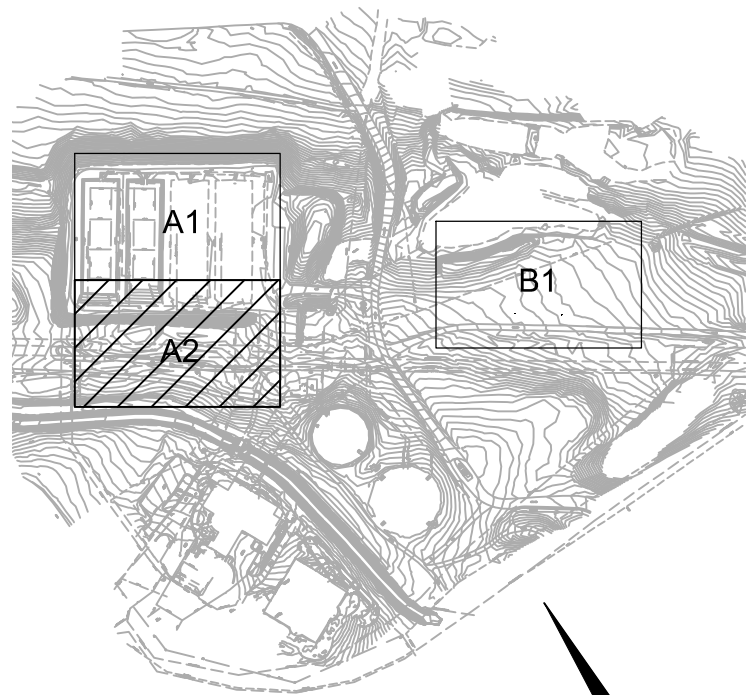
KEY NOTES:

- DEMOLISH PORTION OF EXISTING 24" BWW FOR INSTALLATION OF TEE.
- DEMOLISH PORTION OF EXISTING 24" BWW FOR INSTALLATION OF 24" BUTTERFLY VALVE.
- DEMOLISH EXISTING CONCRETE MANHOLE.



Know what's below.
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KEY MAP



KEY MAP NORTH

Plot Date: 1/17/2023 4:03:52 PM

LAST SAVED BY: ralk



GENERAL NOTES:

1. PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.

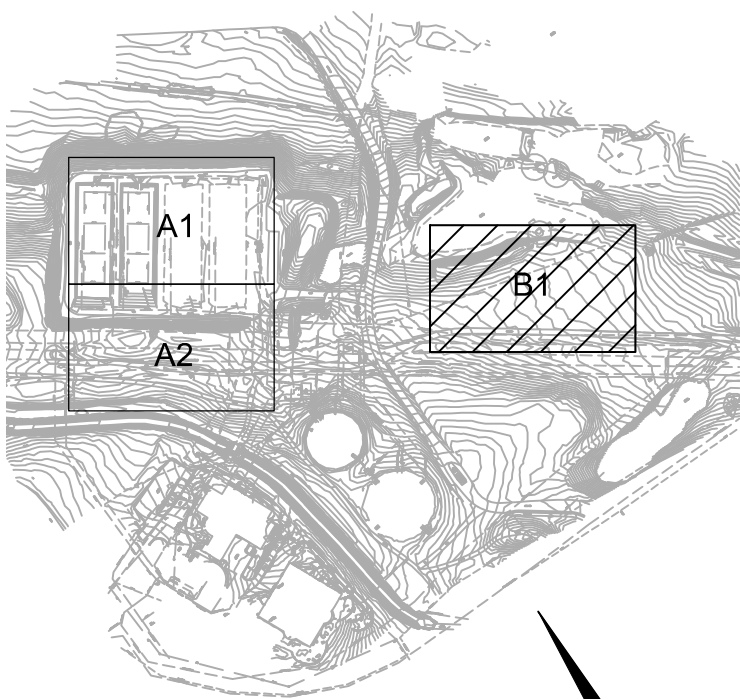
X KEY NOTES:

1. CLEAR AND GRUB EXISTING VEGETATION TO LIMITS SHOWN.
2. PROTECT IN PLACE EXISTING POWER POLE.



Know what's below.
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KEY MAP



KEY MAP
NORTH

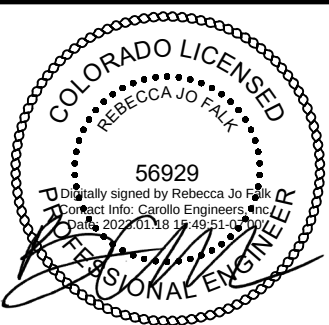
PLAN

FILE: 201351C0900

0 10' 20' 40'
SCALE: 1" = 20' (HORIZ)

REV	DATE	BY	DESCRIPTION

DESIGNED
RJF
DRAWN
JJP
CHECKED
BLG
DATE
JANUARY 2023



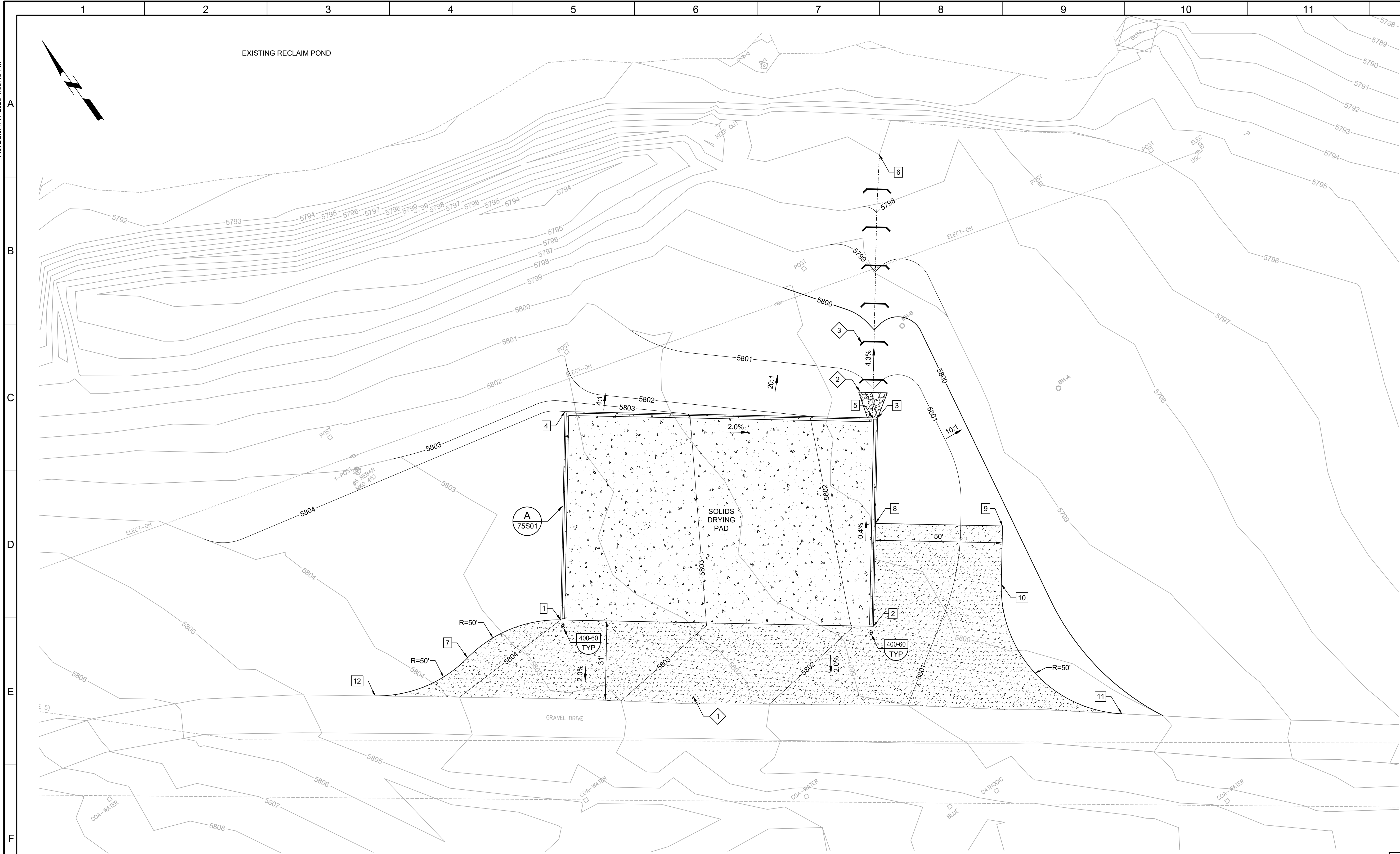
CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
SITE DEMOLITION
PLAN B1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00DC03
SHEET NO.
29 OF 81

Plot Date: 1/17/2023 4:08:43 PM

LAST SAVED BY: ralk



PLAN

FILE: 201351C0101

X COORDINATE CONTROL POINTS

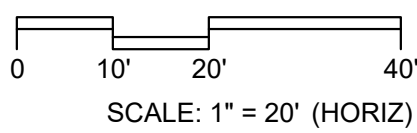
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	122961.31	80939.17	5804.00	FTG TOC
2	122888.74	81038.48	5801.85	FTG TOC
3	122954.95	81086.86	5801.50	FTG TOC
4	123027.52	80987.55	5804.00	FTG TOC

X COORDINATE CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
5	122956.13	81085.24	5801.50	FL
6	123039.41	81146.85	5797.00	FL
7	122970.10	80900.54	5804.02	ROAD
8	122921.44	81062.37	5801.67	ROAD

X COORDINATE CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
9	122891.94	81102.74	5800.67	ROAD
10	122873.38	81089.19	5800.56	ROAD
11	122804.47	81098.79	5800.18	ROAD
12	122978.71	80862.16	5804.52	ROAD



GENERAL NOTES:

- PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.

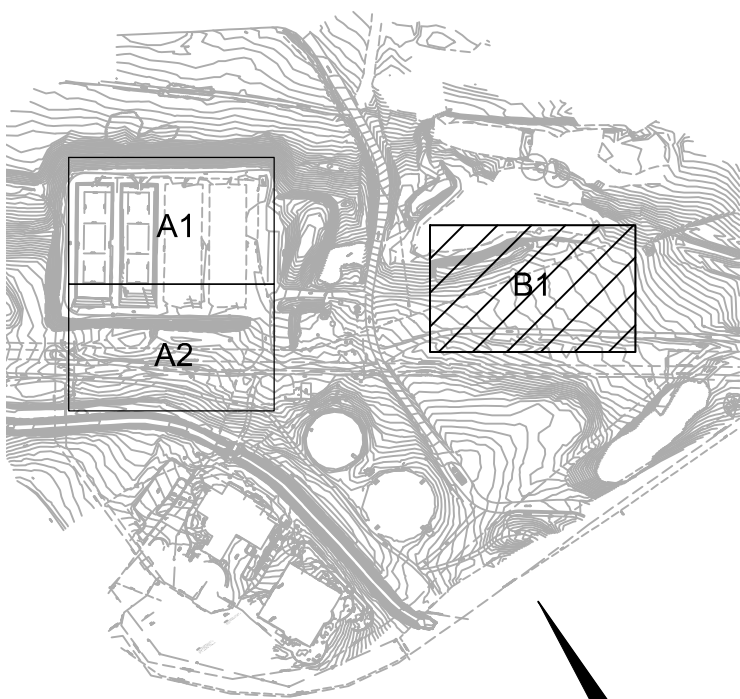
X KEY NOTES:

- 6" CLASS 6 AGGREGATE BASE COURSE (RECYCLED CONCRETE) ACCESS ROAD ALONG SOUTH EDGE OF SOLIDS DRYING PAD.
- INSTALL TYPE VL RIPRAP WITH FILTER FABRIC AT SOLIDS DRYING PAD OUTLET.
- INSTALL GEOSOLUTIONS DURAWATTLE ROCK SOCK OR SIMILAR, SINGLE WATTLE SIZE 5.5" X 12", 5LB EACH, SPACED AT 15' PERPENDICULAR TO FLOW LINE.



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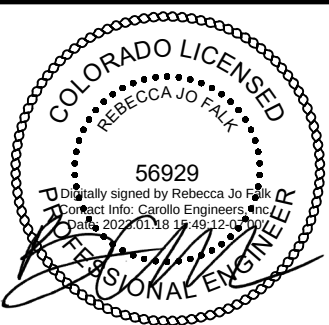
KEY MAP



KEY MAP
NORTH

REV	DATE	BY	DESCRIPTION

DESIGNED
RJF
DRAWN
JJP
CHECKED
BLG
DATE
JANUARY 2023



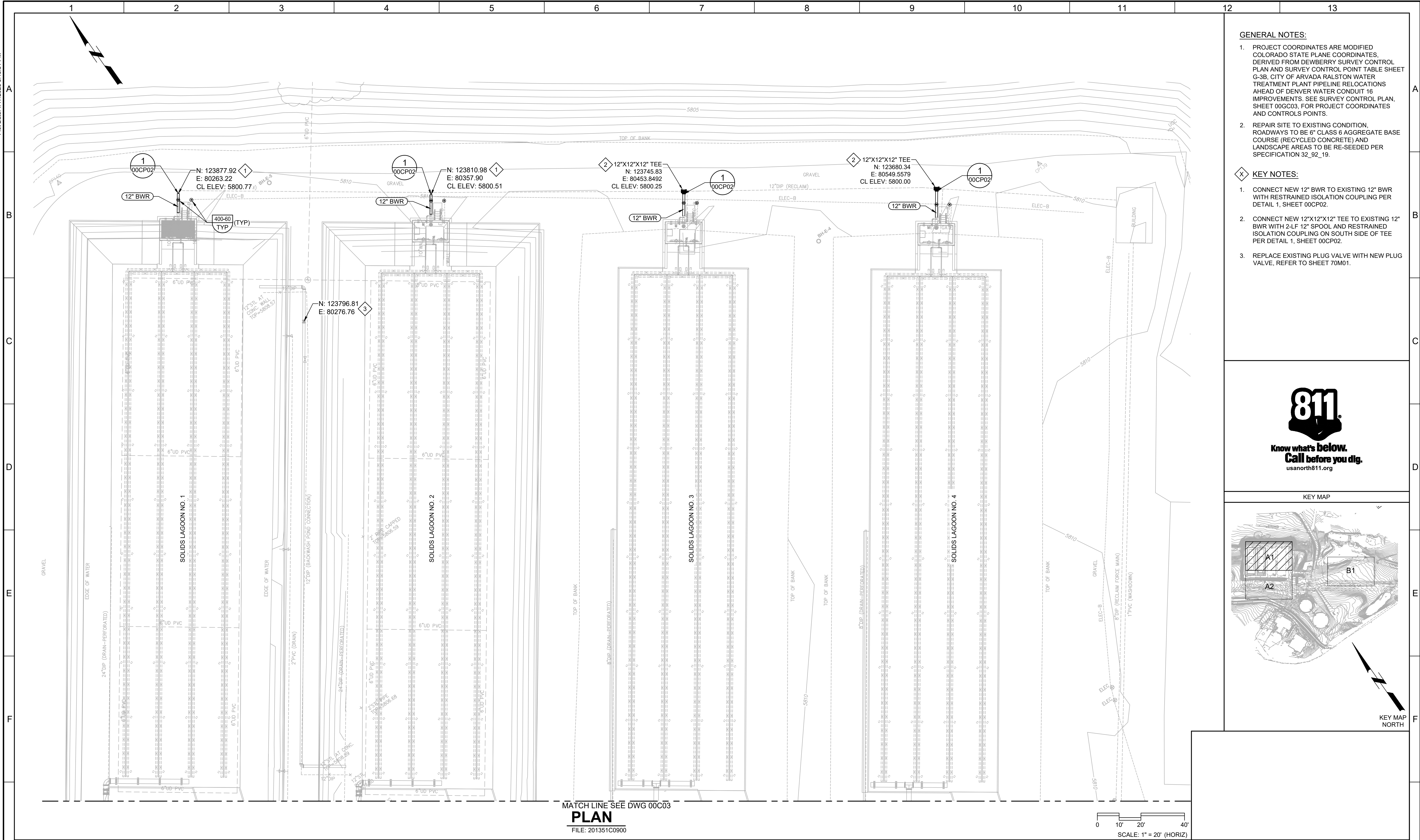
CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
PAVING AND GRADING
PLAN B1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00C01
SHEET NO.
30 OF 81

Plot Date: 1/17/2023 3:48:51 PM

LAST SAVED BY: flak



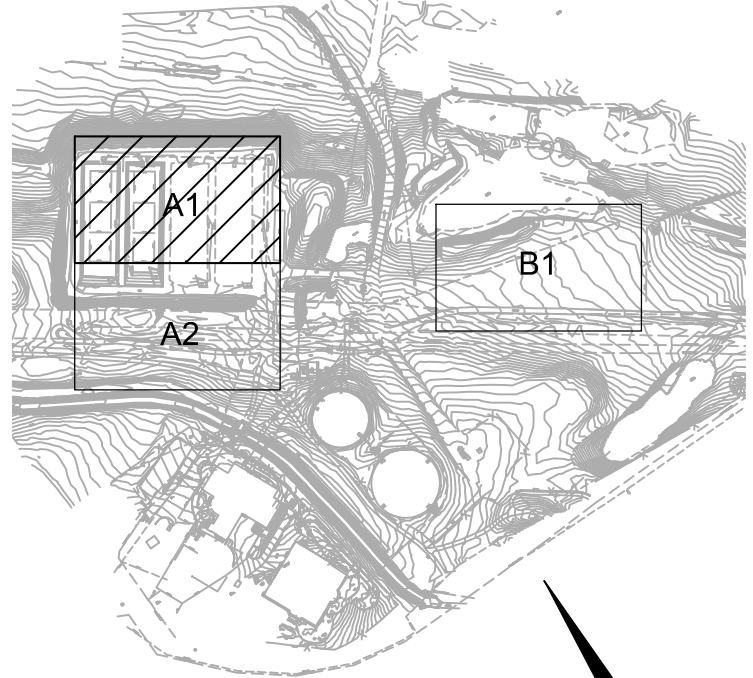
- GENERAL NOTES:
- PROJECT COORDINATES ARE MODIFIED COLORADO STATE PLANE COORDINATES, DERIVED FROM DEWBERRY SURVEY CONTROL PLAN AND SURVEY CONTROL POINT TABLE SHEET G-3B, CITY OF ARVADA RALSTON WATER TREATMENT PLANT PIPELINE RELOCATIONS AHEAD OF DENVER WATER CONDUIT 16 IMPROVEMENTS. SEE SURVEY CONTROL PLAN, SHEET 00GC03, FOR PROJECT COORDINATES AND CONTROLS POINTS.
 - REPAIR SITE TO EXISTING CONDITION, ROADWAYS TO BE 6" CLASS 6 AGGREGATE BASE COURSE (RECYCLED CONCRETE) AND LANDSCAPE AREAS TO BE RE-SEEDDED PER SPECIFICATION 32_92_19.

- KEY NOTES:
- CONNECT NEW 12" BWR TO EXISTING 12" BWR WITH RESTRAINED ISOLATION COUPLING PER DETAIL 1, SHEET 00CP02.
 - CONNECT NEW 12"X12"X12" TEE TO EXISTING 12" BWR WITH 2-LF 12" SPOOL AND RESTRAINED ISOLATION COUPLING ON SOUTH SIDE OF TEE PER DETAIL 1, SHEET 00CP02.
 - REPLACE EXISTING PLUG VALVE WITH NEW PLUG VALVE, REFER TO SHEET 70M01.



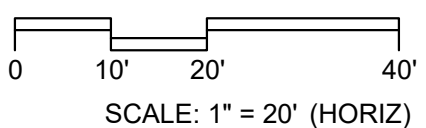
Know what's below.
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KEY MAP



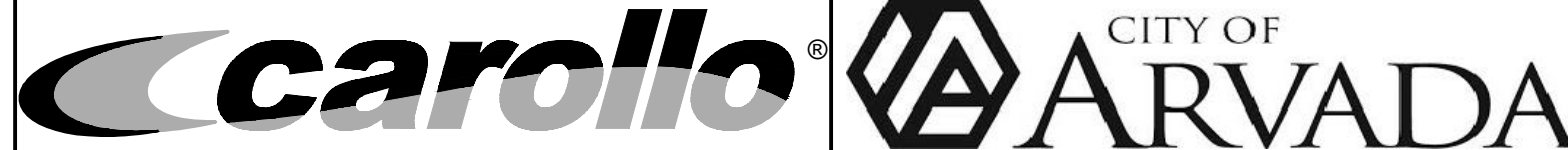
KEY MAP
NORTH

MATCH LINE SEE DWG 00C03
PLAN
FILE: 201351C0900



REV	DATE	BY	DESCRIPTION

DESIGNED RJF
DRAWN JJP
CHECKED BLG
DATE JANUARY 2023

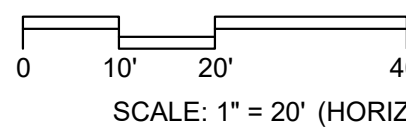


CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
YARD PIPING
PLAN A1

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 201351
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. 00C02
	SHEET NO. 31 OF 81



FILE: 201351C0100



1. PROJECT COORDINATES ARE MODIFIED
COLORADO STATE PLANE COORDINATES,
DERIVED FROM DEWBERRY SURVEY CONTROL
PLAN AND SURVEY CONTROL POINT TABLE SHEET
G-3B, CITY OF ARVADA RALSTON WATER
TREATMENT PLANT PIPELINE RELOCATIONS
AHEAD OF DENVER WATER CONDUIT 16
IMPROVEMENTS. SEE SURVEY CONTROL PLAN,
SHEET 00G003, FOR PROJECT COORDINATES
AND CONTROLS POINTS.
2. REFER TO SPECIFICATION 01_31_13 FOR
CONSTRUCTION SEQUENCING.
3. REPAIR SITE TO EXISTING CONDITION,
ROADWAYS TO BE 6" CLASS 6 AGGREGATE BASE
COURSE (RECYCLED CONCRETE) AND
LANDSCAPE AREAS TO BE RE-SEEDDED PER
SPECIFICATION 32_92_19.

1. SEE MECHANICAL DRAWINGS FOR CONTINUATION.
2. CUT EXISTING 24" DIP, CONNECT NEW 24" TEE WITH 2-LF 24" SPOOL AND RESTRAINED ISOLATION COUPLING BETWEEN TEE AND BFV PER DETAIL 1, SHEET 00CP02.
3. CONNECT NEW 8" DIP TO EXISTING 8" DIP WITH RESTRAINED ISOLATION COUPLINGS PER DETAIL 1, SHEET 00CP02 (NO TEST STATION).

1	70MV0310	24" BURIED BFW
2	70MV0410	24" BURIED BFW
3	00MV1000	24" BURIED BFW



KEY MAP



DESIGNED
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JJP
CHECKED
BLG
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
YARD PIPING
PLAN A2

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0  1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 201351
	DRAWING NO. 00C03
	SHEET NO. 32 OF 81

[illegible]

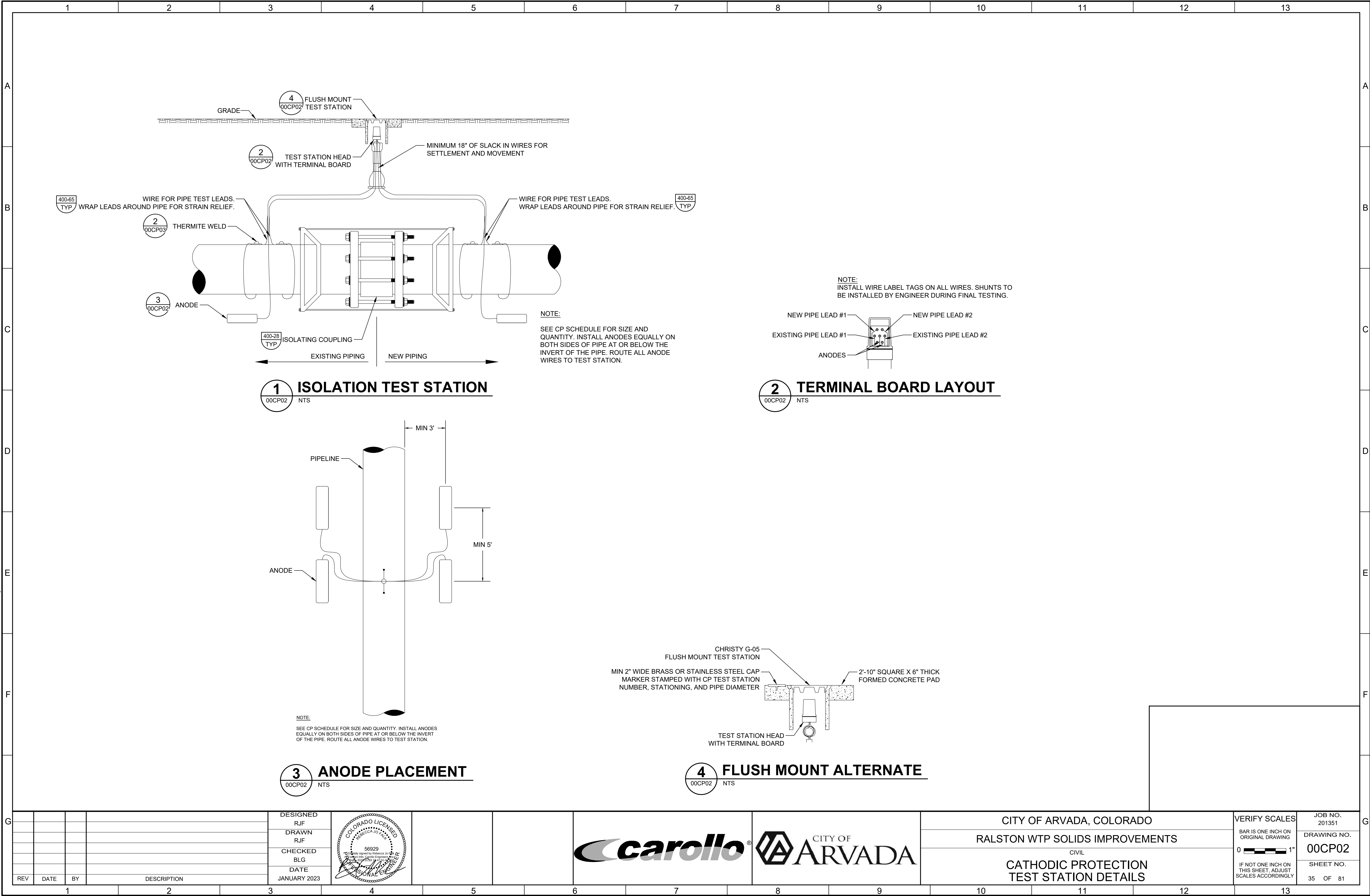
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Plot Date: 1/17/2023 3:56:38 PM

FILE NAME: 201351-00CP02.dwg

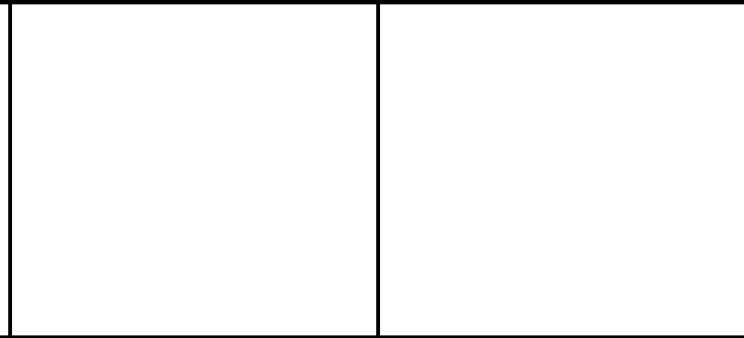
PROJECT NO. 201351-100000

LAST SAVED BY: ralk



REV	DATE	BY	DESCRIPTION

DESIGNED	RJF
DRAWN	RJF
CHECKED	BLG
DATE	JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
CIVIL
CATHODIC PROTECTION TEST STATION DETAILS

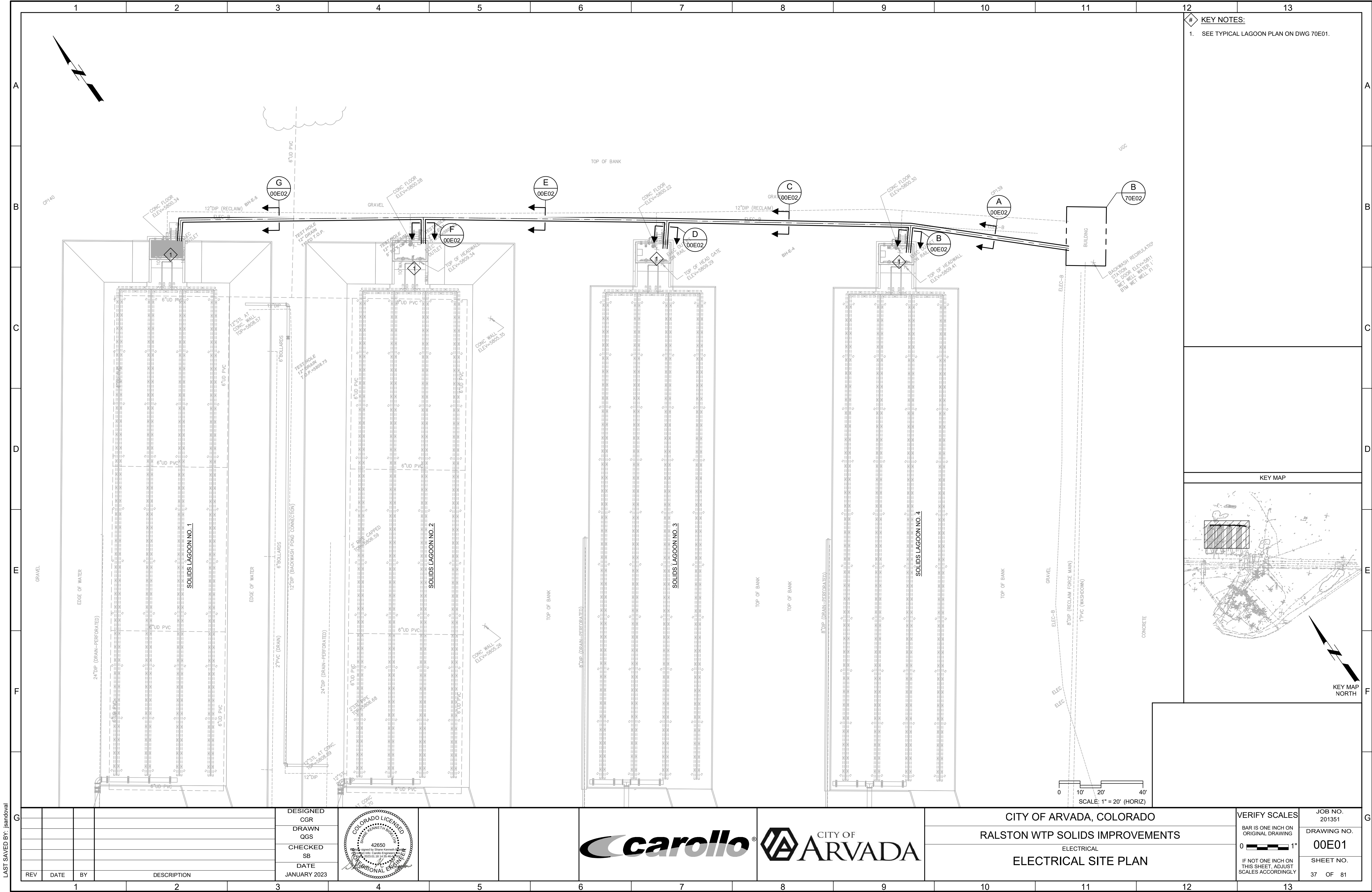
VERIFY SCALES	JOB NO. 201351
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00CP02
0 1"	SHEET NO. 35 OF 81
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

JOB NO.
201351

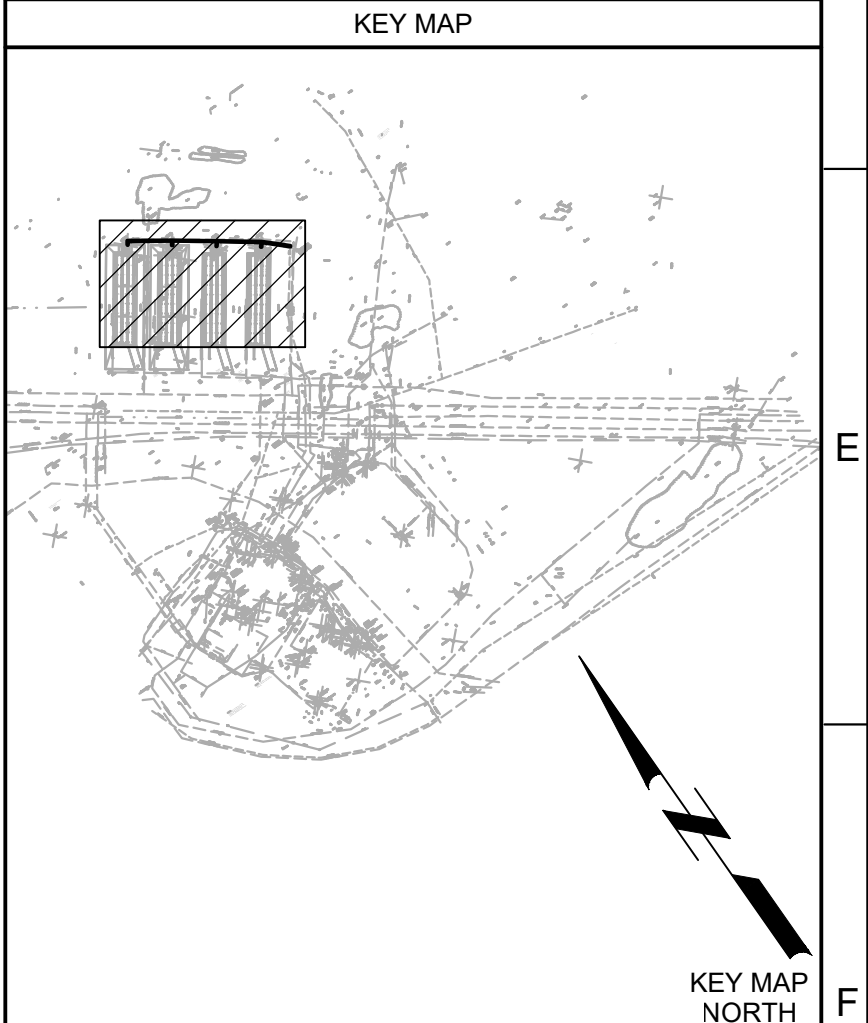
DRAWING NO
00CP03

SHEET NO.

36 OF 81

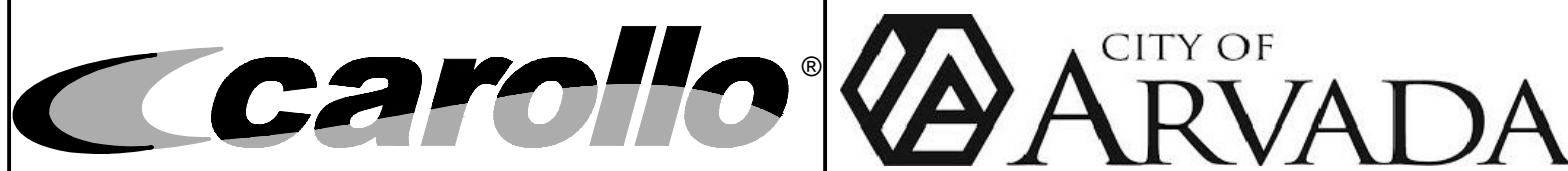


KEY NOTES:
1. SEE TYPICAL LAGOON PLAN ON DWG 70E01.



REV	DATE	BY	DESCRIPTION

DESIGNED CGR
DRAWN QGS
CHECKED SB
DATE JANUARY 2023



CITY OF ARVADA, COLORADO	VERIFY SCALES	JOB NO. 201351
RALSTON WTP SOLIDS IMPROVEMENTS	BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00E01
ELECTRICAL	0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 37 OF 81
ELECTRICAL SITE PLAN		

PROJECT NO. 201351-100000 FILE NAME: 20135100E02.dgn

Plot Date: 18-JAN-2023 9:23:17 AM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: KAtkin

1 2 3 4 5 6 7 8 9 10 11 12 13

A

B

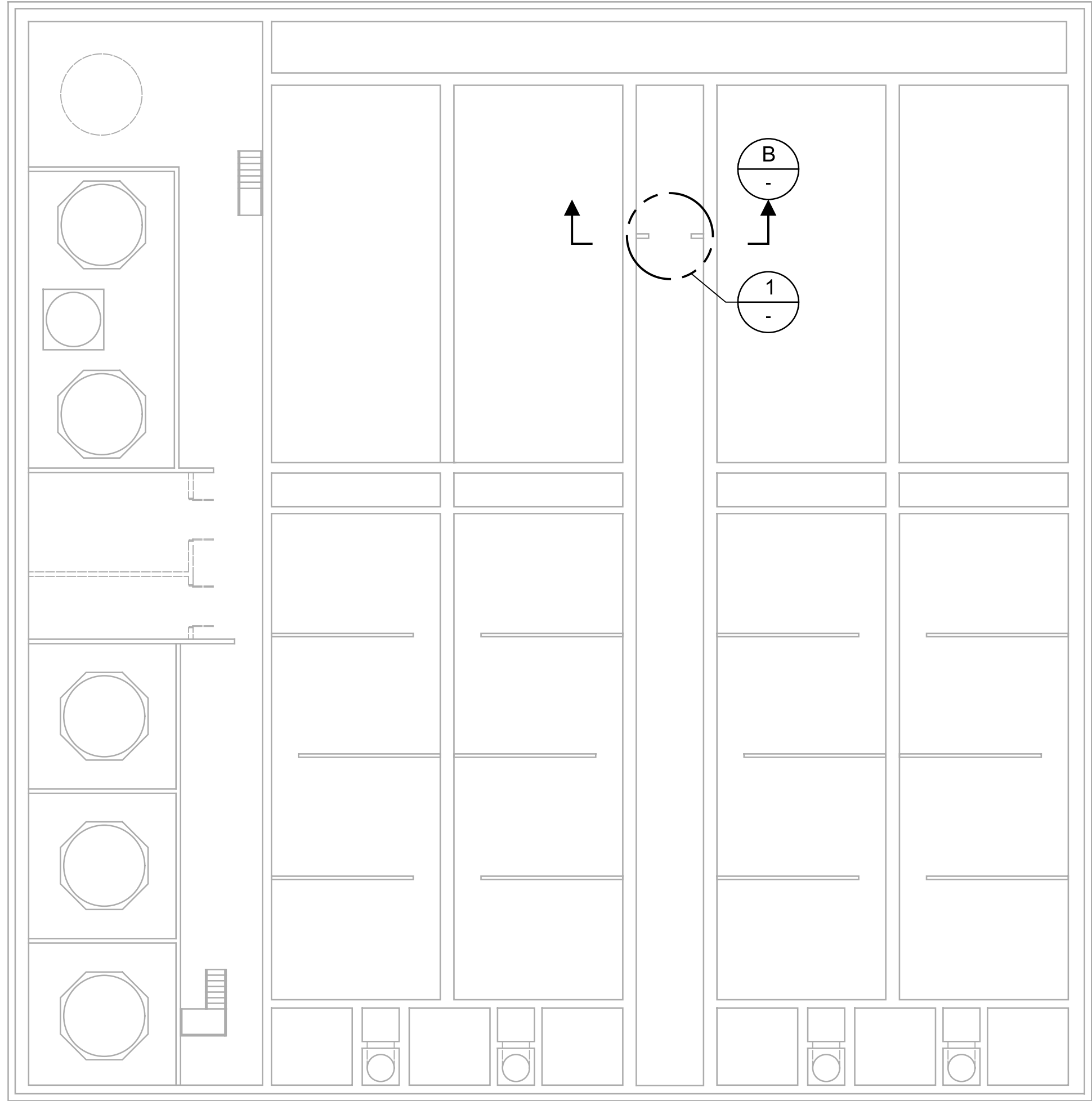
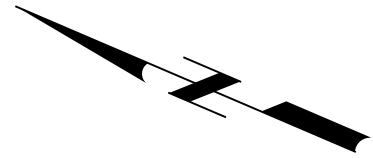
C

D

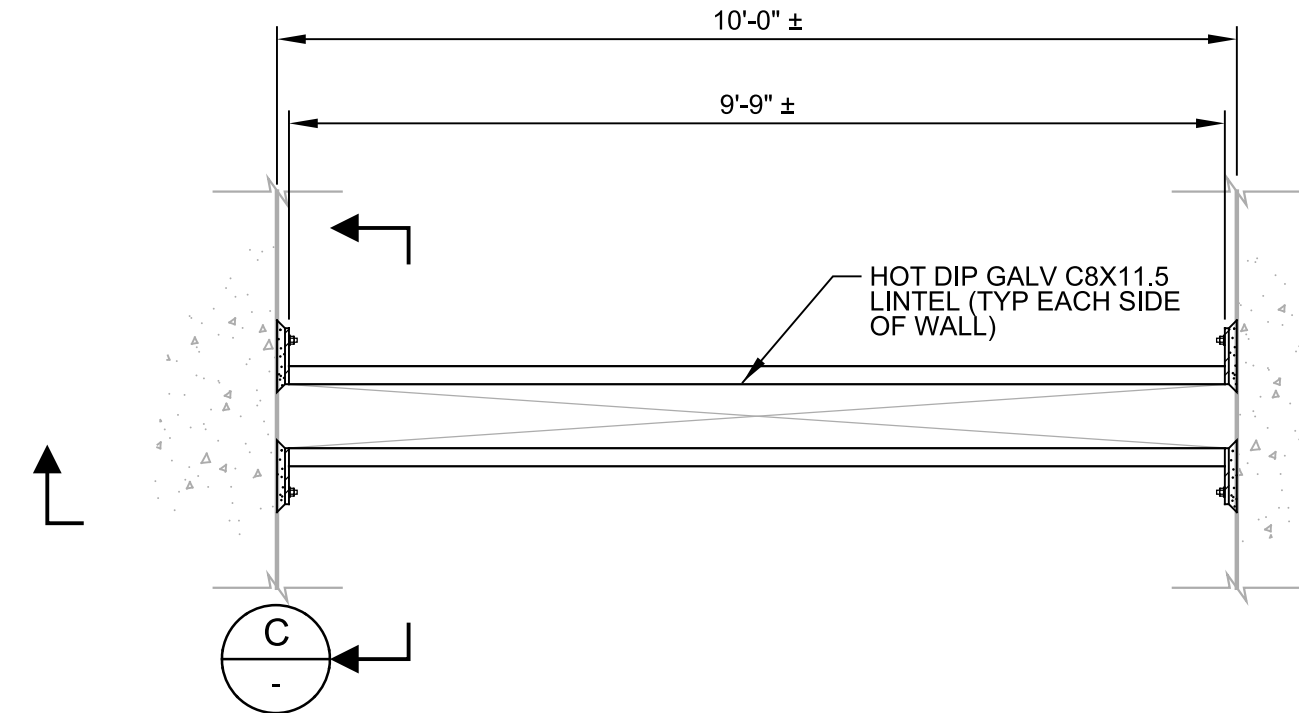
E

F

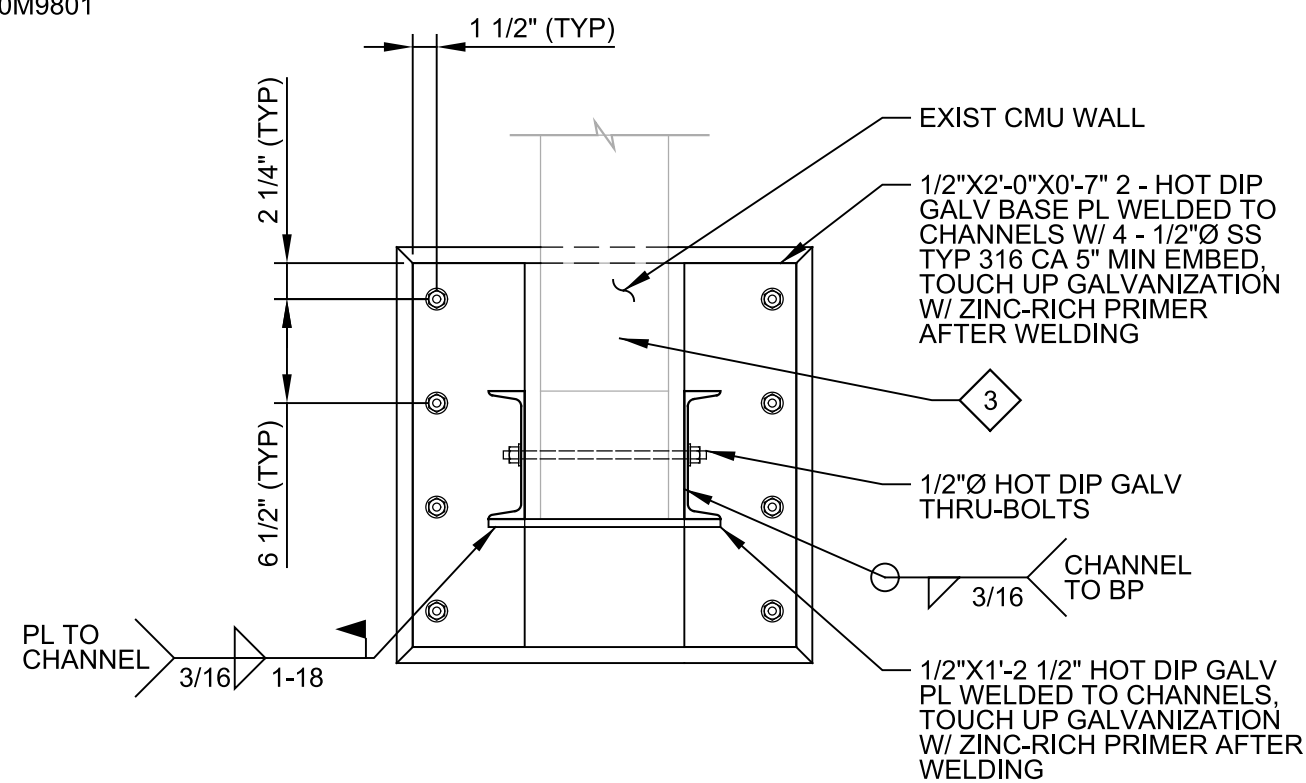
G



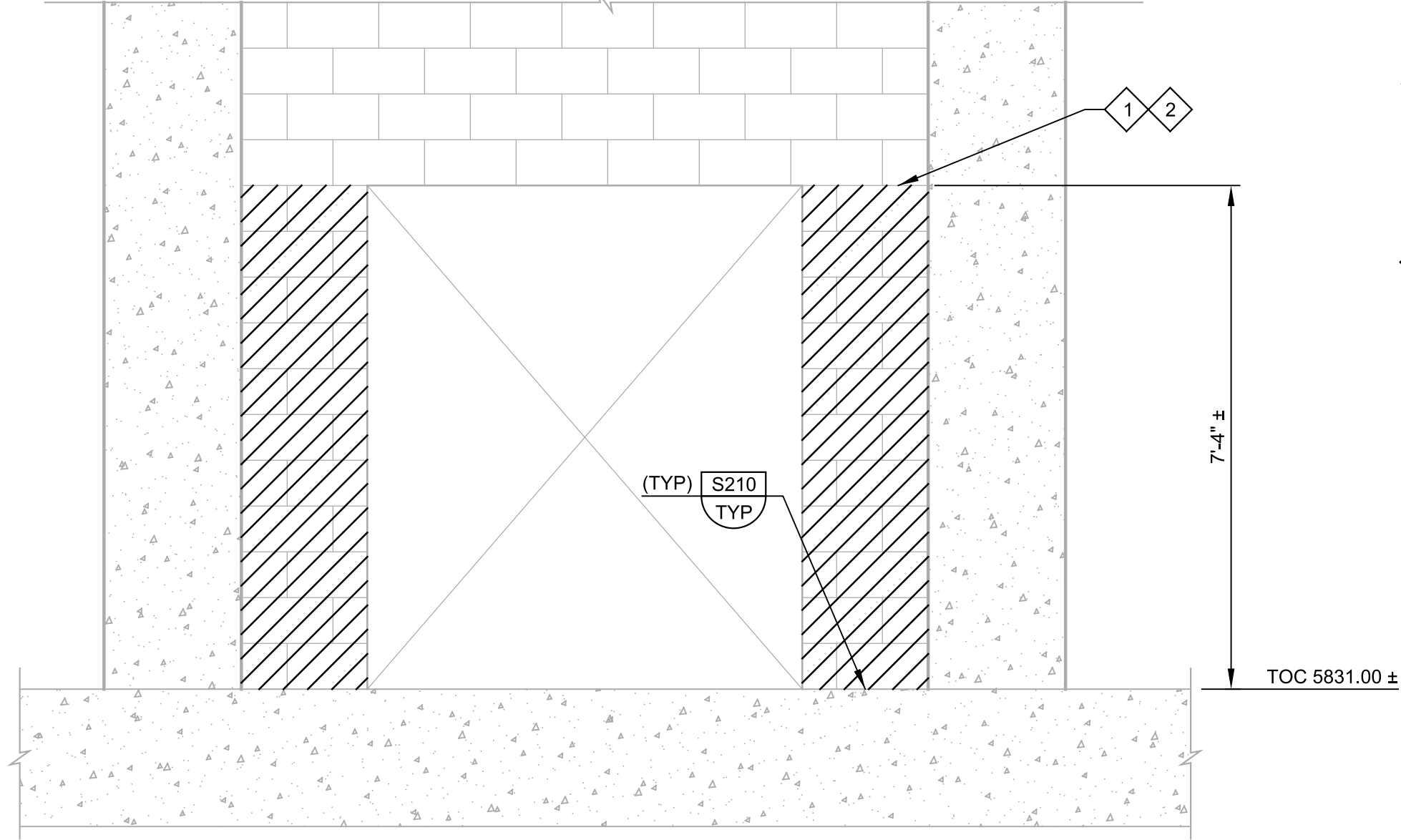
EXISTING LOWER
A PLAN
SCALE: NO SCALE
FILE: 20135130M9801



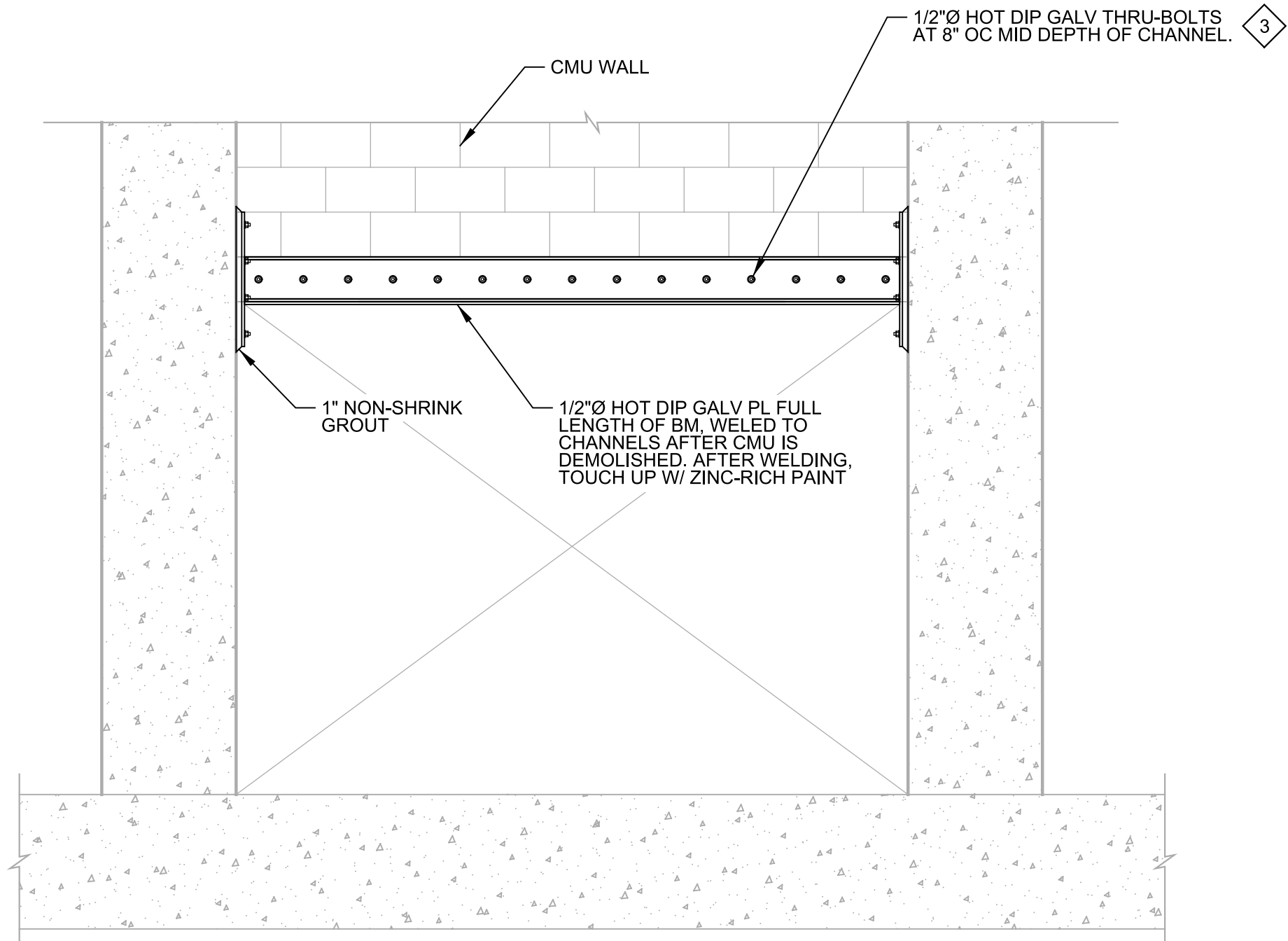
1 DETAIL
SCALE: 1/2" = 1'-0"
FILE: 20135130S081



C SECTION
SCALE: 1" = 1'-0"
FILE: 20135130S0801



DEMO
B SECTION
SCALE: 1/2" = 1'-0"
FILE: 20135130S0801



D SECTION
SCALE: 1/2" = 1'-0"
FILE: 20135130S0801

DEMO GENERAL NOTES:

1. ALL EXISTING CONDITIONS SHALL BE FIELD VERIFIED PRIOR TO BEGINNING WORK. NOTIFY OWNER AND ENGINEER OF ANY DIFFERING CONDITIONS.

GENERAL NOTES:

1. SEE SHEET 00GS01 FOR GENERAL STRUCTURAL NOTES.
2. FIELD VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS.

KEY NOTES:

1. PRIOR TO DEMOLITION OF EXISTING CMU, INSTALL SUPPORT BEAM ACCORDING TO STRUCTURAL DRAWINGS.
2. DEMOLISH EXISTING CMU UP TO BOTTOM OF OPENING.
3. CONFIRM THAT EXISTING CMU WALL IS SOLID GROUTED PRIOR TO INSTALLATION OF BEAMS. IF WALL IS NOT SOLID GROUTED, GROUT SOLID BEFORE INSTALLATION.

A

B

C

D

E

F

G

REV	DATE	BY	DESCRIPTION

DESIGNED	MKF
DRAWN	KA
CHECKED	MAK
DATE	JANUARY 2023

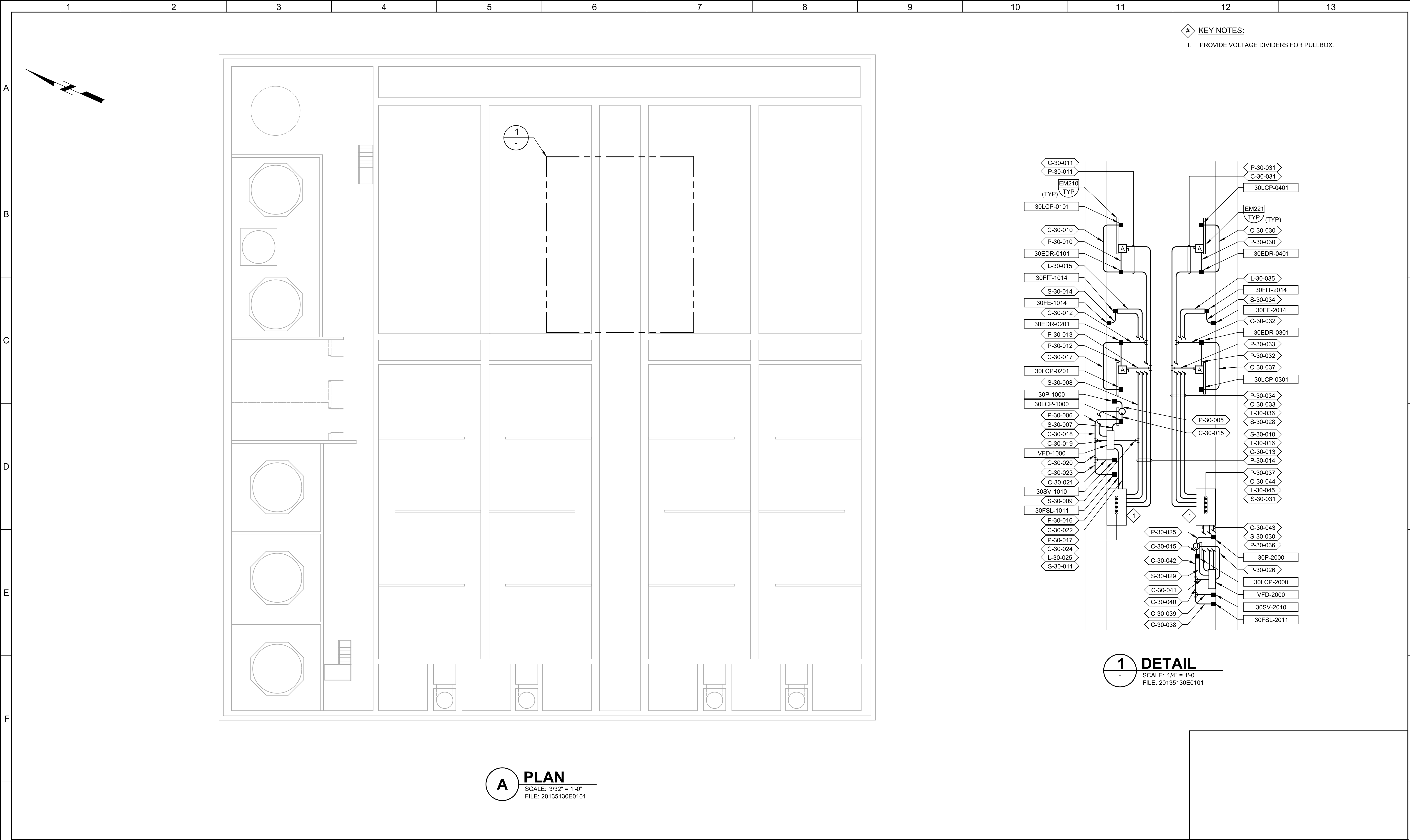


CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
DEMO AND STRUCTURAL
SOLIDS PUMPS
PLAN, SECTIONS, AND DETAILS

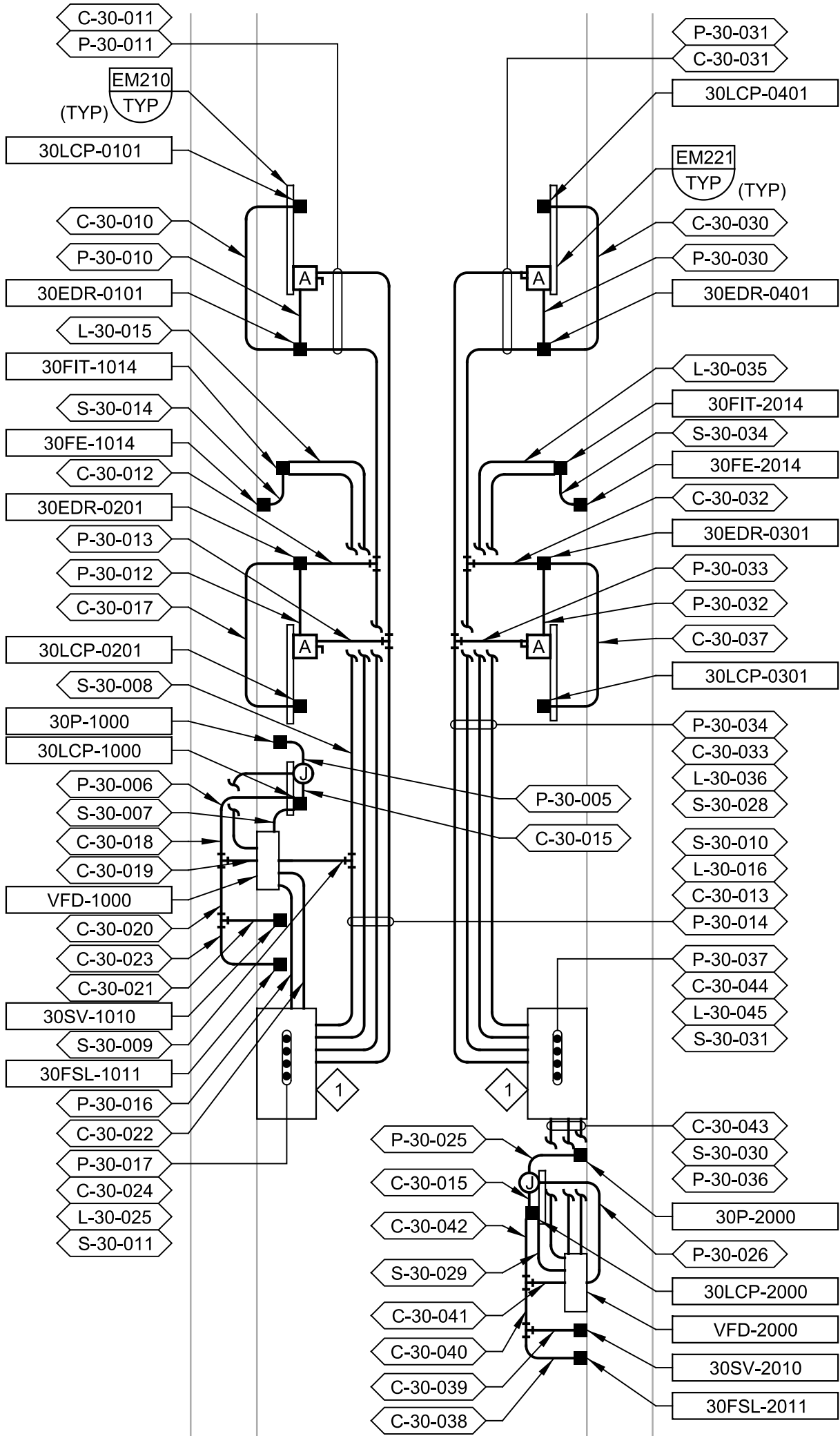
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
30S01
SHEET NO.
39 OF 81

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1 User: svcPW Plot Date: 18-JAN-2023 12:37:25 AM



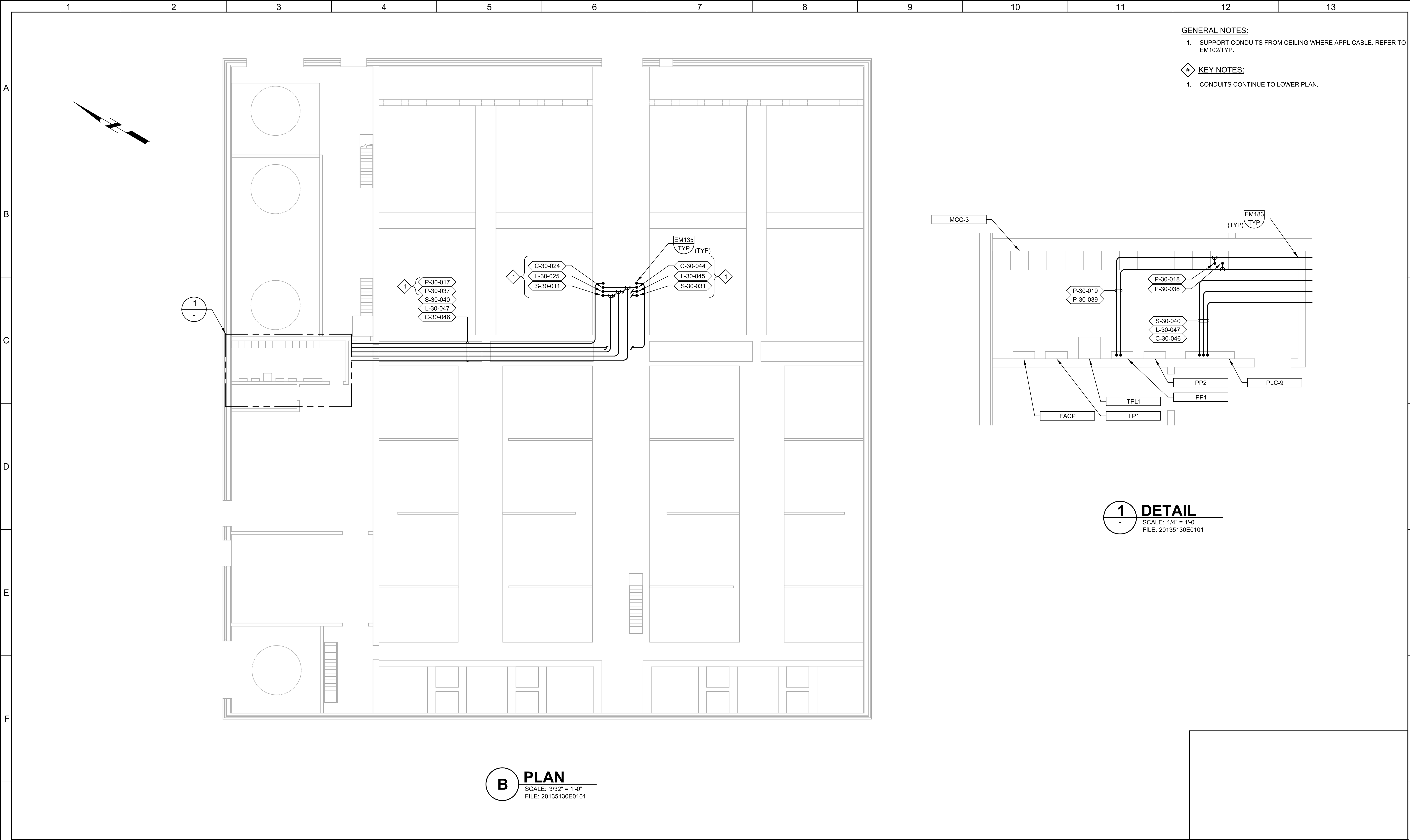
1 DETAIL
SCALE: 1/4" = 1'-0"
FILE: 20135130E0101



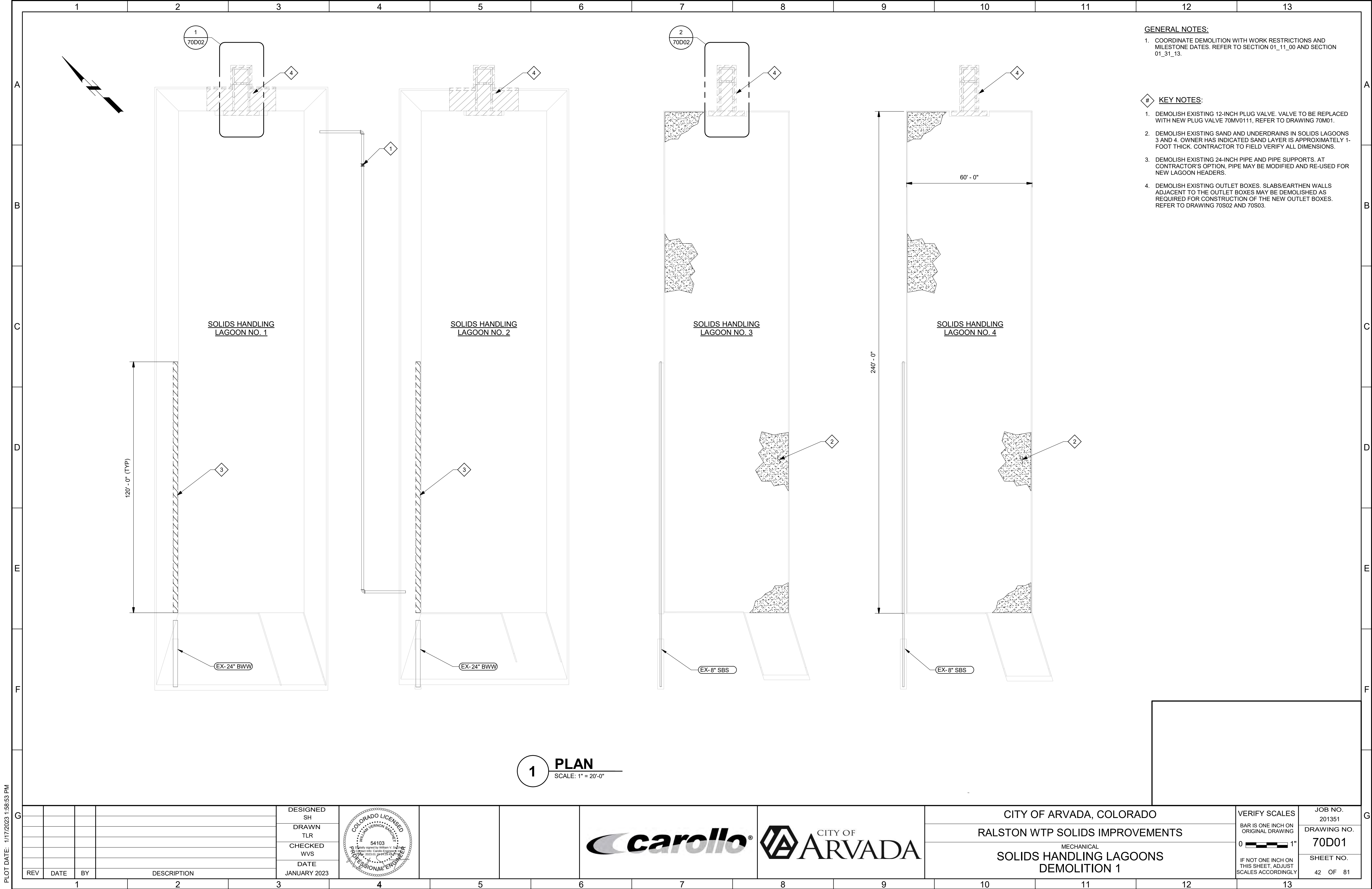
DESIGNED CGR DRAWN QGS CHECKED SB DATE JANUARY 2023				COLORADO LICENSED SHANE KENNETH BILLORE 42650 Professional Engineer Electrical 01/18/2023 TO 01/18/2026	CITY OF ARVADA		CITY OF ARVADA, COLORADO RALSTON WTP SOLIDS IMPROVEMENTS ELECTRICAL SOLID PUMPS - LOWER LEVEL POWER AND CONTROL PLAN		VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 201351 DRAWING NO. 30E01 SHEET NO. 40 OF 81
REV	DATE	BY	DESCRIPTION							
1										
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13										

PROJECT NO. 201351-100000 FILE NAME: 20135130E01.dgn

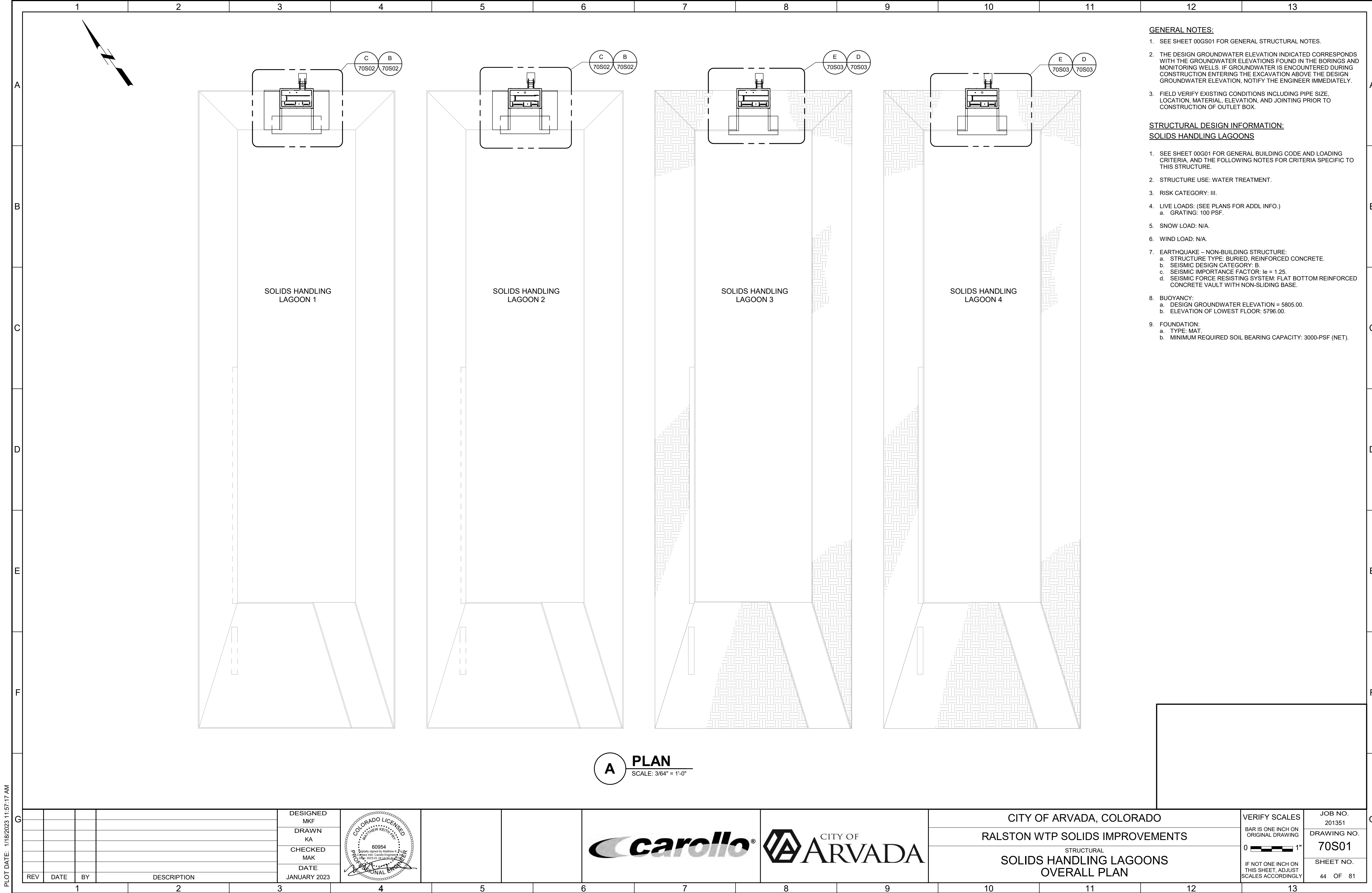
Plot Date: 18-JAN-2023 12:37:36 AM
User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: jsandoval



DESIGNED CGR DRAWN QGS CHECKED SB DATE JANUARY 2023				COLORADO LICENSED SHAWN KENNETH BRIDGES 42650 Professional Engineer Exp. 12/31/2024	carollo		CITY OF ARVADA		CITY OF ARVADA, COLORADO RALSTON WTP SOLIDS IMPROVEMENTS ELECTRICAL SOLID PUMPS - UPPER LEVEL POWER AND CONTROL PLAN			VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 201351 DRAWING NO. 30E02 SHEET NO. 41 OF 81
REV	DATE	BY	DESCRIPTION										

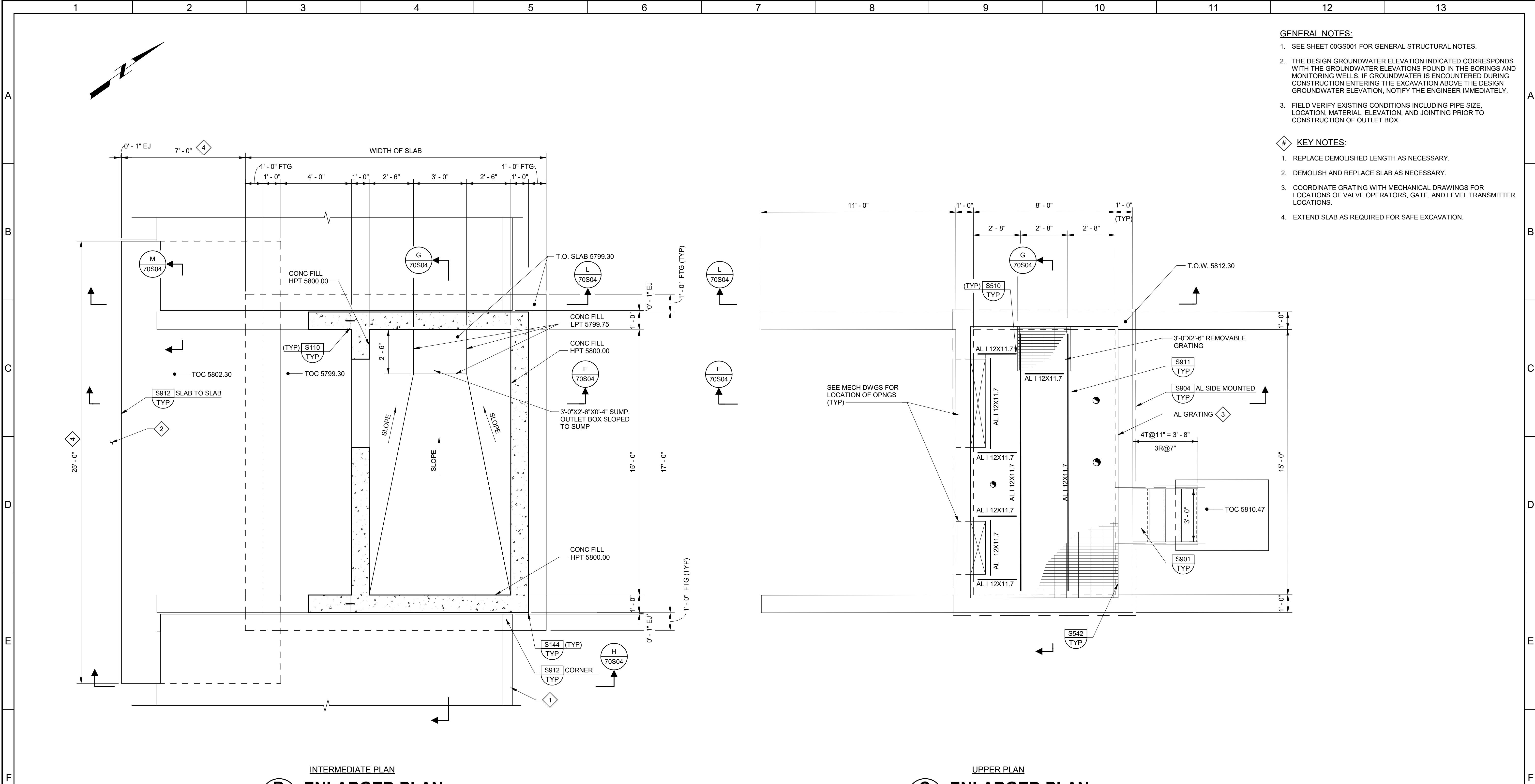


PLOT DATE: 1/17/2023 1:58:53 PM

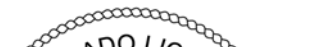


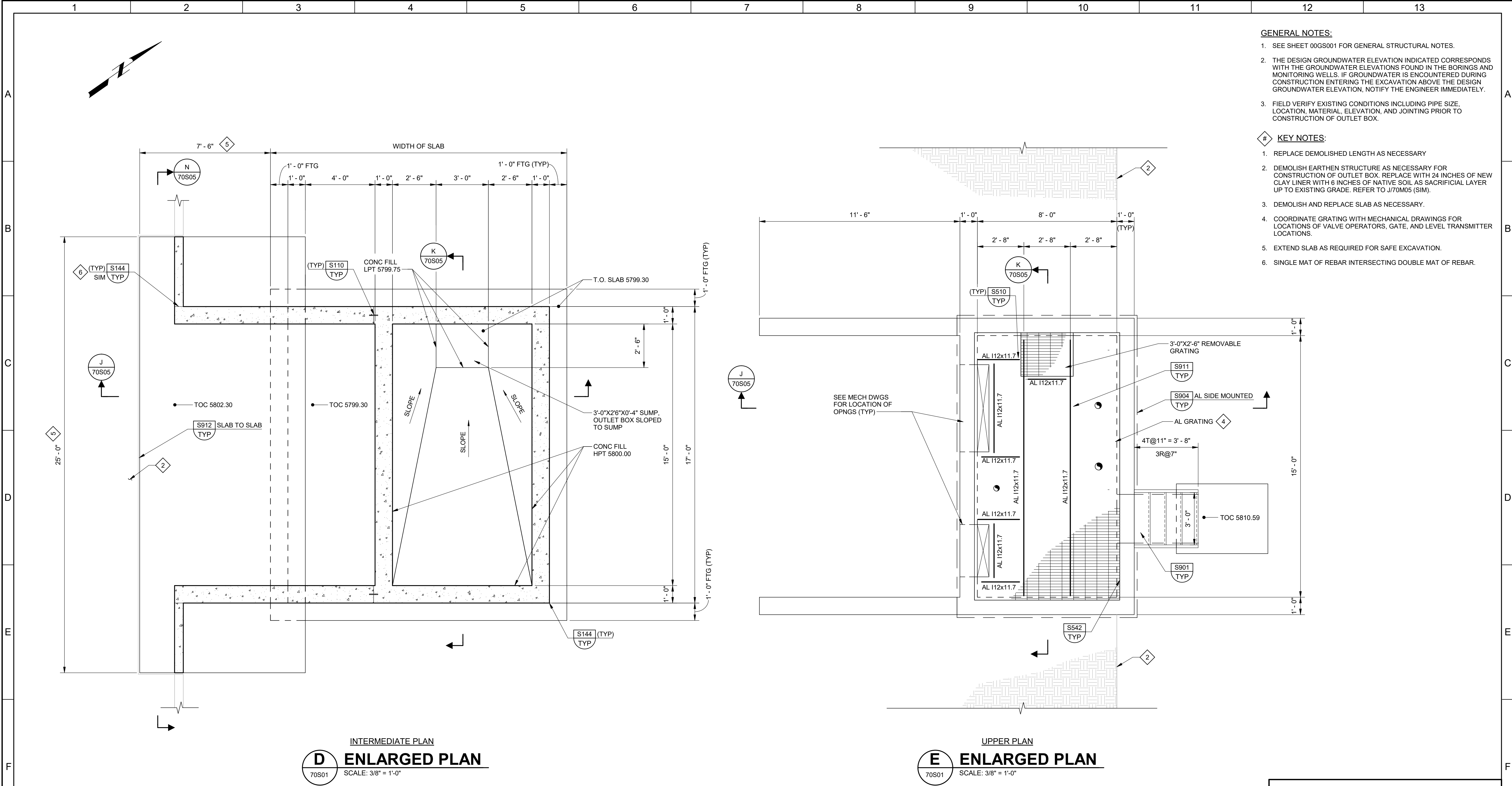
- GENERAL NOTES:**
- SEE SHEET 00GS01 FOR GENERAL STRUCTURAL NOTES.
 - THE DESIGN GROUNDWATER ELEVATION INDICATED CORRESPONDS WITH THE GROUNDWATER ELEVATIONS FOUND IN THE BORINGS AND MONITORING WELLS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ENTERING THE EXCAVATION ABOVE THE DESIGN GROUNDWATER ELEVATION, NOTIFY THE ENGINEER IMMEDIATELY.
 - FIELD VERIFY EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, MATERIAL, ELEVATION, AND JOINTING PRIOR TO CONSTRUCTION OF OUTLET BOX.
- STRUCTURAL DESIGN INFORMATION:**
- SOLIDS HANDLING LAGOONS**
- SEE SHEET 00GS01 FOR GENERAL BUILDING CODE AND LOADING CRITERIA, AND THE FOLLOWING NOTES FOR CRITERIA SPECIFIC TO THIS STRUCTURE.
 - STRUCTURE USE: WATER TREATMENT.
 - RISK CATEGORY: III.
 - LIVE LOADS: (SEE PLANS FOR ADDL INFO.)
 - GRATING: 100 PSF.
 - SNOW LOAD: N/A.
 - WIND LOAD: N/A.
 - EARTHQUAKE – NON-BUILDING STRUCTURE:
 - STRUCTURE TYPE: BURIED, REINFORCED CONCRETE.
 - SEISMIC DESIGN CATEGORY: B.
 - SEISMIC IMPORTANCE FACTOR: $I_e = 1.25$.
 - SEISMIC FORCE RESISTING SYSTEM: FLAT BOTTOM REINFORCED CONCRETE VAULT WITH NON-SLIDING BASE.
 - BUOYANCY:
 - DESIGN GROUNDWATER ELEVATION = 5805.00.
 - ELEVATION OF LOWEST FLOOR: 5796.00.
 - FOUNDATION:
 - TYPE: MAT.
 - MINIMUM REQUIRED SOIL BEARING CAPACITY: 3000-PSF (NET).

PLOT DATE: 1/18/2023 11:57:17 AM



- GENERAL NOTES:**
- SEE SHEET 00GS001 FOR GENERAL STRUCTURAL NOTES.
 - THE DESIGN GROUNDWATER ELEVATION INDICATED CORRESPONDS WITH THE GROUNDWATER ELEVATIONS FOUND IN THE BORINGS AND MONITORING WELLS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ENTERING THE EXCAVATION ABOVE THE DESIGN GROUNDWATER ELEVATION, NOTIFY THE ENGINEER IMMEDIATELY.
 - FIELD VERIFY EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, MATERIAL, ELEVATION, AND JOINTING PRIOR TO CONSTRUCTION OF OUTLET BOX.
- KEY NOTES:**
- REPLACE DEMOLISHED LENGTH AS NECESSARY.
 - DEMOLISH AND REPLACE SLAB AS NECESSARY.
 - COORDINATE GRATING WITH MECHANICAL DRAWINGS FOR LOCATIONS OF VALVE OPERATORS, GATE, AND LEVEL TRANSMITTER LOCATIONS.
 - EXTEND SLAB AS REQUIRED FOR SAFE EXCAVATION.

G					DESIGNED MKF								CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351	G
					DRAWN KA								RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
					CHECKED MAK								STRUCTURAL		0 1"	70S02	
					DATE JANUARY 2023								SOLIDS HANDLING LAGOONS LAGOONS 1 & 2 ENLARGED PLANS		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.	
																45 OF 81	
		REV	DATE	BY	DESCRIPTION												



REV	DATE	BY	DESCRIPTION

DESIGNED MKF
DRAWN KA
CHECKED MAK
DATE JANUARY 2023

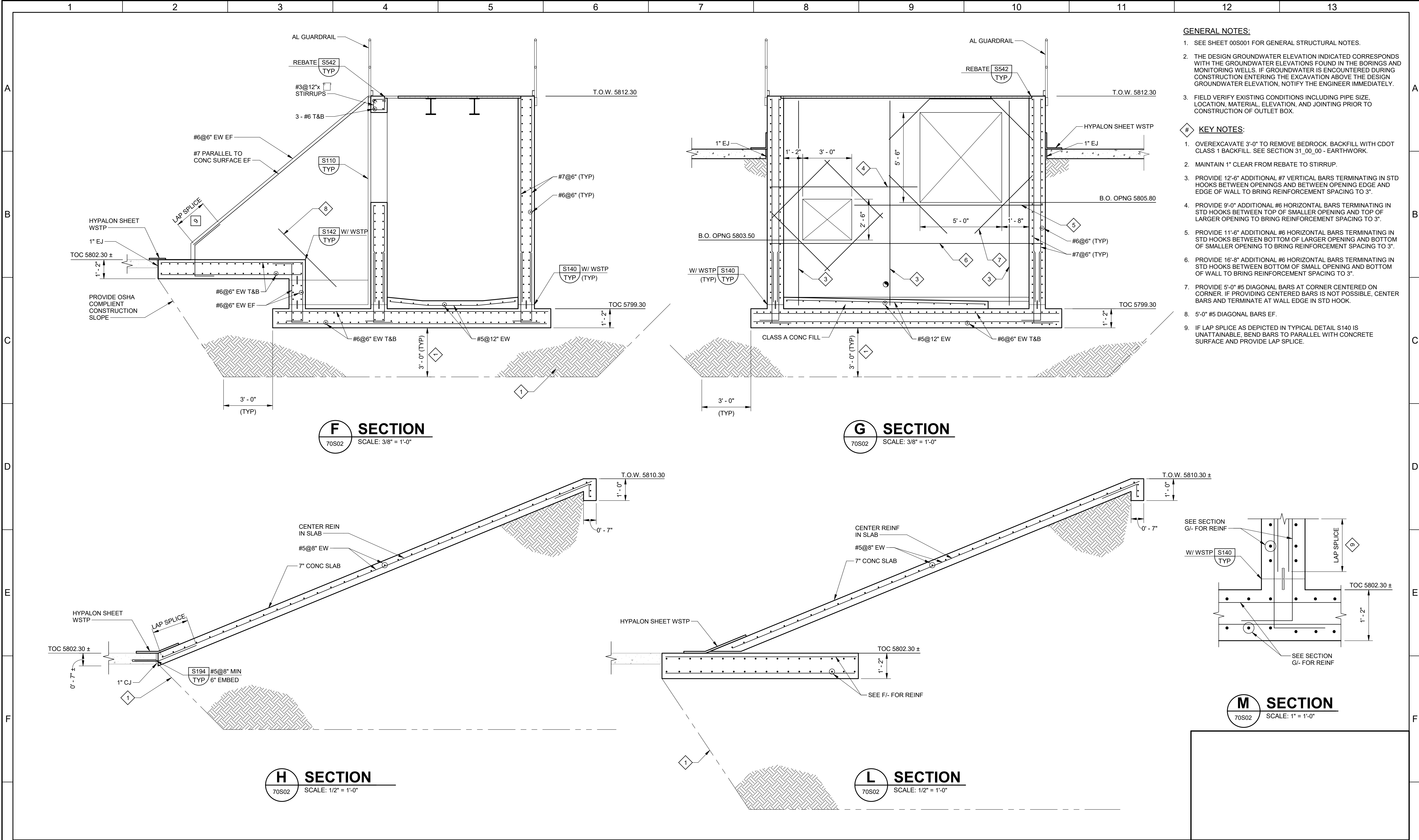


CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
STRUCTURAL
SOLIDS HANDLING LAGOONS
LAGOONS 3 & 4 ENLARGED PLANS

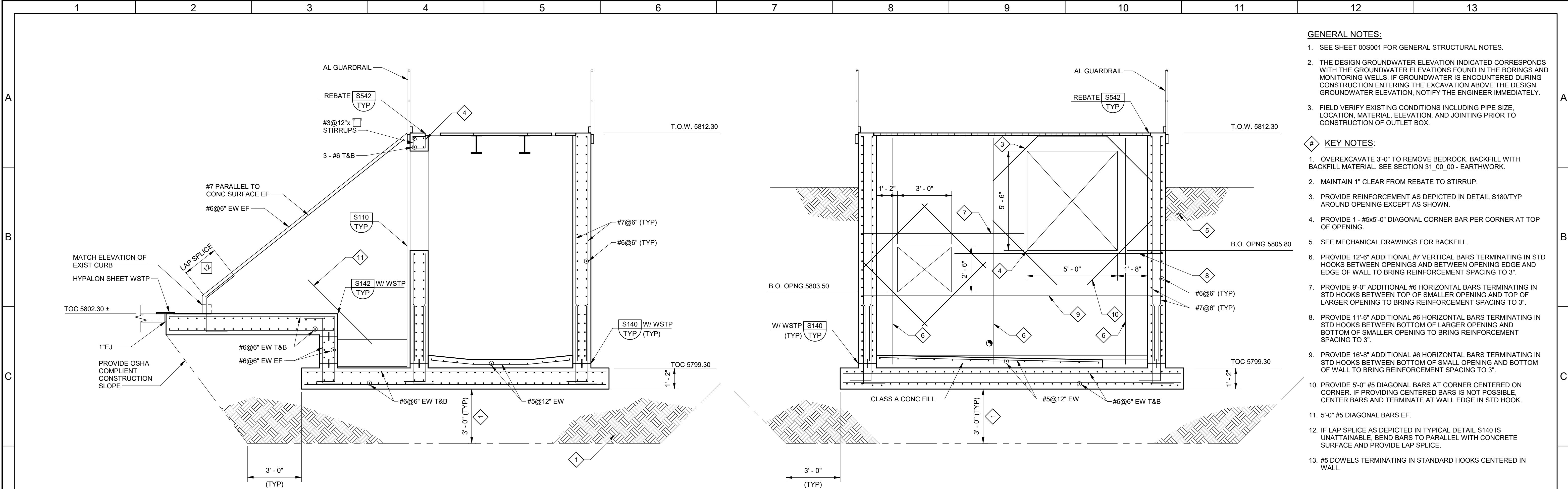
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201351
DRAWING NO. 70S03
SHEET NO. 46 OF 81

PLOT DATE: 1/18/2023 1:15:35 PM



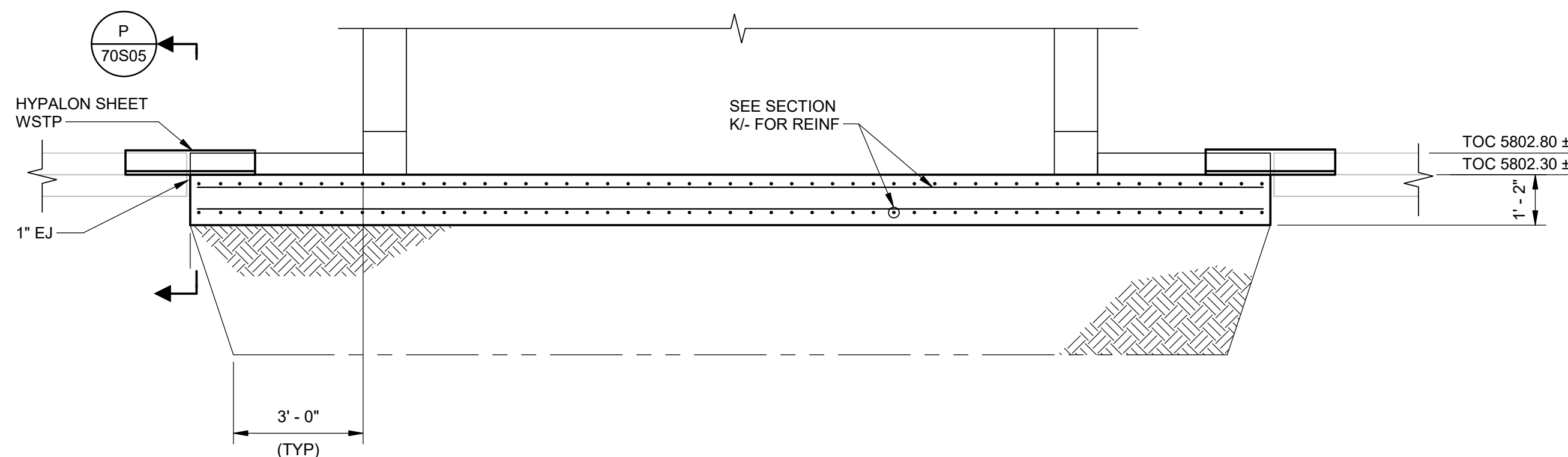
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					CHECKED MAK					STRUCTURAL			0  1"	70S04												
					DATE JANUARY 2023					SOLIDS HANDLING LAGOONS LAGOONS 1 & 2 SECTIONS			IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 47 OF 81												
	REV	DATE	BY	DESCRIPTION																						
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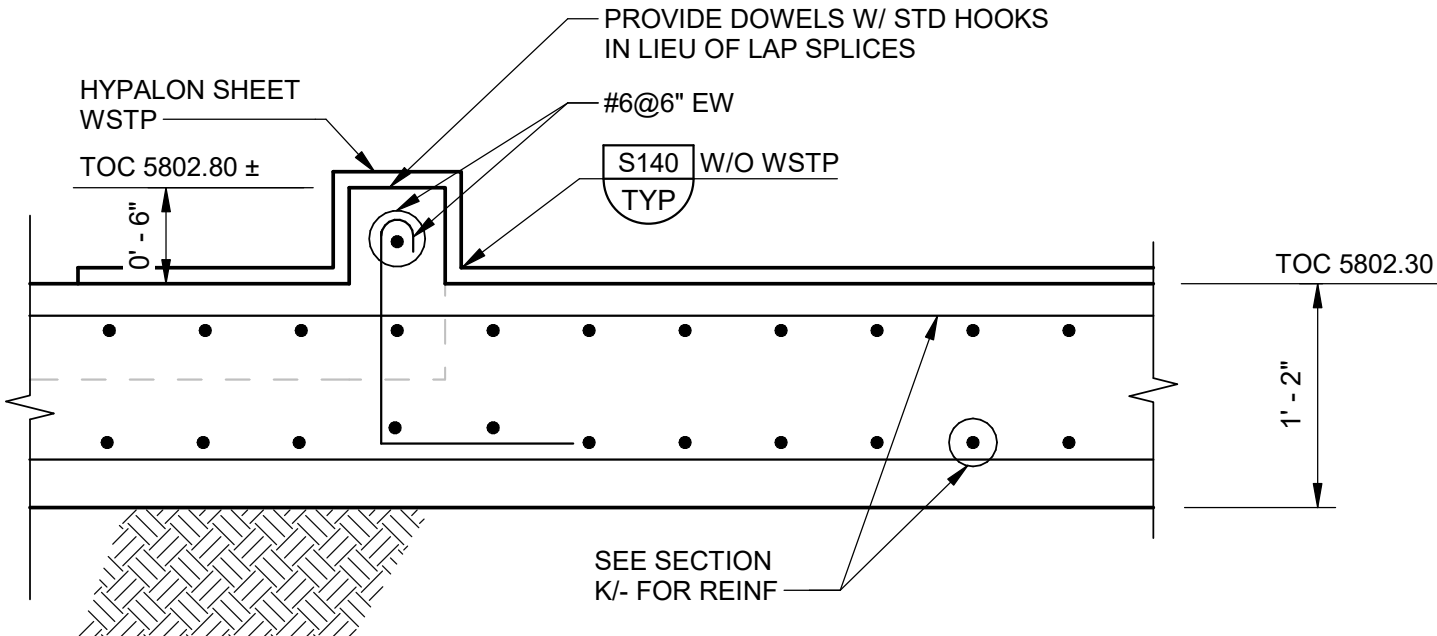
- GENERAL NOTES:**
- SEE SHEET 00S001 FOR GENERAL STRUCTURAL NOTES.
 - THE DESIGN GROUNDWATER ELEVATION INDICATED CORRESPONDS WITH THE GROUNDWATER ELEVATIONS FOUND IN THE BORINGS AND MONITORING WELLS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ENTERING THE EXCAVATION ABOVE THE DESIGN GROUNDWATER ELEVATION, NOTIFY THE ENGINEER IMMEDIATELY.
 - FIELD VERIFY EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, MATERIAL, ELEVATION, AND JOINTING PRIOR TO CONSTRUCTION OF OUTLET BOX.
- KEY NOTES:**
- OVEREXCAVATE 3'-0" TO REMOVE BEDROCK. BACKFILL WITH BACKFILL MATERIAL. SEE SECTION 31_00_00 - EARTHWORK.
 - MAINTAIN 1" CLEAR FROM REBATE TO STIRRUP.
 - PROVIDE REINFORCEMENT AS DEPICTED IN DETAIL S180/TYP AROUND OPENING EXCEPT AS SHOWN.
 - PROVIDE 1 - #5x5'-0" DIAGONAL CORNER BAR PER CORNER AT TOP OF OPENING.
 - SEE MECHANICAL DRAWINGS FOR BACKFILL.
 - PROVIDE 12'-6" ADDITIONAL #7 VERTICAL BARS TERMINATING IN STD HOOKS BETWEEN OPENINGS AND BETWEEN OPENING EDGE AND EDGE OF WALL TO BRING REINFORCEMENT SPACING TO 3".
 - PROVIDE 9'-0" ADDITIONAL #6 HORIZONTAL BARS TERMINATING IN STD HOOKS BETWEEN TOP OF SMALLER OPENING AND TOP OF LARGER OPENING TO BRING REINFORCEMENT SPACING TO 3".
 - PROVIDE 11'-6" ADDITIONAL #6 HORIZONTAL BARS TERMINATING IN STD HOOKS BETWEEN BOTTOM OF SMALLER OPENING AND BOTTOM OF LARGER OPENING TO BRING REINFORCEMENT SPACING TO 3".
 - PROVIDE 16'-8" ADDITIONAL #6 HORIZONTAL BARS TERMINATING IN STD HOOKS BETWEEN BOTTOM OF SMALL OPENING AND BOTTOM OF WALL TO BRING REINFORCEMENT SPACING TO 3".
 - PROVIDE 5'-0" #5 DIAGONAL BARS AT CORNER CENTERED ON CORNER. IF PROVIDING CENTERED BARS IS NOT POSSIBLE, CENTER BARS AND TERMINATE AT WALL EDGE IN STD HOOK.
 - 5'-0" #5 DIAGONAL BARS EF.
 - IF LAP SPLICE AS DEPICTED IN TYPICAL DETAIL S140 IS UNATTAINABLE, BEND BARS TO PARALLEL WITH CONCRETE SURFACE AND PROVIDE LAP SPLICE.
 - #5 DOWELS TERMINATING IN STANDARD HOOKS CENTERED IN WALL.

J SECTION
70S03 SCALE: 3/8" = 1'-0"

K SECTION
70S03 SCALE: 3/8" = 1'-0"

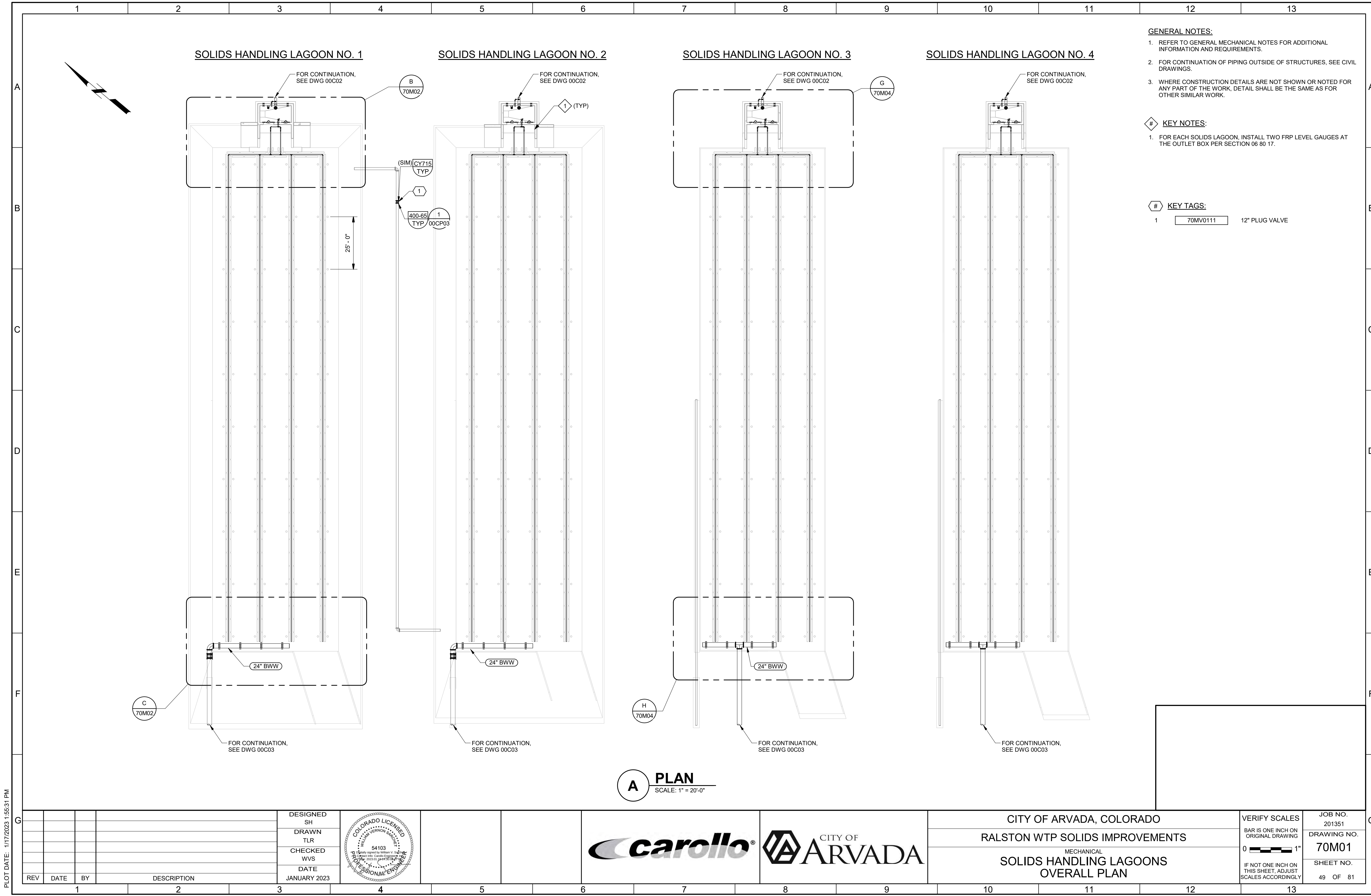


N SECTION
70S03 SCALE: 3/8" = 1'-0"



P SECTION
70S05 SCALE: 1" = 1'-0"

G				DESIGNED MKF						CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351	G
				DRAWN KA						RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
				CHECKED MAK						STRUCTURAL		0 1"	70S05	
				DATE JANUARY 2023						SOLIDS HANDLING LAGOONS LAGOONS 3 & 4 SECTIONS		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 48 OF 81	
	REV	DATE	BY	DESCRIPTION										



GENERAL NOTES:

1. REFER TO GENERAL MECHANICAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. FOR CONTINUATION OF PIPING OUTSIDE OF STRUCTURES, SEE CIVIL DRAWINGS.
3. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

KEY NOTES:

1. FOR EACH SOLIDS LAGOON, INSTALL TWO FRP LEVEL GAUGES AT THE OUTLET BOX PER SECTION 06 80 17.

KEY TAGS:

1 70MV0111 12" PLUG VALVE

A PLAN
SCALE: 1" = 20'-0"

PLOT DATE: 1/17/2023 1:55:31 PM

REV	DATE	BY	DESCRIPTION

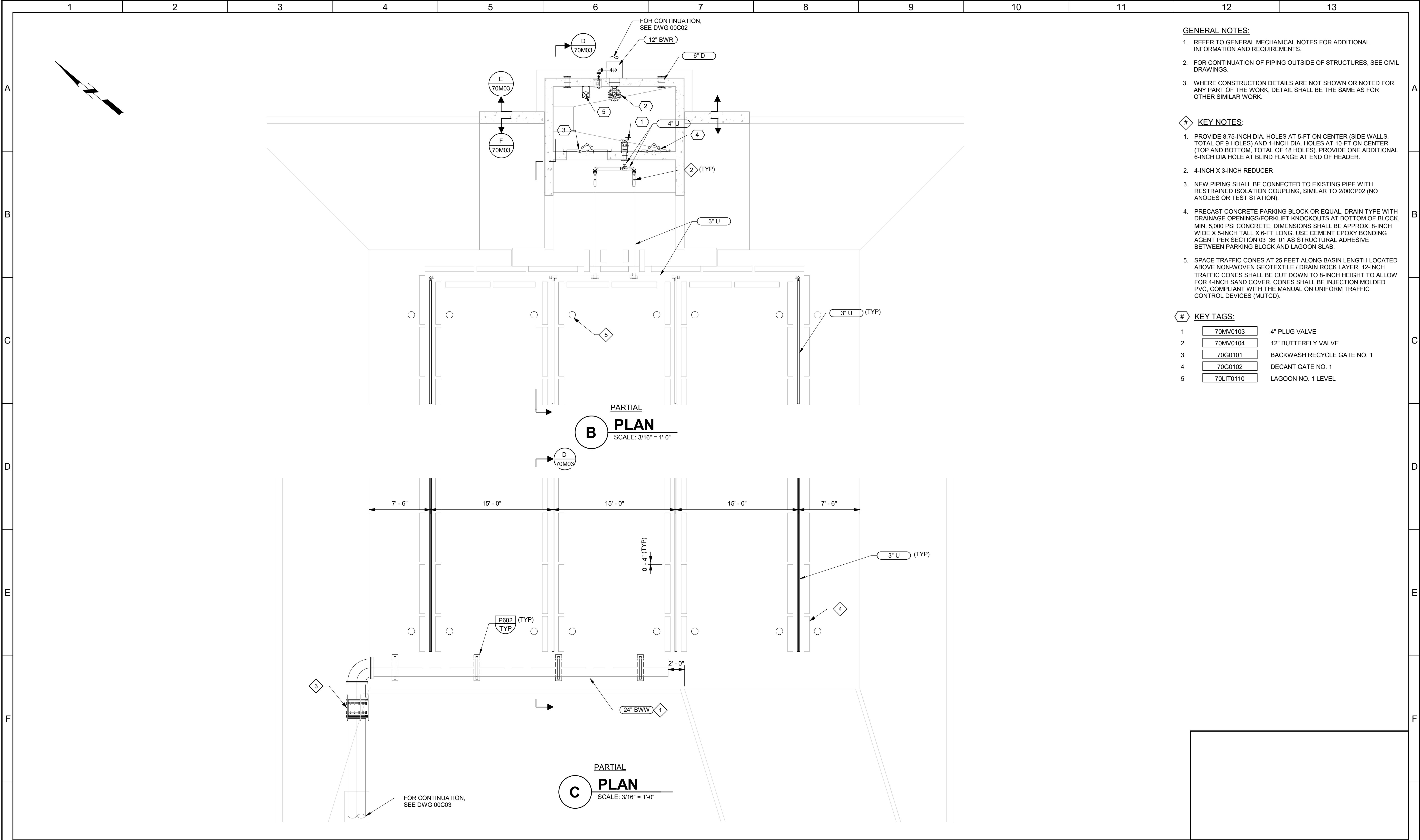
DESIGNED
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CHECKED
WVS
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
MECHANICAL
SOLIDS HANDLING LAGOONS
OVERALL PLAN

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

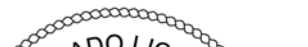
JOB NO.
201351
DRAWING NO.
70M01
SHEET NO.
49 OF 81

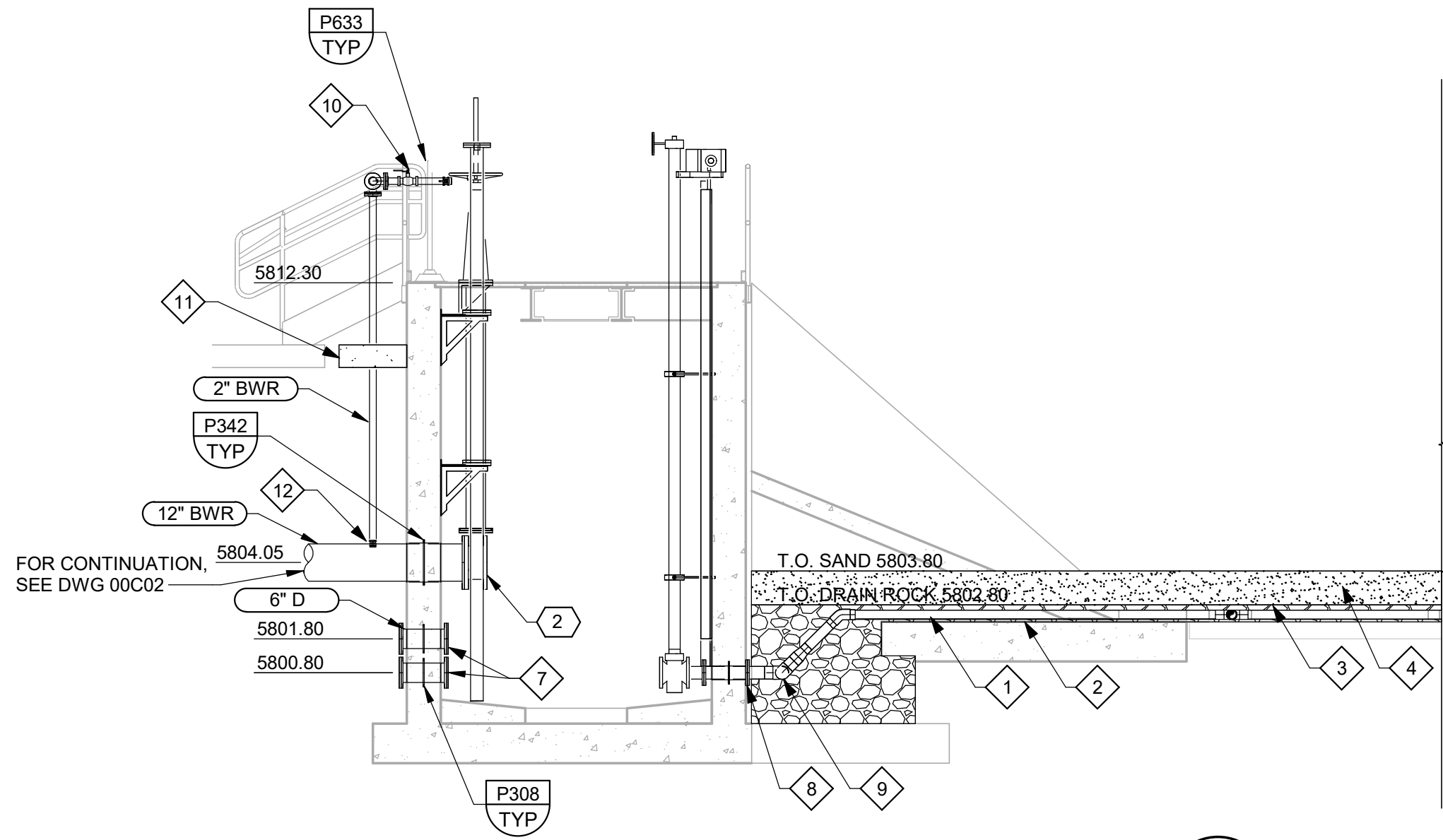


- GENERAL NOTES:**
- REFER TO GENERAL MECHANICAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - FOR CONTINUATION OF PIPING OUTSIDE OF STRUCTURES, SEE CIVIL DRAWINGS.
 - WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

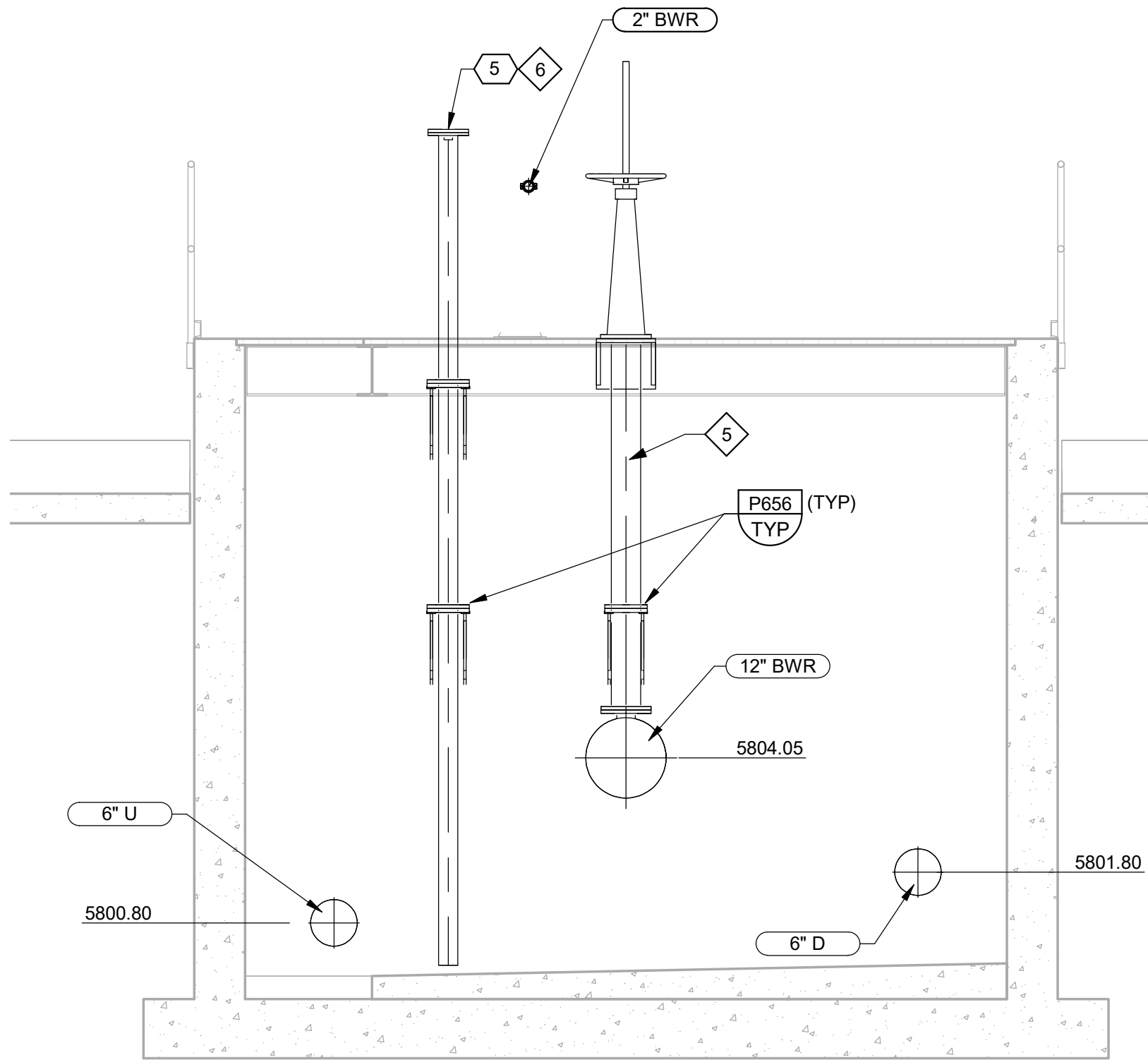
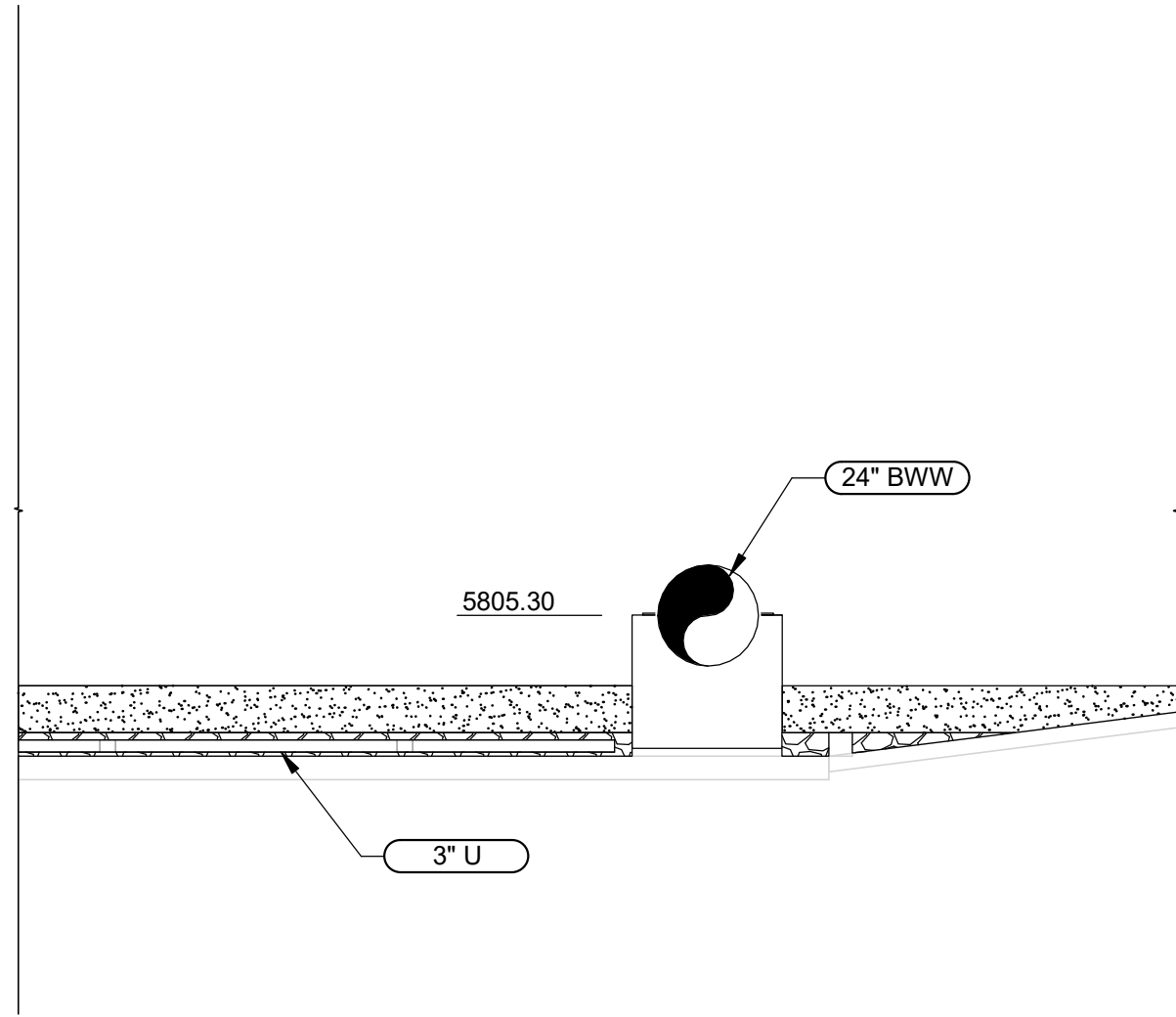
- KEY NOTES:**
- PROVIDE 8.75-INCH DIA. HOLES AT 5-FT ON CENTER (SIDE WALLS, TOTAL OF 9 HOLES) AND 1-INCH DIA. HOLES AT 10-FT ON CENTER (TOP AND BOTTOM, TOTAL OF 18 HOLES). PROVIDE ONE ADDITIONAL 6-INCH DIA HOLE AT BLIND FLANGE AT END OF HEADER.
 - 4-INCH X 3-INCH REDUCER
 - NEW PIPING SHALL BE CONNECTED TO EXISTING PIPE WITH RESTRAINED ISOLATION COUPLING, SIMILAR TO 2/00CP02 (NO ANODES OR TEST STATION).
 - PRECAST CONCRETE PARKING BLOCK OR EQUAL, DRAIN TYPE WITH DRAINAGE OPENINGS/FORKLIFT KNOCKOUTS AT BOTTOM OF BLOCK, MIN. 5,000 PSI CONCRETE. DIMENSIONS SHALL BE APPROX. 8-INCH WIDE X 5-INCH TALL X 6-FT LONG. USE CEMENT EPOXY BONDING AGENT PER SECTION 03 36 01 AS STRUCTURAL ADHESIVE BETWEEN PARKING BLOCK AND LAGOON SLAB.
 - SPACE TRAFFIC CONES AT 25 FEET ALONG BASIN LENGTH LOCATED ABOVE NON-WOVEN GEOTEXTILE / DRAIN ROCK LAYER. 12-INCH TRAFFIC CONES SHALL BE CUT DOWN TO 8-INCH HEIGHT TO ALLOW FOR 4-INCH SAND COVER. CONES SHALL BE INJECTION MOLDED PVC, COMPLIANT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

#	KEY TAGS:
1	70MV0103 4" PLUG VALVE
2	70MV0104 12" BUTTERFLY VALVE
3	70G0101 BACKWASH RECYCLE GATE NO. 1
4	70G0102 DECANT GATE NO. 1
5	70LIT0110 LAGOON NO. 1 LEVEL

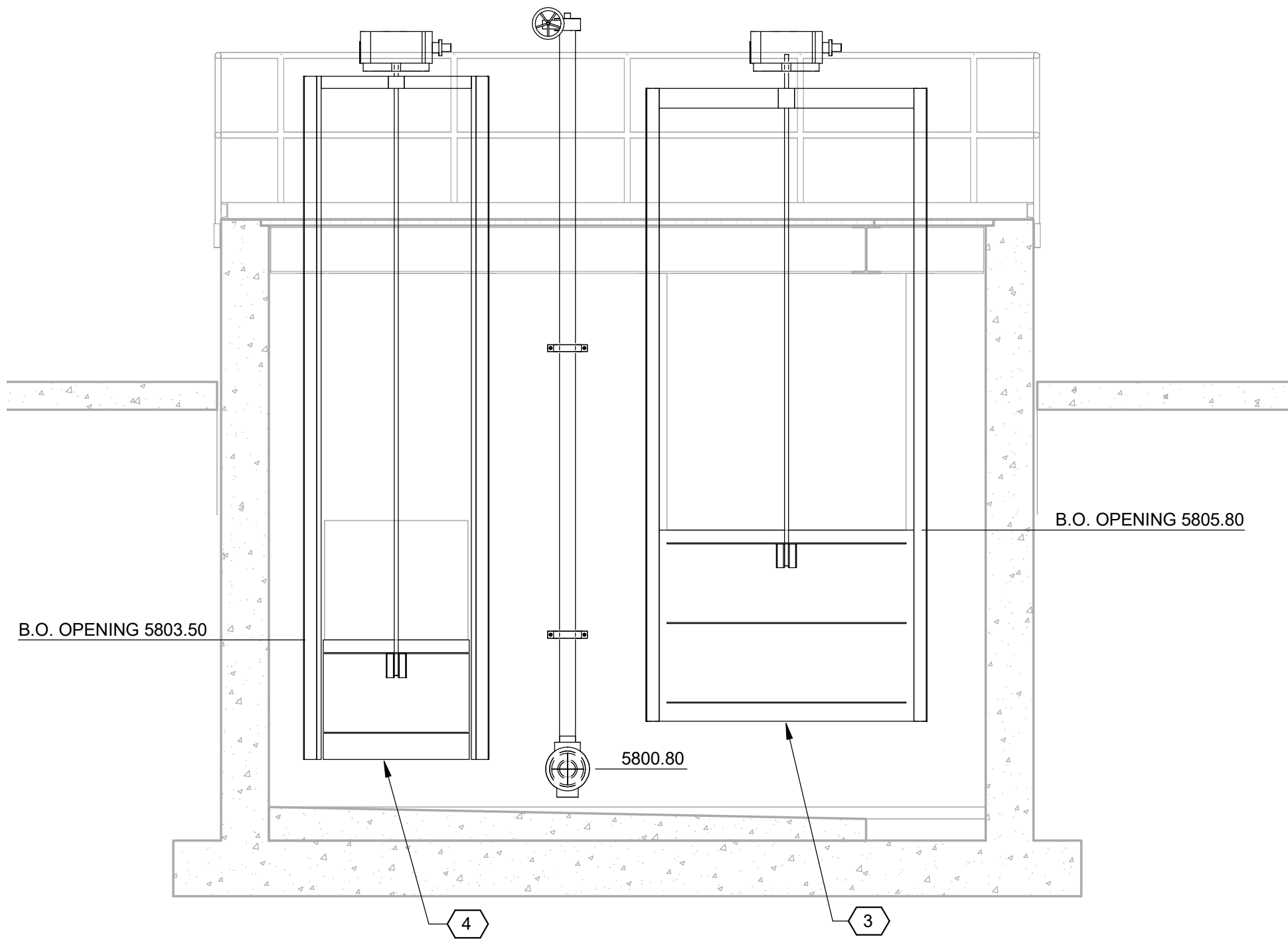
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					DRAWN TLR							RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
					CHECKED WVS							MECHANICAL		0 1"	70M02	
					DATE							SOLIDS HANDLING LAGOONS		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.	
	REV	DATE	BY	DESCRIPTION	JANUARY 2023							LAGOONS 1 & 2 ENLARGED PLANS			50 OF 81	



D SECTION
70D02 SCALE: 1/4" = 1'-0"



E SECTION
70M02 SCALE: 3/8" = 1'-0"



F SECTION
70M02 SCALE: 3/8" = 1'-0"

GENERAL NOTES:

1. REFER TO GENERAL MECHANICAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. FOR CONTINUATION OF PIPING OUTSIDE OF STRUCTURES, SEE CIVIL DRAWINGS.
3. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

KEY NOTES:

1. SLOTTED UNDERDRAIN PIPE.
2. DRAIN ROCK.
3. NON-WOVEN GEOTEXTILE BETWEEN DRAIN ROCK AND DRYING SAND.
4. SOLIDS LAGOON DRYING SAND.
5. EXTENSION BONNET.
6. RADAR LEVEL SENSOR IN HEAT-TRACED STILLING WELL.
7. PROVIDE BLIND FLANGE ON INTERIOR OF SPOOL PIECE AND MJ PLUG ON EXTERIOR OF SPOOL PIECE.
8. TRANSITION TO DIP WALL THIMBLE.
9. TRANSITION TO NON-SLOTTED UNDERDRAIN PIPE. ALL 4-INCH UNDERDRAIN PIPING SHALL NOT HAVE SLOTS.
10. 304SS BALL VALVE.
11. 2 SQ FT X 8" THICK CLASS A CONCRETE PAD, #5 @ 12" EW CENTERED.
12. PROVIDE ISOLATION COUPLING, HART DIELECTRIC INSULATED UNION OR EQUAL.

KEY TAGS:

1	70MV0103	4" PLUG VALVE
2	70MV0104	12" BUTTERFLY VALVE
3	70G0101	BACKWASH RECYCLE GATE NO. 1
4	70G0102	DECANT GATE NO. 1
5	70LIT0110	LAGOON NO. 1 LEVEL

PLOT DATE: 1/17/2023 1:55:33 PM

REV	DATE	BY	DESCRIPTION

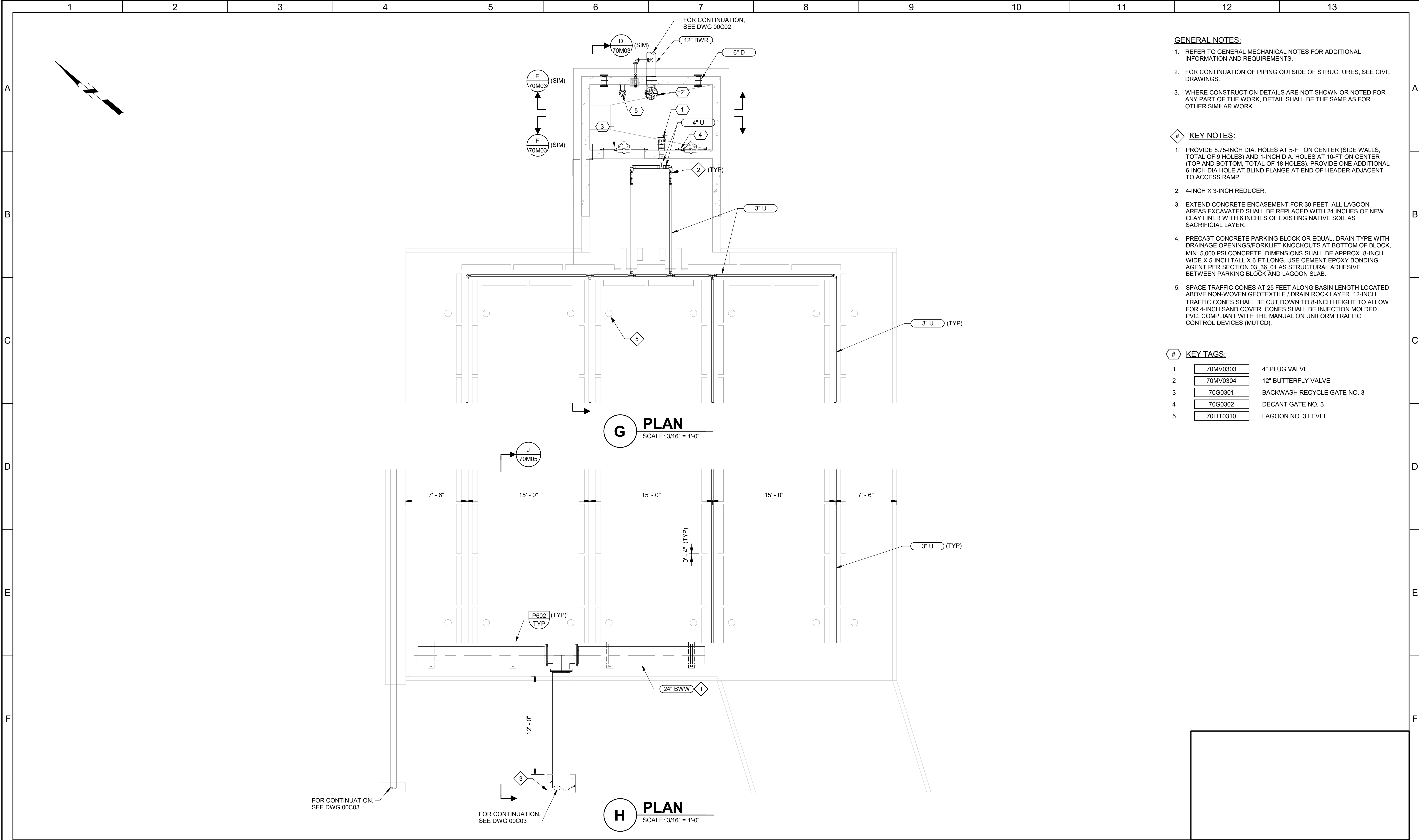
DESIGNED SH
DRAWN TLR
CHECKED WVS
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
MECHANICAL
SOLIDS HANDLING LAGOONS
LAGOONS 1 & 2 SECTIONS

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY

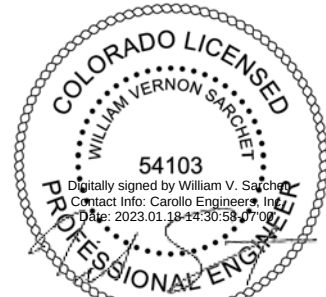
JOB NO.
201351
DRAWING NO.
70M03
SHEET NO.
51 OF 81

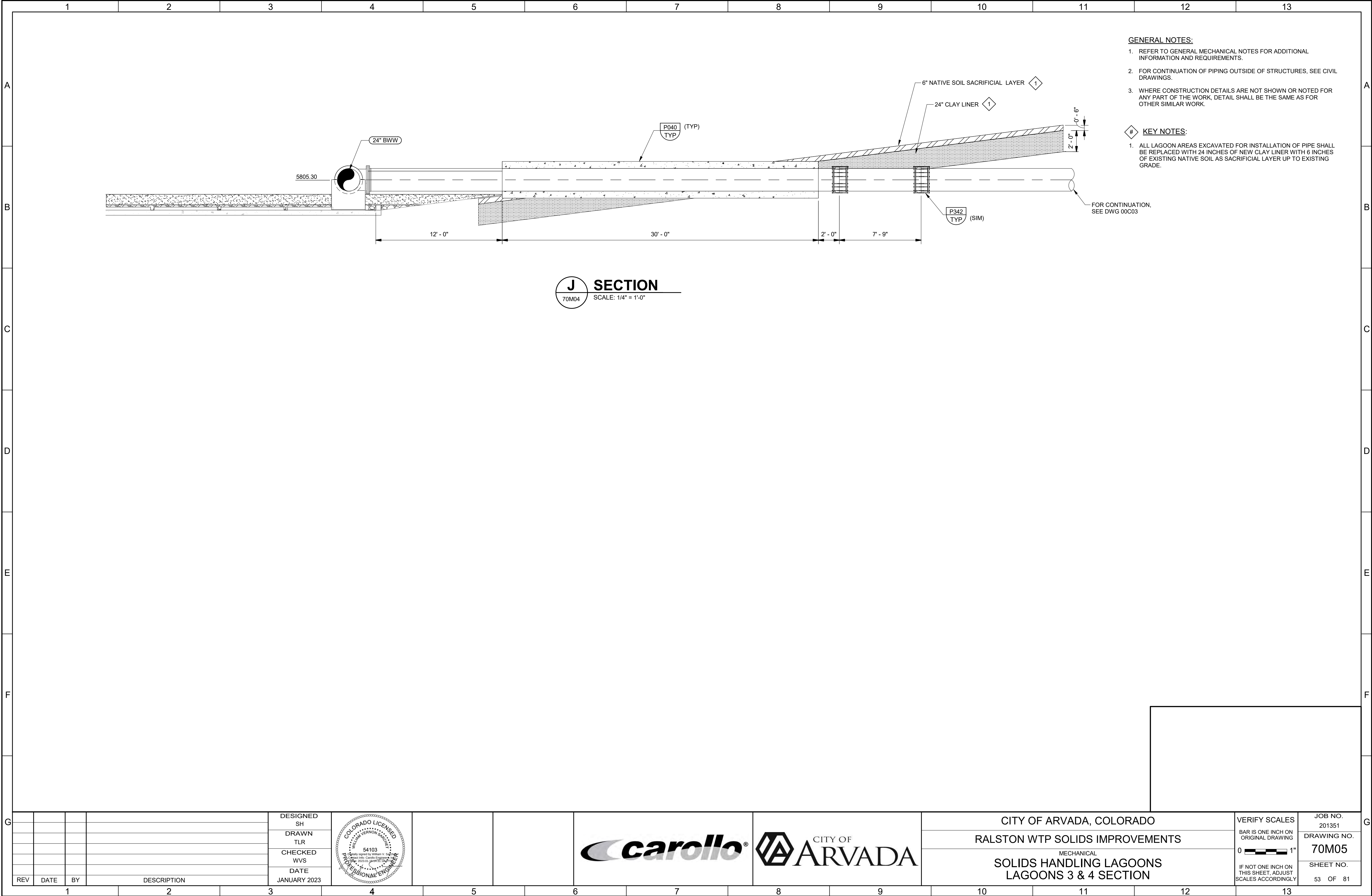


- GENERAL NOTES:**
- REFER TO GENERAL MECHANICAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - FOR CONTINUATION OF PIPING OUTSIDE OF STRUCTURES, SEE CIVIL DRAWINGS.
 - WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

- KEY NOTES:**
- PROVIDE 8.75-INCH DIA. HOLES AT 5-FT ON CENTER (SIDE WALLS, TOTAL OF 9 HOLES) AND 1-INCH DIA. HOLES AT 10-FT ON CENTER (TOP AND BOTTOM, TOTAL OF 18 HOLES). PROVIDE ONE ADDITIONAL 6-INCH DIA HOLE AT BLIND FLANGE AT END OF HEADER ADJACENT TO ACCESS RAMP.
 - 4-INCH X 3-INCH REDUCER.
 - EXTEND CONCRETE ENCASEMENT FOR 30 FEET. ALL LAGOON AREAS EXCAVATED SHALL BE REPLACED WITH 24 INCHES OF NEW CLAY LINER WITH 6 INCHES OF EXISTING NATIVE SOIL AS SACRIFICIAL LAYER.
 - PRECAST CONCRETE PARKING BLOCK OR EQUAL, DRAIN TYPE WITH DRAINAGE OPENINGS/FORKLIFT KNOCKOUTS AT BOTTOM OF BLOCK, MIN. 5,000 PSI CONCRETE. DIMENSIONS SHALL BE APPROX. 8-INCH WIDE X 5-INCH TALL X 6-FT LONG. USE CEMENT EPOXY BONDING AGENT PER SECTION 03_36_01 AS STRUCTURAL ADHESIVE BETWEEN PARKING BLOCK AND LAGOON SLAB.
 - SPACE TRAFFIC CONES AT 25 FEET ALONG BASIN LENGTH LOCATED ABOVE NON-WOVEN GEOTEXTILE / DRAIN ROCK LAYER. 12-INCH TRAFFIC CONES SHALL BE CUT DOWN TO 8-INCH HEIGHT TO ALLOW FOR 4-INCH SAND COVER. CONES SHALL BE INJECTION MOLDED PVC, COMPLIANT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

#	KEY TAGS:	
1	70MV0303	4" PLUG VALVE
2	70MV0304	12" BUTTERFLY VALVE
3	70G0301	BACKWASH RECYCLE GATE NO. 3
4	70G0302	DECANT GATE NO. 3
5	70LIT0310	LAGOON NO. 3 LEVEL

G					DESIGNED SH						CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351	G
					DRAWN TLR						RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.	
					CHECKED WVS						MECHANICAL		0 1"	70M04	
					DATE JANUARY 2023						SOLIDS HANDLING LAGOONS LAGOONS 3 & 4 ENLARGED PLANS		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.	
	REV	DATE	BY	DESCRIPTION											



- GENERAL NOTES:**
1. REFER TO GENERAL MECHANICAL NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 2. FOR CONTINUATION OF PIPING OUTSIDE OF STRUCTURES, SEE CIVIL DRAWINGS.
 3. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

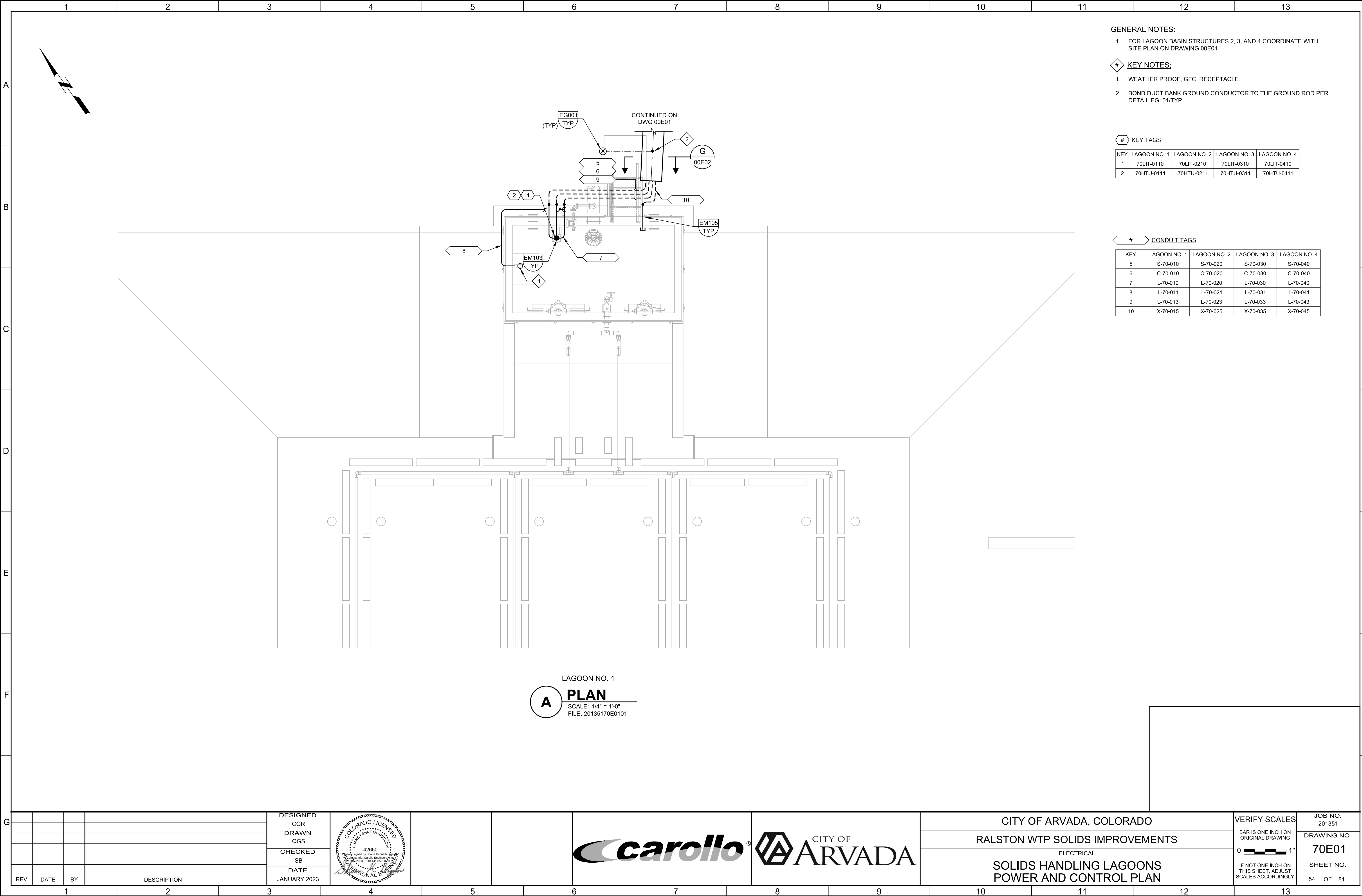
- KEY NOTES:**
1. ALL LAGOON AREAS EXCAVATED FOR INSTALLATION OF PIPE SHALL BE REPLACED WITH 24 INCHES OF NEW CLAY LINER WITH 6 INCHES OF EXISTING NATIVE SOIL AS SACRIFICIAL LAYER UP TO EXISTING GRADE.

J SECTION
SCALE: 1/4" = 1'-0"

				DESIGNED SH								CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351
				DRAWN TLR								RALSTON WTP SOLIDS IMPROVEMENTS		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.
				CHECKED WVS								MECHANICAL		0 1"	70M05
				DATE JANUARY 2023								SOLIDS HANDLING LAGOONS LAGOONS 3 & 4 SECTION		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.
REV	DATE	BY	DESCRIPTION												53 OF 81
1					4	5	6	7	8	9	10	11	12	13	

PLOT DATE: 1/17/2023 1:55:34 PM

Plot Date: 18-JAN-2023 10:32:59 AM User: qsandoval Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: qsandoval



- GENERAL NOTES:**
- FOR LAGOON BASIN STRUCTURES 2, 3, AND 4 COORDINATE WITH SITE PLAN ON DRAWING 00E01.
- KEY NOTES:**
- WEATHER PROOF, GFCI RECEPTACLE.
 - BOND DUCT BANK GROUND CONDUCTOR TO THE GROUND ROD PER DETAIL EG101/TYP.

#	KEY TAGS			
KEY	LAGOON NO. 1	LAGOON NO. 2	LAGOON NO. 3	LAGOON NO. 4
1	70LIT-0110	70LIT-0210	70LIT-0310	70LIT-0410
2	70HTU-0111	70HTU-0211	70HTU-0311	70HTU-0411

#	CONDUIT TAGS			
KEY	LAGOON NO. 1	LAGOON NO. 2	LAGOON NO. 3	LAGOON NO. 4
5	S-70-010	S-70-020	S-70-030	S-70-040
6	C-70-010	C-70-020	C-70-030	C-70-040
7	L-70-010	L-70-020	L-70-030	L-70-040
8	L-70-011	L-70-021	L-70-031	L-70-041
9	L-70-013	L-70-023	L-70-033	L-70-043
10	X-70-015	X-70-025	X-70-035	X-70-045

LAGOON NO. 1
A PLAN
SCALE: 1/4" = 1'-0"
FILE: 20135170E0101

REV	DATE	BY	DESCRIPTION

DESIGNED CGR
DRAWN QGS
CHECKED SB
DATE JANUARY 2023

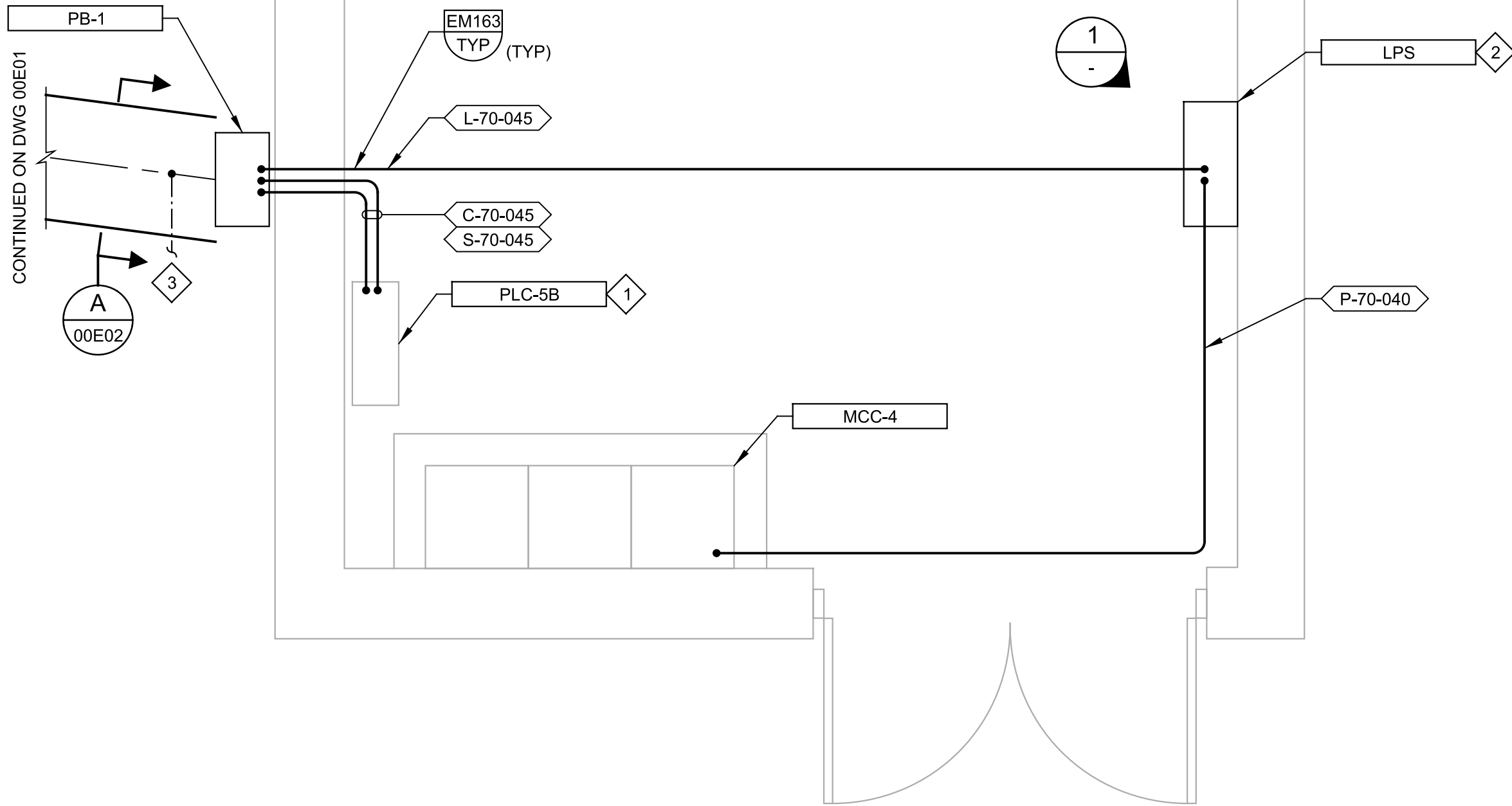
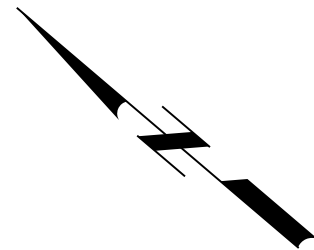


CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
ELECTRICAL
**SOLIDS HANDLING LAGOONS
POWER AND CONTROL PLAN**

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201351
DRAWING NO. 70E01
SHEET NO. 54 OF 81

Plot Date: 18-JAN-2023 12:37:51 AM
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Model: Layout1
ColorTable: gshade.ctb
DesignScript: Carollo Std Pen_v0905.pen
PlotScale: 1:1
LAST SAVED BY: jsandoval



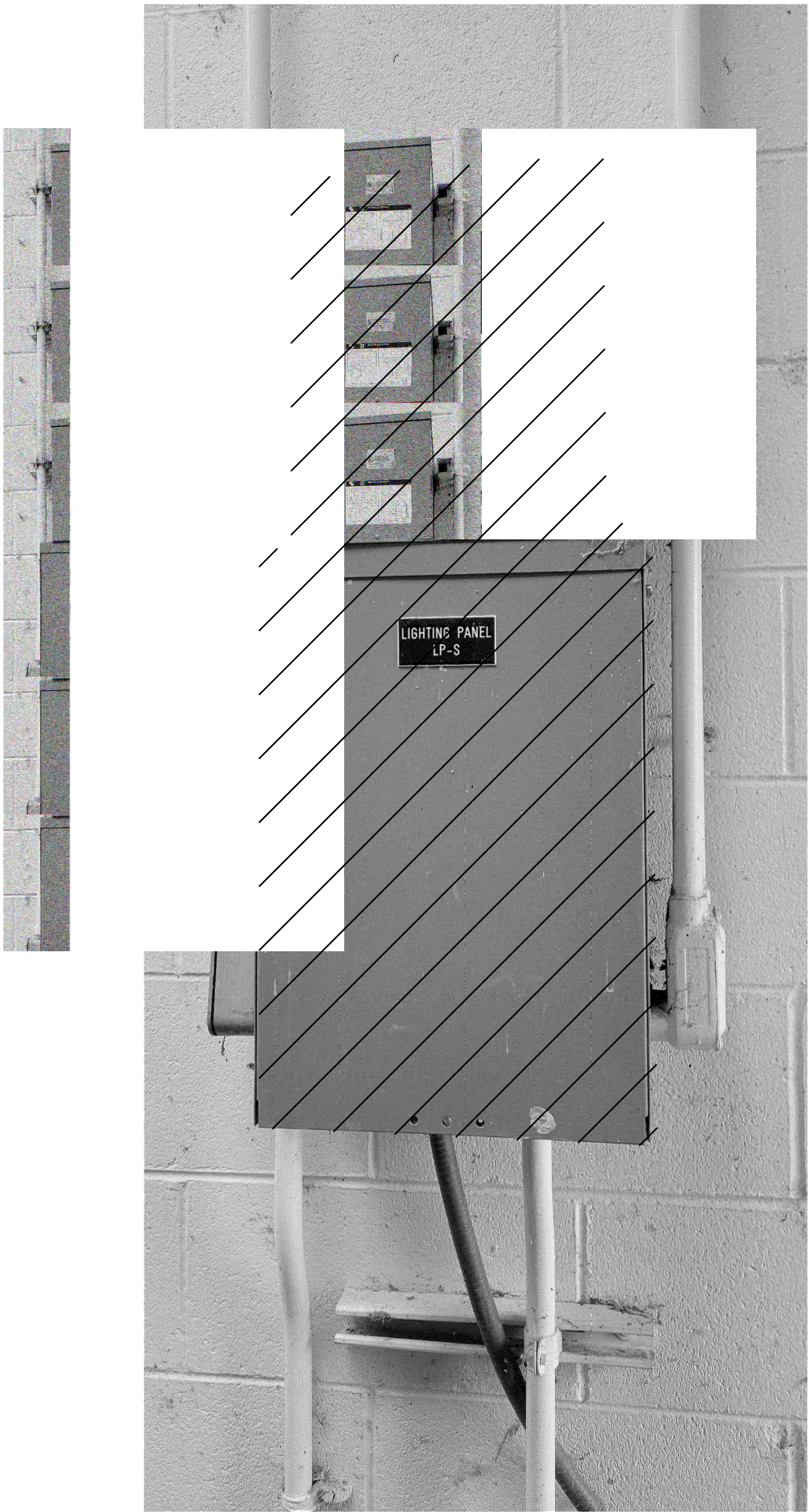
B PLAN
00E01
SCALE: 1/2" = 1'-0"
FILE: 20135170E0102

GENERAL NOTES:

1. SUPPORT CONDUIT FROM CEILING WHERE APPLICABLE. REFER TO EM103/TYP AND EM104/TYP.

KEY NOTES:

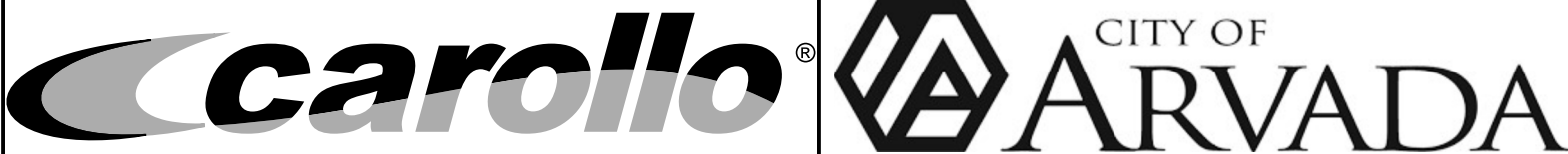
1. PROVIDE 7.0" HMI WITH 4 SERIAL, 2 ETHERNET, AND 2 USB HOST PORTS, RED LION MODEL NO. CR3000 07000 00420, TO MATCH EXISTING HMI AT FACILITY.
2. DEMO EXISTING LP-S AND REPLACE WITH NEW LPS.
3. LOCATE AND BOND THE DUCT BANK GROUND CONDUCTOR TO THE EXISTING BUILDING GROUND RING. IF A GROUND RING IS NOT FOUND, PROVIDE AND BOND TO NEW GROUND ROD. REFER TO EG001/TYP.



1 PHOTO
SCALE: NO SCALE
FILE: 20135170E0102B.jpg

REV	DATE	BY	DESCRIPTION

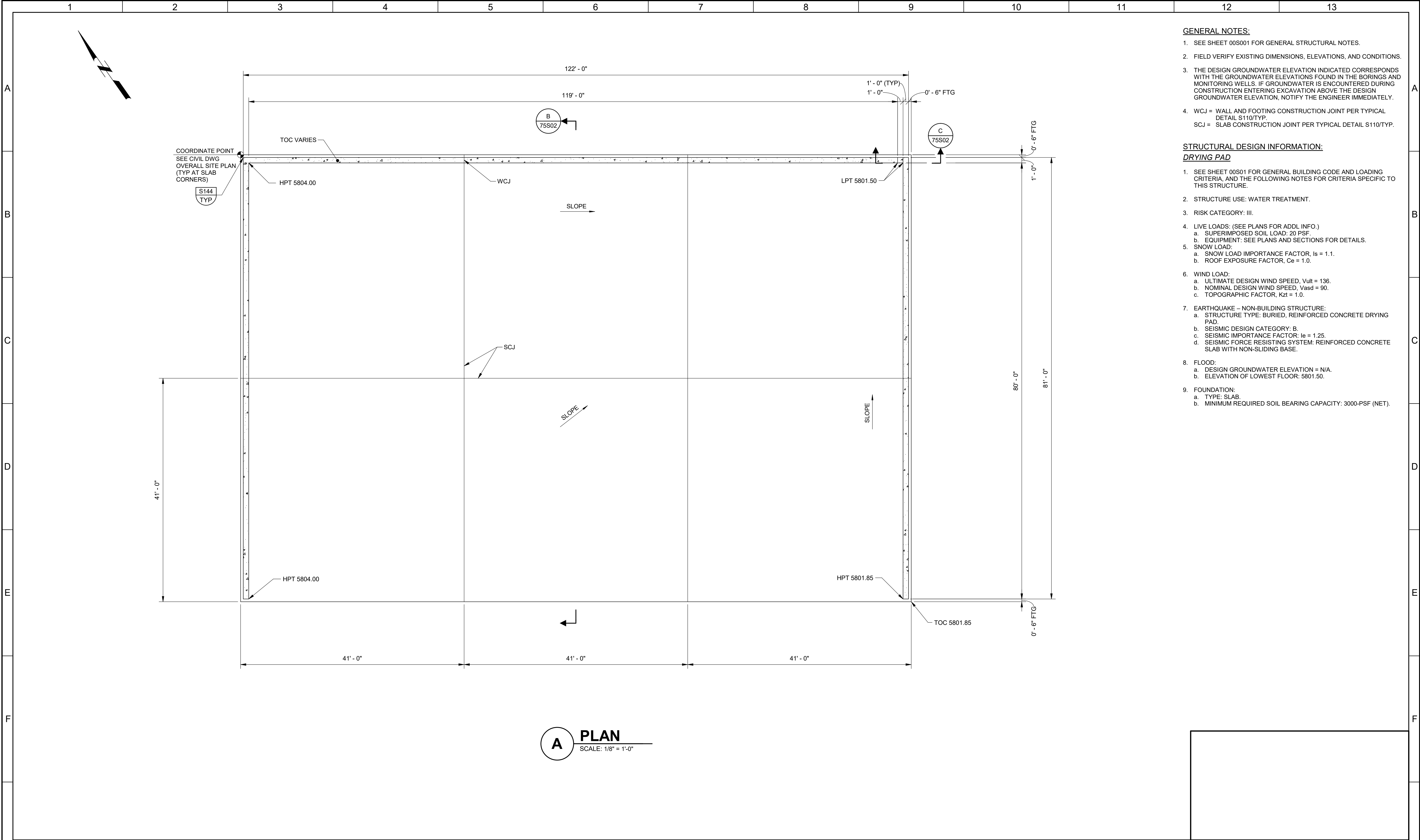
DESIGNED CGR
DRAWN QGS
CHECKED SB
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
ELECTRICAL
BACKWASH RECYCLE PUMP STATION
POWER AND CONTROL PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201351
DRAWING NO. 70E02
SHEET NO. 55 OF 81

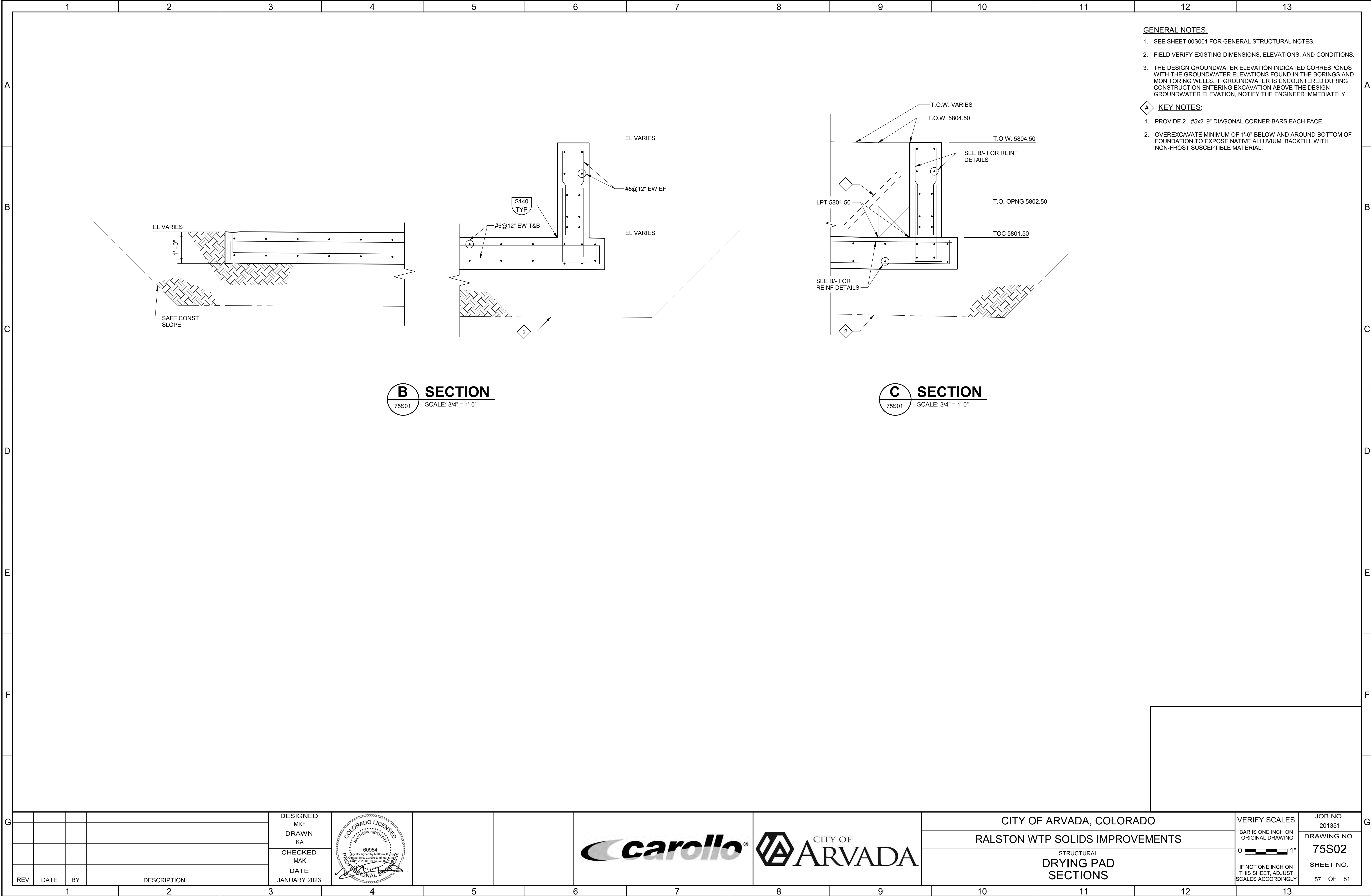


- GENERAL NOTES:**
- SEE SHEET 00S001 FOR GENERAL STRUCTURAL NOTES.
 - FIELD VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS.
 - THE DESIGN GROUNDWATER ELEVATION INDICATED CORRESPONDS WITH THE GROUNDWATER ELEVATIONS FOUND IN THE BORINGS AND MONITORING WELLS. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ENTERING EXCAVATION ABOVE THE DESIGN GROUNDWATER ELEVATION, NOTIFY THE ENGINEER IMMEDIATELY.
 - WCJ = WALL AND FOOTING CONSTRUCTION JOINT PER TYPICAL DETAIL S110/TYP.
SCJ = SLAB CONSTRUCTION JOINT PER TYPICAL DETAIL S110/TYP.

- STRUCTURAL DESIGN INFORMATION:**
- DRYING PAD**
- SEE SHEET 00S01 FOR GENERAL BUILDING CODE AND LOADING CRITERIA, AND THE FOLLOWING NOTES FOR CRITERIA SPECIFIC TO THIS STRUCTURE.
 - STRUCTURE USE: WATER TREATMENT.
 - RISK CATEGORY: III.
 - LIVE LOADS: (SEE PLANS FOR ADDL INFO.)
 - SUPERIMPOSED SOIL LOAD: 20 PSF.
 - EQUIPMENT: SEE PLANS AND SECTIONS FOR DETAILS.
 - SNOW LOAD:
 - SNOW LOAD IMPORTANCE FACTOR, $I_s = 1.1$.
 - ROOF EXPOSURE FACTOR, $C_e = 1.0$.
 - WIND LOAD:
 - ULTIMATE DESIGN WIND SPEED, $V_{ult} = 136$.
 - NOMINAL DESIGN WIND SPEED, $V_{asd} = 90$.
 - TOPOGRAPHIC FACTOR, $K_{zt} = 1.0$.
 - EARTHQUAKE – NON-BUILDING STRUCTURE:
 - STRUCTURE TYPE: BURIED, REINFORCED CONCRETE DRYING PAD.
 - SEISMIC DESIGN CATEGORY: B.
 - SEISMIC IMPORTANCE FACTOR: $I_e = 1.25$.
 - SEISMIC FORCE RESISTING SYSTEM: REINFORCED CONCRETE SLAB WITH NON-SLIDING BASE.
 - FLOOD:
 - DESIGN GROUNDWATER ELEVATION = N/A.
 - ELEVATION OF LOWEST FLOOR: 5801.50.
 - FOUNDATION:
 - TYPE: SLAB.
 - MINIMUM REQUIRED SOIL BEARING CAPACITY: 3000-PSF (NET).

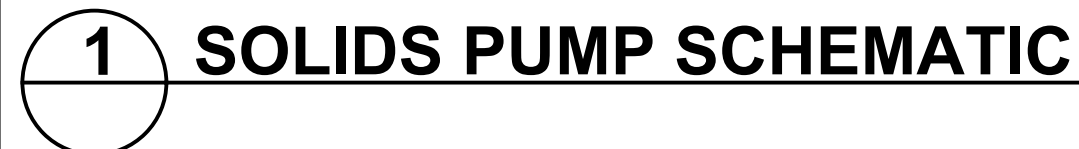
A PLAN
SCALE: 1/8" = 1'-0"

G					DESIGNED MKF							CITY OF ARVADA, COLORADO		VERIFY SCALES	JOB NO. 201351	G
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					CHECKED MAK				STRUCTURAL			0 1"	75S01			
					DATE JANUARY 2023				DRYING PAD PLAN			IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 56 OF 81			
	REV	DATE	BY	DESCRIPTION												

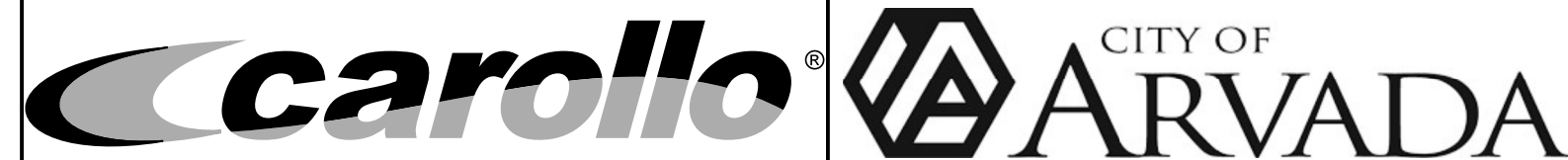
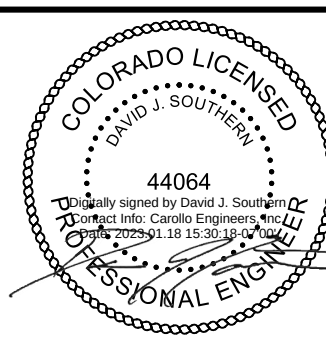


PLOT DATE: 1/17/2023 6:14:41 PM

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					CHECKED MAK						STRUCTURAL			0  1"	75S02	
					DATE JANUARY 2023						DRYING PAD SECTIONS			IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.	
	REV	DATE	BY	DESCRIPTION												
	1		2	3	4		5	6	7	8	9	10	11	12	13	



DESIGNED
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DB
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO

RALSTON WTP SOLIDS IMPROVEMENTS

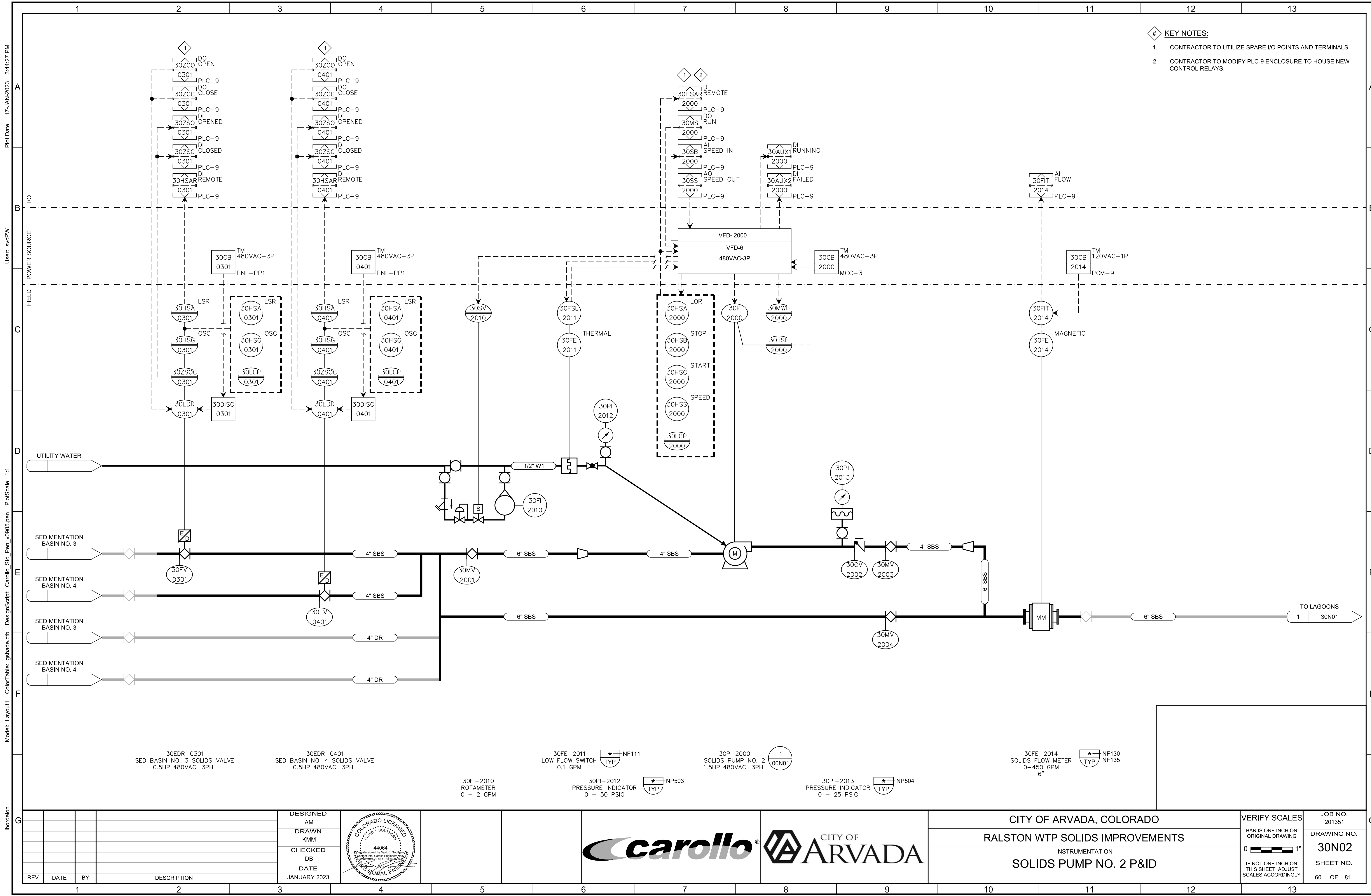
INSTRUMENTATION

CONTROL SCHEMATICS 1

IF NOT ONE INCH ON

SHEET NO.



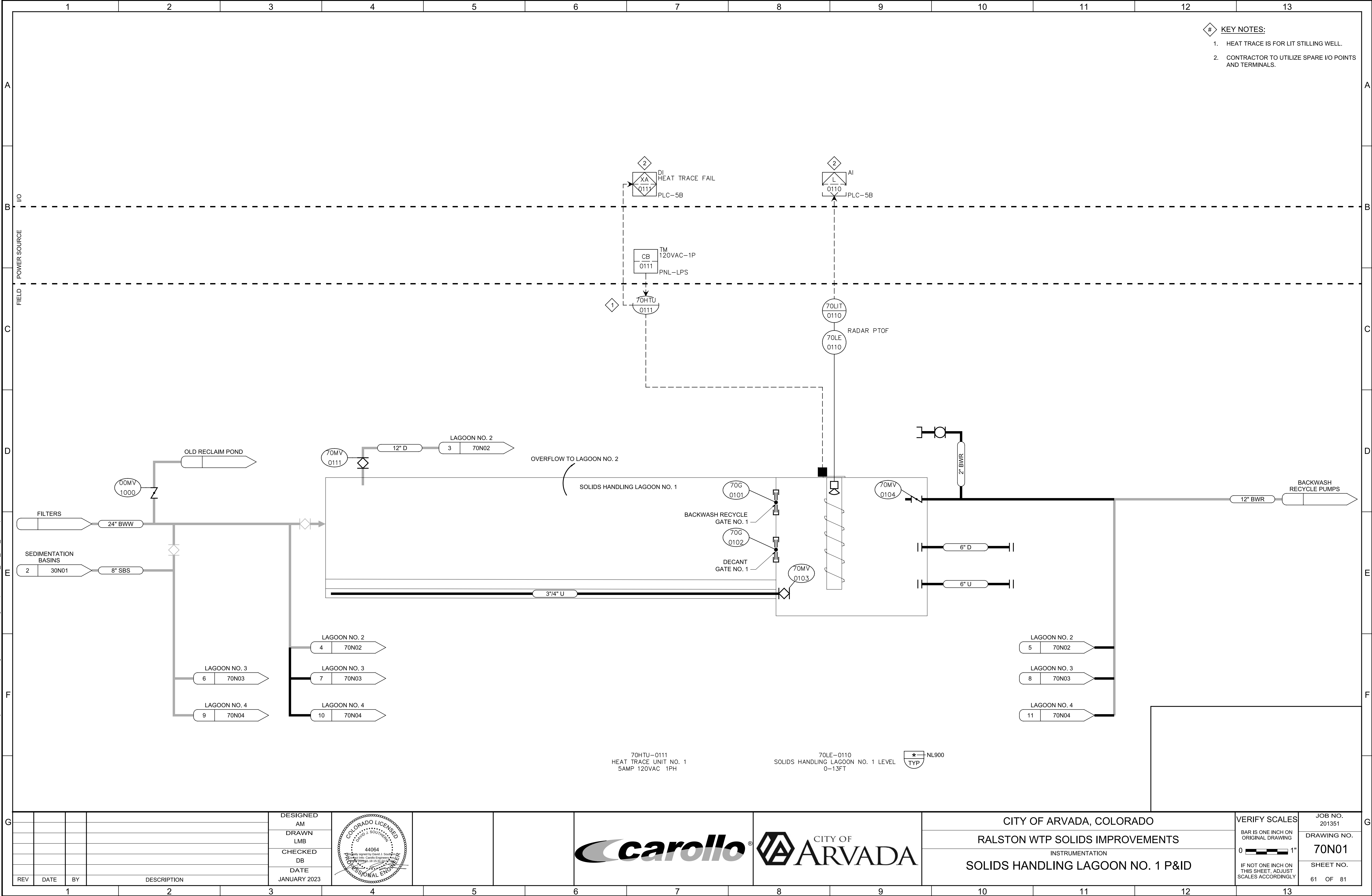


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User: svcPW

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Ibodelon

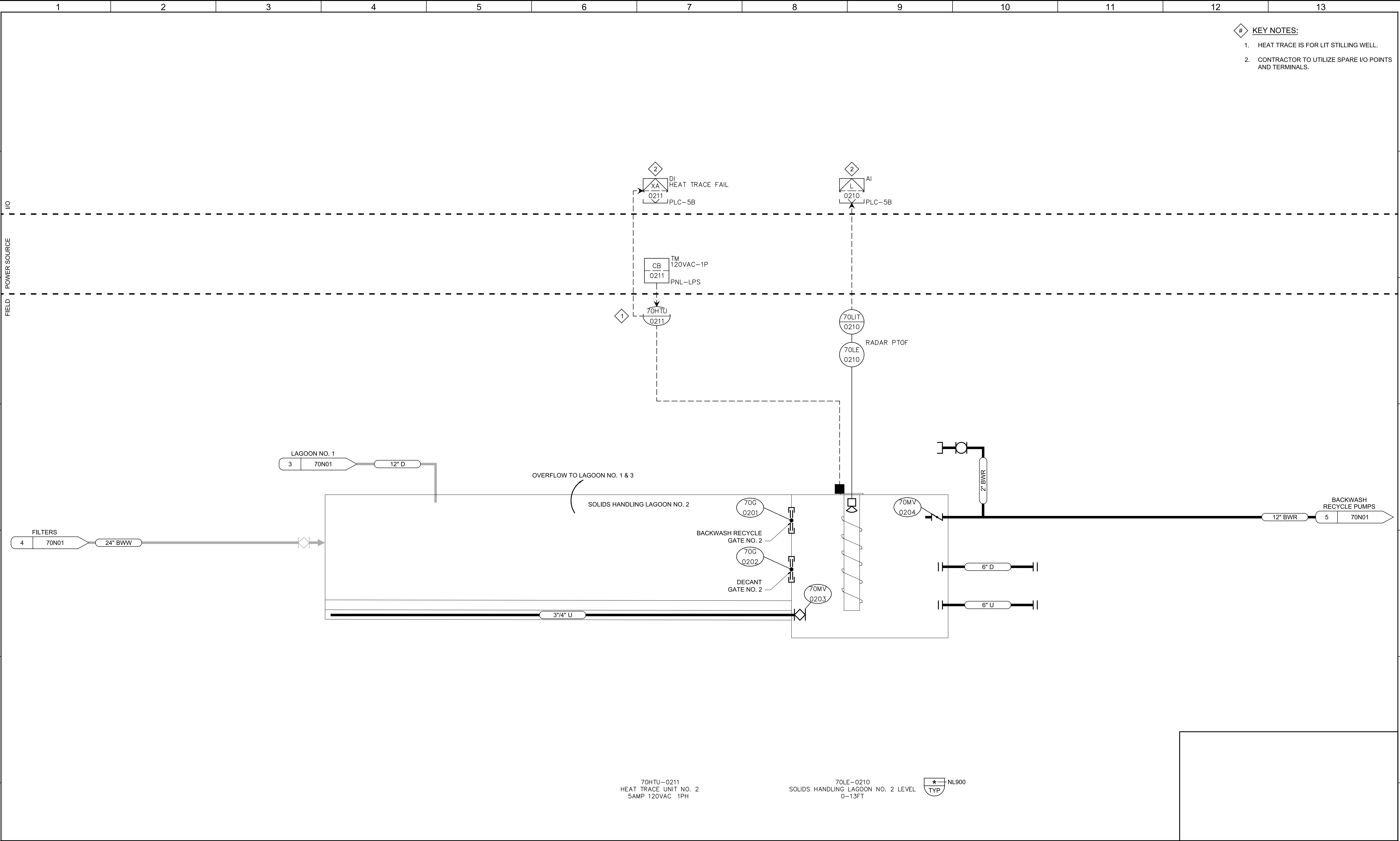


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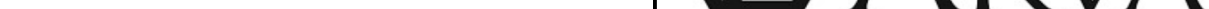
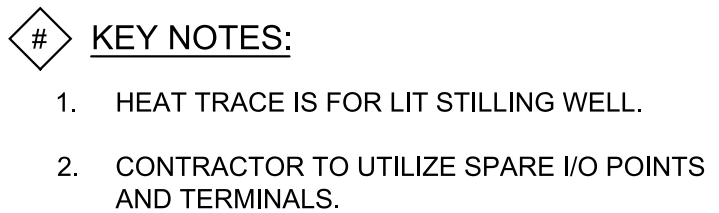
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Iborelon



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				DRAWN LMB					RALSTON WTP SOLIDS IMPROVEMENTS			BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO.		
				CHECKED DB					INSTRUMENTATION			0  1"	70N02		
				DATE JANUARY 2023					SOLIDS HANDLING LAGOON NO. 2 P&ID			IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO.		
REV	DATE	BY	DESCRIPTION										62	OF	81



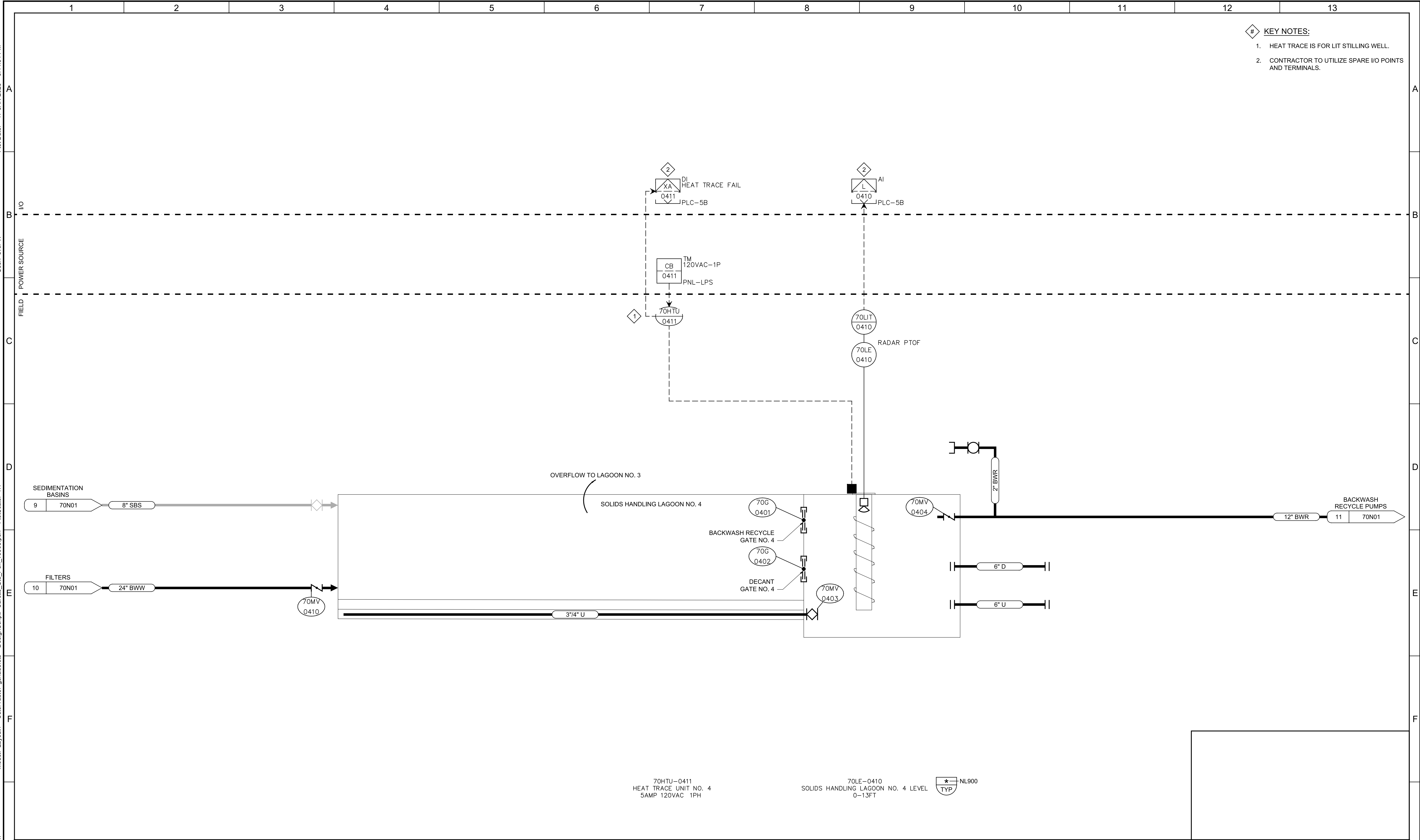
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User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1

Ibodelon



- KEY NOTES:**
- HEAT TRACE IS FOR LIT STILLING WELL.
 - CONTRACTOR TO UTILIZE SPARE I/O POINTS AND TERMINALS.

REV	DATE	BY	DESCRIPTION

DESIGNED AM
DRAWN LMB
CHECKED DB
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
INSTRUMENTATION
SOLIDS HANDLING LAGOON NO. 4 P&ID

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

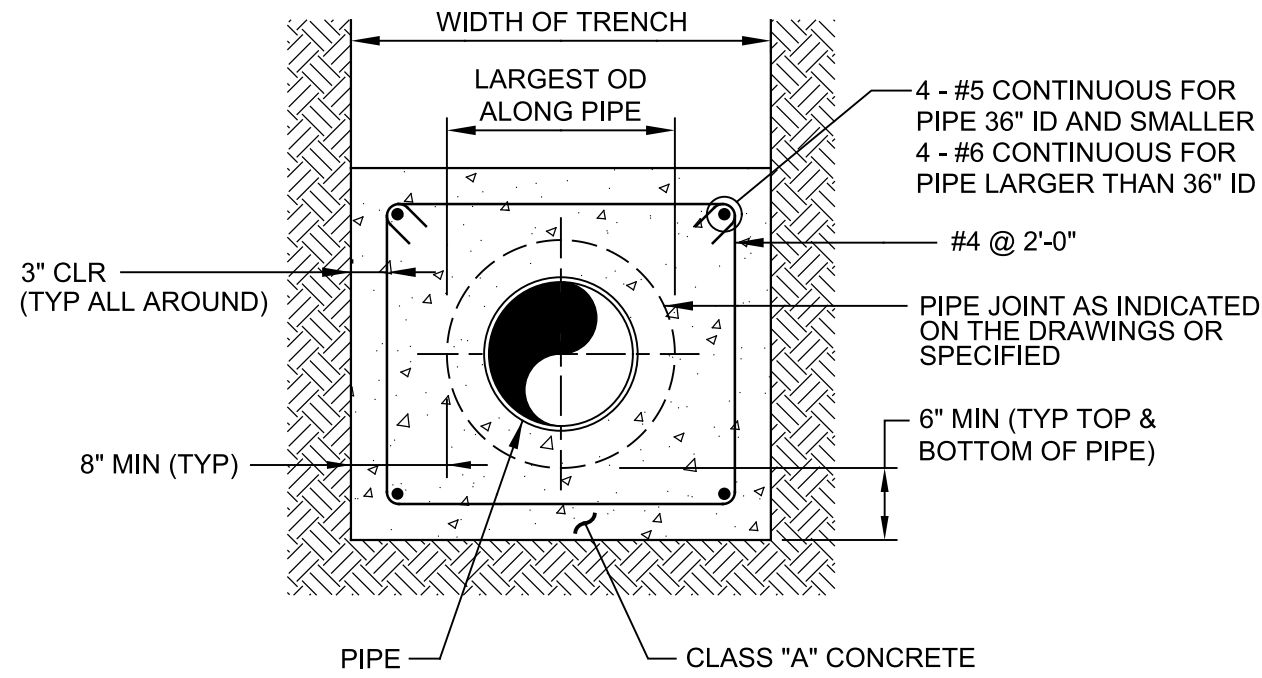
JOB NO.
201351
DRAWING NO.
70N04
SHEET NO.
64 OF 81

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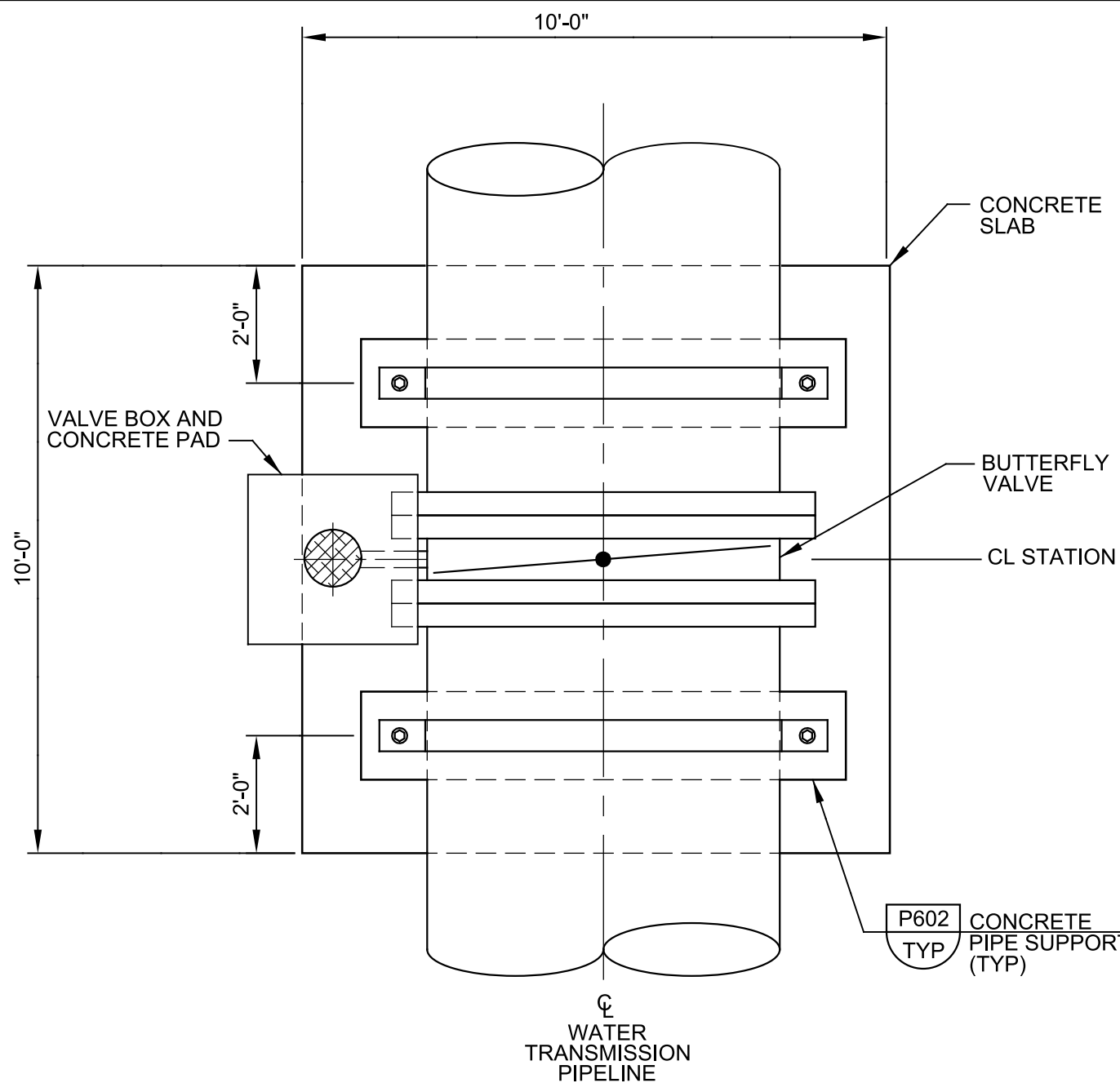
SECTION

- NOTE:
1. TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.
 2. SEE MP100 - MP199 FOR DETAILS OF PIPE ENCASEMENT CONNECTIONS TO STRUCTURES.

CY119
TYP
S

PIPE ENCASEMENT - CONCRETE

08/19/22



PLAN

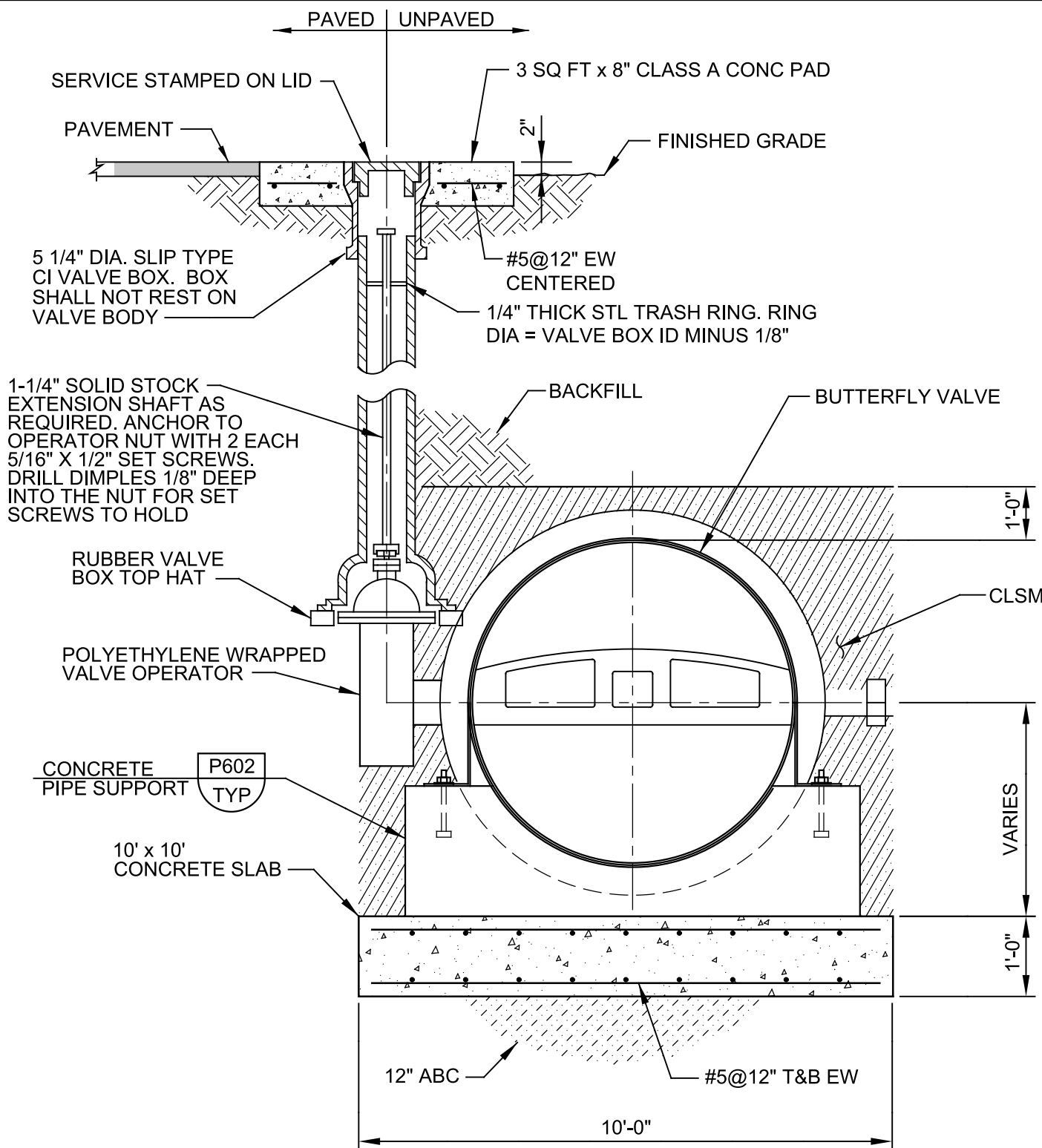
- NOTES:
1. ALL BURIED VALVES SHALL BE PROVIDED WITH EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. INDICATE ON NUT DIRECTION OF ROTATION TO OPEN VALVE.
 2. COAT BURIED PIPE AND VALVE BOX PER SPECIFICATIONS.
 3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.

CY715
TYP
S

BUTTERFLY VALVE - DIRECT BURY

SHEET 1 OF 2

5/21/19



ELEVATION

CY715
TYP
S

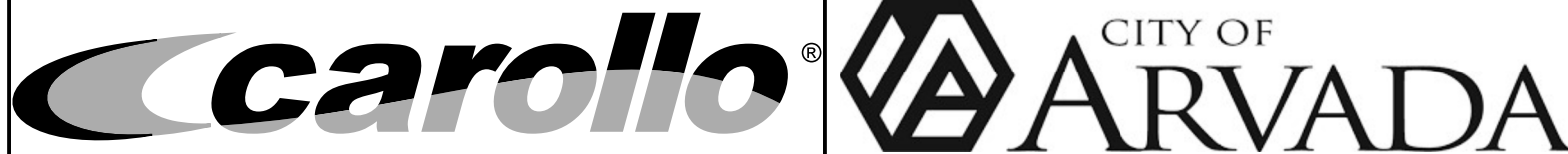
BUTTERFLY VALVE - DIRECT BURY

SHEET 2 OF 2

5/21/19

REV	DATE	BY	DESCRIPTION

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CHECKED
-
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
CIVIL TYPICAL DETAILS 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

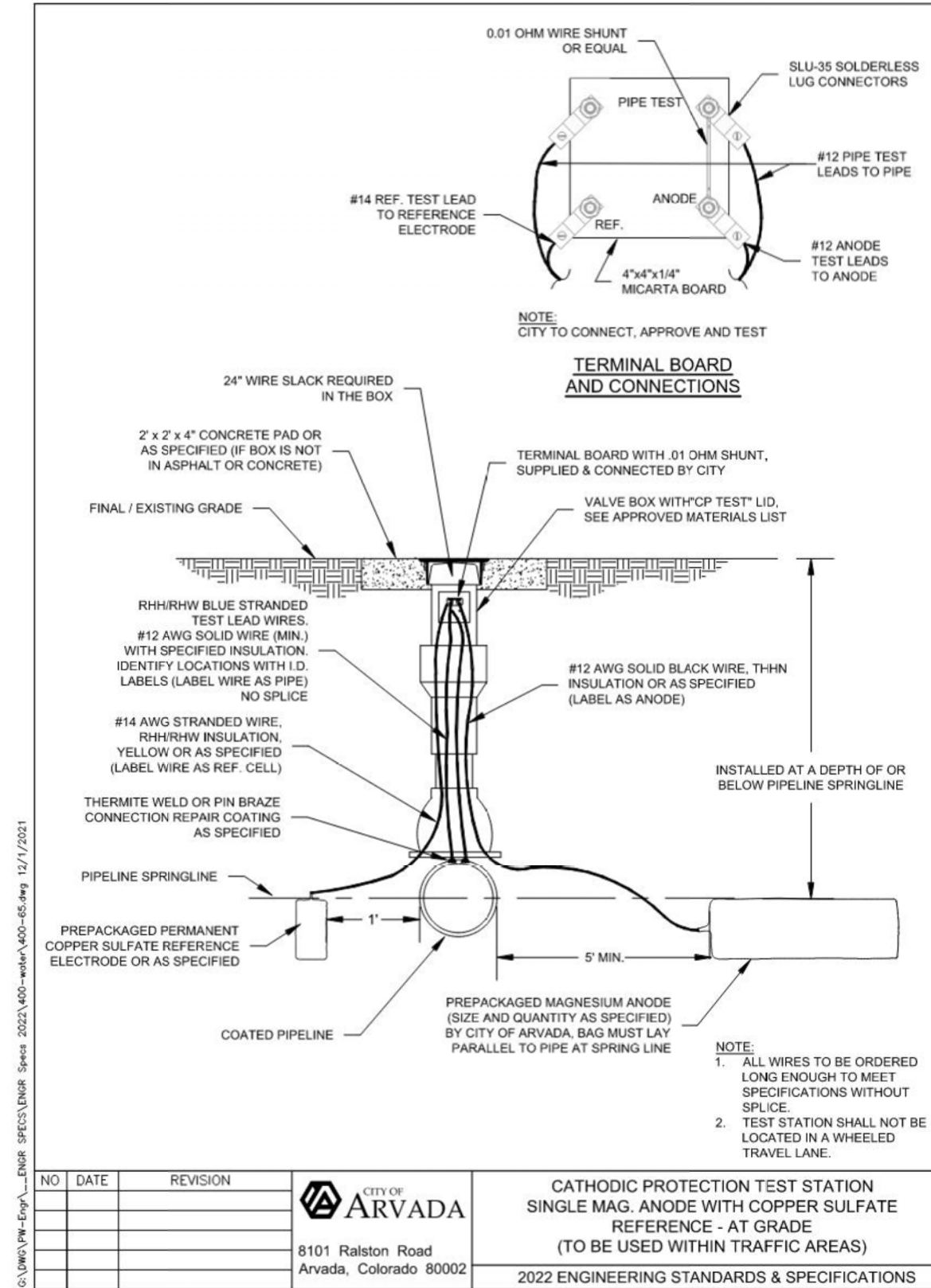
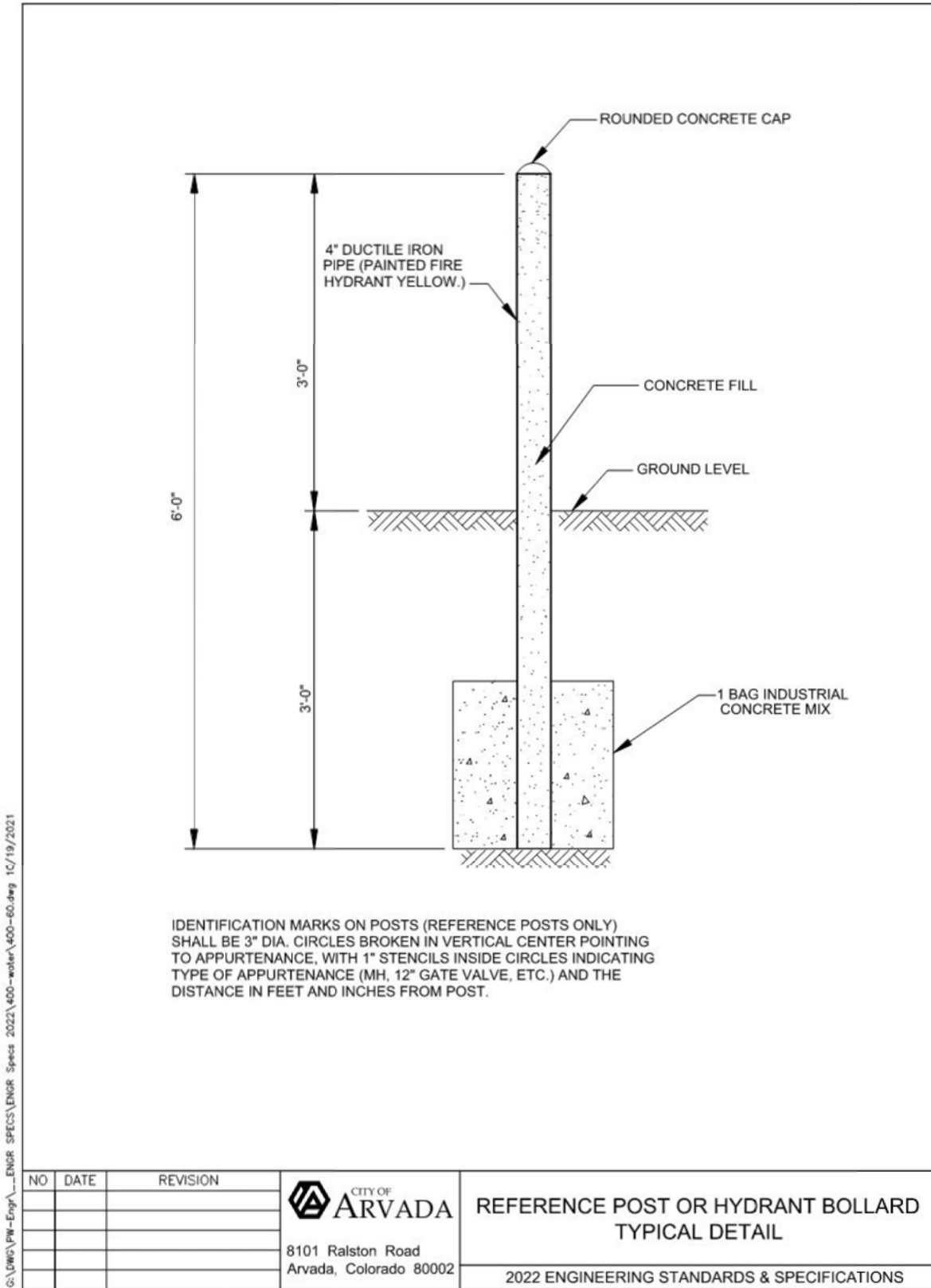
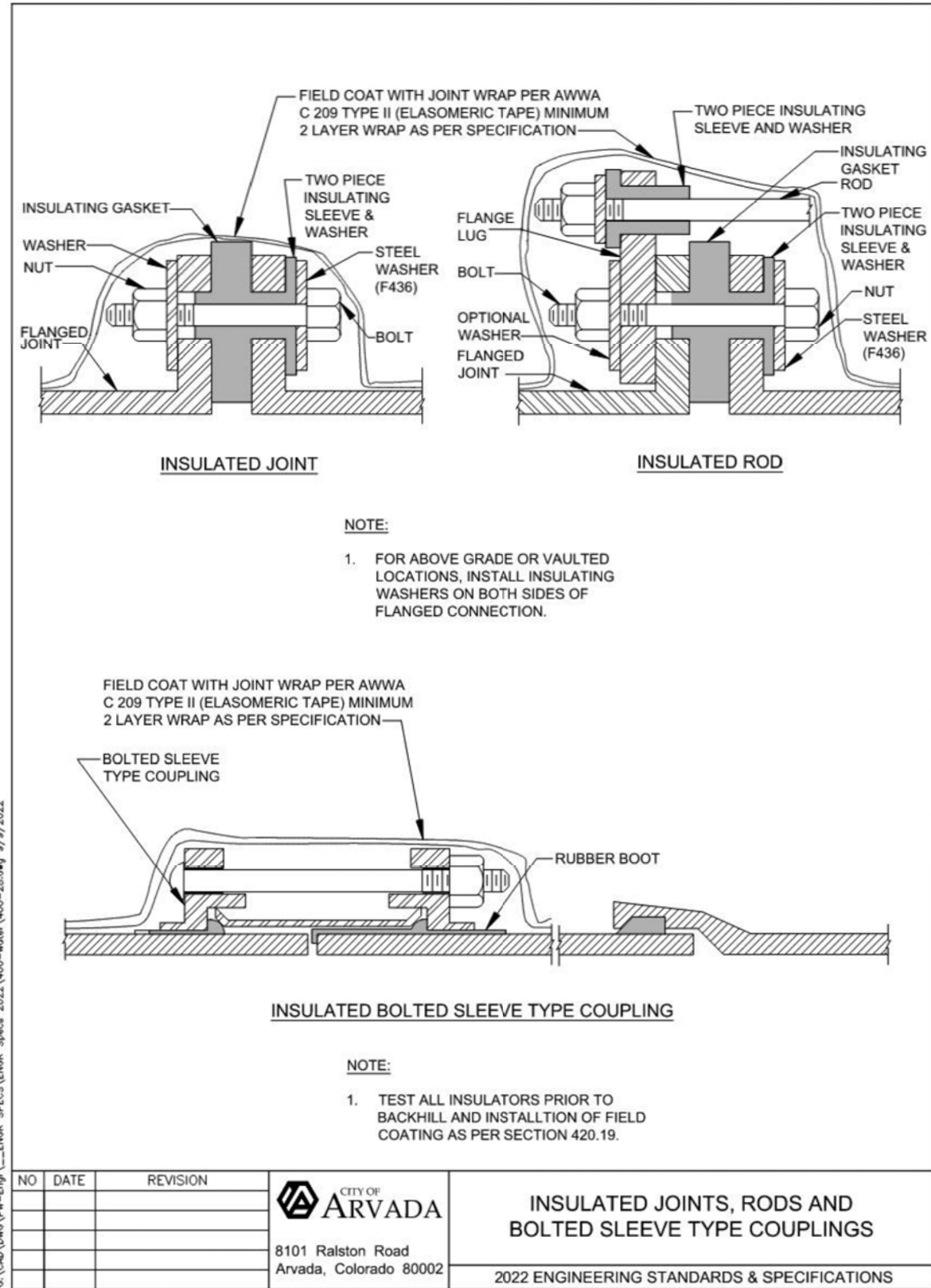
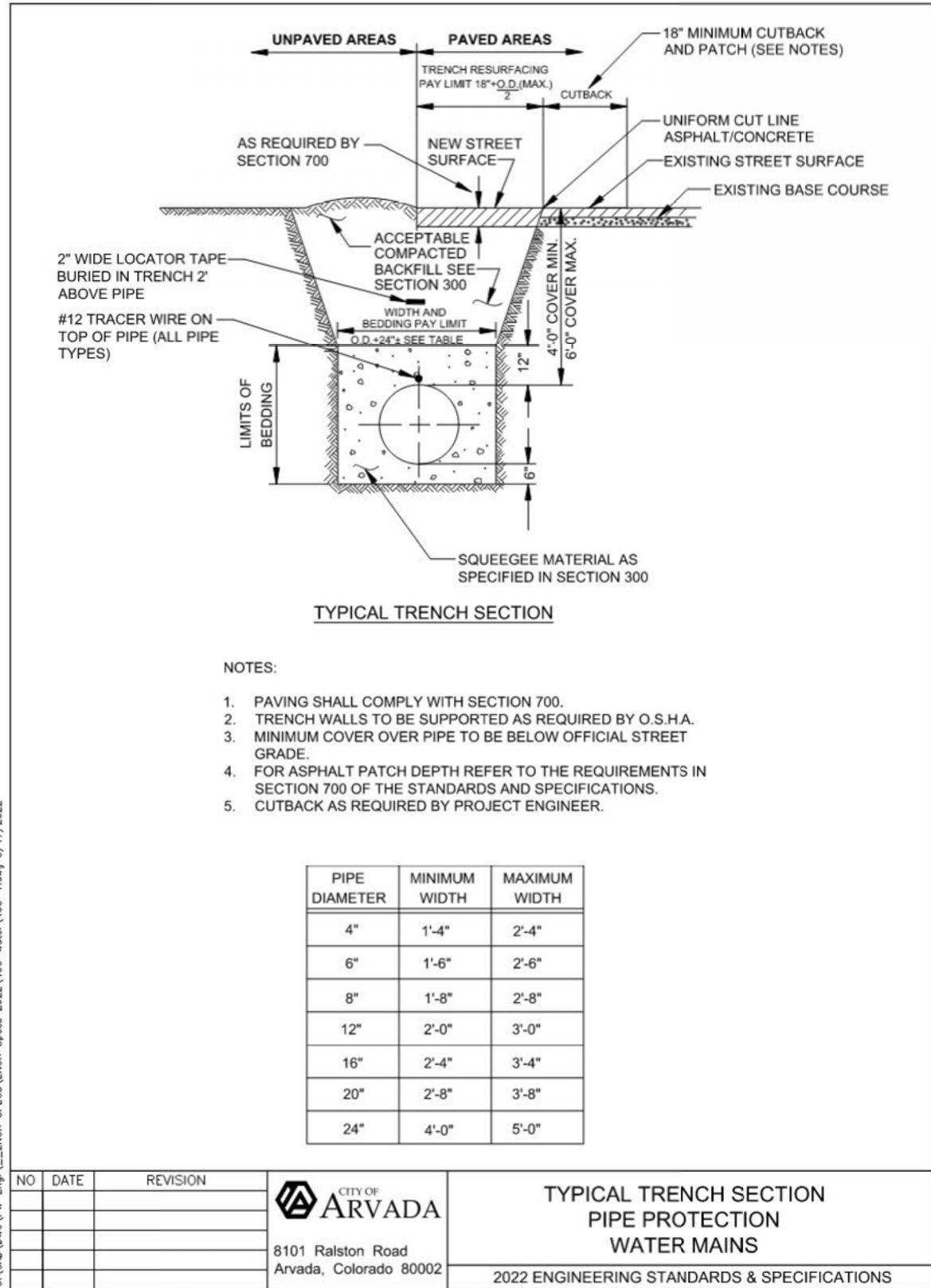
JOB NO.
201351
DRAWING NO.
00TC01
SHEET NO.
65 OF 81

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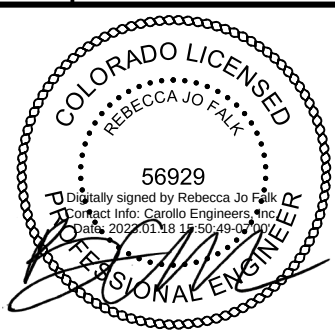
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LAST SAVED BY: trea



REV	DATE	BY	DESCRIPTION

DESIGNED BF
DRAWN TLR
CHECKED -
DATE JANUARY 2023



carollo



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
CIVIL TYPICAL DETAILS 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00TC02
SHEET NO.
66 OF 81

Plot Date: 17-JAN-2023 3:04:10 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: KAlkin

- SEE DIVISION 03 SPECIFICATION FOR REQUIREMENTS FOR CONCRETE CONSTRUCTION.
- UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLABS SHALL BE AS FOLLOWS. CONTACT ENGINEER FOR LOCATIONS INSIDE CONCRETE.
10" THICK OR LESS:#5 @ 12" EACH WAY.
MORE THAN 10" THICK:#5 @ 12" EACH WAY, EACH FACE.
- WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS. LAP SPliced, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK. SEE DETAIL S144/TYP.
- UNLESS OTHERWISE INDICATED ON THE DRAWINGS, DOWELS BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS SPliced TO THE DOWELS.
- SLAB, BEAM AND COLUMN REINFORCING BARS SHALL HAVE A MINIMUM EXTENSION OR ANCHORAGE INTO SUPPORTS IN ACCORDANCE WITH ACI 318 AND ACI 350.
- PROVIDE STIRRUP SUPPORT BARS SHALL BE TO SECURE TOP BARS AGAINST DISPLACEMENT AS REQUIRED.
- UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONCRETE COVER OVER #11 AND SMALLER REINFORCING BARS SHALL BE AS FOLLOWS:
A. SLABS AND JOISTS:
FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES FOR DRY CONDITIONS
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR LOCATED OVER FLUIDS.....2"
B. BEAMS AND COLUMNS:
FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
STIRRUPS, SPIRALS, AND TIES.....1 1/2"
PRINCIPAL REINFORCEMENT.....2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR IN BEAMS LOCATED OVER FLUIDS:
STIRRUPS AND TIES.....2"
PRINCIPAL REINFORCEMENT.....2 1/2"
C. WALLS:
FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
#7 BARS AND SMALLER.....1"
#8 BARS AND LARGER.....1 1/2"
FORMED CONCRETE SURFACES EXPOSED TO WEATHER, OR IN CONTACT WITH SOIL OR FLUIDS.....2"

S101 REINFORCED CONCRETE NOTES

TYP

SHEET 1 OF 3

03/12/19

- FOOTINGS AND SLABS ON GRADE:
FORMED VERTICAL CONCRETE SURFACES.....2"
AT UNFORMED CONCRETE SURFACES CAST AGAINST SOIL, ROCK, OR CONCRETE WORK MATS.....3"
TOP SURFACE OF FOOTINGS AND SLABS.....SAME AS SLABS
- WATERSTOPS:
A. PROVIDE WATERSTOPS AT JOINTS IN SLABS AND WALLS OF LIQUID-CONTAINING STRUCTURES, AND PORTIONS OF STRUCTURES BELOW THE DESIGN GROUNDWATER LEVEL. MAKE WATERSTOPS CONTINUOUS THROUGH STRUCTURE, SPlicing WATERSTOPS IN SLABS WITH WATERSTOPS IN WALLS.
B. END WATERSTOPS 3" BELOW TOP OF WALLS, WHERE TOP OF WALL IS COVERED BY A SLAB WITHOUT WATERSTOPS, CONTINUE WATERSTOP TO WALL/SLAB JOINT, WHERE TOP OF WALL IS COVERED BY A SLAB WITH WATERSTOPS, MAKE WATERSTOPS CONTINUOUS, SPlicing WATERSTOPS IN WALLS WITH WATERSTOPS IN SLAB.
- CURE CONCRETE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE WATER CURING IS SPECIFIED, MEMBRANE CURING IS NOT ALLOWED.
A. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. STUDY SPECIFICATION REQUIREMENTS AND FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED.
B. KEEP WATER CURED SURFACES VISIBLY MOIST AT ALL TIMES. FLOOD TOPS OF WALLS NOT LESS THEN 3 TIMES DAILY.
- DO NOT PLACE BACKFILL AGAINST WALLS UNTIL:
A. WALLS HAVE BEEN CAST TO FULL HEIGHT OF STRUCTURE AND CONCRETE HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f_c).
B. CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND CONCRETE IN THOSE ELEMENTS HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f_c).
- LAP SPICES:
A. SEE TABLE 1 OF THIS DETAIL FOR LAP SPICE LENGTHS.
B. WHEN MULTIPLE BARS ARE SPliced AT THE SAME SECTION, THE "CLEAR BAR SPACING" IS DEFINED AS THE MINIMUM CLEAR DISTANCE BETWEEN THE BARS OUTSIDE THE SPICE LENGTH MINUS ONE BAR DIAMETER.
C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BARS AT A LAP SPICE SHALL BE IN CONTACT WITH EACH OTHER.
D. "TOP BARS" ARE HORIZONTAL REINFORCEMENT AT LOCATIONS WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
- FORM EXPOSED CONCRETE CORNERS AND EDGES WITH 3/4" CHAMFER UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

S101 REINFORCED CONCRETE NOTES

TYP

SHEET 2 OF 3

03/12/19

BAR SIZE	MINIMUM COVER (BAR DIA)	MINIMUM CLEAR BAR SPACING (BAR DIA)	LAP SPICE LENGTH (INCHES)	
			TOP BARS	OTHER BARS
#4	MORE THAN 1	MORE THAN 2	32 *	25 *
	MORE THAN 2	MORE THAN 4	20	16
#5	MORE THAN 1	MORE THAN 2	40 *	31 *
	MORE THAN 2	MORE THAN 4	26	20
#6	MORE THAN 1	MORE THAN 2	48 *	37 *
	MORE THAN 2	MORE THAN 4	30	24
#7	MORE THAN 1	MORE THAN 2	70 *	54 *
	MORE THAN 2	MORE THAN 4	43	33
#8	MORE THAN 1	MORE THAN 2	81 *	62 *
	MORE THAN 2	MORE THAN 4	50	38
#9	MORE THAN 1	MORE THAN 2	90 *	70 *
	MORE THAN 2	MORE THAN 4	56	42
#10	MORE THAN 1	MORE THAN 2	104 *	81 *
	MORE THAN 2	MORE THAN 4	62	48
#11	MORE THAN 1	MORE THAN 2	114 *	88 *
	MORE THAN 2	MORE THAN 4	69	54

REINFORCING BAR LAP SPICE TABLE NOTES:

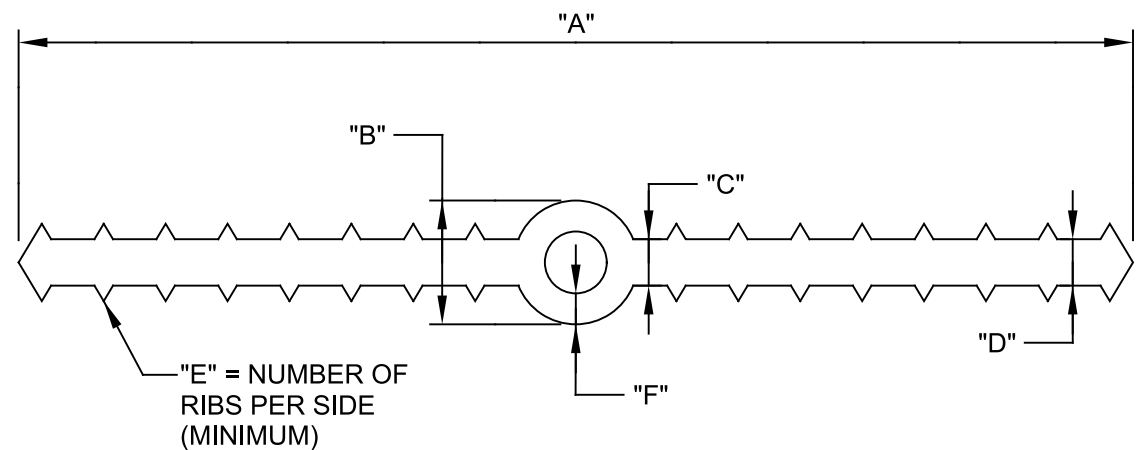
- TABULATED SPICE LENGTHS ARE APPLICABLE ONLY WHEN BOTH REQUIREMENTS FOR MINIMUM COVER AND FOR MINIMUM CLEAR BAR SPACING ARE SATISFIED.
- *= IF THE CLEAR BAR SPACING IS LESS THAN OR EQUAL TO TWO BAR DIAMETERS, OR THE COVER IS LESS THAN OR EQUAL TO ONE BAR DIAMETER, THE LAP SPICE LENGTH SHALL BE INCREASED BY 50 PERCENT.

S101 REINFORCED CONCRETE NOTES

TYP

SHEET 3 OF 3

03/12/19



TYPE	"A"	"B"	"C"	"D"	"E"	"F"	APPLICATION
W/O CENTER BULB	6"	-	3/8"	3/8"	7	-	CONSTRUCTION AND CONTROL JOINTS
CENTER BULB	6"	7/8"	3/8"	3/8"	7	9/32"	FOR USE WITH DETAIL EM071/TYP ONLY
CENTER BULB	9"	1"	3/8"	3/8"	7	1/4"	EXPANSION JOINTS 1" AND NARROWER
CENTER BULB	9"	2"	3/8"	3/8"	7	1/4"	EXPANSION JOINTS WIDER THAN 1" AND TENSION/COMPRESSION RING BEAM AT DIGESTERS

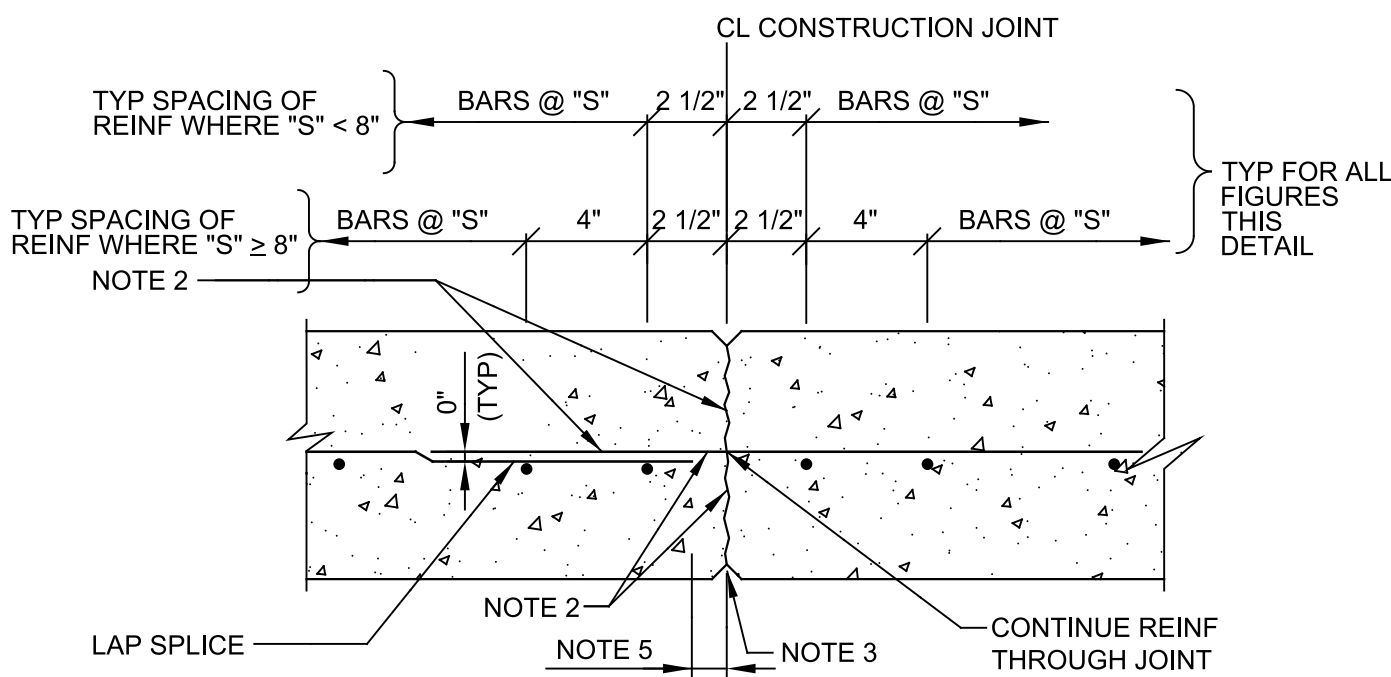
NOTES:

- SEE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
- DIMENSIONS ARE MINIMUM, UNLESS OTHERWISE NOTED.

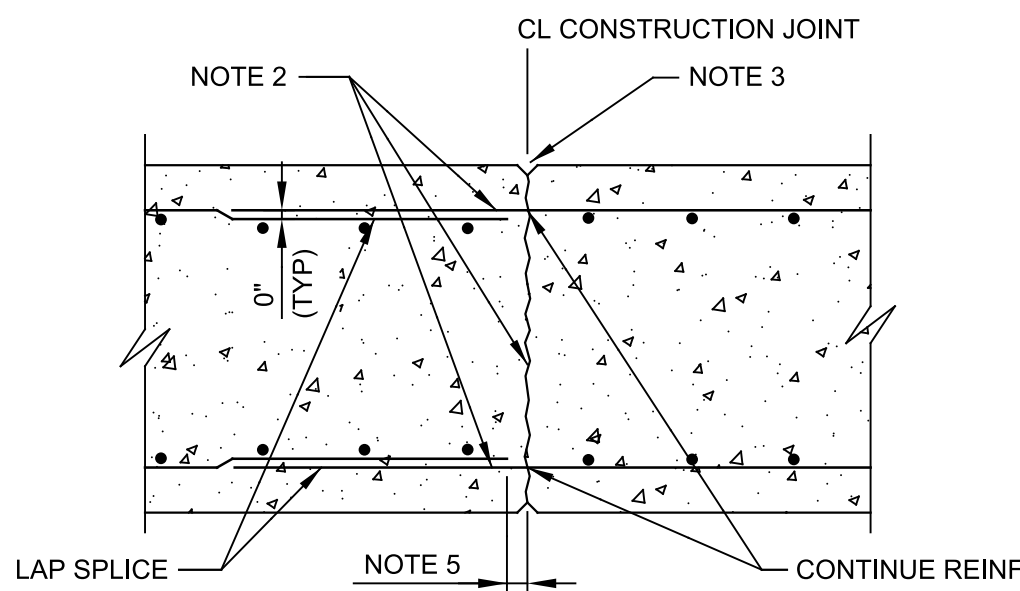
S106 PVC WATERSTOP SCHEDULE

TYP

12/15/20



NON-WATER BEARING WALL OR SLAB SINGLE LAYER REINFORCEMENT



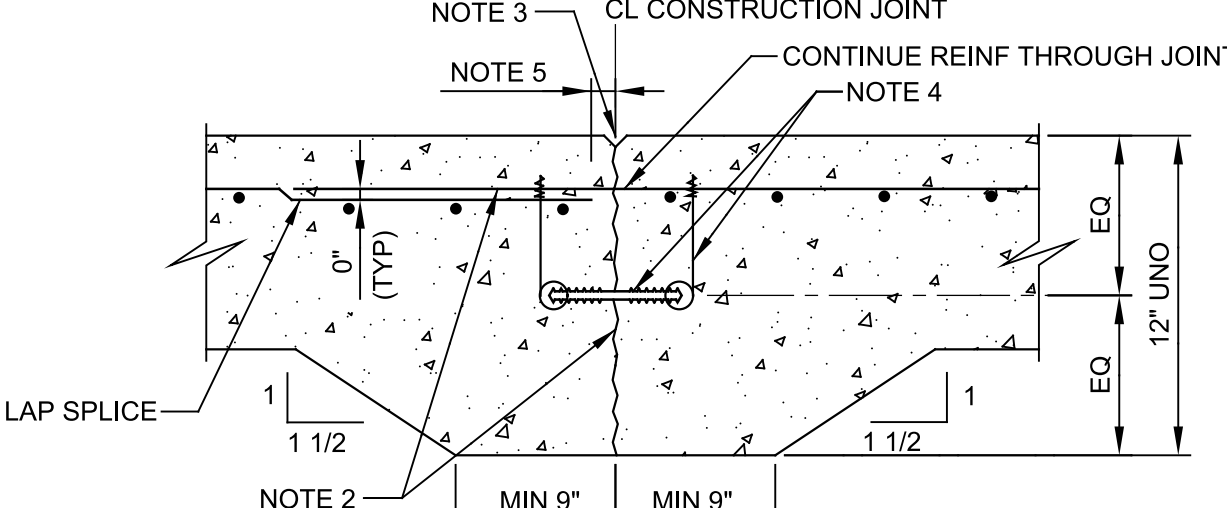
NON-WATER BEARING WALL OR SLAB DOUBLE LAYER REINFORCEMENT

S110 CONSTRUCTION JOINT

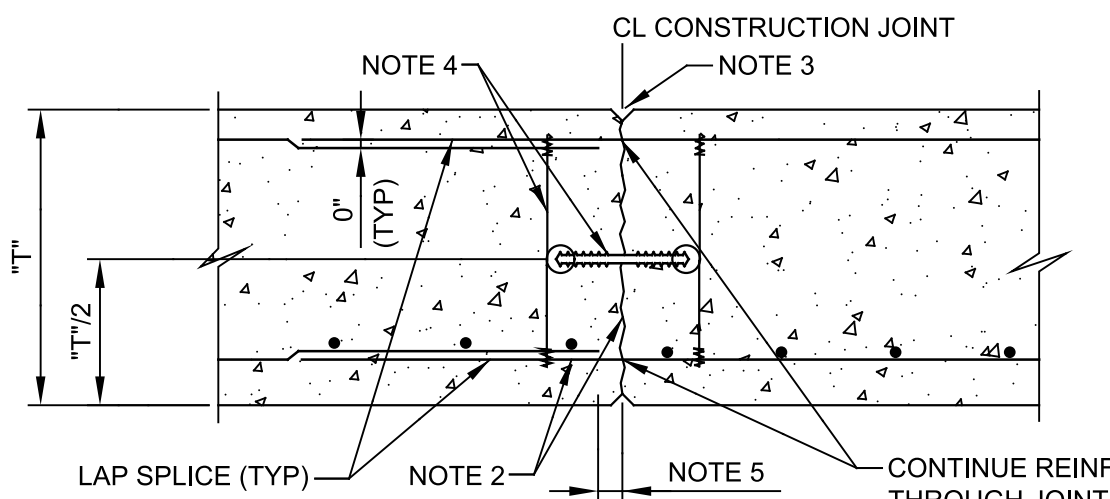
TYP

SHEET 1 OF 2

07/11/16



WATER BEARING SLAB LESS THAN 12" THICK



WATER BEARING SLAB OR WALL

NOTES:

- "S" EQUALS TYPICAL BAR SPACING INDICATED ON THE DRAWINGS.
"T" EQUALS SLAB OR WALL THICKNESS.
- WATER-BLAST EXPOSED JOINT FACE AND PROJECTING REINFORCEMENT BEFORE PLACING CONCRETE.
- JOINT EDGES:
A. FOR WALLS AND BOTTOM OF EXPOSED SLABS: FORM EDGES WITH 1/2" CHAMFER.
B. FOR SLABS: EDGE TOP AND ENDS WITH 1/4" RADIUS.
- 6" WATERSTOP CENTERED ON JOINT - SEE DETAIL S106/TYP. PROVIDE WIRE TIES MAX 2'-0" OC. HOG RINGS MAY BE USED IN LIEU OF WIRE LOOPS. THOROUGHLY CLEAN WATERSTOP BEFORE PLACING CONCRETE IN SECOND POUR.
- STOP REINFORCING 2" CLEAR OF JOINT.

S110 CONSTRUCTION JOINT

TYP

SHEET 2 OF 2

07/11/16



CITY OF ARVADA, COLORADO

RALSTON WTP SOLIDS IMPROVEMENTS

TYPICAL DETAILS

STRUCTURAL TYPICAL DETAILS 1

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.

201351

DRAWING NO.

00TS01

SHEET NO.

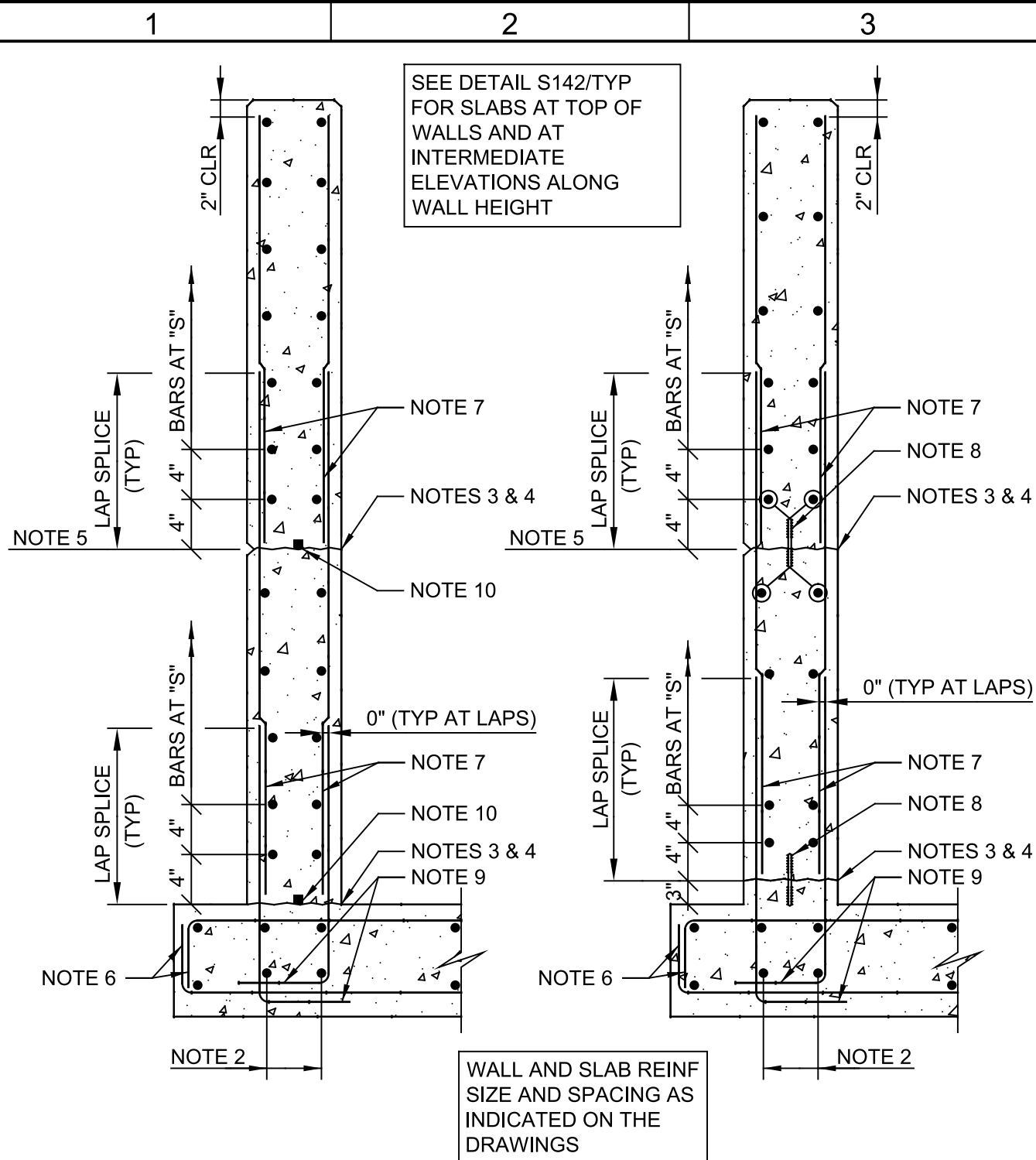
67 OF 81

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User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: Ktkin



A SECTION

B SECTION - "W/ WSTP"

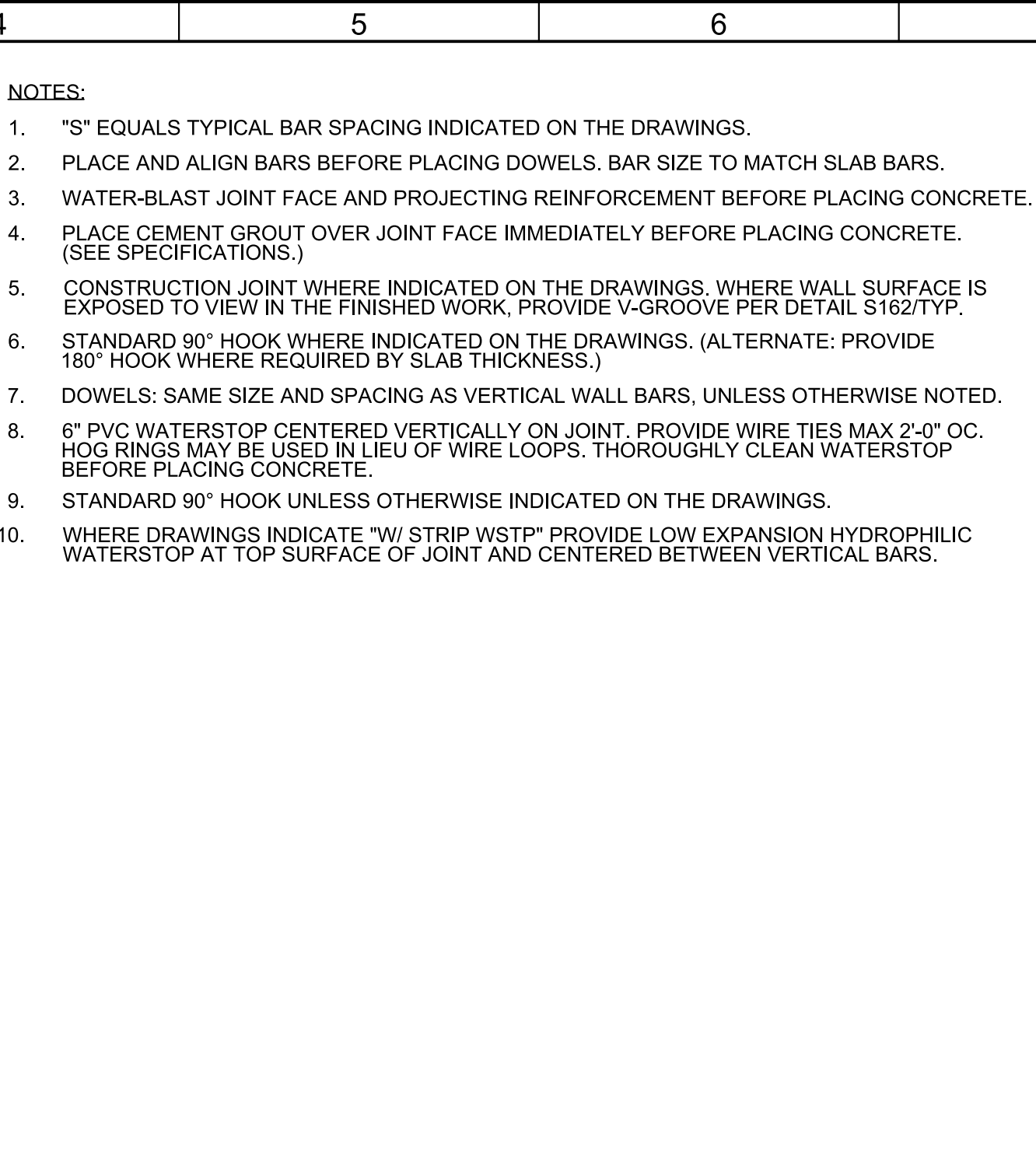
S140 CONSTRUCTION JOINT - WALLS

TYP

S, N

SHEET 1 OF 2

03/12/19



A SECTION

B SECTION - "W/ WSTP"

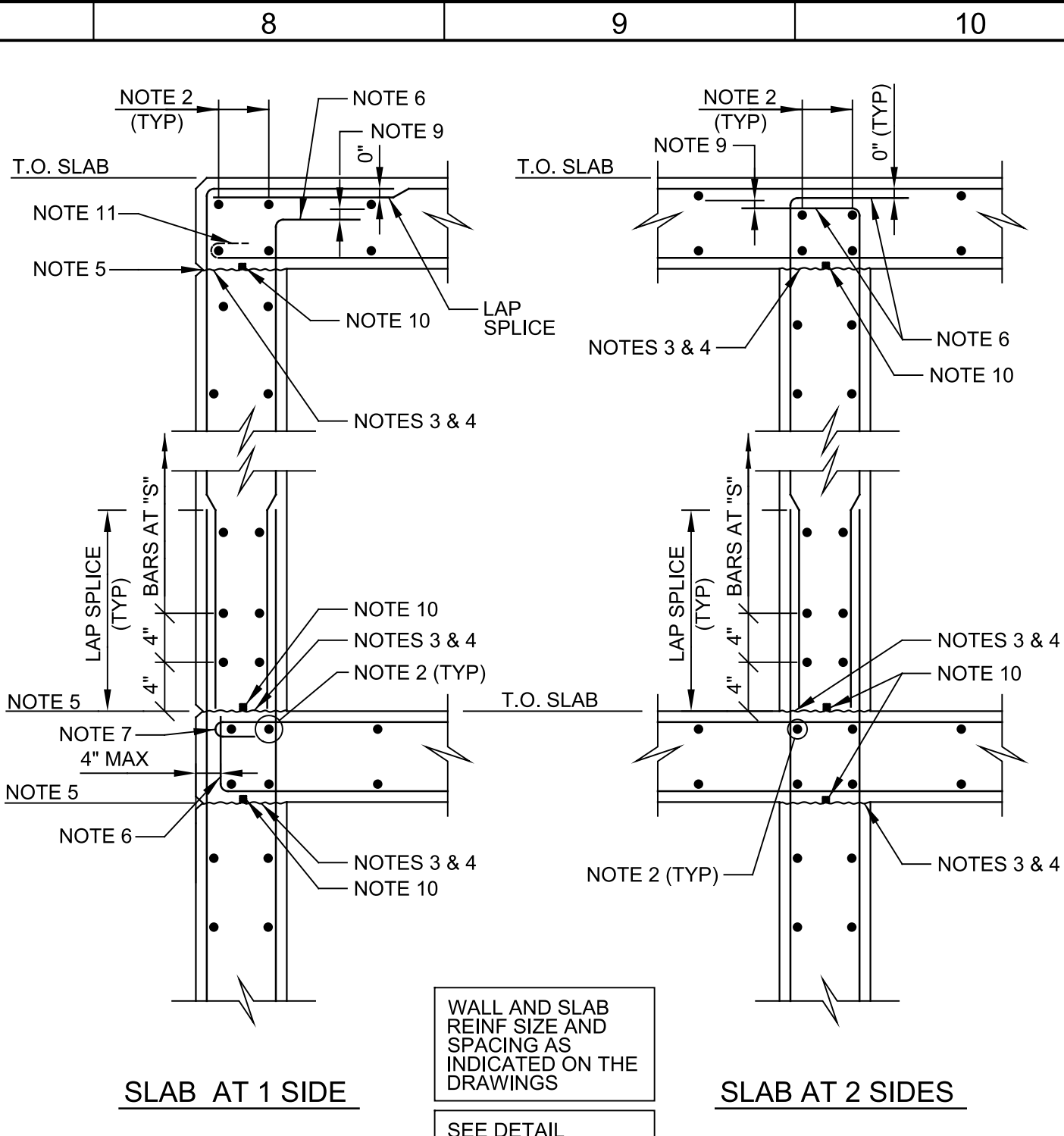
S140 CONSTRUCTION JOINT - WALLS

TYP

S, N

SHEET 2 OF 2

03/12/19



SLAB AT 1 SIDE

SLAB AT 2 SIDES

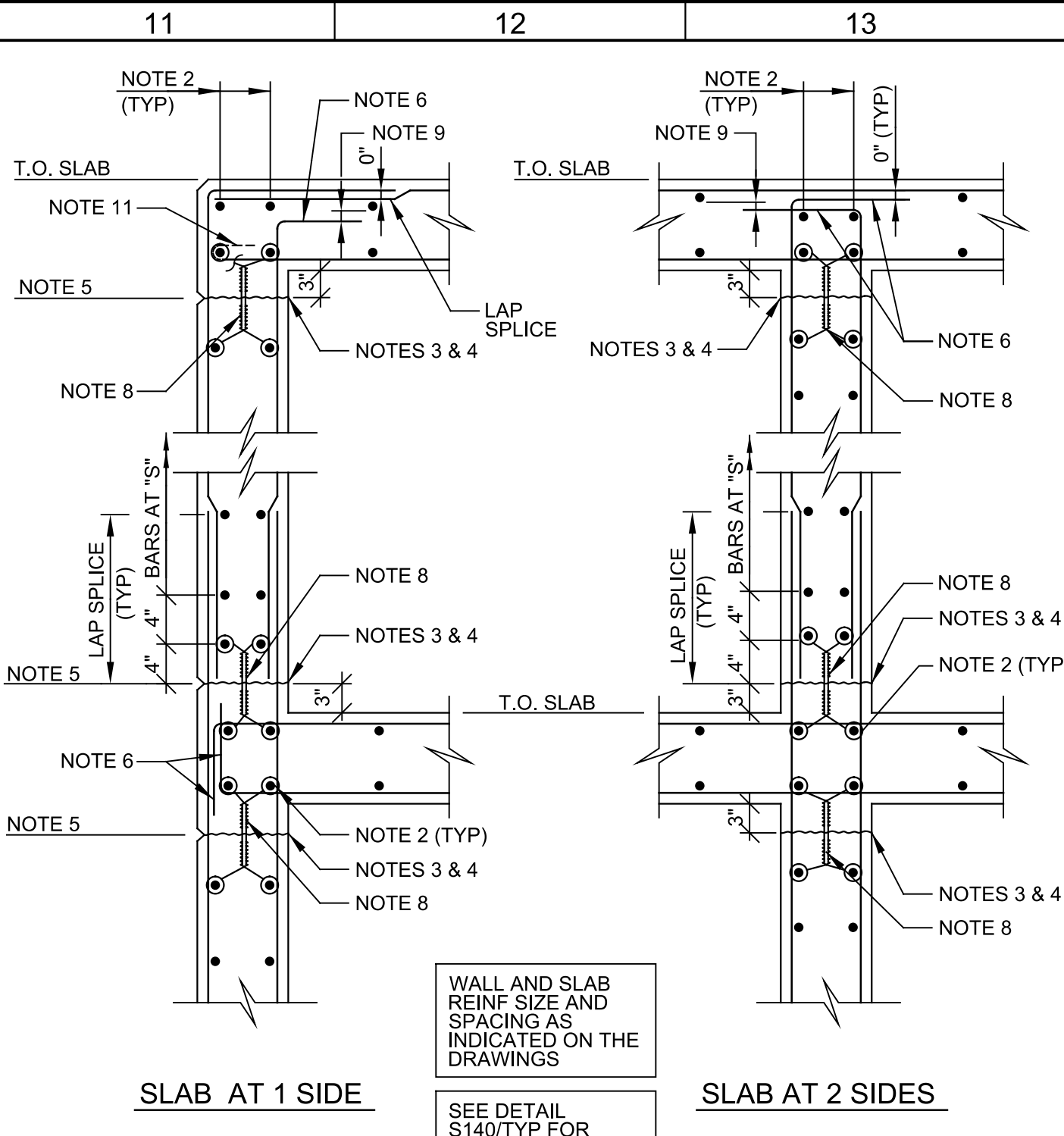
S142 CONSTRUCTION JOINT - WALLS AT ELEVATED SLABS

TYP

S, N

SHEET 1 OF 3

03/12/19



SLAB AT 1 SIDE

SLAB AT 2 SIDES

S142 CONSTRUCTION JOINT - WALLS AT ELEVATED SLABS

TYP

S, N

SHEET 2 OF 3

03/12/19

- NOTES:
- "S" EQUALS TYPICAL BAR SPACING INDICATED ON THE DRAWINGS.
 - AT INTERSECTION, MAKE BAR SIZE THE LARGER OF BAR SIZES IN ADJACENT SLAB OR WALL. PLACE BARS AT SAME LAYERS AS IN ADJACENT SLAB OR WALL.
 - WATER-BLAST JOINT FACE AND PROJECTING REINFORCEMENT BEFORE PLACING CONCRETE.
 - PLACE CEMENT GROUT OVER JOINT FACE IMMEDIATELY BEFORE PLACING CONCRETE. (SEE SPECIFICATIONS.)
 - CONSTRUCTION JOINT WHERE INDICATED ON THE DRAWINGS. WHERE WALL SURFACE IS EXPOSED TO VIEW IN THE FINISHED WORK, PROVIDE V-GROOVE PER DETAIL S162/TYP.
 - STANDARD 90° HOOK UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - STANDARD 180° HOOK (ALTERNATE: 90° HOOK ROTATED OUT OF VERTICAL PLANE IF APPROVED BY ENGINEER.)
 - 6" PVC WATERSTOP CENTERED VERTICALLY ON JOINT. PROVIDE WIRE TIES MAX 2'-0" OC. HOG RINGS MAY BE USED IN LIEU OF WIRE LOOPS. THOROUGHLY CLEAN WATERSTOP BEFORE PLACING CONCRETE.
 - 1 BAR DIAMETER CLEAR.
 - WHERE DRAWINGS INDICATE "W/ STRIP WSTP" PROVIDE LOW EXPANSION HYDROPHILIC WATERSTOP AT TOP SURFACE OF JOINT AND CENTERED BETWEEN VERTICAL BARS.
 - STANDARD 180° HOOK WHERE INDICATED ON THE DRAWINGS.

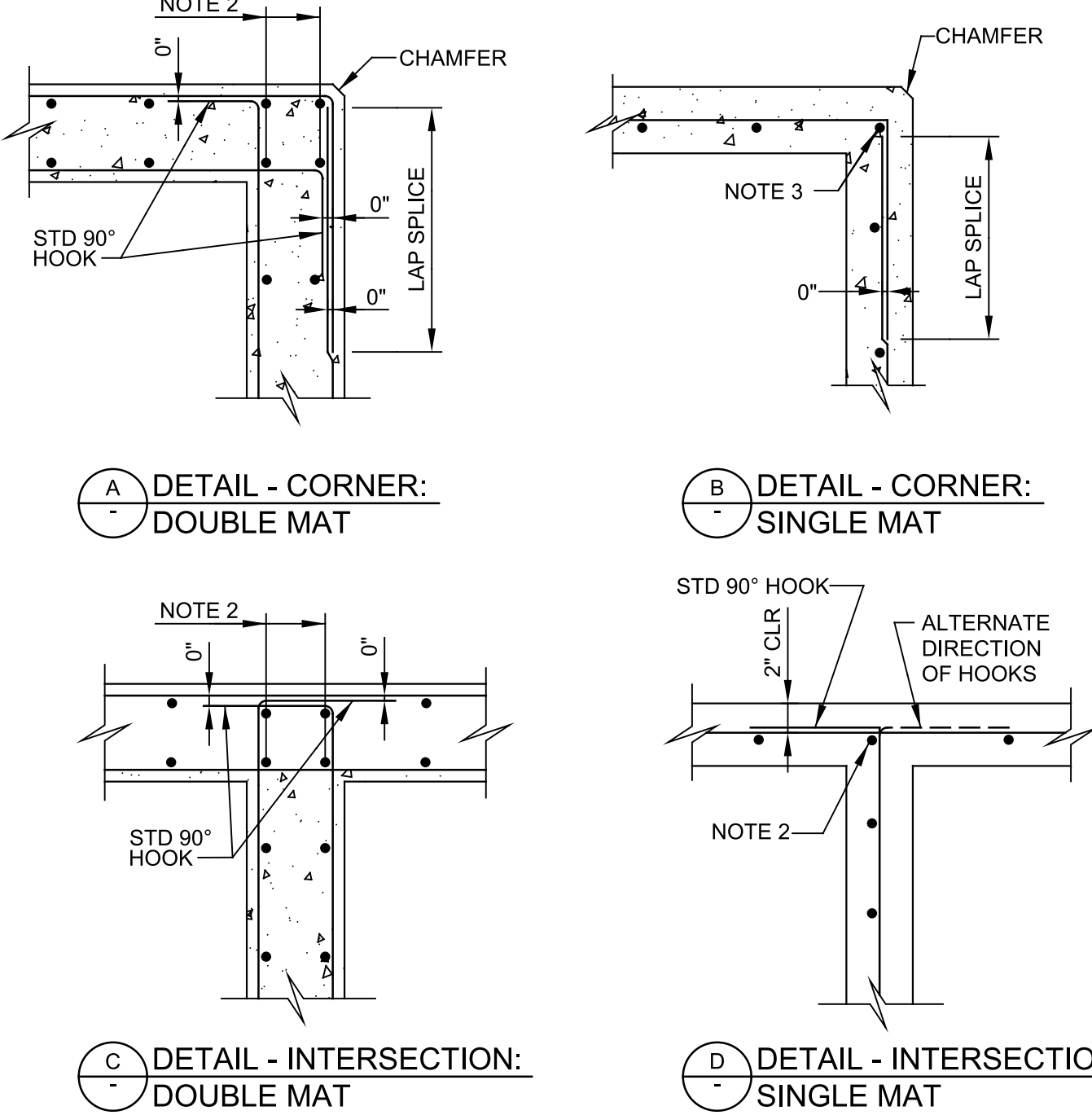
S142 CONSTRUCTION JOINT - WALLS AT ELEVATED SLABS

TYP

S, N

SHEET 3 OF 3

03/12/19



A DETAIL - CORNER: DOUBLE MAT

B DETAIL - CORNER: SINGLE MAT

C DETAIL - INTERSECTION: DOUBLE MAT

D DETAIL - INTERSECTION: SINGLE MAT

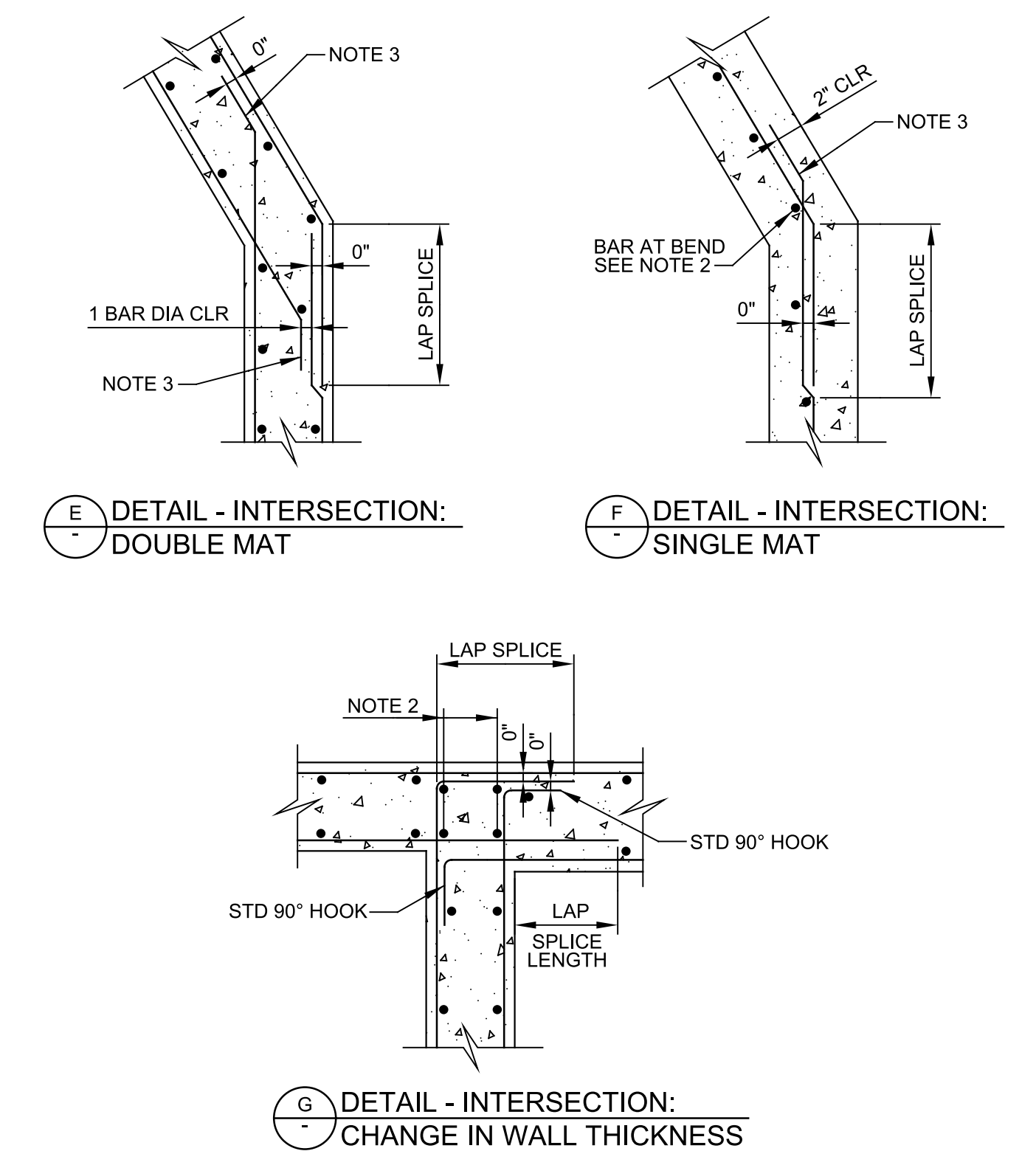
S144 WALL REINFORCEMENT AT CORNERS & INTERSECTIONS

TYP

S

SHEET 1 OF 2

05/31/16



S144 WALL REINFORCEMENT AT CORNERS & INTERSECTIONS

TYP

S

SHEET 2 OF 2

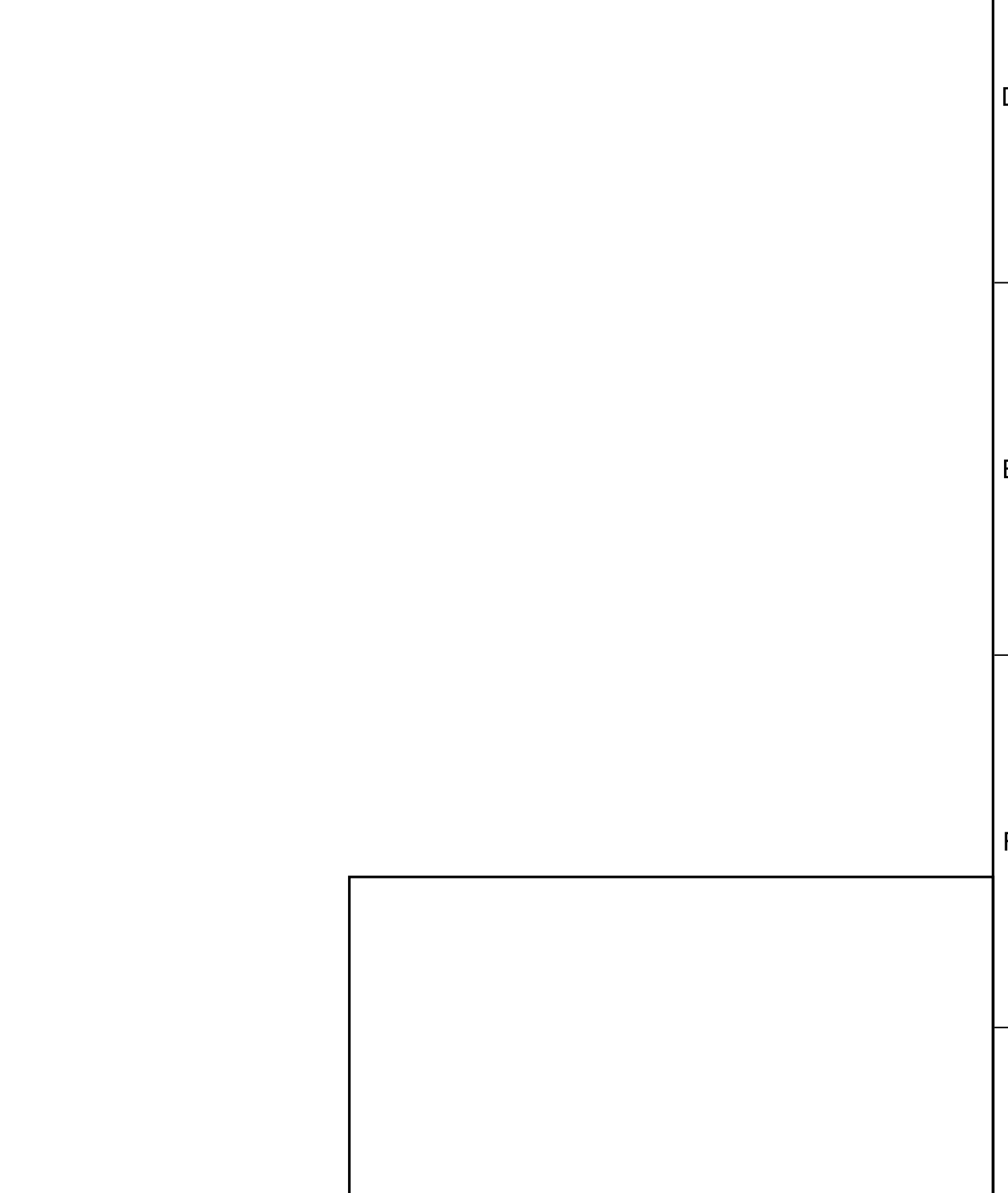
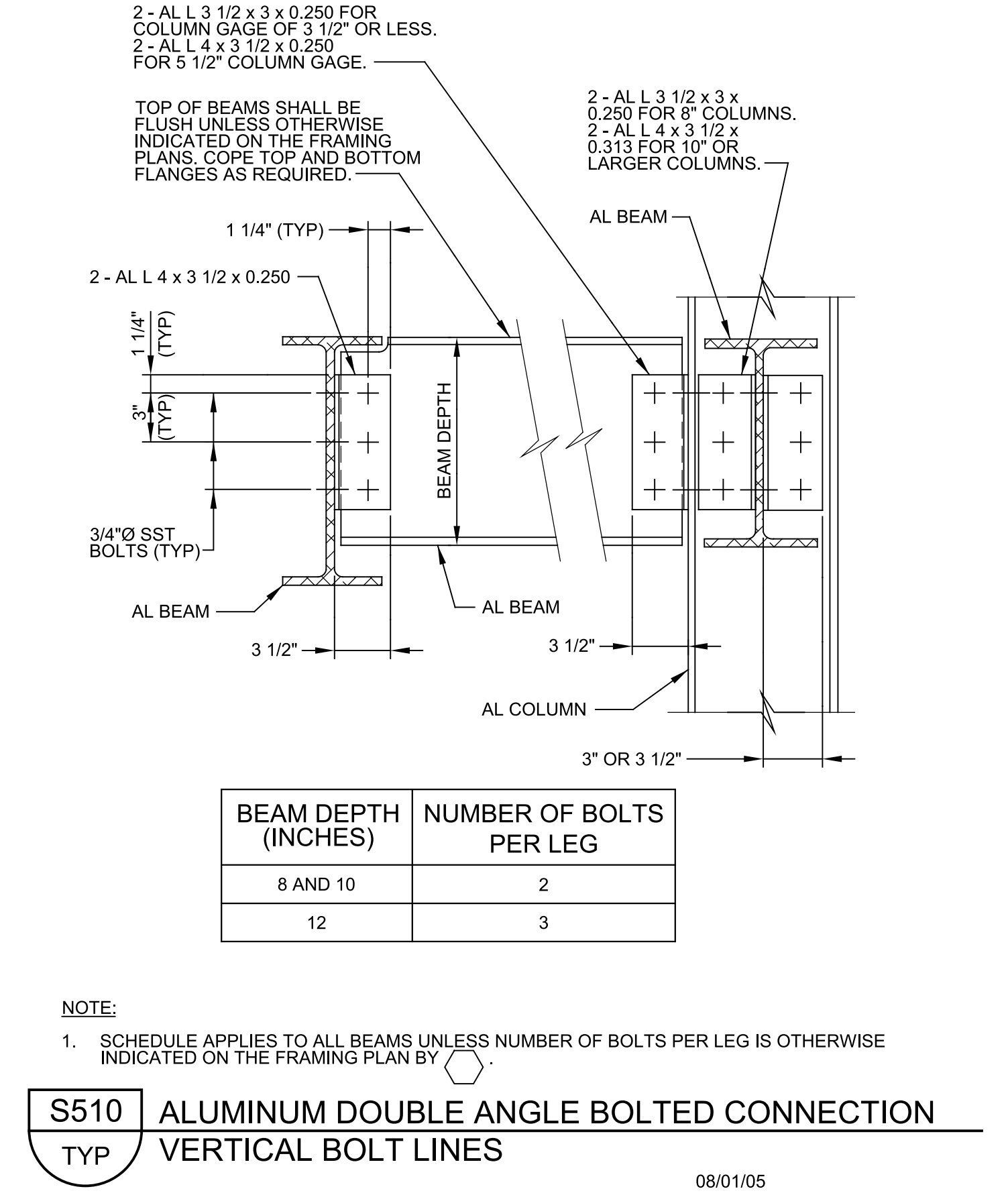
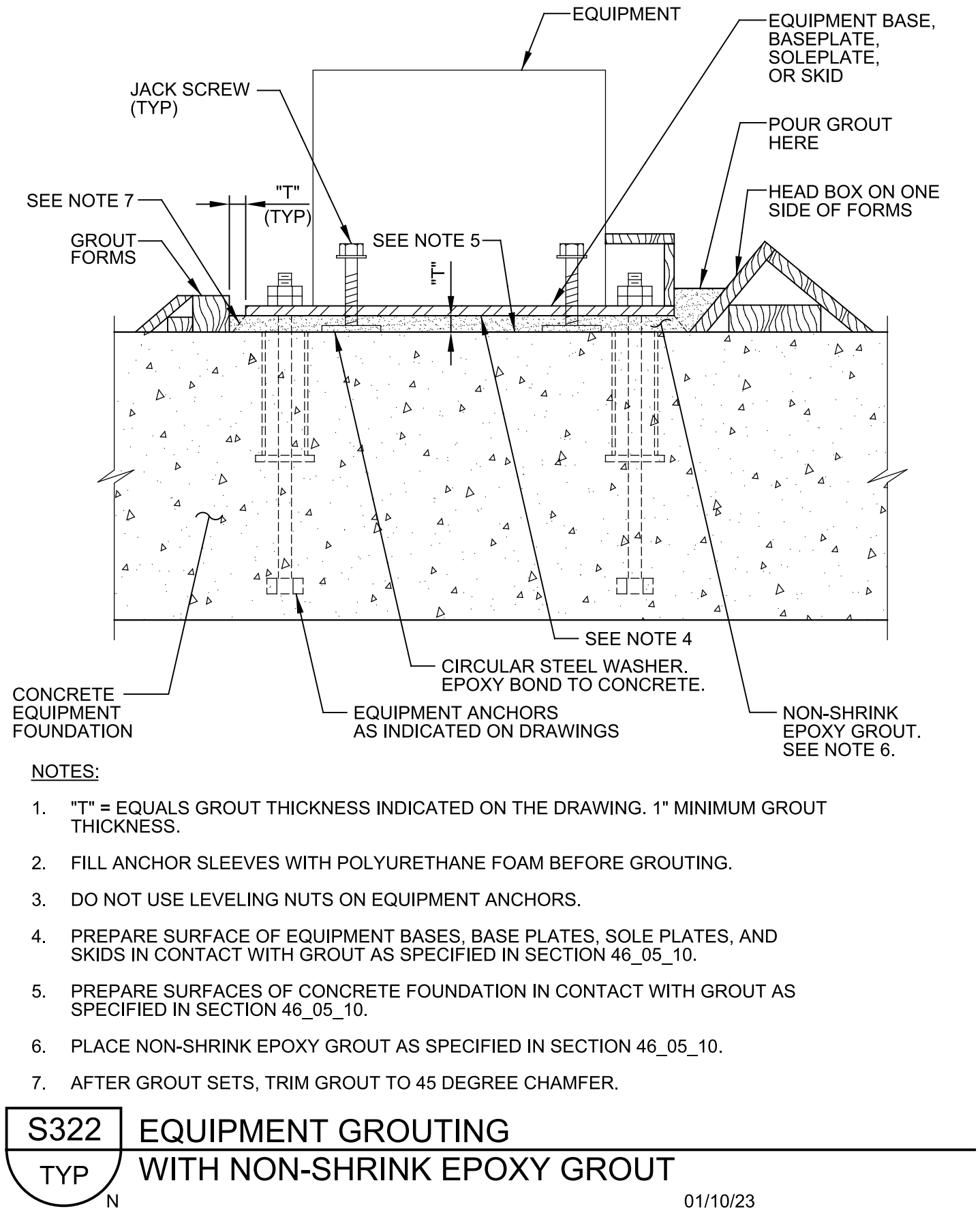
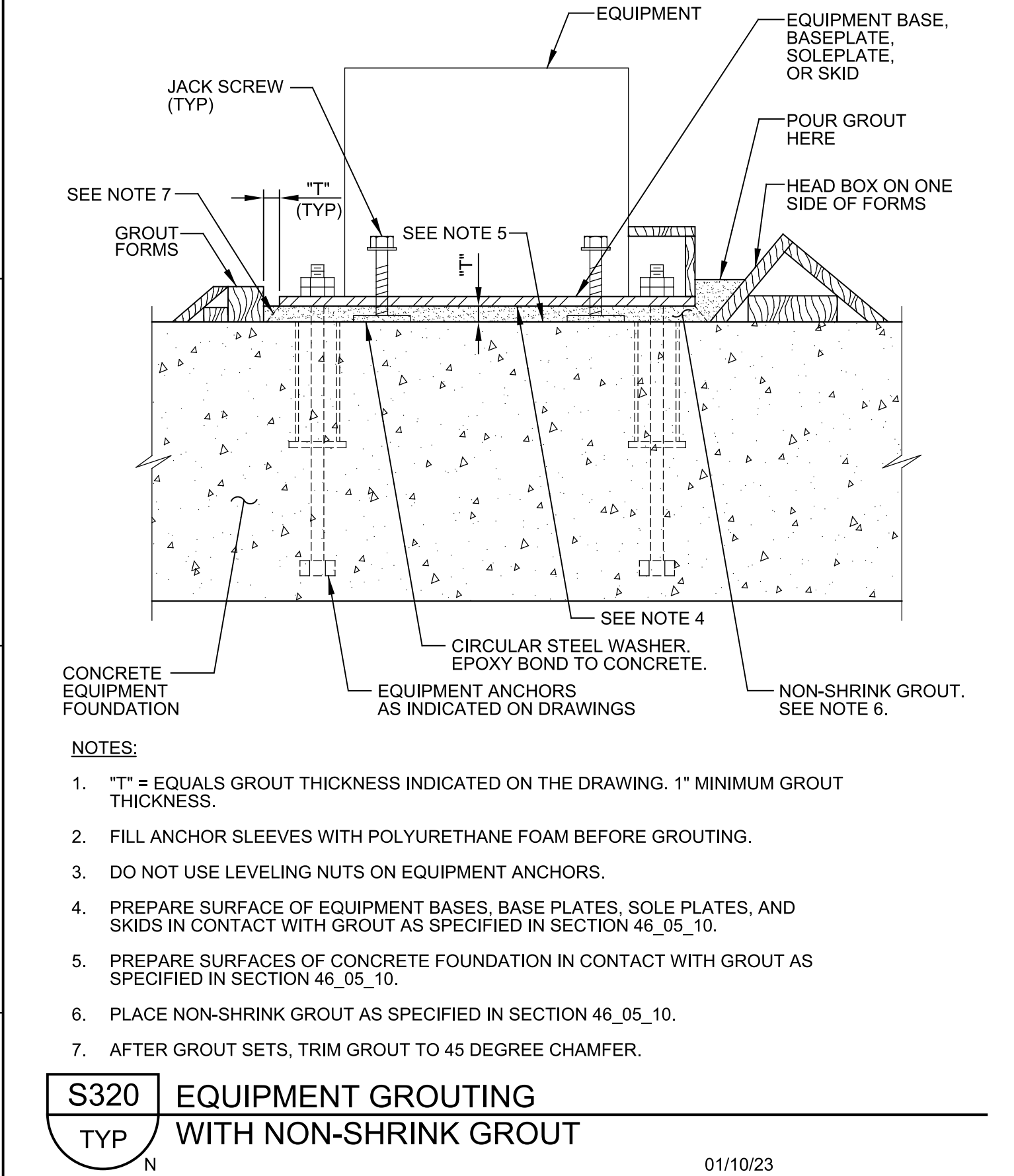
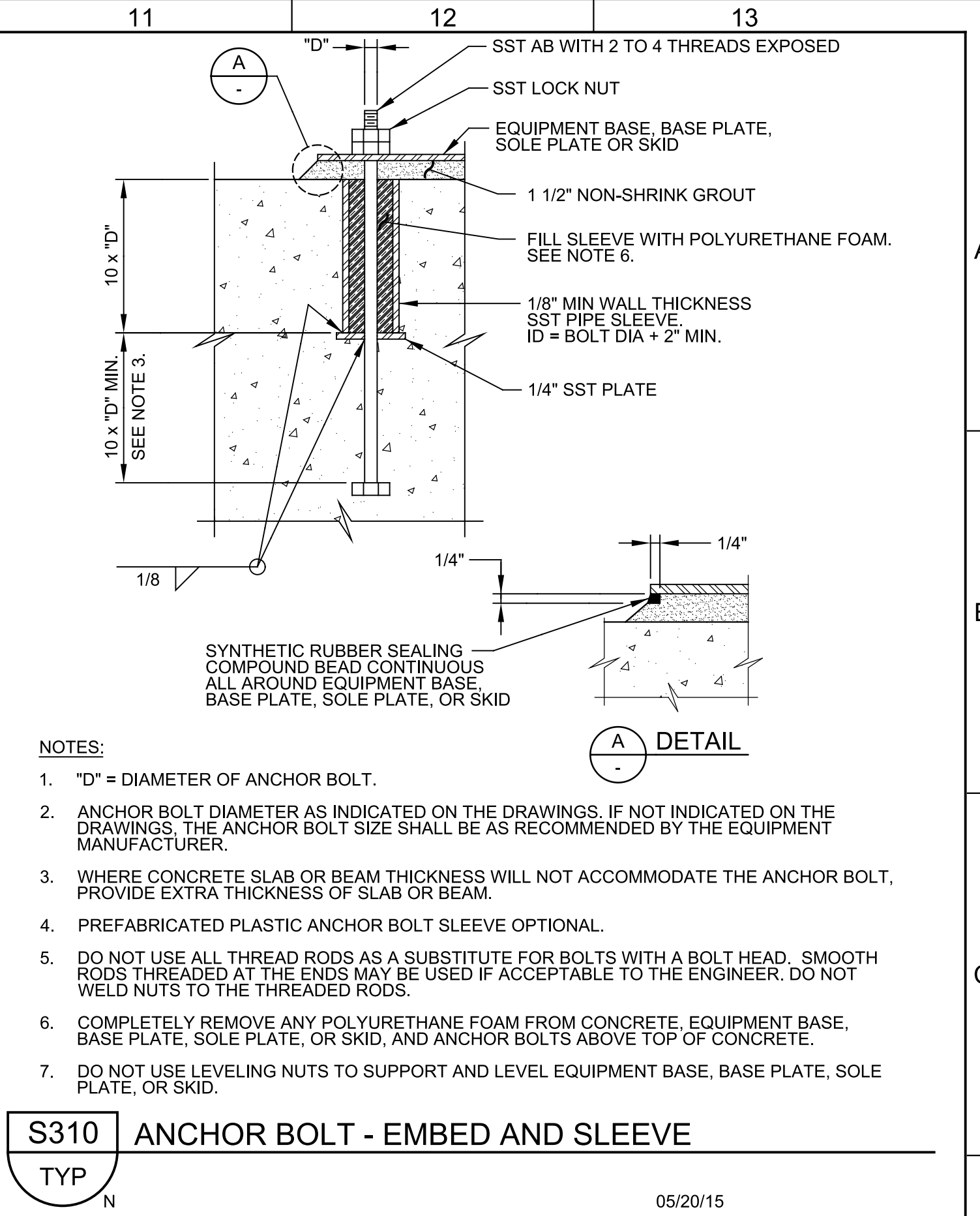
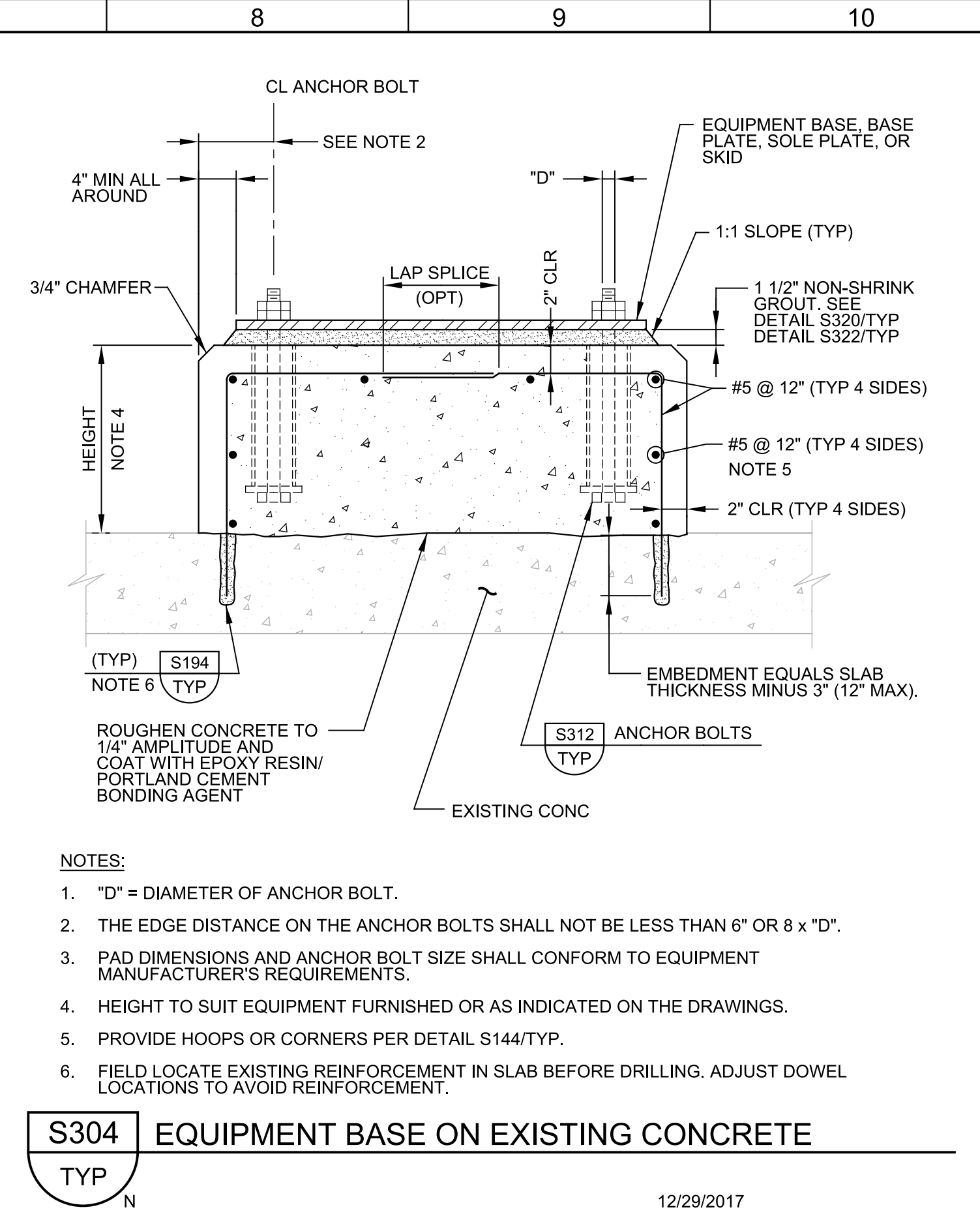
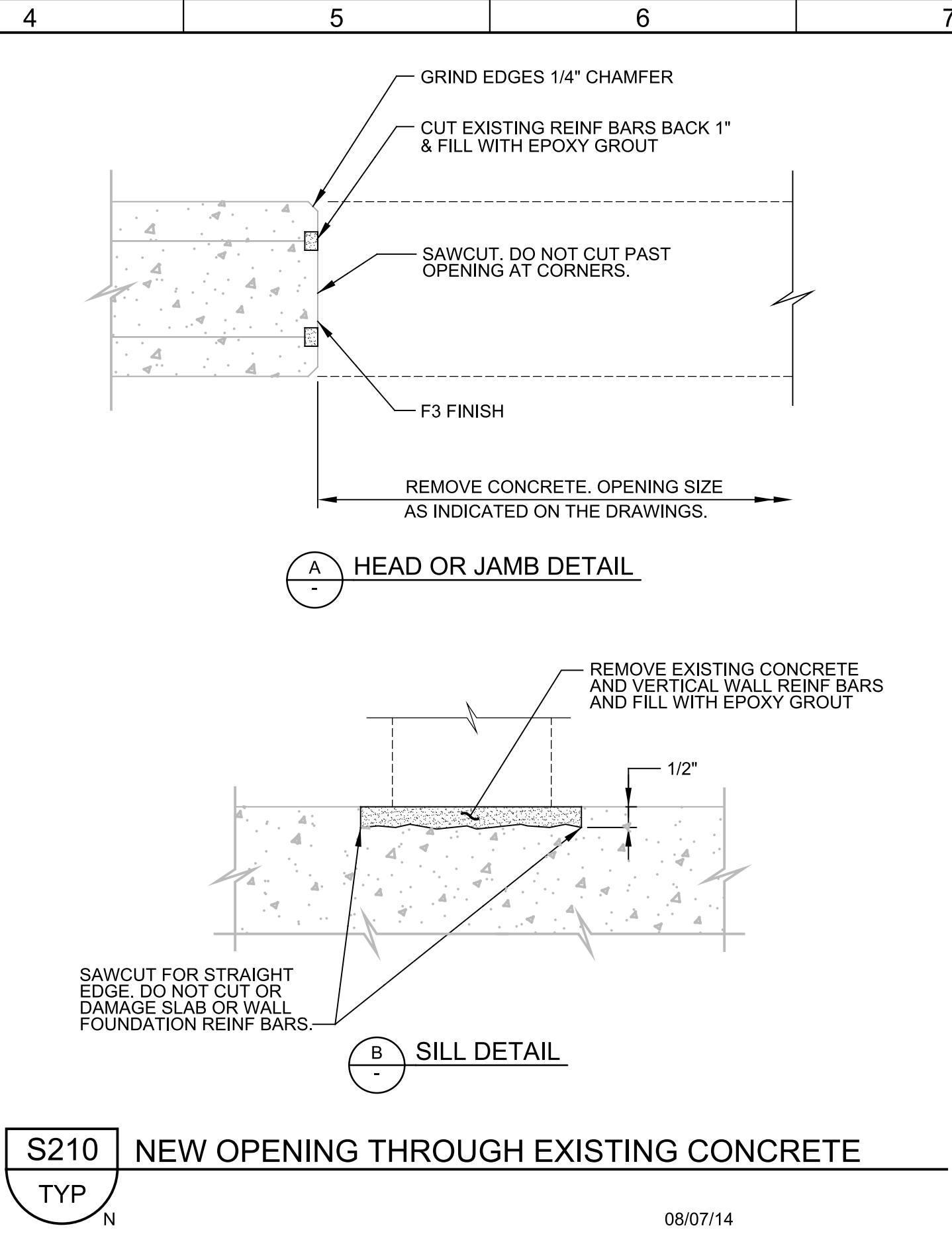
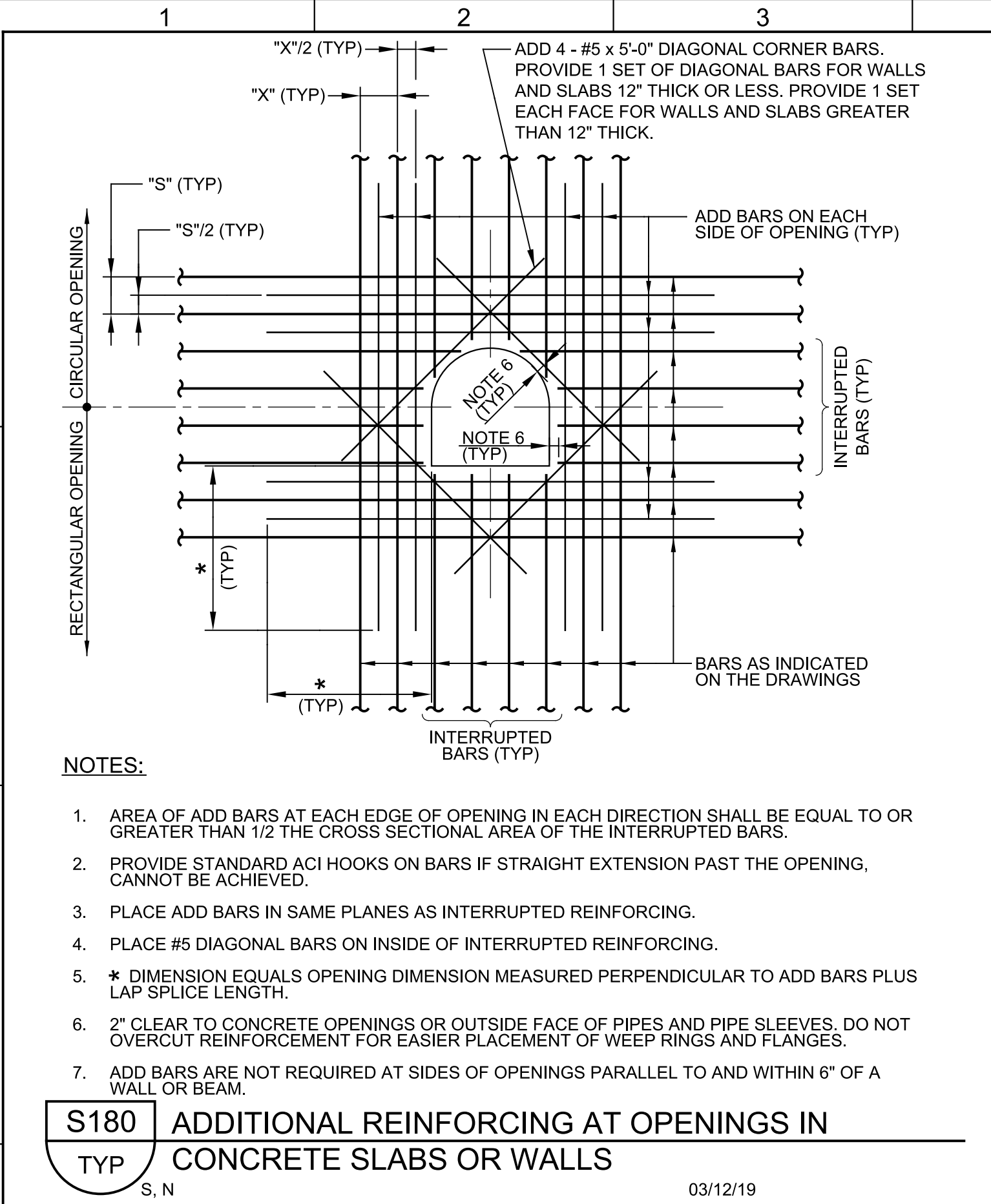
05/31/16



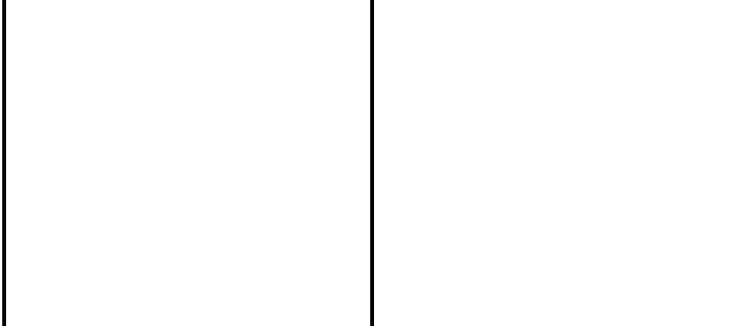
CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
STRUCTURAL TYPICAL DETAILS 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

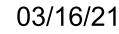
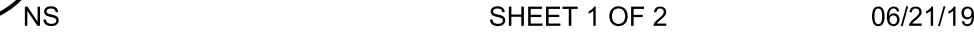
JOB NO. 201351
DRAWING NO. 00TS02
SHEET NO. 68 OF 81



REV	DATE	BY	DESCRIPTION
1			
2			
3			



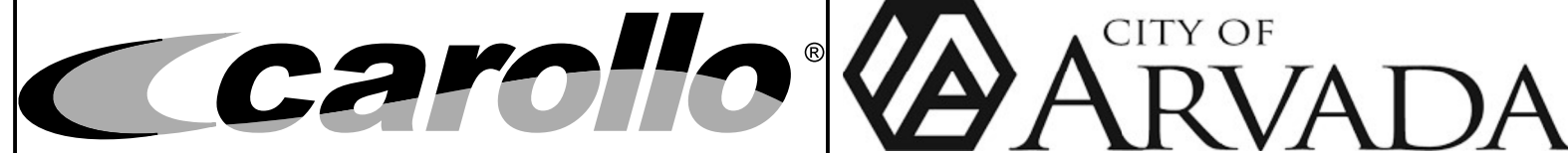
CITY OF ARVADA, COLORADO	VERIFY SCALES	JOB NO. 201351
RALSTON WTP SOLIDS IMPROVEMENTS	BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00TS03
STRUCTURAL TYPICAL DETAILS 3	0 1"	SHEET NO. 69 OF 81



- SHEET 3 OF 3 01/10/23

- 09/23/22

DESIGNED
MKF
DRAWN
KA
CHECKED
MAK
DATE
JANUARY 2023



VERIFY SCALES

BAR IS ONE INCH ON
ORIGINAL DRAWING

0  1"

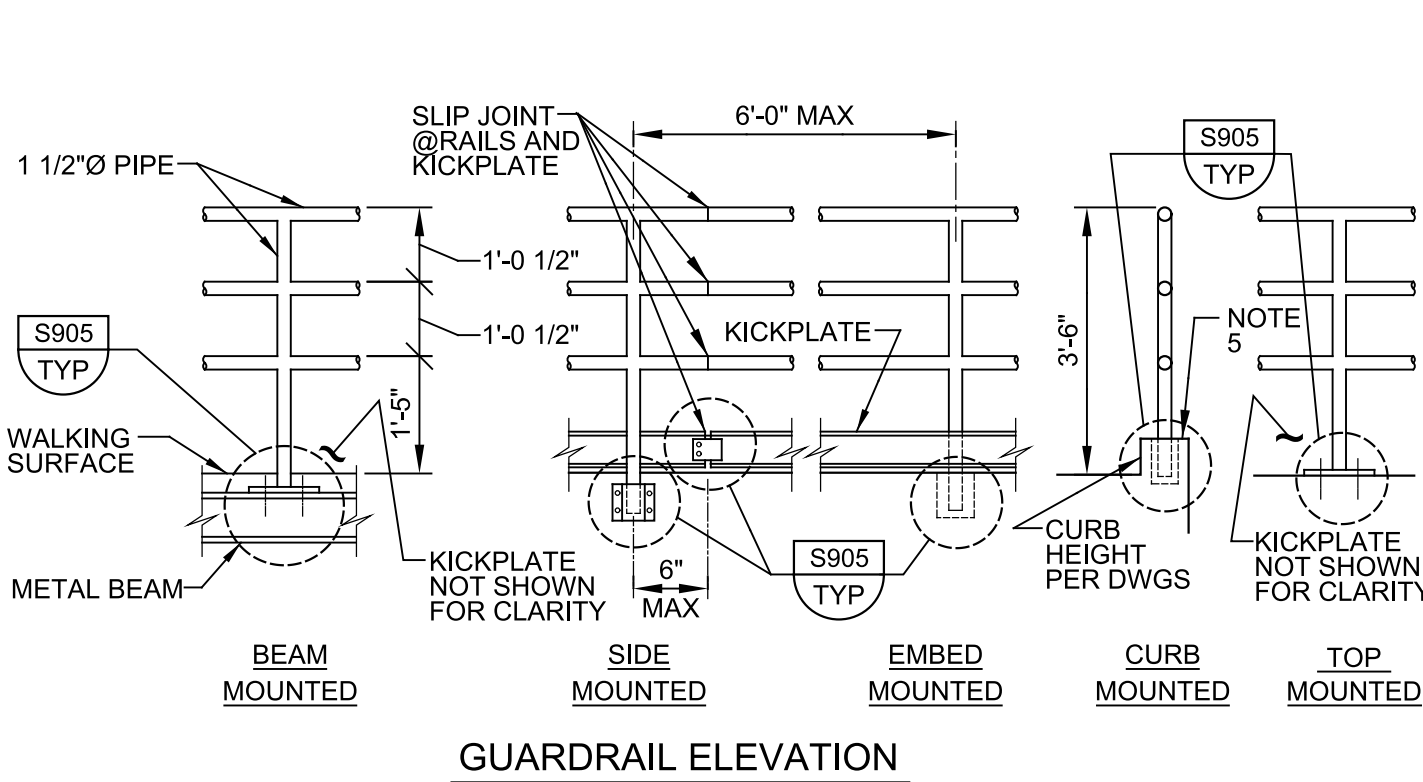
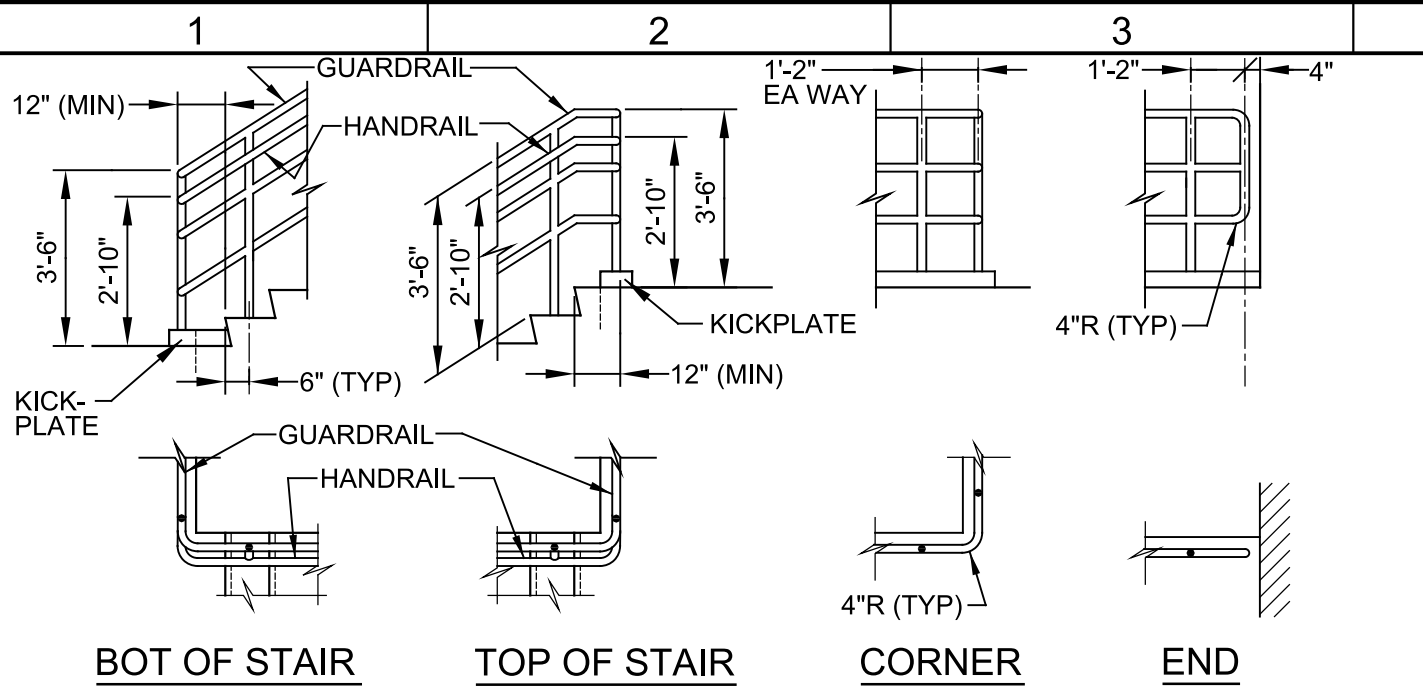
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THIS SHEET, ADJUST
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Plot Date: 17-JAN-2023 5:48:54 PM

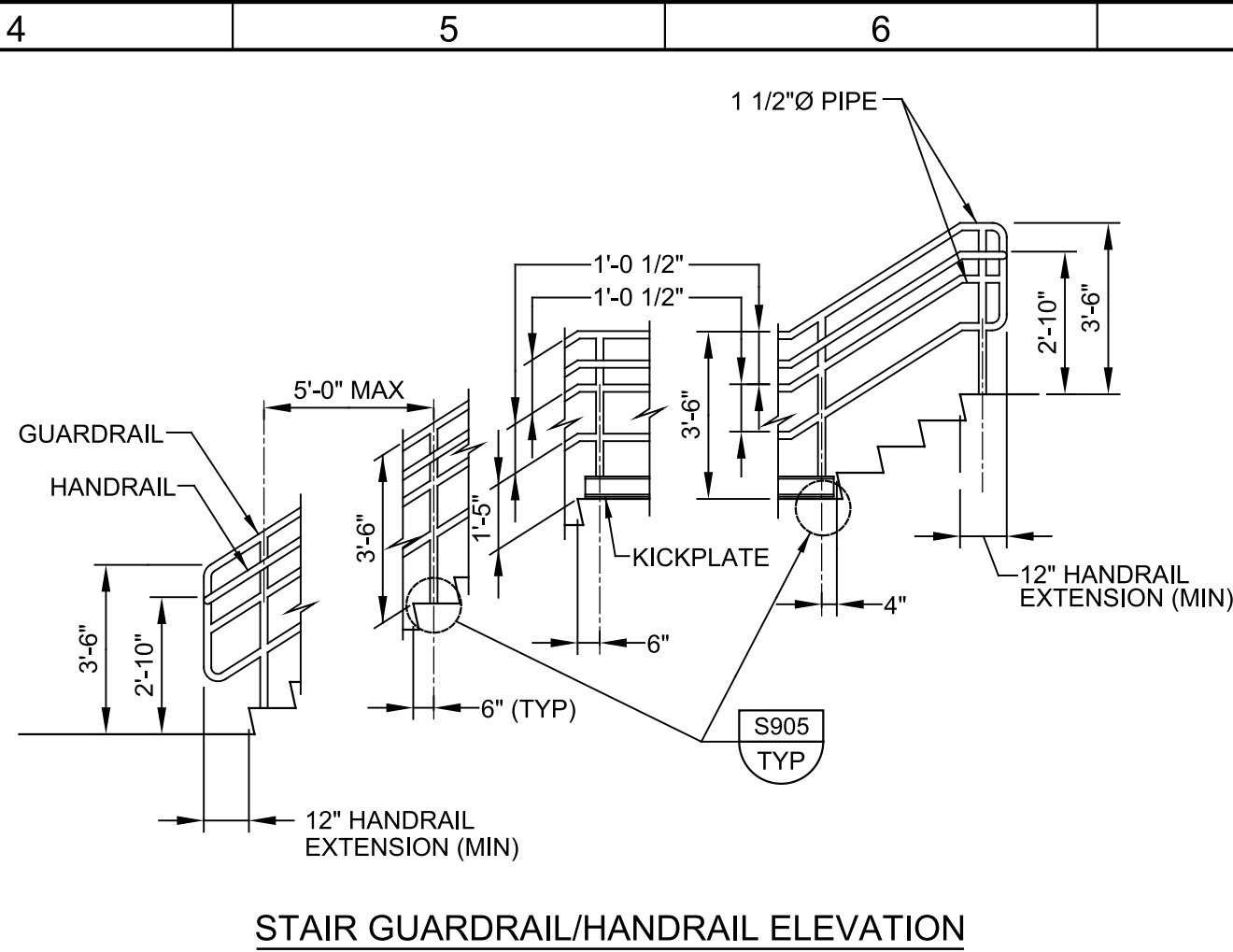
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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

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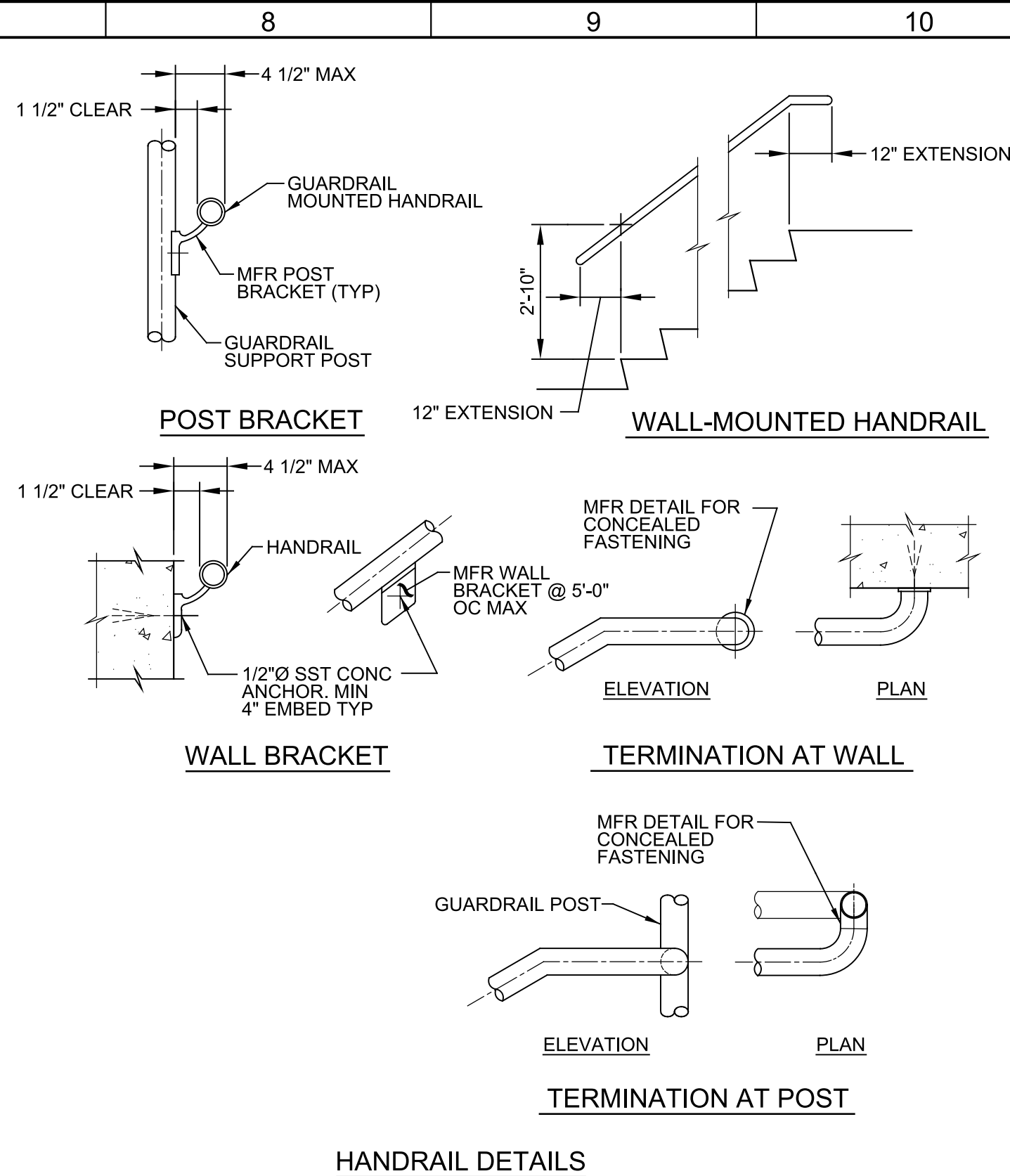


S904 GUARDRAIL - THREE RAIL
TYP J SHEET 1 OF 3 01/10/23

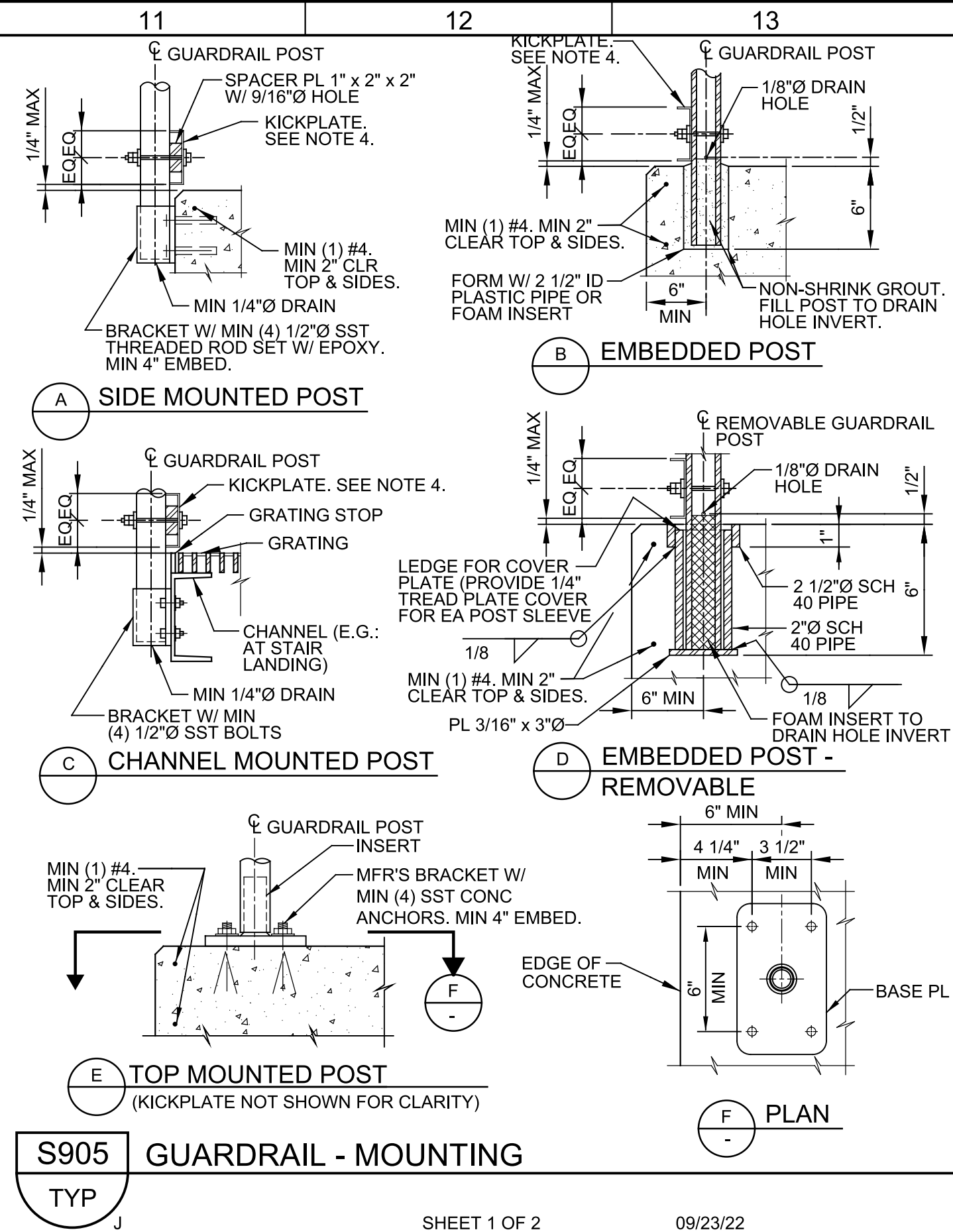


- NOTES:
- THIS DETAIL IS APPLICABLE AT PRIVATE STAIRS IN F, H, AND S OCCUPANCIES WHERE OPERATOR ONLY ACCESS IS REQUIRED. DETAILS AND INSTALLATION SHALL COMPLY WITH THE BUILDING CODE.
 - SEE SPECIFICATIONS AND DETAIL S903/TYP FOR ADDITIONAL REQUIREMENTS.
 - VARIOUS POST MOUNTING DETAILS ARE ILLUSTRATED. SEE DRAWINGS AND DETAIL S905 /TYP FOR SPECIFIC MOUNTING REQUIREMENTS.
 - HANDRAIL EXTENSIONS ARE REQUIRED ON BOTH SIDES OF STAIR, EXCEPT WHERE INSIDE HANDRAIL IS CONTINUOUS AT SWITCHBACK STAIR.
 - AT CURB, USE EMBEDDED OR TOP MOUNTED POST AS INDICATED ON THE DRAWINGS.

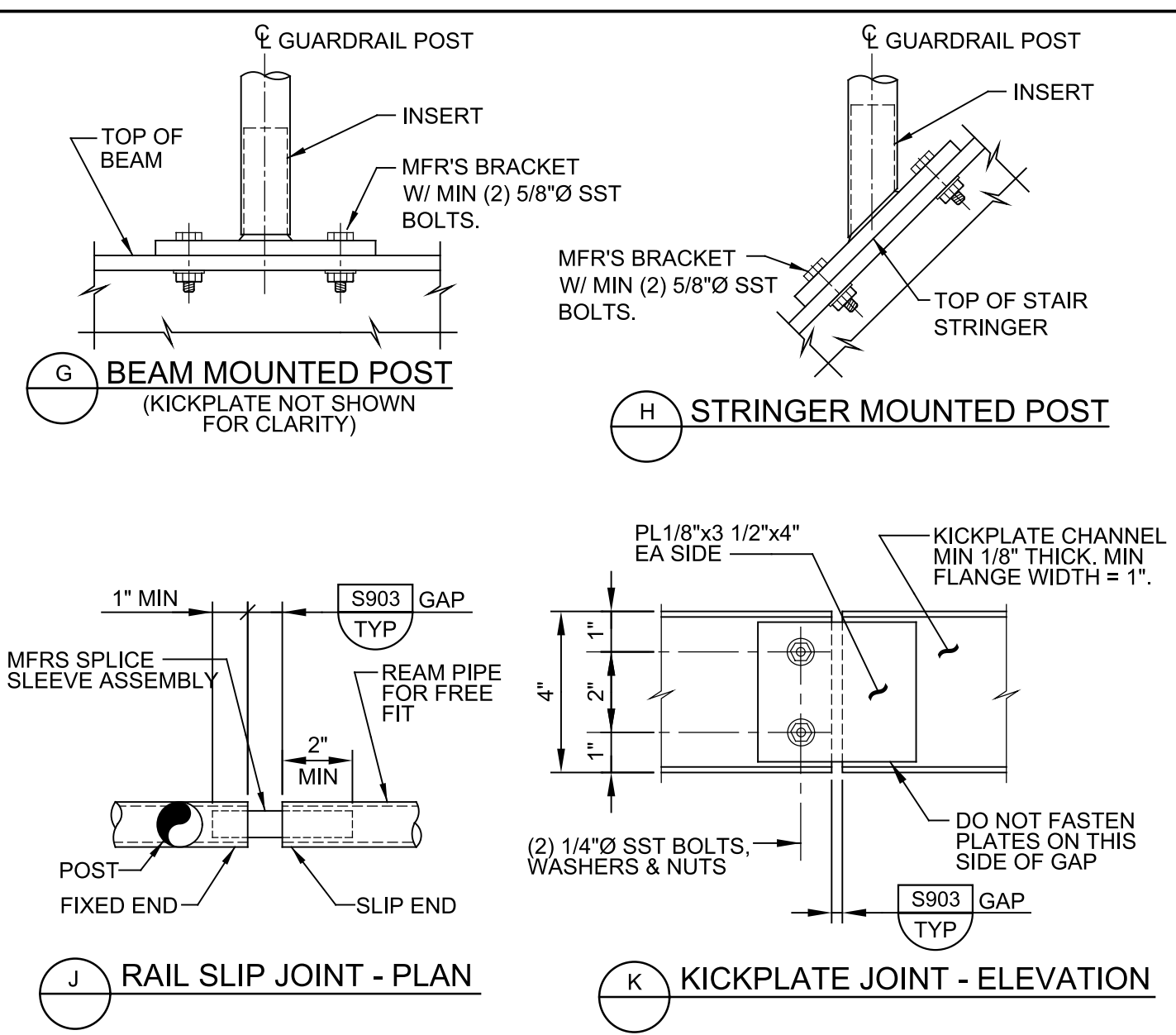
S904 GUARDRAIL - THREE RAIL
TYP J SHEET 2 OF 3 01/10/23



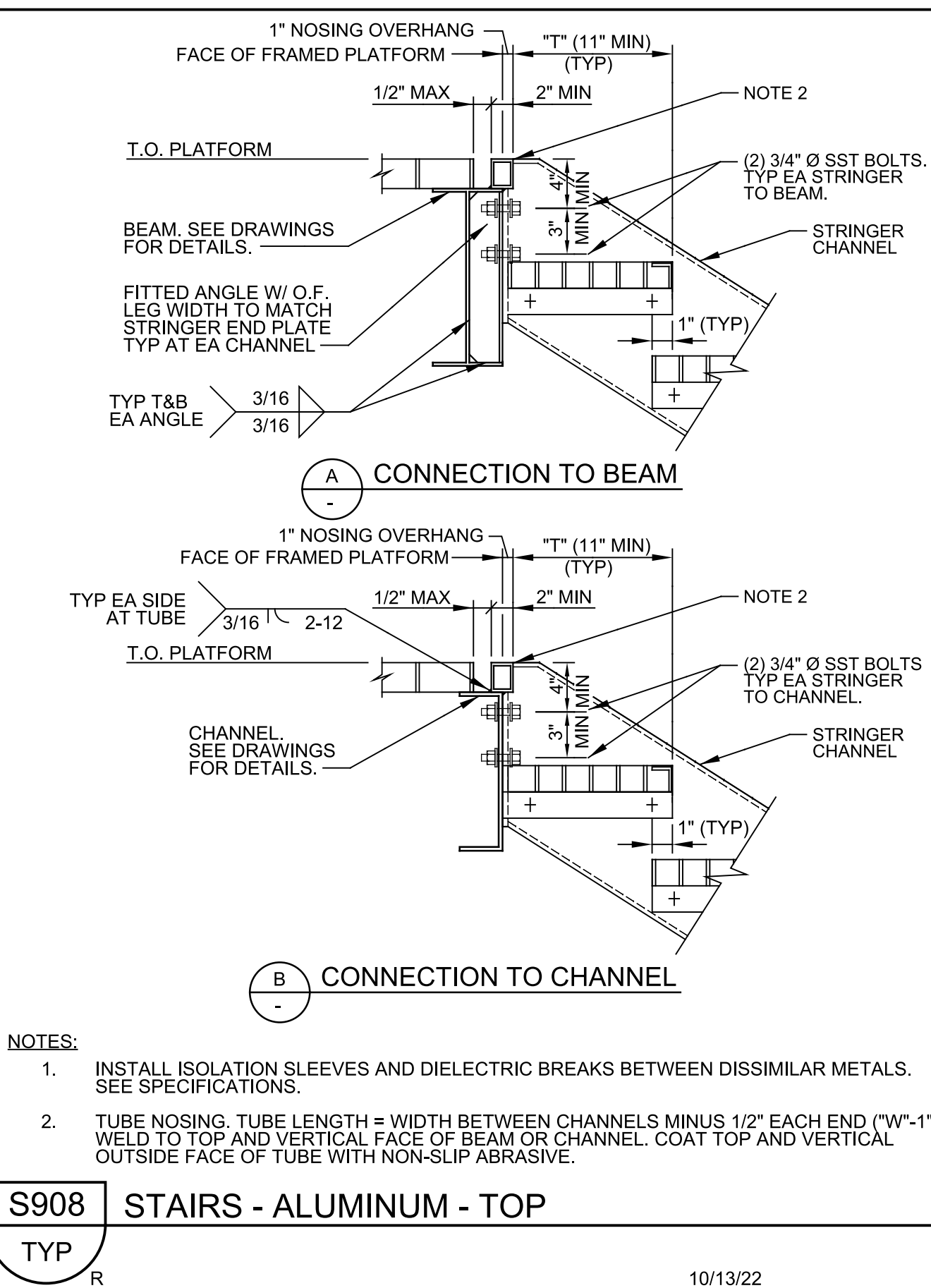
S904 GUARDRAIL - THREE RAIL
TYP J SHEET 3 OF 3 01/10/23



S905 GUARDRAIL - MOUNTING
TYP J SHEET 1 OF 2 09/23/22



S905 GUARDRAIL - MOUNTING
TYP J SHEET 2 OF 2 09/23/22

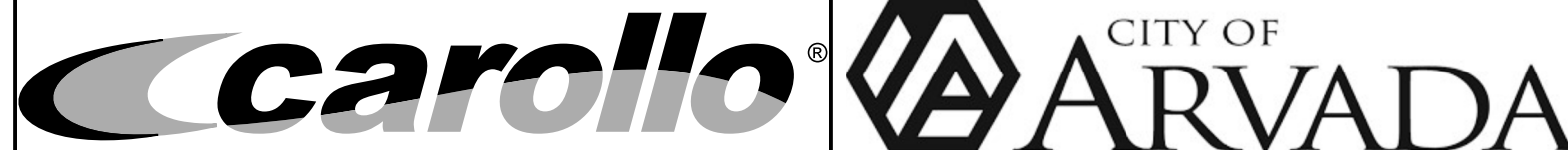


- NOTES:
- INSTALL ISOLATION SLEEVES AND DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS. SEE SPECIFICATIONS.
 - TUBE NOSING. TUBE LENGTH = WIDTH BETWEEN CHANNELS MINUS 1/2" EACH END ("W"-1"). WELD TO TOP AND VERTICAL FACE OF BEAM OR CHANNEL. COAT TOP AND VERTICAL OUTSIDE FACE OF TUBE WITH NON-SLIP ABRASIVE.

S908 STAIRS - ALUMINUM - TOP
TYP R 10/13/22

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED MKF
DRAWN KA
CHECKED MAK
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
STRUCTURAL TYPICAL DETAILS 5

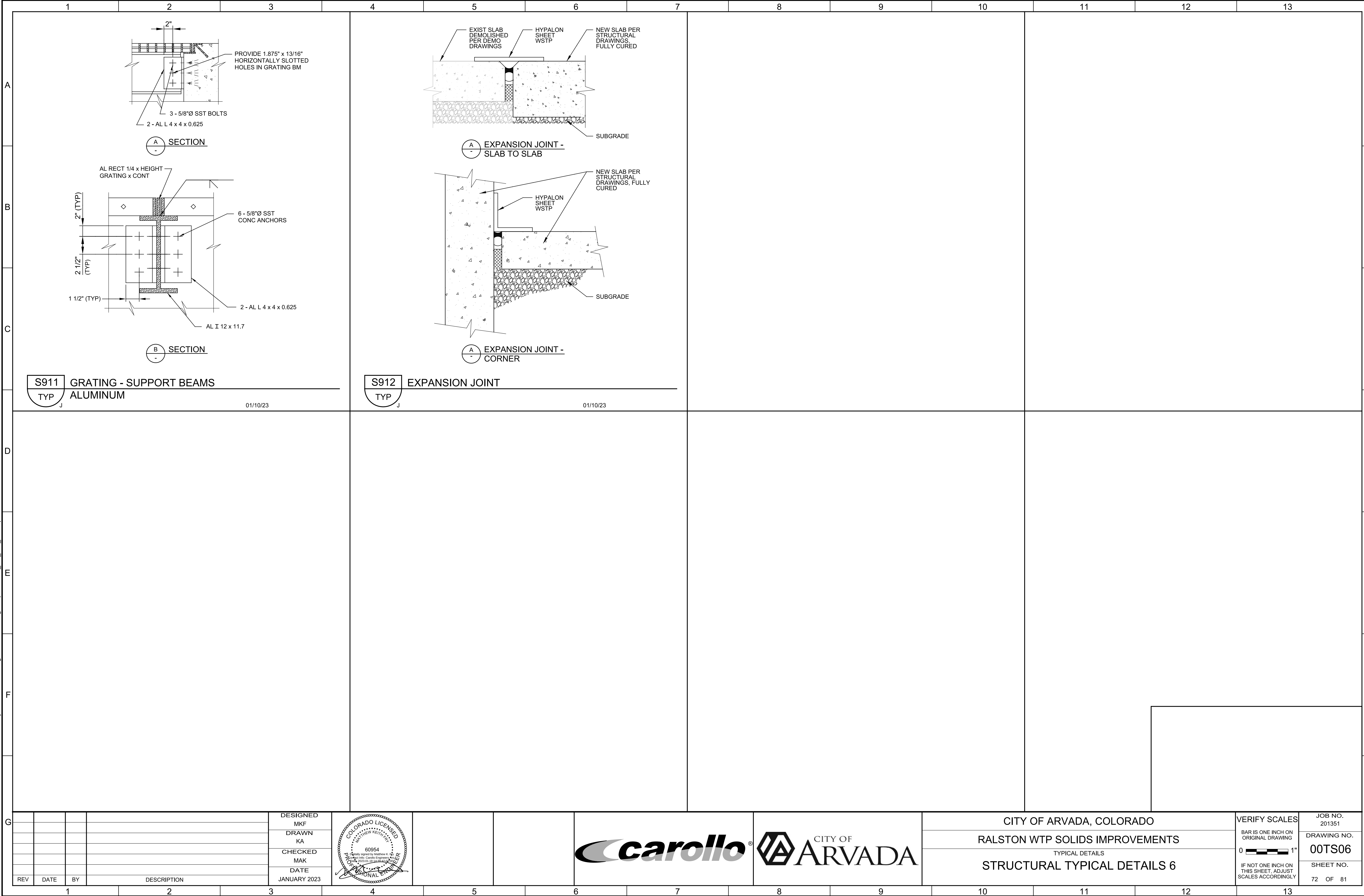
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
JOB NO. 201351
DRAWING NO. 00TS05
SHEET NO. 71 OF 81

Plot Date: 17-JAN-2023 5:48:48 PM

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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: KAlkin

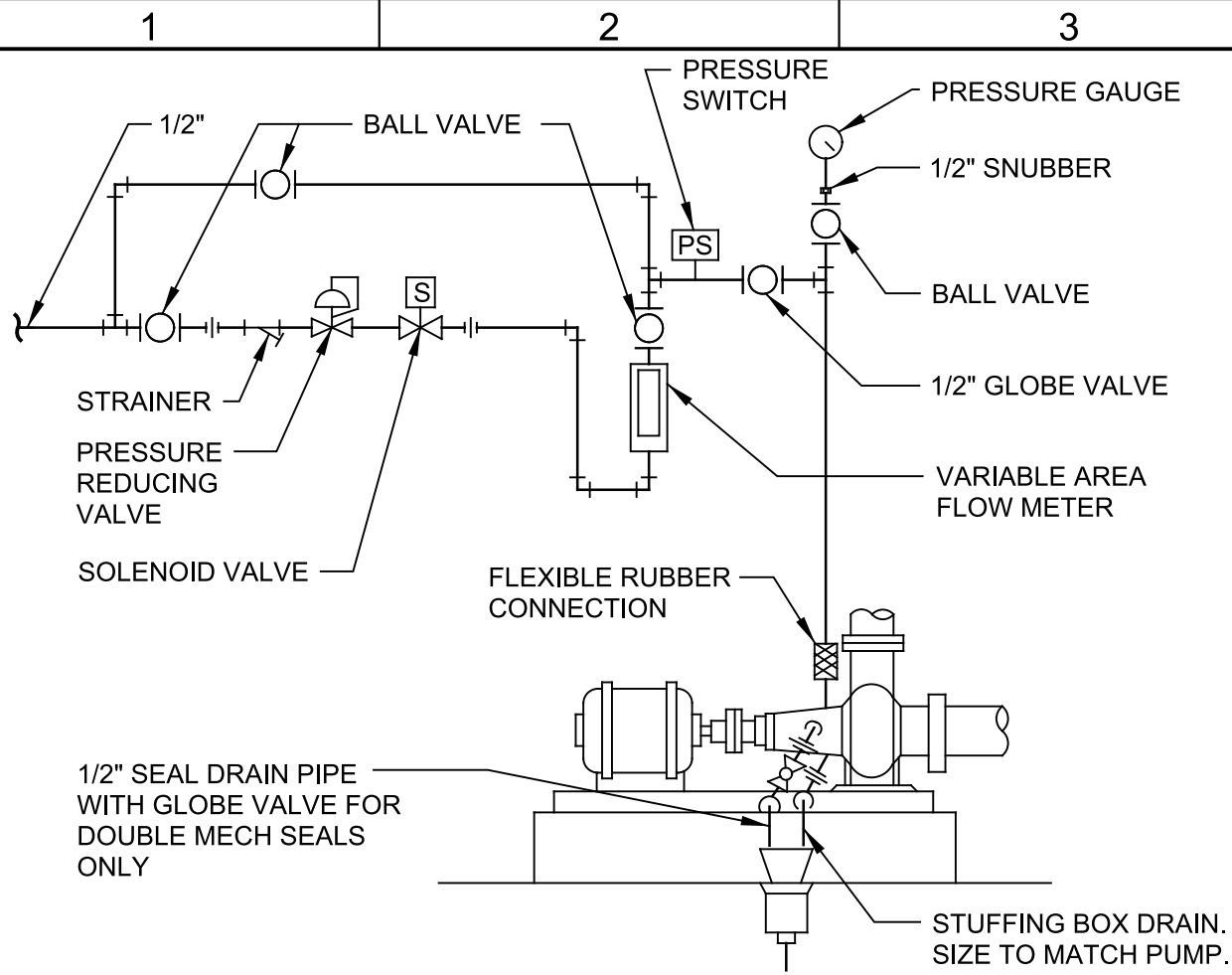


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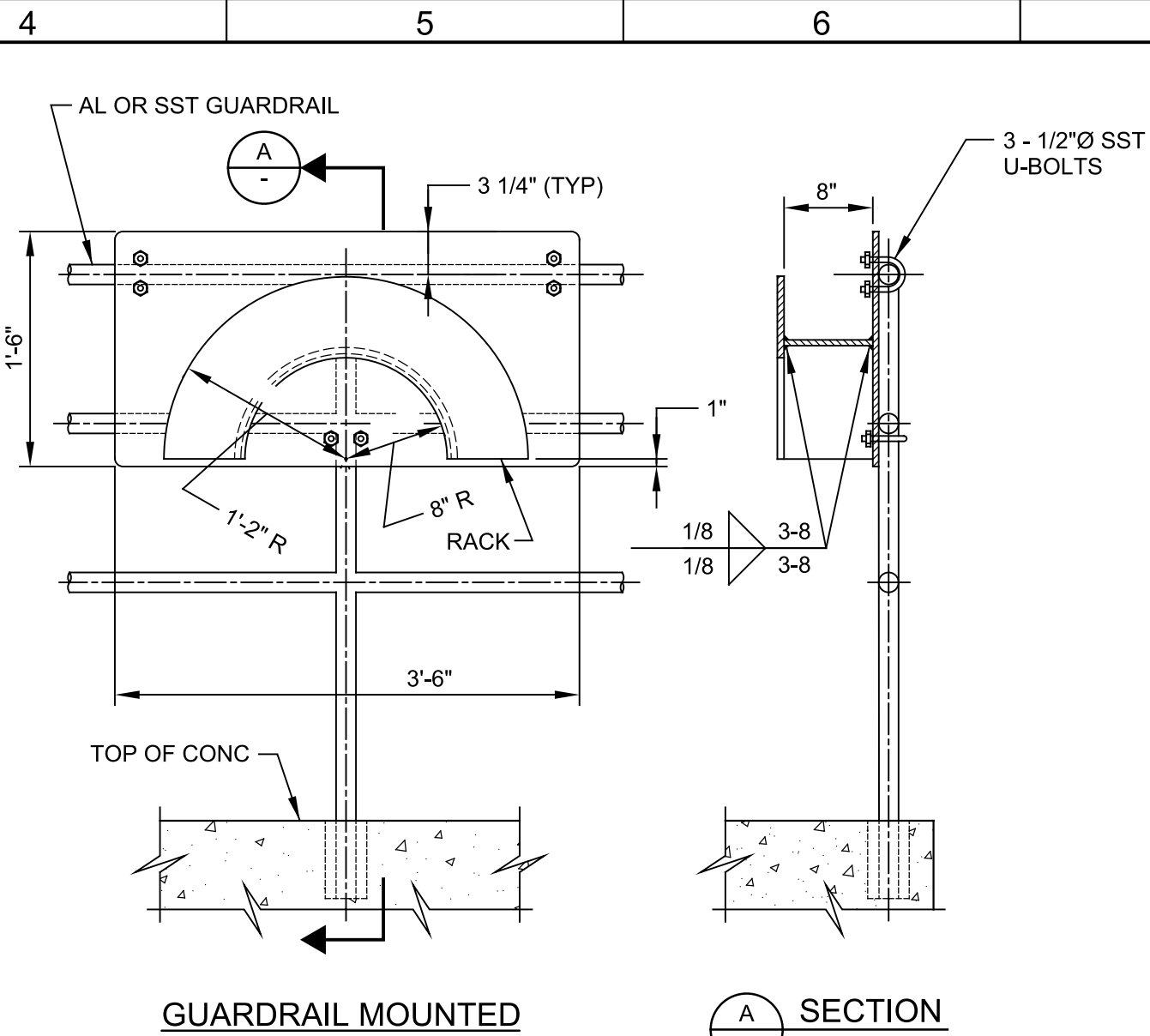


- NOTES:
1. THIS INSTALLATION IS TO BE USED AT ALL PUMPS WITH SEAL WATER/FLUSH.
 2. FLOW METER CAPACITY AND PIPING SYSTEM SHALL MEET PUMP AND SEAL MANUFACTURERS REQUIREMENTS.
 3. UNLESS SPECIFIED OTHERWISE, ALL PIPING SHALL BE GSP.
 4. WALL MOUNT EQUIPMENT IF NEAREST WALL IS WITHIN TEN FEET OF PUMP.
 5. WHERE A DRIP PAN IS SPECIFIED AND/OR PROVIDED ON THE PUMP BASE, A SEPARATE DRAIN LINE TO THE EQUIPMENT DRAIN SHALL BE PROVIDED.
 6. WHEN AN INDICATING FLOW SWITCH IS USED, DELETE THE VARIABLE AREA FLOW METER.
 7. PROJECTS IN AREAS WITH FREEZING TEMPERATURES SHOULD MODIFY THE DESIGN TO PROVIDE INSULATION OF THE ROTAMETER.

M262
TYP
N

SEAL WATER PIPING

10/22/21



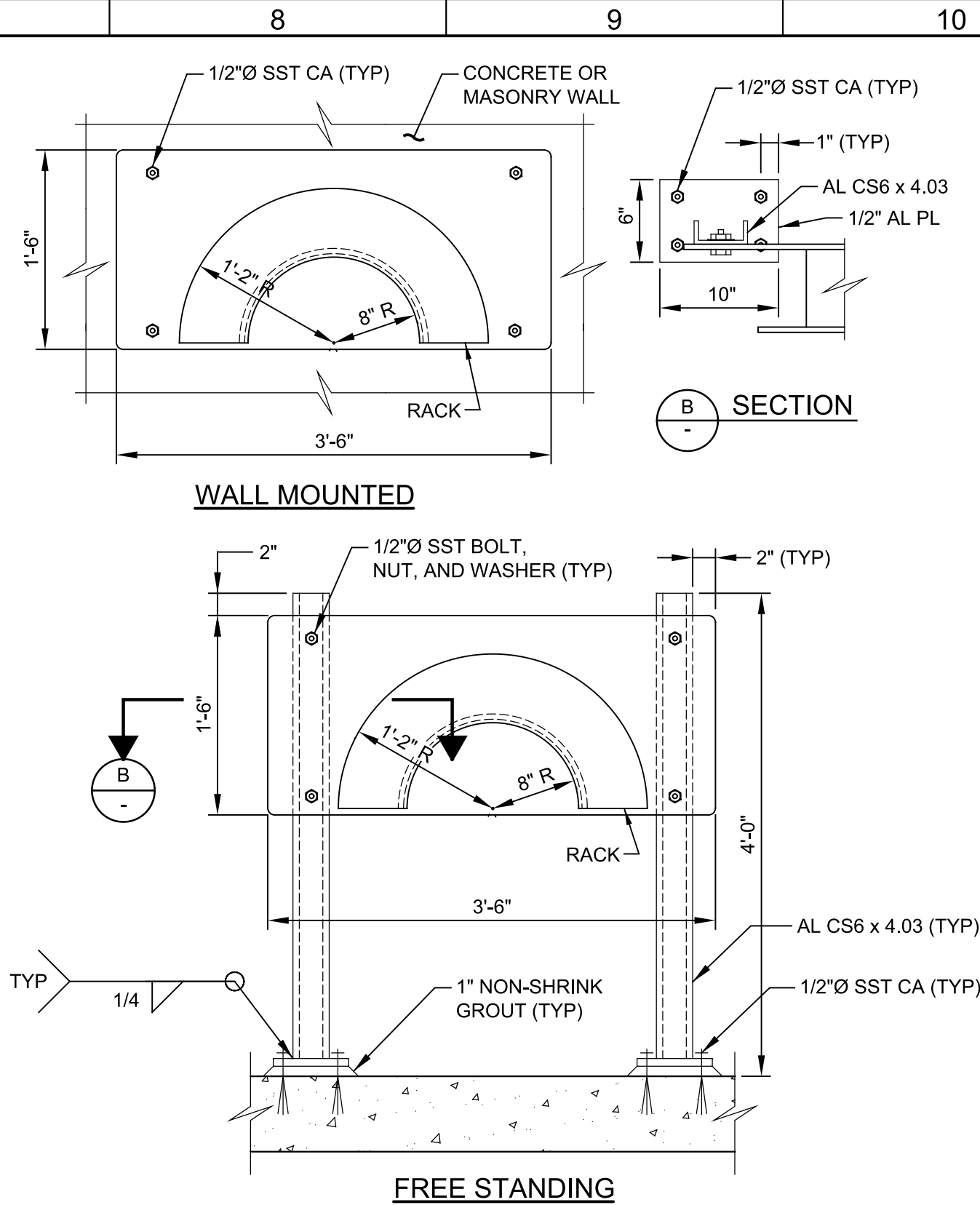
- NOTES:
1. HOSE RACK SHALL BE FABRICATED FROM 3/16" ALUMINUM PLATE. ROUND ALL EDGES SMOOTH.
 2. HOSE RACKS INSTALLED IN YARD LOCATIONS SHALL BE FREESTANDING. ANCHOR TO A 4'-6" LONG x 2'-0" WIDE x 12" DEEP CONCRETE PAD WITH #5@12" EW, T&B.
 3. WALL MOUNTED HOSE RACKS ON MASONRY WALL SHALL BE FASTEN TO GROUTED CELLS.

M280
TYP
S

HOSE RACK

SHEET 1 OF 2

10/28/13



M280
TYP
S

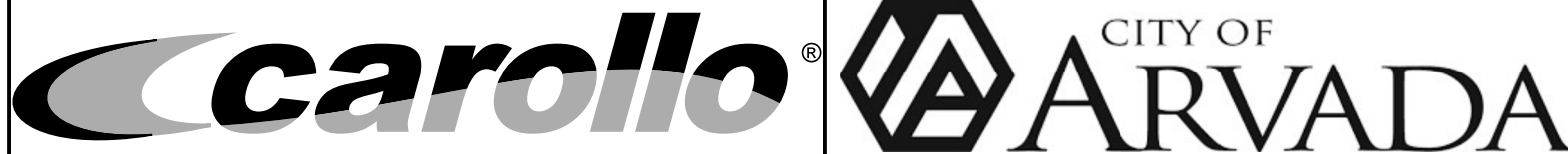
HOSE RACK

SHEET 2 OF 2

10/28/13

REV	DATE	BY	DESCRIPTION

DESIGNED SH
DRAWN TLR
CHECKED WWS
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
MECHANICAL TYPICAL DETAILS 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

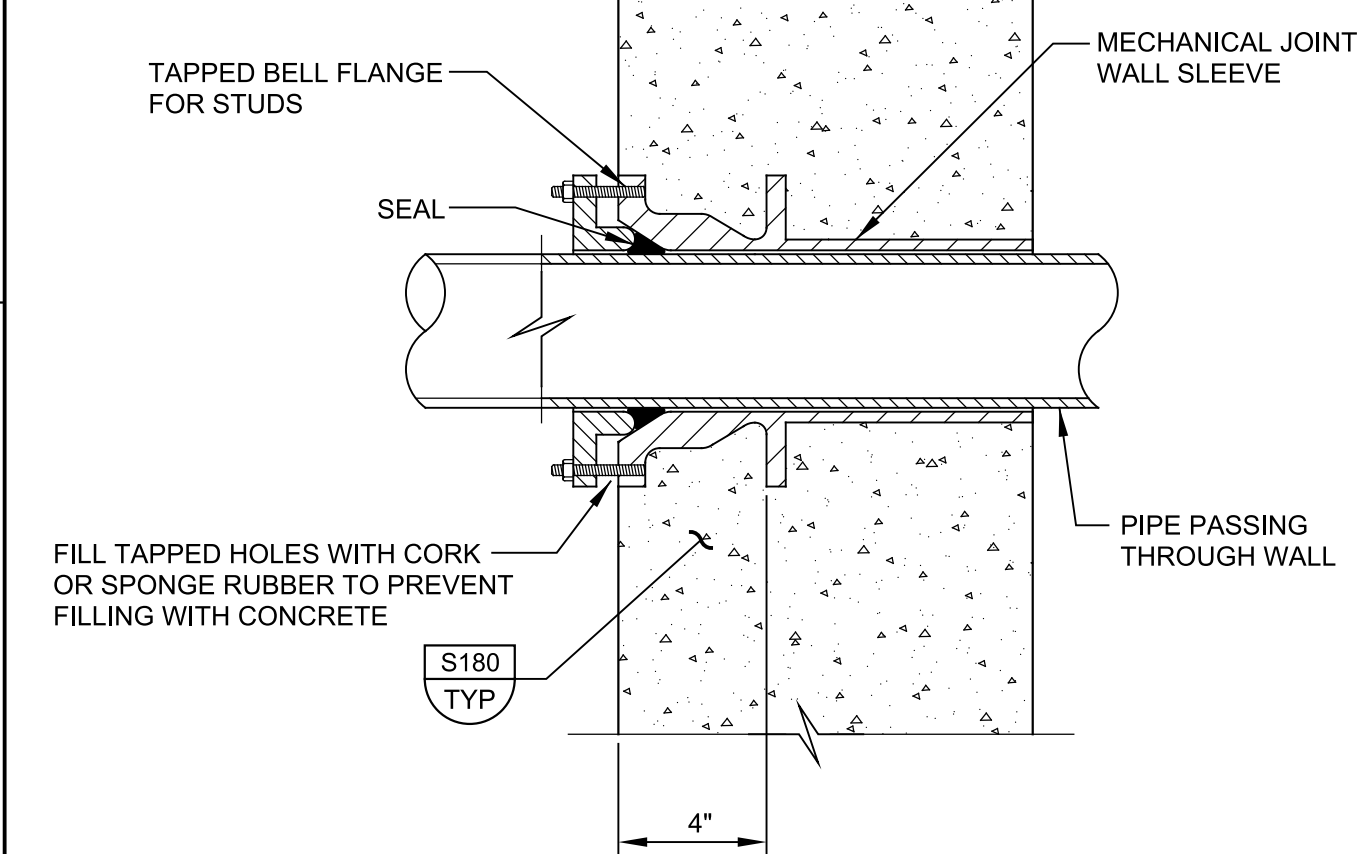
JOB NO. 201351
DRAWING NO. 00TM01
SHEET NO. 73 OF 81

Plot Date: 17-JAN-2023 2:23:27 PM

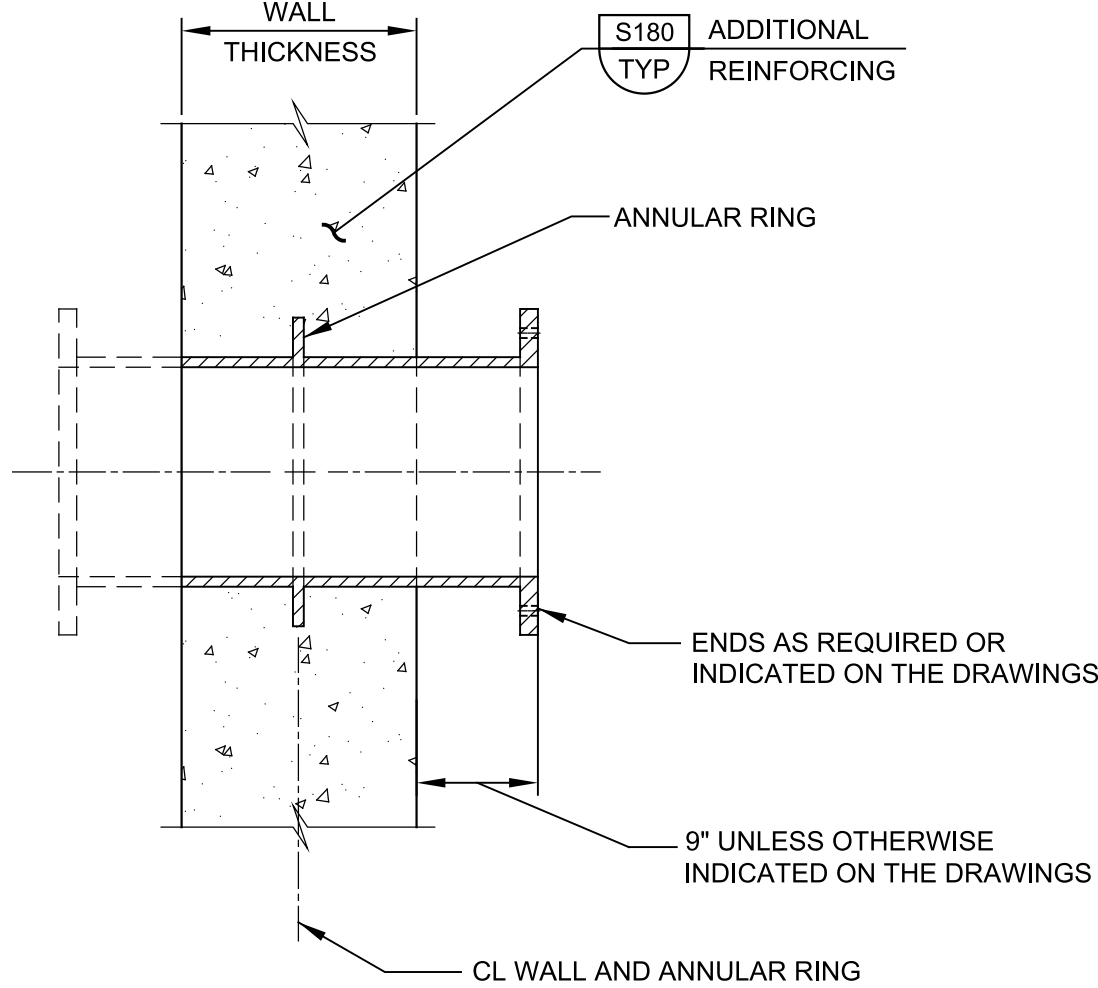
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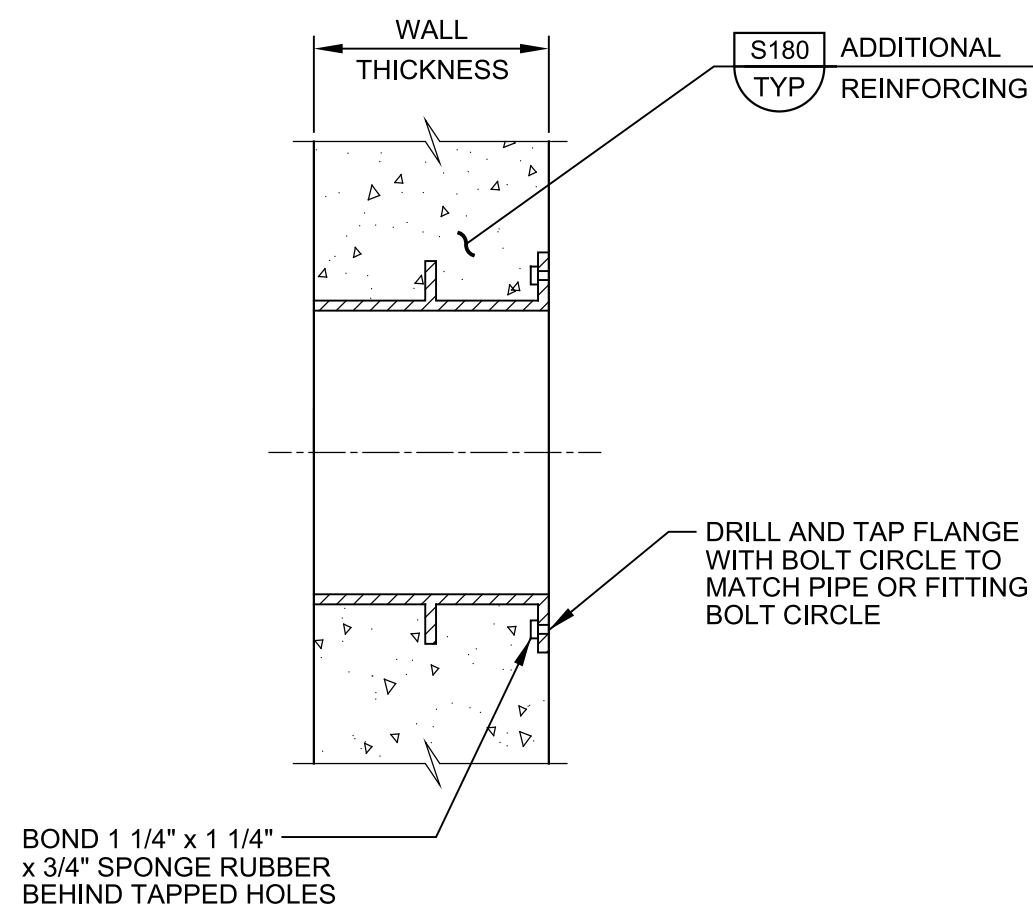
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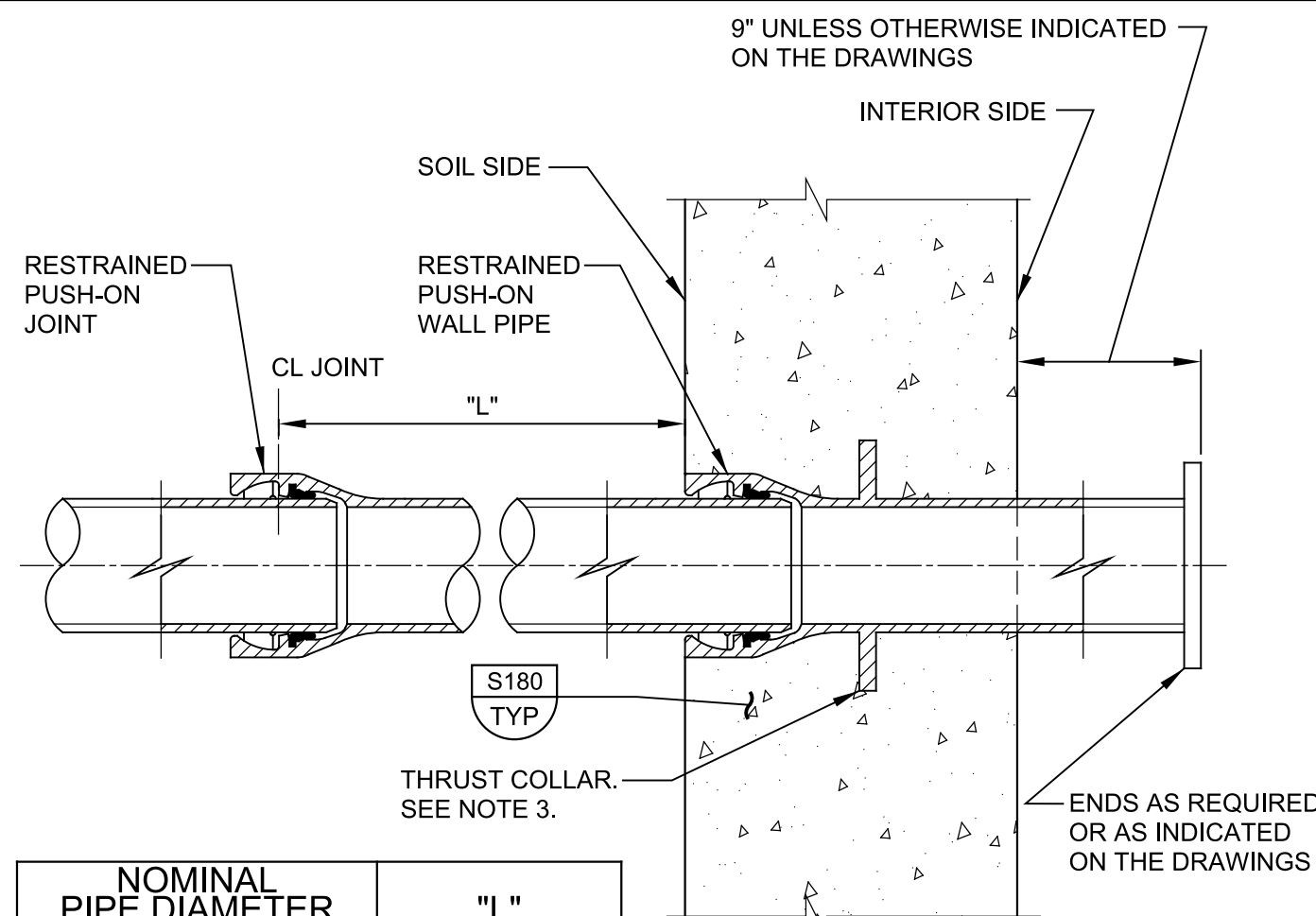
P308 DIP PIPE SLEEVE
TYP N 07/31/08



P312 WALL THIMBLE FOR DIP
TYP N 01/30/2015



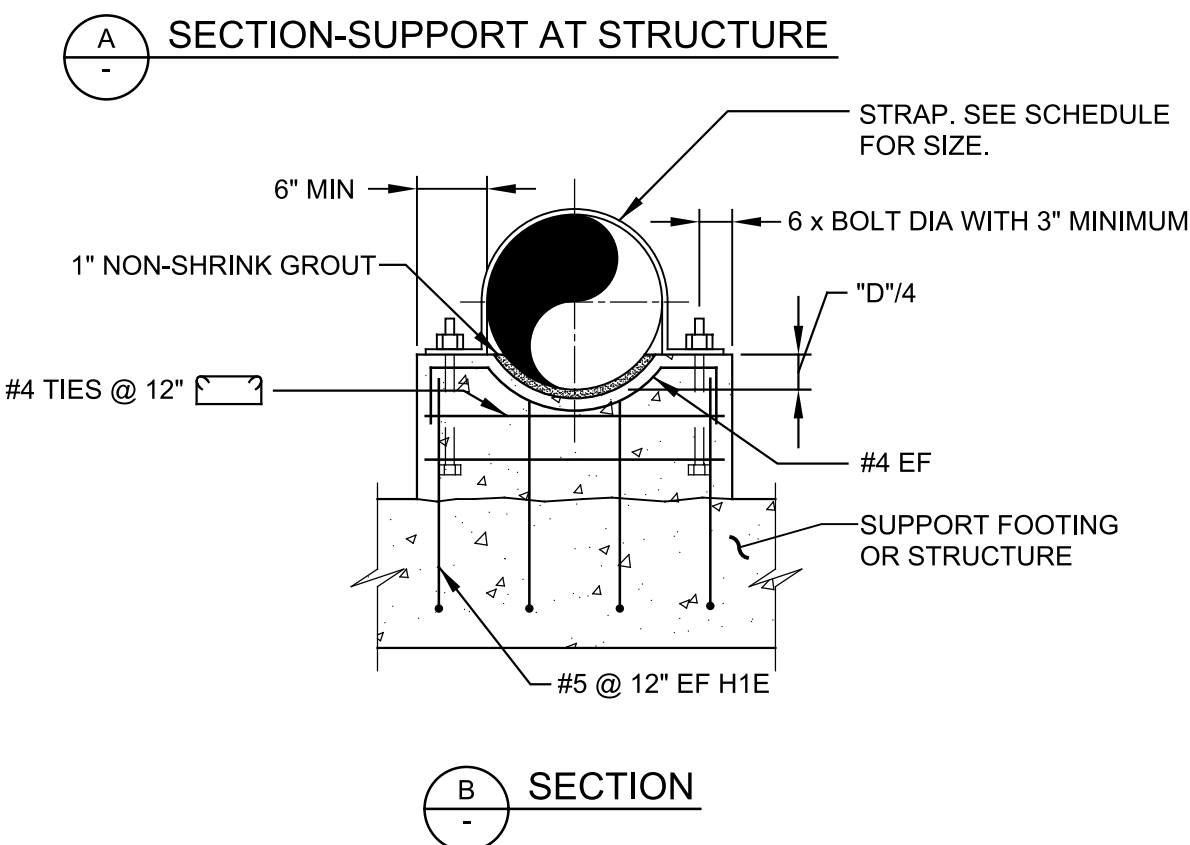
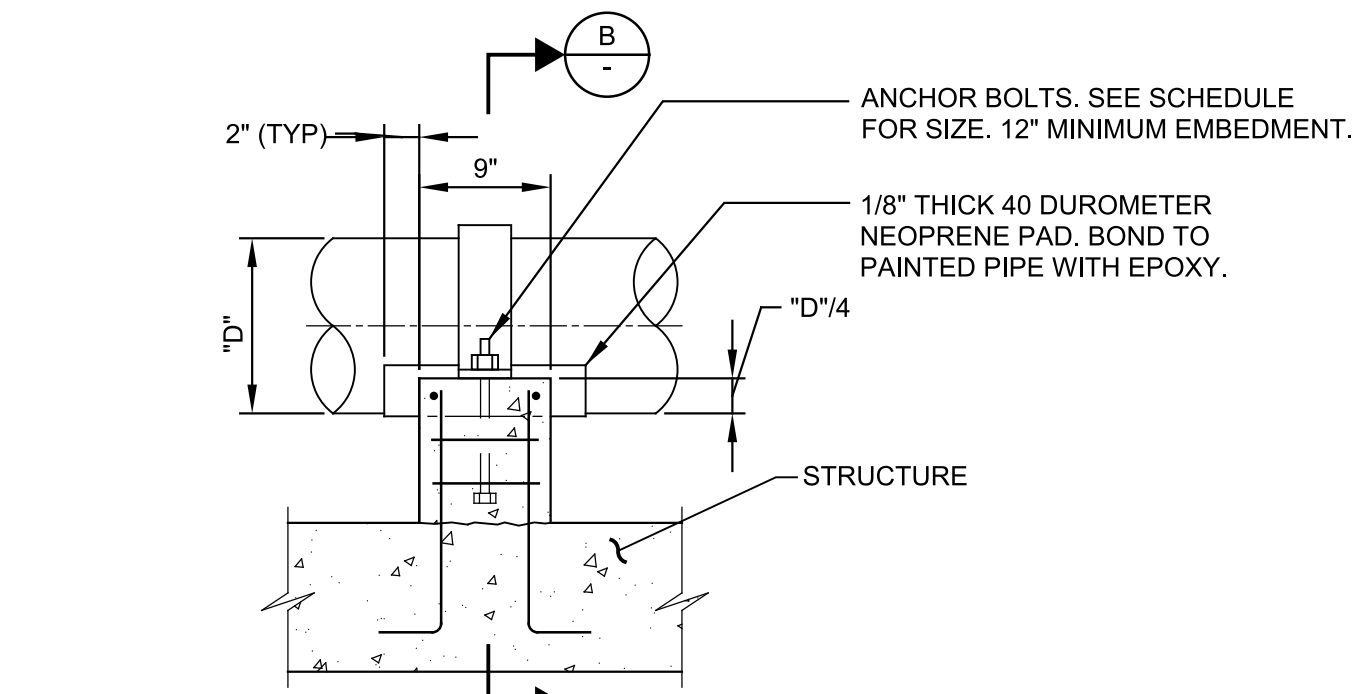
P314 WALL THIMBLE WITH TAPPED FLANGE FOR DIP
TYP N 08/01/05



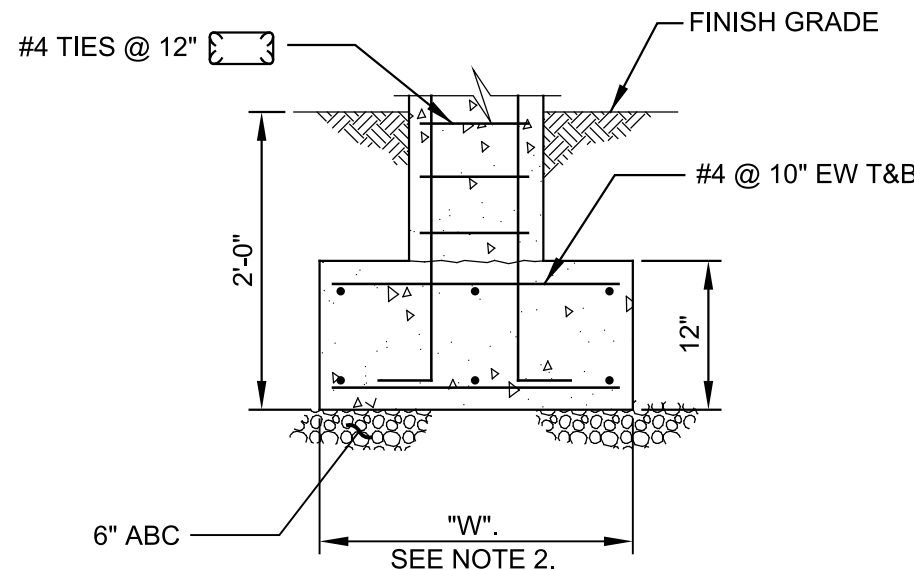
NOMINAL PIPE DIAMETER IN INCHES	"L"
LESS THAN 12"	5'-0"
GREATER THAN 12"- 18"	6'-6"
GREATER THAN 18"- 24"	7'-9"
GREATER THAN 24"- 36"	12'-9"
GREATER THAN 36"	STANDARD PIPE LENGTH

- NOTES:
- FLEXIBLE CONNECTION IS DESIGNED TO ACCOMMODATE SETTLEMENT AND EARTHQUAKE MOVEMENT.
 - PIPES SHALL BE INSTALLED STRAIGHT WITHOUT HORIZONTAL OR VERTICAL OFFSET. DO NOT USE JOINT ANGULAR DEFLECTION TO MAKE UP FOR MISALIGNED PIPE.
 - WALL PIPE WITH WEEP RING (THRUST COLLAR) SHALL BE CAPABLE OF RESISTING THRUST.

P342 RESTRAINED DIP FLEXIBLE CONNECTION AT WALL PENETRATION
TYP N 07/31/08



P602 CONCRETE PIPE SUPPORT
TYP N 07/19/16

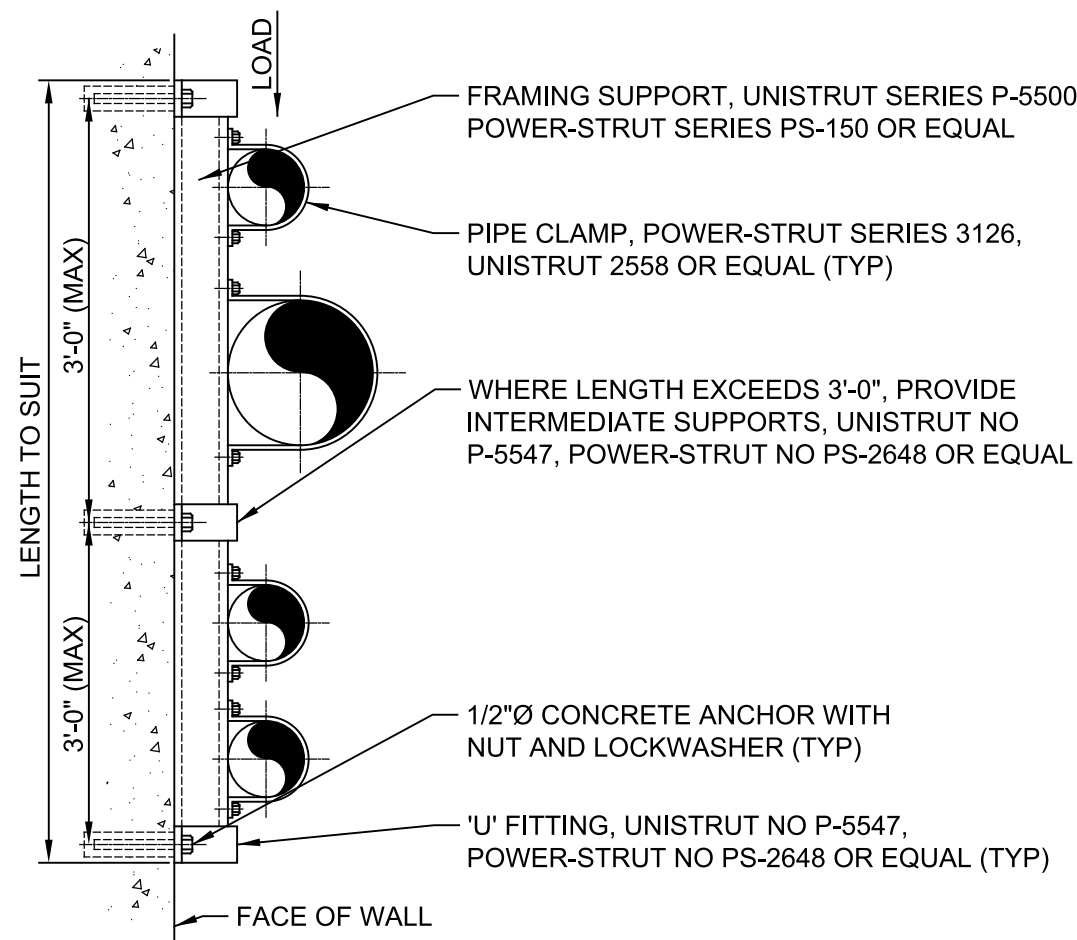


C SECTION-ISOLATED SUPPORT WITH FOOTING

PIPE SIZE	STRAP SIZE	ANCHOR BOLT DIA
8" - 12"	FB 1/4" x 4"	1/2"
14" - 24"	FB 5/16" x 4"	5/8"
26" - 36"	FB 3/8" x 4"	3/4"

- NOTES:
- IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, THE MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - THE WIDTH OF THE FOOTING "W" = 2'-6". THE LENGTH OF THE FOOTING = "D" + 2'-0".

P602 CONCRETE PIPE SUPPORT
TYP N 11/30/08

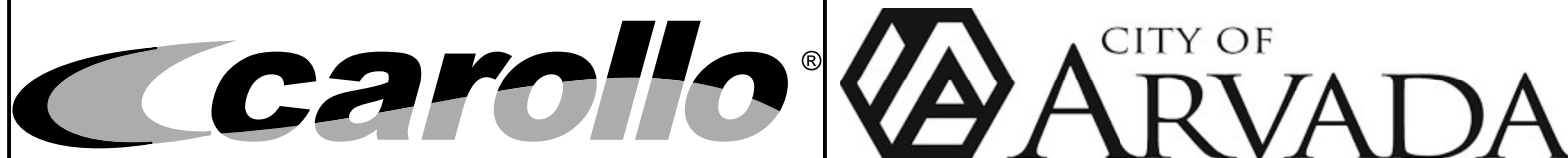


- NOTES:
- HOT DIP GALVANIZE PARTS AFTER FABRICATION.
 - WHERE SUBMERGED, PARTIALLY SUBMERGED, OR LOCATED WITHIN 24" OF A WATER SURFACE, PARTS SHALL BE TYPE 316 STAINLESS STEEL.
 - WHERE LOCATED IN CHEMICAL OR CORROSIVE AREAS, PARTS SHALL BE FRP OR TYPE 316 STAINLESS STEEL.

P621 FLUSH MOUNTED PIPE SUPPORT
TYP J (FOR PIPE 4"Ø AND SMALLER) 02/05/18

REV	DATE	BY	DESCRIPTION

DESIGNED SH
DRAWN TLR
CHECKED WWS
DATE
JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
PIPING TYPICAL DETAILS 2

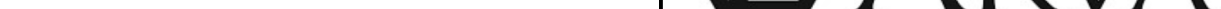
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201351
DRAWING NO. 00TP02
SHEET NO. 75 OF 81

P624	ADJUSTABLE PIPE SUPPORT
TYP	



- # P656 TYP VERTICAL PIPE SUPPORT - WALL BRACKET INSID



carollo® CITY OF ARVADA

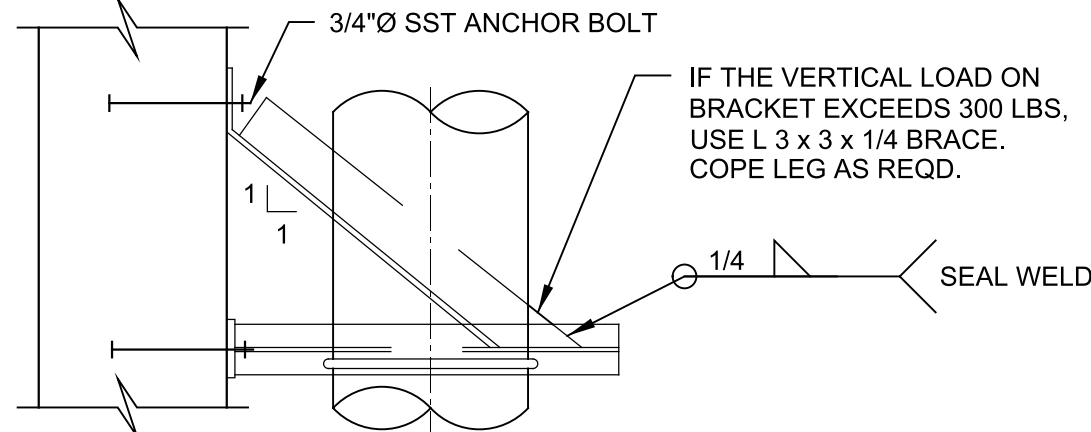
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0  1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 201351
	DRAWING NO. 00TP0
	SHEET NO. 76 OF 81

Plot Date: 17-JAN-2023 2:23:20 PM

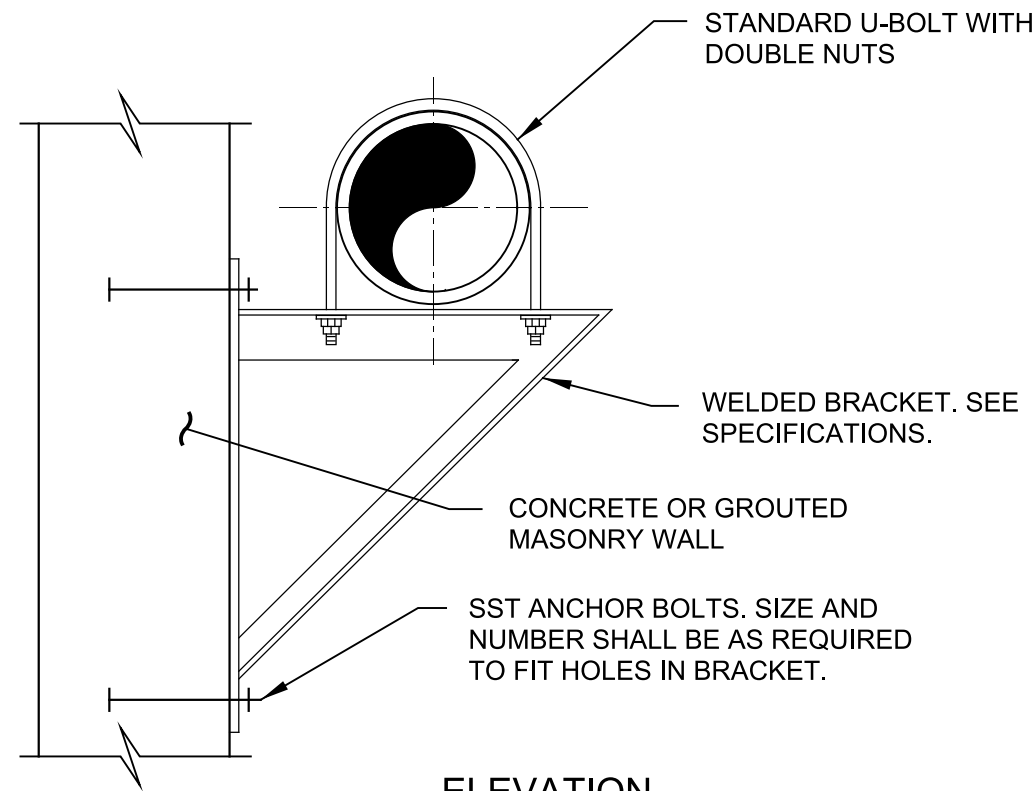
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LAST SAVED BY: irea



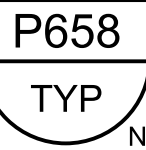
PLAN



ELEVATION

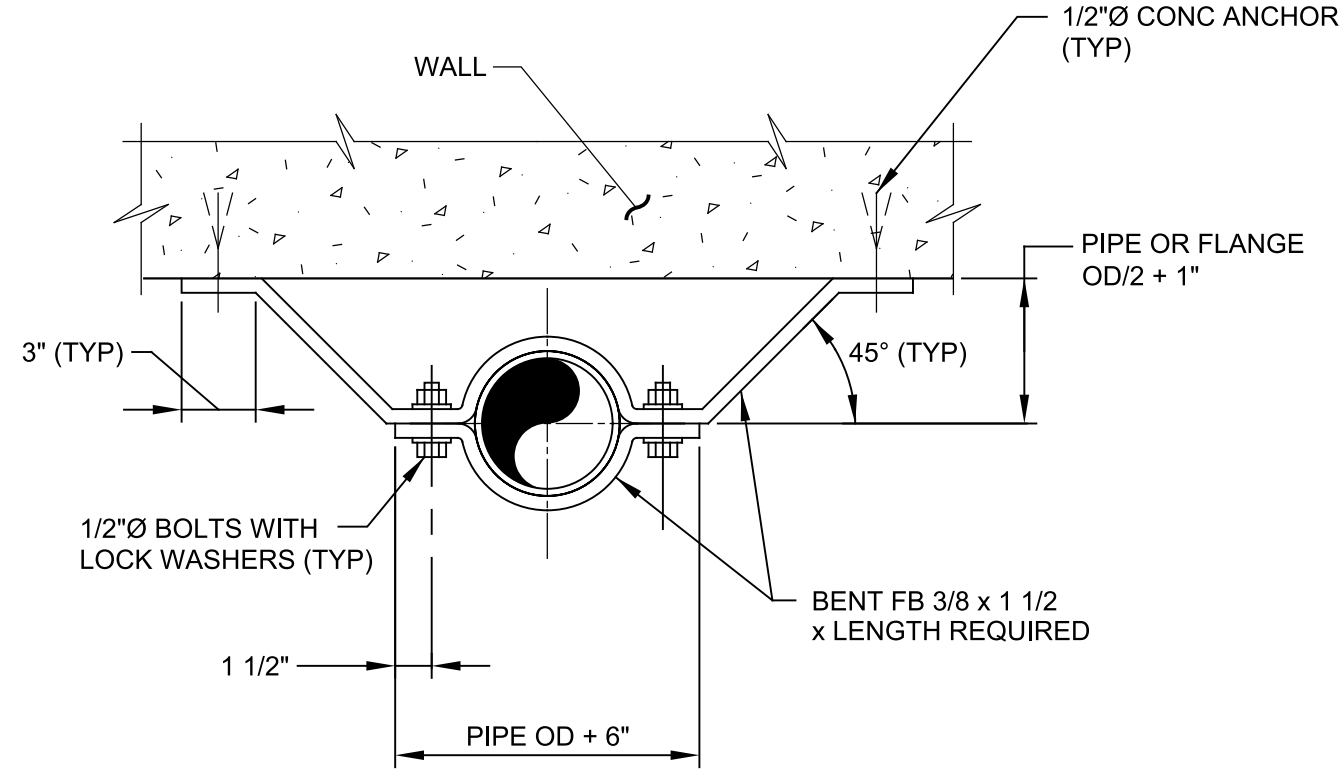
NOTES:

1. MAXIMUM ALLOWABLE VERTICAL LOAD IS THE SMALLER OF 1500 POUNDS AND THE MANUFACTURERS MAXIMUM ALLOWABLE BRACKET LOAD.
2. HOT-DIP GALVANIZE SUPPORT AFTER FABRICATION.
3. ISOLATE ALL COPPER PIPE WITH PVC TAPE.



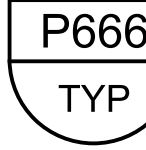
PIPE SUPPORT - WALL BRACKET BELOW

04/10/19



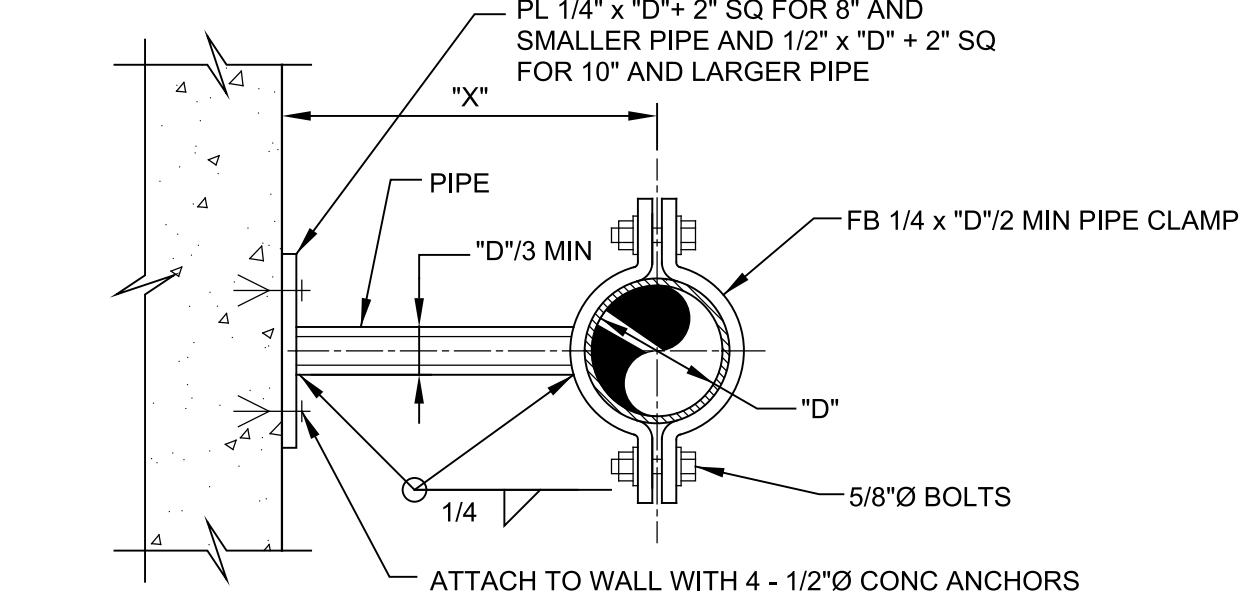
NOTE:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, ALL MATERIAL SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, ALL MATERIAL SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

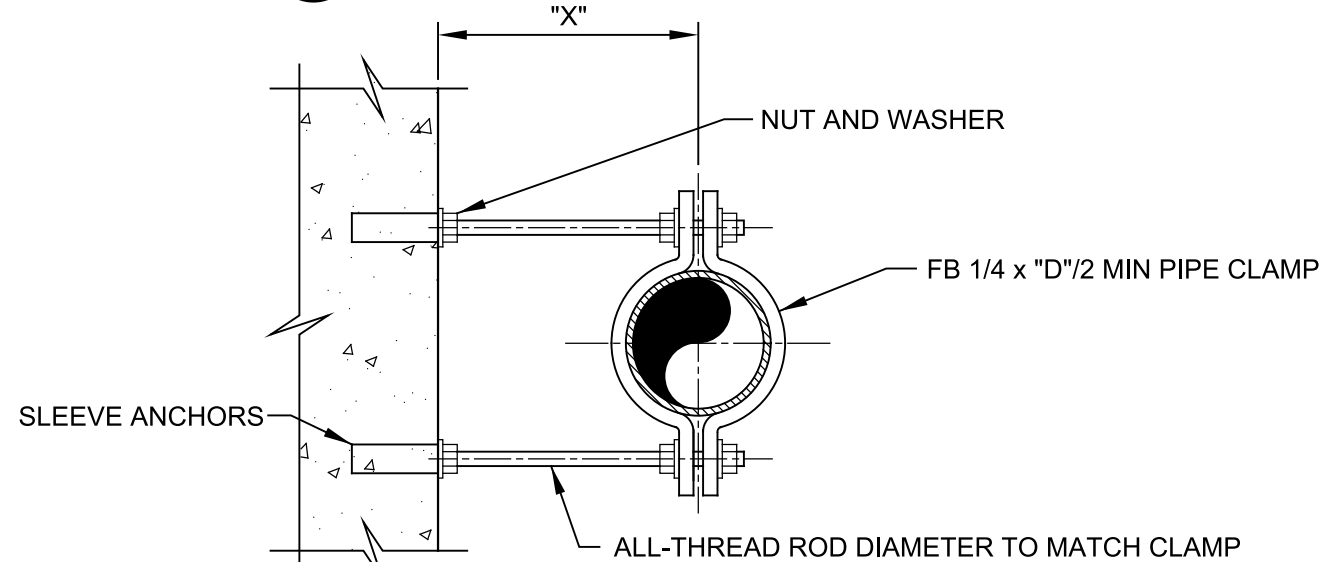


VERTICAL PIPE SWAY BRACE

07/31/08



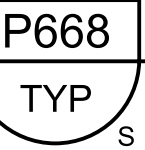
PLAN - FOR "X" GREATER THAN 12"



PLAN - FOR "X" LESS THAN 12"

NOTE:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, ALL MATERIAL SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, ALL MATERIAL SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.



VERTICAL PIPE SWAY BRACE

07/31/08

REV	DATE	BY	DESCRIPTION

DESIGNED	SH
DRAWN	TLR
CHECKED	WWS
DATE	JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
PIPING TYPICAL DETAILS 4

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

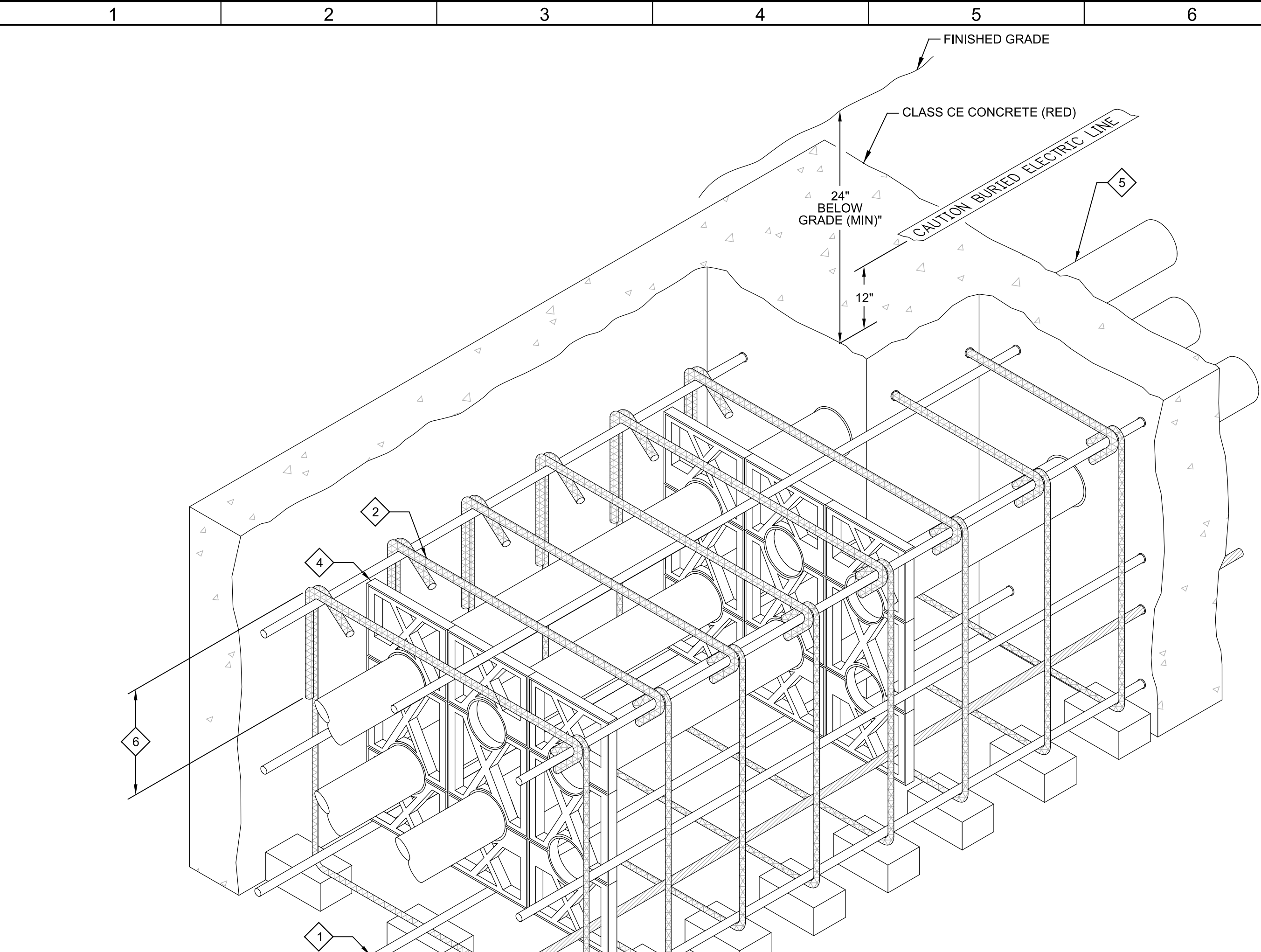
JOB NO.	201351
DRAWING NO.	00TP04
SHEET NO.	77 OF 81

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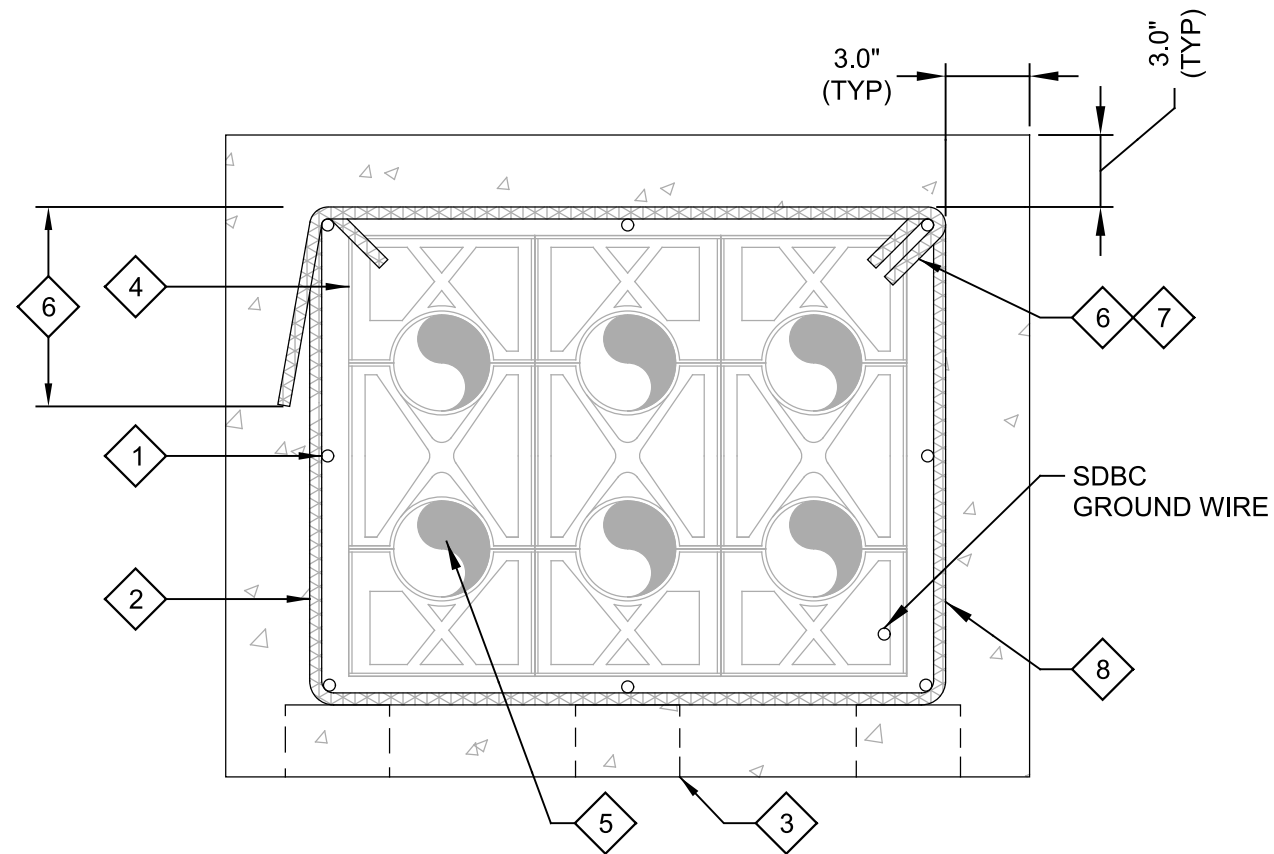
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LAST SAVED BY: jsandoval



- GENERAL NOTES:**
- DIMENSIONS SHOWN ARE MINIMUM.
 - ADJUST SIZE OF DUCT BANK BASED UPON THESE GUIDELINES AND THE DUCT BANK SPECIFICATION TO ACCOMMODATE ACTUAL NUMBER OF CONDUITS WITHIN DUCT BANK. REFER TO DUCT BANK SECTIONS, AND CONDUIT SCHEDULE FOR NUMBER AND SIZE OF CONDUITS.
 - MAKE PROVISIONS TO PREVENT CONDUIT FLOTATION DURING CONCRETE PLACEMENT & CURING.
- # KEY NOTES:**
- #4 REINFORCING STEEL 12" MAXIMUM ON CENTER AROUND ENTIRE PERIMETER OF DUCT BANK.
 - #4 REINFORCING STEEL TIES MAXIMUM 24" ON CENTER ALONG LENGTH OF DUCT BANK.
 - MINIMUM OF TWO PRECAST CONCRETE BAR SUPPORTS PLACED UNDER A TIE AT EACH PVC CONDUIT SPACER ALONG LENGTH OF DUCT BANK. PROVIDE PRECAST BAR SUPPORTS AT INTERVALS OF 24" TO REDUCE DEFLECTION.
 - PVC CONDUIT SPACERS ON 8'-0" CENTERS (MAXIMUM). LOCATE 12" FROM TIES.
 - REFER TO DUCT BANK SECTIONS AND SPECIFICATIONS FOR CONDUIT REQUIREMENTS.
 - 1'-4" OR 135 DEGREE HOOK FOR SHALLOW DUCT BANKS SHALLOWER THAN 21"
 - CONTRACTOR'S OPTION TO PROVIDE 1'-4" LAP LENGTH EACH SIDE OF HORIZONTAL TIE.
 - LOWER PORTION OF TIES COULD BE U-BARS IF UPPER PORTIONS PROVIDES 1'-4" VERTICAL LEGS EACH SIDE.
 - BOND THE DUCT BANK GROUND WIRE TO THE GROUNDING SYSTEM AT BOTH ENDS OF THE DUCT BANK.
- #4/0 SDBC GROUND WIRE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.



EM001 REINFORCED CONCRETE DUCT BANK

TYP
s

REV	DATE	BY	DESCRIPTION

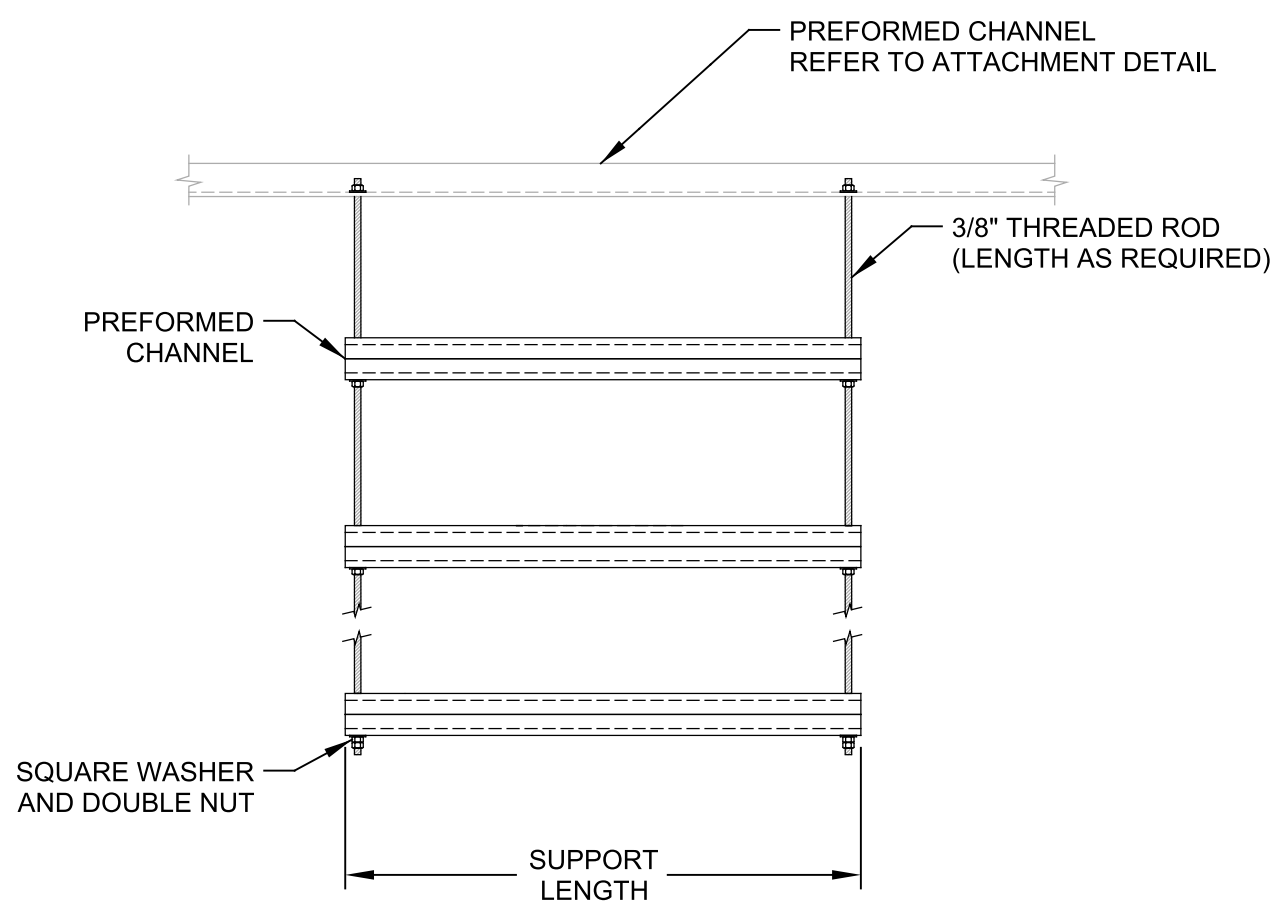
DESIGNED CGR	
DRAWN QGS	
CHECKED SB	
DATE JANUARY 2023	



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
ELECTRICAL TYPICAL DETAILS 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
201351
DRAWING NO.
00TE01
SHEET NO.
78 OF 81

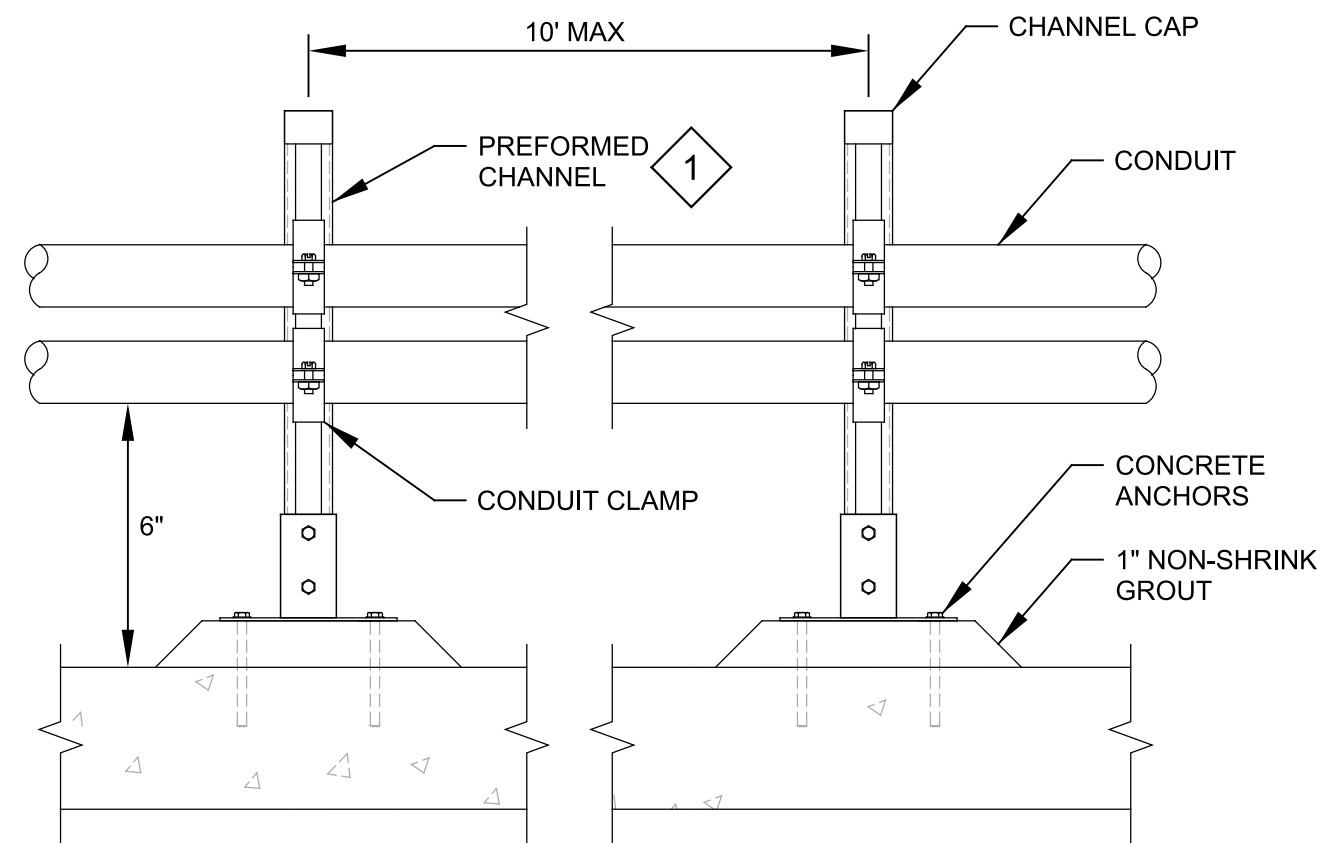


GENERAL NOTES:

- PROVIDE NUMBER AND LENGTH OF PREFORMED CHANNEL SUPPORTS AS REQUIRED BY EQUIPMENT AND MATERIALS TO BE INSTALLED.
- PROVIDE SEISMIC BRACING PER THE SPECIFICATIONS.
- REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

EM102 TRAPEZE SUPPORT

TYP
s

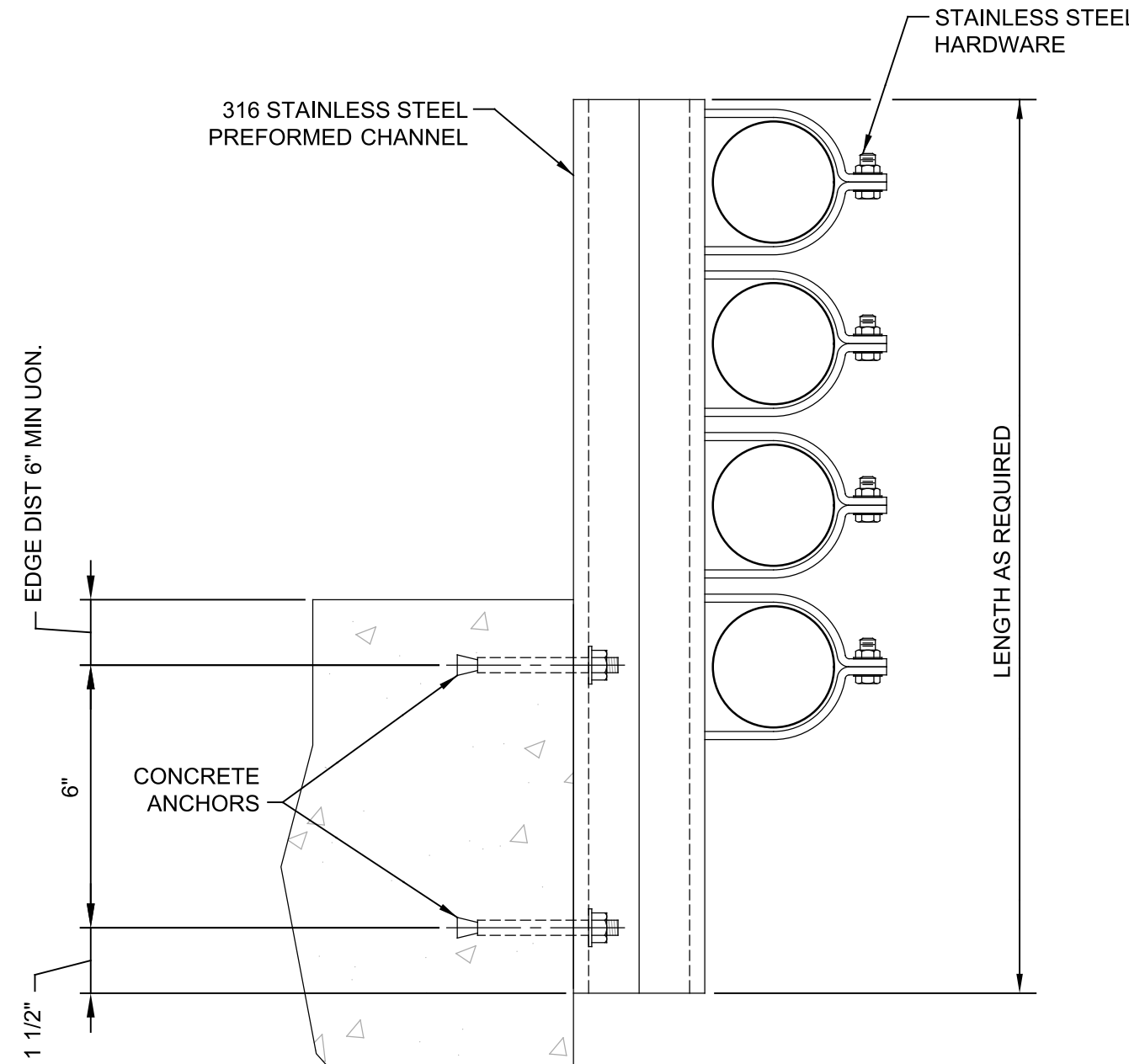


KEY NOTES:

- SIZE PREFORMED CHANNEL FOR CONDUITS INDICATED ON THE DRAWINGS.

EM104 CONDUIT FLOOR SUPPORT FOR ELECTRICAL CONDUITS

TYP
s



EM103 CONDUIT SUPPORT

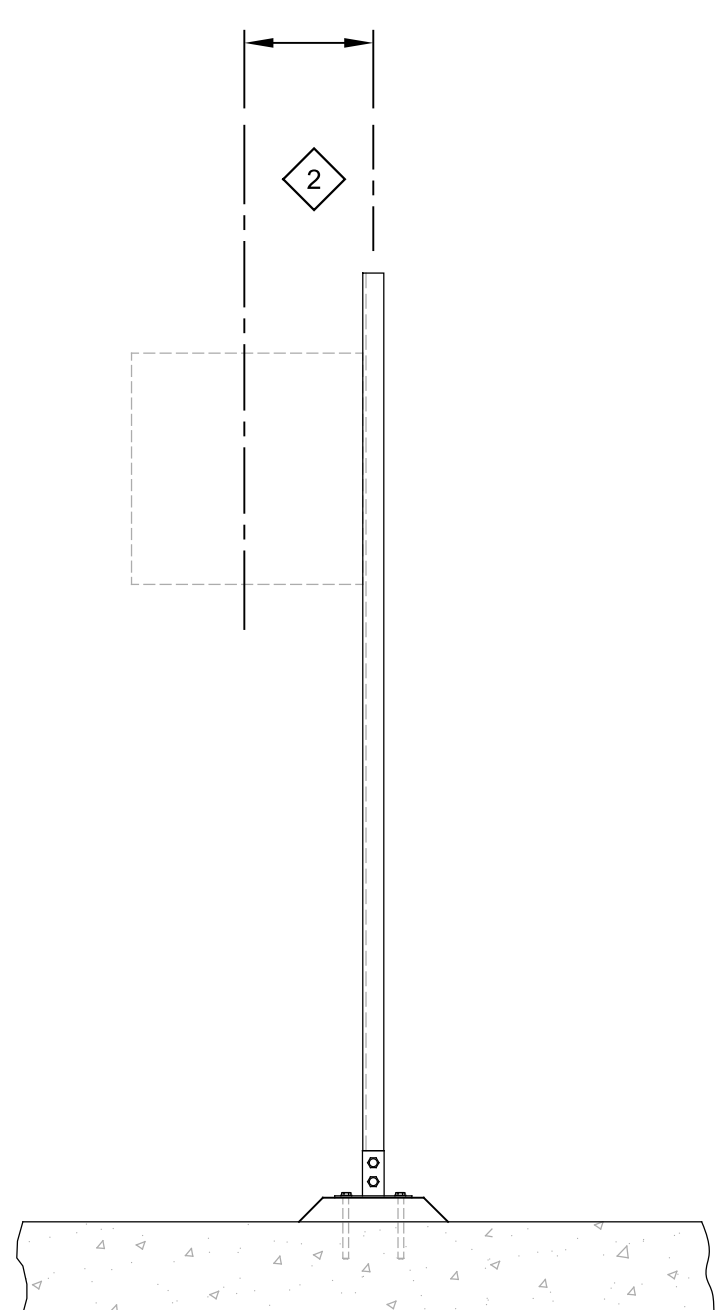
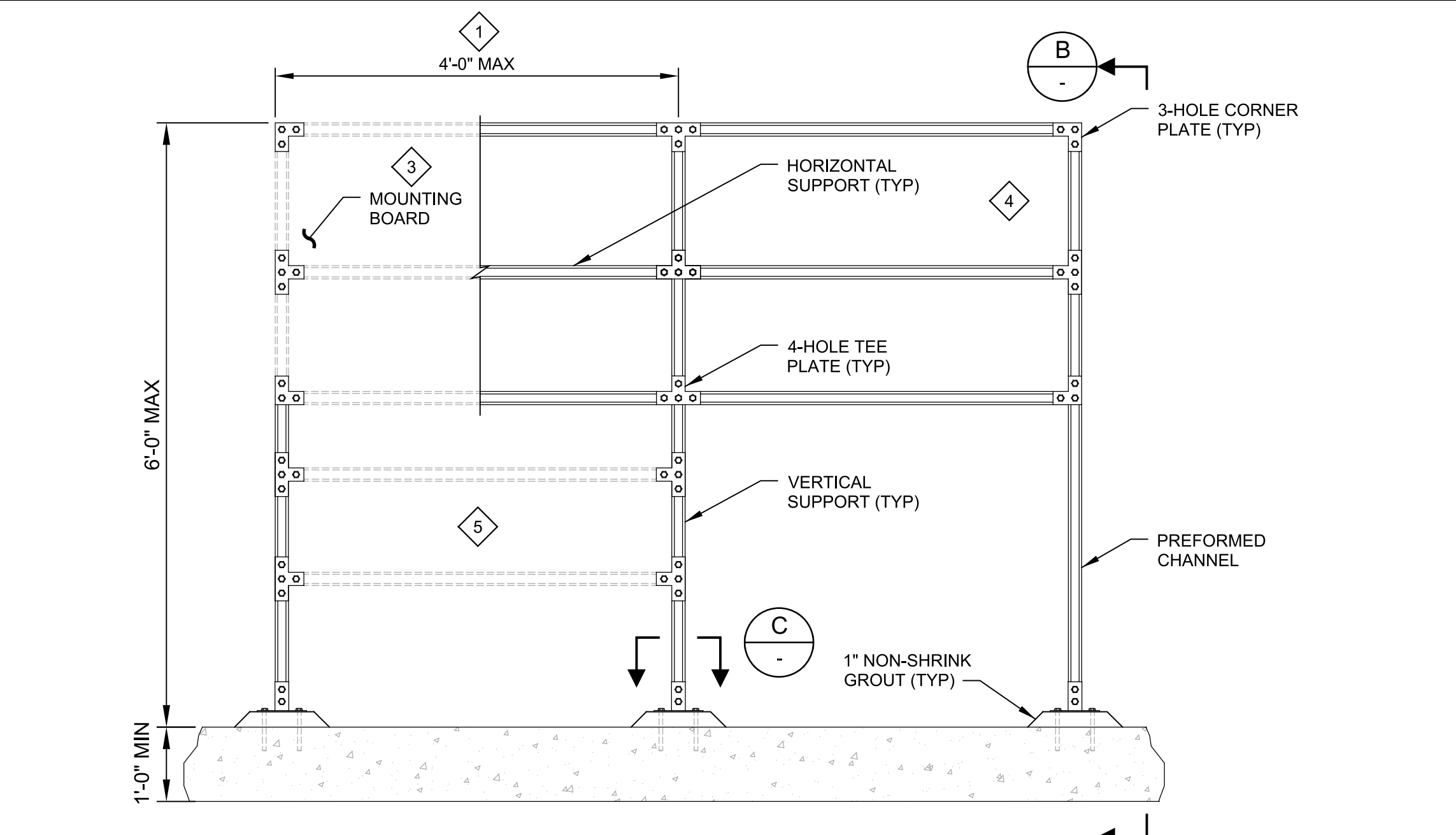
TYP
s

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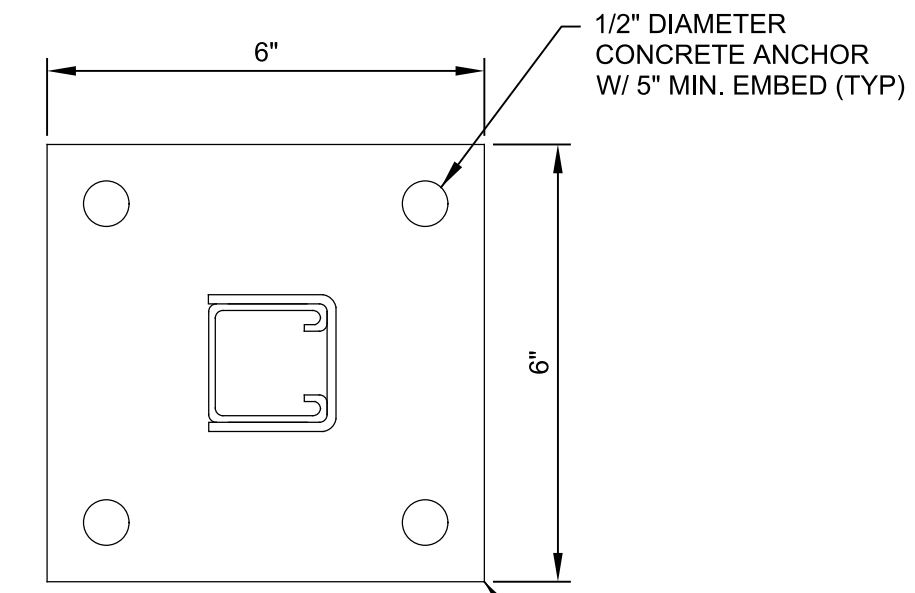
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LAST SAVED BY: jsandoval



B SECTION



C POST BASE

GENERAL NOTES:

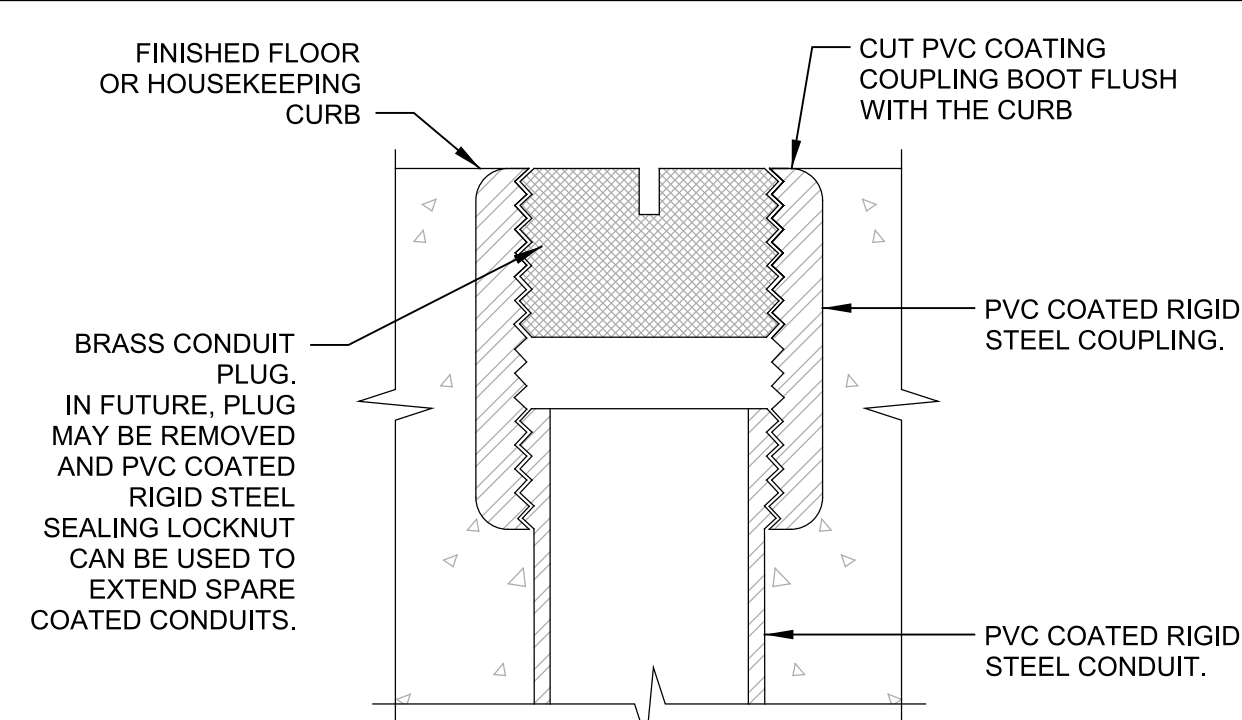
- AS SHOWN, THE MOUNTING STAND IS SUITABLE FOR THE FOLLOWING DESIGN CRITERIA.
 - STAINLESS STEEL OR HOT-DIPPED GALVANIZED PREFORMED CHANNEL
 - SEISMIC DESIGN CATEGORY: A THROUGH D
 - RISK CATEGORY: III AND IV
 - MAXIMUM EQUIPMENT LOAD OF 100 LBS PER VERTICAL SUPPORT
- SUBMIT DESIGN CALCULATIONS FOR EACH INSTALLATION THAT EXCEEDS THE SPECIFIED DESIGN CRITERIA OR DIMENSIONAL LIMITATIONS IN THIS DETAIL. REFER TO THE SPECIFICATIONS FOR DESIGN CALCULATION SUBMITTAL REQUIREMENTS
- REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.
- WHERE CONCRETE ANCHORS COME IN CONTACT WITH DISSIMILAR METALS, ISOLATE DISSIMILAR METALS AS SPECIFIED IN THE SPECIFICATIONS.
- HORIZONTAL AND VERTICAL SUPPORTS SHALL CONSIST OF PREFORMED SINGLE CHANNELS.

KEY NOTES:

- FOR MOUNTING STANDS WIDER THAN 4 FEET PROVIDE EQUALLY SPACED VERTICAL SUPPORTS AT 4 FOOT MAXIMUM SPACING.
- MAXIMUM OFFSET TO THE CENTERLINE OF EQUIPMENT OR ENCLOSURES IS 1'-6".
- PROVIDE A MOUNTING BOARD FOR INSTRUMENTS AND DEVICES WEIGHING LESS THAN 20 POUNDS THAT CANNOT BE MOUNTED DIRECTLY TO PREFORMED CHANNEL. EQUIPMENT ANCHORAGE TO THE MOUNTING BOARD SHALL BE DESIGNED BY THE CONTRACTOR.
- PROVIDE ADDITIONAL PREFORMED CHANNEL SUPPORTS FOR ENCLOSURES THAT CAN BE MOUNTED DIRECTLY TO THE PREFORMED CHANNEL.
- OPTIONAL HORIZONTAL SUPPORTS AND AVAILABLE SPACE FOR JUNCTION BOXES.

EM210 INDOOR EQUIPMENT MOUNTING STAND

TYP
S

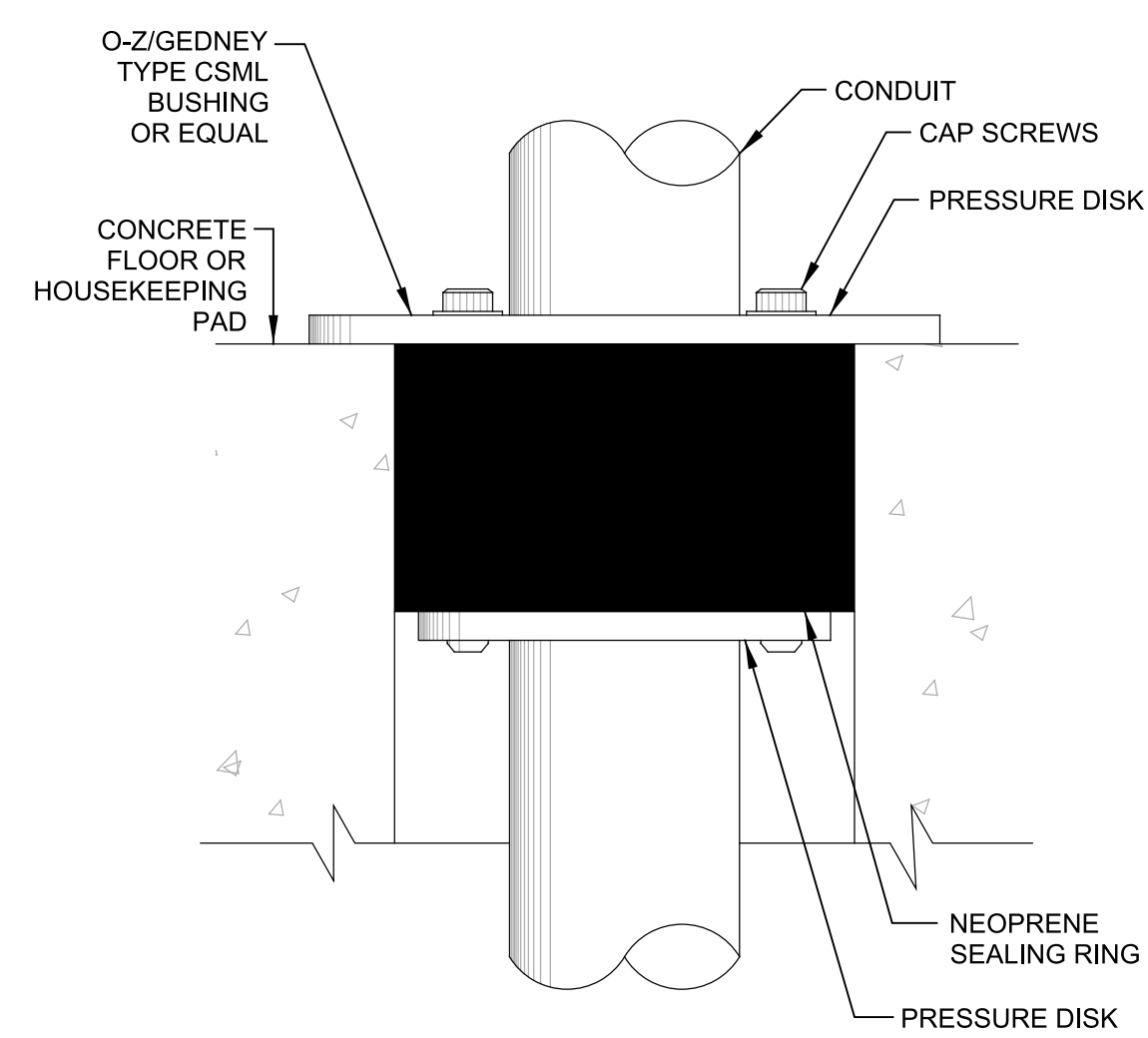


GENERAL NOTES:

- PROVIDE 2" MIN CLEAR BETWEEN ADJACENT CONDUITS

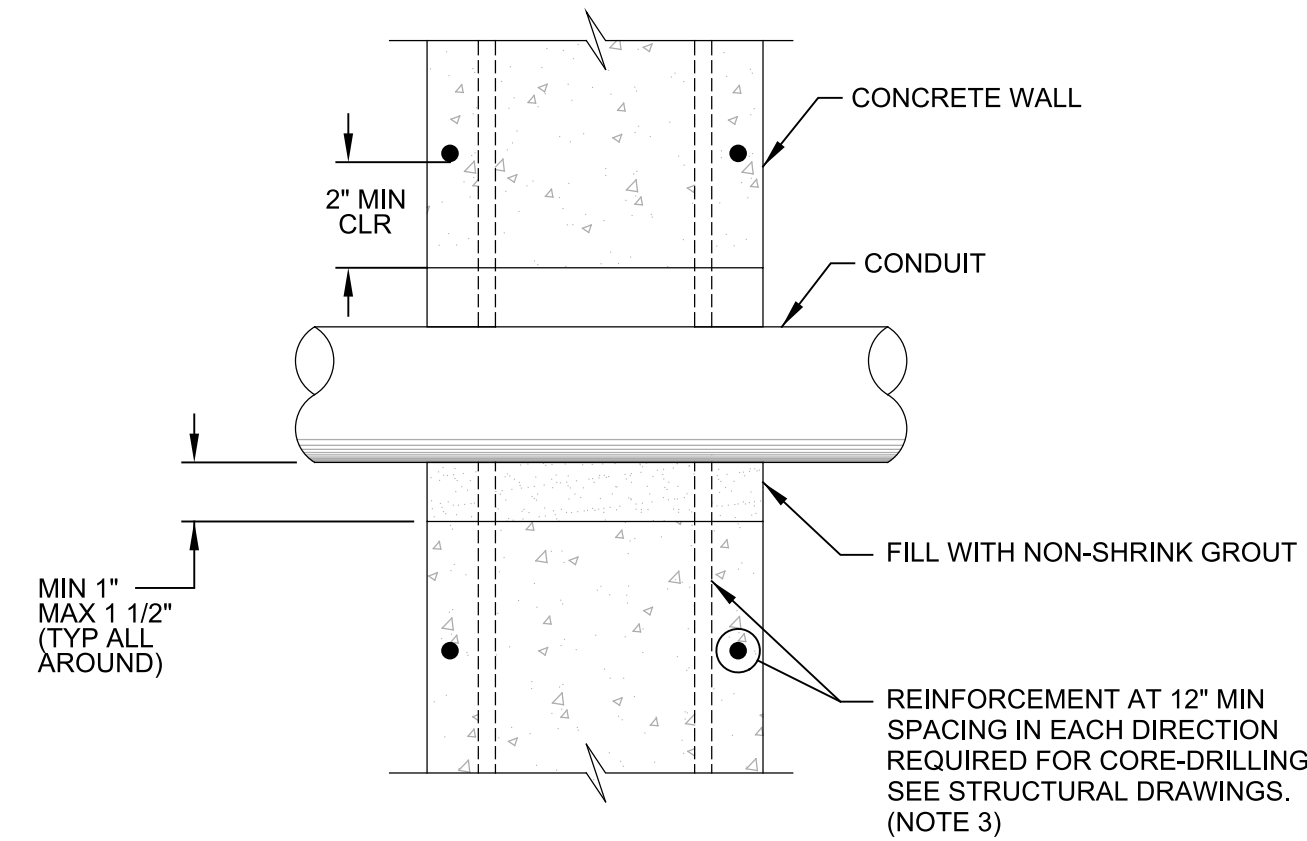
EM105 SPARE CONDUIT DETAIL

TYP
S



EM135 CORE HOLE CONDUIT FLOOR PENETRATION

TYP
S



GENERAL NOTES:

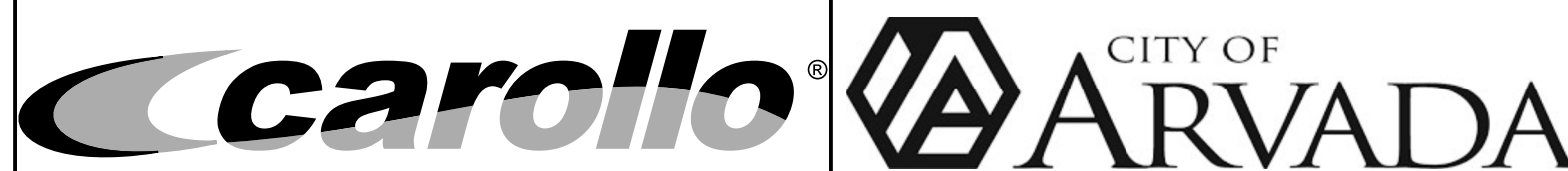
- PROVIDE NON-DESTRUCTIVE TESTING TO DETERMINE LOCATIONS OF REINFORCEMENT. MAINTAIN MIN 2" CLEAR BETWEEN CORE DRILLED OPENING AND REINFORCEMENT.
- APPLY EPOXY CEMENT BONDING AGENT PRIOR TO GROUTING.
- PROVIDE CAST-IN SLEEVE FOR PENETRATIONS IN WALLS WITH REINFORCEMENT SPACING LESS THAN 2" IN EACH DIRECTION. REFER TO STRUCTURAL DRAWINGS.

EM163 CORE DRILLED PENETRATION CONCRETE WALL

TYP
S

REV	DATE	BY	DESCRIPTION
1			
2			
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4			
5			

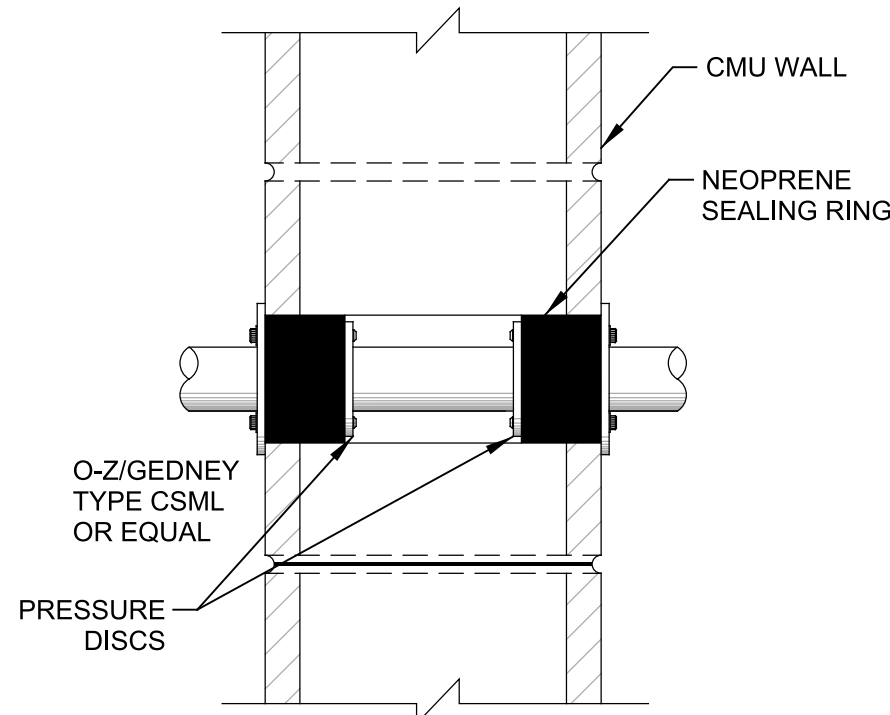
DESIGNED	CGR
DRAWN	QGS
CHECKED	SB
DATE	JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
ELECTRICAL TYPICAL DETAILS 2

VERIFY SCALES	JOB NO. 201351
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. 00TE02
0 1"	SHEET NO. 79 OF 81
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

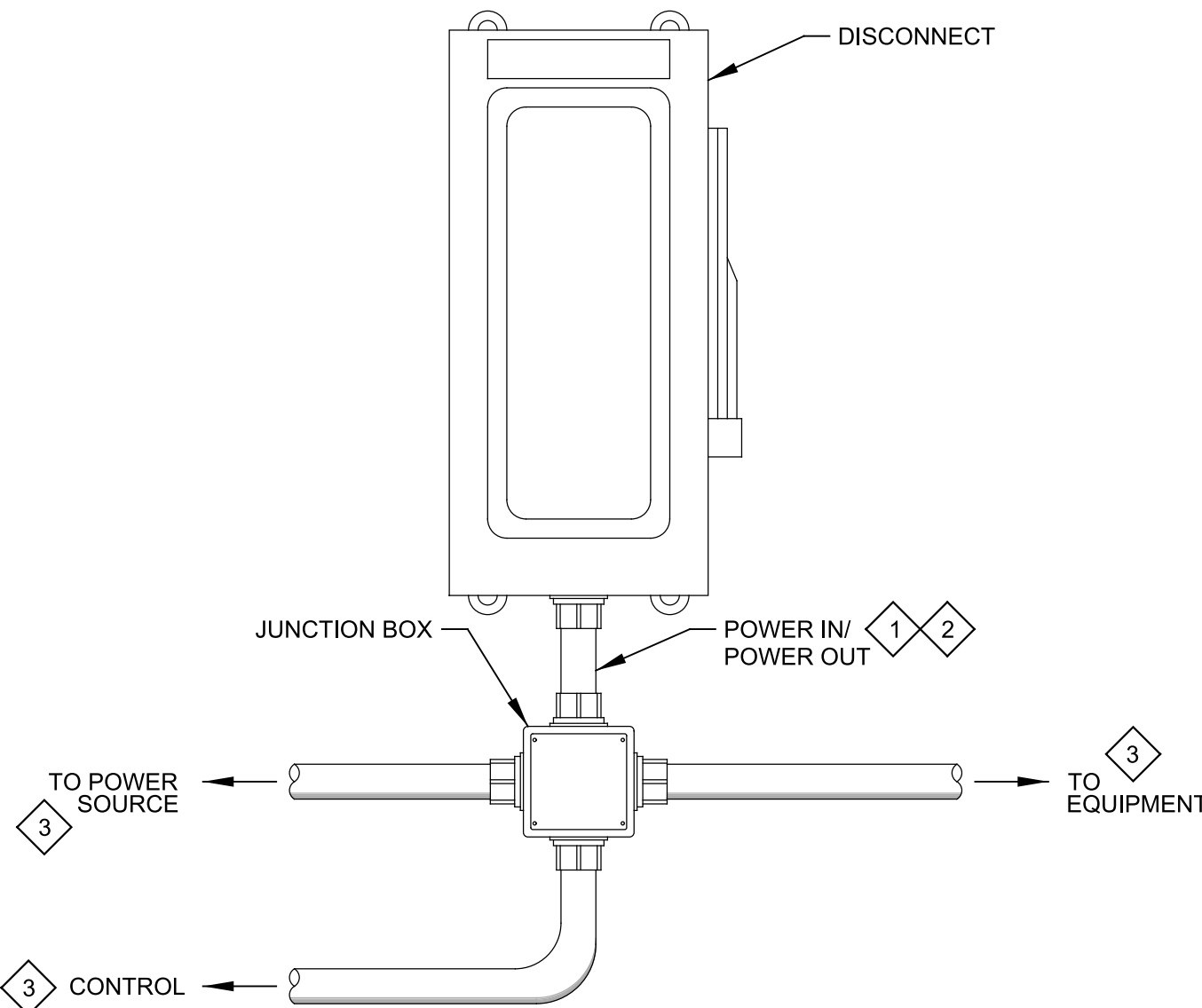
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LAST SAVED BY: qsandoval



GENERAL NOTES:

- ON EXTERIOR WALLS, SET FACE IN RING OF SYNTHETIC RUBBER SEALING COMPOUND.

EM183 CORE HOLE PENETRATION
PARTIALLY GROUTED CMU WALL



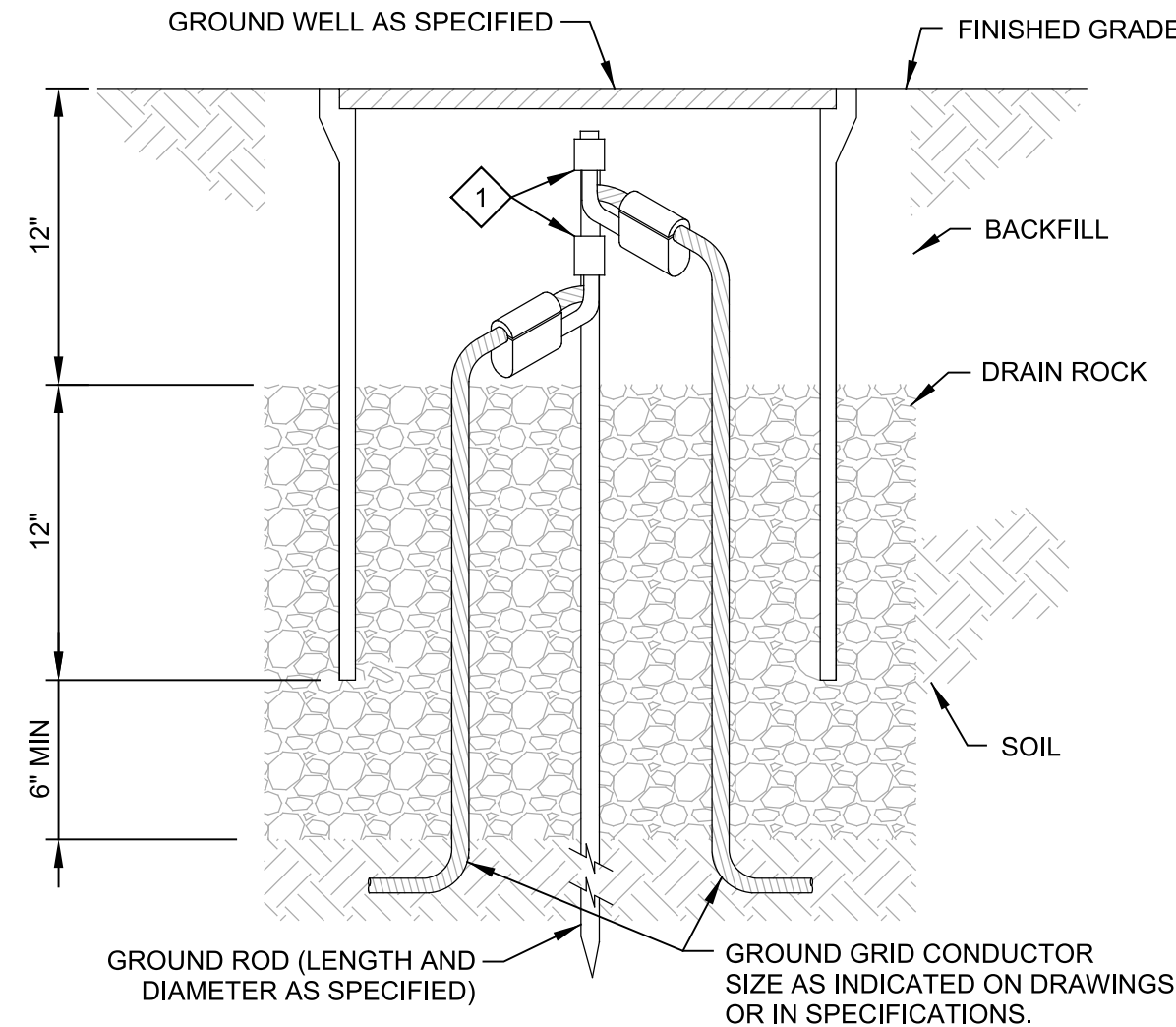
GENERAL NOTES:

- CONDUIT AND ENCLOSURE REQUIREMENTS AS SPECIFIED.

KEY NOTES:

- CONDUIT IS NOT INCLUDED IN THE CONDUIT SCHEDULE.
- SIZE CONDUIT IN ACCORDANCE WITH THE NEC.
- REFER TO CONDUIT SCHEDULE FOR CONDUIT SIZE, WIRE SIZE AND QUANTITY.

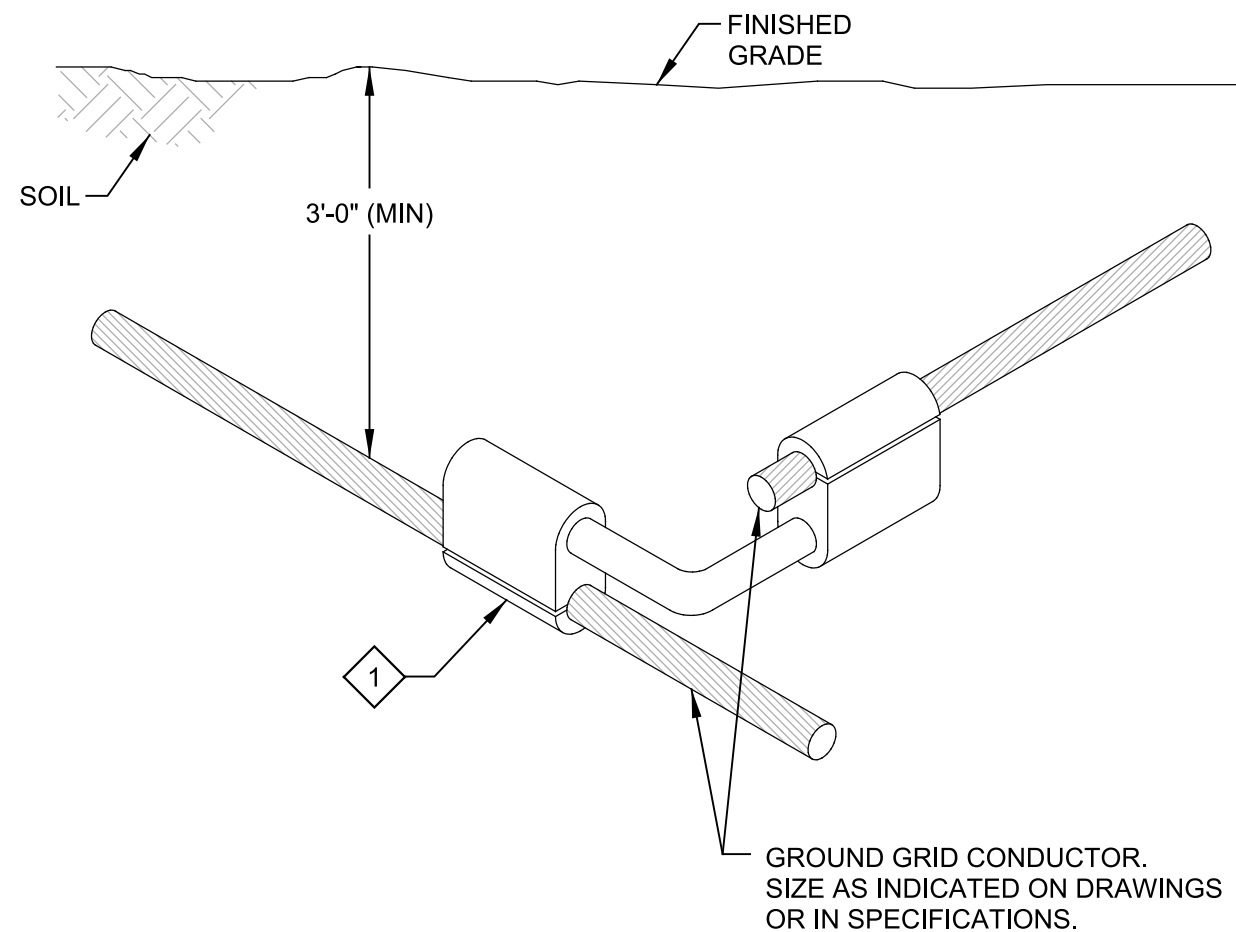
EM221 DISCONNECT CONDUIT INSTALLATION



KEY NOTES:

- GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

EG001 GROUND ROD AND GROUNDWELL
COMPRESSION CONNECTION



KEY NOTES:

- GROUND GRID CROSS CONNECTOR. SIZE FOR CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

EG101 COPPER GROUNDING CABLE CONNECTION
COMPRESSION CONNECTION

REV	DATE	BY	DESCRIPTION

DESIGNED CGR
DRAWN QGS
CHECKED SB
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL DETAILS
ELECTRICAL TYPICAL DETAILS 3

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

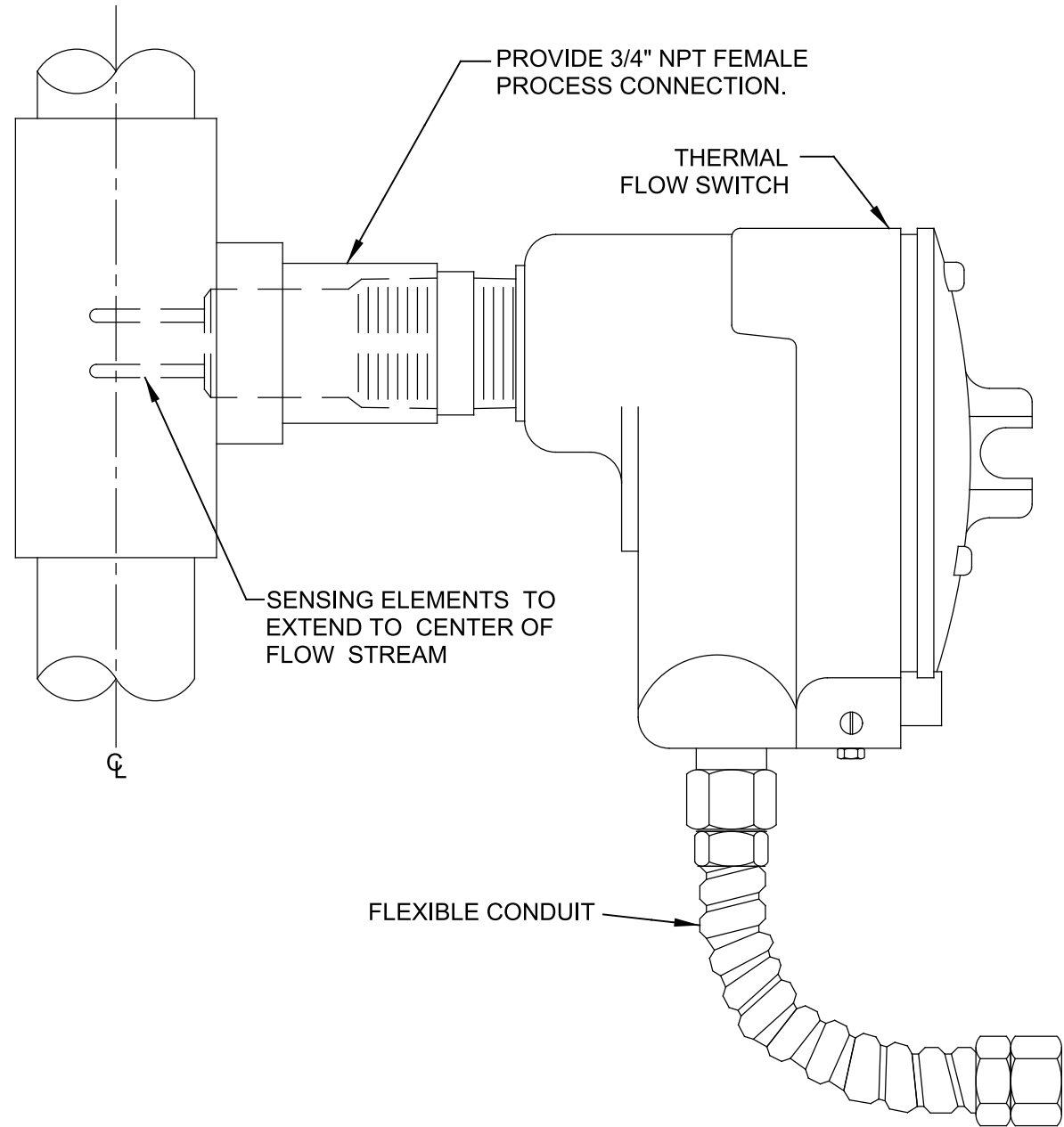
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DRAWING NO. 00TE03
SHEET NO. 80 OF 81

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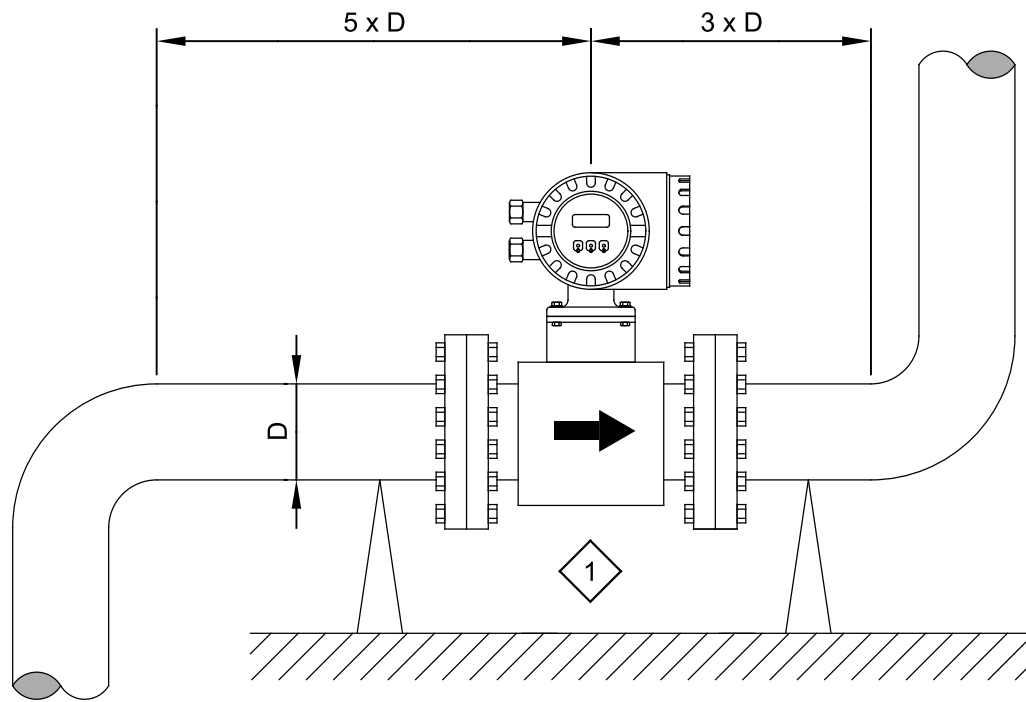
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LAST SAVED BY: lbordelon



NF111 THERMAL FLOW SWITCH MOUNTING DETAIL
TYP S



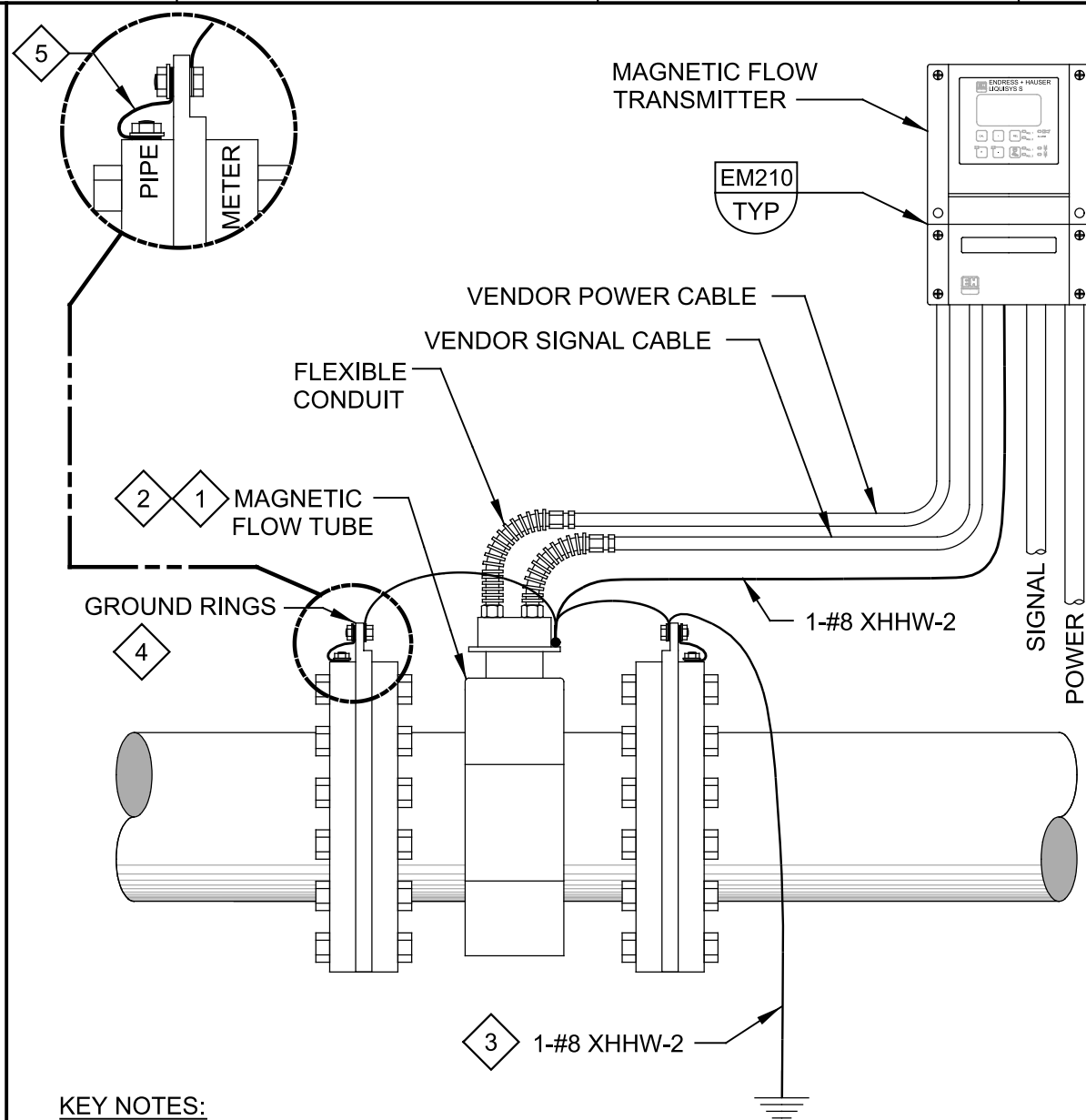
NOTES:

1. FOLLOW MANUFACTURER'S RECOMMENDED MAXIMUM TORQUE SETTINGS. DO NOT OVER-TORQUE FLANGE BOLTS. OVERTIGHTENING THE FASTENERS WILL DEFORM SEALING FACES OR DAMAGE THE LINE.
2. ALWAYS TIGHTEN FLANGE BOLTS UNIFORMLY AND IN DIAGONALLY OPPOSITE SEQUENCE.
3. MOUNT METER SO THAT IT REMAINS FULLY FLOODED.
4. INSTALL METER SUCH THAT THERE ARE NO PIPE BENDS FOR 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETERS DOWNSTREAM OF THE METER.

KEY NOTES:

- 1 PIPE SUPPORTS BY MECHANICAL CONTRACTOR. NO SUPPORTS SHALL BE INSTALLED AT THE METER HOUSING.

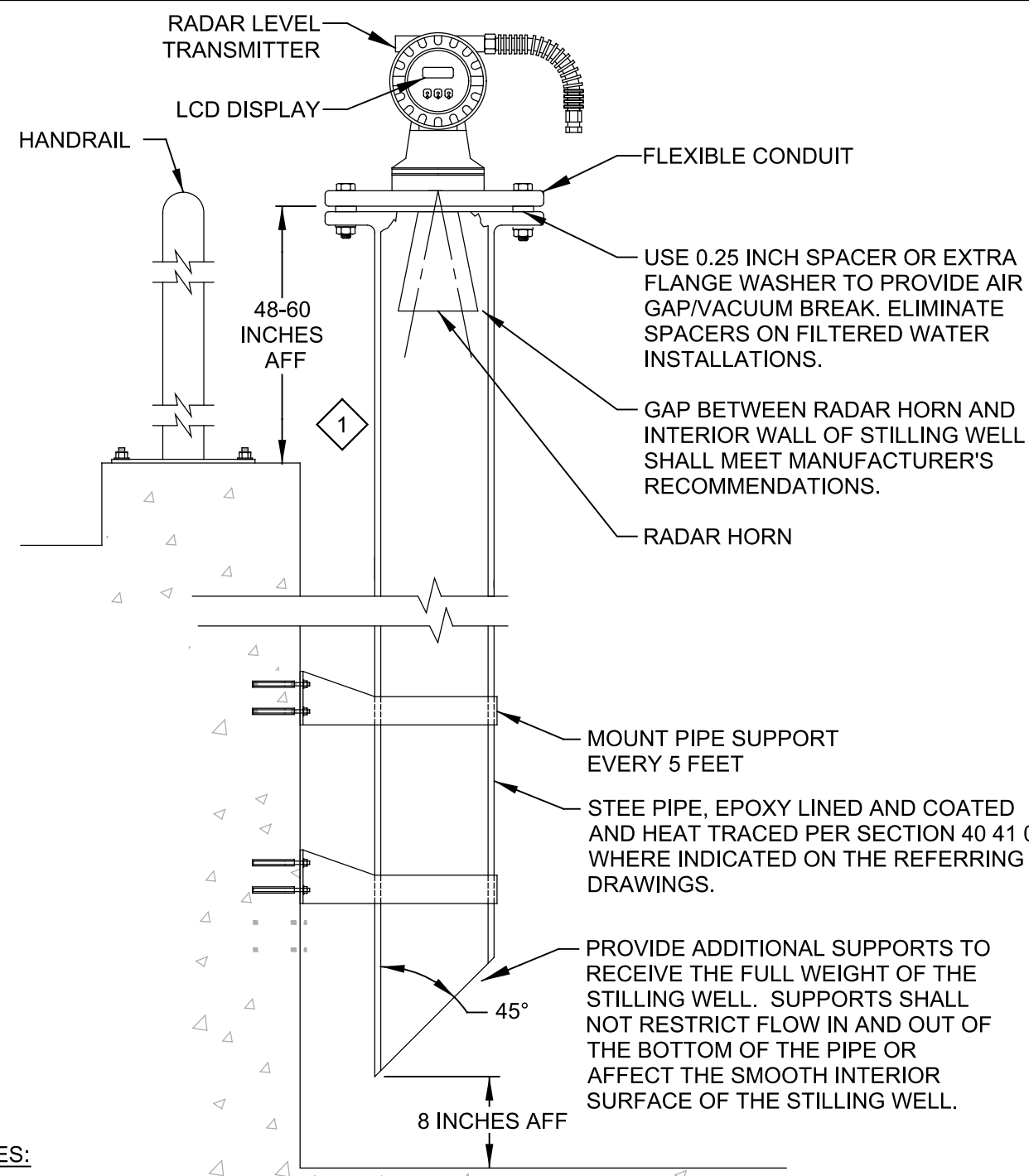
NF130 MAGNETIC FLOW MOUNTING DETAIL
TYP S



KEY NOTES:

- 1 CONTRACTOR SHALL VERIFY ZERO POTENTIAL BETWEEN FLOW TUBE, EARTH GROUND AND TRANSMITTER GROUND TERMINAL.
- 2 CONNECT TRANSMITTER GROUND TERMINAL TO GROUND RINGS.
- 3 CONNECT METER BODY TO EARTH GROUND POTENTIAL.
- 4 EQUALIZE POTENTIAL VIA GROUND RINGS BETWEEN FLUID AND MAGMETER.
- 5 PROVIDE BONDING JUMPER ON CONDUCTIVE PIPES.

NF135 REMOTE TRANSMITTER MAGNETIC FLOWMETER GROUNDING DETAIL
TYP S



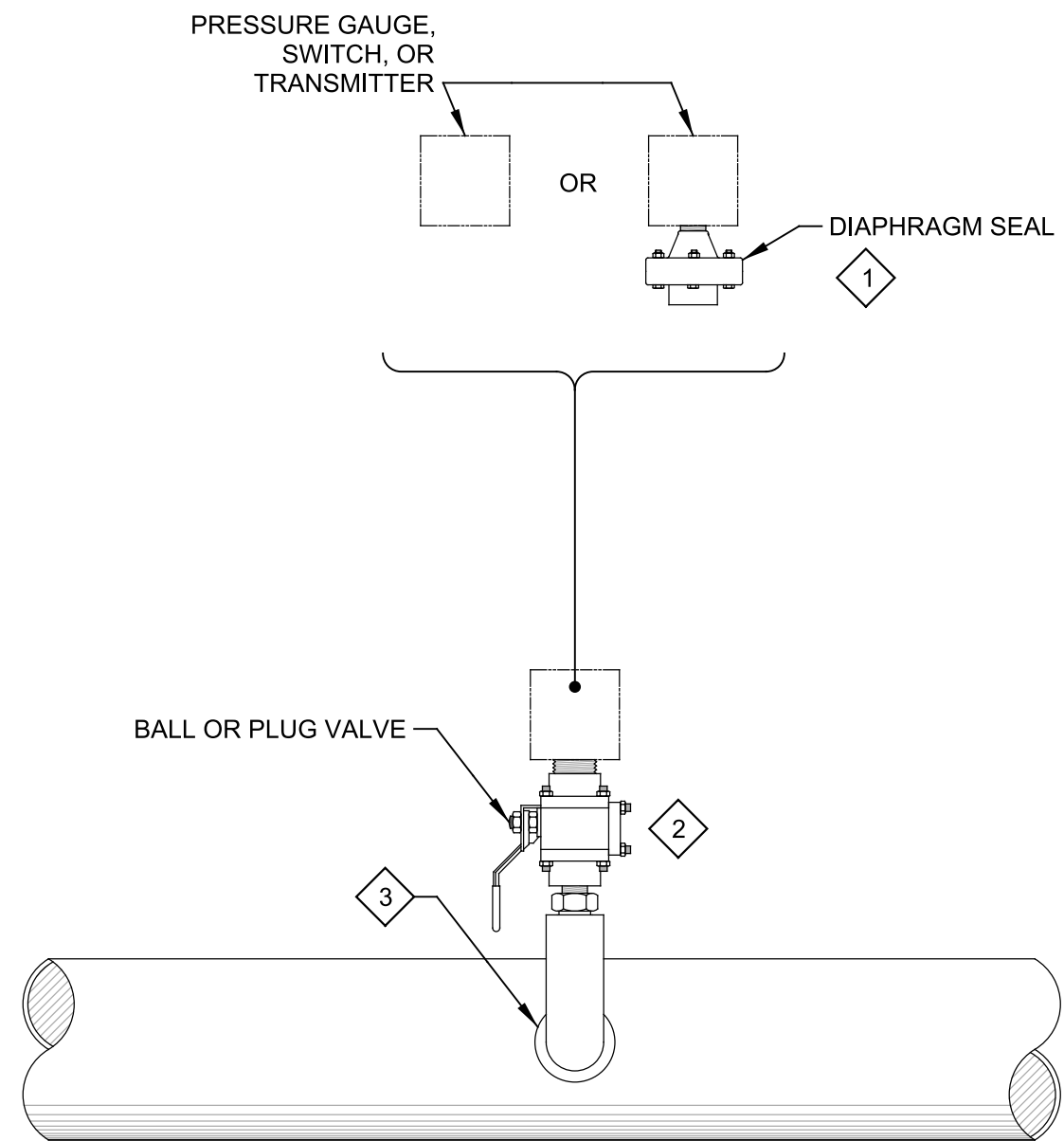
KEY NOTES:

- 1 MINIMUM DISTANCE BETWEEN HIGHEST POSSIBLE LEVEL, INCLUDING OVERFLOW, AND PROBE FACE SHALL BE MANUFACTURER'S BLANKING ZONE PLUS 2 INCHES.

NOTES:

1. STILLING WELL NOMINAL DIAMETER SHALL BE 6 INCHES, MINIMUM.

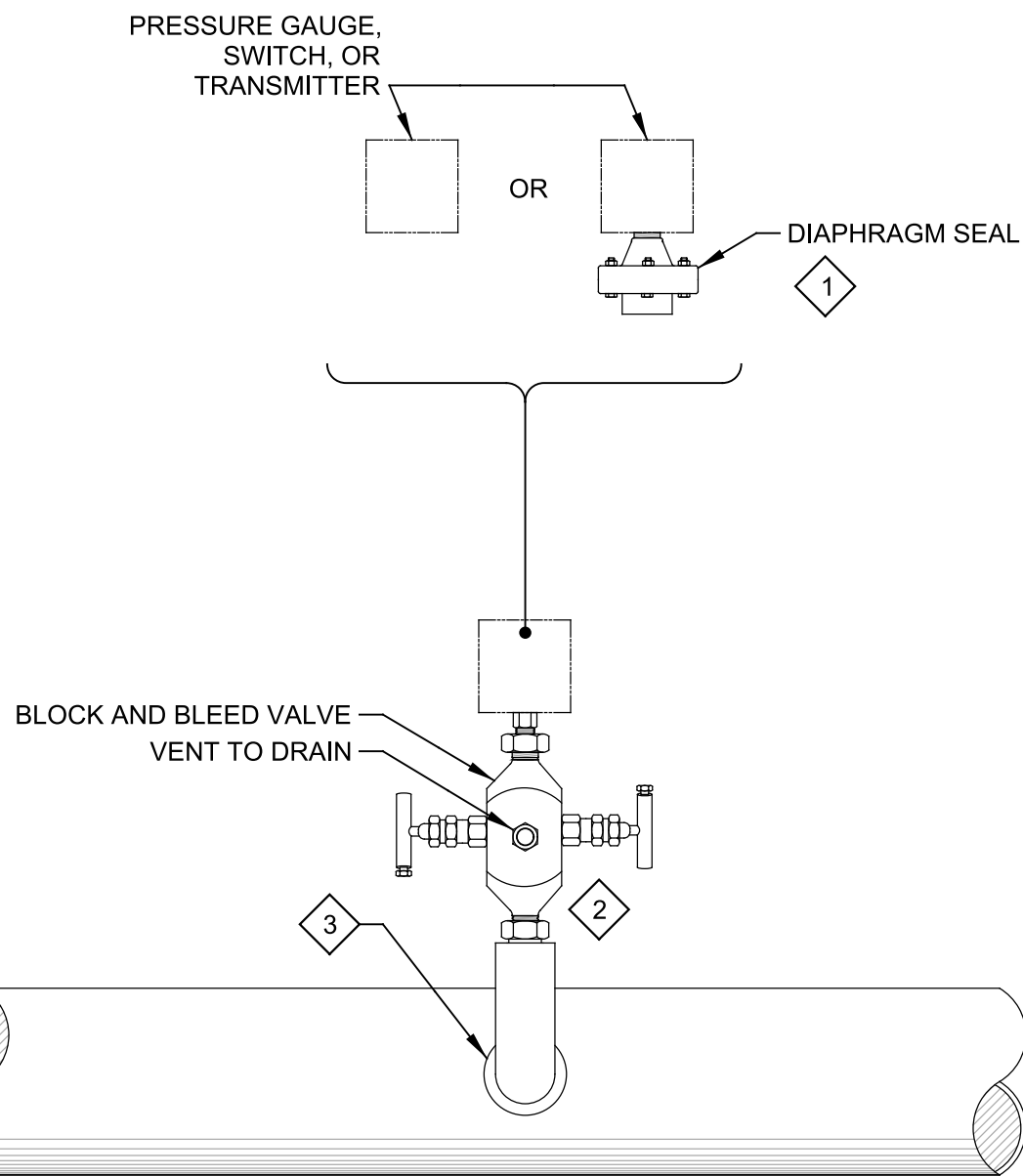
NL900 RADAR LEVEL TRANSDUCER STILLING WELL MOUNTING DETAIL
TYP J



KEY NOTES:

1. USE THE INSTRUMENT DATA SHEETS IN DIVISION 17 OR DIVISIONS 40 SPECS TO IDENTIFY INDIVIDUAL REQUIREMENTS FOR DIAPHRAGM SEALS.
2. ALL VALVE AND PIPE MATERIAL SHALL BE COMPATIBLE WITH PROCESS FLUID.
3. THREADED TAP OR SADDLE CONNECTION FOR DUCTILE IRON PIPE. WELD-O-LET OR THREAD-O-LET FOR WELDED PIPE. TEE OR REDUCING TEE FOR NON-METALLIC PIPE.

NP503 ISOLATING PRESSURE INSTRUMENT MOUNTING DETAIL
TYP S



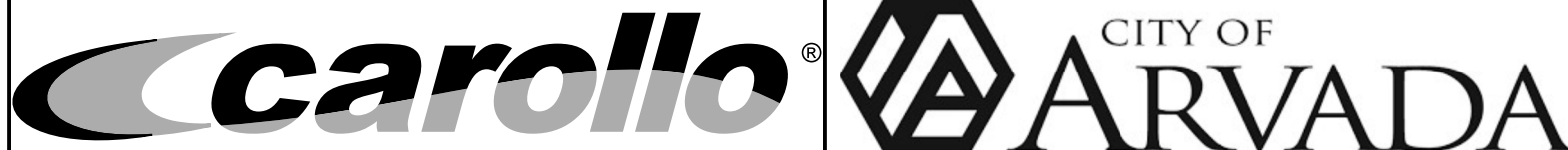
KEY NOTES:

1. USE THE INSTRUMENT DATA SHEETS IN DIVISION 17 OR DIVISIONS 40 SPECS TO IDENTIFY INDIVIDUAL REQUIREMENTS FOR DIAPHRAGM SEALS.
2. ALL VALVE AND PIPE MATERIAL SHALL BE COMPATIBLE WITH PROCESS FLUID.
3. THREADED TAP OR SADDLE CONNECTION FOR DUCTILE IRON PIPE. WELD-O-LET OR THREAD-O-LET FOR WELDED PIPE. TEE OR REDUCING TEE FOR NON-METALLIC PIPE.

NP504 PRESSURE INSTRUMENT MOUNTING DETAIL
TYP S

REV	DATE	BY	DESCRIPTION
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DESIGNED CE
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CHECKED DB
DATE JANUARY 2023



CITY OF ARVADA, COLORADO
RALSTON WTP SOLIDS IMPROVEMENTS
TYPICAL
INSTRUMENTATION TYPICAL DETAILS 1

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
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JOB NO. 201351
DRAWING NO. 00TN01
SHEET NO. 81 OF 81



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.2.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: R23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision

Report in Brief

This resolution authorizes a Supplemental Agreement between the Union Pacific Railroad Company and the City of Arvada to allow the installation of a fiber optic wireline in an existing casing under the railroad. This casing is located about ½ mile north of Highway 72 and about 2 miles west of Highway 93. This fiber optic cable will serve as communication between the Ranson pump station and the new Canyon pump station for the Canyon Pines subdivision.

The Arvada team recommends that the City Council approve R23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision.

Financial Impact

There is no fiscal impact. The Canyon Pines Metropolitan District is responsible for funding the project.

Background

The installation of the fiber optic wireline is being completed as part of CIP project No. 21-WA-06 for the construction of the new Canyon Pines pump station and improvements to the existing Ranson pump station. The fiber optic connection is necessary for the operation of these two pump stations.

Discussion

In accordance with IGA between the City of Arvada and the Canyon Pines Metropolitan District, the city is responsible for the design and construction of a pump station to provide water for the Canyon Pines subdivision. The Canyon Pines Metropolitan District is responsible for fully financing the design and construction of the pump station. The \$5,000 cost to execute the supplemental agreement with Union Pacific is included in the budget for this project.

Public Contact

Posting of the City Council agenda

Commission Recommendation

N/A

Strategic Alignment

This action aligns with the Infrastructure Priority Area of the City Council Strategic Plan. Specifically, the recommended actions support the following Principle within the Infrastructure Priority Area:

Provides the community with a safe, reliable, high-quality water supply, drainage system, and wastewater disposal services for full city build-out, as defined by the Comprehensive Plan.

Alternative Courses of Action

N/A

Recommendation for Action

The Arvada team recommends that the City Council approve R23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision.

Suggested Motion:

I move that CB23-041, A Resolution Authorizing Supplemental Agreement for License Audit No. 249836 Covering Pipeline Crossing on Union Pacific Railroad Property at Mile Post 23.8 on the Moffat Tunnel Subdivision, be (approved) (rejected).

Prepared by:
Daniel Wolff, Civil Engineer 1

Reviewed by:

Approved by:

Mary Stahl, Senior Civil Engineer	4/7/2023
Jenny Wolfschlag, City Engineer	4/7/2023
Jacqueline Rhoades, Public Works Director	4/12/2023
Bryan Archer, Director of Finance	4/12/2023
Tammy Hedlund, Legal Specialist	4/13/2023
Kelsy Sargent, Assistant City Attorney	4/13/2023
Rachel Morris, City Attorney	4/19/2023
Don Wick, Deputy City Manager	4/20/2023
Lorie Gillis, City Manager	4/20/2023

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R23-041

A RESOLUTION AUTHORIZING SUPPLEMENTAL AGREEMENT FOR LICENSE AUDIT
NO. 249836 COVERING PIPELINE CROSSING ON UNION PACIFIC RAILROAD
PROPERTY AT MILE POST 23.8 ON THE MOFFAT TUNNEL SUBDIVISION

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, a Supplemental Agreement, which is in substantially the same form as that attached hereto, by and between the City of Arvada and Union Pacific Railroad for License Audit No. 249836 covering one pipeline crossing on Union Pacific Railroad property at Mile Post 23.8 on the Moffat Tunnel Subdivision at or near Arvada, Jefferson County, Colorado.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 1st day of May, 2023.

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:

Rachel A. Morris, City Attorney

By: _____

Audit: 249836
Folder: 02503-89

SUPPLEMENTAL AGREEMENT

THIS SUPPLEMENTAL AGREEMENT is entered into on the ____ day of _____, 2023, between **UNION PACIFIC RAILROAD COMPANY** ("Licensor") and **CITY OF ARVADA**, whose address is City Hall, 8101 Ralston Road Arvada, Colorado 80002 ("Licensee").

RECITALS:

By instrument dated 8/1/2008, Licensor and Licensee, or their predecessors in interest, entered into an agreement ("Basic Agreement"), identified as Audit No. 249836, at ARVADA, COLORADO.

AGREEMENT:

NOW, THEREFORE, IT IS AGREED by and between the parties hereto as follows:

Article 1. SUBSTITUTION OF PRINT.

The print dated October 04, 2022, attached hereto as Exhibit 'A', shall be and hereby is substituted for the print dated May 15, 2008, attached to the Basic Agreement, and from and after the effective date herein whenever the term Pipeline is used in the Basic Agreement, or any amendment or supplement thereto (if any), such reference shall be deemed to refer to the Pipeline as shown on Exhibit 'A', hereto attached.

Article 2. CONSENT TO WORK.

This Supplemental Agreement will serve as notification that the Railroad Company approves of your intentions to install a fiber optic wireline through an existing casing in accordance with Exhibit A.

Article 3. CONTRACTOR RIGHT OF ENTRY.

If a contractor is to do any of the work performed on or about the Railroad Company's property, then Licensee shall require its contractor to execute the Railroad Company's form Contractor's Right of Entry Agreement, **EXHIBIT B**. Licensee acknowledges receipt of a copy of Contractor's Right of Entry Agreement and understanding its term, provisions and requirements, and will inform its contractor of the need to execute the Agreement. Under no circumstances will Licensee's contractor be allowed on or about the Railroad Company's property without first executing the Contractor's Right of Entry Agreement.

Article 4. NOTICE OF COMMENCEMENT OF WORK / RAILROAD REPRESENTATIVE / SUPERVISION / FLAGGING / SAFETY.

If an emergency should arise, requiring immediate attention, the Licensee shall provide as much notice as practicable to Railroad, by calling the Response Management Communication Center at (888) 877-7267 before commencing any work. In all other situations, the Licensee shall notify the Railroad at least ten (10) days (or such other time as the Railroad may allow) in advance of the commencement of any work upon property of the Railroad in connection with the construction, maintenance, repair, renewal, modification, reconstruction, relocation or removal of the Wireline. All such work shall be prosecuted diligently to completion. The Licensee will coordinate its initial and any subsequent work with a Railroad approved flagger provided at the link below and the following employee of Railroad or his or her duly authorized representative (hereinafter "Railroad Representative" or "Railroad Representative"):

www.up.com/real_estate/third-party-flagging/index.htm	MGR SIGNAL MNTCE Tim Grudzinski 303-405-5446 tsgrudzi@up.com
--	---

Article 5. EFFECTIVE DATE.

This Supplemental Agreement shall be effective as of May 1, 2023.

Article 6. AGREEMENT SUPPLEMENT.

Nothing in this Supplemental Agreement shall be construed as amending or modifying the Basic Agreement unless specifically provided herein.

Article 7. ADMINISTRATIVE HANDLING CHARGE.

Upon execution and delivery of this Supplemental Agreement, the Licensee shall pay to the Licensor an administrative handling charge of **Five Thousand DOLLARS (\$5,000.00)**.

IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement as of the day and year first written.

UNION PACIFIC RAILROAD COMPANY

CITY OF ARVADA

By: _____

By: _____

Justin Soriano
Analyst Finance

Name Printed: Marc Williams

Title: Mayor of City of Arvada

PLACE ARROW INDICATING NORTH
DIRECTION RELATIVE TO CROSSING



UNDERGROUND WIRELINE CROSSING

750 VOLTS OR LESS

NOTE: ALL AVAILABLE DIMENSIONS MUST BE
FILLED IN TO PROCESS THIS APPLICATION.

FORM DR-0404-F

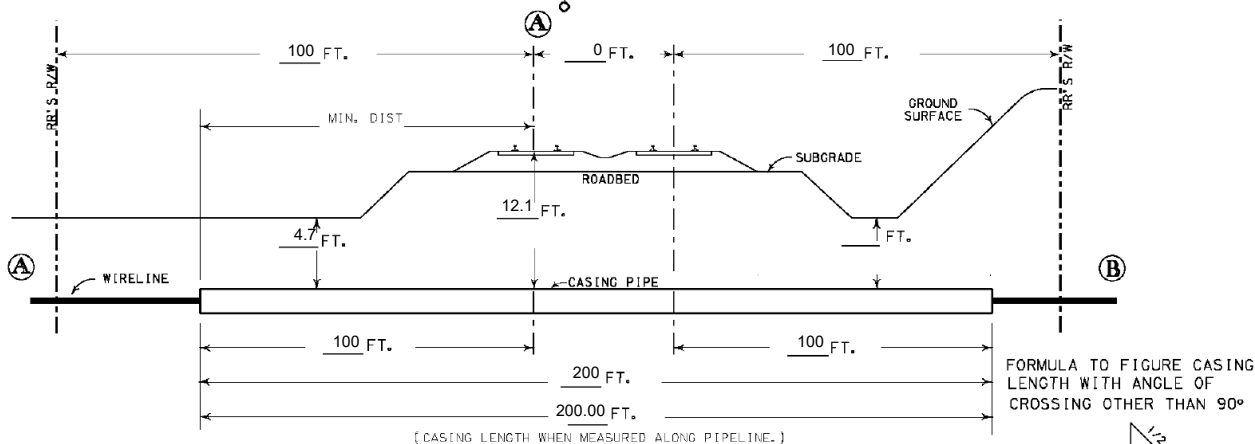
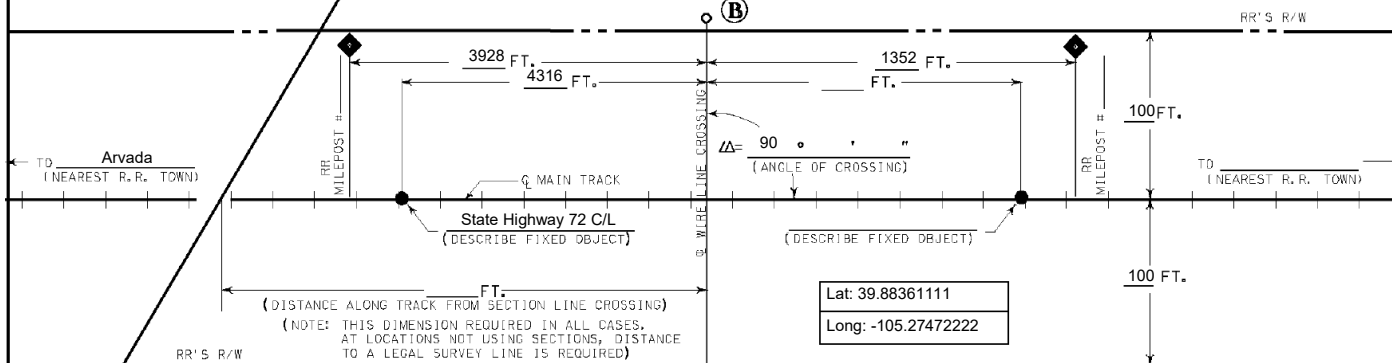
REV 10-26-2007

www.uprr.com

NO SCALE

(OR LEGAL SURVEY LINE, WHERE APPLICABLE)

LINE SECTION _____, TOWNSHIP _____, RANGE _____, MERIDIAN _____



NOTES :

- A) TYPE WIRELINE CROSSING: FIBER OPTIC
- B) VOLTAGE TO BE CARRIED UNDER TRACK 0 NO. OF WIRES 2
- C) CASING TYPE TO BE INSTALLED 48" STEEL (EXISTING)
- D) METHOD OF INSTALLING CASING PIPE UNDER TRACK(S):
(WET BORE NOT PERMITTED); UTILIZE EXISTING CASING
- E) DISTANCE FROM CENTER LINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES TO TRACK 100
(30' MIN.)
- F) DISTANCE TO NEAREST ROAD CROSSING WITH SIGNAL LIGHTS OR GATES (IF LESS THAN ONE MILE) 6900
- G) APPLICANT HAS CONTACTED 1-800-336-9193,
U. P. COMMUNICATION DEPARTMENT, AND HAS DETERMINED FIBER OPTIC CABLE EXIST IN VICINITY OF
WORK TO BE PERFORMED. TICKET NO. _____

EXHIBIT "A"

(FOR RAILROAD USE ONLY - DO NOT WRITE IN THIS BOX)

UNION PACIFIC RAILROAD CO.

Moffat Tunnel Sub.

(SUBDIVISION)

M. P. 23.74 E. S. 1255+15 ±

UNDERGROUND WIRELINE CROSSING

ARVADA

JEFFERSON

CO

(NEAREST RR STATION)

(COUNTY)

(STATE)

FOR CITY OF ARVADA

(APPLICANT)

RR FILE NO. 0786883 DATE 10/04/2022

Supplementing original
folder 2503-89 audit
249836

WARNING

IN ALL OCCASIONS, U. P. COMMUNICATIONS
DEPARTMENT MUST BE CONTACTED IN ADVANCE
OF ANY WORK TO DETERMINE EXISTENCE AND
LOCATION OF FIBER OPTIC CABLE.
PHONE : 1-800-336-9193

Folder: 02503-89

To the Contractor:

Before Union Pacific Railroad Company can permit you to perform work on its right of way, it will be necessary to complete two originals of the enclosed Right of Entry Agreement as follows:

1. Fill in the complete legal name of the contractor in the space provided on Page 1 of the Contractor's Right of Entry Agreement.
2. Fill in the name of the contractor in the space provided in the signature block at the end of the Contractor's Right of Entry Agreement. If the contractor is a corporation, the person signing on its behalf must be an elected corporate officer.
3. Please print two copies, execute on your behalf and return ALL DOCUMENTS with a check for any payments required, as shown below to 1400 Douglas Street, Omaha, NE 68137-1690 Attn: Justin Soriano.
4. Check, **with Folder No. 02503-89 written on the front**, made payable to the Union Pacific Railroad Company in the amount of **ONE THOUSAND DOLLARS (\$1,000.00)**. If you require formal billing, you may consider this letter as a formal bill. In compliance with the Internal Revenue Service's new policy regarding their Form 1099, I certify that 94-6001323 is the Railroad Company's correct Federal Taxpayer Identification Number and that UNION PACIFIC RAILROAD COMPANY is doing business as a corporation.
5. Railroad Protective Liability Insurance (RPLI) certificate listing folder number 02503-89. Only one RPI certificate is required and must be on a separate certificate from your general liability insurance.

After approval of the Right of Entry Agreement and insurance certificate, one fully-executed counterpart of the Agreement will be returned to you. In no event should you begin work until you have received your counterpart of the fully-executed Agreement.

Sincerely,

Justin Soriano
Analyst Finance - Real Estate

EXHIBIT B
TO
SUPPLEMENTAL AGREEMENT

Folder No. 02503-89

Form Approved, AVP-Law
09/01/2018

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ by and between UNION PACIFIC RAILROAD COMPANY, a Delaware corporation, ("Railroad") and _____, a _____ corporation ("Contractor"), to be addressed at _____.

RECITALS:

The Contractor has been hired by **City Of Arvada** to one pipeline crossing to run a fiber optic wireline through the existing casing (the "work"), with all or a portion of such work to be performed on property of Railroad at Mile Post 23.8, on the Moffat Tunnel Subdivision at or near ARVADA, Jefferson County, Colorado. pursuant to a Supplemental Agreement between Railroad and City Of Arvada with an effective date of 05/01/2023 at such location as shown on the print marked **Exhibit A** attached hereto and hereby made a part hereof.

Railroad is willing to permit Contractor to perform the work described above at the location described above subject to the terms and conditions contained in this Agreement.

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between the Railroad and Contractor, as follows:

Article I. DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this Agreement to the Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

Article II. RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing any work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named

in Article IV, and is strictly limited to the scope of work identified to the Railroad, as determined by the Railroad in its sole discretion, and for no other purpose.

Article III. TERMS AND CONDITIONS CONTAINED IN EXHIBITS B AND C.

The terms and conditions contained in **Exhibit B** and **C**, attached hereto, are hereby made a part of this Agreement.

Article IV. ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

www.up.com/real_estate/third-party-flagging/index.htm	MGR SIGNAL MNTCE Tim Grudzinski 303-405-5446 tsgrudzi@up.com
--	---

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

Article V. TERM: TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement, and continue for one (1) year from May 1, 2023, unless sooner terminated as herein provided, or at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

Article VI. CERTIFICATE OF INSURANCE.

A. Only upon request, Contractor will provide Railroad with the insurance binders, policies, certificates and/or endorsements set forth in **Exhibit C** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Folder No: 02503-89
Union Pacific Railroad Company
1400 Douglas Street, STOP 1690
Omaha, Nebraska 68179-1690

Article VII. CHOICE OF FORUM.

Litigation arising out of or connected with this Agreement may be instituted and maintained in the courts of the State of Colorado only, and the parties consent to jurisdiction over their person and over the subject matter of any such litigation, in those courts, and consent to service of process issued by such courts.

Article VIII. DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

Article IX. ADMINISTRATIVE FEE.

Upon the execution and delivery of this Agreement, Contractor shall pay to Railroad **One Thousand Dollars (\$1,000.00)** as reimbursement for clerical, administrative and handling expenses in connection with the processing of this Agreement.

Article X. CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

Article XI. EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY

By: _____
Justin Soriano
Analyst Finance - Real Estate

(Contractor Name)

By _____

Name: _____

Title: _____

Telephone: _____

Email: _____

EXHIBIT B
To
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least ten (10) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such ten (10)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in

compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days' notice prior to the cessation of the need for a flagman. If five (5) days' notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional ten (10) days' notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall visit up.com/CBUD to complete and submit the required form to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company (ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. In addition to other indemnity provisions in this Agreement, Contractor shall indemnify, defend and hold Railroad harmless from and against all costs, liability and expense whatsoever (including, without limitation, attorneys' fees, court costs and expenses) arising out of any act or omission of Contractor, its agents and/or employees, that causes or contributes to (1) any damage to or destruction of any telecommunications system on Railroad's property, and/or (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Railroad's property. Contractor shall not have or seek recourse against Railroad for any claim or cause of action for alleged loss of profits or revenue or loss of service or other consequential damage to a telecommunication company using Railroad's property or a customer or user of services of the fiber optic cable on Railroad's property.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Licensee or its contractor. Licensee shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Licensee and its contractor shall at a minimum comply with Licensor's then current safety standards located at www.up.com/cs/groups/public/@uprr/@suppliers/documents/up_pdf_nativedocs/pdf_up_supplier_safety_req.pdf

B. to ensure uniformity with the safety standards followed by Licensor's own forces. As a part of Licensee's safety responsibilities, Licensee shall notify Licensor if it determines that any of Licensor's safety standards are contrary to good safety practices. Licensee and its contractor shall furnish copies of each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. To the extent not prohibited by applicable statute, Contractor shall indemnify, defend and hold harmless Railroad, its affiliates, and its and their officers, agents and employees ("Indemnified Parties") from and against any and all loss, damage, injury, liability, claim, demand, cost or expense (including, without limitation, attorney's, consultant's and expert's fees, and court costs), fine or penalty (collectively, "Loss") incurred by any person (including, without limitation, any Indemnified Party, Contractor, or any employee of Contractor or of any Indemnified Party) arising out of or in any manner connected with (i) any work performed by Contractor, or (ii) any act or omission of Contractor, its officers, agents or employees, or (iii) any breach of this agreement by Contractor.

B. The right to indemnity under this Section 8 shall accrue upon occurrence of the event giving rise to the Loss, and shall apply regardless of any negligence or strict liability of any Indemnified Party, except where the Loss is caused by the sole active negligence of an Indemnified Party as established by the final judgment of a court of competent jurisdiction. The sole active negligence of any Indemnified Party shall not bar the recovery of any other Indemnified Party.

C. Contractor expressly and specifically assumes potential liability under this Section 8 for claims or actions brought by Contractor's own employees. Contractor waives any immunity it may have under worker's compensation or industrial insurance acts to indemnify Railroad under this Section 8. Contractor acknowledges that this waiver was mutually negotiated by the parties hereto.

D. No court or jury findings in any employee's suit pursuant to any worker's compensation act or the Federal Employers' Liability Act against a party to this Agreement may be relied upon or used by Contractor in any attempt to assert liability against Railroad.

E. The provisions of this Section 8 shall survive the completion of any work performed by Contractor or the termination or expiration of this Agreement. In no event shall this Section 8 or any other provision of this Agreement be deemed to limit any liability Contractor may have to any Indemnified Party by statute or under common law.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors, and shall require all subcontractors to maintain the insurance coverage required to be maintained by Contractor as provided in this Agreement, and to indemnify Contractor and Railroad to the same extent as Railroad is indemnified by Contractor under this Agreement.

EXHIBIT C

Union Pacific Railroad Company Insurance Provisions For Contractor's Right of Entry Agreement

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from the Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. Commercial General Liability insurance. Commercial general liability (CGL) with a limit of not less than \$2,000,000 each occurrence and an aggregate limit of not less than \$4,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.

B. Business Automobile Coverage insurance. Business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less \$2,000,000 for each accident.

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement – Hazardous materials clean up (MCS-90) if required by law.

C. Workers Compensation and Employers Liability insurance. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state(s) affected by this Agreement.
- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 disease policy limit \$500,000 each employee.

If Contractor is self-insured, evidence of state approval and excel workers compensation coverage must be provided. Coverage must include liability arising out of the U.S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. Railroad Protective Liability insurance. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than \$2,000,000 per occurrence and an aggregate of \$6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. Umbrella or Excess insurance. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. Pollution Liability insurance. Pollution Liability coverage must be included when the scope of the work as defined in the Agreement includes installation, temporary storage, or disposal of any "hazardous" material that is injurious in or upon land, the atmosphere, or any watercourses; or may cause bodily injury at any time.

Pollution liability coverage must be written on ISO form Pollution Liability Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

Other Requirements

G. All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the work is to be performed.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.A.3.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation

Report in Brief

The current lease agreement between the City of Arvada and T-Mobile West Tower for an existing wireless communication site at 17850 West 64th Avenue Parkway ("Long Lake Park") is about to expire. A new lease agreement is currently being evaluated; however, it is not yet complete. In the interim, the First Amendment to the Lease Agreement has been agreed upon as a temporary stop-gap measure until a new lease can be finalized.

The Arvada team recommends that the City Council approve R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation.

Financial Impact

When the revised lease terms are finalized, they will be included in a new lease that will then be presented to City Council for approval. Included in that lease will be new lease terms for the rent payments to be made by T-Mobile to the City of Arvada. Until then, the rental payments shall continue at the existing rate on a short term basis as outlined in the First Amendment to Lease Agreement. Once a new lease is approved, the revised rent payments shall commence upon execution of the new lease. Revenue generated by these leases will continue to go into the General Fund.

Background

T-Mobile and its predecessor have had a wireless communication facility on the hillside at the western portion of Long Lake Park, near Highway 93, for quite some time. On May 5 2003 a lease agreement was approved for T-Mobile's predecessor to utilize a portion of the City property for a period of 20 years. That lease agreement is set to terminate on May 5, 2023. While T-Mobile continues to operate the wireless facility on this structure, the structure is owned and maintained by Crown Castle. Although this structure has been designed to appear as a shelter for trail users, it is nonetheless located within the park. This park is also encumbered by a Jefferson County Open Space (JCOS) reverter. As such, our Arvada team is working with T-Mobile/Crown Castle and JCOS to re-evaluate this site. T-Mobile/Crown Castle desires to remain at this location and as a result, a new lease agreement would need to be completed.

Discussion

In anticipation of the lease termination on May 5, 2023, the City of Arvada and T-Mobile/Crown Castle have entered into discussions of the renewal terms for a new lease agreement; however, the new lease is not yet ready for approval. To allow adequate time to complete an evaluation of this site, address the open space reverter, and finalize the new lease, it has been agreed that the current lease should be extended for a six-month period at the current terms with the option to extend another six months if necessary. During this extension, the First Amendment to the Lease Agreement shall also terminate upon the effective date of a new long-term lease agreement for this site.

Public Contact

Posting of the City Council agenda

Commission Recommendation

N/A

Strategic Alignment

The Strategic Plan supports community safety as a City Council Priority Area. Providing good wireless communication networks will help to ensure quality communication services thereby increasing community safety. In addition, the Strategic Plan identifies building and maintaining infrastructure networks as an important element in Arvada's future economic growth. While not specifically identified in the strategic plan, the wireless communications networks provide an added layer of infrastructure improvements that will provide increased opportunities for business and residents throughout the City.

Alternative Courses of Action

Based on Federal Communication Commission (FCC) rulings, municipalities have a limited ability to control wireless communications network deployments and are required to accommodate these network installations.

Recommendation for Action

The Arvada team recommends that the City Council approve R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation.

Suggested Motion:

I move that R23-042, A Resolution Authorizing a First Amendment to the Lease Agreement Between the City of Arvada and T-Mobile West Tower, LLC, Formerly Voicestream PCS II Corporation, be (approved) (rejected).

Prepared by:
Heidi Van Gieson, Administrative Specialist

Reviewed by:

Approved by:

Linda Hoover, Senior Planner	4/10/2023
Josie Suk, Development Systems and Administrative Manager	4/10/2023
Robert Smetana, Manager of City Planning and Development	4/10/2023
Ryan Stachelski, Director of Community and Economic Development	4/12/2023
Gail Walker, Legal Specialist-Contracts	4/12/2023
Emily Grogg, Senior Assistant City Attorney	4/13/2023
Rachel Morris, City Attorney	4/19/2023
Linda Haley, Deputy City Manager	4/19/2023
Lorie Gillis, City Manager	4/19/2023

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R23-042

**A RESOLUTION AUTHORIZING A FIRST AMENDMENT TO THE
LEASE AGREEMENT BETWEEN THE CITY OF ARVADA AND
T-MOBILE WEST TOWER, LLC., FORMERLY VOICESTREAM
PCS II CORPORATION**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Mayor or Mayor Pro Tem is authorized to sign and the City Clerk to attest, in form approved by the City Attorney, a First Amendment to a Communications Site Lease Agreement, which is in substantially the same form as that attached hereto, by and between the City of Arvada and T-Mobile West Tower, LLC., formerly Voicestream PCS II Corporation

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 1st day of May, 2023.

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____

**FIRST AMENDMENT TO LEASE AGREEMENT BETWEEN THE
CITY OF ARVADA AND T-MOBILE WEST TOWER, LLC.,
FORMERLY VOICESTREAM PCS II CORPORATION**

THIS FIRST AMENDMENT TO LEASE AGREEMENT ("First Amendment") is made and entered into as of the ____ day of _____, 2023, between the **THE CITY OF ARVADA**, a Colorado home rule municipal corporation ("Landlord") and **T-MOBILE WEST TOWER LLC**, a Delaware limited liability company, By CCTMO LLC, a Delaware limited liability company ("Tenant"). Landlord and Tenant may be referred to individually as a "Party" or collectively as the "Parties."

RECITALS

Landlord and Tenant are parties to that certain Lease Agreement dated May 5, 2003 (the "Agreement"), whereby Landlord leases a portion of the real property ("Premises") located at 17850 West 64th Avenue Parkway ("Long Lake Park"), City of Arvada, Colorado (the "Property") to Tenant as more specifically described in the Agreement.

T-Mobile West Tower LLC, a Delaware limited liability company, is successor in interest to Voicestream PCS II Corporation, and all references to "Tenant" are now T-Mobile West Tower LLC. T-Mobile West Tower LLC has granted Crown Castle a limited power of attorney (the "POA") to, among other things, prepare, negotiate, execute, deliver, record, and/or file certain documents on behalf of Tenant, all as more particularly set forth in the POA.

The Agreement is set to terminate on May 5, 2023, and Landlord and Tenant now desire to amend the Agreement to extend the term of the Agreement, in order to provide sufficient time to negotiate a new lease agreement for the Premises.

FIRST AMENDMENT

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are acknowledged, the Parties agree as follows:

1. Effective May 5, 2023, the Agreement shall automatically be extended for one additional six month term with an option to extend the term for a second period of six months (the "Extension Term") upon the mutual written agreement of the parties on or before November 5, 2023.

2. During the Extension Term, should the Parties agree to and approve a new long-term lease agreement for the Premises, this Agreement shall terminate upon the effective date of the new lease.

3. The Tenant's contact information in paragraph 22 of the Agreement is hereby deleted and replaced with the following:

Tenant:
CCTMO LLC
c/o Crown Castle Inc.
Attn. Real Estate
1500 Corporate Drive
Canonsburg, PA 15317

4. Except as specifically modified by this Amendment, all terms and conditions of the Agreement shall remain in full force and effect. To the best of each Party's knowledge without any independent investigation, as of the date of this First Amendment, neither Party is in default of the Agreement. In the event of a conflict between any term or provision of the Agreement and this First Amendment, the terms and provisions of this First Amendment shall control. All captions are for reference purposes only and shall not be used in the construction or interpretation of this Amendment. All capitalized terms used but not defined in this First Amendment have the meanings set forth in the Agreement.

This First Amendment has been executed by each Party's duly authorized representative effective as of the date first above written.

LANDLORD:

CITY OF ARVADA, a Colorado home rule municipal corporation

By: _____
Marc Williams, Mayor
Date: _____

TENANT:

T-MOBILE WEST TOWER LLC, a Delaware limited liability company

By: CCTMO LLC, a Delaware limited liability company,
its attorney in fact

By: 
Name: Lisa Sedgwick
Title: Manager RE Transactions
Date: 4/12/23



REPORT TO CITY COUNCIL RESOLUTION

AGENDA ITEM
8.B.1.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: R23-043, A Resolution Authorizing the Fourth Revision to the City of Arvada City Council Strategic Plan 2020-2025 (Presenter: Lorie Gillis, City Manager)

Report in Brief

PRESENTER: Lorie Gillis, City Manager

On March 10, 2023, the City Council, with the support of the City Leadership Team, conducted the Annual City Council Strategic Planning Retreat. The information gained from the retreat resulted in the refinement of several strategic results and associated milestones. Revisions to the existing strategic plan will be added to the 2020-2025 City Council Strategic Plan upon approval of the attached Resolution R23-xxx, thereby amending the plan originally adopted by City Council on September 16, 2019, first revised by Resolution R20-047 on June 1, 2020, next revised by Resolution R21-0095 on July 19, 2021 and last revised by Resolution R22-033.

The Arvada team recommends that the City Council approve A Resolution Authorizing the Fourth Revision to the City of Arvada City Council Strategic Plan 2020-2025.

Financial Impact

The Financial Impact associated with the revisions to the City Council Strategic Plan as described herein will be determined through the 2023-2024 budget development process that will begin later this month and will proceed through the Council's approval of the budget in October. The City Council will receive information associated with the Financial Impact of the Strategic Plan during workshops and business meetings in July, August, September and October.

Background

In June 2013, the City Council adopted the City Strategic Plan 2014 - 2019. The plan outlined four priority areas to focus on through 2019. In 2018, a fifth priority area was added. The 2020-2025 City Council Strategic Plan was adopted by City Council on September 16, 2019. Initial revisions were adopted to the 2020-2025 City Council Strategic Plan (The Plan) on June 1, 2020 by Resolution R20-047. The Plan was updated again on July 19, 2021 by Resolution R21-095. Most recently the plan was revised for the third time on May 16, 2022 by Resolution R22-033. The Council receives updates regarding progress on the achievement of strategic results and milestones that were approved within each revised Plan on an annual basis.

This year's annual update on progress was provided to the City Council on March 03, 2023. Each year, the City Council and Leadership Team reviews Plan progress during the Council's annual strategic planning retreat and uses the Retreat as an opportunity to add, enhance or delete strategic results. All changes to the City Council Strategic Plan must be adopted via Resolution.

The City Council requested a topic-focused discussion during the retreat on March 10, 2023. These topics included in-depth and robust conversations about Public Safety and Crime, Affordable Housing, Homelessness, and Financial Resiliency. These conversations contributed to the proposed revisions to the plan.

The attached document includes all changes and, if approved by the Council, will be put in final form.

Discussion

The City Council Strategic Plan is the foundation for the allocation of resources for the City's Biennial Operating and Capital Budget. Strategic Results are assigned to at least one department, resourced as part of the budget development process, and incorporated within department performance measures. The integration of the Strategic Results within the Biennial Operating and Capital Budget is the "Golden Thread" that connects specific City Council direction with the day-to-day operation of the City. The amended City Council Strategic Plan will be utilized by team members to implement City Council and community priorities during 2023 and form the foundation for continued progress in the future.

Public Contact

Posting of the City Council agenda

Commission Recommendation

N/A.

Strategic Alignment

The City Council 2020-2025 Strategic Plan is the document that provides Council's strategic vision and strategic priority areas. Use of City resources is aligned with the vision included herein.

Alternative Courses of Action

N/A.

Recommendation for Action

The Arvada team recommends that the City Council approve A Resolution Authorizing the Fourth Revision to the City of Arvada City Council City Strategic Plan 2020-2025.

Suggested Motion:

I move that R23-043, A Resolution Authorizing the Fourth Revision to the City of Arvada City Council Strategic Plan 2020-2025, be (approved) (rejected).

Prepared by:
Elizabeth Blythe, Strategic Planning and Performance Alignment
Manager

Reviewed by:

Approved by:

Rachel Morris, City Attorney	4/17/2023
Don Wick, Deputy City Manager	4/17/2023
Linda Haley, Deputy City Manager	4/17/2023
Lorie Gillis, City Manager	4/19/2023

Enclosure, exhibits & attachments required to support the report

RESOLUTION NO. R23-043

A RESOLUTION AUTHORIZING THE FOURTH REVISION TO THE CITY OF ARVADA
CITY COUNCIL STRATEGIC PLAN 2020-2025

WHEREAS, the City Council has completed the process of creating strategic results and associated milestones for the 2020-2025 City Council Strategic Plan; and

WHEREAS, the City Council Strategic Plan will be used to develop action plans for each work system and provide strategic direction.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. The Fourth Revision to the City of Arvada City Council Strategic Plan 2020-2025 is hereby formally adopted.

Section 2. This resolution shall be effective upon its approval by the City Council.

APPROVED AND ADOPTED this 1st day of May, 2023.

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By: _____

City Council Strategic Plan 2020-2025

4th Revision Edits Recommended for Adoption via City Council Resolution on May 1, 2023.

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INTRODUCTION

In 2013, the Arvada City Council developed the first comprehensive citywide strategic plan which was adopted by Resolution. The City Council Strategic Plan (CCSP) is the guiding document that lays the foundation for meeting current and future community needs, integrates the Biennial Operating and Capital Improvement Budgets, and subsequently drives daily operations within the City. The CCSP identifies key ~~prioritizes change initiatives, and addresses resource allocation. The CCSP has along~~ **strategic and** operational objectives a six-year time horizon, bolstered by an annual iterative review considering shorter-term adjustments, and a 10-year outlook to incorporate long-range initiatives reflected in the financial plan.

The CCSP is developed by the City Council using the strategic planning process in collaboration with the City leadership team and is reviewed on an annual basis as part of City Council strategic planning retreat with a focus on strategic results. The retreat provides a forum for in-depth discussion of strategic results progress which can either confirm the current approach or modify existing plans based on review findings. Additionally, every other year following a City Council election, a comprehensive review of all strategic results is conducted to determine whether updates, additions, or deletions are needed. The scheduling of the comprehensive review following Council election is intended to provide new Councilmembers an opportunity to influence the re-setting of priorities and a platform for agility with the potential of re-prioritization of change initiatives and identification of potential larger transformational change opportunities.

In 2019, City Council and the Leadership Team began discussions for the creation of the 2020-2025 CCSP. This document builds upon the original strategic foundation and includes cycles of learning which led to the creation of a fifth priority area. The five priority areas now include Safe Community, Infrastructure, Community and Economic Development, Vibrant Community and Neighborhoods, and Organizational and Service Effectiveness. Principles and milestones were also incorporated in 2019 to provide clear alignment and progress points toward the successful completion of strategic results.

The City monitors progress using an integrated performance management system called FOCUS, which aligns performance-based budgeting, strategic planning, strategic results, priorities, milestones, performance measures, and individual workforce goals to clearly define what the City needs to accomplish over a six-year timeframe. The CCSP guides FOCUS to prioritize services and programs for the community by concentrating on the value to, and experience of, the customer, and by measuring, evaluating, and reporting performance. Progress toward the achievement of strategic results is reviewed, discussed, and shared on a quarterly basis with the community, workforce, and City Council.

STRATEGIC PLANNING PROCESS

~~In May of the first quarter each year, the City Council and Leadership Team participate in a Strategic Planning Retreat. City team members are responsible for facilitating the retreat utilizing the STRATOP framework. Steps in the process are as follows:~~

~~**Perspective** - Where are we now? The City Council and Leadership review and update the framework of the history of the City of Arvada. We do this through identifying, updating and then profiling the turning points of the City. Understanding our story answers the question, “How did we get to where we are now?” This helps the City Council and Leadership Team continuously update our story and capture insights and learnings invaluable to perspective and planning. Focusing on this perspective ensures we capture the relevant impact and insight of each turn on strategic, operational, and financial categories. The other important aspect of this step is focusing on turning point learnings. By doing so, we gain valuable insight into how we got to where we are.~~

~~**Planning** - Where are we headed? The City Council and Leadership Team dedicate time during the Strategic Retreat, to “Dream Big and Deliver”, and explore what The City of Arvada will be 5 and 10 years in the future. The teams identify strategic drivers to accomplish the mission of the City, projecting a future model for the community. The teams infuse the viewpoints and requirements of our primary customers gained through the biennial Customer Survey, Speak Up Arvada and Ask Arvada.~~

~~**Action** - What is important now? The City Council and Leadership Team come to consensus on what is important to focus resources on in order to move towards their strategic vision. This work informs new Strategic Results. The information is infused into the budget process, as all requests for resources must be tied to a strategic result, principle or performance measure.~~

~~**Management** - How are we doing? All elements of the strategic planning process are reflected in ClearPoint. Leadership Team members review strategic results, action initiative plans and performance measures on a monthly basis at the Leadership Team Retreat.~~

~~**Renewal** - What must change? At the conclusion of each year, a Strategic Plan Progress Report is presented to the City Council for review and feedback. Feedback gained is gathered and used to prepare for the next City Council Strategic Retreat.~~

The 2023 Strategic Planning process included both a review of the progress made on all strategic results, as well as in-depth discussions of four specific topic areas. On March 3, 2023, City Council received a document outlining the progress made on the current City Council Strategic Plan. At the March 10, 2023 City Council Strategic Retreat, City Council asked further questions and received more detailed information on items from the strategic plan that needed further review.

In addition to the plan progress update, City Council requested time for discussion of specific

policy-level topics. These topics included homelessness, affordable housing, public safety and crime, and financial resiliency. The selection of these topics was informed by the 2022 Community Survey, which helped the Leadership Team create a preliminary list of discussion topics for City Council to choose from. During the retreat, Leadership Team members presented information on these topics and were available to answer Councilmember questions as they discussed their policy direction.

Based on the policy direction and feedback provided by City Council, the Leadership Team recommended changes to the strategic plan, which were then approved by City Council at the May 1, 2023 City Council Meeting and are now reflected in this document.

COMMUNITY PROFILE

Arvada is a beautiful first-ring suburb of Denver, the Mile High City. Arvada retains its small-town feel even with its estimated population of 124,000. Established in 1870, Arvada enjoys a rich history, quiet tree-lined neighborhoods, and a robust mix of parks, trails, and open space. Arvada's strong civic leadership balances quality of life with an understanding and support of business and economic development. The City has been recognized for customer-focused excellence, societal responsibility, performance management, and visionary leadership.

Arvada spans 39 square miles. Three proximate interstate highways provide easy access to the larger metropolitan region and Denver International Airport. Arvada hosts three G Line transit stops which are a part of the metropolitan FasTracks commuter rail system providing direct access to downtown Denver and Denver International Airport. An extraordinary trail system links with Denver trails on the east and the foothills of the Rocky Mountains to the west, punctuated with thousands of acres of parks and open spaces.

Arvada's Historic Olde Town provides an eclectic shopping and dining experience along with farmers markets and festivals. Arvada's low crime rate, superb quality of life, organized neighborhoods, diverse economic base, and highly-educated workforce have helped shape our community into one of the most attractive and competitive cities in the Centennial State.

GUIDING THEMES

~~Input from the community gathered through Speak Up Arvada and City Council helps to identify major themes for the CCSP. These themes describe an Arvada that:~~

- ~~• Provides a full range of municipal services to its residents; one that engages effectively and allocates sufficient resources to meet the growing and changing needs of our community.~~
- ~~• Prioritizes quality of life, which is defined by connected, safe neighborhoods where we care for our neighbors and enjoy access to an incredible network of parks, trails, and open space.~~
- ~~• Supports a safe, effective, and efficient transportation system, including access to the greater~~

~~metropolitan area, transit opportunities, and improved connectivity to our many recreational assets.~~

- ~~• Embraces small-town traditions to achieve an inclusive, prosperous, and resilient community of neighborhoods where quality housing is attainable to all.~~

In October of 2022, Arvada residents received the annual community survey. The community feedback received through this survey informed City Council and Leadership Team discussions in the strategic planning process. Below are a few key findings and themes from the 2022 survey.

- More residents say the City is headed in the right direction than the wrong direction, but there is room for improvement.
- Across all demographic groups, there is a high level of satisfaction with the accessibility and quality of the parks and trails in Arvada. Likewise, all demographic groups are satisfied with the maintenance of paths and trails.
- When asked what was the most important issue facing the city, public safety was the top issue across all demographic groups. In a different question about priorities, the number of homeless people in Arvada, the condition of streets, roads and sidewalks and crime, in general, were the top three ranked issues.
- Generally, most residents are satisfied they are getting their money's worth for their tax dollars. Residents over the age of 65 are more satisfied that they are receiving their money's worth of services for their tax dollars than younger residents.
- There is a large gap in satisfaction with how the City manages growth between newer residents and long-term residents. Age groups 40+ and District 4 residents are the least satisfied with how the City manages growth and development. Residents who have lived in Arvada longer have a stronger objection to the growth and development the City has experienced.

VISION, MISSION AND VALUES

From 2015 to 2016, the City engaged in a cultural transformation initiative, using extensive internal and external input, in order to redefine its Vision, Mission, and Values. The City's revised VMV was created through a collaborative process with representatives from all work systems and workforce levels. The City's Values directly support and reinforce the City's Vision, Mission, and core competencies. In July of each year, the workforce celebrates and re-confirms their commitment to the VMV.

Vision

We dream big and deliver.

Mission

We are dedicated to delivering superior services to enhance the lives of everyone in our community.

Values

Innovation - We excel in creativity, flexibility and the use of best practices while valuing diverse backgrounds, ideas and perspectives.

Passion - We are a high performing, inclusive team inspiring each other to pursue excellence.

Opportunity - We value our diversity, embrace possibilities, face challenges, persevere and take action to deliver quality results.

CHALLENGES AND ADVANTAGES

The CCSP is the result of the integration of data gathered from City Council, community input and all work systems generating strategically relevant information to identify organizational challenges and opportunities. The City must continue to learn and adapt in order to address current challenges while leveraging existing advantages.

Work System	Challenges	Advantages
Safe Community	● National narrative on policing ● Tragie loss of an officer ● Recruitment and retention of officers ● Implementation of body worn camera State mandate ● Increase in homelessness ● Increase population and calls for service ● Increase in violent crime ● Lack of mental health services ● Lack of appropriate sentencing options ● Increase in legislative mandates	● Supportive community, Council and City Management ● Strong leadership in the Police Department and Municipal Court ● Maintaining national accreditation ● Judicial focus on restorative justice ● Specialty Court docket addressing homeless population
Infrastructure	● Aging curb, gutter, sidewalks, ADA compliant ramps, streets and utility assets ● Funding required for asset maintenance, replacement and serving planned development ● Cost and availability of labor and materials ● Expanding service area ● Accessibility to public buildings ● Transportation infrastructure ● Climate variability	● Execution of bond projects ● Completion of Master Plans ● Progress on long-term water and sewer needs ● Comprehensive road condition analysis ● Success of organized waste hauling
Community and Economic Development	● Approaching full buildout with focus shifting to redevelopment and infill ● Finding a balance between new development and established neighborhoods ● Increasing community concerns around growth and density ● Growing concerns around sustainability	● Opportunities for community engagement ● Interdisciplinary development review process ● Focus on infrastructure planning ● Dedication to long-range land use ● Relationship with the business community

Work System	Challenges	Advantages
Vibrant Community and Neighborhoods	● Effect of climate change on outdoor assets ● Lack of affordable housing/increasing cost of housing ● Limited land available for acquisition and increasing cost of property ● Expanding service area ● Impacts of increased use of parks, trails, and open space amenities ● Increasing impact of homelessness on the Arvada community ● Accessibility of parks and amenities ● Lasting impacts and uncertainty of pandemic restrictions ● Lack of volunteers	● Resident and community support for parks, trails and open space ● Collaboration for affordable housing options ● Implementation of the regional initiative to address homelessness ● Parks superior level of service
Organizational and Service Effectiveness	● Recruitment and retention of employees ● Heightened focus on cybersecurity ● Increasing complexity and magnitude of workloads ● City Manager Transition ● Employment Legislation ● Changing workforce demographics and expectations ● Legacy Technology ● Increasing Litigation	● Financial stability through the pandemic ● Long range financial planning ● Focus on building organizational capacity ● 2021 Top Workplace recognition ● Engaged Workforce ● Flexible work schedule and location options
City Organization and Community	● Decreased trust of local government ● Recovering from tragic events ● Increasing and elevated community expectations ● Increased frequency of controversial policy decisions ● Labor shortages and supply chain issues ● Inflation ● Climate variability	● Economic resiliency ● Engaged residents ● Increased options for participation with City government ● Olde Town pedestrian improvements ● Sustained resilience as a result of the pandemic ● Data driven decisions ● Superior customer service

STRATEGIC ADVANTAGES AND CHALLENGES

The City has identified the following advantages and challenges that could impact the implementation of strategic objectives laid out in this plan's principles, results and milestones. The City must continue to learn and adapt in order to address current challenges while leveraging existing advantages.

Advantages	Challenges
● A desirable place to live, work, play and explore with attractive amenities and high quality of life ● Commitment to integrated master planning and distinguished financial practices including long-range planning, high ratings and strong reserves ● A people-first organizational culture with strong leadership and high-performing and engaged employees ● Superior service delivery through strong customer service and data-driven decision making ● Solid relationships with the community including residents, visitors, businesses, non-profits, and governmental agencies	● Evolving and confused identity as a large city compared to its historic small-town roots ● Attracting, retaining, and developing top talent ● Underfunded and delayed reinvestment in city assets with an increasingly vulnerable environment ● Balancing limited resources with an expanding service area and a demographically shifting customer base who have competing community priorities and changing expectations ● Increased frequency of controversial policy decisions and legislative mandates, and decreased public trust that infringe on home rule and our ability to support community needs ● Aligning regional partners around a common mission ● Defining core services

Safe Community

Community-based policing, connected neighbors, engaged local businesses, supportive community institutions, and a fair and impartial justice system, all working together, to ensure Arvada is a safe place to live, work, play, and stay.

Principles

To support a safe community, the City of Arvada:

- Achieves and maintains the gold standard in public safety by meeting and exceeding standards set forth through the Commission of Accreditation for Law Enforcement Agencies (CALEA) to assist with the designation of one of the safest communities in Colorado.
- Provides customized police services making the community feel safe and secure, including proper investigation, appropriate case filings, and crime scene investigation, resulting in an increased likelihood of identifying and prosecuting those responsible for committing crimes.
- Ensures the Police Department has appropriate staffing levels; communication, information, financial management support; and leadership services to achieve strategic and operational results, including maintaining a well-informed community.
- Applies inspection, enforcement, community support, and neighborhood engagement services to residents, businesses, and neighborhood partners in order to preserve a safe community. ~~compliance, stability, and appearance of neighborhoods through collaborative partnerships and achievement of long-term neighborhood goals.~~
- Provides administrative, business, communication, and investigative services to members of the community and the Police Department with a commitment to Respect, Dedication, and Responsibility.
- Provides an independent, fair, and impartial justice system that efficiently processes the court docket, renders fair and just decisions, and holds all stakeholders accountable, while providing access to resources and services to reduce recidivism and improve the well-being of defendants.

Safe Community Strategic Results

[SR1] By 12/23 By 12/24, Public Safety staffing levels will be at 95% filled.	Complete [M1A] By 12/20, create performance measures documenting the amount of and reasons for officer attrition.	[M1B] By 12/24 Continuously, update and utilize the recruitment and retention plan including the use of a hiring strategy.	[M1C] By 12/24, continue use of an over-hire strategy to leverage access to quality candidates and be fully staffed.
Complete [SR2] by 3/21, Public Safety will implement a community engagement and education plan.	Complete [M2A] By 12/20, formalize and integrate the CORE unit to work with those experiencing homelessness by providing resources, education, and criminal violation enforcement.	Complete [M2B] By 12/20, implement a plan that outlines services and education provided to juveniles within Arvada.	Complete [M2C] By 12/20, implement a plan that outlines strategies to enhance positive police and community interaction.
[SR3] By 12/23, maintain a violent crime rate lower than 80% of the cities in the state of Colorado with a population of 100,000.	Complete [M3A] By 12/22, implement a comprehensive Traffic Safety Strategy and Operational Plan with collaboration between the police department, traffic engineering and streets maintenance programs to ensure high level traffic safety and operation standards.	[M3B] Annually, 80% of calls for service with a priority of "O" or "1" will have less than a 5 minute response time.	[M3C] By 12/22 By 12/23, design and implement Code Enforcement measure focused on proactive inspections for designated retail commercial areas.
Complete [SR4] By 12/22, 100% of juveniles charged with criminal offenses and referred to probation will receive measurable risk-based pre-sentence assessments.	Complete [M4A] Annually, 90% of presentence reports will be completed and provided to juvenile within 72 hours of sentence.	Complete [M4B] Annually, 80% of presentence reports contribute to evidenced based sentencing recommendations - Municipal Judge.	Complete [M4C] Annually, 80% of presentence reports contribute to evidenced based sentencing recommendations City prosecution team.
[SR5] By 6/25, the One Small Step (OSS) Specialty Court Docket will be successfully implemented to improve outcomes for people experiencing homelessness.	[M5A] By 6/23, the specialty court docket will be in compliance with best practices for the homeless population.	[M5B] By 12/23, reduce recidivism among One Small Step defendants by 25% and identify where clients disengage in the process to enhance the benefits of the program.	[M5C] By 6/25, 60% of One Small Step defendants are enrolled in a treatment program.
[SR6] By 12/23 By 12/24, complete a review of the City Code and present revisions for the City Council's consideration that will improve the accountability of defendants.	Complete [M6A] By 12/23, complete analysis of a Parent Accountability ordinance that would address juvenile violence in schools for the City Council's consideration.	[M6B] By 6/23 By 6/24, complete revisions to Chapter 62 of the ACC to be more consistent with Colorado State criminal laws to facilitate prosecution of defendants in the Municipal Court and help hold defendants accountable for their conduct.	

Infrastructure

The community depends on a well-maintained foundation of streets, sidewalks, and water, wastewater and stormwater facilities. Planned and steady population growth requires proper maintenance of existing infrastructure **including city buildings and fleet, as well as**, additional capacity to support a thriving community.

Principles

To support infrastructure, the City of Arvada:

- Provides the community with a safe, resilient, high-quality water supply, drainage system, wastewater disposal **and solid waste management** services for full city build-out, as defined by the Comprehensive Plan. This includes maintaining utility rates at lowest practical levels with accurate billing that supports robust and reliable infrastructure.
- ~~• Provide reliable solid waste management services for the community.~~
- ~~Offers services focused on~~ Invests in and maintains safe, resilient, accessible and environmentally-efficient City facilities and fleet vehicles. ~~to ensure the most efficient and maximum usage of valued assets.~~
- Maintains existing roads and transportation network in tandem with snow and ice control services to ensure swift and safe transportation modes for the community.
- **Provides** Innovates safe, accessible and efficient connections to modes of transportation, including transit, streets, sidewalks, and bikeway **with including** a focus on enhanced technology at high-priority intersections improving safety, minimizing traffic congestion and making first and last-mile connections.
- Applies cost-effective and timely engineering, **planning and design**, ~~geographic information, effective~~ construction practices, and established standards and specifications to align public infrastructure **priorities** reinvestment capacity with community ~~growth and redevelopment~~ needs.
- ~~• Provides computer-aided drafting, design services, special analysis, GIS applications, and enterprise system integration for the workforce to better visualize spatial relationships for informed decisions, while maintaining and/or replacing infrastructure and accommodating new construction projects.~~
- Develops, advances, and implements systems of asset management to support levels of service commitments.
- Ensures compliance with federal and state regulations including environmental and Americans with Disabilities Act.
- Develops and implements aligned infrastructure master plans and sustainable financial strategies.
- Provides timely engagement opportunities and information about public infrastructure.

Infrastructure Strategic Results

[SR1] By 12/22, By 12/23, complete and continue to implement a Street Maintenance Master Plan and develop an implementation plan to address and prioritize findings.	[M1A] Through 12/25 Annually, prepare an annual -street maintenance report for City Council and the community.	Complete [M1B] By 1/23, provide City Council with a briefing of the Streets Maintenance Master Plan.	[MIC] By 12/23, develop an implementation plan to address and prioritize master plan findings.	
Complete [SR2] By 12/21, complete full implementation of waste hauling options.	Complete [M2A] By 5/20, the first reading of the proposed ordinance will be complete.	Complete [M2B] By 6/20, a public hearing at a City Council Business Meeting will be held and City Council will be provided with the option for contract approval.	Complete [M2C] By 12/20, develop a waste hauling engagement and outreach plan if the contract is approved by City Council.	Complete [M2D] By 4/21, complete initial household component selections to prepare for Cart Deployment in June.
	Complete [M2E] By 6/21, stage and deploy waste and recycle carts.	Complete [M2F] By 7/21, begin waste and recycle collection services with a contracted vendor.		
[SR3] By 12/23, update water, sewer, stormwater master plans and develop an implementation plan to address all and prioritize findings.	Complete [M3A] By 12/21, complete the Sewer and Stormwater Master Plans.	Complete [M3B] By 12/22, complete the Water Master Plan.	[M3C] By 12/23, actions including conceptual project and operational changes to utilities programs necessary to implement the Master Plans are included in the 10-year CIP and performance budget.	
[SR4] By 12/23 By 12/24, complete a pavement program plan, provide financial options for City Council in order to eliminate the street maintenance deficit and develop an implementation plan to address and prioritize findings.	Complete [M4A] By 12/22, evaluate and develop policy direction for streets maintenance including ADA compliance requirements.	Complete [M4B] By 12/22, all new development in the City complies with ADA requirements and 2022 updated engineering standards.	[M4C] By 1/23 By 7/24, obtain City Council support and direction after completing research and developing the business case for dedicated funding to street maintenance.	[M4D] By 7/23, By 7/24 obtain council support and direction for dedicated streets funding.
	[M4E] By 12/23, have a business case for maintaining infrastructure in the future.			

[SR5] By 12/25, effectively utilize voter approved bond funds for the completion of Ralston Road phase 2 and the expansion of 72nd Avenue.	[M5A] By 3/23 By 3/24, 85% of bond funds will be expended.	[M5B] By 12/24 By 3/25, the required 5-year bond arbitrage calculation will be completed on time.		
[SR6] By 12/25, complete a comprehensive plan for City facilities and properties that would be utilized for City business. operations post COVID-19, including the City Hall campus, Indiana Shops, and other appropriate satellite facilities to ensure optimal usage of space.	Complete [M6A] By 12/20, update the conceptual plan for the Post Office property.	Complete [M6B] By 12/21, present the conceptual plan for the Post Office property with cost, funding, and schedule to City Council.	[M6C] By 12/22 By 12/23, complete an evaluation of utilization of all currently operating City facilities.	[M6D] By 12/23 By 12/24, determine need for additional facilities to support City operations.
	[M6E] By 12/24 By 12/25, develop a sustainable financial plan for improvements to existing City facilities and/or purchase of additional properties and develop an implementation plan to address and prioritize findings.			
[SR7] Through 12/25, continue progress on having 100% of the water supply needed for buildout based upon the water supply master plan and current schedule for completion of Gross Reservoir by 2028.	[M7A] By 12/24, develop a Water Supply Master Plan.	[M7B] Through 12/25, maintain funds to meet water supply financial commitments.	[M7C] Through 12/25, monitor Denver Water participation contract requirements to meet water delivery scheduled for 2028.	
Complete [SR8] By 12/22, the engineering standards and City code framework will be updated.	Complete [M8A] By 12/20, create new development agreement terms and template.	Complete [M8B] By 12/20, complete an inventory of engineering Ordinances and specifications and by 12/22, adopt new/revised Ordinances and specifications.	Complete [M8C] By 12/21, complete draft engineering standards and specifications update.	

[SR9] By 12/23 By 12/24, complete and implement an Arvada transportation master plan, including analysis of the current transportation network, and analysis of future multi-model opportunities including non-motorized micro-mobility options, transit options, first and last mile opportunities, road system safety improvements, and emerging transportation technology.	[M9A] By 6/22 By 6/23, initiate a transportation master planning project with a selected contractor.	[M9B] By 6/23 By 6/24, begin implementation of the transportation master plan, including conceptual project and operational changes to transportation programs necessary to ensure the Master Plans are included in the 10-year CIP and performance budget.	[M9C] By 7/23 By 7/24, the Transportation Committee will align with city stakeholders in the refinement and implementation of the master plan recommendations.	[M9D] By 1/24, on an ongoing basis provide semi-annual updates to the City Council regarding the implementation.
[SR10] By 6/23 By 12/24, create a comprehensive environmental regulatory compliance program.	[M10A] By 8/22 By 2/24, evaluate current City Ordinances, state and federal regulatory requirements, and the logistics for the development of an environmental regulatory compliance program.	[M10B] By 12/22 By 6/24, provide the analysis and recommendations regarding a comprehensive environmental regulatory compliance program to the City Manager.	[M10C] By 6/23 By 12/24, based upon the outcomes of previous milestones, update workforce plans and set new milestones for the resourcing of recommendations to leverage all work systems to support compliance.	
[SR11] By 6/24 By 12/25, conduct a fleet electrification transition study.	Complete [M11A] Effective 6/22, all future vehicle purchases will include the evaluation of electric vehicle options.	[M11B] By 6/23, complete a telematics study of city fleet vehicle use patterns.	[M11C] By 6/24, prepare a comprehensive report with vehicle use pattern assessments and recommendations for fleet electrification, including vehicles, resource needs, and charging infrastructure.	[M11D] By 12/22 Continuously, identify and solicit additional state, local and grant funding opportunities for charging infrastructure.

Community and Economic Development

Arvada's future prosperity, beautification, and quality of life will be significantly influenced by the City's ability to ensure that development meets safety requirements, design values and standards, infrastructure needs, and supports the local economy to implement the community's vision.

Principles

To support community and economic development, the City of Arvada:

- Uses the Comprehensive Plan to guide planning, land use code decisions, development management, and informational and resource services that are delivered to residents, businesses, the development community, decision-making bodies, and neighborhood partners to achieve a well-planned, aligned, sustainable, attractive, and livable community for current and future generations.
- Applies a high-performing development review process that maintains the community's standards for safety, vision, sustainable, and quality design which ensures a quality and timely review for the developer.
- Supports the community's vision by cultivating an environment that attracts and retains private-sector investment, a talented workforce, and an engaged business community.
- Maintains and protects the health, safety, and welfare of the public by ensuring safe buildings in the community, while providing excellent customer service
- Improves access to quality housing that is affordable to a broad range of income levels and provides resources, housing, and neighborhood assistance services to Arvada residents, neighborhoods, property owners, and stakeholders. MOVED FROM VCN

Community and Economic Development Strategic Results				
[SR1] 95% of development project approvals conform to the City's Comprehensive Plan.	Complete [M1A] By 12/20, complete and implement the updated Land Development Code through adoption and remapping.	Complete [M1B] By 12/22, create a sub-area plan for NW Arvada focused on place making.	[M1C] By 12/25, fully align the Master Plans contained within the City's Comprehensive Plan.	
[SR2] By 12/22, 66% of development customers rate the development review process as 'good' and/or 'excellent'.	Complete [M2A] By 12/22, implement a development customer service survey with at least a 50% response rate.	[M2B] Annually, 90% of development reviews will be returned to the applicant within 15 business days.	[M2C] On an ongoing basis, resolve all temporary certificates of occupancy (TCOs) within 6 months of issuance.	
[SR3] By 12/23, adopt land use options that allow for pocket neighborhoods.	Complete [M3A] By 12/21, develop a resource plan to ensure appropriate implementation.	Complete [M3B] By 12/22, propose new land development code zone districts which can accommodate pocket neighborhoods.		
[SR4] By 12/25, fully align the City's economic development efforts with the community's vision expressed in the Community Survey and Business Survey.	Complete [M4A] By 12/21, AEDA will be re-accredited by the International Economic Development Council.	Complete [M4B] By 12/21, establish a community outreach program that helps the community define its economic development goals.	Complete [M4C] By 12/22, develop policies, procedures and standards for all events occurring in Olde Town to ensure safety and quality for the community.	[M4D] By 12/23, establish a plan to build a hospital in Arvada in collaboration with a regional healthcare provider.
	[M4E] By 12/25, develop options for the Harvest Festival targeting the alignment of the Harvest Festival Committee and City goals.			

[SR25] By 12/24, implement a tool kit of housing mix and style plans to improve access to quality housing affordable for a broad range of income levels. MOVED FROM CED	Complete [M25A] By 12/20, create a regional strategy to address homelessness.	Complete [M25B] By 12/20, complete an affordable housing assessment including incentive options and the area south of the Arvada Cemetery.	Complete [M25C] By 6/21, evaluate the Human Services Advisory Committee's process for recommending funding.	Complete [M25D] By 12/20, complete a list of current projects under development or planning.
	Complete [M25E] By 12/22, create a Housing Advisory Committee to support the City in current/future initiatives while also educating the broader community on issues of affordable housing.	[M5F] By 12/24, Utilize housing committee to create a housing strategy plan and have plan approved by City Council.		

Vibrant Community and Neighborhoods

A vibrant community is engaged in civic life, the arts, and the outdoors. It comprises individuals and groups who are dedicated to their community, get involved with neighborhood associations, and participate with local government to ensure responsiveness to changing needs, resulting in Arvada being the preferred place to live, work, play, and stay.

Principles

To support a vibrant community and neighborhoods, the City of Arvada:

- ~~Provides meaningful ways for the community to engage with local government and strategic partnerships to advance quality of life by embracing both Arvada's small town traditions and history and changing to achieve an inclusive, equitable, diverse, prosperous, community that cares about its neighbors.~~ Fosters strategic partnerships to advance quality of life and achieve an inclusive, equitable, diverse, resilient and sustainable community.
- Provides specialized programs, environmental education, sustainability and resource conservation services to residents so they can carefully use and preserve resources and save money.
- Provides maintenance services to the community and visitors, so they can play and enjoy activities in safe and well-maintained parks, open spaces, and trails system. ~~Completing park projects, creating a green spine trail system while enhancing the existing trail system, and acquiring lands for open space conservation to complete gaps in underserved areas or along potential open space corridors.~~
- Ensures that all Arvadans have equal access to quality parks that provide diverse, affordable recreation opportunities in clean, safe, and healthy environments through strategic design and land acquisition; Designs public park and trail choices that enrich quality of life and cultural connection to beautiful places and vibrant experiences; Addresses service gaps in underserved areas or along potential open space corridors.
- Operates sustainable premier golf programs and facilities focusing on exceptional service and value to the community and on conservation of the natural environment under economically sound and socially responsible management.
- Plans and hosts events and works collaboratively with artists, arts and culture organizations and the community to enrich Arvada's quality of life and economic vitality and to help create a vibrant, beautiful and resilient sustainable city.
- Supports city policies, programs and efforts to secure an economically, socially, and environmentally sustainable city for generations to come; and ensures that the setting of goals and metrics and monitoring of results considers equity.
- Enhances community health and quality of life by promoting active lifestyles and connecting Arvada's youth with the outdoors; Provides youth sports organizations with the highest quality of fields to ensure a safe and enriching playing environment for recreational and competitive sports.

Vibrant Community and Neighborhoods Strategic Results

[SR1] By 12/25, complete current improvements to recognize Arvada's history.	[M1A] By 12/23 By 12/24, partner with AURA in the development of a plan for activation of the Flour Mill in Olde Town.	[M1B] By 12/23 By 12/25, complete operational plan for display of the restored .04 Trolley.		
<i>VCN Strategic Result 2 Moved to CED</i>				
[SR3] [SR2] By 12/25, develop a maintenance and reinvestment financial resilience plan to ensure a sustainable, resilient and beautiful community of parks, trails, open space, outdoor recreation facilities and medians in alignment with our diverse, changing and growing community.	Complete [M32A] By 8/22, provide strategic recommendations for the Majestic View Nature Center and future city-wide interpretive programs.	Complete [M3 E 2B] By 12/22, complete an inventory of all city medians with recommendations for improvement.	Complete [M3 D 2C] By 12/23, complete Arts and Culture Master Plan workshop(s) to determine related actions to implement the plan.	[M3 E 2D] By 12/23, update the TLC program to include a communication plan and key lifecycle metrics.
	[M3 F 2E] By 12/23, Complete Level of Service studies for Golf, Restaurants, Parks, Medians, Arts and Culture, Festivals, and Majestic View Nature Center.	[M3 G 2F] By 12/23 By 12/24, complete a sustainable Community Events Plan.	[M3 H 2G] By 7/24 By 12/24, replace Meyer's Pool with a new 50 meter natatorium.	[M3 B 2H] By 12/22 By 12/25, complete updates to the Lake Arbor Golf Master Plan.
	[M32I] By 12/24 By 12/25, establish determine a centralized volunteer coordination program strategy Moved to OSE SR4	[M3 J 2I] By 12/24 By 12/25, adopt a strategic Land Pursuit and Acquisition Plan including opportunities for grants and funding partnerships.		
<i>VCN Strategic Result 4 moved to OSE.</i>				
[SR6] By 12/23, Community Resilience and [SR3] By 12/25, a sustainability plan will be complete and ready for City Council approval and implementation beginning in 2026.	Complete [M63A] By 12/22, begin hiring process for a new Sustainability Coordinator.	[M6B] By 12/22, develop and begin the implementation of a municipal resilience strategy to prepare and adapt for the urgent threat of changing environment and resources. Move to OSE SR4	[M6 C 3B] By 6/23, work with the Arvada Sustainability Advisory Committee in the development of the scope of work for the update of the Sustain Arvada Plan.	[M6 D 3C] By 12/23 By 12/25, complete the update of the sustain arvada plan Arvada's Sustainability Plan including an inventory of existing sustainability actions to determine level of service needs.
	[M6E] By 6/24, resource and implement Council approved actions included in the			

Organizational and Service Effectiveness

The community depends on a well-managed, fiscally responsible and transparent City government. Performance-based management practices, sustainable levels of resource use, efficient use of technology, a high-performing workforce, and legal and ethical compliance will ensure the long-term credibility and effectiveness of the City government.

Principles

To support organizational and service effectiveness, the City of Arvada:

- Provides leadership, policy and guidance, communication, and engagement services to City Council, the community, and the organization utilizing a values-driven organizational culture, ethical behavior, and transparency to the community to maintain public trust.
- Provides legal services to the City Council, Boards and Commissions, and all work systems, so they can enforce the law, avoid, or mitigate risks and promote safety associated with City operations and protect the legal interests of the City.
- ~~Maintains appropriate staffing levels, collaborative communications, information technology and financial management support, as well as, leadership services to all work systems to achieve strategic and operational results.~~ Provides leadership services to ensure appropriate staffing, financial, and technology resources to all work systems to achieve strategic and operational results.
- ~~Provides a sustainable government that operates effectively and efficiently while identifying revenue requirements to sustain current service levels and achieve future requested levels of service.~~ Provides financial management services to facilitate responsible resource allocation and sustain current service levels while identifying revenue requirements to promote long-term financial resilience.
- ~~Leverages technology and benchmarks to guide decisions, improve results, enhance service delivery, and maintain the highest level of cybersecurity in support of City effectiveness.~~ Provide operational technology and implement new innovative projects to guide decisions, improve results, enhance service delivery, and continue the highest level of cybersecurity strategy in support of City operations and efficiency.
- Provides information and data to the community to support engagement in community governance, civic responsibility, and easy access to public information.
- Fosters a top workplace environment that attracts and retains a highly engaged, inclusive workforce and promotes a culture of wellness, safety, cycles of learning and performance excellence.
- Supports a resilient workforce and community that are able to withstand stresses and shocks, while maintaining essential functions and recovering quickly, effectively, and equitably.
- ~~Ensures the alignment of all City Master Plans providing an aligned and integrated approach to the achievement of strategic and operational targets.~~ Moved to OSE M4J

Organizational and Service Effectiveness Strategic Results

Complete [SR1] By 12/20, in alignment with established recovery Principles, the city will provide services with necessary modifications while remaining agile and able to respond to changing circumstances related to the COVID-19 pandemic.	Complete [M1A] By 5/20, all work system teams will have a recovery plan in place.	Complete [M1B] By 7/20, develop and implement a framework for remote work including policy updates, equipment needs, and performance metrics.	Complete [M1C] By 9/20, present a 2-year budget and 10-year financial plan that accounts for the effects of COVID-19.	Complete [M1D] By 12/20, CARES funding will be fully utilized to support the community and City operations.
[SR2] By 12/23 By 12/24, implement a comprehensive City Communications and Engagement Strategy.	Complete [M2A] By 1/20, complete the overarching communications and engagement strategy.	Complete [M2B] By 12/20, implement external communications, engagement plans and by 12/21, implement an internal communication plan.	Complete [M2C] By 12/20, offer leadership development opportunities and training to volunteers to foster future City leaders. Moved from OSE SR8	Complete [M2D] By 12/22, determine branding framework to be used in alignment with arvadaco.gov upgrade.
	[M2E] By 6/23 launch Arvadaco.gov.	[M2F] By 6/23 By 12/24, develop a marketing plan highlighting City successes, presenting information using engaging content and using shared partner messaging.	[M2G] By 12/24 further define an internal communications plan.	[M2H] By 12/24, develop a neighborhood engagement plan aimed at building social cohesion and leveraging community efficacy. Moved from OSE SR8
[SR3] By 12/23, develop an organizational framework for the effective advancement of data utilization, system integration, and digital capacities analytics across all work systems.	Complete [M3A] By 6/20, identify all performance measures with a potential smart city component and create a city wide inventory.	Complete [M3B] By 12/20, complete first draft of the Smart Arvada Plan.	Complete [M3C] By 6/21, develop a data governance framework.	Complete [M3D] By 1/22, increase the data governance maturity score from the current 1.4 to 2.2.
	Complete [M3E] By 6/22, select a Cloud partner and implement the Cloud platform.	Complete [M3F] By 9/22, form data and analytics team.	[M3G] By 6/23, select ERP replacement platform.	[M3H] By 6/23, increase the data governance maturity score to 2.9.

[SR4] By 12/22 , 12/25 continue to implement sustain and enhance an organizational performance excellence framework.	Complete [M4A] By 12/21, achieve Denver Post Top Workplace designation.	[M4 EB] By 12/23, establish systems and structures to embed enhanced levels of sustainability , diversity, equity, inclusion and accessibility and safety in our city services and operations.	[M4 GC] By 12/23, foster a culture of safety through established systems and structures to embed enhanced levels of safety in our services and operations.	[M4 HD] By 6/24, develop and begin the implementation of a municipal resilience strategy to prepare and adapt for the urgent threat of changing environment and resources.
	[M4 HE] By 12/24 By 12/25, establish determine a centralized volunteer coordination program strategy.	[M4F] By 12/25, draft the application for Malcolm Baldrige National Quality site visit. Utilize Malcolm Baldrige, ICMA and other performance excellence review processes to further calibrate Arvada's journey to excellence.	[M4 EG] Annually, enhance Arvada University programming to support workforce growth and development needs.	[M4 DH] On an ongoing basis, prepare and present a balanced biennial budget and 10-year financial plan.
	[M4 BI] Annually, maintain a "AA" or better bond rating.	[M4J] Continuously, ensure the alignment of all City Master Plans providing an aligned and integrated approach to the achievement of strategic and operational targets.		
Complete [SR5] By 12/22, continually measure citizen satisfaction regarding the overall well being of the community.	Complete [M5A] By 12/20, identify all lower-rated items in the 2019 Community Survey and develop an action plan to address all items.	Complete [M5B] By 6/22, identify and select a survey vendor.	Complete [M5C] By 9/22, develop survey questions with input from the community.	Complete [M5D] By 12/22, launch an annual Arvada Community Survey.
<i>OSE Strategic Result 6 has been moved to VCN</i>				
<i>VCN Strategic Result 4 has moved OSE. (Below)</i>				
[SR4] By 12/24, construct a regional Navigation Center to deliver coordinated homeless services located out of Olde Town. [SR6] By 12/25 implement a regional homelessness strategy.	[M4 6A] By 7/22 By 12/23 enter into an LOI with Jefferson County, Lakewood, Wheat Ridge, Golden, Edgewater, and Westminster to develop two navigation centers within Jefferson County. enter into a collaborative working	[M4 6B] By 9/22, determine additional related actions to address homelessness in Olde Town. By 5/2023, hire a homelessness project manager.	[M4 6C] By 10/22, complete Low Income Housing Tax Credits (LIHTC) application and receive the 4% award from CHAFA. By 5/2023, enter into	[M4 6D] By 12/22, in collaboration with partner agencies, including RTD, ensure adequate transportation and accessibility to the Navigation Center for those experiencing homelessness. By 8/2023, implement a homelessness study and PESTEL analysis

	and governance structure MOU with the metro cities within and including Jefferson County.		fully authorized IGAs with Adams County for street outreach services and collaborative partnership with all Adams County jurisdictions.	which includes each jurisdiction in the collaborative MOU (reference M4A).
	[M46E] By 10/23, complete all closing actions and begin construction. By 12/23, implement or begin implementation of short-term goals as stated in the April 9, 2023 homelessness City Council presentation.	[M46F] By 12/24, complete construction of a Regional Navigation Center. By 12/24, implement, or begin implementation of intermediate-term goals as stated in the April 9, 2023 homelessness City Council presentation.		
[SR7] By 12/24, update the City's Total Rewards Philosophy and Strategy to improve the City's ability to attract, motivate and retain a high performing workforce.	Complete [M7A] By 6/22, complete an Employee Total Rewards Survey and an Employment Market Benchmark Survey.	Complete [M7B] By 8/22, update City Council on Total Rewards Philosophy Discussions.	Complete [M7C] By 12/22, develop and recommend new Total Rewards Philosophy for City Council approval.	[M7D] By 12/23 12/24, create the strategy for developing and funding Total Reward Programs and begin designing and implementing program updates.
[SR8] By 12/25, 50% of neighborhoods complete a project or initiative that reshapes or activates shared neighborhood spaces. Combined with OSE SR2	Complete [M8A] By 12/20, offer leadership development opportunities and training to volunteers to foster future City leaders.	[M8B] By 12/22, by 12/23 develop a neighborhood engagement plan.		

[SR98] By 12/24, based on long-term financial projections and updated master plans, develop financial resiliency recommendations to ensure adequate and on-ongoing investment in city infrastructure and core services.	Complete [M98A] By 12/22, using information assembled as part of the 2023-2024 Budget development process and current master planning efforts, prepare a summary of long range unfunded needs by work system.	[M98B] By 12/23, develop a city-wide consolidated level of service summary.	[M98C] By 12/23, prepare an exhaustive list of funding source opportunities for closing identified infrastructure and core service funding gaps.	[M8D] Continuously, research, track, apply for and deploy awarded grant funding.
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TERMINOLOGY

Principle [P] – Principles are high-level business strategies that form our business model and serve as pillars of excellence. They are broad in scope and apply to all areas within the City organization and provide standards for how we do business in order to successfully support City Council priorities. They promote working collaboratively in a deliberate strategic direction.

Strategic Result [SR]– A specific and measurable objective directed by City Council providing guidance in supporting priorities and organizational transformation. Strategic results are a statement of a desired end state and are measurable and explicitly defined using outcome language. They provide guidance to organizational transformation.

Milestone [M]– A significant event or important achievement that indicates change or progress toward a strategic result. Milestones signal anchors and serve as visible indicators of progress toward achievement of a strategic result.

Performance Measure [PM]– Using SMART goal framework, performance measures are specific, measureable, achievable, realistic, and timely. Performance measures help focus efforts and the ability to achieve targets. All strategic performance measures are directly aligned with a strategic result and all operational performance measures align with one or more principle.

~~**STRATOP**—A strategic planning framework and process emphasizing perspective first helps us close the gap between the City Council’s vision and our day-to-day work.~~



REPORT TO CITY COUNCIL ORDINANCE FIRST READING

**AGENDA ITEM
8.C.1.**

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: CB23-010, An Ordinance Repealing and Reenacting Article XIII, National Electric Code, Section 18-570, Adopted, of Chapter 18, Buildings and Building Regulations, of the Arvada City Code Through the Adoption, by Reference, of the 2023 National Electrical Code, and the Adoption of Penalties for Violations Thereof (Public Hearing to be set for May 15, 2023 at 6:15 p.m.)

Report in Brief

Periodically, the City updates its Building Code regulations by amending and adopting the most recent version of the International Codes and National Electrical Code. The proposed Ordinance would adopt the 2023 version of the National Electrical Code.

The Arvada team recommends that City Council approves the Ordinance Repealing and Reenacting Article XIII, National Electric Code Section 18-570, Adopted, of Chapter 18, Building and Building Regulations, of the Arvada City Code Through the Adoption, by Reference, of the 2023 National Electrical Code, and the Adoption of Penalties for Violations Thereof and sets the Public Hearing for May 15, 2023.

Financial Impact

There is no financial impact to the City.

Background

Updated model building codes are published by the International Code Council (building and fire codes) and National Fire Protection Association (electrical code) every three years. These codes are widely adopted by jurisdictions around the country and in various other countries around the world and they provide the foundation and guidelines for creating a safe, built environment. Typically, the City of Arvada has adopted the newest version of these codes, with local amendments, every three or six years which is the best practice for ensuring the most recent safety provisions and recent innovations in material science and construction methods are utilized.

Discussion

With the adoption of the 2023 NEC the City will remain in compliance with State mandated adoption requirements. This revised ordinance replaces the City's automatic adoption of the NEC and will allow the flexibility to adopt the NEC on a timeline that fits the City of Arvada needs.

Public Contact

Posting of the City Council agenda

Commission Recommendation

N/A

Strategic Alignment

SUBJECT: CB23-010, An Ordinance Repealing and Reenacting Article XIII, National Electric Code, Section 18-570, Adopted, of Chapter 18, Buildings and Building Regulations, of the Arvada City Code Through the Adoption, by Reference, of the 2023 National Electrical Code, and the Adoption of Penalties for Violations Thereof (Public Hearing to be set for May 15, 2023 at 6:15 p.m.)

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ITEM: 8.C.1.

The proposed Ordinance is in alignment with the Building Division mission, outlined in the CED Strategic Business Plan, to provide safe, code compliant, energy efficient buildings to our customers and community. The CED Strategic Business Plan aligns with the City Council Strategic Plan, Community and Economic Development Priority Area. The proposed ordinances supports the following Principle:

Maintains and protects the health, safety, and welfare of the public by ensuring safe buildings in the community, while providing excellent customer service.

Alternative Courses of Action

N/A

Recommendation for Action

The Arvada team recommends that the City Council approve CB23-010, An Ordinance repealing and reenacting Article XIII, National Electric Code, section 18-570, adopted, of chapter 18, buildings and building regulations, of the Arvada City Code through the adoption, by reference, of the 2023 National Electrical Code, and the adoption of penalties for violations thereof.

Suggested Motion:

I move that CB23-010, An Ordinance repealing and reenacting Article XIII, National Electric Code, section 18-570, adopted, of chapter 18, buildings and building regulations, of the Arvada City Code through the adoption, by reference, of the 2023 National Electrical Code, and the adoption of penalties for violations thereof, be (approved on first reading, ordered published in full, and a public hearing set for May 15, 2023, at 6:15 p.m.) (rejected).

Prepared by:

Josie Suk, Development Systems and Administrative Manager

Reviewed by:

Approved by:

Justin Clark, Chief Building Official	4/7/2023
Ryan Stachelski, Director of Community and Economic Development	4/12/2023
Gail Walker, Legal Specialist-Contracts	4/12/2023
Emily Grogg, Senior Assistant City Attorney	4/12/2023
Rachel Morris, City Attorney	4/19/2023
Linda Haley, Deputy City Manager	4/19/2023
Lorie Gillis, City Manager	4/20/2023

Enclosure, exhibits & attachments required to support the report

COUNCIL BILL NO. CB23-010
ORDINANCE NO.

AN ORDINANCE REPEALING AND REENACTING ARTICLE XIII, NATIONAL ELECTRIC CODE, SECTION 18-570, ADOPTED, OF CHAPTER 18, BUILDINGS AND BUILDING REGULATIONS, OF THE ARVADA CITY CODE THROUGH THE ADOPTION, BY REFERENCE, OF THE 2023 NATIONAL ELECTRICAL CODE, AND THE ADOPTION OF PENALTIES FOR VIOLATIONS THEREOF

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. Chapter 18, Article XIII, of the Arvada City Code is hereby repealed as set forth above and enacted to read as follows:

“ARTICLE XIII. NATIONAL ELECTRICAL CODE

Sec. 18-570. Adopted.

Pursuant to C.R.S. § 31-16-101 et seq. and the Arvada City Charter, the National Electrical Code, 2023 Edition, including Annexes A through K, published by the National Fire Protection Association, is hereby adopted by reference and incorporated into the Arvada City Code. The 2023 National Electrical Code shall be known as the “N.E.C.” or the “electrical code,” and may be cited and referred to as such. Any reference in any of the technical codes to the International Code Council Electrical Code shall be to the most nearly equivalent of the 2023 National Electrical Code, or any successor electrical code adopted by Arvada.”

The remaining portions of Chapter 18 shall remain unchanged.

Section 2. Severability. If any section, paragraph, sentence, clause, or phrase of this ordinance is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity of constitutionality of the remaining portions of this ordinance. The City Council declares it would have adopted this ordinance and each part or parts hereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 3. This ordinance shall take effect five days after publication following final passage.

INTRODUCED, READ, AND ORDERED PUBLISHED this 1st day of May, 2023.

PASSED, ADOPTED, AND APPROVED this ____ day of _____, 2023.

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney

By:_____

Publication Dates: May 4, 2023

REDLINE/STRIKEOVER VERSION

FOR INFORMATION ONLY – NOT PART OF THE ORDINANCE

Underlined indicates new material
~~Strikethrough~~ indicates deleted material

ARTICLE XIII. NATIONAL ELECTRICAL CODE

Sec. 18-570. Adopted.

Pursuant to C.R.S. § 31-16-101 *et seq.* and the Arvada City Charter, the National Electrical Code, as currently adopted by the State of Colorado or as is from time to time modified, re-enacted or re-adopted by the State of Colorado is hereby adopted as the electrical code of the City of Arvada.



REPORT TO CITY COUNCIL PUBLIC HEARING

AGENDA ITEM
10.A.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023 (Ordinance No. 4842) (Presenter: Bryan Archer, Director of Finance)

Report in Brief

PRESENTER: Bryan Archer

The W. 72nd Ave and Ralston Road projects were the top two capital projects identified by the City Council, the Citizens Capital Improvement Committee and the citizens of Arvada. Like the majority of other construction projects, these projects are facing inflationary pressures and will need additional resources to bring them to completion. Increases in sales tax revenues have provided additional resources that can be used as payment for an additional bond issue. The 2018 approved total debt issuance was \$79,800,000 and only \$72,570,000 was issued in 2019.

The City Staff is asking the City Council to approve issuing the remaining \$7,230,000 to help offset the rising costs.

The Arvada team recommends that the City Council approve CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023.

Financial Impact

If approved, the new bond issue should generate between \$7.25 and \$8.5 million in additional revenue that can be used to complete the two capital projects. The annual debt service payment is estimated at \$450,000 for 16 years and will include four additional payments at the end of the bond of approximately \$1.4 million each, totaling approximately \$12.65 million in Debt Service payments. The source of the payments is the portion of the City's General Fund that is reserved for capital projects. By ordinance, the City must reserve an amount equal to 20% of the first cent of the City's annual sales and use tax collection which must be used for capital projects, major capital maintenance and/or bond issuance for capital projects. The estimated amount that will be reserved for capital projects in 2023 is \$15,038,925; this amount is expected to escalate by 2%-3% annually.

Background

On August 27, 2018, Resolution R18-091 was presented to the City Council for approval to place a question on the November 2018 ballot to allow the City to issue ~ \$79,800,000 in Sales and Use Tax Bonds to complete two capital projects, W. 72nd Ave Underpass and Ralston Road improvements. The Council approved the resolution unanimously, and the voters approved the ballot measure 3F in November of 2018. On January 28, 2019 the City Council approved Ordinance No. 4674 to allow staff to issue the 2019 Sales and Use Tax Bonds. The 2019 Sales and Use tax bonds were issued in February of 2019 but only \$72,570,000 of the total authorized \$79,800,000 was issued. This ordinance is seeking approval to issue the remaining \$7,230,000 of authorized debt to help finance the two projects, 72nd Ave and Ralston Road.

Discussion

The original budgets for W. 72nd Ave and Ralston Road were \$64,537,000 and \$15,300,000 respectively. These budgets were established in the fall of 2018. Since that period of time, we have experienced a worldwide pandemic, a flash crash of the stock market, rapidly rising inflation and nine interest rate hikes. All of these items have put pressure on the construction

environment, leading to long supply chain delays and increasing costs. As the projects have moved through the construction cycle, the costs for various goods and services have escalated anywhere from 40% to 70%.

The City Council, along with the Citizens Capital Improvement Committee and the citizens of Arvada, have made these two projects top priorities of the City.

Sales tax revenues for the City have increased over the past 3 years by an average of 11%. A minimum of 20% of this increase is required to be used on capital projects or debt related to capital projects. The funding for this proposed bond issue will come out of this 20% allocation and is estimated to cost an additional \$450,000 per year.

Public Contact

Posting of the City Council agenda.

Commission Recommendation

N/A

Strategic Alignment

The issuance of the Sales and Use Tax Revenue Bonds supports the Infrastructure Worksystem Strategic Result:

By 12/2025 effectively utilize voter approved bonds for the completion of Ralston Road phase 2 and the expansion of 72nd Avenue.

Alternative Courses of Action

Approve

Do not Approve - The City Council could choose to reject this ordinance and use other sources to pay for the two projects. These sources could include future 98-101 funds, current fund balances and/or future operating funds. If this decision was made, there would be a ripple effect on other areas of the organization.

Recommendation for Action

The Arvada team recommends that the City Council approve CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023.

Suggested Motion:

I move that CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023 be (approved on final reading, numbered 4842 and ordered published by title only (rejected)).

Prepared by:
Bryan Archer, Director of Finance

Reviewed by:

Approved by:

SUBJECT: CB23-009, An Ordinance Authorizing the Issuance of the City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023 (Ordinance No. 4842) (Presenter: Bryan Archer, Director of Finance)

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ITEM: 10.A.

Jenna Belec, Executive Assistant	4/10/2023
Bryan Archer, Director of Finance	4/10/2023
Gail Walker, Legal Specialist-Contracts	4/11/2023
Kylie Justus, Assistant City Attorney	4/11/2023
Laura Hemler, Assistant City Attorney	4/11/2023
Rachel Morris, City Attorney	4/19/2023
Linda Haley, Deputy City Manager	4/19/2023
Lorie Gillis, City Manager	4/20/2023

Enclosure, exhibits & attachments required to support the report

COUNCIL BILL NO. 23-009
ORDINANCE NO. 4842

AN ORDINANCE AUTHORIZING THE ISSUANCE OF THE CITY OF ARVADA,
COLORADO, SALES AND USE TAX REVENUE BONDS, SERIES 2023.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ARVADA, COLORADO:

Section 1. Definitions. Terms used in this Ordinance shall have the meanings specified in this Section 1 for all purposes of this Ordinance and of any ordinance amendatory hereof, supplemental hereto or relating hereto, and of any instrument or document appertaining hereto, except where the context by clear implication otherwise requires. All definitions include the singular and plural and include all genders. Certain terms are parenthetically defined elsewhere herein.

Bonds: the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023” authorized by the Ordinance.

Bond Account: the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Bond Account,” authorized herein as a separate account within the Debt Service Fund for the purpose of paying the principal of, premium, if any, and interest on the Bonds.

Business Day: any day other than a Saturday, Sunday or other day on which banks in Denver, Colorado, are required or authorized to be closed.

Charter: the home rule charter of the City, as it may be amended from time to time.

City: the City of Arvada, Colorado.

City Clerk: the City Clerk of the City, or his or her successor in functions, if any.

City Council: the City Council of the City or any successor in functions thereto.

City Manager: the City Manager of the City, or his or her successor in functions, if any.

Code: the Code of Ordinances of the City, as it may be amended from time to time.

Costs of the Project: all costs, as designated by the City, of the Project, or any interest therein, which cost, at the option of the City (except as may be otherwise limited by law) may include all, any one or other portion of the incidental costs pertaining to the Project, including, without limitation:

- i. All preliminary expenses or other costs advanced by the City or advanced by the Federal Government, the State or by any other Person from any source, with the approval of the City Council, or any combination thereof, or otherwise;
- ii. The costs of making surveys and tests, audits, preliminary plans, other plans, specifications, estimates of costs and other preliminaries;
- iii. The costs of contingencies;

- iv. The costs of premiums on any builders' risk insurance and performance bonds during the construction, installation and other acquisition of the Project, or a reasonably allocated share thereof;
- v. The costs of appraising, printing, estimates, advice, inspection, other services of engineers, architects, accountants, financial consultants, attorneys at law, clerical help and other agents and employees;
- vi. The costs of making, publishing, posting, mailing and otherwise giving any notice in connection with the Project and the issuance of the Bonds;
- vii. All costs and expenses of issuing the Bonds including, without limitation, fees of the Paying Agent, Bond Counsel, counsel to the Purchaser, counsel to the City, financial advisor, rating agencies and printers;
- viii. The costs of the filing or recording of instruments and the cost of any title insurance premiums;
- ix. The costs of funding any construction loans and other temporary loans pertaining to the Project and of the incidental expenses incurred in connection with such loans;
- x. The costs of demolishing, removing, or relocating any buildings, structures, or other facilities on land acquired for the Project, and of acquiring lands to which such buildings, structures or other facilities may be moved or relocated;
- xi. The costs of machinery and equipment;
- xii. The costs of any properties, rights, easements or other interests in properties, or any licenses, privileges, agreements and franchises;
- xiii. The costs of labor, material and obligations incurred to contractors, builders and materialmen in connection with the acquisition and construction of the Project;
- xiv. The costs of amending any ordinance or other instrument pertaining to the Bonds or otherwise to the Pledged Revenues; and
- xv. All other expenses pertaining to the Project.

C.R.S.: the Colorado Revised Statutes, as amended and supplemented from time to time.

DTC: The Depository Trust Company, New York, New York, and its successors and assigns.

Debt Service Fund: the "City of Arvada, Colorado, Sales and Use Tax Debt Service Fund" previously established and continued herein for the purpose of securing all of the City's sales and use tax revenue bonds, which fund will consist of the Bond Account for the Bonds and the bond accounts for any series of Parity Lien Bonds, and the Rebate Account for the Bonds and any rebate accounts established for any series of Parity Lien Bonds.

Director of Finance: the Director of Finance of the City, or his or her successor in functions, if any.

Disclosure Certificate: the undertaking executed by officers of the City simultaneous with the delivery of the Bonds which enables the Purchaser to comply with the Rule.

Election: the special municipal election held in the City on November 6, 2018, authorizing an increase in debt of the City to be used for various street improvements as provided in the ballot question.

Event of Default: one or more of the events set forth in Section 23 of this Ordinance.

Federal Government: the United States of America and any agency, instrumentality or corporation thereof.

Federal Securities: only non-callable direct obligations of the United States of America and securities fully and unconditionally guaranteed as to the timely payment of principal and interest by the United States of America, to which direct obligation or guarantee the full faith and credit of the United States of America has been pledged.

Maximum Annual Debt Service Requirement: the maximum amount of all required payments of principal of and interest the Bonds, any Outstanding Parity Lien Bonds, and the proposed Parity Lien Bonds which will become due in any fiscal year.

Notice of Public Sale: the Notice of Public Sale prepared in connection with the sale of the Bonds.

Official Statement: the Official Statement delivered in connection with the original issuance and sale of the Bonds in substantially the form of the Preliminary Official Statement.

Ordinance: this Ordinance, which authorizes the issuance of the Bonds.

Outstanding: as of any date of calculation, all Bonds or Parity Lien Bonds theretofore executed, issued and delivered by the City except:

- i. Bonds or Parity Lien Bonds theretofore cancelled by the City, the Registrar or the Paying Agent, or surrendered to the City, the Registrar or the Paying Agent for cancellation;
- ii. Bonds or Parity Lien Bonds in lieu of or in substitution for which other Bonds or Parity Lien Bonds shall have been executed, issued and delivered by the City and authenticated by the Registrar unless proof satisfactory to the Registrar is presented that any such Bonds or Parity Lien Bonds are duly held by the lawful registered owners thereof; or
- iii. Bonds or Parity Lien Bonds deemed to have been paid as provided in Section 20 of the Ordinance or any similar provision of an ordinance authorizing the issuance of Parity Lien Bonds.

For purposes of this definition, the terms Registrar and Paying Agent shall include a registrar or paying agent for any Parity Lien Bonds.

Owner: when used with respect to a Bond or Bonds, means the registered owner of any Outstanding Bond.

Parity Lien Bonds: any Outstanding Series 2019 Bonds and any additional bonds, notes, certificates, contracts, or other similar obligations issued in accordance with Section 20 of

the Ordinance, payable in whole or in part from the Pledged Revenues and having a lien thereon on a parity with the lien of the Bonds.

Paying Agent: UMB Bank, n.a., Denver, Colorado, or its successors or assigns.

Permitted Investments: any of the investments or deposits which are at the time permitted by the Charter and applicable ordinances or other provisions of the City.

Person: a corporation, firm, other body corporate (including, without limitation, the Federal Government, the State, or any other body corporate and politic other than the City), partnership, limited liability company, association or individual, and also includes an executor, administrator, trustee, receiver or other representative appointed according to law.

Pledged Revenues: the proceeds of the City's 3.0% sales and use tax imposed by the Code, including investment income as provided in Section 17 (v.) hereof, to the extent such moneys are at any time required by Section 17 hereof to be deposited into and held in the Bond Account and any investment income to the extent such moneys are at any time deposited into and held in an account of the Debt Service Fund (other than a rebate account) for payment of any Parity Lien Bonds, the Reserve Account or any reserve account securing any Parity Lien Bonds.

The term "Pledged Revenues" does not include:

- i. any amounts determined, pursuant to the Code and other applicable law, to be subject to valid claims for refunds;
- ii. amounts in the 2023 Rebate Account or any similar account for Parity Lien Bonds;
- iii. moneys retained by the City or by the State Department of Revenue, as the case may be, for costs of collection, administration and enforcement of the sales and use tax;
- iv. amounts lawfully withheld by retailers;
- v. the proceeds of any increase in such sales and use tax which may be approved in the future unless expressly pledged to the payment of the Bonds by the City Council;
- vi. incremental sales taxes which are pledged to the payment of obligations issued pursuant to an urban renewal plan as defined in Section 31-25-103(9), C.R.S., a plan of development as defined in Section 31-25-802(6.6), C.R.S., or a value capture plan as defined in Section 43-4-508, C.R.S.;
- vii. the proceeds of the City's 0.21% sales and use tax imposed pursuant to the Code and an election held in 1993;
- viii. the proceeds of the City's 0.25% sales and use tax imposed pursuant to the Code and an election held within the City in 2005, unless expressly pledged to the payment of the Bonds by the City Council; or

- ix. any amounts payable by the City under any sales tax sharing agreements made in connection with the imposition of public improvement fees.

Preliminary Official Statement: the Preliminary Official Statement with respect to the Bonds, in substantially the form of the Official Statement delivered by the City with respect to the Series 2019 Bonds.

Project: the projects approved by the voters of the City at the Election.

Project Fund: the special fund designated as the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Project Fund” created pursuant to Section 15 hereof.

Proposal: the proposal of the Purchaser to purchase the Bonds.

Purchaser: the initial purchaser of the Bonds.

Rebate Account: the account created as part of the Debt Service Fund and designated as such pursuant to Section 17(iii.) hereof.

Record Date: the 15th day of the calendar month next preceding each interest payment date.

Registrar: UMB Bank, n.a., Denver, Colorado, or its successors and assigns, acting as the registrar for the Bonds.

Registrar Agreement: the Registrar and Paying Agent Agreement between the City and the Registrar and the Paying Agent.

Reserve Account: the special account of the Reserve Account designated as the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Reserve Account” created pursuant to Section 15(i) hereof.

Reserve Account Requirement: has the meaning ascribed to such term in the Sale Certificate, which requirement may be zero.

Rule: Rule 15c2-12 promulgated by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended (17 CFR Part 240, § 240.15c2-12).

Sale Certificate: the sale certificate of the City relating to the Bonds executed pursuant to the Supplemental Act and described in Section 5 hereto.

Sales and Use Tax Fund: the existing Sales and Use Tax Capital Improvement Fund of the City, into which the Pledged Revenues are directed to be deposited as provided in Section 17 hereof.

Series 2019 Bonds: the City’s Sales and Use Tax Revenues Bonds, Series 2019, issued pursuant to Ordinance No. 4674, Series of 2019, adopted by the City Council on January 28, 2019.

Special Record Date: a special record date fixed to determine the names and addresses of Owners of Bonds for purposes of paying accrued but unpaid interest on a special interest payment date.

State: the State of Colorado.

Subordinate Lien Bonds: bonds, notes, certificates, contracts, or other similar obligations, issued in accordance with Section 20 hereof, payable in whole or in part from the Pledged Revenues and having a lien thereon which is subordinate to the lien of the Bonds and Parity Lien Bonds.

Supplemental Act: the Supplemental Public Securities Act, constituting Title 11, Article 57, Part 2, C.R.S.

Tax Code: the Internal Revenue Code of 1986, as amended to the date of delivery of the Bonds, and applicable regulations and rulings thereunder.

Term Bonds: Bonds, if any, that are payable on or before their specified maturity dates from sinking fund payments established for that purpose and calculated to retire such Bonds on or before their specified maturity dates.

1. _____
2. Section 2. Recitals.
- 3.
- a. The City is a legal and regularly created, established, organized and existing municipal corporation and political subdivision of the State under the provisions of Article XX of the Constitution of the State and the Charter. At the Election, the registered electors of the City authorized an increase in debt of the City pursuant to the following ballot question:

WITHOUT IMPOSING ANY NEW TAX OR INCREASING ANY TAX RATE, SHALL THE CITY OF ARVADA DEBT BE INCREASED UP TO \$79.8 MILLION WITH A REPAYMENT COST OF UP TO \$125 MILLION, SUBJECT TO THE FOLLOWING LIMITATIONS AND FOR THE FOLLOWING PURPOSES:

IMPROVING PEDESTRIAN SAFETY BY ENHANCING INTERSECTIONS, SIDEWALKS AND CROSSWALKS, AND IMPROVING DRIVER SAFETY BY EASING TRAFFIC CONGESTION ALONG MAJOR EAST-WEST ROADS IN THE CITY, SPECIFICALLY RALSTON ROAD BETWEEN YUKON AND GARRISON STREETS, AND ON 72ND AVENUE BETWEEN KIPLING AND SIMMS STREETS;

PROVIDED THAT THE EXPENDITURE OF PROCEEDS WILL BE MONITORED BY A COUNCIL APPOINTED OVERSIGHT COMMITTEE OF RESIDENTS, AND SUCH EXPENDITURES WILL BE REPORTED IN THE CITY'S INDEPENDENT AUDIT PUBLISHED ON THE CITY'S WEB SITE AND NO PROCEEDS MAY BE USED FOR CITY ADMINISTRATION.

- i.
- b. Pursuant to Article X, Section 20(3)(c) of the State Constitution, the authorized debt cannot be sold on terms which could exceed the maximum repayment costs described in the ballot question or in the notice sent to voters. Pursuant to the ballot question and the ballot issue notice provided to electors of the City in connection with the Election, the principal amount of the authorized debt cannot exceed \$79,800,000, the maximum annual repayment cost cannot exceed \$6,200,000, and the total repayment cost of debt issued pursuant to the election question cannot exceed \$125,000,000.

- c. The City has previously issued its Series 2019 Bonds in the original aggregate principal amount of \$72,570,000 pursuant to the ballot question approved at the Election, leaving \$7,230,000 in authorized but unissued debt as a result of the Election.
- ii.
 - d. Pursuant to Section 11.5.5 of the Charter, the City may issue securities made payable solely out of the proceeds of any sales or use taxes, or from any portion, however determined, or any combination of sales and use taxes.
 - e. Except for the Outstanding Series 2019 Bonds, the Pledged Revenues are not currently pledged for the payment of any other securities or obligations. The Pledged Revenues may be pledged lawfully and irrevocably for the payment of the Bonds.
 - f. The City Council has determined to authorize and issue the Bonds for the purpose of defraying a portion of the Costs of the Project and to pledge a portion of the City's sales and use tax for the repayment of the Bonds.
 - g. The City Council has determined, and hereby determines to conduct a public sale of the Bonds where the Bonds will be sold to the highest and best bidders for cash and to the best advantage of the City for the purpose of defraying in whole or in part the Costs of the Project in accordance with Section 11.8 of the Charter.
 - h. The Bonds authorized by this Ordinance shall be payable in whole or in part from the Pledged Revenues and shall have a lien on the Pledged Revenues, but not necessarily an exclusive lien.
 - i. The following documents are on file with the City Clerk:
 - i. the form of the Preliminary Official Statement;
 - ii. the form of the Registrar Agreement;
 - iii. the form of the Disclosure Certificate; and
 - iv. the form of the Notice of Public Sale.
 - j. It is necessary to provide for the form and details of the Bonds, the payment of the Bonds, the payment of the Costs of the Project, and other provisions relating to the authorization and issuance of the Bonds.

4. Section 3. Authorization; Supplemental Act. In accordance with the Charter, the Constitution and laws of the State, including but not limited to the Supplemental Act, and the provisions of this Ordinance, the City hereby authorizes the issuance of its sales and use tax revenue bonds, to be designated the "City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023," in the aggregate principal amount set forth in the Sale Certificate.

Section 11-57-204, C.R.S., provides that a public entity, including the City, may elect in an act of issuance to apply all or any of the provisions of the Supplemental Act to the issuance of

securities. The City Council hereby elects to apply all of the provisions of the Supplemental Act to the Bonds.

The Bonds are issued under the authority of the Supplemental Act and shall so recite as provided in Sections 8 and 31 hereof. Pursuant to Section 11-57-210 C.R.S., such recital shall be conclusive evidence of the validity and regularity of the issuance of the Bonds and their delivery for value.

Section 11-57-205, C.R.S., provides that a public entity may delegate to any member of the issuing authority, chief executive officer, or chief financial officer of the public entity the authority to sign a contract for the purchase of the securities or to accept a binding bid for the securities, such delegation to be effective for one year after adoption of the act of issuance. The City Council hereby delegates to the Mayor, the City Manager and the Director of Finance the independent authority to accept a binding bid for the Bonds, execute and deliver any purchase contract, and execute and deliver the Sale Certificate setting forth the terms on which the Bonds will be delivered, subject to the parameters and restrictions contained in Section 5 of this Ordinance.

5.

6. Section 4. Special Obligations; Pledge; Negotiability.

- a. All of the Bonds shall be payable only out of the Pledged Revenues which are to be deposited in the Bond Account of the Debt Service Fund. The Owner or Owners of the Bonds may not look to any ad valorem property taxes levied or collected by the City for the payment of the principal of and interest on the Bonds, and the Bonds shall not constitute a debt or an indebtedness of the City within the meaning of any constitutional, Charter, or statutory provision or limitation; nor shall they be considered or held to be general obligations of the City. None of the covenants, agreements, representations and warranties contained herein or in the Bonds shall ever impose or be construed as imposing any liability, obligation or charge against the City (except to the extent of the Pledged Revenues which are to be deposited in the Bond Account of the Debt Service Fund) or its general credit, payable out of its general funds or out of any funds derived from ad valorem property taxation. The payment of the Bonds is not secured by an encumbrance, mortgage or other pledge of any property, except the Pledged Revenues which are to be deposited in the Bond Account of the Debt Service Fund as provided herein.
- b. The City hereby irrevocably pledges the Pledged Revenues which are to be deposited in the Bond Account of the Debt Service Fund, on the terms provided herein, for the payment of the principal of and interest on the Bonds. Such pledge shall create an irrevocable lien (but not an exclusive such lien) on the Pledged Revenues for the payment of the principal of and interest on the Bonds.
- c. The covenants and agreements herein set forth to be performed on behalf of the City shall be for the equal benefit, protection and security of the Owners of any and all of the Outstanding Bonds. The Bonds and any Parity Lien Bonds, regardless of the time or times of their issuance or maturity, shall be of equal rank without preference, priority or distinction, except as otherwise expressly provided in or pursuant to this Ordinance.

- d. Subject to the registration provisions hereof, the Bonds shall possess all rights enjoyed by the holders of investment securities under the provisions of the Uniform Commercial Code – Investment Securities. The principal of and interest on the Bonds shall be paid, and the Bonds shall be transferable, free from and without regard to any equities between the City and the original or any intermediate Owner of any Bonds or any setoffs or cross-claims.

7. Section 5. Bond Details.

- a. The Bonds shall be issued in fully registered form (i.e., registered as to both principal and interest), shall be initially registered in the name of Cede & Co. as nominee for DTC, shall be dated as of their date of delivery, shall be issued in the denomination of \$5,000 or any integral multiple thereof (provided that no Bond may be in a denomination which exceeds the principal amount coming due on any maturity date, and no individual Bond will be issued for more than one maturity and interest rate) and shall be numbered in such manner as the Registrar may determine.

8.

- b. The Bonds shall be dated as of their date of delivery. The Bonds shall mature, bear interest, and be sold, all as provided in the Sale Certificate; subject to the following:
 - i. Interest Rate. No Bond shall bear interest in excess of 6.00%.
 - ii. Redemption Provisions. The Bonds shall be subject to optional redemption as set forth in the Sale Certificate at a redemption price not to exceed 102%.
 - iii. Purchase Price. The purchase price of the Bonds shall not be less than 98% of the aggregate principal amount of the Bonds.
 - iv. Principal Amount. The aggregate principal amount of the Bonds shall not exceed \$7,230,000.
 - v. Maturity Schedule. The maximum annual repayment cost and the total repayment cost of the Bonds, together with the Series 2019 Bonds, shall not exceed \$6,200,000 and \$125,000,000 respectively.
 - vi. Term of the Bonds. The Bonds shall not mature later than December 1, 2047.
 - vii. Capitalized Interest. The existence and amount of any capitalized interest on the Bonds.
 - viii. Reserve Account. The amount to be deposited in the Reserve Account and the accounts thereof, which amount may be zero.

Such determinations shall be evidenced by the Sale Certificate signed by the Mayor, the City Manager or the Director of Finance, dated the date of the sale of the Bonds or the Closing Date, and delivered as of the Closing Date, which shall not be more than one year from the date of adoption of this Ordinance.

Interest on the Bonds shall be calculated on the basis of a 360-day year of twelve 30-day months, payable semiannually on each June 1 and December 1, commencing on the date provided in the Sale Certificate.

- c. The principal, of and premium, if any, on any Bond shall be payable to the registered owner thereof as shown on the registration books kept by the Registrar, upon maturity or prior redemption of the Bonds and upon presentation and surrender at the principal office of the Paying Agent. If any Bond shall not be paid upon such presentation and surrender at maturity, it shall continue to draw interest at the rate borne by said Bond until the principal thereof is paid in full.

Payment of interest on any Bond shall be made to the registered owner thereof by check or draft mailed or wire sent by the Paying Agent, on or before each interest payment date (or, if such interest payment date is not a Business Day, on or before the next succeeding Business Day), at such Person's address as it last appears on the registration books kept by the Registrar on the Regular Record Date; but, any such interest not so timely paid or duly provided for shall cease to be payable to the Person who is the registered owner thereof on the Regular Record Date and shall be payable to the Person who is the registered owner thereof at the close of business on a Special Record Date for the payment of any such defaulted interest. Such Special Record Date and the date fixed for payment of such defaulted interest shall be fixed by the Registrar whenever moneys become available for payment of the defaulted interest, and notice of the Special Record Date shall be given to the registered owners of the Bonds not less than ten days prior to the Special Record Date by first-class mail to each such registered owner as shown on the Registrar's registration books on a date selected by the Registrar, stating the date of the Special Record Date and the date fixed for the payment of such defaulted interest.

The Paying Agent may make payments of interest on any Bond by such alternative means as may be mutually agreed to between the registered owner of such Bond and the Paying Agent (provided, however, that the City shall not be required to make funds available to the Paying Agent prior to the dates specified in the Registrar Agreement). All such payments shall be made in lawful money of the United States of America, without deduction for services of the Registrar or Paying Agent.

9. Section 6. Prior Redemption.

- a. *Optional Redemption.* The Bonds designated in the Sale Certificate, if any, are subject to redemption at the option of the City prior to their respective maturities as provided in the Sale Certificate.

10.

- b. *Mandatory Redemption.* The Term Bonds designed in the Sale Certificate, if any, shall be subject to mandatory sinking fund redemption at the times, in the amounts, and at the prices set forth in the Sale Certificate.

11. On or before the thirtieth day prior to each sinking fund redemption date, the Registrar will proceed to call the Term Bonds (or any Term Bond or Term Bonds issued to replace such Term Bonds) for redemption from the sinking fund on the next December 1, and give notice to such call without further instruction or notice from the City.

At its option, to be exercised on or before the 60th day next preceding any sinking fund redemption date, the City may (i) deliver to the Registrar for cancellation Term Bonds

subject to mandatory sinking fund redemption on such date in an aggregate principal amount desired or (ii) receive a credit in respect of its sinking fund redemption obligation for any Terms Bonds subject to mandatory sinking fund redemption on such date, which prior to said date have been redeemed (otherwise than through the operation of the sinking fund) and cancelled by the Registrar and not theretofore applied as a credit against any sinking fund redemption obligation. Each Term Bond so delivered or previously redeemed will be credited by the Registrar at the principal amount thereof on the obligation of the City on such sinking fund redemption date and the principal amount of Term Bonds to be redeemed by operation of such sinking fund on such date will be accordingly reduced. The City will, on or before the 60th day next preceding each sinking fund redemption date, furnish the Registrar with the City's certificate indicating whether or not and to what extent the provision of (i) and (ii) above are to be availed with respect to such sinking fund payment. Failure of the City to deliver such certificate shall not affect the Registrar's duty to give notice of sinking fund redemption as provided herein.

- c. *Partial Redemption.* In the case of Bonds of a denomination larger than \$5,000, a portion of such Bond (\$5,000 or any integral multiple thereof) may be redeemed, in which case the Registrar shall, without charge to the Owner thereof, authenticate and issue a replacement Bond or Bonds for the unredeemed portion thereof.
- d. *Notice of Redemption.* Notice identifying the Bonds or portions thereof to be redeemed shall be given by the Registrar by mailing a copy of the redemption notice by first class mail, postage prepaid, or by sending a copy of the redemption notice by electronic means, not more than 60 nor less than 30 days prior to the date fixed for redemption, to the Owner of each Bond to be redeemed in whole or in part at the address shown on the registration records maintained by the Registrar. Failure to give such notice as provided in this paragraph to any Owner of any Bond, or any defect therein, shall not affect the validity of any proceedings for the redemption of any other Bonds. Actual receipt of notice sent in accordance with this paragraph by the Owner of any Bond shall not be a condition precedent to the redemption of such Bond or any other Bond. The principal amount so redeemed will be payable upon presentation and surrender of the Bond at the Paying Agent, and accrued interest to the redemption date will be paid by check or draft mailed or by wire to the Owner (or by alternative means if so agreed to by the Owner and the Paying Agent). All Bonds so called for redemption will cease to bear interest after the specified redemption date if moneys to effect the redemption are on deposit with the Paying Agent on such redemption date.
- e. *Conditional Call Provision.* Notwithstanding the provisions of this Section, any notice of optional redemption may contain a statement that the redemption is conditioned upon the receipt by the Paying Agent of funds on or before the date fixed for redemption sufficient to pay the redemption price of the Bonds so called for redemption, and that if such funds are not available, such redemption shall be canceled by written notice to the owners of the Bonds called for redemption in the same manner as the original redemption notice was sent.

12. _____

- 13. Section 7. Execution of Bonds. The Bonds shall be executed in the name of and on behalf of the City and signed by the manual or facsimile signature of the Mayor, sealed with a manual or facsimile impression of the seal of the City and attested by the manual or facsimile

signature of the City Clerk. The Bonds bearing the manual or facsimile signatures of the officers in office at the time of the signing thereof shall be the valid and binding obligations of the City (subject to the requirement of authentication by the Registrar as hereinafter provided) notwithstanding that before the delivery of the Bonds, or before the issuance of the Bonds upon transfer or exchange, any or all of the persons whose facsimile signatures appear on the Bonds shall have ceased to fill their respective offices. The Mayor and City Clerk may, by the execution of a signature certificate pertaining to the Bonds, adopt as and for their respective signatures the facsimiles thereof appearing on the Bonds. At the time of the execution of the signature certificate, the Mayor and City Clerk may each adopt as and for his or her facsimile signature the facsimile signature of his or her predecessor in office in the event that such facsimile signature appears upon any of the Bonds.

14.

15. No Bond shall be valid or obligatory for any purpose unless the certificate of authentication, substantially in the form hereinafter provided, has been duly manually executed by the Registrar. The Registrar's certificate of authentication shall be deemed to have been duly executed by it if manually signed by an authorized officer or representative of the Registrar, but it shall not be necessary for the same officer or representative to sign the certificate of authentication on all of the Bonds issued hereunder. By authenticating any of the Bonds initially delivered pursuant to this Ordinance, the Registrar shall be deemed to have assented to the provisions of this Ordinance.

16.

17. Section 8. Form of Bonds. The Bonds shall be substantially as follows (provided that any portion of the Bond text may, with appropriate references, be printed on the back of the Bonds), with such omissions, insertions, endorsements, and variations as to any recitals of fact or other provisions as may be required by the circumstances, be required or permitted by this Ordinance, or be consistent with this Ordinance and necessary or appropriate to conform to the rules and requirements of any governmental authority or any usage or requirement of law with respect thereto:

[Form of Bond]

Unless this bond is presented by an authorized representative of The Depository Trust Company, a New York corporation ("DTC"), to the City or its agent for registration of transfer, exchange, or payment, and any bond issued is registered in the name of Cede & Co. or in such other name as is requested by an authorized representative of DTC (and any payment is made to Cede & Co. or to such other entity as is requested by an authorized representative of DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL inasmuch as the Registered Owner hereof, Cede & Co., has an interest herein.

No. R-_____

\$_____

**UNITED STATES OF AMERICA
STATE OF COLORADO
COUNTIES OF JEFFERSON AND ADAMS**

**CITY OF ARVADA
SALES AND USE TAX REVENUE BOND
SERIES 2023**

<u>INTEREST RATE</u>	<u>MATURITY DATE</u>	<u>DATED AS OF</u>	<u>CUSIP</u>
_____ %	December 1, 20____	[date of delivery]	_____

REGISTERED OWNER: CEDE & CO.

PRINCIPAL AMOUNT: _____ DOLLARS

The City of Arvada, in the Counties of Jefferson and Adams and the State of Colorado, a municipal corporation duly organized and operating under the City Charter and the Constitution and laws of the State of Colorado, for value received, hereby promises to pay from the special funds and accounts hereafter designated, but not otherwise, to the Registered Owner named above, or registered assigns, on the maturity date specified above (unless called for earlier redemption), the principal amount specified above, and in like manner to pay interest on such principal amount at the interest rate per annum specified above, payable semiannually on June 1 and December 1 each year, commencing on _____ 1, 2023, until such principal amount is paid, unless this Bond shall have been previously called for redemption and payment shall have been duly made. This bond will bear interest from the most recent interest payment date to which interest has been paid or provided for, or, if no interest has been paid, from the date of this bond. This bond is one of an authorized series issued pursuant to an ordinance of the City Council adopted on May 1, 2023 (the "Bond Ordinance"). This bond bears interest, matures, is payable, is subject to redemption and is transferable as provided in the Bond Ordinance and Sale Certificate authorized by the Bond Ordinance. To the extent not defined herein, terms used in this Bond shall have the same meanings as set forth in the Bond Ordinance.

The principal of this bond is payable upon presentation and surrender hereof at the principal office of the Paying Agent. Interest on this bond will be paid on or before each interest payment date (or, if such interest payment date is not a Business Day, on or before the next succeeding Business Day), by check or draft mailed or wire sent to the person in whose name this bond is registered in the registration records of the City maintained by the Registrar, at the address appearing thereon at the close of business on the Record Date.

In the case of redemption of Bonds of a denomination larger than \$5,000, a portion of such Bond (\$5,000 or any integral multiple thereof) may be redeemed, in which case the Registrar shall, without charge to the Registered Owner of such Bond, authenticate and issue a replacement Bond or Bonds for the unredeemed portion thereof. Redemption shall be made upon not more than sixty days and not less than thirty days' notice to each registered Owner of Bonds to be redeemed as shown on the registration records kept by the Registrar, in the manner and upon the conditions provided in the Bond Ordinance.

The Bonds of which this Bond is one are all of like date, tenor, and effect except as to number, principal amount, interest rate, date of maturity, and optional prior redemption, and are issued by the City Council of the City of Arvada, in the Counties of Jefferson and Adams and State of Colorado, for the purpose of financing the costs of the Project, under the authority of and in full

conformity with the Charter, the Constitution and laws of the State of Colorado, and pursuant to the duly adopted Bond Ordinance.

The Bonds are also issued pursuant to Title 11, Article 57, Part 2, C.R.S. (the “Supplemental Act”). Pursuant to Section 11-57-210 of the Supplemental Act, this recital shall be conclusive evidence of the validity and the regularity of the issuance of the Bonds after their delivery for value.

The principal of and interest on this Bond are payable only from the proceeds of the Pledged Revenues, all as more particularly set forth in the Bond Ordinance. This Bond constitutes a lien, but not necessarily an exclusively such lien, on the Pledged Revenues.

This Bond is payable solely from such Pledged Revenues, does not constitute a debt of the City within the meaning of any constitutional, home rule charter, or statutory limitation, and shall not be considered or held to be a general obligation of the City.

It is further hereby recited, certified, and warranted that all the requirements of law have been complied with fully by the proper officers of the City in issuing this Bond.

Reference is made to the Bond Ordinance for the provisions, among others, with respect to the custody and application of the proceeds of the Bonds, the receipt and disposition of the Pledged Revenues, the nature and extent of the security, the terms and conditions under which additional bonds payable from the Pledged Revenues may be issued, the rights, duties and obligations of the City, the rights of the Owners of the Bonds, the events of defaults and remedies, the circumstances under which any Bond is no longer Outstanding, and the ability to amend the Bond Ordinance. By acceptance of this Bond the Registered Owner hereof assents to all provisions of the Bond Ordinance. The principal of and the interest on this Bond shall be paid, and this Bond is transferable, free from and without regard to any equities between the City and the original or any intermediate Owner hereof or any setoffs or cross-claims.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any security or benefit under the Bond Ordinance until the certificate of authentication hereon shall have been manually signed by the Registrar.

IN TESTIMONY WHEREOF, the City Council of the City of Arvada, Colorado, has caused this bond to be signed and executed in its name with a manual or facsimile signature of the Mayor of the City, and to be attested with a manual or facsimile signature of the City Clerk, with a manual or facsimile impression of the seal of the City affixed hereto, all as of the date specified above.

CITY OF ARVADA, COLORADO

(SEAL OR FACSIMILE)

(Manual or Facsimile Signature)

Mayor

ATTESTED:

(Manual or Facsimile Signature) _____
City Clerk

[Form of Registrar's Certificate of Authentication]

CERTIFICATE OF AUTHENTICATION

Date of Registration
and Authentication: _____

This Bond is one of the Bonds of the issue described in the within-mentioned Bond Ordinance, and this Bond has been duly registered in the registration records kept by the undersigned as Registrar.

UMB BANK, n.a., as Registrar

By: _____
Authorized Representative

[End Form of Registrar's Certificate of Authentication]

[Form of Assignment]

For value received, the undersigned hereby sells, assigns and transfers unto _____ the within Bond and hereby irrevocably constitutes and appoints _____ attorney, to transfer the same on the records of the Registrar, with full power of substitution in the premises.

Dated: _____

Signature Guaranteed:

Signature must be guaranteed by a member
of a Medallion Signature Program.

Address of transferee:

Social Security or other tax
identification number of transferee:

NOTE: The signature to this Assignment must correspond with the name as written on the face of the within Bond in every particular, without alteration or enlargement or any change whatsoever.

EXCHANGE OR TRANSFER FEES MAY BE CHARGED

[End Form of Assignment]

[Form of Prepayment Panel]

The following installments of principal (or portion thereof) of this Bond have been prepaid in accordance with the terms of the Bond Ordinance authorizing the issuance of this Bond.

<u>Date of Prepayment</u>	<u>Principal Prepaid</u>	<u>Signature of Authorized Representative of the Depository</u>

(End of Form of Prepayment Panel)

[End Form of Bond]

18. Section 9. Book Entry.

- a. Notwithstanding any contrary provision of this Ordinance, the Bonds initially shall be evidenced by one Bond for each maturity and interest rate in denominations equal to the aggregate principal amount of the Bonds of such maturity and interest rate. Such initially delivered Bonds shall be registered in the name of "Cede & Co." as nominee for DTC, the Depository for the Bonds. The Bonds may not thereafter be transferred or exchanged except:
 - i. to any successor of DTC or its nominee, which successor must be both a "clearing corporation" as defined in Section 4-8-102(a)(5), C.R.S. and a qualified and registered "clearing agency" under Section 17A of the Securities Exchange Act of 1934, as amended; or
 - ii. upon the resignation of DTC or a successor or new depository under clause (i) or this clause (ii) of this Subsection a., or a determination by the City Council that DTC or such successor or a new depository is no longer able to carry out its functions, and the designation by the City Council of another depository acceptable to the City Council and to the depository then holding the Bonds, which new depository must be both a "clearing corporation" as defined in Section 4-8-102(a)(5), C.R.S. and a qualified and registered "clearing agency" under Section 17A of the Securities Exchange Act of 1934, as amended, to carry out the functions of DTC or such successor new depository; or
 - iii. upon the resignation of DTC or a successor or new depository under clause (i) above or the designation of a new depository pursuant to clause (ii) above, or a determination of the City Council that DTC or such successor or depository is no longer able to carry out its functions, and the failure by the City Council, after reasonable investigation, to locate another depository under clause (ii) to carry out such depository functions.
- b. In the case of a transfer to a successor of DTC or its nominee as referred to in clause (i) or (ii) of Subsection a. hereof, upon receipt of the Outstanding Bonds by the Registrar together with written instructions for transfer satisfactory to the Registrar, a new Bond for each maturity and interest rate of the Bonds then Outstanding shall be issued to such successor or new depository, as the case may be, or its nominee, as is specified in such written transfer instructions. In the case of a resignation or determination under clause (iii) of Subsection a. hereof and the failure after reasonable investigation to locate another qualified depository for the Bonds as provided in clause (iii) of Subsection a. hereof, and upon receipt of the Outstanding Bonds by the Registrar, together with written instructions for transfer satisfactory to the Registrar, new Bonds shall be issued in denominations of \$5,000 or any integral multiple thereof, registered in the names of such persons, and in such authorized denominations as are requested in such written transfer instructions; however, the Registrar shall not be required to deliver such new Bonds within a period of less than 60 days from the date of receipt of such written transfer instructions.
- c. The City Council and the Registrar shall be entitled to treat the registered owner of any Bond as the absolute Owner thereof for all purposes hereof and any applicable laws, notwithstanding any notice to the contrary received by any or all of them and the City

Council and the Registrar shall have no responsibility for transmitting payments or notices to the beneficial owners of the Bonds held by DTC or any successor or new depository named pursuant to Subsection a. hereof.

- d. The City Council and the Registrar shall endeavor to cooperate with DTC or any successor or new depository named pursuant to clause (i) or (ii) of Subsection a. hereof in effectuating payment of the principal amount of the Bonds upon maturity or prior redemption by arranging for payment in such a manner that funds representing such payments are available to the depository on the date they are due.
- e. Upon any partial redemption of any of the Bonds, Cede & Co. (or its successor) in its discretion may request the City to issue and authenticate a new Bond or shall make an appropriate notation on the Bond indicating the date and amount of prepayment, except in the case of final maturity, in which case the Bond must be presented to the Registrar prior to payment. The records of the Paying Agent shall govern in the case of any dispute as to the amount of any partial prepayment made to Cede & Co. (or its successor).

19. Section 10. Authentication. No Bond shall be valid or obligatory for any purpose or be entitled to any security or benefit under this Ordinance unless and until a certificate of authentication on such Bond substantially in the form hereinabove set forth shall have been duly manually executed by the Registrar, and such executed certificate of the Registrar upon any such Bond shall be conclusive evidence that such Bond has been authenticated and delivered under this Ordinance. The Registrar's certificate of authentication on any Bond shall be deemed to have been executed by it if signed by an authorized officer or signatory of the Registrar, but it shall not be necessary for the same officer or signatory to sign the certificate of authentication on all of the Bonds issued hereunder. By authenticating any of the Bonds initially delivered pursuant to this Ordinance, the Registrar and Paying Agent shall be deemed to have assented to the provisions of, and to have agreed to abide by and to perform the duties provided for them in this Ordinance.

20.

21. Section 11. Delivery of Bonds. After the adoption of this Ordinance. The City shall execute the Bonds, and deliver them to the Registrar, and the Registrar shall authenticate the Bonds and deliver them to the Purchaser, as directed by the City and the Purchaser.

22.

23. Section 12. Registration, Transfer and Exchange.

- a. Subject to Section 9 hereof, books for the registration and transfer of the Bonds shall be kept by the Registrar. Upon the surrender for transfer of any Bond to the Registrar, duly endorsed for transfer or accompanied by an assignment duly executed by the registered owner or such Person's attorney duly authorized in writing, the Registrar shall authenticate and deliver in the name of the transferee or transferees a new Bond or Bonds of a like aggregate principal amount and of the same maturity and interest rate, bearing a number or numbers not previously assigned. Bonds may be exchanged at the principal office of the Registrar for an equal aggregate principal amount of Bonds of the same maturity and interest rate of other authorized denominations. The Registrar shall authenticate and deliver a Bond or Bonds which the Registered Owner making the exchange is entitled to receive, bearing a number or numbers not previously assigned. The Registrar may impose reasonable charges in

connection with exchanges or transfers of Bonds, which charges (as well as any tax or other governmental charge required to be paid with respect to such transfer) shall be paid by the Owner of any Bond requesting such exchange or transfer.

- b. The Registrar shall not be required (1) to transfer or exchange all or a portion of any Bond subject to prior redemption during the period beginning at the opening of business 15 days next preceding the sending of notice calling any Bonds for prior redemption as herein provided or (2) to transfer or exchange all or a portion of a Bond after the sending of notice calling such Bond or portion thereof for prior redemption, except for the unredeemed portion of Bonds being redeemed in part.
- c. The Person in whose name any Bond shall be registered, on the registration books kept by the Registrar, shall be deemed and regarded as the absolute Owner thereof for the purpose of making payment thereof and for all other purposes except as may otherwise be provided with respect to payment of interest to the Owners of the Bonds as is provided in Section 5 hereof; and payment of or on account of either principal or interest on any Bond shall be made only to or upon the written order of the registered owner thereof or such Person's legal representative, but such registration may be changed upon transfer of such Bond in the manner and subject to the conditions and limitations provided herein. All such payments shall be valid and effectual to discharge the liability upon such Bond to the extent of the sum or sums so paid.
- d. The officers of the City are authorized to deliver to the Registrar fully executed but unauthenticated Bonds in such quantities as may be convenient to be held in custody by the Registrar pending use as herein provided.
 - a. Section 13. Cancellation and Destruction of Bonds. Whenever any Outstanding Bond shall be delivered to the Registrar for payment pursuant to this Ordinance and upon payment of the principal amount and interest represented thereby, such Bond shall be canceled in accordance with the customary procedures of the Registrar and applicable retention laws. Whenever any Outstanding Bond shall be delivered to the Registrar for transfer pursuant to the provisions hereof, such Bond shall be canceled by the Registrar in accordance with the customary procedures of the Registrar and applicable retention laws.
 - b. Section 14. Lost Bonds. Subject to the provisions of Section 9 hereof, if any Bond shall be lost, stolen, destroyed or mutilated, the Registrar shall, upon receipt of such evidence, information or indemnity relating thereto as it may reasonably require, authenticate and deliver a replacement Bond or Bonds of a like aggregate principal amount and of the same maturity and interest rate, bearing a number or numbers not previously assigned. If such lost, stolen, destroyed or mutilated Bond shall have matured or is about to become due and payable, the Registrar may direct the Paying Agent to pay such Bond in lieu of replacement.
 - c. Section 15. Disposition of Bond Proceeds and Additional Deposits. The proceeds of the Bonds (including any original issue premium but net of

underwriting discount and any original issue discount), upon the receipt thereof, shall be accounted for in the following manner and priority:

- i. Reserve Account. An amount equal to the portion of the Reserve Account Requirement as described in the Sale Certificate shall be credited to the special and separate fund hereby created and known as the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Reserve Account.”
- ii. Costs of Issuance. An amount sufficient to pay the costs of issuing the Bonds, as described in the Registrar Agreement shall be credited to the fund created in the Registrar Agreement and known as the “City of Arvada, Colorado, Sales and Use Revenue Bonds, Series 2023, Costs of Issuance Fund.”
- iii. Project Fund. The remaining proceeds derived from the sale of the Bonds shall be credited to the special and separate account hereby created and held by the City to be known as the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Project Fund.” Except as otherwise provided herein, the moneys in the Project Fund shall be used solely for the Costs of the Project.

24. After payment of the Costs of the Project, any unexpended balance of Bond proceeds shall be either utilized for capital projects approved by the voters of the City at the Election or deposited into the Bond Account for the payment of the principal of and interest on the Bonds as the same become due. Neither the Purchaser nor any subsequent Owners of the Bonds shall be responsible for the application or disposal by the City or any of its officers of the funds derived from the sale thereof.

25.

26. Section 16. Tax Covenant and Rebate Account.

- a. The City covenants for the benefit of the Owners of the Bonds that it will not take any action or omit to take any action with respect to the Bonds, the proceeds thereof, any other funds of the City or any facilities financed or refinanced with the proceeds of the Bonds if such action or omission (i) would cause the interest on the Bonds to lose its exclusion from gross income for federal income tax purposes under Section 103 of the Tax Code, (ii) would cause interest on the Bonds to become a specific preference item for purposes of federal alternative minimum tax under the Tax Code, except as such interest is taken into account in determining the annual adjusted financial statement income of applicable corporations (as defined in Section 59(k) of the Tax Code) for the purpose of computing the alternative minimum tax imposed on corporations, or (iii) would cause interest on the Bonds to lose its exclusion from Colorado taxable income or Colorado alternative minimum taxable income under present Colorado law. The foregoing covenant shall remain in full force and effect notwithstanding the payment in full or defeasance of the Bonds until the date on which all obligations of the City in fulfilling the above covenant under the Tax Code and Colorado law have been met.
- b. All of the amounts on deposit in the Bond Account or in any fund or account created or continued under this Ordinance, and all amounts pledged to the payment of the Bonds, shall

be invested in compliance with the requirements of Subsection a. of this Section. Amounts on deposit in the Rebate Account shall not be subject to the lien and pledge of this Ordinance, to the extent that such amounts are required to be paid to the United States Treasury. The City shall withdraw from the Bond Account for deposit into the Rebate Account, as provided in Section 17 hereof, amounts required to be deposited into the Rebate Account from time to time. Upon receipt of an opinion of nationally recognized bond counsel that the balance in the Rebate Account is in excess of the amount required by Subsection a. of this Section to be included therein, such excess shall be transferred to the Bond Account.

27. Section 17. Payment of Principal and Interest. The Pledged Revenues shall be deposited immediately upon receipt to the existing separate, special fund designated as the “Sales and Use Tax Capital Improvement Fund” (“Sales and Use Tax Fund”) of the City. The amount of the Pledged Revenues deposited to the Sales and Use Tax Fund shall be accounted for separately and shall be identifiable at all times. The Pledged Revenues in the Sales and Use Tax Fund shall be deposited to the extent required below into the “City of Arvada, Colorado, Sales and Use Tax Debt Service Fund” (the “Debt Service Fund”) previously created and hereby continued, and such Pledged Revenues shall be applied only in the following manner and order:

- i. *Bond Account.* First, in each month, the City covenants to deposit to the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Bond Account” hereby created as a separate account within the Debt Service Fund, from the Pledged Revenues the following amounts:
 - (1) Monthly, commencing on the first day of the month immediately succeeding the delivery of any of the Bonds, or commencing on the first day of the month six months next prior to the first interest payment date of any of the Bonds, whichever commencement date is later, an amount in equal monthly installments necessary, together with any moneys therein and available therefor, to pay the interest due and payable on the Bonds on the next succeeding interest payment date.
 - (2) Monthly, commencing on the first day of the month immediately succeeding the delivery of any of the Bonds, or commencing on the first day of the month one year next prior to the first principal payment date of any of the Bonds, whichever commencement date is later, an amount in equal monthly installments necessary, together with any moneys therein and available therefor, to pay the principal and redemption premium, if any, due and payable on the Bonds on the next succeeding principal payment date.
 - (3) Payments may be made to any bond account for Parity Lien Bonds concurrently (but not necessarily simultaneously) with the payment for the Bonds.

- ii. *Reserve Account.* Second, deposits shall be made to the Reserve Account for the Bonds if set forth in the Sale Certificate and, if necessary, to any reserve account securing the payment of any Parity Lien Bonds.
- iii. *Rebate Account Payments.* Third, after making the payments required above, the City shall deposit any remaining Pledged Revenues to the account of the Debt Service Fund created hereunder and designated the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Rebate Account” (the “Rebate Account”) as required under Section 148(f) of the Tax Code and the regulations promulgated thereunder and shall apply such funds to the extent necessary to comply with the City’s covenants under Section 16 hereof to make payments to the United States Treasury. Payments into similar rebate accounts for Parity Lien Bonds shall be made concurrently (but not necessarily simultaneously) with payments into the Rebate Account.
- iv. *Any Lawful Purpose.* After compliance with Subsections (i) through (iii), inclusive, the remaining Pledged Revenues may be used for any lawful purpose, as the City Council may direct.
- v. *General Administration of Funds and Accounts.* The Sales and Use Tax Fund, the Debt Service Fund, the Project Fund, the Bond Account, the Reserve Account and the Rebate Account shall be held in the custody of the City. Each periodic payment shall be credited to the proper fund or account not later than the date designated therefor, except that when any such date shall be a day which is not a Business Day, then such payment shall be made on or before the next succeeding Business Day. Moneys in the Sales and Use Tax Fund, the Debt Service Fund, the Project Fund, the Bond Account, the Reserve Account and the Rebate Account, not immediately needed may be deposited or invested and reinvested by the City, in deposits or investments which are at the time Permitted Investments, subject to Section 16 hereof. Securities or obligations purchased as an investment of moneys in any such fund or account shall be deemed at all times to be a part of such fund or account, except to the extent otherwise provided herein. Interest and any profit realized from investments in the Sales and Use Tax Fund, the Debt Service Fund, and the Bond Account shall be deposited to the Sales and Use Tax Fund. Interest and any profit realized from investments in the Reserve Account shall be retained in the Reserve Account to the extent the Reserve Account Requirement is not satisfied, otherwise such interest and profits realized from investments in the Reserve Account shall be deposited to the Bond Account or the Rebate Account. Any loss resulting from investments in the Sales and Use Tax Fund, the Debt Service Fund, the Bond Account and the Reserve Account shall be charged to each such fund or account, respectively. Interest and profit realized and any loss resulting from investments in the Rebate Account shall be credited or charged to such account. The moneys in any fund or account herein provided for shall consist of lawful money of the United States or Permitted Investments or

both such money and such Permitted Investments. Moneys deposited in a demand or time deposit account in or evidenced by a certificate of deposit of a commercial bank, appropriately secured according to the laws of the State, shall be deemed lawful money of the United States. Investments purchased with cash on deposit in the Reserve Account shall mature no later than five years from the date of purchase. Neither the City nor any officer or employee of the City shall be liable or responsible for any loss resulting from any investment or reinvestment made in accordance with this Ordinance.

28. Section 18. Replacement of Registrar or Paying Agent. If the Registrar or Paying Agent initially appointed hereunder shall resign, or if the City shall determine to replace the Registrar or Paying Agent, the City may, upon notice mailed to each Owner of any Bond at such Person's address last shown on the registration records or by electronic means to DTC or its successors, appoint a successor Registrar or Paying Agent, or both. No resignation or dismissal of the Registrar or Paying Agent may take effect until a successor has been appointed and has accepted such duties, as applicable. Every such successor Registrar or Paying Agent shall be the City or a bank or trust company having a shareowner's equity (e.g., capital, surplus, and undivided profits), however denominated, of not less than \$10,000,000. It shall not be required that the same institution serve as both Registrar and Paying Agent hereunder, but the City shall have the right to have the same institution serve as both Registrar and Paying Agent hereunder.

29.

30. Section 19. Covenants of the City. The City hereby irrevocably covenants and agrees with each and every Owner of the Bonds that so long as any of the Bonds remain Outstanding:

- i. It will not amend or repeal the provisions of the Code appertaining to the sales and use tax in any way that would materially adversely affect the amount of sales or use tax revenues which would otherwise be collected. However, nothing herein shall prevent the City from amending the provisions of the Code appertaining to the sales and use tax in order to make changes in the administration, collection, or enforcement of such sales and use taxes, provided that such changes would not materially adversely affect the Owners of the Bonds.
- ii. It will administer, enforce, and collect, or cause to be administered, enforced, and collected, the sales and use tax authorized by the Code, and shall take such necessary action to collect delinquent payments as shall be authorized by the Code and in accordance with law.
- iii. It will keep such books and records showing the proceeds of the municipal sales and use taxes, in which complete entries shall be made in accordance with standard principles of accounting, and any Owner of any of the Bonds shall have the right at all reasonable times to inspect the records and accounts relating to the collection and receipt of such sales and use taxes.
- iv. It will, at least once a year, cause an audit to be performed of the records relating to the collection and receipt of the sales and use taxes (which may be performed as a part of the City's general annual audit), and upon

request, make available at cost the report of the auditor or accountant, to any Owner of any of the Bonds. Such audit may be made part of and included within the general audit of the City, and made at the same time as the general audit.

- v. Income earned from the investment of moneys held in the Sales and Use Tax Fund, the Debt Service Fund and the funds and accounts thereof shall be deposited immediately upon receipt to the Sales and Use Tax Fund and thereafter shall be deemed to be Pledged Revenues, except that income earned from the investment of moneys in the Rebate Account shall be retained in the Rebate Account and shall not be deemed to be Pledged Revenues (except to the extent transferred to the Bond Account pursuant to the last sentence of Section 16 b. hereof).
- vi. It will comply with the terms of the Disclosure Certificate. Any failure by the City to perform in accordance with this Subsection. shall not constitute an Event of Default under this Ordinance, and the rights and remedies provided by this Ordinance upon the occurrence of an Event of Default shall not apply to any such failure. Neither the Registrar nor the Paying Agent shall not have any power or duty to enforce this Section. No owner of a Bond shall be entitled to damages for the City's non-compliance with its obligations under this Subsection; however, the owners of the Bonds may enforce specific performance of the obligations contained in this Subsection by any judicial proceeding available.

i.

31. Section 20. Additional Obligations.

- a. No bonds, notes, certificates, contracts, or other similar obligations shall be issued payable from the Pledged Revenues and having a lien thereon which is prior or superior to the lien of the Bonds.
 - a.
- b. Nothing in this Ordinance shall be construed in such manner as to prevent the issuance by the City of Parity Lien Bonds, provided:
 - i. the City is current in the payment of principal of and interest on the Bonds and any Outstanding Parity Lien Bonds, and in the accumulation of any required amounts in the Reserve Account and any reserve account established for Outstanding Parity Lien Bonds,
 - ii. no Event of Default has occurred and is continuing, and
 - iii. the Pledged Revenues collected or received by the City in the last preceding Fiscal Year are sufficient to cover two times the Maximum Annual Debt Service Requirement. In determining the Maximum Annual Debt Service Requirement as described above, there shall be included the maximum amount of all required payments of principal and interest on the proposed Parity Lien Bonds which will become due in any Fiscal Year, and mandatory sinking fund redemption installments shall be treated as serial principal maturities. In the event that the municipal sales and use tax

has been increased during the preceding or current Fiscal Year and if such increase is pledged to pay the proposed Parity Lien Bonds, then the Pledged Revenues for the last preceding Fiscal Year may be adjusted by applying the new percentage to the amount of sales and use taxes actually collected during such prior Fiscal Year, for the purpose of determining compliance with this Subsection. A written certification by the Director of Finance that the requirements of clause (iii) of this Subsection have been met shall be conclusively presumed to be accurate in determining the right of the City to authorize, issue, sell and deliver the proposed Parity Lien Bonds. The City has established the calendar year as the "Fiscal Year" for purposes of this Subsection.

- c. Simultaneously with the issuance of any Parity Lien Bonds, if required by the ordinance authorizing the issuance of such Parity Lien Bonds, there shall be established a reserve account for the Parity Lien Bonds.
 - b.
- d. If at any time after the Bonds, or any part thereof, shall have been issued and remain Outstanding, the City shall find it desirable to refund any Outstanding obligations payable from the Pledged Revenues, said obligations, or any part thereof, may be refunded, subject to the provisions stated below. Any refunding obligations payable in whole or in part from the Pledged Revenues shall be issued with such details as the City Council may provide, so long as there is no impairment of any contractual obligations imposed upon the City; but if only a part of the Outstanding obligations payable from the Pledged Revenues is refunded, then such securities may not be refunded without the consent of the Owner or Owners of the unrefunded portion of such obligations unless:
 - i. the refunding obligations do not increase, for any fiscal year in which any Bonds will be Outstanding, the aggregate principal and interest requirements evidenced by such refunding obligations and by the Outstanding obligations payable from the Pledged Revenues and not refunded, and the lien of the refunding obligations on the Pledged Revenues is not raised to a higher priority than the lien thereon of the obligations thereby refunded; or
 - ii. the lien on the Pledged Revenues for the payment of the refunding obligations is subordinate to each such lien for the payment of any Bonds not refunded; or
 - iii. the refunding obligations are issued in compliance with paragraph b. of this Section 20.
- b. Nothing herein shall prevent the City from issuing Subordinate Lien Bonds.

32. Section 21. Defeasance. When the Bonds shall be paid in accordance with their terms (or payment of the Bonds has been provided for in the manner set forth in the following paragraph), then this Ordinance and all rights granted hereunder shall thereupon cease, terminate and become void and be discharged and satisfied.

33. Payment of any Outstanding Bond shall prior to the maturity or redemption date thereof be deemed to have been provided for within the meaning and with the effect expressed in this Section if (a) in case said Bond is to be redeemed on any date prior to its maturity, the City shall have given to the Paying Agent in form satisfactory to it irrevocable instructions to give on a date in accordance with the provisions of Section 6 hereof, notice of redemption of such Bond on said redemption date, such notice to be given in accordance with the provisions of Section 6 hereof, (b) there shall have been deposited with the Paying Agent or a Trust Bank either moneys in an amount which shall be sufficient, and/or Federal Securities which shall not contain provisions permitting the redemption thereof at the option of the issuer, the principal of and the interest on which when due, and without any reinvestment thereof, will provide moneys which, together with the moneys, if any, deposited with or held by the Paying Agent or a Trust Bank at the same time, shall be sufficient to pay when due all principal of, interest on, and any prior redemption premiums on said Bond on and prior to the redemption date or maturity date thereof, as the case may be, and (c) in the event said Bond is not by its terms subject to redemption within the next sixty days, the City shall have given the Paying Agent in form satisfactory to it irrevocable instructions to give, as soon as practicable in the same manner as the notice of redemption is given pursuant to Section 6 hereof, a notice to the Owner of such Bond that the deposit required by (b) above has been made with the Paying Agent or a Trust Bank and that payment of said Bond has been provided for in accordance with this Section and stating such maturity or redemption date upon which moneys are to be available for the payment of the principal of and interest of said Bond. Neither such Federal Securities nor moneys deposited with the Paying Agent or Trust Bank pursuant to this Section or principal or interest payments on any such Federal Securities shall be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal of and interest on said Bond; provided any cash received from such principal or interest payments on such Federal Securities deposited with the Paying Agent or other Trust Bank, if not then needed for such purpose, shall, to the extent practicable, be reinvested in securities of the type described in (b) of this paragraph maturing at times and in amounts sufficient to pay when due the principal and interest to become due on said Bond on or prior to such redemption date or maturity date thereof, as the case may be. At such time as payment of a Bond has been provided for as aforesaid, such Bond shall no longer be secured by or entitled to the benefits of this Ordinance, except for the purpose of any payment from such moneys or securities deposited with the Paying Agent or other Trust Bank.

34.

35. The release of the obligations of the City under this Section shall be without prejudice to the right of the Paying Agent to be paid reasonable compensation for all services rendered by it hereunder and all its reasonable expenses, charges and other disbursements incurred on or about the administration of and performance of its powers and duties hereunder.

36.

37. Upon compliance with the foregoing provisions of this Section with respect to all Bonds then Outstanding, this Ordinance may be discharged in accordance with the provisions of this Section but the liability of the City in respect of the Bonds shall continue; provided that the

Owners thereof shall thereafter be entitled to payment only out of the moneys or Federal Securities deposited with the Paying Agent or other Trust Bank as provided in this Section.

38.

39. Section 22. Amendment. Within the limits of applicable law, any limitation in this Ordinance may be waived or modified by the written consent of the Owners of Bonds representing at least seventy-five percent (75%) of the then Outstanding principal amount of the Bonds; and provided further that the written consent of the Owners of all the Bonds adversely affected thereby is required to:

- i. Extend the maturity of any Bond;
- ii. Reduce the principal amount or interest rate of any Bond;
- iii. Create a lien upon the Pledged Revenues ranking prior to the lien created by this Ordinance;
- iv. Reduce the principal amount of the Bonds required for consent to any waiver or modification; or
- v. Establish priorities between Bonds.

In addition to any other consent required in this Section 22, the consent of the Registrar and Paying Agent is required for any amendments which adversely affect the Registrar and Paying Agent. Copies of any waiver, modification or amendment to this Ordinance shall be delivered to any entity then maintaining a rating on the Bonds, at least 15 days prior to its execution or adoption.

40. Section 23. Events of Default. It is an Event of Default if:

- i. The City fails to pay the principal of any Bond when due at maturity or upon prior redemption;
- ii. The City fails to pay the interest on any Bond when due;
- iii. The City defaults in the punctual performance of its covenants hereunder (other than Section 19(vi.)) for 60 days after written notice shall have been given by the Owners of at least 25% of the Outstanding Bonds.
 - i.

41. Section 24. Remedies. Upon the happening of any Event of Default, the Owner or Owners of not less than 25% in aggregate principal amount of the Outstanding Bonds, or a trustee therefor, may protect and enforce their rights hereunder by any proper legal or equitable remedy deemed most effectual including mandamus, specific performance of any covenants, the appointment of a receiver (the consent of such appointment being hereby granted), injunctive relief, or requiring the City Council to act as if it were the trustee of an express trust, or any combination of such remedies. All proceedings shall be maintained for the benefit of the Owners. The failure of any Owner to proceed does not relieve the City or any person of any liability for failure to perform any duty hereunder. The foregoing rights are in addition to any other right available to the Owners of Bonds and the rights of the Owners are cumulative. Exercise of any right by any Owner shall not be deemed a waiver of any other right. If any remedial action is discontinued, the Owners shall be restored to their positions prior to taking such action.

42.

43. Section 25. Costs. All costs and expenses incurred in connection with the issuance and payment of the Bonds shall be paid either from the proceeds of the Bonds or from other legally available moneys of the City, or from a combination thereof.

44.

45. Section 26. Acceptance of Proposal. The City Council hereby authorizes the sale of the Bonds to the Purchaser upon the terms, conditions, and provisions set forth herein and in the Sale Certificate. The City Council hereby determines that the sale of the Bonds within the parameters and limitations provided herein and in the Notice of Public Sale is to the best advantage of the City.

46.

47. Section 27. Authorization to Execute Collateral Documents. The officers of the City and members of the City Council are authorized and directed to take any and all other actions necessary or appropriate to effectuate the provisions of this Ordinance, including but not limited to, the execution of the Disclosure Certificate, the Registrar Agreement and such certificates and affidavits as may be reasonably required by the Purchaser or by Bond Counsel.

48.

49. Section 28. Approval of Preliminary Official Statement and Authorization of Final Official Statement. The preparation and use of the Preliminary Official Statement, in substantially the form of the Official Statement delivered by the City with respect to the Series 2019 Bonds, and of the final Official Statement are hereby authorized. The Mayor, the City Manager, or the Director of Finance is hereby authorized to deem the Preliminary Official Statement as final within the meaning of the Rule and to approve, on behalf of the City, the Official Statement, in substantially the form of the Preliminary Official Statement with such changes as are hereafter approved by the Mayor, the City Manager or the Director of Finance. The execution of the Official Statement by the Mayor, the City Manager, or the Director of Finance shall be conclusively deemed to evidence the approval of the form and contents thereof by the City.

50.

51. Section 29. Ratification and Approval of Prior Action. All actions heretofore taken by the officers of the City and the members of the City Council, consistent with the provisions of this Ordinance, relating to the Project and the authorization, issuance, and delivery of the Bonds, including but not limited to the execution of the Disclosure Certificate and the Registrar Agreement are hereby ratified, approved, and confirmed.

52. _____

53. Section 30. Pledge of Revenues. The creation, perfection, enforcement, and priority of the pledge of revenues to secure or pay the Bonds as provided herein shall be governed by Section 11-57-208 of the Supplemental Act and this Ordinance. The revenues pledged for the payment of the Bonds, as received by or otherwise credited to the City, shall immediately be subject to the lien of such pledge without any physical delivery, filing, or further act. The lien of such pledge on the revenues pledged for payment of the Bonds and the obligation to perform the contractual provisions made herein shall have priority over any or all other obligations and liabilities of the City, except the Outstanding Parity Lien Bonds. The lien of such pledge shall be valid, binding, and enforceable as against all Persons having claims of any kind in tort, contract, or otherwise against the City irrespective of whether such Persons have notice of such liens.

54. _____

55. Section 31. Conclusive Recital. Pursuant to Section 11-57-210 of the Supplemental Act, the Bonds shall contain a recital that they are issued pursuant to the provisions of the Supplemental Act. Such recital shall be conclusive evidence of the validity and the regularity of the issuance of the Bonds after their delivery for value.

56. _____

57. Section 32. Severability. If any section, subsection, paragraph, clause, or provision of this Ordinance shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, subsection, paragraph, clause, or provision shall not affect any of the remaining provisions of this Ordinance, the intent being that the same are severable.

58. _____

59. Section 33. Repealer. All orders, resolutions, bylaws, ordinances or regulations of the City, or parts thereof, inconsistent with this Ordinance are hereby repealed to the extent only of such inconsistency.

60. _____

61. Section 34. Electronic Signatures; Electronic Transactions. The Mayor, the City Clerk, the City Manager, the Director of Finance and all other employees and officials of the City that are authorized or directed to execute any agreement, document, certificate, instrument or other paper in accordance with this Ordinance (collectively, the "Authorized Documents") are hereby authorized to execute Authorized Documents electronically via facsimile or email signature. Any electronic signature so affixed to any Authorized Document shall carry the full legal force and effect of any original, handwritten signature. This provision is made pursuant to Article 71.3 of Title 24, C.R.S., also known as the Uniform Electronic Transactions Act. It is hereby determined that the transactions described herein may be conducted and related documents may be stored by electronic means. Copies, telecopies, facsimiles, electronic files and other reproductions of original executed documents shall be deemed to be authentic and valid counterparts of such original documents for all purposes, including the filing of any claim, action or suit in the appropriate court of law.

62. _____

63. Section 35. Ordinance Irrepealable. After the Bonds are issued, this Ordinance shall constitute an irrevocable contract between the City and the Owners of the Bonds, and shall be and remain irrepealable until the Bonds and the interest thereon shall have been fully paid, satisfied, and discharged. No provisions of any constitution, statute, charter, ordinance,

resolution or other measure enacted after the issuance of the Bonds shall in any manner be construed as impairing the obligations of the City to keep and perform the covenants contained in this Ordinance.

64.

65. Section 36. Recording and Authentication. Immediately on its passage this Ordinance shall be recorded in a book kept for that purpose, authenticated by the signatures of the Mayor or Mayor Pro Tem and City Clerk, and shall be published in accordance with the Charter.

66.

67. Section 37. Statutes Superseded. Pursuant to Article XX of the State Constitution and the Charter, all statutes of the State which might otherwise apply in connection with the Bonds are hereby superseded.

68.

Section 38. This ordinance shall be effective five days after publication following final passage.

INTRODUCED, READ, AND ORDERED PUBLISHED this 17th day of April, 2023.

PASSED, ADOPTED AND APPROVED this 1st day of May, 2023

Marc Williams, Mayor

ATTEST:

City Clerk

APPROVED AS TO FORM:
Rachel A. Morris, City Attorney:

BY: _____

Publication Dates: April 20, 2023
May 4, 2023

STATE OF COLORADO)
)
COUNTIES OF ADAMS AND)
JEFFERSON) SS.
)
CITY OF ARVADA)

I, Kristen Rush, the City Clerk of the City of Arvada, Colorado (the “City”), do hereby certify that:

69. The foregoing pages are a true, correct and complete copy of an ordinance adopted by the City Council of the City (the “Council”) (i) on first reading at a regular meeting of the Council held at the City Council Chambers on April 17, 2023, and (ii) on second reading, at a regular meeting of the Council held at the City Council Chambers on May 1, 2023.
70. The ordinance has been signed by the Mayor, sealed with the corporate seal of the City, attested by me as City Clerk, and duly recorded in the books of the City; and the same remains of record in the book of records of the City.
71. The passage of the ordinance on April 17, 2023, on first reading was duly moved and seconded, and the ordinance was passed on first reading by an affirmative vote of a majority of the members of the Council as follows:

Name	“Yes”	“No”	Absent	Abstain
Marc Williams, Mayor				
David Jones, Mayor Pro Tem				
Randy Moorman				
Lauren Simpson				
John Marriott				
Lisa Smith				
Bob Fifer				

72. The passage of the ordinance on May 1, 2023, on second and final reading was duly moved and seconded, and the ordinance was passed on second and final reading by an affirmative vote of a majority of the members of the Council as follows:

Name	“Yes”	“No”	Absent	Abstain
Marc Williams, Mayor				
David Jones, Mayor Pro Tem				
Randy Moorman				
Lauren Simpson				
John Marriott				
Lisa Smith				
Bob Fifer				

73. There are no bylaws, rules or regulations of the Council which might prohibit the adoption of the Ordinance.
74. Notices of the meetings of April 17, 2023, and May 1, 2023, in the forms attached hereto as Exhibit A were posted not less than 24 hours prior to the meetings in accordance with law.
75. The Ordinance was published after first reading, which notice included the day, hour, and place at which the Council would hold a public hearing thereon, and the affidavit of publication is attached hereto as Exhibit B.
76. The Ordinance was published after second and final reading and the affidavit of publication is attached hereto as Exhibit C.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said City this _____ day of May, 2023.

(SEAL)

City Clerk

EXHIBIT A
(Attach Notices of Meetings)

EXHIBIT B

(Affidavit of Publication after First Reading)

EXHIBIT C

(Affidavit of Publication after Second Reading)

CONTINUING DISCLOSURE CERTIFICATE

City of Arvada, Colorado Sales and Use Tax Revenue Bonds Series 2023

This Continuing Disclosure Certificate (the “Disclosure Certificate”) is executed and delivered by the City of Arvada, Colorado (the “Issuer”), in connection with the issuance of its “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023” dated as of [CLOSING DATE, 2023], in the aggregate principal amount of \$[PAR] (the “Bonds”). The Bonds are being issued pursuant to an ordinance adopted by the City Council of the Issuer on [May 1, 2023] (the “Ordinance”). The Issuer covenants and agrees as follows:

SECTION 1. Purpose of this Disclosure Certificate. This Disclosure Certificate is being executed and delivered by the Issuer for the benefit of the holders and beneficial owners of the Bonds and in order to assist the Participating Underwriter in complying with Rule 15c-12(b)(5) of the Securities and Exchange Commission (the “SEC”).

SECTION 2. Definitions. In addition to the definitions set forth in the Ordinance or parenthetically defined herein, which apply to any capitalized terms used in this Disclosure Certificate unless otherwise defined in this Section, the following capitalized terms shall have the following meanings:

“Annual Report” shall mean any Annual Report provided by the Issuer pursuant to, and as described in, Sections 3 and 4 of this Disclosure Certificate.

“Dissemination Agent” shall mean any Dissemination Agent designated in writing by the Issuer and which has filed with the Issuer a written acceptance of such designation.

“Fiscal Year” shall mean the period beginning on January 1 of a calendar year and ending on December 31 of the same calendar year, or such other 12-month period as may be adopted by the Issuer in accordance with law.

“Listed Events” shall mean any of the events listed in Section 5 of this Disclosure Certificate.

“MSRB” shall mean the Municipal Securities Rulemaking Board. As of the date hereof, the MSRB’s required method of filing is electronically via its Electronic Municipal Market Access (EMMA) system, which is currently available at <http://emma.msrb.org>.

“Official Statement” means the final Official Statement prepared in connection with the Bonds.

“Participating Underwriter” shall mean the original underwriter of the Bonds required to comply with the Rule in connection with an offering of the Bonds.

“Rule” shall mean Rule 15c2-12(b)(5) adopted by the SEC under the Securities Exchange Act of 1934, as in effect on the date of this Disclosure Certificate.

SECTION 3. Provision of Annual Reports.

(a) The Issuer shall, or shall cause the Dissemination Agent to, not later than nine (9) months following the end of the Issuer’s Fiscal Year, commencing nine (9) months following the end of the Issuer’s Fiscal Year ending December 31, 2022, provide to the MSRB (in an electronic format as prescribed by the MSRB), an Annual Report which is consistent with the requirements of Section 4 of this Disclosure Certificate. Not later than five business days prior to said date, the Issuer shall provide the Annual Report to the Dissemination Agent (if the Issuer has selected one). The Annual Report may be submitted as a single document or as separate documents comprising a package, and may cross-reference other information as provided in Section 4 of this Disclosure Certificate; provided that the audited financial statements of the Issuer may be submitted separately from the balance of the Annual Report. The information to be updated may be reported in any format chosen by the Issuer: it is not required that the format reflected in the Official Statement be used in future years.

(b) If the Issuer is unable to provide to the MSRB an Annual Report by the date required in subsection (a), the Issuer shall, in a timely manner, file or cause to be filed with the MSRB a notice in substantially the form attached to this Disclosure Certificate as Exhibit “A.”

SECTION 4. Content of Annual Reports. The Issuer’s Annual Report shall contain or incorporate by reference the following:

(a) A copy of its annual financial statements, if any, prepared in accordance with generally accepted accounting principles audited by a firm of certified public accountants. If audited annual financial statements are not available by the time specified in Section 3(a) above, audited financial statements will be provided when and if available.

(b) An update of the type of information identified in Exhibit “B” hereto, which is contained in the tables in the Official Statement with respect to the Bonds.

Any or all of the items listed above may be incorporated by reference from other documents (including official statements), which are available to the public on the MSRB’s Internet Web Site or filed with the SEC. The Issuer shall clearly identify each such document incorporated by reference.

SECTION 5. Reporting of Listed Events. The Issuer shall file or cause to be filed with the MSRB, in a timely manner not in excess of ten business days after the occurrence of the event, notice of any of the events listed below with respect to the Bonds. All of the events currently mandated by the Rule are listed below; however, some may not apply to the Bonds.

- (1) Principal and interest payment delinquencies;
- (2) Non-payment related defaults, *if material*;

- (3) Unscheduled draws on debt service reserves reflecting financial difficulties;
- (4) Unscheduled draws on credit enhancements reflecting financial difficulties;
- (5) Substitution of credit or liquidity providers or their failure to perform;
- (6) Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;
- (7) Modifications to rights of bondholders, *if material*;
- (8) Bond calls, *if material*, and tender offers;
- (9) Defeasances;
- (10) Release, substitution or sale of property securing repayment of the Bonds, *if material*;
- (11) Rating changes;
- (12) Bankruptcy, insolvency, receivership or similar event of the obligated person;¹
- (13) The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, *if material*;
- (14) Appointment of a successor or additional trustee or the change of name of a trustee, *if material*;
- (15) Incurrence of a financial obligation² of the obligated person, *if material*, or agreement to covenants, events of default, remedies, priority rights, or other similar terms

¹ For the purposes of the event identified in subparagraph (b)(5)(i)(C)(12) of the Rule, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and official or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person.

² For purposes of the events identified in subparagraphs (b)(5)(i)(C)(15) and (16) of the Rule, the term “financial obligation” is defined to mean a (A) debt obligation; (B) derivative instrument entered into in connection with, or

of a financial obligation of the obligated person, any of which affect security holders, *if material*; and

(16) Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a financial obligation² of the obligated person, any of which reflect financial difficulties.

SECTION 6. Format; Identifying Information. All documents provided to the MSRB pursuant to this Disclosure Certificate shall be in the format prescribed by the MSRB and accompanied by identifying information as prescribed by the MSRB.

As of the date of this Disclosure Certificate, all documents submitted to the MSRB must be in portable document format (PDF) files configured to permit documents to be saved, viewed, printed and retransmitted by electronic means. In addition, such PDF files must be word-searchable, provided that diagrams, images and other non-textual elements are not required to be word-searchable.

SECTION 7. Termination of Reporting Obligation. The Issuer's obligations under this Disclosure Certificate shall terminate upon the earliest of: (i) the date of legal defeasance, prior redemption or payment in full of all of the Bonds; (ii) the date that the Issuer shall no longer constitute an "obligated person" within the meaning of the Rule; or (iii) the date on which those portions of the Rule which require this written undertaking are held to be invalid by a court of competent jurisdiction in a non-appealable action, have been repealed retroactively or otherwise do not apply to the Bonds.

SECTION 8. Dissemination Agent.

(a) The Issuer may, from time to time, appoint or engage a Dissemination Agent to assist the Issuer in carrying out its obligations under this Disclosure Certificate, and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. If the Issuer elects not to appoint a successor Dissemination Agent, it shall perform the duties thereof under this Disclosure Certificate. The Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Certificate and any other agreement between the Issuer and the Dissemination Agent.

(b) In addition to the filing duties on behalf of the Issuer described in this Disclosure Certificate, the Dissemination Agent shall:

pledged as security or a source of payment for, an existing or planned debt obligation; or (C) a guarantee of (A) or (B). The term "financial obligation" shall not include municipal securities as to which a final official statement has been otherwise provided to the MSRB consistent with the Rule. In complying with Listed Events (15) and (16), the Issuer intends to apply the guidance provided by the Rule or other applicable federal securities law, SEC Release No. 34-83885 (August 20, 2018) and any future guidance provided by the SEC or its staff.

(1) each year, prior to the date for providing the Annual Report, determine the appropriate electronic format prescribed by the MSRB;

(2) send written notice to the Issuer at least 30 but no more than 60 days prior to the date the Annual Report is due stating that the Annual Report is due as provided in Section 3(a) hereof; and

(3) certify in writing to the Issuer that the Annual Report has been provided pursuant to this Disclosure Certificate and the date it was provided.

(4) If the Annual Report (or any portion thereof) is not provided to the MSRB by the date required in Section 3(a), the Dissemination Agent shall file with the MSRB a notice in substantially the form attached to this Disclosure Certificate as Exhibit A.

SECTION 9. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Certificate, the Issuer may amend this Disclosure Certificate and may waive any provision of this Disclosure Certificate, without the consent of the holders and beneficial owners of the Bonds, if such amendment or waiver does not, in and of itself, cause the undertakings herein (or action of any Participating Underwriter in reliance on the undertakings herein) to violate the Rule, but taking into account any subsequent change in or official interpretation of the Rule. The Issuer will provide notice of such amendment or waiver to the MSRB.

SECTION 10. Additional Information. Nothing in this Disclosure Certificate shall be deemed to prevent the Issuer from disseminating any other information, using the means of dissemination set forth in this Disclosure Certificate or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Certificate. If the Issuer chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Certificate, the Issuer shall have no obligation under this Disclosure Certificate to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

SECTION 11. Default. In the event of a failure of the Issuer to comply with any provision of this Disclosure Certificate, any holder or beneficial owner of the Bonds may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the Issuer to comply with its obligations under this Disclosure Certificate. A default under this Disclosure Certificate shall not be deemed an event of default under the Ordinance, and the sole remedy under this Disclosure Certificate in the event of any failure of the Issuer to comply with this Disclosure Certificate shall be an action to compel performance.

SECTION 12. Beneficiaries. This Disclosure Certificate shall inure solely to the benefit of the Issuer, the Dissemination Agent, the Participating Underwriter and the holders and beneficial owners from time to time of the Bonds, and shall create no rights in any other person or entity.

DATE: [CLOSING DATE, 2023]

CITY OF ARVADA, COLORADO

By: _____
Mayor

EXHIBIT “A”

NOTICE OF FAILURE TO FILE ANNUAL REPORT

Name of Issuer: City of Arvada
Name of Bond Issue: Sales and Use Tax Revenue Bonds, Series 2023
Date of Issuance: [CLOSING DATE, 2023]
CUSIP Number: _____

NOTICE IS HEREBY GIVEN that the Issuer has not provided an Annual Report with respect to the above-named Bonds as required by the Continuing Disclosure Certificate dated [CLOSING DATE, 2023]. The Issuer anticipates that the Annual Report will be filed by _____.

Dated: _____, _____

CITY OF ARVADA, COLORADO

By: _____
Mayor

EXHIBIT “B”

OFFICIAL STATEMENT TABLES TO BE UPDATED

[TO BE DISCUSSED]

REGISTRAR AND PAYING AGENT AGREEMENT

THIS AGREEMENT, dated as of [CLOSING DATE, 2023], is by and between the City of Arvada, in the Counties of Adams and Jefferson and State of Colorado (the “City”), and UMB Bank, n.a., in Denver, Colorado (the “Bank”).

WITNESSETH:

WHEREAS, by an ordinance of the City Council of the City duly adopted on [May 1, 2023] (the “Bond Ordinance”), the City has authorized the issuance of its Sales and Use Tax Revenue Bonds, Series 2023, in the aggregate principal amount of \$[PAR] (the “Bonds”); and

WHEREAS, it is mutually desirable to the City and the Bank that the Bank, through its Corporate Trust & Escrow Services Department, located in Denver, Colorado, act as Registrar and Paying Agent (each as defined in the Bond Ordinance) for the Bonds; and

WHEREAS, it is mutually desirable that this agreement (the “Agreement”) be entered into between the City and the Bank to provide for certain aspects of such Registrar and Paying Agent services.

NOW, THEREFORE, the City and the Bank, in consideration of the mutual covenants herein contained, agree as follows:

1. The Bank hereby accepts all duties and responsibilities of the Registrar and the Paying Agent as provided in the Bond Ordinance and in this Agreement. The Bank shall cause the Bonds to be honored in accordance with their terms, provided that the City causes to be made available to the Bank all funds necessary in order to so honor the Bonds. Nothing in this Agreement shall require the Bank to pay or disburse any funds in excess of the amount then on deposit in the “Principal and Interest Payment Account” provided for in Section 2 of this Agreement. Nothing in this Agreement shall require the City to pay or disburse any funds for payment of the Bonds or interest thereon except at the times and in the manner provided herein, in the Bond Ordinance and in the Sale Certificate authorized by the Bond Ordinance (the “Sale Certificate”). In addition, the Bank hereby accepts the duties and responsibilities pertaining to the authentication, registration, transfer, exchange and replacement of the Bonds, and the duties and responsibilities pertaining to the calling of Bonds for prior redemption, all as provided in the Bond Ordinance.

2. Not less than (a) one business days prior to each payment date, if funds are delivered by wire transfer, or (b) three business days prior to each payment date, if funds are delivered by another method of payment, funds for the payment of the Bonds and interest thereon are to be deposited by the City with the Bank in an account designated “Principal and Interest Payment Account.” The funds so deposited shall be held and applied by the Bank through its Corporate Trust & Escrow Services Department solely for the payment of principal of, premium, if any, and interest on the Bonds. From such funds, the Bank agrees to pay at the times and in the manner provided in the Bond Ordinance and the Sale Certificate, the principal of, premium, if any, and interest on the Bonds. In the event a payment date is not a Business Day (as defined in the Bond Ordinance), the Bank shall make the principal and/or interest payment on the following Business Day with the same effect as if it had been made on the date scheduled for such payment. The Bank shall not be required to invest or to pay interest on any funds of the City for any period during which such funds are held by the Bank awaiting the presentation of the Bonds for payment.

3. The City shall pay to the Bank fees in accordance with its then existing fee schedule and reimburse the Bank solely from Pledged Revenues for its expenses incurred in connection with its duties under this Agreement (including without limitation, legal fees and expenses). Attached to this Agreement as Exhibit A is the Bank’s current fee schedule. No new fee schedule shall become effective until 30 days after the Bank has given the City notice thereof.

4. Unless waived by the Bank, the City agrees to provide the Bank with not less than 60 days’ notice of any prior redemption of the Bonds.

5. The Bank agrees to annually notify the City, in writing, of the City’s obligation to file its Annual Report (as such term is defined in the Continuing Disclosure Certificate dated [CLOSING DATE, 2023], relating to the issuance of the Bonds), at least 30 but not more than 60 days prior to the date on which the Annual Report is required to be filed pursuant to the terms of the Continuing Disclosure Certificate. The Bank shall have no further obligation or duty relating to the City’s obligation under the Continuing Disclosure Certificate other than the provision of the notice as required by this Section. The Bank shall not be held liable for failure to provide such notice nor for the City’s failure to comply with such requirements.

6. At least 30 but not more than 60 days prior to [CLOSING DATE, 2028], [CLOSING DATE, 2033], [CLOSING DATE, 2038], [CLOSING DATE, 2043], [CLOSING DATE, 2048], and on the date on which the last Bond is discharged, the Bank shall send written

notice to the City stating that the City must: (i) compute the amount of rebatable arbitrage, if any, which is due to the federal government pursuant to Sections 103 and 148(f) of the Internal Revenue Code of 1986, as amended, and (ii) pay such amount no later than 60 days from [CLOSING DATE, 2028], [CLOSING DATE, 2033], [CLOSING DATE, 2038], [CLOSING DATE, 2043], [CLOSING DATE, 2048], and on the date on which the last Bond is discharged. The Bank shall have no further obligation or duty related to the City's requirements under Sections 103 and 148(f) of the Internal Revenue Code of 1986 other than providing the notice required by this Section. The Bank shall not be held liable for failure to provide such notice nor for the City's failure to comply with such requirements.

7. Any moneys held by the Bank for the owners of the Bonds remaining unclaimed for one year after principal and/or interest of the respective Bonds with respect to which such moneys have been set aside have become due and payable shall without further request by the City be paid to the City. If funds are returned to the City, the City and the Bank agree that the registered owner of such Bond shall thereafter look only to the City for payment thereof, and that all liability of the Bank with respect to such moneys shall thereupon cease.

8. The Agreement may be terminated as provided in the Bond Ordinance.

9. In the event of any conflict between the provisions of this Agreement and the provisions of the Bond Ordinance, the provisions of the Bond Ordinance shall be controlling.

10. At any time, the Bank may apply to the City for instructions and may consult counsel for the City or nationally recognized bond counsel with respect to any matter arising in connection with this Agreement and it shall not be liable for any action taken or omitted by it in good faith in accordance with such instructions or upon the advice or opinion of such counsel. The Bank may conclusively rely and shall be protected in acting upon any paper or document believed by it in good faith to be genuine and to have been signed by any authorized officer of the City and shall not be held to have notice of any change of authority of any authorized officer until receipt by it of written notice thereof by the City. The Bank shall also be protected in recognizing Bonds that it reasonably believes bear the manual or facsimile signatures of the authorized officers of the City. The Bank shall not be responsible, for any reason, for any action taken or omitted to be taken by it in good faith in connection with this Agreement or any of the Bonds except for its own negligence, willful misconduct or bad faith in the performance of any duty to be performed by the Bank hereunder.

11. Any company or national banking association into which the Bank may be merged or converted or with which it may be consolidated or any company or national banking association resulting from any merger, conversion or consolidation to which it shall be a party or any company or national banking association to which the Bank may sell or transfer all or substantially all of its corporate trust business, provided such company shall be eligible, shall be the successor to the Bank without the execution or filing of any paper or further act, anything herein to the contrary notwithstanding.

12. This Agreement shall be deemed to be a contract made under and shall be construed in accordance with and governed by the laws of the State of Colorado, without regard to choice of law analysis. Jurisdiction and venue for any disputes related to this Agreement shall be in any court of the State of Colorado located in Adams or Jefferson County or the United States District Court for the District of Colorado.

13. The parties hereto agree that the transaction described herein may be conducted and related documents may be stored by electronic means. Copies, telecopies, facsimiles, electronic files and other reproductions of original executed documents shall be deemed to be authentic and valid counterparts of such original documents for all purposes, including the filing of any claim, action or suit in the appropriate court of law.

14. There is hereby created and established with the Bank a fund to be designated "City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023, Costs of Issuance Fund" (the "Costs of Issuance Fund"). Into such Costs of Issuance Fund there shall be deposited \$[] of the proceeds of the Bonds, which shall be used to pay costs of issuance and expenses incurred as a result of the issuance of the Bonds. The Bank is hereby directed by the City to pay the approved costs of issuance to the parties and in the amounts listed in a copy of the closing memorandum provided by Stifel, Nicolaus & Company, Incorporated, upon presentation of an invoice from each party for the amount listed. Any discrepancies will be approved by the City prior to payment of the expense. Moneys held as part of the Costs of Issuance Fund shall remain uninvested. Any amounts remaining in the Costs of Issuance Fund 90 days after closing shall be transferred to the City subject to written confirmation from the City to the Bank that all costs of issuance have been paid.

IN WITNESS WHEREOF, the Bank and the City have caused this Agreement to be duly executed and delivered as of the day and year first above written.

CITY OF ARVADA, COLORADO

By: _____
Mayor

(SEAL)

Attest:

City Clerk

UMB BANK, N.A., as Registrar and Paying Agent

By: _____
Senior Vice President

EXHIBIT A

(Attach Bank's Fee Schedule)

**NOTICE OF PUBLIC SALE
DATED [MAY 23, 2023]**

**CITY OF ARVADA, COLORADO
SALES AND USE TAX REVENUE BONDS
SERIES 2023 - \$[PAR]***

PUBLIC NOTICE IS HEREBY GIVEN that the City Council (the “Council”) of the City of Arvada, Colorado (the “City”) will receive electronic bids for the purchase of the Bonds described below on:

[Tuesday, June 6, 2023]*

at the hour of 9:00 a.m., Colorado time.

Bids must be submitted electronically via the BIDCOMP/PARITY BIDDING SYSTEM (“BIDCOMP/PARITY”) as described in “BID PROPOSAL REQUIREMENTS” and “BIDCOMP/PARITY” below.

ISSUE DETAILS: The Bonds to be sold are the “City of Arvada, Colorado, Sales and Use Tax Revenue Bonds, Series 2023” (the “Bonds”) in the aggregate principal amount of \$[PAR]*. The Bonds will be dated as of the date of delivery, will be issued in fully registered form, and will be initially evidenced by one Bond for each year in which the Bonds mature in denominations equal to the principal amount which matures in each such year. Any initially issued Bonds will be registered in the name of Cede & Co., as nominee for The Depository Trust Company, as securities depository for the Bonds (“DTC”). The Bonds are being issued pursuant to an ordinance adopted by the Council on [May 1, 2023] (the “Bond Ordinance”), and a sale certificate (the “Sale Certificate”) authorized pursuant to the Bond Ordinance.

MATURITIES: Except as otherwise provided below in “MANDATORY SINKING FUND REDEMPTION” and “ADJUSTMENT OF MATURITIES AFTER DETERMINATION OF BEST BID” below, the Bonds will mature on December 1 in the years and amounts designated below:

<u>Maturity Date</u> <u>(December 1)</u>	<u>Principal Amount*</u>
2023	\$
2024	
2025	
2026	
2027	
2028	
2029	
2030	
2031	

* Subject to change.

2032
2033
2034
2035
2036
2037
2038
2039
2040

ADJUSTMENT OF MATURITIES AFTER DETERMINATION OF BEST BID:

The aggregate principal amount and the principal amount of each serial maturity of the Bonds set forth in the Maturity Schedule above are subject to adjustment by the City, after the determination of the best bid. Changes to be made will be communicated to the winning bidder at the time of award of the Bonds to the winning bidder; changes will not reduce or increase the aggregate principal amount of any individual maturity of the Bonds by more than [fifteen percent (15%)] from the amount shown in the Maturity Schedule and will not increase the total aggregate principal amount of the Bonds to an amount in excess of \$[PAR] or the maximum annual repayment cost to an amount in excess of \$[MADS]. The price bid (i.e., par less any discount bid or plus any premium bid) by a winning bidder may be changed as described below, but the interest rates specified by the winning bidder for all maturities will not change. A winning bidder may not withdraw its bid as a result of any changes made within these limits. The price bid will be changed so that the percentage net compensation to the winning bidder (i.e., the percentage resulting from dividing (i) the aggregate difference between the offering price of the Bonds to the public and the price to be paid to the City, by (ii) the principal amount of the Bonds) does not increase or decrease from what it would have been if no adjustment was made to the principal amounts shown in the Maturity Schedule.

OPTIONAL PRIOR REDEMPTION: The Bonds maturing on or before December 1, 20[33], are not subject to redemption at the option of the City prior to maturity. The Bonds maturing on and after December 1, 20[34], are subject to redemption prior to their respective maturities, at the option of the City, in whole or in part, in integral multiples of \$5,000, from such maturities as are selected by the City, and if less than all of the Bonds of a maturity are to be redeemed, the Bonds of such maturity are to be selected by lot (giving proportionate weight to Bonds in denominations larger than \$5,000), on December 1, 20[33] or on any date thereafter, at a redemption price equal to the principal amount so redeemed plus accrued interest to the redemption date without a redemption premium. Redemption will be made in the manner and upon the conditions described in the Final Official Statement (as described below).

MANDATORY SINKING FUND REDEMPTION: Any bidder may, at its option, specify that one or more consecutive maturities of the Bonds will consist of term bonds (the "Term Bonds") which are subject to mandatory sinking fund redemption in consecutive years immediately preceding the maturity thereof, as designated in the bid of such bidder. Amounts included as a Term Bond must consist of consecutive maturities, must bear the same rate of interest and must include the entire principal amount for any maturity included in the Term Bond (i.e., the principal amount maturing in any year may not be divided between a serial maturity and a mandatory sinking fund redemption). Any such Term Bond will be subject to mandatory sinking

fund redemption in installments in the same amounts and on the same dates as the Bonds would have matured if they were not included in a Term Bond or Term Bonds. Bonds redeemed pursuant to the mandatory sinking fund redemption provisions will be redeemed at a redemption price equal to the principal amount of the Bonds to be redeemed plus accrued interest to the redemption date in the manner and as otherwise provided in the Bond Ordinance and the Sale Certificate. Any election to designate the Bonds as being included in a Term Bond must be made in the official bid forms.

INTEREST RATES AND LIMITATIONS: Interest shall be payable on June 1 and December 1 of each year, commencing [December 1, 2023], and will be computed on the basis of a 360-day year of twelve 30-day months.

1. There is no limit on the number of rates specified, except that one interest rate only shall be specified for the Bonds of any maturity.

2. The interest rate for the Bonds must be stated in a multiple of 1/8th or 1/20th of 1% per annum. A zero rate of interest may not be named for the Bonds.

3. The maximum differential between the lowest and the highest interest rates stated in the bid for the Bonds may not exceed 200 basis points (e.g., if the lowest rate is 3.00% the highest rate may not exceed 5.00%).

4. The maximum interest rate on any Bond shall not exceed []%.

5. The City intends to receive a project construction fund deposit of \$[] from the proceeds of the Bonds. Depending on the coupon structure in the bid, an increase or reduction of annual par amounts may be required.

PURCHASE PRICE: The purchase price bid for the Bonds shall not be less than []% of the par amount of the Bonds. SEE “WINNING BIDDER’S REOFFERING YIELDS”.

INFORMATION AVAILABLE FROM PRELIMINARY OFFICIAL STATEMENT: Reference is made to the Preliminary Official Statement dated [May 23, 2023] (the “Preliminary Official Statement”) for information as to the authorization and purpose of the Bonds; security for the Bonds; the book-entry system, transfer, exchange and place of payment of the Bonds; the exclusion of the interest on the Bonds from federal and State of Colorado income taxation; and other information relating to the Bonds and the City.

BIDCOMP/PARITY: Bids must be submitted electronically using BIDCOMP/PARITY no later than the time designated herein for the receipt of bids. During the electronic bidding, no bidder will see any other bidder’s bid nor the status of their bid relative to other bids (i.e., whether their bid is a leading bid). Bidders may change or withdraw their bids at any time up to the time designated herein. Electronic bids may only be submitted through BIDCOMP/PARITY. If any provisions in this Notice of Public Sale should conflict with information or terms provided or required by BIDCOMP/PARITY, this Notice of Public Sale (and any amendments hereto) shall control.

BID PROPOSAL REQUIREMENTS: A prospective bidder must register electronically to bid for the Bonds via BIDCOMP/PARITY no later than 8:30 a.m., (Mountain Time), on [June 6, 2023]. A prospective bidder must register electronically to bid for the Bonds by completing the information required by BIDCOMP/PARITY. By registering to bid for the Bonds, a prospective electronic bidder represents and warrants to the City that such bidder's bid for the purchase of the Bonds (if a bid is submitted in connection with the sale) is submitted for and on behalf of such prospective bidder by an officer or agent who is duly authorized to bind the prospective bidder to a legal, valid and enforceable contract for the purchase of the Bonds. By registering via BIDCOMP/PARITY to bid for the Bonds, a prospective bidder is not obligated to submit a bid in connection with the sale.

Bids must be submitted electronically for the purchase of the Bonds by means of BIDCOMP/PARITY by 9:00 a.m., (Mountain Time), on [June 6, 2023]. Prior to that time, an eligible prospective bidder may (1) input the proposed terms of its bid on BIDCOMP/PARITY, (2) modify the proposed terms of its bid, in which event the proposed terms as last modified will (unless the bid is withdrawn as described herein) constitute its bid for the Bonds, (3) send its proposed bid, or (4) withdraw its proposed bid. Once the bids are communicated electronically via BIDCOMP/PARITY, each bid will constitute an irrevocable offer to purchase the Bonds on the terms therein provided.

Each prospective bidder shall be solely responsible to register to bid via BIDCOMP/PARITY as described above. Each qualified prospective bidder shall be solely responsible to make necessary arrangements to access BIDCOMP/PARITY for purposes of submitting its bid in a timely manner and in compliance with the requirements of this Notice of Public Sale. Neither the City nor the City's financial advisor Stifel, Nicolaus & Company, Incorporated (the "Financial Advisor") shall have any duty or be obligated to undertake such registration to bid for any prospective bidder or to provide or assure such access to any qualified prospective bidder, and neither the City nor the Financial Advisor shall be responsible for a bidder's failure to register to bid or for proper operation of, or have any liability for any delays or interruptions of, or any damages caused by, BIDCOMP/PARITY. The City is using BIDCOMP/PARITY as a communication mechanism, and not as the City's agent, to conduct the electronic bidding for the Bonds.

Each bidder is required to transmit electronically via BIDCOMP/PARITY an unconditional bid specifying the lowest rate or rates of interest and the premium, or discount, as applicable, at which the bidder will purchase the Bonds. Each bid must be for all the Bonds herein offered for sale.

For informational purposes only, the electronic bid will show the effective interest rate for the Bonds represented on a true interest cost basis, as described under "BASIS OF AWARD" below, represented by the rate or rates of interest and the bid price specified in the bid. No bid will be received after the time for receiving such bids specified above.

Further information about BIDCOMP/PARITY, including any fees charged, may be obtained from such entity as follows: Bidcomp/Parity, 1359 Broadway, 2nd Floor, New York, New York 10018, telephone (212) 849-5023; fax (212) 849-5021.

WINNING BIDDER'S REOFFERING YIELDS AND ESTABLISHING THE ISSUE PRICE: At or before 10:30 a.m. Mountain Time on [June 6, 2023], the winning bidder (or manager of the purchasing account) for the Bonds must provide to the Director of Finance of the City (the "Director of Finance") and the Financial Advisor the initial offering price and yield to the public.

The winning bidder shall assist the City in establishing the issue price of the Bonds for federal income tax purposes and shall execute and deliver to the City at Closing an "issue price" or similar certificate setting forth the reasonably expected initial offering price to the public or the sales price or prices of the Bonds, together with the supporting pricing wires or equivalent communications, substantially in the form attached hereto as Exhibit A, in a form acceptable to the City and Butler Snow LLP ("Bond Counsel"). All actions to be taken by the City under this Notice of Public Sale to establish the issue price of the Bonds may be taken on behalf of the City by the Financial Advisor and any notice or report to be provided to the City may be provided to the Financial Advisor.

The City intends that the provisions of Treasury Regulation Section 1.148-1(f)(3)(i) (defining "competitive sale" for purposes of establishing the issue price of the Bonds) will apply to the initial sale of the Bonds (the "competitive sale requirements") because:

- (i) the City will disseminate this Notice of Public Sale to potential underwriters in a manner that is reasonably designed to reach potential underwriters;
- (ii) all bidders will have an equal opportunity to bid;
- (iii) the City may receive bids from at least three underwriters of municipal bonds who have established industry reputations for underwriting new issuances of municipal bonds; and
- (iv) the City anticipates awarding the sale of the Bonds to the bidder who submits a firm offer to purchase the Bonds at the highest price (or lowest interest cost), as set forth in this Notice of Public Sale.

Any bid submitted pursuant to this Notice of Public Sale shall be considered a firm offer for the purchase of the Bonds, as specified in the bid and in this Notice of Public Sale and shall not be subject to any conditions or qualifications except as permitted by this Notice of Public Sale. **By submitting a bid, each bidder confirms that it has an established industry reputation for underwriting new issuances of municipal obligations.**

In the event that the competitive sale requirements are not satisfied, the City shall so advise the winning bidder. The City may determine to treat (i) the first price at which 10% of a maturity of the Bonds (the "10% test") is sold to the public as the issue price of that maturity and/or (ii) the initial offering price to the public as of the sale date of any maturity of the Bonds as the issue price of that maturity (the "hold-the-offering-price rule"), in each case applied on a maturity-by-maturity basis (and if different interest rates apply within a maturity, to each separate CUSIP number within that maturity). The winning bidder shall advise the City if any maturity of the Bonds satisfies the 10% test as of the date and time of the award of the Bonds. The City shall promptly advise the winning bidder, at or before the time of award of the Bonds, which maturities (and if

different interest rates apply within a maturity, which separate CUSIP number within that maturity) of the Bonds shall be subject to the 10% test or shall be subject to the hold-the-offering-price rule. Bids will not be subject to cancellation in the event that the City determines to apply the hold-the-offering-price rule to any maturity of the Bonds. ***Bidders should prepare their bids on the assumption that some or all of the maturities of the Bonds will be subject to the hold-the-offering-price rule in order to establish the issue price of the Bonds.***

By submitting a bid, the winning bidder shall (i) confirm that the underwriters have offered or will offer the Bonds to the public on or before the date of award at the offering price or prices (the “initial offering price”), or at the corresponding yield or yields, set forth in the bid submitted by the winning bidder and (ii) agree, on behalf of the underwriters participating in the purchase of the Bonds, that the underwriters will neither offer nor sell unsold Bonds of any maturity to which the hold-the-offering-price rule shall apply to any person at a price that is higher than the initial offering price to the public during the period starting on the sale date and ending on the earlier of the following:

- (A) the close of the fifth (5th) business day after the sale date; or
- (B) the date on which the underwriters have sold at least 10% of that maturity of the Bonds to the public at a price that is no higher than the initial offering price to the public.

The winning bidder shall promptly advise the City when the underwriters have sold 10% of that maturity of the Bonds to the public at a price that is no higher than the initial offering price to the public, if that occurs prior to the close of the fifth (5th) business day after the sale date.

If the competitive sale requirements are not satisfied, then until the 10% test has been satisfied as to each maturity of the Bonds, the winning bidder agrees to promptly report to the City the prices at which the unsold Bonds of that maturity have been sold to the public. That reporting obligation shall continue, whether or not the Closing Date, as set forth in the Final Official Statement, has occurred, until the 10% test has been satisfied as to the Bonds of that maturity or until all Bonds of that maturity have been sold.

The City acknowledges that, in making the representation set forth above, the winning bidder will rely on (i) the agreement of each underwriter to comply with the hold-the-offering-price rule, as set forth in an agreement among underwriters and the related pricing wires, (ii) in the event a selling group has been created in connection with the initial sale of the Bonds to the public, the agreement of each dealer who is a member of the selling group to comply with the hold-the-offering-price rule, as set forth in a selling group agreement and the related pricing wires, and (iii) in the event that an underwriter is a party to a retail distribution agreement that was employed in connection with the initial sale of the Bonds to the public, the agreement of each broker-dealer that is a party to such agreement to comply with the hold-the-offering-price rule, as set forth in the retail distribution agreement and the related pricing wires. The City further acknowledges that each underwriter shall be solely liable for its failure to comply with its agreement regarding the hold-the-offering-price rule and that no underwriter shall be liable for the failure of any other underwriter, or of any dealer who is a member of a selling group, or of any

broker-dealer that is a party to a retail distribution agreement to comply with its corresponding agreement regarding the hold-the-offering-price rule as applicable to the Bonds.

By submitting a bid, each bidder confirms that: (i) any agreement among underwriters, any selling group agreement and each retail distribution agreement (to which the bidder is a party) relating to the initial sale of the Bonds to the public, together with the related pricing wires, contains or will contain language obligating each underwriter, each dealer who is a member of the selling group, and each broker-dealer that is a party to such retail distribution agreement, as applicable, to (A) report the prices at which it sells to the public the unsold Bonds of each maturity allotted to it until it is notified by the winning bidder that either the 10% test has been satisfied as to the Bonds of that maturity or all Bonds of that maturity have been sold to the public and (B) comply with the hold-the-offering-price rule, if applicable, in each case if and for so long as directed by the winning bidder and as set forth in the related pricing wires, and (ii) any agreement among underwriters relating to the initial sale of the Bonds to the public, together with the related pricing wires, contains or will contain language obligating each underwriter that is a party to a retail distribution agreement to be employed in connection with the initial sale of the Bonds to the public to require each broker-dealer that is a party to such retail distribution agreement to (A) report the prices at which it sells to the public the unsold Bonds of each maturity allotted to it until it is notified by the winning bidder or such underwriter that either the 10% test has been satisfied as to the Bonds of that maturity or all Bonds of that maturity have been sold to the public and (B) comply with the hold-the-offering-price rule, if applicable, in each case if and for so long as directed by the winning bidder or such underwriter and as set forth in the related pricing wires.

Sales of any Bonds to any person that is a related party to an underwriter shall not constitute sales to the public for purposes of this Notice of Public Sale. Further, for purposes of this Notice of Public Sale:

- (i) “public” means any person other than an underwriter or a related party,
- (ii) “underwriter” means (A) any person that agrees pursuant to a written contract with the City (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the public and (B) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (A) to participate in the initial sale of the Bonds to the public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Bonds to the public),
- (iii) a purchaser of any of the Bonds is a “related party” to an underwriter if the underwriter and the purchaser are subject, directly or indirectly, to (i) at least 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (ii) more than 50% common ownership of their capital interests or profits interests, if both entities are partnerships (including direct ownership by one partnership of another), or (iii) more than 50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership

(including direct ownership of the applicable stock or interests by one entity of the other), and

- (iv) “sale date” means the date that the Bonds are awarded by the City to the winning bidder.

GOOD FAITH DEPOSIT: A good faith deposit in the amount of \$[150,000] will be required to be made by the apparent winning bidder after the bids have been received. The apparent winning bidder will be required to wire the good faith deposit to the City no later than 1:00 p.m. Mountain Time on [June 6, 2023]. The Financial Advisor will contact the apparent winning bidder and request the apparent winning bidder to wire such good faith deposit and the apparent winning bidder shall provide the Federal wire reference number of such good faith deposit to the Financial Advisor by 1:00 p.m. Mountain Time on [June 6, 2023]. Wire information shall be provided by the City upon award.

The Bonds will not be officially awarded to a bidder until such time as the bidder has provided a Federal wire reference number for the good faith deposit to the Financial Advisor.

No interest on the good faith deposit will accrue to any bidder. The good faith deposit of the winning bidder for the Bonds will be applied to the purchase price of the Bonds. In the event the winning bidder for the Bonds fails to honor its accepted bid, the good faith deposit plus any interest accrued on the good faith deposit will be retained by the City. Any investment income earned on the good faith deposit will not be credited to the successful bidder on the purchase price of the Bonds.

SALE RESERVATIONS: The Council reserves the right (1) to reject any and all bids for the Bonds, (2) to reoffer the Bonds for sale as provided by law, and (3) to waive any irregularity or informality in any bid. In addition, the Council reserves the privilege of changing the date and/or time of sale of the Bonds. If the Council changes the date and/or time of the sale of the Bonds, this Notice of Public Sale shall remain effective, except as amended by communication or other amendment communicated to potential bidders.

If bids are not taken on [June 6, 2023], or if all bids are rejected on [June 6, 2023], the City may reoffer the Bonds for sale at any time thereafter.

BASIS OF AWARD: Subject to the sale reservations and limitations set forth herein, the Bonds will be sold to the responsible bidder making the best bid therefor. The best bid(s) will be determined by computing the actuarial yield on the Bonds (i.e., using an actuarial or true interest cost method) for each bid received. “True interest cost” on the Bonds as used herein means that yield which if used to compute the present worth as of the estimated delivery date of the Bonds of all payments of principal and interest to be made on such series of the Bonds from the estimated delivery date to their respective maturity dates (or mandatory sinking fund redemption dates), using the interest rates specified in the bid and the principal amounts specified in the Maturity Schedule, produces an amount equal to the principal amount of the Bonds, less any discount or plus any premium bid. All interest calculations and the calculation of the best bid shall be based on a 360-day year and a semiannual compounding interval. If an award is made, it will be made to the bidder whose bid results in the lowest true interest cost, i.e., to the bidder making the bid resulting in the lowest true interest cost on the Bonds. If two or more equal bids for the

Bonds are received and such equal bids are the best bids received, the City will determine which bid will be accepted.

TIME OF AWARD: The Council has authorized certain designated officers, on behalf of the Council, to accept the best responsible bid for the purchase of the Bonds, and to accept such bid, for and in the name of the City, by notice to the winning bidder. The City will award the Bonds or reject all bids not later than 24 hours after the expiration of the time herein specified for the receipt of bids unless such time of award is waived by the winning bidder.

MANNER AND TIME OF DELIVERY: The good faith deposit of the winning bidder will be credited to the winning bidder against the purchase price of the Bonds at the time of delivery of the Bonds (without accruing interest). If the winning bidder for the Bonds fails or neglects to complete the purchase of the Bonds when the Bonds are made ready and are tendered for delivery, the amount of this good faith deposit will be forfeited (as liquidated damages for noncompliance with the bid) to the City, except as hereinafter provided. In that event, the Council may reoffer the Bonds for sale as provided by law. The purchaser will not be required to accept delivery of any of the Bonds if they are not tendered for delivery within 60 days from the date herein stated for opening bids. If the Bonds are not so tendered within said period of time, the good faith deposit, if any, will be returned to the purchaser upon its request (without accruing interest). The City contemplates, however, effecting delivery of the Bonds to the purchaser through DTC on or about [June 20, 2023].

PAYMENT: The winning bidder or bidders will be required to make payment of the balance due for the Bonds at a bank or trust company designated by the Director of Finance. Payment of the balance of the purchase price due at delivery must be made in Federal Reserve Funds or other funds acceptable to the City for immediate and unconditional credit to the City. The Bonds will be delivered at the office of The Depository Trust Company in New York, New York, on confirmation by the City of receipt of the balance of the purchase price.

CUSIP NUMBERS: CUSIP numbers will be ordered by the Financial Advisor and will be paid for by the City as a cost of issuance. CUSIP numbers will be printed on the Bonds. If a wrong number is imprinted on any Bond or if a number is not printed thereon, any such error or omission will not constitute cause for the winning bidder to refuse delivery of any Bond.

OFFICIAL STATEMENT: The City has prepared the Preliminary Official Statement, which is deemed by the City to be final as of its date for purposes of allowing bidders to comply with Rule 15c2-12(b)(1) of the Securities and Exchange Commission (the "Rule"), except for the omission of certain information as permitted by the Rule. The Preliminary Official Statement is subject to revision, amendment and completion in a Final Official Statement, as defined below.

Copies of the Preliminary Official Statement and other information concerning the City and the Bonds may be obtained prior to the sale from the sources listed under "INFORMATION" below.

The City will, as soon as practicable after the award of the Bonds to the winning bidder, update the information contained in the Preliminary Official Statement to the date of the award, and such updated Preliminary Official Statement will constitute the "Final Official

Statement” relating to the Bonds. The City authorizes the winning bidder to distribute the Final Official Statement in connection with the offering of the Bonds. The City will provide to the winning bidder an amount not to exceed 20 copies of the Final Official Statement on or before the seventh business day following the date of the award of the Bonds to the winning bidder. The winning bidder may obtain additional copies of the Final Official Statement at its expense. The Final Official Statements will be delivered to the winning bidder at the offices of the Financial Advisor at the address listed below (see “INFORMATION” herein). If the winning bidder fails to pick up the Final Official Statements at the offices of the Financial Advisor, the Final Official Statements will be forwarded to the winning bidder by mail or another delivery service mutually agreed to between the winning bidder and the Financial Advisor.

For a period beginning on the date of the Final Official Statement and ending 25 days following the date the winning bidder shall no longer hold for sale any of the Bonds, if any event concerning the affairs, properties or financial condition of the City shall occur as a result of which it is necessary to supplement the Final Official Statement in order to make the statements therein, in light of the circumstances existing at such time, not misleading, the City shall notify the winning bidder of any such event of which the Director of Finance has actual knowledge and, at the request of the winning bidder, shall cooperate fully in preparation and furnishing of any supplement to the Final Official Statement necessary, in the reasonable opinion of the City and the winning bidder, so that the statements therein as so supplemented will not be misleading in the light of the circumstances existing at such time.

SECONDARY MARKET DISCLOSURE UNDERTAKING: Pursuant to Securities and Exchange Commission Rule 15c2-12, the City will undertake to provide notice of the occurrence of certain listed events. A form of the undertaking is set forth as an appendix to the Preliminary Official Statement.

TRANSCRIPT AND LEGAL OPINION: The validity and enforceability of the Bonds will be approved by Butler Snow LLP, Denver, Colorado, as Bond Counsel. The purchaser will receive a transcript of legal proceedings, which will include, among other documents:

- A certificate executed by officials of the City stating that there is no litigation pending affecting the validity of the Bonds as of the date of their delivery;
- A certificate executed by the Director of Finance or other authorized official of the City stating that, to the best of such person’s knowledge, the Final Official Statement as of its date did not contain any untrue statement of a material fact or omit to state any material fact necessary to make the statements made in the Final Official Statement, in the light of the circumstances under which they were made, not misleading, subject to the condition that while information in the Final Official Statement obtained from sources other than the City is not guaranteed as to accuracy, completeness, or fairness, such person has no reason to believe and does not believe that such information is materially inaccurate, incomplete, or misleading, and that, to the best of such person’s knowledge, since the date of the Final Official Statement no event has occurred which would cause the Final Official Statement as of the date of the delivery of the Bonds to

contain any untrue statement of a material fact or to omit to state any material fact necessary to make the statements made in the Final Official Statement, in the light of the circumstances under which they were made, not misleading (provided that, if between the date of the public sale of the Bonds and the date of delivery of the Bonds, any event should occur or be discovered which would cause the Final Official Statement to contain an untrue statement of a material fact or to omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, the City shall notify the purchaser thereof, and if in the opinion of the City or the purchaser such event requires the preparation and publication of a supplement or amendment to the Final Official Statement, the City, at its sole expense, will supplement or amend the Final Official Statement in a form and in a manner approved by the purchaser and by Butler Snow LLP, Denver, Colorado, as Special Counsel to the City);

- The opinion of Butler Snow LLP as to the validity, enforceability and tax-exempt status of interest on the Bonds, a form of which is set forth as [Appendix D] to the Preliminary Official Statement.

GOVERNING LAW AND VENUE: This Notice of Public Sale and the contract formed when the City accepts the winning bid is governed by the laws of the State of Colorado without regard to choice of law analysis. By submitting a bid, each bidder consents to the exclusive jurisdiction of any court of the State of Colorado located in either Adams or Jefferson County or the United States District Court for the State of Colorado for the purpose of any suit, action or other proceeding arising under this Notice of Public Sale, and each bidder hereby irrevocably agrees that all claims in respect of any such suit, action or proceeding may be heard and determined by such court. Each bidder further agrees that service of process in any such action commenced in such state or federal court shall be effective on such bidder by deposit of the same as registered mail addressed to the bidder at the address set forth in the bid submitted by the bidder.

INFORMATION: This Notice of Public Sale, the Preliminary Official Statement, the official bid form and other information concerning the City and the Bonds may be obtained from the Director of Finance, City of Arvada, 8101 Ralston Road, Arvada, Colorado 80002, phone (720) 898-7123 or from the Financial Advisor, Stifel, Nicolaus & Company, Incorporated, 1401 Lawrence Street, Suite 900, Denver, Colorado, 80202, phone (303) 291-5362.

Dated [May 23, 2023].

/s/ Bryan Archer

Director of Finance

EXHIBIT A

**CITY OF ARVADA, COLORADO
SALES AND USE TAX REVENUE BONDS
SERIES 2023 - \$[PAR]***

(FOR USE WHEN COMPETITIVE SALE REQUIREMENTS ARE SATISFIED)

ISSUE PRICE CERTIFICATE

The undersigned, on behalf of [NAME OF UNDERWRITER] (“[SHORT NAME OF UNDERWRITER]”), hereby certifies as set forth below with respect to the sale of the above-captioned obligations (the “Bonds”).

1. Reasonably Expected Initial Offering Price.

(a) As of the Sale Date, the reasonably expected initial offering prices of the Bonds to the Public by [SHORT NAME OF UNDERWRITER] are the prices listed in Schedule A (the “Expected Offering Prices”). The Expected Offering Prices are the prices for the Maturities of the Bonds used by [SHORT NAME OF UNDERWRITER] in formulating its bid to purchase the Bonds. Attached as Schedule B is a true and correct copy of the bid provided by [SHORT NAME OF UNDERWRITER] to purchase the Bonds.

(b) [SHORT NAME OF UNDERWRITER] was not given the opportunity to review other bids prior to submitting its bid.¹

(c) The bid submitted by [SHORT NAME OF UNDERWRITER] constituted a firm offer to purchase the Bonds.

2. Defined Terms.

(a) **Maturity** means Bonds with the same credit and payment terms. Bonds with different maturity dates, or Bonds with the same maturity date but different stated interest rates, are treated as separate Maturities.

(b) **Public** means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter. The term “related party” for purposes of this certificate generally means any two or more persons who have greater than 50 percent common ownership, directly or indirectly.

*Subject to change.

¹ Treas. Reg. §1.148-1(f)(3)(i)(B) requires that all bidders have an equal opportunity to bid to purchase bonds. If the bidding process affords an equal opportunity for bidders to review other bids prior to submitting their bids, then this representation should be modified to describe the bidding process.

(c) ***Sale Date*** means the first day on which there is a binding contract in writing for the sale of a Maturity of the Bonds. The Sale Date of the Bonds is [DATE].

(d) ***Underwriter*** means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to participate in the initial sale of the Bonds to the Public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Bonds to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents [SHORT NAME OF UNDERWRITER]'s interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in the Tax Certificate and with respect to compliance with the federal income tax rules affecting the Bonds, and by Butler Snow LLP in connection with rendering its opinion that the interest on the Bonds is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that it may give to the Issuer from time to time relating to the Bonds.

[UNDERWRITER]

By: _____

Name: _____

Dated: [ISSUE DATE]

**CITY OF ARVADA, COLORADO
SALES AND USE TAX REVENUE BONDS
SERIES 2023 - \$[PAR]***

**(FOR USE WHEN COMPETITIVE SALE REQUIREMENTS ARE NOT SATISFIED
TO BE ADJUSTED BY BOND COUNSEL AS APPLICABLE)**

ISSUE PRICE CERTIFICATE

The undersigned, on behalf of [NAME OF UNDERWRITER/REPRESENTATIVE] [“[SHORT NAME OF UNDERWRITER]”][the “Representative”)], on behalf of itself and [NAMES OF OTHER UNDERWRITERS] (together, the “Underwriting Group”), hereby certifies as set forth below with respect to the sale and issuance of the above-captioned obligations (the “Bonds”).

(1) ***[If all maturities satisfy the 10% test on the sale date:] Sale of the General Rule Maturities.*** As of the date of this certificate, for each Maturity of the Bonds, the first price at which at least 10% of such Maturity of the Bonds was sold to the Public is the respective price listed in Schedule A. ***[If only some of the maturities satisfy the 10% test on the sale date:]*** As of the date of this certificate, for each Maturity of the General Rule Maturities, the first price at which at least 10% of such Maturity was sold to the Public is the respective price listed in Schedule A.

(2) ***Initial Offering Price of the [Bonds]/[Hold-the-Offering-Price Maturities].***

(a) ***[If all maturities use hold-the-offering-price rule:]***[SHORT NAME OF UNDERWRITER][The Underwriting Group] offered the Bonds to the Public for purchase at the respective initial offering prices listed in Schedule A (the “Initial Offering Prices”) on or before the Sale Date. A copy of the pricing wire or equivalent communication for the Bonds is attached to this certificate as Schedule B. ***[If selected maturities use hold-the-offering-price rule:]***[SHORT NAME OF UNDERWRITER][The Underwriting Group] offered the Hold-the-Offering-Price Maturities to the Public for purchase at the respective initial offering prices listed in Schedule A (the “Initial Offering Prices”) on or before the Sale Date. A copy of the pricing wire or equivalent communication for the Bonds is attached to this certificate as Schedule B.

(b) ***[If all maturities use hold-the-offering-price rule:]***As set forth in the Notice of Sale and bid award, [SHORT NAME OF UNDERWRITER][the members of the Underwriting Group] [has][have] agreed in writing that, (i) for each Maturity of the Bonds, [it][they] would neither offer nor sell any of the Bonds of such Maturity to any person at a price that is higher than the Initial Offering Price for such Maturity during the Holding Period for such Maturity (the “hold-the-offering-price rule”), and (ii) any selling group agreement shall contain the agreement of each dealer who is a member of the selling group, and any retail distribution agreement shall contain the agreement of each broker-dealer who is a party to the retail distribution agreement, to comply with the hold-the-offering-price rule. Pursuant to such agreement, no Underwriter (as defined below) has offered or sold any Maturity of the Bonds at a price that is

* Subject to Change

higher than the respective Initial Offering Price for that Maturity of the Bonds during the Holding Period. ***[If selected maturities use hold-the-offering-price rule:]***[s set forth in the Notice of Sale and bid award, [SHORT NAME OF UNDERWRITER][the members of the Underwriting Group] [has][have] agreed in writing that, (i) for each Maturity of the Hold-the-Offering-Price Maturities, [it][they] would neither offer nor sell any of the Bonds of such Maturity to any person at a price that is higher than the Initial Offering Price for such Maturity during the Holding Period for such Maturity (the “hold-the-offering-price rule”), and (ii) any selling group agreement shall contain the agreement of each dealer who is a member of the selling group, and any retail distribution agreement shall contain the agreement of each broker-dealer who is a party to the retail distribution agreement, to comply with the hold-the-offering-price rule. Pursuant to such agreement, no Underwriter (as defined below) has offered or sold any Maturity of the Hold-the-Offering-Price Maturities at a price that is higher than the respective Initial Offering Price for that Maturity of the Bonds during the Holding Period.

(3) ***Defined Terms.***

(a) ***General Rule Maturities*** means those Maturities of the Bonds listed in Schedule A hereto as the “General Rule Maturities.”

(b) ***Hold-the-Offering-Price Maturities*** means those Maturities of the Bonds listed in Schedule A hereto as the “Hold-the-Offering-Price Maturities.”

(c) ***Holding Period*** means, with respect to a Hold-the-Offering-Price Maturity, the period starting on the Sale Date and ending on the earlier of (i) the close of the fifth business day after the Sale Date ([DATE]), or (ii) the date on which [SHORT NAME OF UNDERWRITER][the Underwriters] [has][have] sold at least 10% of such Hold-the-Offering-Price Maturity to the Public at prices that are no higher than the Initial Offering Price for such Hold-the-Offering-Price Maturity.

(d) ***Issuer*** means the City of Arvada, Colorado.

(e) ***Maturity*** means Bonds with the same credit and payment terms. Bonds with different maturity dates, or Bonds with the same maturity date but different stated interest rates, are treated as separate maturities.

(f) ***Public*** means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter. The term “related party” for purposes of this certificate generally means any two or more persons who have greater than 50 percent common ownership, directly or indirectly.

(g) ***Sale Date*** means the first day on which there is a binding contract in writing for the sale of a Maturity of the Bonds. The Sale Date of the Bonds is [DATE].

(h) ***Underwriter*** means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to

participate in the initial sale of the Bonds to the Public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Bonds to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents [NAME OF UNDERWRITING FIRM][the Representative's] interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in the Tax Certificate and with respect to compliance with the federal income tax rules affecting the Bonds, and by Butler Snow LLP in connection with rendering its opinion that the interest on the Bonds is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that it may give to the Issuer from time to time relating to the Bonds.

[Signature Page Follows]

[UNDERWRITER][REPRESENTATIVE]

By: _____

Name: _____

Dated: [ISSUE DATE]

SCHEDULE A

**SALE PRICES OF THE GENERAL RULE MATURITIES AND
INITIAL OFFERING PRICES OF THE HOLD-THE-OFFERING-PRICE MATURITIES**

(Attached)

SCHEDULE B
PRICING WIRE OR EQUIVALENT COMMUNICATION
(Attached)

Exhibit B - Notice of Sale

2023 Sales & Use Tax Bonds



City Council Meeting
May 1, 2023



CITY OF
ARVADA

What are we asking for?

2023 Sales & Use Tax Bond Issue - \$7,230,000

City Council to approve staff issuing the difference between 2018 voter approved \$79,800,000 and 2019 Sales & Use Tax issuance of \$72,570,000



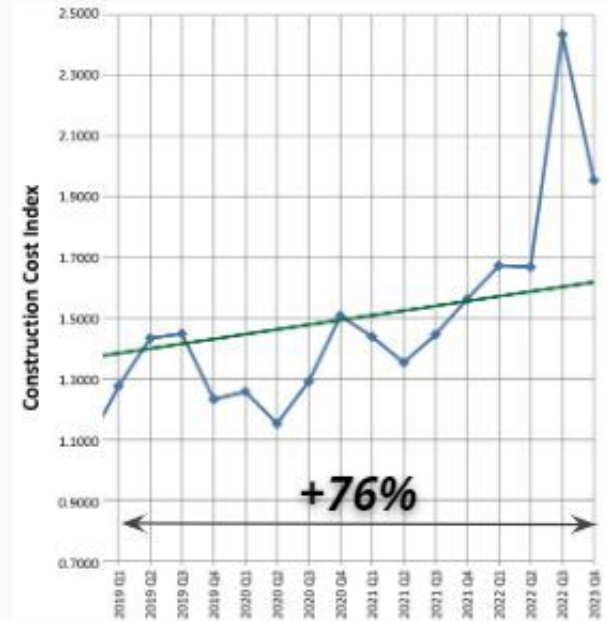
Why are we asking?

Inflation - Colorado CCI +76%

Redesign (Underground challenges)

Unforeseen (Contaminated soil, Development)

Time delays (Utilities, UPRR)



2019 Q1 to 2022 Q4
COLORADO CCI

Why are we asking continued?

Project costs have increased

Ralston Road \$18.8 million to \$22.5 million

72nd Ave \$64.5 million to over \$92.5 million



Ralston Road Estimated Budget

SOURCES	Initial Budget & Costs	Current Expected Budget & Costs
1. Bond Funding	\$ 15,300,000	\$15,300,000
2. Additional City Funding	\$0	\$3,493,574
3. AURA Funding (Streetscape)	\$3,500,000	\$3,500,000
TOTAL	\$18,800,000	\$ 22,293,574
USES		
A. Design	\$852,407	\$2,133,532
B. Right-of-Way	\$4,190,034	\$5,212,790
C. Construction - Hamon Infrastructure, Inc.	\$12,274,000	*\$12,800,000
D. Construction - Street Lights & Testing	\$0	\$193,769
E. Miscellaneous (includes Contingency)	\$1,483,559	\$2,115,270
TOTAL	\$18,800,000	\$ *22,455,361
*Change Order being reviewed for additional scope of work		

72nd Ave Estimated Budget



How are we going to pay?

Sales Tax average increase since 2019 ~ 11% per year,

20% into code sec 98-101 funds

Debt is for 20 years, 16 at \$450,000, 4 at \$1,400,000

Additional 98-101 funds estimated at \$2,200,000 per year

NO NEW TAXES



When will this happen?

May 1 - Present to City Council for approval

May 10 - Bond Rating Call

May 22 - Notice of Sale

June 1 - Competitive Sale

June 7 - Post Official Statement

June 15 - Closing



What is next?

Continue with projects

Ralston Road - expected to be completed this year

72nd Ave - still working on final design with UPRR

Final Budget - need additional funding, use remaining 98-101 funds, possible COP, one-time funds





REPORT FROM CITY COUNCIL

AGENDA ITEM
12.A.

DATE: May 1, 2023

SUBJECT: Council Committee Reports

Report in Brief

City Council members are appointed to various committees and boards as set out on the attached listing. As meetings are held, individual council members will report back to the full City Council any relevant discussions and issues that occurred.

Prepared by:
Chris Koch, CCO Admin

Marc Williams	Arvada Municipal Court/Judicial Committee Arvada City Attorney Committee Arvada Urban Renewal Authority E-470 Authority (alternate) Jefferson Parkway Public Highway Authority Northwest Parkway Authority (Associate Member) (alternate) Urban Drainage and Flood Control District West Connect Coalition *Metro Mayors Caucus
Bob Fifer	Adams County Regional Economic Partnership (ACREP) Apex Coordinating Committee Arvada City Attorney Committee Arvada Transportation Committee Denver Regional Council of Governments (Alternate) Jefferson County R-1 Schools Coordinating Committee Jeffco Transportation Action & Advisory Group (JEFFTAAG) Smart City Advisory Committee
David Jones	E-470 Authority (alternate) Jefferson County Community Corrections Board Jefferson County R-1 Schools Coordinating Committee Jefferson Economic Development Council (JEDC) Jefferson Parkway Public Highway Authority Northwest Parkway Authority (Associate Member) (alternate) West Connect Coalition (alternate)

John Marriott	Adams County Regional Economic Partnership (ACREP) (alternate) Apex Coordinating Committee Arvada Economic Development Association Board Arvada Municipal Court/Judicial Committee Arvada Parks Advisory Committee Arvada Visitors Center Committee (alternate) CML Policy Committee Olde Town Business Improvement (BID) District Rocky Mountain Metropolitan Airport Community Noise Roundtable
Randy Moorman	Arvada Audit Committee Arvada Sustainability Advisory Committee CML Policy Committee Rocky Flats Stewardship Council
Lauren Simpson	Arvada Audit Committee Arvada Center for the Arts and Humanities Arvada Fire Protection District Coordinating Committee Arvada Visitors Center Committee Olde Town Business Improvement (BID) District (alternate)
Lisa Smith	Arvada Chamber of Commerce Government Affairs Committee Arvada Fire Protection District Coordinating Committee Denver Regional Council of Governments Jefferson County Community Corrections Board (alternate) Jeffco Transportation Action & Advisory Group (JEFFTAAG) (alternate) Smart City Advisory Committee

*asterisked committees are not appointed by Council



REPORT TO CITY COUNCIL

AGENDA ITEM
13.A.

TO: THE HONORABLE CITY COUNCIL

DATE: May 1, 2023

SUBJECT: Review of Future Workshops and Presentations

Report in Brief

The City Manager's Office maintains a list of upcoming workshops and presentations to be scheduled for City Council meetings. During City Manager Reports, at the end of City Council business meetings, City Manager, Lorie Gillis, will review with City Council the tentative schedule and make any adjustments necessary.

Prepared by:
Chris Koch, CCO Admin

Reviewed by:

Approved by:

Rachel Morris, City Attorney 4/10/2023

Lorie Gillis, City Manager 4/19/2023

Enclosure, exhibits & attachments required to support the report

2023 CITY COUNCIL WORKSHOPS, STUDY SESSIONS, PRESENTATIONS AND RETREATS (TENTATIVE)

WORKSHOPS	Date	Lead
Olde Town Strategic Reinvestment Plan Over the past year the City team has been engaged with DIG Studio to work with the community to create a strategic vision for Olde Town. The community has been heavily engaged in this process, which has led to a draft plan. The draft plan, with recommendations will be presented at the workshop. Next Steps: Following the presentation the City team will update the draft plan with the City Council's input. The plan will then be placed online for a 30 day public comment period. Following that period the plan will be brought back to City Council, along with the public comment, for the City Council to consider adoption of the plan.	May 8	
Legislation Debrief	May 22	CMO
Prop 123 In November, 2022 voters in Colorado approved Proposition 123, which created a dedicated funding pool at the State for affordable housing. Municipalities, developers, and local nonprofits can apply. In order to have access to these funds the City of Arvada needs to determine if we want to "opt in" by November 1st, 2023. If the City of Arvada opts in then the City would be committing to increase its affordable housing stock by 3% per year over the next 3 years. Additionally, this City needs to commit to a 90 approval period for affordable housing projects prior to November 1st, 2026. Next Steps: Based on City Council direction, determine if the City will "opt in" to the Prop 123 program before November 1st, 2023.	May 22	CED
Bond Project Update Public Works will provide the City Council with an update on the bond projects for streets and utilities. There are two street projects. The first project is Ralston Road Phase 2 (Yukon Street to Garrison Street). The second project is W. 72nd Avenue (Swadley Court to Kipling Street). The utility bonds were issued in December 2022 and an update on the spending plan for each fund will be presented.	June 12	PW
Budget Presentation to Council – 10-year models	June 12	Fin
Budget Presentation to Council – 10-year CIP	June 12	Fin
Smart Meters Update	July 24	Utilities
	Aug 14	
	Aug 28	
Water, Sewer, Stormwater Rates and Fees@ Business Meeting	Sept 18	Utilities
Bond Project Update Public Works will provide the City Council with an update on the bond projects for streets and utilities. There are two street projects. The first project is Ralston Road Phase 2 (Yukon Street to Garrison Street). The second project is W. 72nd Avenue (Swadley Court to Kipling Street). The utility bonds were issued in December 2022 and an update on the spending plan for each fund will be presented.	Sept 25	PW
Budget Workshop – Work System Changes	Sept 25	Fin
Regional Homelessness The City Manager's Office will update the Council on the progress of the City's immediate and intermediate goals, as well as to update the Council regarding the Jefferson County regional efforts of the homelessness strategy.	Aug 28	CMO
Water Infrastructure for Fire Protection	Oct 9	Utilities
Budget Workshop – Pay Plan	Oct 9	Fin
Bond Project Update Public Works will provide the City Council with an update on the bond projects for streets and utilities. There are two street projects. The first project is Ralston Road Phase 2 (Yukon Street to Garrison Street). The second project is W. 72nd Avenue (Swadley Court to Kipling Street). The utility bonds were issued in December 2022 and an update on the spending plan for each fund will be presented.	Dec 11	PW

Infrastructure Annual Report	Dec 11	Utilities/PW
PRESENTATIONS		
APAC – SaBell Park Naming	March 20	VCN
STUDY SESSIONS		
Red Light Cameras	April 24	
Sustainability	TBD	
BID and Chamber funding	TBD	
PRESENTATIONS		
Workshop TBD's		
Budget and Fiscal Policy Update	TBD	
Tour of Pavement Operations	TBD	
Pavement Programs	TBD	
Financial resiliency recommendations Provide City Council an update on the OSE's SR9: By 12/2024 based on long-term financial projections and updated master plans, develop financial resiliency recommendations to ensure adequate and ongoing investment in city infrastructure and core services. This workshop will present the summary of long range unfunded needs by work systems. Next Steps will be [M9B] By 12/2023 develop a city-wide consolidated level of service summary. [M9C] By 12/2023 prepare an exhaustive list of funding source opportunities for closing identified infrastructure and core service funding gaps.	TBD	Fin
Athletic Field Programming	TBD-2023	VCN
Fleet Electrification	TBD	Utilities
Council Retreat Update	TBD	CMO
Pre-Sentencing/One Small Step	TBD	Courts
Meyers Pool Provide City Council an update on the VCN's SR3: By 12/2025 develop a maintenance and reinvestment plan to ensure a sustainable, resilient and beautiful community of parks, trails, open space and medians in alignment with our diverse, changing and growing community and VCN's SR3 Milestone [M3H] By 7/2024 replace Meyer's Pool with a new 50 meter natatorium.	TBD	CMO
City Marketing Plan	TBD	CMO
Financial Scenarios for Street Maintenance Deficit/Options for Increasing Maintenance Funds Engage City Council in a discussion around the current street maintenance needs and how the City might fund them. This will include revenue enhancements, future allocations and expenditure realignments.	TBD	PW/Fin/ CMO
Fiber Master Plan The Fiber Master Plan which is also called Arvada Fiber Optic Network (AFON), was first presented to City Council 4/10/2017. City Councils had set a strategic goal to build a fiber network to enable high speed/real-time connectivity to city facilities and assets in order to enhance city operations. This workshop is intended to brief City Council as to the progress of the AFON build out. Updates are intended to cover conduit installation progress, fiber installation progress, current co-locate opportunities, IGA member updates, and connections to current assets (city buildings, traffic, signals, utilities, radio, etc.).	TBD	PW
Problem Properties	TBD	P.D.
Activation of Historical Assets	TBD	VCN
Customer Service Philosophy	TBD	CMO

Ask Arvada Update	TBD	CMO
COUNCIL JOINT MEETINGS/DINNERS:		
Denver Water Board Apex Board AURA Board Arvada Center Board—Per Coop Agreement - Annually after October 1 of each year Jefferson Parkway Meeting with Jeffco and Broomfield Council Annual Retreat		