PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2

PERSIGO WASTE WATER TREATMENT PLANT
ANAEROBIC DIGESTERS REPAIRS

Owner: City of Grand Junction
Grand Junction, Colorado

Owners Representative: Kirsten Armbruster, PE
970.244.1421
kirstena@gjcity.org

Engineer-of-Record: Wiss, Janney, Elstner Associates, Inc. (WJE)
3609 South Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80232

Engineer-of-Record Representative: Mr. Terry McGovern, PE
303.914.4300
tmcgovern@wje.com

Project Address: Persigo Wastewater Treatment Plant
2145 River Road
Grand Junction, Colorado 81505

ANAEROBIC DIGESTER REPAIR SCOPE

The repairs at the Anaerobic Digesters include, but are not limited to, installation of supplemental mechanical anchors at exterior panels to address noted bowing of isolated panels, concrete repairs, including removal of incipiently spalled concrete, as well as sound concrete, and associated surface preparation of the embed steel elements and concrete surfaces to receive the concrete repairs, and removal and replacement of sealant at all vertical panel joints.

SPECIAL CONSIDERATIONS

The Anaerobic Digesters will remain in-service during the repairs. If closure or temporary blockage of the doors at the east and west elevations is required to perform the concrete or sealant repairs, Contractor shall coordinate with and obtain Owner's approval at least 7 days in advance. The Anaerobic digester's contain flammable gases, use caution when working around these structures and take care to penetrate the walls. When working around the top of the digester, do not perform work that could create sparks. Coordinate safety restrictions with Owner.

DRAWING SUBMITTALS

None.

REQUIRED MOCKUP SUMMARY

1. Installation of helical anchors at one panel where supplemental mechanical anchorage is designated.
2. Two adjacent corner spall repairs.

Keyed Note Schedule

Callout	Plan Hatch/Symbol	Name	Unit	Total Estimated Quantity	Description	Reference Specification Section(s)	Reference Detail(s)
3-1		Corner Spall Repair	SF	46	Remove and replace deteriorated and/or delaminated concrete on concrete panel corners. Number adjacent to keyed note indicates the estimated area of replacement. Assume 4 inch repair depth. Prior to proceeding with concrete repairs, sound surface of concrete and notify Engineer and Owner of revised repair quantity prior to proceeding with removal if it exceeds 10 percent more than specified.	03 01 34 03 21 00	1/3.4
3-2		Coping Repair	SF	4	Remove and replace deteriorated and/or delaminated concrete on concrete coping top surface. Number adjacent to keyed note indicates the estimated area of replacement. Assume 6 inch repair depth. Prior to proceeding with concrete repairs, sound surface of concrete and notify Engineer and Owner of revised repair quantity prior to proceeding with removal if it exceeds 10 percent more than specified.	03 01 34 03 21 00	2/3.4
3-3	*	Installation of New Mechanical Anchors	Panels	39	Install new stainless steel supplemental mechanical anchors at panels/locations noted on sheet 3.2. New mechanical anchors shall engage the backup structural concrete wall a minimum of 2 inches. Repairs include installation of appropriate filler material following installation of anchor.	03 21 00	3/3.4
3-4	NOT USED						
3-5	None	New Sealant Joint	LF	780	Remove existing sealant and backing materials and install new joint sealant. Number adjacent to keyed note indicates the estimated lineal feet of repair.	07 92 00	4/3.4

ABBREVIATIONS:

CLR	CLEAR
(E)	EXISTING
EA	EACH
FV	FIELD VERIFY
LF	LINEAL FEET
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
PNL	PANEL
RE	REFERENCE
SIM	SIMILAR
SF	SQUARE FEET
TYP	TYPICAL
w/	WITH

INDEX TO DRAWINGS:

SYMBOLS LEGEND:

EXISTING FULL HEIGHT WALL

GENERAL NOTES

A. Drawings and associated Specifications (referred to in general as the Construction Documents) apply only to the specific project identified in Titleblock, and shall not be used for any other purpose without specific written consent of Engineer, Engineer's sub-consultants, and Owner. Any unauthorized use of Engineer's work product shall be at user's sole risk and user shall indemnify Engineer against any liability or legal exposure related to the unauthorized use.
B. Drawings and Specifications are complementary, are to be taken as a whole, and should include sufficient information necessary for the execution and completion of the work in a manner consistent with the design intent. In the absence of explicit or reasonably inferable information on drawings or in specifications, promptly seek clarification from Engineer as a request for information.
C. Contractor is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Engineer has no such responsibilities beyond its own employees.
D. In an emergency affecting safety of persons or property, act to prevent or stop further damage, injury, or loss.
E. If a hazardous material or substance not addressed in the Construction Documents is encountered, immediately stop work in affected area and notify Owner and Engineer of the condition.
F. Temporarily relocate and restore existing equipment and appurtenances (whether or not shown on the drawings) that obstruct access to portions of the Work. Notify and coordinate with Owner prior to doing so.
G. Develop, implement, erect, and maintain safeguards to prevent damage, injury, or loss resulting from the work to (a) workers, occupants, passers-by, and other persons; (b) in-progress work, materials, and equipment under care, custody, and control of the contractor (whether on or off site); and (c) other property at the site or adjacent thereto not designated as part of the work for removal, relocation, or replacement. In the event of damage, injury, or loss, promptly notify Engineer and Owner and present proposed remedy. All damage to these elements must be repaired to the satisfaction of the Owner.
H. Promptly correct work rejected by Engineer or failing to conform to requirements of the Construction Documents. Associated costs (including additional testing or inspections, cost of uncovering and correction, and compensation for Engineer's services and expenses made necessary thereby) shall be the Contractor's responsibility.
I. Dimensions, quantities, and geometries provided for existing construction are based on original drawings and limited field documentation by Engineer. Field verify applicable information prior to submitting a bid, ordering materials, or otherwise committing resources to the Work. Provided dimensions take precedence over scaled dimensions. Dimensions of the new construction shall be adjusted as necessary to fit the existing conditions. The Engineer shall be notified in writing of any significant deviations from the dimensions or conditions shown on these drawings.
J. Drawings illustrate the completed work with elements in their final intended positions. Provide shoring, bracing, support, and sequence work as required to maintain the structural integrity of new or existing construction during the work. Provide shoring per 1/3.3. Only two non-adjacent (i.e. one bottom and one top) corner repairs per panel are allowed at the same time.
K. Contractor is solely responsible for, and shall have sole control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the work. Engineer has no such responsibilities. Specific instruction that may be given in Construction Documents concerning construction means, methods, techniques, sequences, or procedures shall not relieve contractor of its responsibility for control and coordination.
L. Provide labor, materials, equipment, supervision, and coordination directly and incidentally necessary to perform the work in accordance with Construction Documents.
M. Promptly report to Engineer as a request for information known or suspected errors, inconsistencies, or omissions within or between Construction Documents, as well as known or suspected variance of the Construction Documents from existing conditions. Await direction from Engineer prior to proceeding with Work. For bidding purposes only, and unless otherwise directed by Engineer, the more stringent requirement or better quality shall take precedence as determined by Engineer.
N. Activities or duties of Engineer, or tests, inspections, or approvals required or performed by third parties shall not relieve Contractor of its obligation to perform the Work in accordance with Construction Documents.
O. Secure and pay for all permits, fees, licenses, and inspections by government agencies necessary for proper and compliant execution and completion of the work. Contractor shall be properly licensed to perform the specified Work.
P. Comply with and give notices required by laws, statutes, ordinances, codes, rules and regulations, and lawful orders of authorities having jurisdiction applicable to the Work.
Q. The Work will be performed at an occupied and operational facility. Coordinate construction activities and procedures with Owner to (a) maintain unobstructed existing means of egress from facility; (b) comply with facility's existing security procedures and requirements; and (c) provide not less than 48 hours advance notice to and gain approval from Owner prior to construction activities that will disrupt normal use of facility (including exceptional noise and/or vibrations, uncontrolled dust, obtrusive odors, or interruptions of utilities). Work not coordinated and approved in advance that disrupts the normal use of the facility may be stopped until proper coordination and approval is achieved. Contractor shall be responsible for any costs incurred as a consequence of stoppage.
R. Coordinate locations of on-site storage of materials and equipment with Owner so as to not unreasonably encumber facility or site. Do not allow construction materials, equipment, or procedures to overload or exceed the structural capacity of existing construction to remain, partially completed work, or completed work. Make inspections and/or perform analyses and tests necessary to verify that existing elements have adequate capacity to support proposed construction loads.

BUILDING CODES AND LOADS

A. Original Building Code Under Which the Structures were Constructed: Not Specified
   1. Original Construction Documents prepared by Henningson, Durham and Richardson (HDR), Inc. dated June 1984, are available for review from Owner's Representative.
B. Current Building Code and Basis for Repair Work: The 2018 International Existing Building Code (IEBC), as adopted by the Mesa County Building Inspection Department, shall serve as the Governing Building Code for the Work.

INSPECTIONS AND OBSERVATIONS

A. Observations are performed by the Engineer, or licensed design professional.
B. Special Inspections shall be performed by a qualified Testing Agency or Special Inspector. Additional inspections may be performed by the local building authority.
C. All construction shall be subject to review (observation) by the Engineer before it is concealed from view. Coordinate expected review items with the Engineer prior to the start of construction. Provide reasonable notification to the Engineer to allow for such review as the Work proceeds, 48 hours minimum unless noted otherwise.
D. Contractor to pay for and provide access for all inspections and observations, regardless of the entity retaining such services.

MATERIAL PROPERTIES

A. Original Construction
   1. Concrete Compressive Strength (f'c) 5000 psi at 28 days using normal weight aggregate.
   2. No. 4 and larger reinforcing steel ASTM A615-76a Grade 40, No 3 stirrups and ties may be Grade 40.
   3. All original structural steel: A36.
B. Repair Construction
   1. Minimum concrete compressive Strength (f'c) 5000 psi at 28 days using normal weight aggregate.
   2. All reinforcing steel shall be A615 Grade 60 unless specifically noted otherwise.

SHORING

A. Reference Section 03 01 01 for additional requirements.
B. Shoring shall be designed by a Professional Engineer licensed in Colorado.
C. Design Loads (Each Location, Ultimate)
   1. Dead Load: Self Weight
   2. Construction Live Load: 20 psf minimum.
   3. Wind Load: (ASCE 7-16)
      a. V = 115 mph
      b. Exposure = C

Special Inspection Schedule

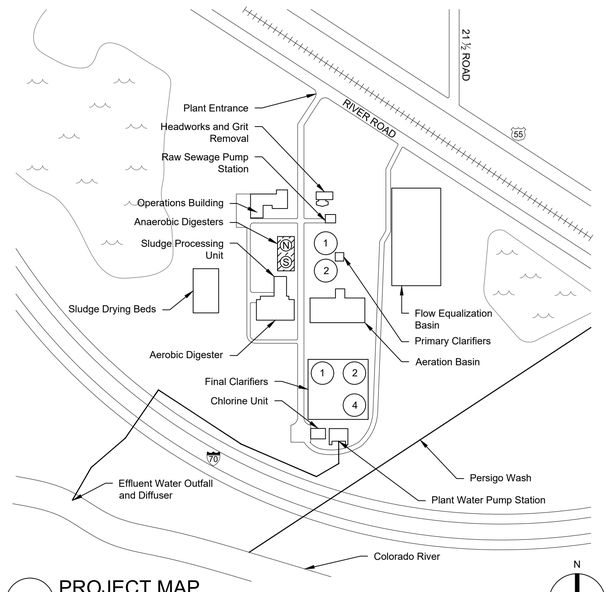
Verification and Inspection	Frequency	Inspector	Reference Standard(s)
Concrete Construction, Including Concrete Repairs (IBC Table 1705.3)			
Inspection of Reinforcing Steel Preparation and Placement	Prior to Each Placement	Special Inspector	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3
Verifying use of Approved Repair Material	With Fresh Material Testing	Special Inspector	ACI 318 CH 19, 26.4.3, 26.4.4
Fresh Cementitious Material Testing	Once Each Placement Shift	Special Inspector	ASTM C172, ASTM C31, AND ACI 318: 26.5, 26.12
Inspection for Installation and Maintenance of Specified Curing Temperature and Techniques	At each visit for other reasons	Special Inspector	ACI 318: 26.5.3-26.5.5
Compression Strength Testing	Once Each Placement Shift	Special Inspector	ACI 318: 26.12
Mixing, Conveying, Depositing and Curing Concrete or Repair Materials	Once Each Placement Shift	Special Inspector	ACI 318: 26.5.2, 26.5.3

Notes:
1. Reference ACI 318 2014 Edition for Special Inspection Requirements.
2. Concrete inspections shall apply to all pre-packaged repair materials, site batched cementious repair materials and ready-mix concrete delivered to the site.
3. All special inspections shall be performed by a qualified Testing Agency or Special Inspector Retained by the Owner.
4. All reports shall be provided DIRECTLY to the Owner, Contractor, and Engineer, for information only.

Quality Control Testing Summary

Item or Test	Keyed Note(s)	Frequency	Reference Specification Section(s)	Reference Standard(s)
Sealant Adhesion Testing	3-5	Every 250 LF	07 92 00	ASTM C1521

Notes:
1. This testing shall be performed by the Testing Agency or Engineer, with assistance from the Contractor as noted in the Specification Sections.



1 PROJECT MAP
SCALE: NTS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY AGL/TMM DATE 04/07/21
CHECKED BY SWF/CFL DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

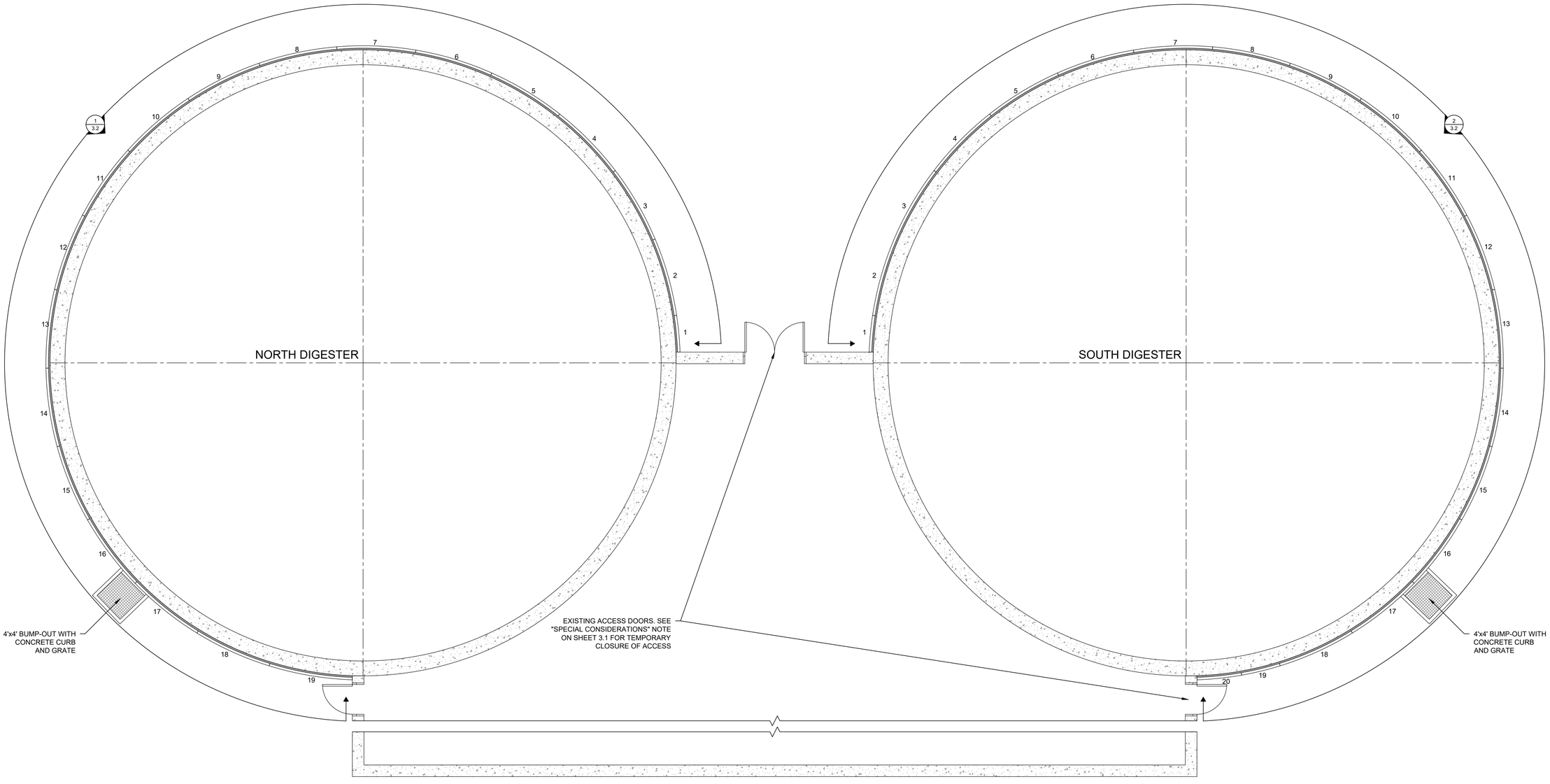
CITY OF Grand Junction COLORADO

WJE Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

ANAEROBIC DIGESTERS COVER SHEET

3.0

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2



1 North and South Anaerobic Digester Plan

SCALE: 1/4" = 1'-0"

N

PLAN NOTES:

1. REFERENCE ORIGINAL DRAWING IV-25 AND IV-28 FOR ADDITIONAL INFORMATION.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY	BRS/CRS	DATE	04/07/21
DESIGNED BY	AGL/TMM	DATE	04/07/21
CHECKED BY	SWF/CFL	DATE	04/07/21
APPROVED BY	TMM	DATE	04/07/21

SCALES:

AS NOTED

0 1/2" 1" 2"

THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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WJE

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ANAEROBIC DIGESTERS PLAN

3.1

PROJECT NO. F0010-F001051

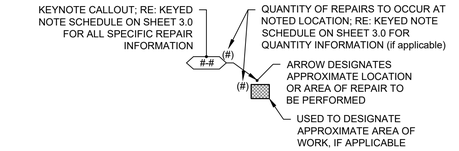
WJE PROJECT NO. 2019.3776.2

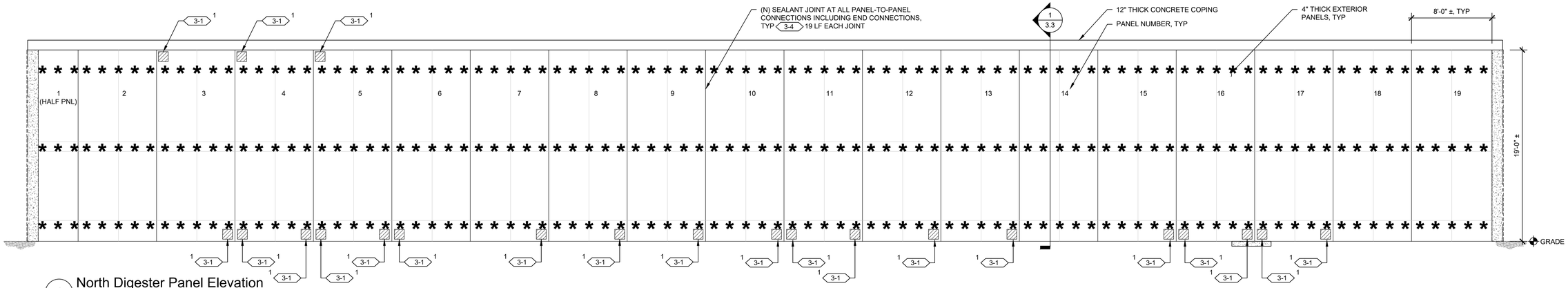
Keyed Note Summary

Callout	Plan Hatch/Symbol	Name	Total Estimated Quantity (This Sheet)
3-1		Corner Spall Repair	46 sf
3-2		Coping Repair	4 sf
3-3	*	Installation of New Mechanical Anchors	39 PANELS
3-4	NOTE USED		
3-5	NONE	New Sealant Joint	780 lf (41 Joints Total)

NOTE: SEE KEYED NOTE SCHEDULE ON 3.0.

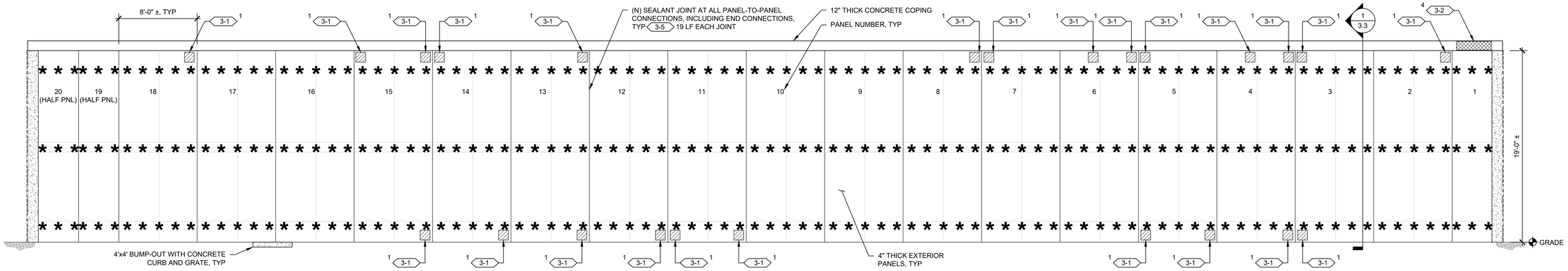
KEYED NOTE LEGEND





1 North Digester Panel Elevation

SCALE: 3/16" = 1'-0"



2 South Digester Panel Elevation

SCALE: 3/16" = 1'-0"

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21

DESIGNED BY AGL/TMM DATE 04/07/21

CHECKED BY SWF/CFL DATE 04/07/21

APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED

0 1/2" 1" 2"

THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

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Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
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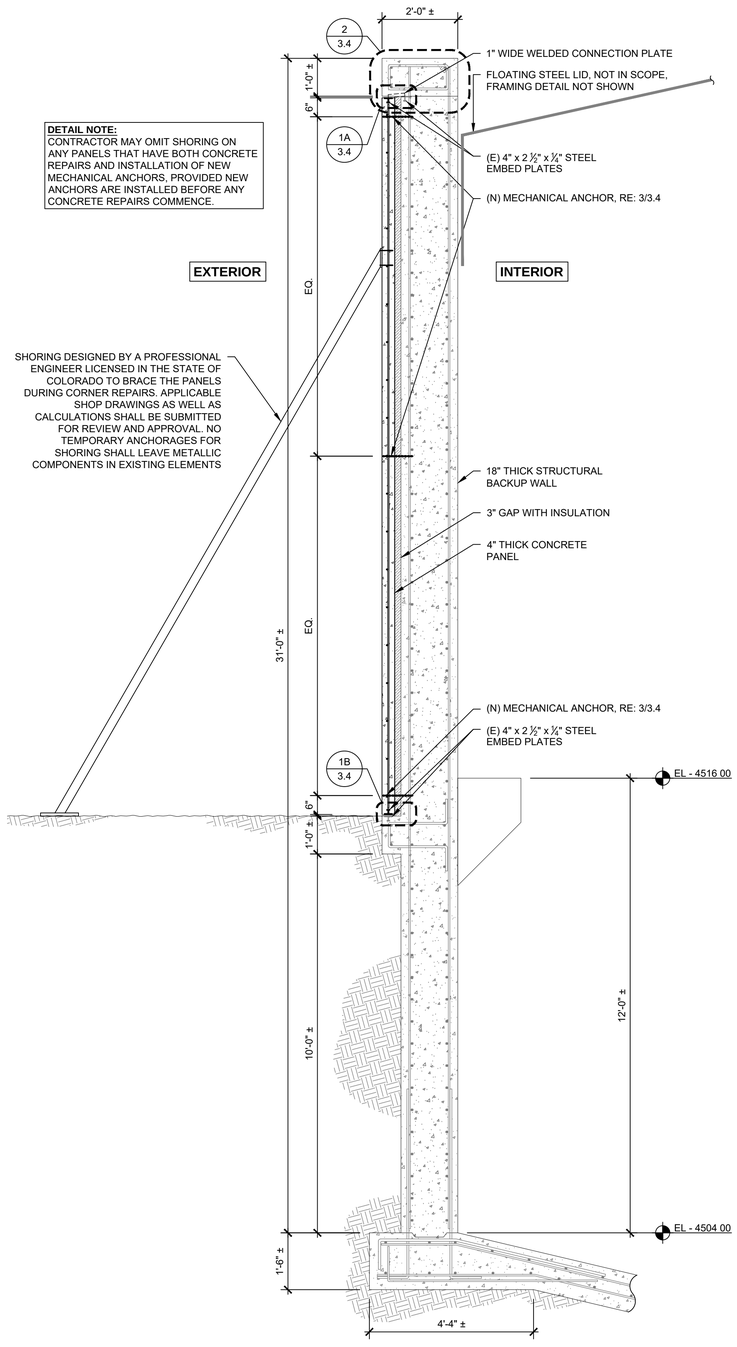
ANAEROBIC DIGESTERS
PANEL ELEVATIONS

3.2

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2

DETAIL NOTE:
CONTRACTOR MAY OMIT SHORING ON ANY PANELS THAT HAVE BOTH CONCRETE REPAIRS AND INSTALLATION OF NEW MECHANICAL ANCHORS, PROVIDED NEW ANCHORS ARE INSTALLED BEFORE ANY CONCRETE REPAIRS COMMENCE.



1 Anaerobic Digester Wall Section

SCALE: 1/2" = 1'-0"

DETAIL NOTES:
1. REFERENCE ORIGINAL DRAWING IV-28 FOR ADDITIONAL INFORMATION.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
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APPROVED BY TMM DATE 04/07/21

SCALES:
AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
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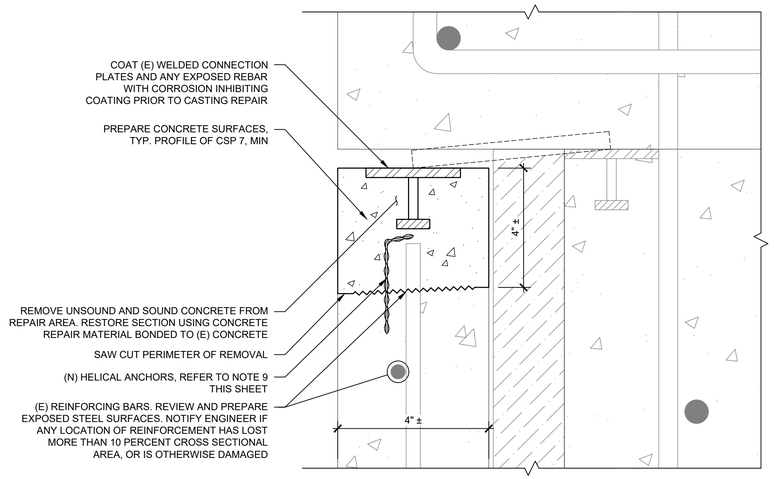
ANAEROBIC DIGESTERS
WALL SECTION

3.3

TYPICAL CONCRETE REPAIR NOTES:

THESE NOTES SHALL APPLY TO ALL CONCRETE REPAIR WORK UNLESS NOTED OTHERWISE ON SPECIFIC DETAILS. THESE NOTES SERVE TO SUPPLEMENT THE SPECIFICATION SECTIONS 03 01 34 AND 03 21 00. REFERENCE THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

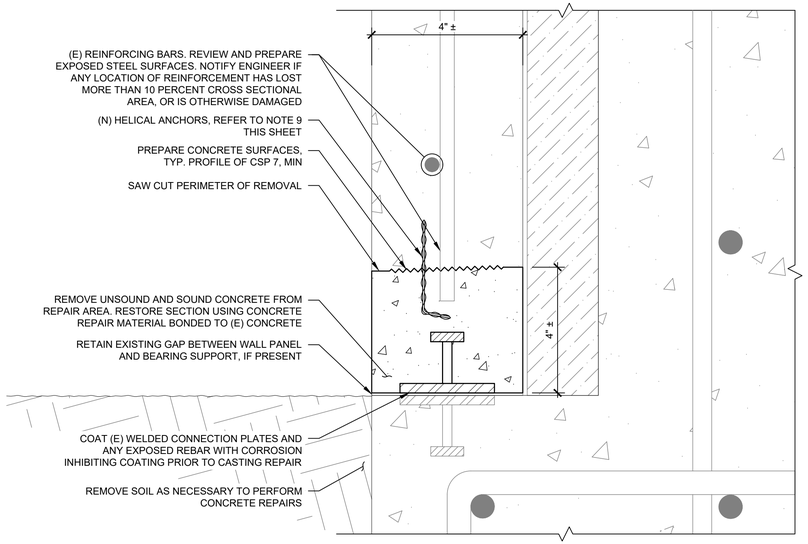
1. SOUND AND MARK ALL REPAIR AREAS ON CONCRETE SURFACE. NOTIFY ENGINEER AND OWNER OF ANY ADDITIONAL DISTRESSED LOCATIONS. AWAIT APPROVAL PRIOR TO PROCEEDING WITH CONCRETE REMOVAL AT ADDITIONAL LOCATIONS.
2. PROVIDE SHORING PER 1/3.3. ONLY TWO NON-ADJACENT)I.E. ONE BOTTOM AND ONE TOP) CORNER REPAIRS PER PANEL ARE ALLOWED AT THE SAME TIME.
3. REMOVE ALL LOOSE CONCRETE FROM THE DETERIORATED AREA.
4. CONCRETE REMOVAL AREAS:
   - 4.A. MAKE A SAWCUT AROUND THE ENTIRE PERIMETER OF THE REPAIR AREA. SHAPE SHALL BE RECTANGULAR IN PLAN AND ELEVATION, AND SHALL AVOID RE-ENTRANT CORNERS.
   - 4.B. EXTEND REMOVAL AND REPLACEMENT AT LEAST 1 INCHES BEYOND EDGE OF UNSOUND CONCRETE.
   - 4.C. THE CUT SHALL BE MADE TO A DEPTH OF 3/4 INCHES, IF POSSIBLE. IF THERE ARE AREAS AROUND THE PERIMETER OF THE DETERIORATED AREAS WHERE STEEL REINFORCING IS CLOSER TO THE SURFACE THAN NOTED SAWCUT DEPTH, THEN NO SAW CUT SHALL BE MADE IN THOSE AREAS. INSTEAD OF A SAWCUT, THE PERIMETER OF THE AREA SHALL BE CAREFULLY CHIPPED AWAY WITH A LIGHT DUTY CHIPPING HAMMER TO ACHIEVE AS CLOSE TO A SMOOTH UNIFORM EDGE AS POSSIBLE (I.E. SIMULATE A SAWCUT PERIMETER).
5. CONCRETE REMOVAL PROCEDURE:
   - 5.A. REMOVE UNSOUND CONCRETE AND, AS NECESSARY, SOUND CONCRETE USING EITHER 15-LB CHIPPING HAMMER (DETAIL WORK ADJACENT TO AND BENEATH REINFORCING STEEL AND EMBEDS) OR 30-LB CHIPPING HAMMER (REMOVAL OF CONCRETE AT REPAIR AREAS).
   - 5.B. MINIMUM REMOVAL DEPTH AS SHOWN ON DRAWINGS. AVOID ABRUPT CHANGES IN DEPTH OF REMOVAL.
   - 5.C. CLEARANCE AROUND REINFORCING BARS OF AT LEAST 3/4 INCHES.
   - 5.D. TAKE CARE NOT TO EXCESSIVELY VIBRATE THE EXPOSED REINFORCING WITH THE CHIPPING HAMMER, IN ORDER TO AVOID FRACTURING ANY OF THE CONCRETE THAT IS BONDED TO THE REINFORCEMENT OUTSIDE THE PERIMETER OF THE REPAIR.
   - 5.E. PROVIDE CONCRETE SURFACE PROFILE AS SPECIFIED OR INDICATED ON THE DRAWINGS. SURFACE PROFILES SHALL BE AS DEFINED ICRI 310.2R, AND JUDGED BASED ON COMPARISON TO PROFILE CHIPS SUPPLIED BY ICRI. UNLESS NOTED OTHERWISE, CSP 7, MIN SHALL BE PROVIDED.
   - 5.F. LIMIT CHIPPING HAMMER SIZE AND IMPACT ANGLE TO MINIMIZE DAMAGE TO SOUND CONCRETE. IMPACT ANGLE SHALL BE NO MORE THAN 60° TO SURFACE.
6. REMOVE MICROFRACTURED OR BRUISED CONCRETE BY ABRASIVE BLASTING THE EXPOSED CONCRETE SURFACES WITHIN THE AREA OF THE REMOVAL. BE SURE TO ABRASIVE BLAST THE VERTICAL SAWCUT EDGES AROUND THE PERIMETER.
7. PER SSPC SP6, COMMERCIAL BLAST CLEAN THE EXPOSED REINFORCING STEEL BY ABRASIVE BLASTING TO REMOVE ALL RUST SCALE FROM ALL STEEL REINFORCING BARS AND EMBEDDED ITEMS. EXERCISE CARE TO PREPARE UNDERSIDES OF REINFORCING BARS.
   - 7.A. NOTIFY ENGINEER OF REINFORCING BARS THAT HAVE LESS THAN 1/2 INCH OF CONCRETE COVER.
8. CAREFULLY INSPECT THE EXPOSED STEEL REINFORCING BARS FOR LOSS OF SECTION DUE TO CORROSION. THE INSPECTION SHOULD TAKE PLACE AFTER ABRASIVE BLASTING OF THE STEEL REINFORCING. WITH MORE THAN 10 PERCENT LOSS OF SECTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR POSSIBLE FURTHER REMEDIAL ACTION.
9. INSTALL SUPPLEMENTAL MECHANICAL ANCHORS AND/OR REINFORCING BAR AT ANY REPAIR AREA (OR PORTION OF THE REPAIR AREA) IN WHICH THE EXISTING OR NEW REINFORCING IS NOT COMPLETELY ENCAPSULATED WITHIN THE NEW REPAIR MATERIAL, AS FOLLOWS.
   - 9.A. INSTALL HELICAL ANCHORS PER MANUFACTURER'S INSTRUCTIONS
   - 9.B. ANCHORS SHALL BE INSTALLED AT THE FOLLOWING MINIMUM FREQUENCIES, WHICHEVER IS GREATER:
     - 9.B.1. TWO (2) ANCHORS PER ONE (1) SQUARE FOOT OF REPAIR AREAS, UNIFORMLY SPACED.
     - 9.B.2. TWO (2) ANCHORS PER REPAIR AREA, UNIFORMLY SPACED
   - 9.C. ANCHORS SHALL BE INSTALLED TO MANUFACTURER SPECIFIED MINIMUM EMBEDMENT, OR 1 1/2-INCHES, WHICHEVER IS GREATER.
   - 9.D. AFTER BEING INSTALLED, THE ANCHORS SHALL BE :
     - 9.D.1. BENT INTO AN "L" SHAPE SUCH THAT 1/2 INCH CLEAR IS PROVIDED BETWEEN THE ANCHOR AND THE EXISTING CONCRETE MATERIAL.
     - 9.D.2. THE TAIL OF THE "L" SHALL BE A MINIMUM OF 1-INCH LONG.
     - 9.D.3. CLEAR COVER FROM THE OUTER EDGE OF THE ANCHOR TO THE FACE OF THE REPAIR SHALL BE 1-INCH MINIMUM.
10. CLEAN THE ENTIRE AREA OF THE REPAIR WITH HIGH PRESSURE, OIL FREE, COMPRESSED AIR.
11. COAT ALL EXPOSED STEEL REINFORCING WITH TWO COATS OF CORROSION - INHIBITING COATING OR EPOXY. TAKE CARE NOT TO GET ANY OF THE COATING ON THE SURROUNDING CONCRETE SURFACES.
12. AS SOON AS THE COATING HAS CURED (AS RECOMMENDED BY MANUFACTURER), FORM AND PLACE THE CONCRETE REPAIR MATERIAL TO RESTORE THE PROFILE OF THE EXISTING SECTION. ENSURE THAT REPAIR AREAS ARE CLEAN AND PROPERLY CONDITIONED PRIOR TO STARTING PLACEMENT. IF SPECIFIED BY THE ENGINEER, BUILD-OUT THE FORM WORK TO ACHIEVE AT LEAST 1 INCH OF COVER OVER THE EXPOSED REINFORCING STEEL.
13. PLACE MATERIAL TO ACHIEVE PROPER CONSOLIDATION.
14. WET CURE FOR 7 DAYS OR UNTIL MATERIAL HAS ACHIEVED 75 PERCENT OF IT'S REQUIRED 28-DAY COMPRESSIVE STRENGTH; OR LONGER IF SPECIFIED BY MANUFACTURER FOR PROPRIETY MATERIALS.
15. PROTECT REPLACEMENT MATERIAL FROM WEATHER AND MAINTAIN ABOVE 55° F FOR A MINIMUM OF 7 DAYS.
16. REMOVE THE FORMS AFTER CONCRETE HAS REACHED 75 PERCENT OF REQUIRED STRENGTH. CAREFULLY INSPECT THE REPAIR FOR IMPROPER CONSOLIDATION, CRACKING AROUND THE PERIMETER, OR DEBONDING OF NEW CONCRETE. IF THESE CONDITIONS EXIST, NOTIFY THE ENGINEER FOR POSSIBLE REMEDIAL ACTION OR REPLACEMENT OF THE REPAIR.
17. SOUND REPAIR AREAS TO CONFIRM INTEGRITY. DELAMINATED AND/OR DISTRESSED AREAS MUST BE REMOVED AND REPAIRED.
18. REMOVE SHORING WHEN CONCRETE HAS REACHED MINIMUM REQUIRED STRENGTH.



DETAIL NOTES:
1. PREPARE EXISTING CONCRETE AND STEEL SURFACES PER CONCRETE REPAIR NOTES ON THIS SHEET.
2. ENSURE MECHANICAL ANCHORAGE OF THE NEW MATERIAL AT ≥ 75 PERCENT OF REPAIR AREA. IF THIS IS NOT POSSIBLE, SUPPLEMENTAL MECHANICAL ANCHORAGE TO BE INSTALLED PER CONCRETE REPAIR NOTES ON THIS SHEET.

1A Corner Repair (Top) 3-1

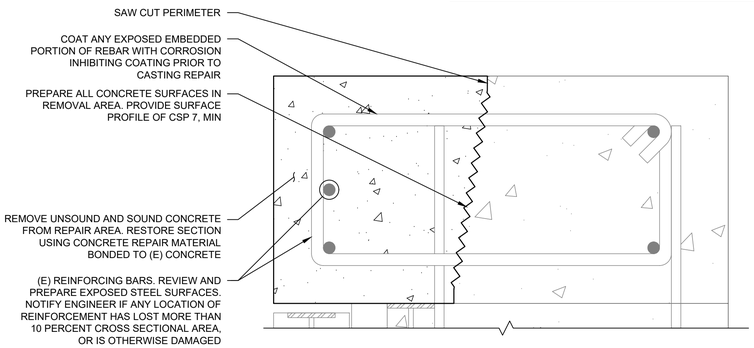
SCALE: 6" = 1'-0"



DETAIL NOTES:
1. PREPARE EXISTING CONCRETE AND STEEL SURFACES PER CONCRETE REPAIR NOTES ON THIS SHEET.
2. ENSURE MECHANICAL ANCHORAGE OF THE NEW MATERIAL AT ≥ 75 PERCENT OF REPAIR AREA. IF THIS IS NOT POSSIBLE, SUPPLEMENTAL MECHANICAL ANCHORAGE TO BE INSTALLED PER CONCRETE REPAIR NOTES ON THIS SHEET.

1B Corner Repair (Bottom) 3-1

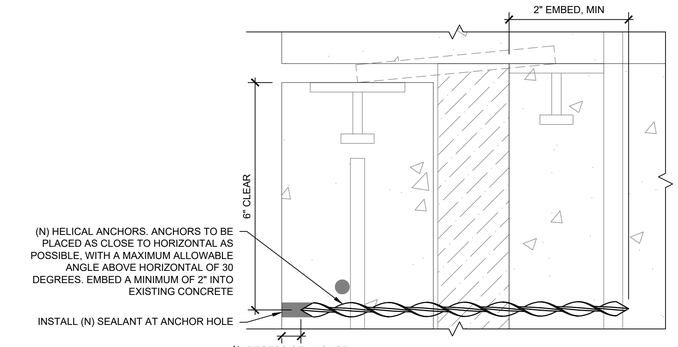
SCALE: 6" = 1'-0"



DETAIL NOTES:
1. PREPARE EXISTING CONCRETE AND STEEL SURFACES PER CONCRETE REPAIR NOTES ON THIS SHEET.
2. ENSURE MECHANICAL ANCHORAGE OF THE NEW MATERIAL AT ≥ 75 PERCENT OF REPAIR AREA. IF THIS IS NOT POSSIBLE, SUPPLEMENTAL MECHANICAL ANCHORAGE TO BE INSTALLED PER CONCRETE REPAIR NOTES ON THIS SHEET.

2 Top Surface Coping Repair 3-2

SCALE: 3" = 1'-0"



DETAIL NOTES:
1. DIAMETER OF PILOT HOLE TO BE PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
2. INSTALL NEW HELICAL ANCHORS IN THREE LOCATIONS:
   - A. TOP OF PANEL
   - B. MID-HEIGHT OF PANEL
   - C. BOTTOM OF PANEL
3. CONTRACTOR TO ENSURE THAT PILOT HOLE, AND INSTALLATION OF NEW ANCHOR, DOES NOT PENETRATE FULL THICKNESS OF 18-INCH STRUCTURAL SUBSTRATE WALL.
4. INSTALL ANCHORS WITH 6" MINIMUM CLEARANCE FROM PANEL PERIMETERS AND EMBED PLATES.
5. INSTALL 5 ANCHORS PER ROW, SPACED EQUIDISTANT (~ 24" OC HORIZONTALLY).
6. DO NOT INSTALL ANCHORS WITHIN EXISTING FORMBOARD JOINTS.

3 Supplemental Mechanical Anchor Installation 3-3

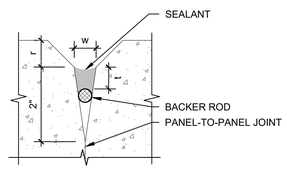
SCALE: 6" = 1'-0"

DETAIL NOTES:

THESE NOTES SHALL APPLY TO ALL SEALANT JOINT WORK UNLESS NOTED OTHERWISE ON A SPECIFIC DETAIL. THESE NOTES SERVE TO SUPPLEMENT THE SPECIFICATIONS. REFERENCE SPECIFICATION SECTION 07 92 00 FOR ADDITIONAL INFORMATION.

1. ABBREVIATIONS: w = JOINT WIDTH, t = SEALANT THICKNESS, r = RECESS OF JOINT.
2. REMOVE ALL GROUT, SEALANT, BACKER ROD, BOND BREAKER TAPE, ETC. IN JOINT OR CRACK.
3. SLIGHTLY GRIND THE CONCRETE SURFACES WITHIN THE JOINT WITH A GRINDING WHEEL HAVING A PROFILE APPROXIMATELY THE SAME AS THE JOINT.
4. PROVIDE PROPER JOINT DEPTH PER DETAILS.
5. AFTER GRINDING, CLEAN DEBRIS FROM THE JOINT USING A STIFF BRUSH AND OIL-FREE COMPRESSED AIR. VACUUM THE JOINT AND SURFACES WITHIN 6 INCHES OF JOINT.
6. INSTALL PRIMER ON ALL SURFACES. POROUS SURFACES SHALL BE PRIMED REGARDLESS OF MANUFACTURER RECOMMENDATIONS TO EXCLUDE PRIMER.
7. INSTALL BACKER ROD OR BOND BREAKER TAPE WHERE INDICATED AND SEALANT PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND THESE DOCUMENTS.
8. CONFIRM REQUIREMENTS OF SEALANT MANUFACTURER PRIOR TO SUBMITTING BID. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THESE DOCUMENTS AND MANUFACTURERS TYPICAL DETAILS, WRITTEN RECOMMENDATIONS, OR INSTRUCTIONS. ENGINEER SHALL DETERMINE WHICH APPLY.

KEY:
w = ½"±
t = (½)w
r = ½"(SEE NOTE 1)



4 Sealant Profiles 3-5

SCALE: NOT TO SCALE

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY AGL/TMM DATE 04/07/21
CHECKED BY SWF/CFL DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

ANAEROBIC DIGESTERS REPAIR DETAILS

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.3

PERSIGO WASTE WATER TREATMENT PLANT

FLOW EQUALIZATION BASIN - DIVIDING WALL REBUILD

Owner: City of Grand Junction
Grand Junction, Colorado

Owners Representative: Kirsten Armbruster
970.244.1421
kirstena@gjcity.org

Engineer-of-Record: Wiss, Janney, Elstner Associates, Inc. (WJE)
3609 South Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80232

Engineer-of-Record Representative: Mr. Terry McGovern, PE
303.914.4300
tmcgovern@wje.com

Project Address: Persigo Wastewater Treatment Plant
2145 River Road
Grand Junction, Colorado 81505

FLOW EQUALIZATION BASIN REPAIR SCOPE

The repairs at the Flow Equalization Basin include, but are not limited to, removal and replacement of the south and north dividing wall.

North Dividing Wall:
The north dividing wall shall be completely removed and replaced (including the catwalk).

South Dividing Wall:
The south concrete dividing wall shall be repaired by complete removal and replacement. During the replacement, the new wall shall have a catwalk added to the top of the wall. Remove and dispose of all concrete wall debris from south wall collapse from Cell 2 & 3. Scope also includes removal of damaged aeration machines.

SPECIAL CONSIDERATIONS

The Flow Equalization Basin will be partially taken out of service during the repairs and cleaned by the city prior to work starting. There are weight restrictions which limit the equipment that can be used to perform the work within the basin and how close certain equipment can get to the perimeter of the tank basin. Work must be completed in full on the north dividing wall prior to proceeding with work on the south dividing wall. Limiting the time of shutdown to the FEB is critical to the Owner. Contractors shall take reasonable steps to limit shutdown time.

DRAWING SUBMITTALS

A. Calculations and plans for surcharge loading for heavier equipment, if proposed.
B. Calculations for equipment proposed for use on the slab.
C. Shutdown Plan with bid.

REQUIRED MOCKUP SUMMARY

Surface preparation and evaluation of the existing reinforcing shall be required prior to the first placement of the north wall and south wall.

GENERAL NOTES

A. Drawings and associated Specifications (referred to in general as the Construction Documents) apply only to the specific project identified in Titleblock, and shall not be used for any other purpose without specific written consent of Engineer, Engineer's sub-consultants, and Owner. Any unauthorized use of Engineer's work product shall be at user's sole risk and user shall indemnify Engineer against any liability or legal exposure related to the unauthorized use.
B. Drawings and Specifications are complementary, are to be taken as a whole, and should include sufficient information necessary for the execution and completion of the work in a manner consistent with the design intent. In the absence of explicit or reasonably inferable information on drawings or in specifications, promptly seek clarification from Engineer as a request for information.
C. Contractor is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Engineer has no such responsibilities beyond its own employees.
D. In an emergency affecting safety of persons or property, act to prevent or stop further damage, injury, or loss.
E. If a hazardous material or substance not addressed in the Construction Documents is encountered, immediately stop work in affected area and notify Owner and Engineer of the condition.
F. Temporarily relocate and restore existing equipment and appurtenances (whether or not shown on the drawings) that obstruct access to portions of the Work. Notify and coordinate with Owner prior to doing so.
G. Develop, implement, erect, and maintain safeguards to prevent damage, injury, or loss resulting from the work to (a) workers, occupants, passers-by, and other persons; (b) in-progress work, materials, and equipment under care, custody, and control of the contractor (whether on or off site); and (c) other property at the site or adjacent thereto not designated as part of the work for removal, relocation, or replacement. In the event of damage, injury, or loss, promptly notify Engineer and Owner and present proposed remedy. All damage to these elements must be repaired to the satisfaction of the Owner.
H. Promptly correct work rejected by Engineer or failing to conform to requirements of the Construction Documents. Associated costs (including additional testing or inspections, cost of uncovering and correction, and compensation for Engineer's services and expenses made necessary thereby) shall be the Contractor's responsibility.
I. Dimensions, quantities, and geometries provided for existing construction are based on original drawings and limited field documentation by Engineer. Field verify applicable information prior to submitting a bid, ordering materials, or otherwise committing resources to the Work. Provided dimensions take precedence over scaled dimensions. Dimensions of the new construction shall be adjusted as necessary to fit the existing conditions. The Engineer shall be notified in writing of any significant deviations from the dimensions or conditions shown on these drawings.
J. Drawings illustrate the completed work with elements in their final intended positions. Provide shoring, bracing, support, and sequence work as required to maintain the structural integrity of new or existing construction during the work.
K. Contractor is solely responsible for, and shall have sole control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the work. Engineer has no such responsibilities. Specific instruction that may be given in Construction Documents concerning construction means, methods, techniques, sequences, or procedures shall not relieve contractor of its responsibility for control and coordination.
L. Provide labor, materials, equipment, supervision, and coordination directly and incidentally necessary to perform the work in accordance with Construction Documents.
M. Promptly report to Engineer as a request for information known or suspected errors, inconsistencies, or omissions within or between Construction Documents, as well as known or suspected variance of the Construction Documents from existing conditions. Await direction from Engineer prior to proceeding with Work. For bidding purposes only, and unless otherwise directed by Engineer, the more stringent requirement or better quality shall take precedence as determined by Engineer.
N. Activities or duties of Engineer, or tests, inspections, or approvals required or performed by third parties shall not relieve Contractor of its obligation to perform the Work in accordance with Construction Documents.
O. Secure and pay for all permits, fees, licenses, and inspections by government agencies necessary for proper and compliant execution and completion of the work. Contractor shall be properly licensed to perform the specified Work.
P. Comply with and give notices required by laws, statutes, ordinances, codes, rules and regulations, and lawful orders of authorities having jurisdiction applicable to the Work.
Q. The Work will be performed at an occupied and operational facility. Coordinate construction activities and procedures with Owner to (a) maintain unobstructed existing means of egress from facility; (b) comply with facility's existing security procedures and requirements; and (c) provide not less than 48 hours advance notice to and gain approval from Owner prior to construction activities that will disrupt normal use of facility (including exceptional noise and/or vibrations, uncontrolled dust, obtrusive odors, or interruptions of utilities). Work not coordinated and approved in advance that disrupts the normal use of the facility may be stopped until proper coordination and approval is achieved. Contractor shall be responsible for any costs incurred as a consequence of stoppage.
R. Coordinate locations of on-site storage of materials and equipment with Owner so as to not unreasonably encumber facility or site. Do not allow construction materials, equipment, or procedures to overload or exceed the structural capacity of existing construction to remain, partially completed work, or completed work. Make inspections and/or perform analyses and tests necessary to verify that existing elements have adequate capacity to support proposed construction loads.

BUILDING CODES AND LOADS

A. Original Building Code Under Which the Structure was Constructed: Not Specified
B. Original Construction Documents prepared by Henningson, Durham and Richardson, Inc. dated January 1980, are available for review from Owner's Representative.
C. Current Building Code and Basis for Repair Work: The 2018 International Building Code (IBC), as adopted by the Mesa County Building Inspection Department, shall serve as the Governing Building Code.
D. Concrete Building Codes:
   1. ACI 318-14 for miscellaneous structural elements.
   2. ACI 350-06 for liquid containing elements only.
D. Rebuild Live Loads:
   1. Corridors and Walkways 100psf
   2. Stairs 100psf
E. Fluid Loads (New Design):
   1. 64 PCF for Wastewater

INSPECTIONS AND OBSERVATIONS

A. Observations are performed by the Engineer, or licensed design professional.
B. Special Inspections shall be performed by a qualified Testing Agency or Special Inspector. Additional inspections may be performed by the local building authority.
C. All construction shall be subject to review (observation) by the Engineer before it is concealed from view. Coordinate expected review items with the Engineer prior to the start of construction. Provide reasonable notification to the Engineer to allow for such review as the Work proceeds, 48 hours minimum unless noted otherwise.
D. Contractor to pay for and provide access for all inspections and observations, regardless of the entity retaining such services.

MATERIAL PROPERTIES

A. Original Construction (Per Sheet 15 of Original Drawings)
   1. Concrete Compressive Strength (f'c) 4000 psi at 28 days using normal weight aggregate.
   2. No. 4 and larger reinforcing steel ASTM A615-76a Grade 60.
B. Repair Construction
   1. Minimum concrete compressive Strength (f'c) 5000 psi at 28 days using normal weight aggregate.
   2. All reinforcing steel shall be ASTM A615 Grade 60 unless specifically noted otherwise.

Special Inspection Schedule

Verification and Inspection	Frequency	Inspector	Reference Standard(s)
Concrete Construction, Including Concrete Repairs (IBC Table 1705.3)			
Inspection of Reinforcing Steel Preparation and Placement	Prior to Each Placement	Special Inspector	ACI 318: CH 20, 25.2, 25.3, 26.6.1-26.6.3
Verifying use of Approved Material	With Fresh Material Testing	Special Inspector	ACI 318 CH 19, 26.4.3, 26.4.4
Fresh Cementitious Material Testing	First truck & every 4th truck thereafter	Special Inspector	ASTM C172, ASTM C31, AND ACI 318: 26.5, 26.12
Inspection for Installation and Maintenance of Specified Curing Temperature and Techniques	At each visit for other reasons	Special Inspector	ACI 318: 26.5.3-26.5.5
Mixing, Conveying, Depositing and Curing Concrete or Repair Materials	Once Each Placement Shift	Special Inspector	ACI 318: 26.5.2, 26.5.3
Verify weldability of reinforcing bars other than ASTM A706	Prior to start of Welding	Special Inspector	AWS D1.4 AND ACI 318: 26.6.4
Inspect single-pass fillet welds, maximum 5/16"	Prior to Each Placement	Special Inspector	AWS D1.4 AND ACI 318: 26.6.4
Inspect all other welds	Prior to Each Placement	Special Inspector	AWS D1.4 AND ACI 318: 26.6.4

Notes:
1. Reference ACI 318 2014 Edition for Special Inspection Requirements.
2. All special inspections shall be performed by a qualified Testing Agency or Special Inspector Retained by the Owner.
3. All reports shall be provided DIRECTLY to the Contractor, Owner and Engineer, for information only.

SHORING

A. Reference Section 03 01 01 for additional requirements.
B. Shoring shall be designed by a Professional Engineer licensed in Colorado.
C. Design Loads (Each Location, Ultimate)
   1. Dead Load: Self Weight
   2. Construction Live Load: 20 psf minimum. Contractor shall increase based on equipment and means and methods employed.
   3. Wind Load: (ASCE 7-16, ASCE 37-14)
      a. V = 105 mph
      b. Exposure = C
D. Soil loading per WJE Geotechnical Report dated October 22, 2019.

WATER TIGHTNESS TESTING

A. After the tanks have been cured, Cell 2 shall be filled with water to the maximum design height. The cell shall remain full at this level for a period of 72 hours. At the 72 hour mark, all exposed wall surfaces shall be inspected for leakage. Leakage shall be acceptable if there are no damp spots (or areas where moisture can be transferred to a dry hand). Perform water tightness testing after new walls have been constructed.
B. If water tightness testing is not passed, water shall be allowed to sit in the tank for an additional period of time up to 14 days. The contractor shall be responsible for correcting leaks in the new work by injection or other means. Submit leak correction procedure to the Owner and Engineer for approval. An allowance for addressing leaks due to concrete cracks shall be provided with the bid. Leaks due to faulty construction joints (water stops) or poor consolidation are responsibility of the Contractor.

Quality Control Testing Summary

Item or Test	Keyed Note(s)	Frequency	Reference Specification Section(s)	Reference Standard(s)
Sealant Adhesion Testing	N/A	See Specification	07 92 00	ASTM C1521

Notes:
1. This testing shall be performed by the Testing Agency, Coating Inspector or Engineer, with assistance from the Contractor as noted in the Specification Sections.

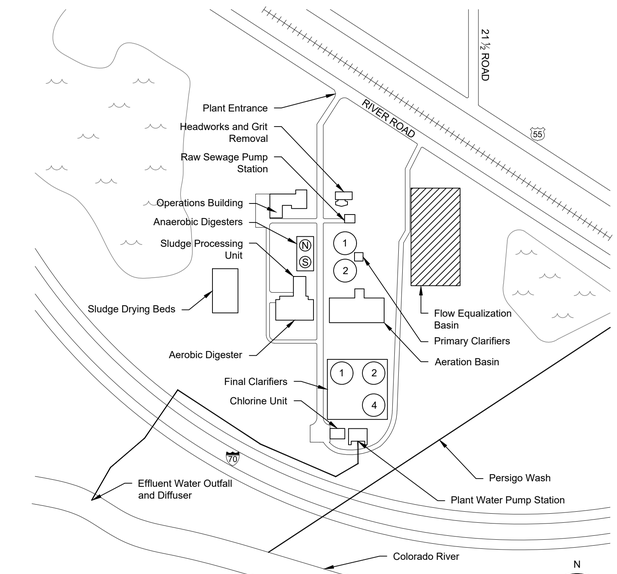
ABBREVIATIONS:

CIP	CAST-IN-PLACE
CL	CENTER LINE
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
EF	EACH FACE
EL	ELEVATION
EW	EACH WAY
EXT	EXTERIOR
(E)	EXISTING
FV	FIELD VERIFY
HORIZ	HORIZONTAL
JT	JOINT
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
NTS	NOT TO SCALE
OC	ON CENTER
RE	REFERENCE
REQ'D	REQUIRED
SIM	SIMILAR
SF	SQUARE FEET
TYP	TYPICAL
VERT	VERTICAL
w/	WITH

INDEX TO DRAWINGS:

SYMBOLS LEGEND:

- EXISTING DRAIN
- EXISTING PIPE PENETRATION
- MAXIMUM DESIGN FLUID LEVEL
- SOIL/EARTH
- GROUND WATER ELEVATION
- LOAD RESTRICTION ZONE



1 PROJECT MAP
SCALE: NTS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY TMM DATE 04/07/21
CHECKED BY CJL/KT DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

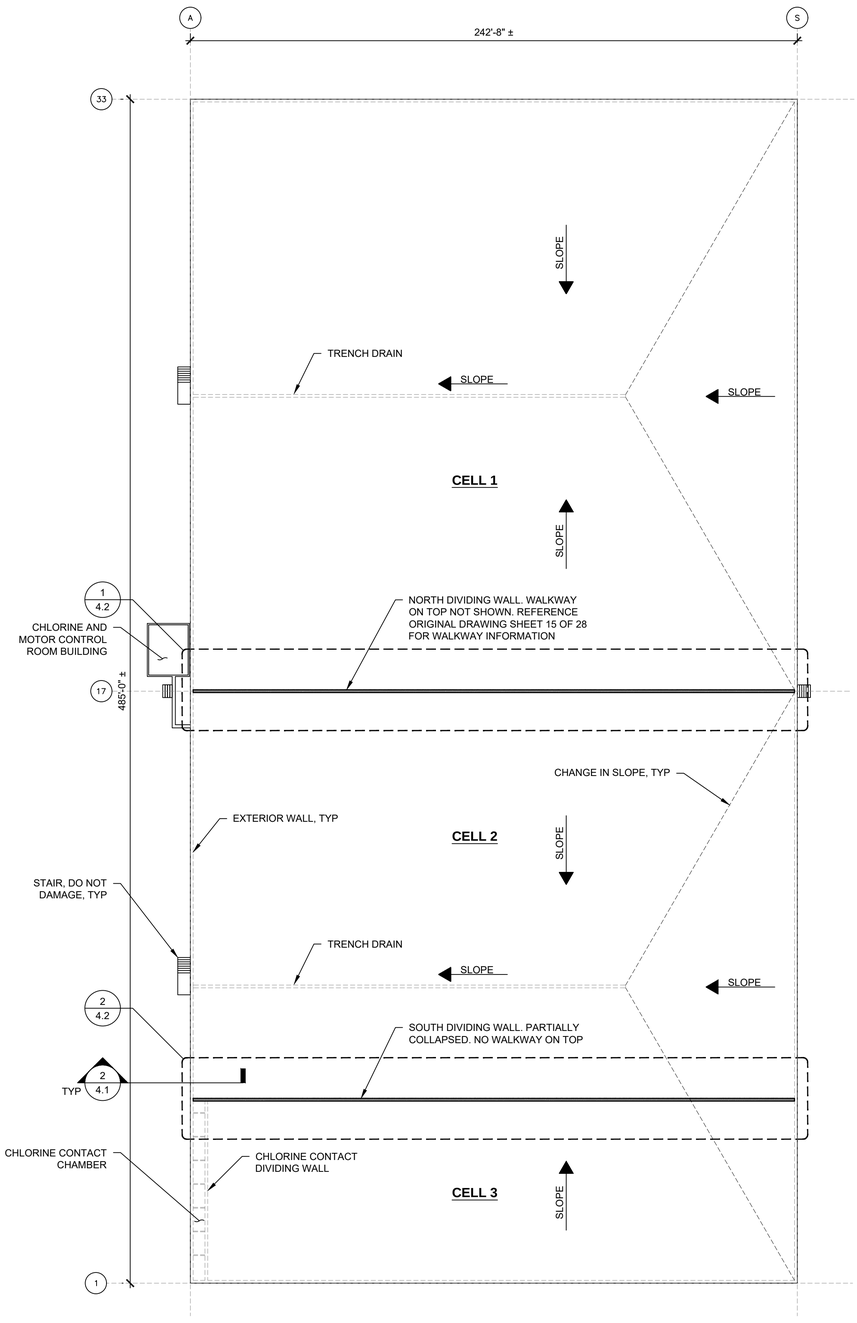
SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

FLOW EQUALIZATION BASIN
COVER SHEET

4.0



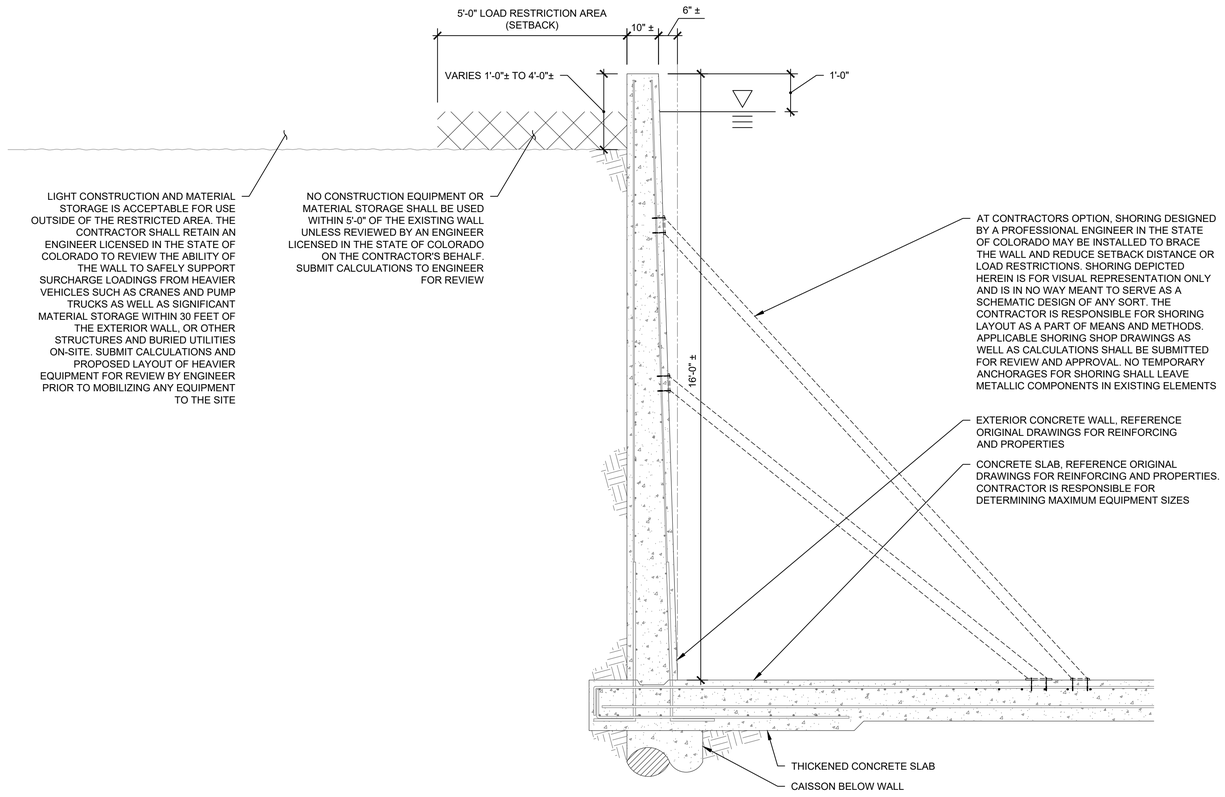
N

1 Flow Equalization Basin Plan

SCALE: 3/32" = 1'-0"

PLAN NOTES:

1. REFERENCE ORIGINAL DRAWING SHEETS 2,8,12,13,14,15,16,17,18,19 AND 20 OF 28 FOR ADDITIONAL INFORMATION.
2. SLOPES AND ELEVATIONS TO MATCH ORIGINAL AS SHOWN ON ORIGINAL DRAWING SHEETS 17,18 AND 19 OF 28.



2 Perimeter Wall Section and Setback Requirements

SCALE: 1/2" = 1'-0"

DETAIL NOTES:

1. REFERENCE ORIGINAL DRAWING SHEETS 12, 13 AND 15 OF 28 FOR ADDITIONAL INFORMATION.
2. SLAB CONSISTS OF 12" THICK TWO-WAY CONVENTIONALLY REINFORCED CONCRETE.
3. REFERENCE WJE GEOTECHNICAL INVESTIGATION REPORT DATED OCTOBER 22, 2019 FOR ADDITIONAL INFORMATION.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY TMM DATE 04/07/21
CHECKED BY CJL/KT DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED
0 1/2" 1" 2"
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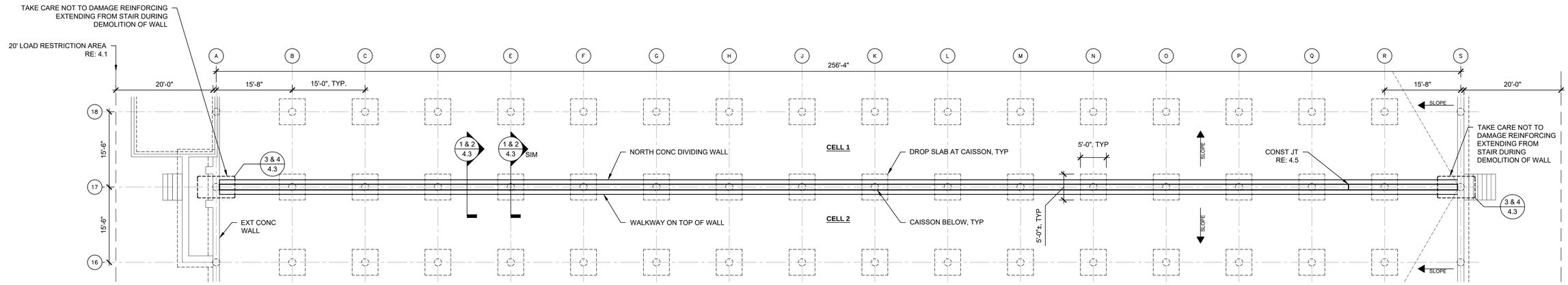
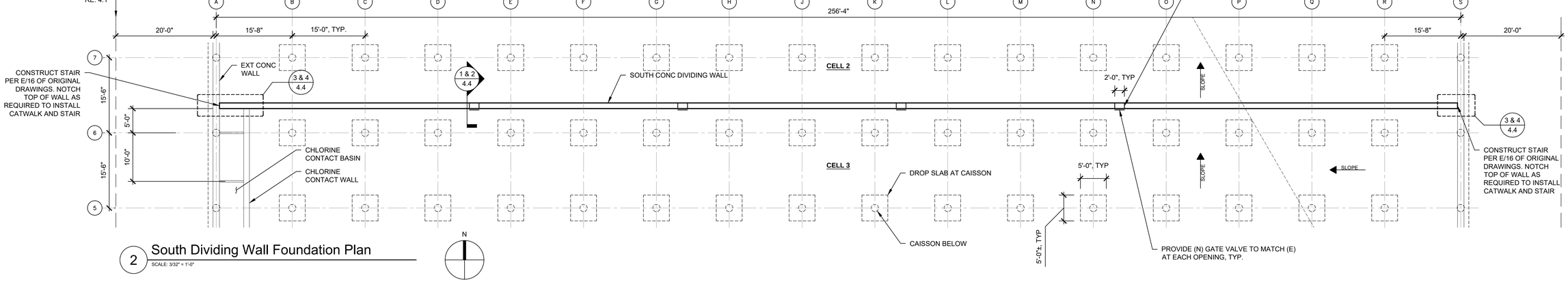
FLOW EQUALIZATION BASIN PLAN AND PERIMETER WALL

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.3



1 North Dividing Wall Foundation Plan
SCALE: 3/32" = 1'-0"



2 South Dividing Wall Foundation Plan
SCALE: 3/32" = 1'-0"

SHEET NOTES:
1. REFERENCE ORIGINAL DRAWING SHEETS 12,13,17,18 and 19 of 28 OF 28 FOR ADDITIONAL INFORMATION.
2. SLAB CONSISTS OF 12" TWO-WAY REINFORCED CONCRETE.
3. SLOPES AND ELEVATIONS TO MATCH ORIGINAL AS SHOWN ON ORIGINAL DRAWING SHEETS 17,18 AND 19 OF 28.

DESCRIPTION		DATE
REVISION 1	–	
REVISION 2	–	
REVISION 3	–	
REVISION 4 XXX	–	201X

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY TMM DATE 04/07/21
CHECKED BY CJL/KT DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES:
AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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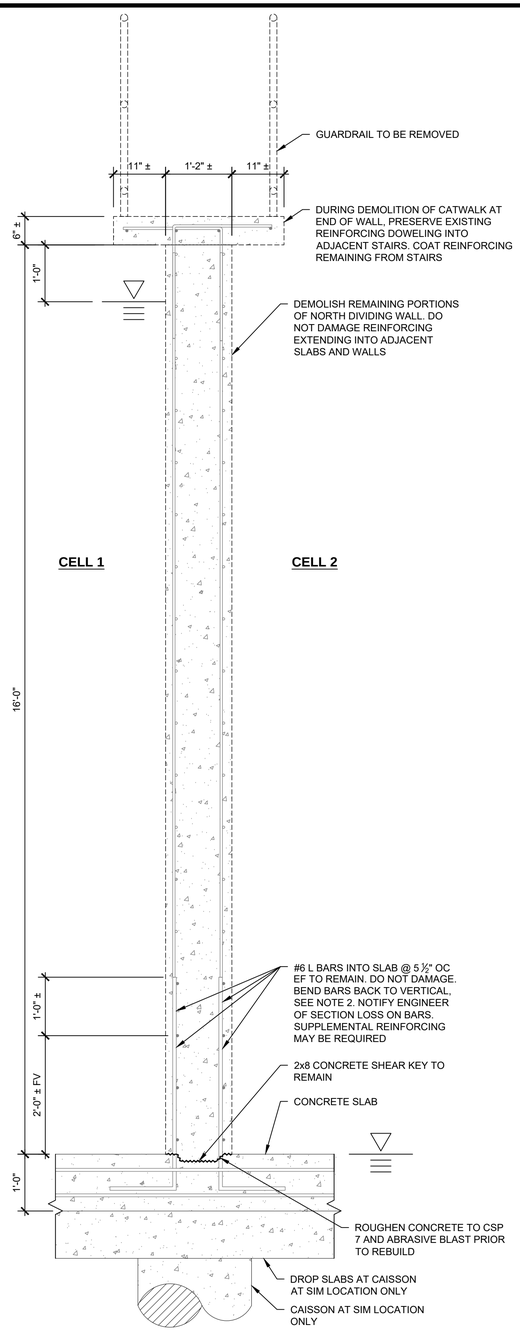
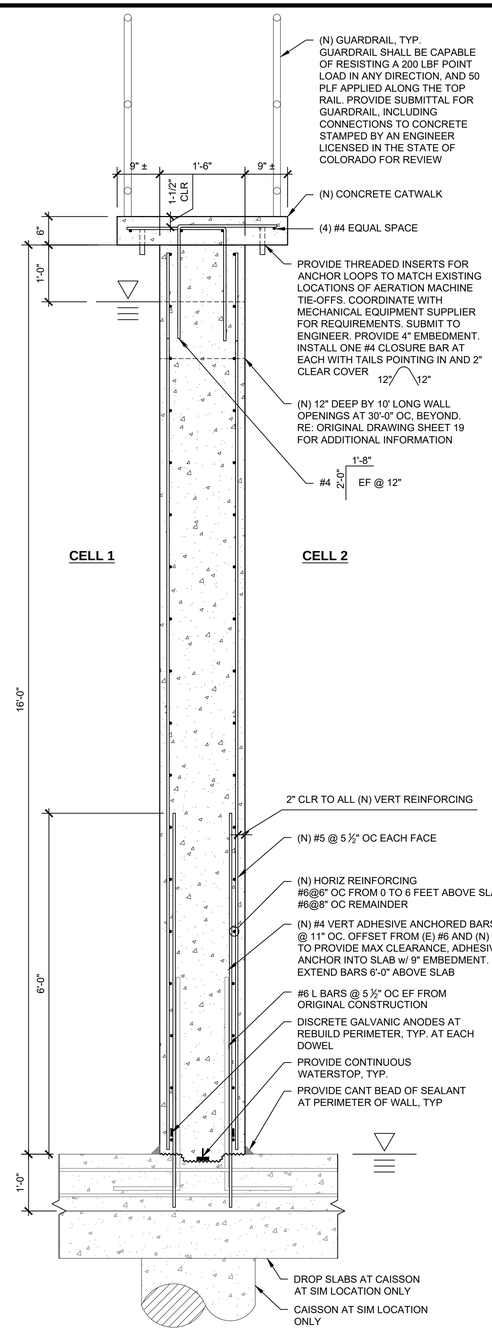
FLOW EQUALIZATION BASIN DIVIDING WALL PLANS

4.2

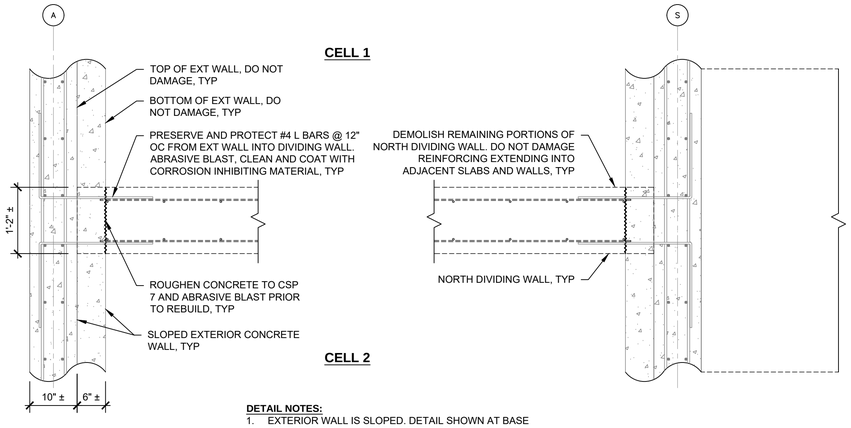


1 North Dividing Wall - Demolition
SCALE: 3/4" = 1'-0"



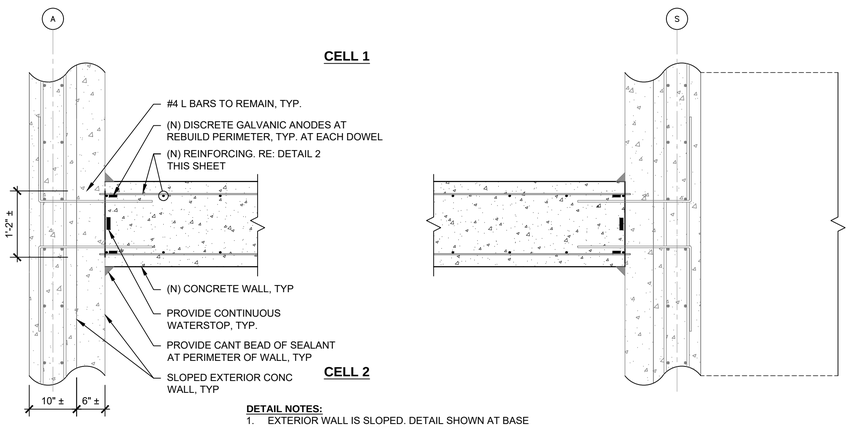
2 North Dividing Wall - Rebuild
SCALE: 3/4" = 1'-0"

SHEET NOTES:
1. REFERENCE ORIGINAL DRAWING SHEETS 12,13 AND 15 OF 28 FOR ADDITIONAL INFORMATION.
2. SOME REINFORCING SHOWN OFFSET FOR CLARITY. VERTICAL AND HORIZONTAL REINFORCING BARS SHALL BE IN THE SAME PLANE UNLESS OTHERWISE NOTED.
3. CONSTRUCTION JOINTS SHALL ALIGN WITH THE CENTER OF THE EXISTING WALL OPENINGS.



DETAIL NOTES:
1. EXTERIOR WALL IS SLOPED. DETAIL SHOWN AT BASE OF EXTERIOR ALL, UPPER PORTIONS SIMILAR.

3 North Dividing Wall to Perimeter Wall Connections - Demolition
SCALE: 3/4" = 1'-0"



DETAIL NOTES:
1. EXTERIOR WALL IS SLOPED. DETAIL SHOWN AT BASE OF EXTERIOR ALL, UPPER PORTIONS SIMILAR.

4 North Dividing Wall to Perimeter Wall Connections - Rebuild
SCALE: 3/4" = 1'-0"

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY TMM DATE 04/07/21
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SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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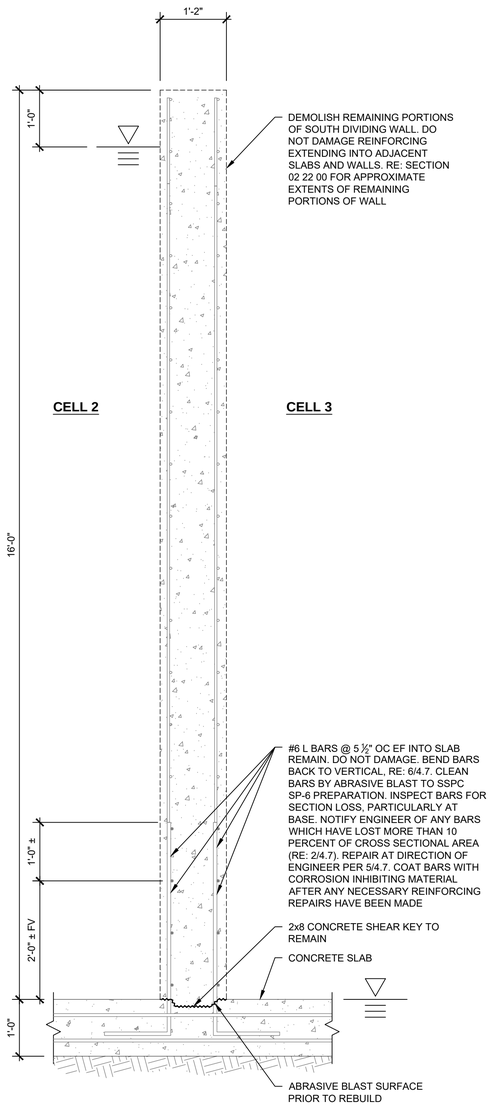
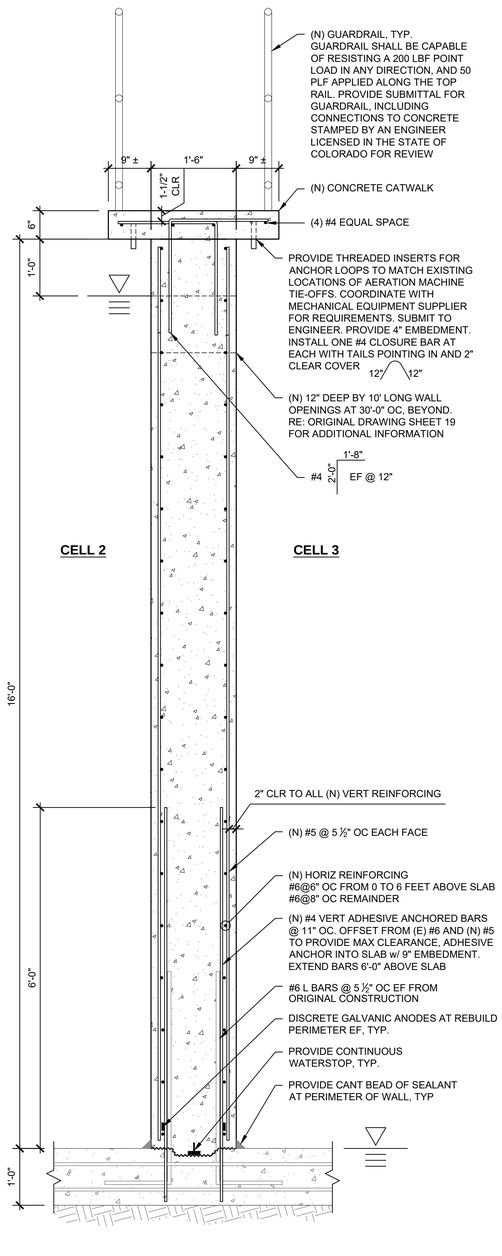
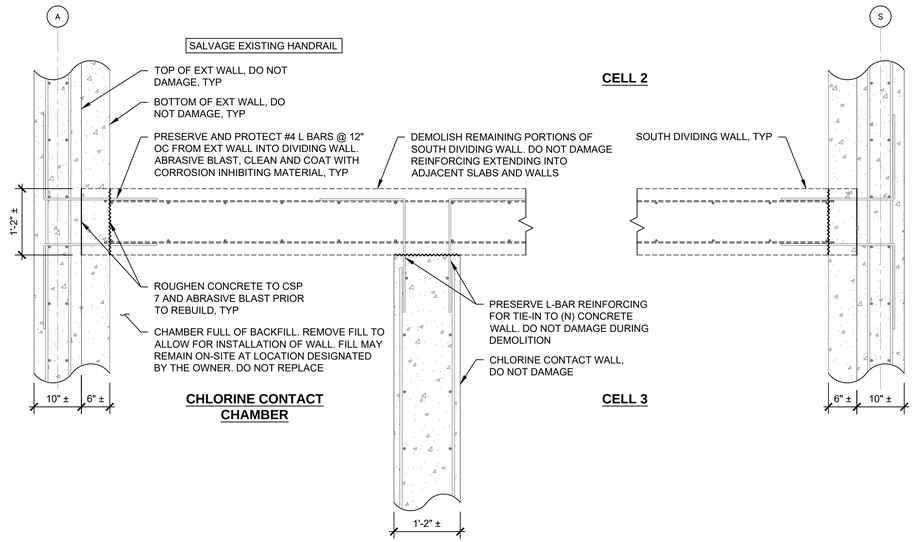
FLOW EQUALIZATION BASIN
NORTH DIVIDING WALL REBUILD DETAILS



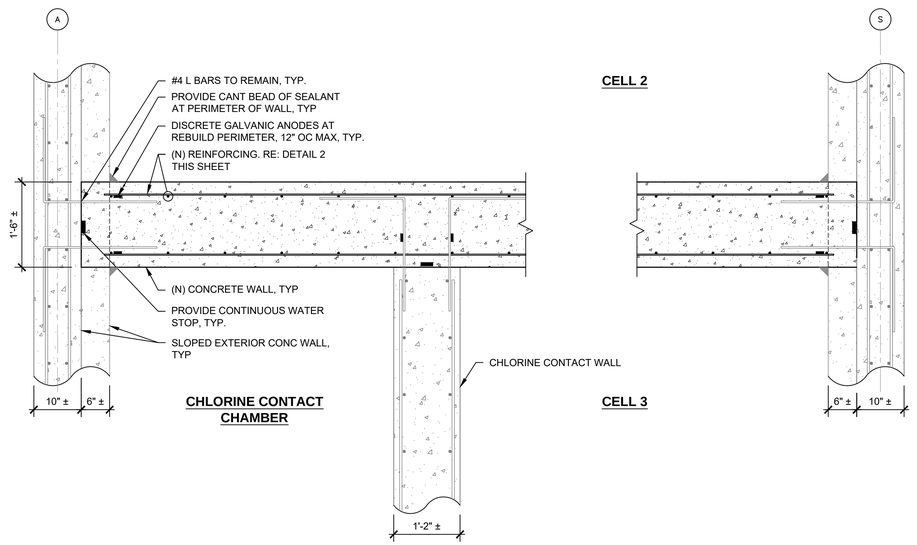
1 South Dividing Wall - Demolition
SCALE: 3/4" = 1'-0"



2 South Dividing Wall - Rebuild
SCALE: 3/4" = 1'-0"



3 South Dividing Wall to Perimeter Wall Connections - Demolition
SCALE: 3/4" = 1'-0"



4 South Dividing Wall to Perimeter Wall Connections - Rebuild
SCALE: 3/4" = 1'-0"

SHEET NOTES:
1. REFERENCE ORIGINAL DRAWING SHEETS 12,13 AND 15 OF 28 FOR ADDITIONAL INFORMATION.
2. SOME REINFORCING SHOWN OFFSET FOR CLARITY. VERTICAL AND HORIZONTAL REINFORCING BARS SHALL BE IN THE SAME PLANE UNLESS OTHERWISE NOTED.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY TMM DATE 04/07/21
CHECKED BY CJL/KT DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

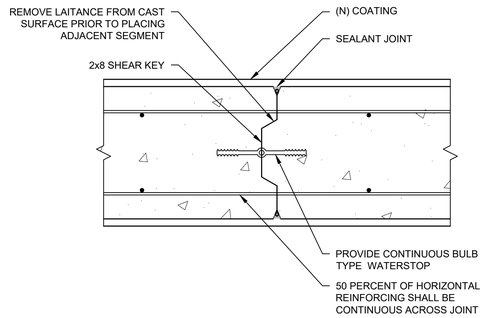
SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

FLOW EQUALIZATION BASIN
SOUTH DIVIDING WALL REBUILD DETAILS

4.4

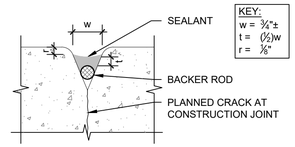


DETAIL NOTES:
1. MAXIMUM CONSTRUCTION JOINT SPACING SHALL BE 30'-0".
2. ALLOW CONCRETE TO CURE A MINIMUM OF 14 DAYS PRIOR TO PLACING ADJACENT SECTIONS.

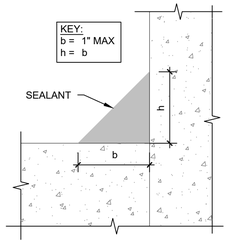
1 Typical Vertical Construction Joint
SCALE: 1-1/2" = 1'-0"

TYPICAL SEALANT NOTES:
THESE NOTES SHALL APPLY TO ALL SEALANT JOINT WORK UNLESS NOTED OTHERWISE ON A SPECIFIC DETAIL. THESE NOTES SERVE TO SUPPLEMENT THE SPECIFICATIONS. REFERENCE SPECIFICATION SECTION 07 92 00 FOR ADDITIONAL INFORMATION.

1. ABBREVIATIONS: w = JOINT WIDTH, h = SEALANT HEIGHT, t = SEALANT THICKNESS, r = RECESS OF JOINT, AND b = BOND LINE.
2. REMOVE ALL GROUT, SEALANT, BACKER ROD, BOND BREAKER TAPE, ETC. IN JOINT OR CRACK.
3. SLIGHTLY GRIND THE CONCRETE SURFACES WITHIN THE JOINT WITH A GRINDING WHEEL HAVING A PROFILE APPROXIMATELY THE SAME AS THE JOINT.
4. PROVIDE PROPER JOINT DEPTH PER DETAILS.
5. AFTER GRINDING, CLEAN DEBRIS FROM THE JOINT USING A STIFF BRUSH AND OIL-FREE COMPRESSED AIR. VACUUM THE JOINT AND SURFACES WITHIN 6 INCHES OF JOINT.
6. INSTALL PRIMER ON ALL SURFACES. POROUS SURFACES SHALL BE PRIMED REGARDLESS OF MANUFACTURER RECOMMENDATIONS TO EXCLUDE PRIMER.
7. INSTALL BACKER ROD OR BOND BREAKER TAPE WHERE INDICATED AND SEALANT PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND THESE DOCUMENTS.
8. CONFIRM REQUIREMENTS OF SEALANT MANUFACTURER PRIOR TO SUBMITTING BID. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THESE DOCUMENTS AND MANUFACTURERS TYPICAL DETAILS, WRITTEN RECOMMENDATIONS, OR INSTRUCTIONS. ENGINEER SHALL DETERMINE WHICH APPLY.



DETAIL NOTES:
1. INSTALL SEALANT FLUSH WITH SURFACE WHERE COATING IS TO BE INSTALLED OVER JOINT.



2 Typical Joint Sealant Details and Notes
SCALE: 6" = 1'-0"

10% SECTION LOSS

BAR NO.	DIAMETER in.	AREA in.²	BAR DIAMETER WITH 10% SECTION LOSS in.	
			CIRCUMFERENTIAL LOSS	ONE - SIDED LOSS
3	0.375	0.110	0.356	0.315
4	0.500	0.196	0.474	0.420
5	0.625	0.307	0.593	0.525
6	0.750	0.442	0.712	0.625
7	0.875	0.601	0.830	0.735
8	1.000	0.785	0.949	0.835

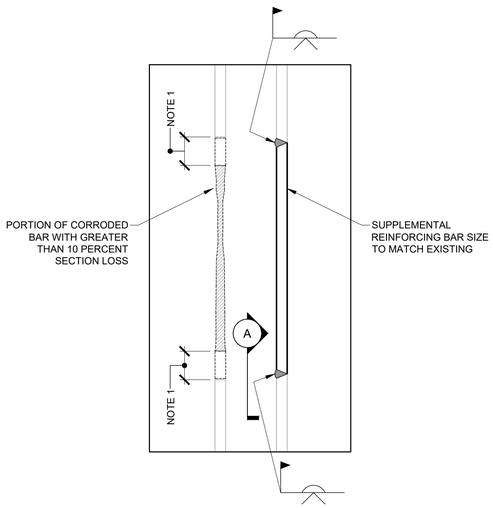
CIRCUMFERENTIAL LOSS **ONE - SIDED LOSS**

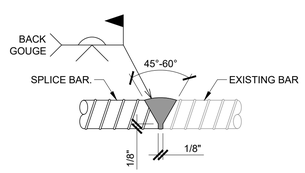
3 Section Loss Chart
SCALE: NOT TO SCALE

BAR NO.	MIN LAP LENGTH in.
3	12
4	18
5	24
6	32

DETAIL NOTES:
1. CLASS B SPLICES. (QUALIFIED)
2. UNCOATED BARS.
3. ALL CONSIDERED "TOP" BARS w/ > 12" OF CONCRETE BELOW.
4. MINIMUM CLEAR COVER OF 2".

4 Reinforcing Tension Lap Splice Schedule
SCALE: NOT TO SCALE

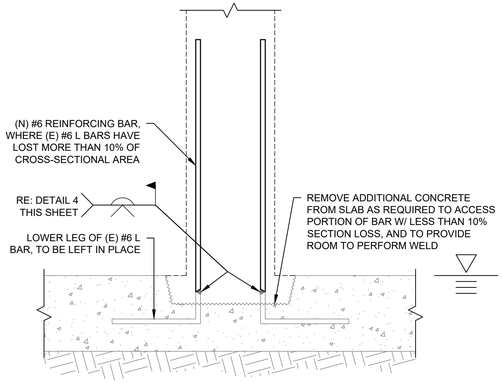




SECTION A - SINGLE V - GROOVE WELD SPLICE

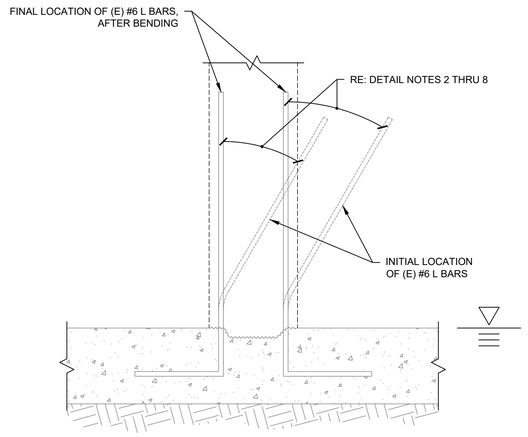
DETAIL NOTE:
1. CUT BAR 3 INCHES MINIMUM BEYOND SECTION LOSS AND REMOVE.

5 Supplemental Reinforcing Installation
SCALE: NOT TO SCALE



DETAIL NOTES:
1. NEW REINFORCING STEEL IN WALL AND EXISTING REINFORCING STEEL IN SLAB OMITTED FOR CLARITY. REFERENCE 2/4.5 AND 2/4.6 FOR INFORMATION ON LAYOUT OF REINFORCING STEEL.
2. REFERENCE DETAIL 4 THIS SHEET FOR ADDITIONAL REQUIREMENTS FOR BUTT WELD REINFORCING SPLICES.

6 Base of Wall Reinforcing Inspection and Repair Detail
SCALE: 1" = 1'-0"



DETAIL NOTES:
1. NEW REINFORCING STEEL IN WALL AND EXISTING REINFORCING STEEL IN SLAB OMITTED FOR CLARITY. REFERENCE 2/4.4 AND 2/4.5 FOR INFORMATION ON LAYOUT OF REINFORCING STEEL.
2. PREHEAT BARS PRIOR TO BENDING. APPLY HEAT BY METHODS THAT DO NOT HARM REINFORCING BAR MATERIAL OR CAUSE DAMAGE TO CONCRETE.
3. PREHEAT LENGTH OF REINFORCING BAR EQUAL TO AT LEAST FIVE BAR DIAMETERS IN EACH DIRECTION FROM CENTER OF BEND, BUT DO NOT EXTEND PREHEATING BELOW CONCRETE SURFACE.
4. DO NOT ALLOW TEMPERATURE OF REINFORCING BAR AT CONCRETE INTERFACE TO EXCEED 500°F.
5. PREHEAT TEMPERATURE OF REINFORCING BAR SHALL BE BETWEEN 1100°F AND 1200°F.
6. MAINTAIN PREHEAT TEMPERATURE UNTIL BENDING IS COMPLETE.
7. UNLESS OTHERWISE PERMITTED, MEASURE PREHEAT TEMPERATURE WITH MEASUREMENT CRAYONS OR CONTACT PYROMETER.
8. DO NOT ARTIFICIALLY COOL HEATED REINFORCING BARS UNTIL BAR TEMPERATURE IS LESS THAN 600°F.

7 Base of Wall Reinforcing Bending
SCALE: 1" = 1'-0"

TYPICAL CONCRETE REMOVAL PROCEDURE AT PERIMETER OF DEMOLITION:

1. CONCRETE REMOVAL PROCEDURE:
   - 1.A. REMOVE UNSOUND CONCRETE AND, AS NECESSARY, SOUND CONCRETE USING EITHER 15-LB CHIPPING HAMMER (DETAIL WORK ADJACENT TO AND BENEATH REINFORCING STEEL AND POSTS) OR 30-LB CHIPPING HAMMER (REMOVAL OF CONCRETE AT REPAIR AREAS).
   - 1.B. CLEARANCE AROUND REINFORCING BARS TO REMAIN OF AT LEAST 3/4 INCHES.
   - 1.C. TAKE CARE NOT TO EXCESSIVELY VIBRATE THE EXPOSED REINFORCING WITH THE CHIPPING HAMMER, IN ORDER TO AVOID FRACTURING ANY OF THE CONCRETE THAT IS BONDED TO THE REINFORCEMENT OUTSIDE THE PERIMETER OF THE REMOVAL.
   - 1.D. PROVIDE CONCRETE SURFACE PROFILE AS SPECIFIED OR INDICATED ON THE DRAWINGS. SURFACE PROFILES SHALL BE AS DEFINED ICRI 310.2R, AND JUDGED BASED ON COMPARISON TO PROFILE CHIPS SUPPLIED BY ICRI. UNLESS NOTED OTHERWISE, CSP 7, MIN SHALL BE PROVIDED.
   - 1.E. LIMIT CHIPPING HAMMER SIZE AND IMPACT ANGLE TO MINIMIZE DAMAGE TO SOUND CONCRETE TO REMAIN. IMPACT ANGLE SHALL BE NO MORE THAN 60° TO SURFACE.
2. REMOVE MICROFRACTURED OR BRUISED CONCRETE BY ABRASIVE BLASTING THE EXPOSED CONCRETE SURFACES AT THE PERIMETER OF THE REMOVAL. BE SURE TO ABRASIVE BLAST THE VERTICAL SAWCUT EDGES AROUND THE PERIMETER.

TYPICAL EXPOSED REINFORCING TO REMAIN PREPARATION:

1. PER SSPC SP6, COMMERCIAL BLAST CLEAN THE EXPOSED REINFORCING STEEL BY ABRASIVE BLASTING TO REMOVE ALL RUST SCALE. EXERCISE CARE TO PREPARE ALL SIDES OF REINFORCING BARS.
2. COAT ALL AREAS OF EXPOSED EXISTING REINFORCING STEEL TO REMAIN WITH TWO COATS OF CORROSION INHIBITING COATING OR EPOXY.

DESCRIPTION	DATE
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REVISION 2	
REVISION 3	
REVISION 4	

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CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

FLOW EQUALIZATION BASIN TYPICAL CONCRETE DETAILS

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2

PERSIGO WASTE WATER TREATMENT PLANT
PRIMARY CLARIFIER REPAIRS

Owner: City of Grand Junction
Grand Junction, Colorado

Owners Representative: Kirsten Armbruster, PE
970.244.1421
kirstena@gjcity.org

Engineer-of-Record: Wiss, Janney, Elstner Associates, Inc. (WJE)
3609 South Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80232

Engineer-of-Record Representative: Mr. Terry McGovern, PE
303.914.4300
tmcgovern@wje.com

Project Address: Persigo Wastewater Treatment Plant
2145 River Road
Grand Junction, Colorado 81505

PRIMARY CLARIFIER PROJECT DESCRIPTION

The work at the Primary Clarifier repairs includes removal of the dome roof structure and installation of a concrete coating system on the interior of each clarifier tank.

SPECIAL CONSIDERATIONS

The Primary Clarifiers cannot be shutdown at the same time. Work on one Clarifier must be completed in full and the clarifier put back into service, prior to shutdown commencing on the next clarifier. Owner will clean Clarifiers after shutdown to an extent commensurate with that shown in Section 02 22 00. Contractor is responsible for providing access to clarifier for work. Contractor shall take care to not damage or otherwise clog any equipment or plumbing during surface preparation. Any repair or replacement of damaged equipment or plumbing will be withheld from payment or back charged to the Contractor. Contractor to coordinate rotation of the skimmers and other mechanical equipment, and positioning of the bottom screed plates, with the City in order to gain access for surface preparation and coating installation. Limiting the time of shutdown is critical for the work at the clarifiers. Contractors are encouraged to take reasonable steps to limit shutdown time.

The removal of the dome roof is a delegated design item to meet the requirements of the construction documents. There are no original drawings available for the dome structure. There is a 5'-0" minimum setback for heavy equipment that must be followed when working around the Clarifiers and adjacent structures that must be considered when developing a removal plan.

DRAWING SUBMITTALS

1. Shutdown plan for taking structures offline to perform the work. Submit with bid.
2. Shutdown and site plan for Add Alternate 5-4, assuming the existing dome roof will be undamaged during removal, and stored for later re-use by the City. Submit with bid.

REQUIRED MOCKUP SUMMARY

1. A mockup of concrete coating shall be performed and testing completed prior to full-scale coating work.
2. Guardrail mockup of one section adjacent to Pump Station.

Keyed Note Schedule

Callout	Plan Hatch/Symbol	Name	Unit	Total Estimated Quantity	Description	Reference Specification Section(s)	Reference Detail(s)
5-1		Concrete Coating	SF	7,700 SF Each 15,400 SF Total	Properly prepare concrete surface and install immersion grade concrete coating on Clarifier walls, through, sludge pits, etc. as noted on 5.4 Due to acid leaching of the concrete, up to ⅛ inch of the concrete surface shall be removed during preparation at the upper portions of the clarifiers as indicated herein.	09 97 23	5.5
Alternate 5-2	None	Concrete Coating	SF	10,300 SF Each 20,600 SF Total	Properly prepare concrete surface and install immersion grade concrete coating on Clarifier slabs, as noted on 5.4. Due to acid leaching of the concrete, up to ¼ inch of the concrete surface shall be removed during preparation at the upper portions of the clarifiers as indicated herein.	09 97 23	5.5
5-3	None	Remove Dome & Entrance Extension	EA	2	Remove metal dome structure. Properly terminate mechanical and electrical items at connection to Pump Station. Grind down flush connection hardware after removal to allow for installation of new coating.	02 41 19	5.2
Alternate 5-4		Remove & Salvage Dome	EA	2	Remove metal dome structures (not inclusive of entrance extensions), to be salvaged for re-use.	02 41 19	5.2
5-5		Guardrail	LF	380 LF Each 760 LF Total	Install guardrail at locations indicated after dome and entrance extension removal. Guardrail shall match in appearance (number of members, size, components, etc.) as closely as possible the existing guardrails. Guardrail system shall include 4-inch kick plate when adjacent to walking surfaces. Provide temporary fencing at perimeter of clarifier walls prior to final instillation.	05 52 00	1/5.5
5-6		New Grating	SF	30 SF Each 60 SF Total	Install new grating at Clarifier entrance platforms, to cover the sludge and scum pits. New grating to match existing.	05 53 00	5.4

ABBREVIATIONS:

CLR	CLEAR
CONN.	CONNECTION
(E)	EXISTING
FV	FIELD VERIFY
LF	LINEAL FEET
MAX	MAXIMUM
MIN	MINIMUM
MISC.	MISCELLANEOUS
(N)	NEW
OPP	OPPOSITE
RE	REFERENCE
SIM	SIMILAR
SF	SQUARE FEET
TYP	TYPICAL
w/	WITH

INDEX TO DRAWINGS:

SYMBOLS LEGEND:

- EXISTING FULL HEIGHT WALL
- MAXIMUM DESIGN FLUID LEVEL
- SOIL/EARTH
- CONCRETE COATING
- EXISTING DOME HATCH
- GUARDRAILS
- GRATING

GENERAL NOTES

A. Drawings and associated Specifications (referred to in general as the Construction Documents) apply only to the specific project identified in Titleblock, and shall not be used for any other purpose without specific written consent of Engineer, Engineer's sub-consultants, and Owner. Any unauthorized use of Engineer's work product shall be at user's sole risk and user shall indemnify Engineer against any liability or legal exposure related to the unauthorized use.
B. Drawings and Specifications are complementary, are to be taken as a whole, and should include sufficient information necessary for the execution and completion of the work in a manner consistent with the design intent. In the absence of explicit or reasonably inferable information on drawings or in specifications, promptly seek clarification from Engineer as a request for information.
C. Contractor is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Engineer has no such responsibilities beyond its own employees.
D. In an emergency affecting safety of persons or property, act to prevent or stop further damage, injury, or loss.
E. If a hazardous material or substance not addressed in the Construction Documents is encountered, immediately stop work in affected area and notify Owner and Engineer of the condition.
F. Temporarily relocate and restore existing equipment and appurtenances (whether or not shown on the drawings) that obstruct access to portions of the Work. Notify and coordinate with Owner prior to doing so.
G. Develop, implement, erect, and maintain safeguards to prevent damage, injury, or loss resulting from the work to (a) workers, occupants, passers-by, and other persons; (b) in-progress work, materials, and equipment under care, custody, and control of the contractor (whether on or off site); and (c) other property at the site or adjacent thereto not designated as part of the work for removal, relocation, or replacement. In the event of damage, injury, or loss, promptly notify Engineer and Owner and present proposed remedy. All damage to these elements must be repaired to the satisfaction of the Owner.
H. Promptly correct work rejected by Engineer or failing to conform to requirements of the Construction Documents. Associated costs (including additional testing or inspections, cost of uncovering and correction, and compensation for Engineer's services and expenses made necessary thereby) shall be the Contractor's responsibility.
I. Dimensions, quantities, and geometries provided for existing construction are based on original drawings and limited field documentation by Engineer. Field verify applicable information prior to submitting a bid, ordering materials, or otherwise committing resources to the Work. Provided dimensions take precedence over scaled dimensions. Dimensions of the new construction shall be adjusted as necessary to fit the existing conditions. The Engineer shall be notified in writing of any significant deviations from the dimensions or conditions shown on these drawings.
J. Drawings illustrate the completed work with elements in their final intended positions. Provide shoring, bracing, support, and sequence work as required to maintain the structural integrity of new or existing construction during the work.
K. Contractor is solely responsible for, and shall have sole control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the work. Engineer has no such responsibilities. Specific instruction that may be given in Construction Documents concerning construction means, methods, techniques, sequences, or procedures shall not relieve contractor of its responsibility for control and coordination.
L. Provide labor, materials, equipment, supervision, and coordination directly and incidentally necessary to perform the work in accordance with Construction Documents.
M. Promptly report to Engineer as a request for information known or suspected errors, inconsistencies, or omissions within or between Construction Documents, as well as known or suspected variance of the Construction Documents from existing conditions. Await direction from Engineer prior to proceeding with Work. For bidding purposes only, and unless otherwise directed by Engineer, the more stringent requirement or better quality shall take precedence as determined by Engineer.
N. Activities or duties of Engineer, or tests, inspections, or approvals required or performed by third parties shall not relieve Contractor of its obligation to perform the Work in accordance with Construction Documents.
O. Secure and pay for all permits, fees, licenses, and inspections by government agencies necessary for proper and compliant execution and completion of the work. Contractor shall be properly licensed to perform the specified Work.
P. Comply with and give notices required by laws, statutes, ordinances, codes, rules and regulations, and lawful orders of authorities having jurisdiction applicable to the Work.
Q. The Work will be performed at an occupied and operational facility. Coordinate construction activities and procedures with Owner to (a) maintain unobstructed existing means of egress from facility; (b) comply with facility's existing security procedures and requirements; and (c) provide not less than 48 hours advance notice to and gain approval from Owner prior to construction activities that will disrupt normal use of facility (including exceptional noise and/or vibrations, uncontrolled dust, obtrusive odors, or interruptions of utilities). Work not coordinated and approved in advance that disrupts the normal use of the facility may be stopped until proper coordination and approval is achieved. Contractor shall be responsible for any costs incurred as a consequence of stoppage.
R. Coordinate locations of on-site storage of materials and equipment with Owner so as to not unreasonably encumber facility or site. Do not allow construction materials, equipment, or procedures to overload or exceed the structural capacity of existing construction to remain, partially completed work, or completed work. Make inspections and/or perform analyses and tests necessary to verify that existing elements have adequate capacity to support proposed construction loads.

Quality Control Testing Summary

Item or Test	Keyed Note(s)	Frequency	Reference Specification Section(s)	Reference Standard(s)
Coating Adhesion Testing (Puck Pull-Off)	5-2	1 Additional Location EA Clarifier During Production	09 97 23	ASTM D7234
Sealant Adhesion Testing	N/A	See Specification	07 92 00	ASTM C1521

Notes:
1. This testing shall be performed by the Testing Agency, Coating Inspector or Engineer, with assistance from the Contractor as noted in the Specification Sections.

BUILDING CODES AND LOADS

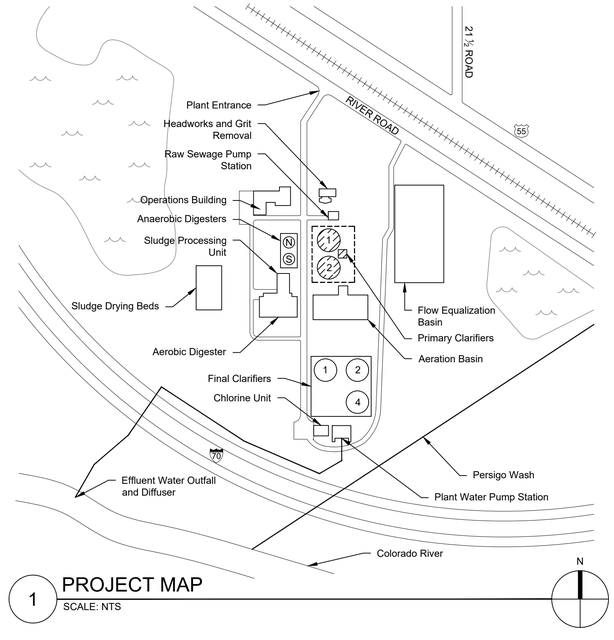
A. Original Building Code Under Which the Structures were Constructed: Not Specified
   1. Original Construction Documents prepared by Henningson, Durham and Richardson (HDR), Inc. dated May 1985, are available for review from Owner's Representative.
B. Current Building Code and Basis for Repair Work: The 2018 International Existing Building Code (IEBC), as adopted by the Mesa County Building Inspection Department, shall serve as the Governing Building Code for the Work.

INSPECTIONS AND OBSERVATIONS

A. Observations are performed by the Engineer, or licensed design professional.
B. Special Inspections shall be performed by a qualified Testing Agency or Special Inspector. Additional inspections may be performed by the local building authority.
C. All construction shall be subject to review (observation) by the Engineer before it is concealed from view. Coordinate expected review items with the Engineer prior to the start of construction. Provide reasonable notification to the Engineer to allow for such review as the Work proceeds, 48 hours minimum unless noted otherwise.
D. Contractor to pay for and provide access for all inspections and observations, regardless of the entity retaining such services.

MATERIAL PROPERTIES

A. Original Construction (Per Sheet IV-39 of Original Drawings)
   1. Concrete Compressive Strength (f'c) 4000 psi at 28 days using normal weight aggregate.
   2. No. 4 and larger reinforcing steel ASTM A615-76a Grade 60.
B. The dome structure materials are unknown, field verify. Original construction documents (drawings and specifications) for the dome structure are not available.



1 PROJECT MAP
SCALE: NTS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY AGL/TMM DATE 04/07/21
CHECKED BY SWF DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

PRIMARY CLARIFIER COVER SHEET

5.0

PROJECT NO. F0010-F001051

WJE PROJECT NO. 2019.3776.2

Keyed Note Summary

Callout	Plan Hatch/Symbol	Name	Total Estimated Quantity (This Sheet)
5-3		Remove Dome & Entrance Extension	2 EA
ALTERNATE 5-4		Remove & Salvage Dome	2 EA

NOTE: SEE KEYED NOTE SCHEDULE ON 5.0.

KEYED NOTE LEGEND

KEYNOTE CALLOUT; RE: KEYED NOTE SCHEDULE ON SHEET 5.0 FOR ALL SPECIFIC REPAIR INFORMATION

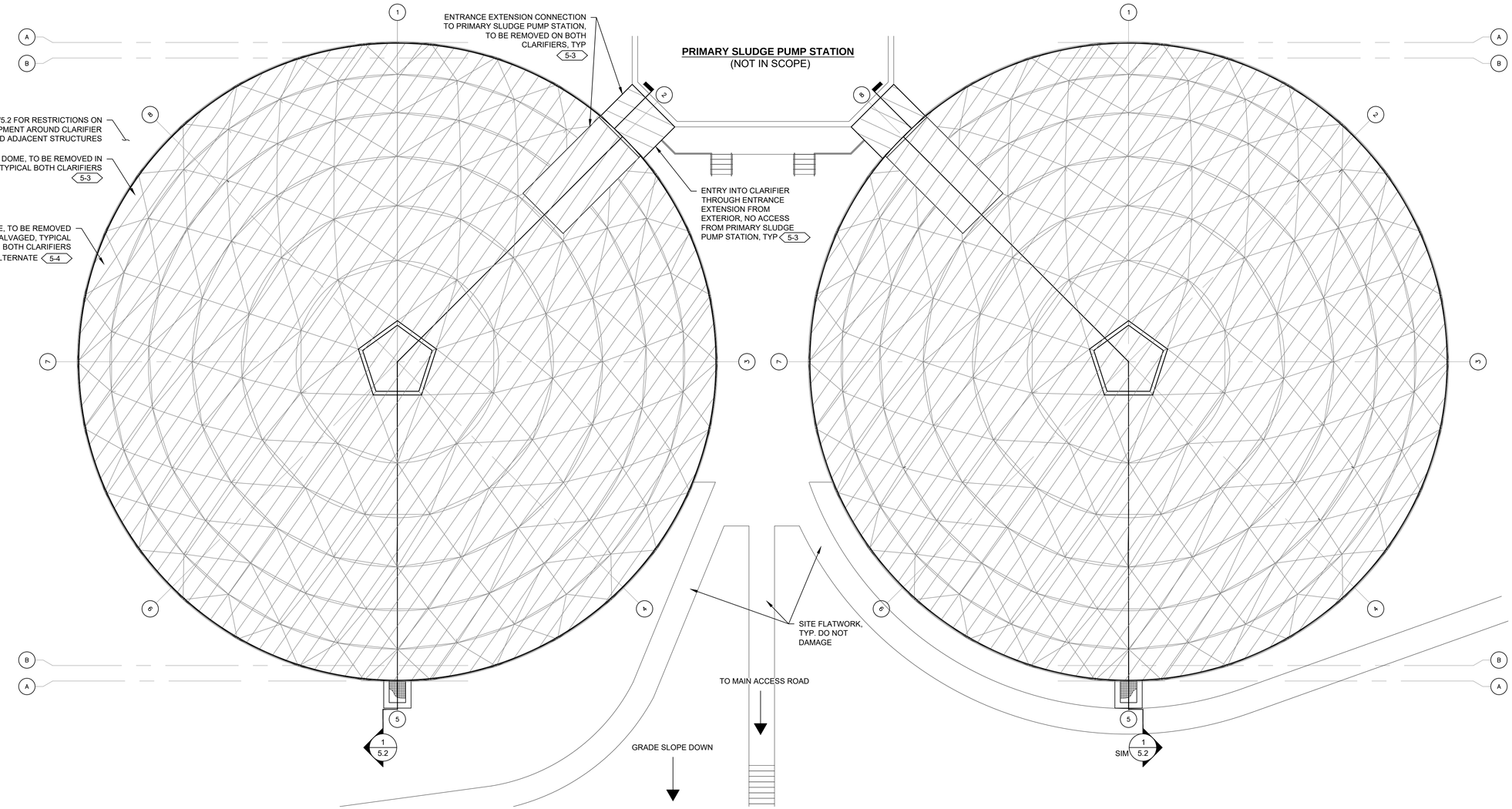
#-# (#)

QUANTITY OF REPAIRS TO OCCUR AT NOTED LOCATION; RE: KEYED NOTE SCHEDULE ON SHEET 5.0 FOR QUANTITY INFORMATION (if applicable)

(#)

ARROW DESIGNATES APPROXIMATE LOCATION OR AREA OF REPAIR TO BE PERFORMED

USED TO DESIGNATE APPROXIMATE AREA OF WORK, IF APPLICABLE



CLARIFIER No. 1

CLARIFIER No. 2

PLAN NOTE:
1. ALL WORK AREAS FROM CLARIFIER No. 1 APPLY TO CLARIFIER No. 2.

1 Primary Clarifier Demolition Plan

SCALE: 3/32" = 1'-0"

N

SHEET NOTES:
1. REFERENCE ORIGINAL DRAWINGS IV-12 TO IV-14 AND V-7 TO V-8 FOR ADDITIONAL INFORMATION.
2. GRADE NOT SHOWN IN FULL. CONTRACTOR IS RESPONSIBLE FOR VISITING SITE AND VERIFYING SLOPES AROUND SITE WHICH MAY IMPACT WORK.
3. EXTENSIVE UNDERGROUND UTILITIES ARE PRESENT ON-SITE. COORDINATE WITH OWNER TO PERFORM LOCATES. DO NOT DAMAGE BURIED OR CONCEALED ELEMENTS. COORDINATE ACCESS AND DEMOLITION PLANS TO PREVENT DAMAGE. REPAIR ALL DAMAGE RESULTING FROM THE PERFORMANCE OF THE WORK AT NO COST TO OWNER.
4. MOST AREAS AROUND CLARIFIERS ARE GRASS WITH IRRIGATION. CONTRACTOR SHALL SEED ANY AREAS OF DAMAGED GRASS, AND REPAIR ALL DAMAGE TO IRRIGATION RESULTING FROM THE PERFORMANCE OF THE WORK AFTER COMPLETION OF WORK.

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REVISION 1	
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DRAWN BY BRS/CRS DATE 04/07/21

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CITY OF Grand Junction COLORADO

WJE

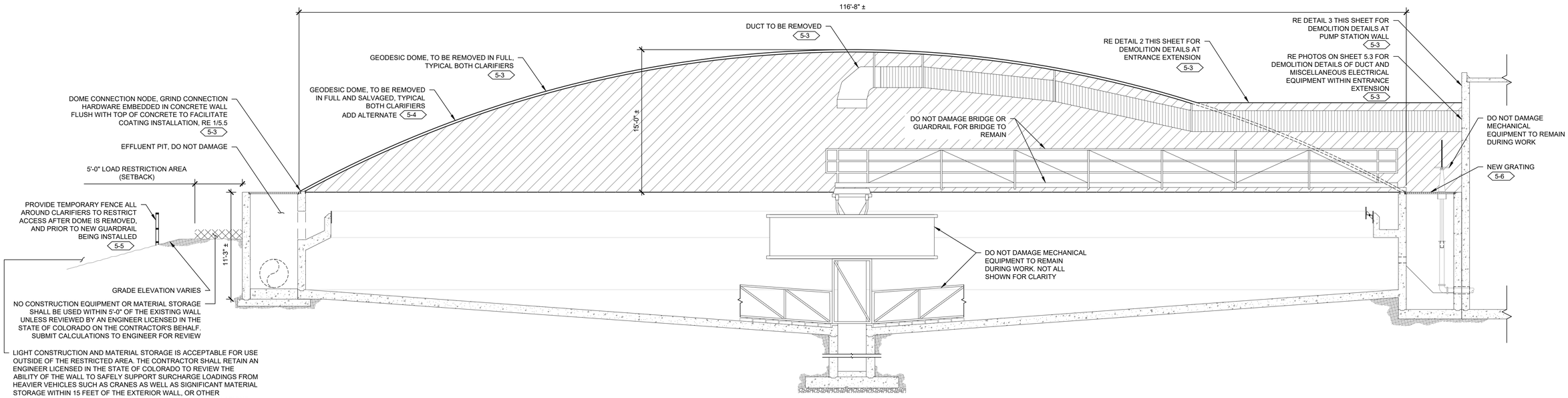
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

PRIMARY CLARIFIER DEMOLITION PLAN

5.1

PROJECT NO. F0010-F001051

WJE PROJECT NO. 2019.3776.2



1 Primary Clarifier Demolition Section

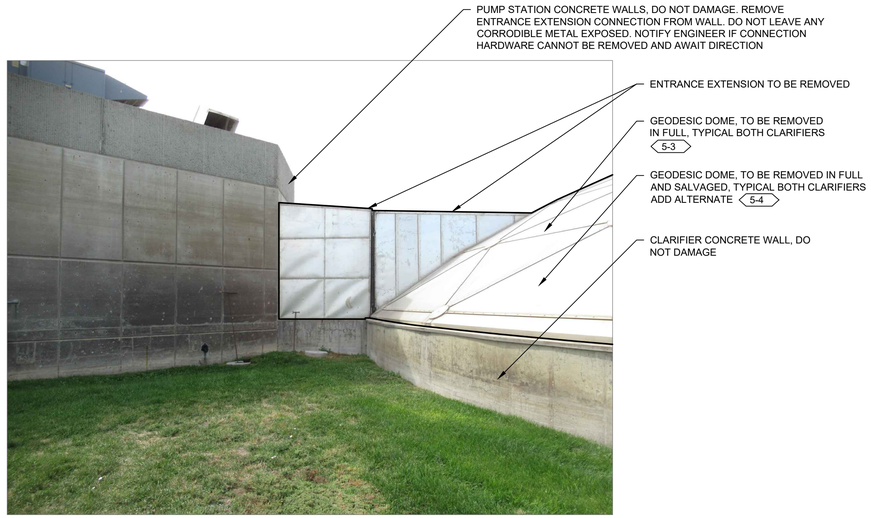
SCALE: 3/16" = 1'-0"

SHEET NOTES:

1. REFERENCE ORIGINAL DRAWINGS IV-12 TO IV-14, V-7 TO V-8, AND VI-8 TO VI-9 FOR ADDITIONAL INFORMATION.
2. MECHANICAL EQUIPMENT AND PLUMBING NOT SHOWN IN FULL. DO NOT DAMAGE ITEMS NOT IDENTIFIED FOR DEMOLITION.
3. REFERENCE WJE GEOTECHNICAL INVESTIGATION REPORT DATED OCTOBER 22, 2019, FOR ADDITIONAL INFORMATION AND TO DETERMINE ACCEPTABLE LOADINGS.

2 Frontside Entrance Extension Elevation Detail 5-3

SCALE: NOT TO SCALE



3 Backside Entrance Extension Elevation Detail 5-3

SCALE: NOT TO SCALE

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21

DESIGNED BY AGL/TMM DATE 04/07/21

CHECKED BY SWF DATE 04/07/21

APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED

0 1/2" 1" 2"

THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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PRIMARY CLARIFIER DEMOLITION SECTION & DETAILS

5.2

PROJECT NO. F0010-F001051

WJE PROJECT NO. 2019.3776.2

DEMISING WALL BETWEEN ENTRANCE EXTENSION (LEFT PHOTO) AND PRIMARY SLUDGE PUMP ROOM (RIGHT PHOTO). REMOVE ALL DUCT WORK AND REPAIR HOLE THROUGH DEMISING WALL (ASSUMED TO BE 12"-14" THICK WALL) CONCRETE SHALL BE REPAIRED WITH CONCRETE, AND BLOCK SHALL BE REPAIRED WITH BLOCK TO MATCH EXISTING. HOLE SHALL BE FULLY SEALED AGAINST AIR AND WATER INFILTRATION. CONTRACTOR SHALL SUBMIT PROPOSED MATERIALS AND PLAN TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WITH WORK. CONCRETE REPAIR SHALL INCLUDE MOCKUPS FOR COLOR MATCH TO BE APPROVED BY OWNER

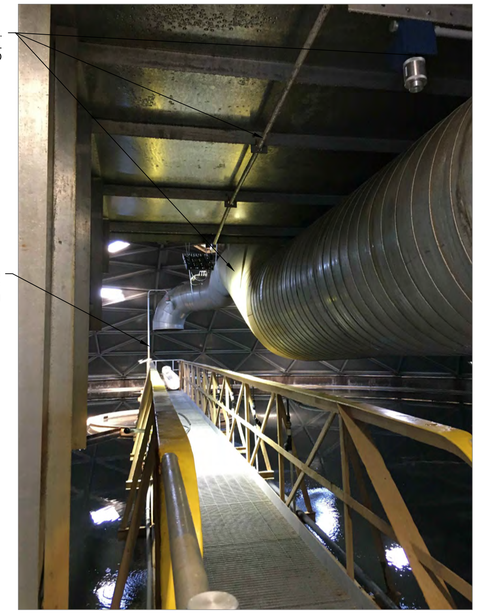
WATER SUPPLY LINE TO CLARIFIERS, DO NOT DAMAGE

NEW GRATING. SUPPORT CONDITIONS AND GRATING TYPE TO MATCH EXISTING

5-6

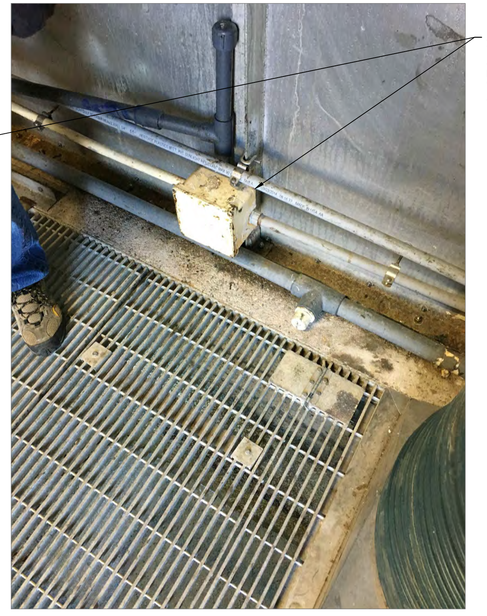
MECHANICAL DUCT TO BE REMOVED. ALL CEILING-MOUNTED ELECTRICAL ITEMS TO BE REMOVED

LIGHT FIXTURE AND ALL SUPPORTING ELECTRICAL CONDUIT AT END OF CATWALK TO REMAIN



1 Mechanical Duct Removal

SCALE: NOT TO SCALE



ALL ELECTRICAL COMPONENTS AFFIXED TO SIDE WALLS OF ENTRANCE EXTENSION ASSUMED TO REMAIN AS PART OF THE REPAIRS. CONTRACTOR TO COORDINATE WITH THE CITY REGARDING RELOCATION AND PLACEMENT

2 Electrical Components

SCALE: NOT TO SCALE

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21

DESIGNED BY AGL/TMM DATE 04/07/21

CHECKED BY SWF DATE 04/07/21

APPROVED BY TMM DATE 04/07/21

SCALES:

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PRIMARY CLARIFIER MEP DEMOLITION PHOTOGRAPHS

5.3

PROJECT NO. F0010-F001051

WJE PROJECT NO. 2019.3776.2

Keyed Note Summary

Callout	Plan Hatch/Symbol	Name	Total Estimated Quantity (This Sheet)
5-1	None	Concrete Coating on Clarifier walls, trough, sludge pits, etc.	No. 1 - 7,700 SF No. 2 - 7,700 SF
5-2	None	Concrete Coating on Clarifier slabs	No. 1 - 10,300 SF No. 2 - 10,300 SF
5-5		Install Guardrail	No. 1 - 380 LF No. 2 - 380 LF
5-6		New Grating	No. 1 - 30 SF No. 2 - 30 SF

NOTE: SEE KEYED NOTE SCHEDULE ON 5.0.

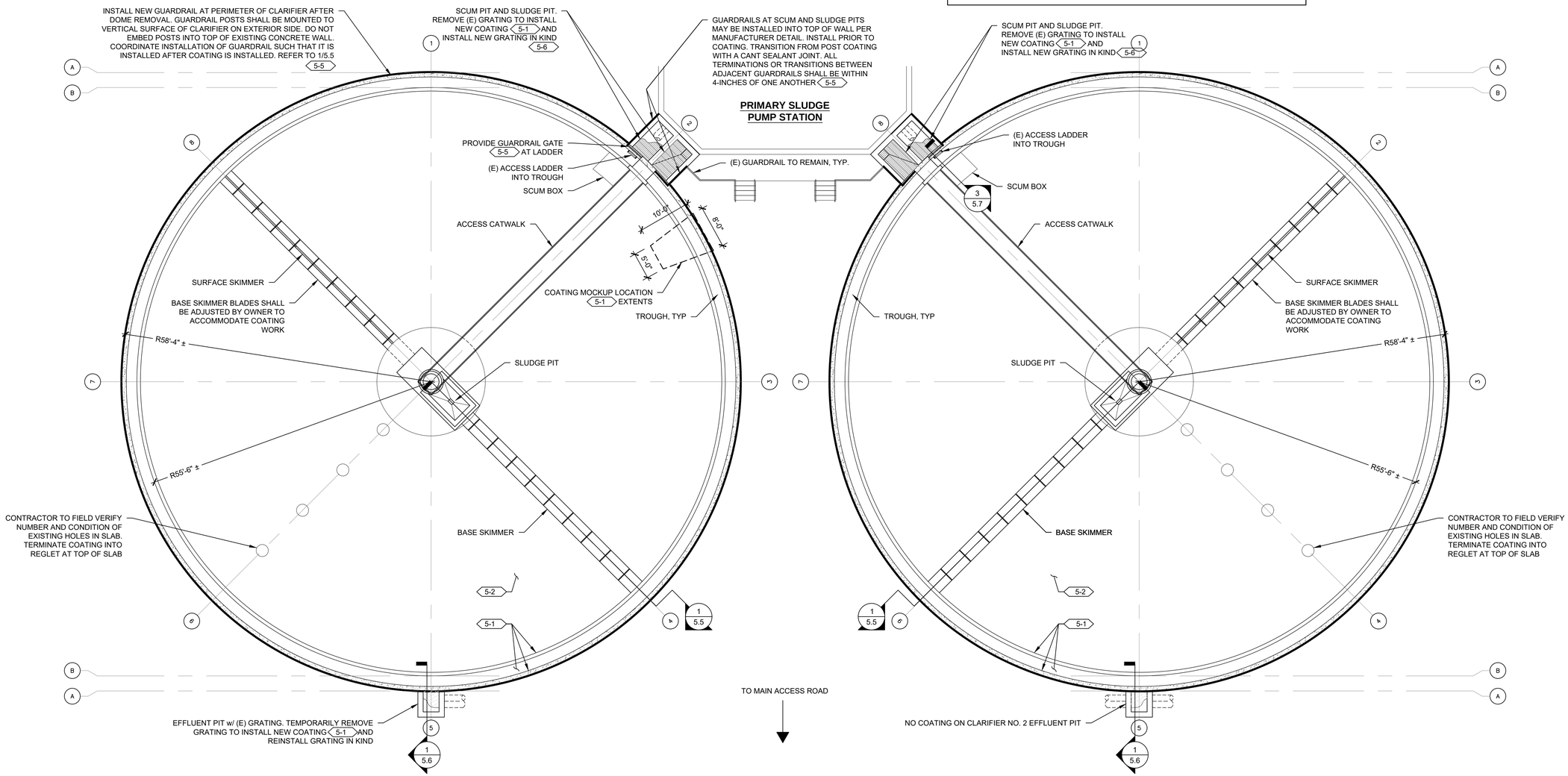
KEYED NOTE LEGEND

KEYNOTE CALLOUT; RE: KEYED NOTE SCHEDULE ON SHEET 5.0 FOR ALL SPECIFIC REPAIR INFORMATION

#-#

(#) QUANTITY OF REPAIRS TO OCCUR AT NOTED LOCATION; RE: KEYED NOTE SCHEDULE ON SHEET 5.0 FOR QUANTITY INFORMATION (if applicable)

ARROW DESIGNATES APPROXIMATE LOCATION OR AREA OF REPAIR TO BE PERFORMED



1 Primary Clarifier Plan

SCALE: 3/32" = 1'-0"

N

SHEET NOTES:

1. REFERENCE ORIGINAL DRAWINGS IV-12 TO IV-14 AND V-7 TO V-8 FOR ADDITIONAL INFORMATION.
2. MECHANICAL EQUIPMENT AND PLUMBING NOT SHOWN IN FULL. DO NOT DAMAGE. COORDINATE MOVEMENT WITH OWNER. OWNER WILL ADJUST HEIGHT OF BLADES TO ALLOW FOR COATING WORK.

PLAN NOTE:

1. ALL WORK AREAS FROM CLARIFIER No. 1 APPLY TO CLARIFIER No. 2.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21

DESIGNED BY AGL/TMM DATE 04/07/21

CHECKED BY SWF DATE 04/07/21

APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED

0 1/2" 1" 2"

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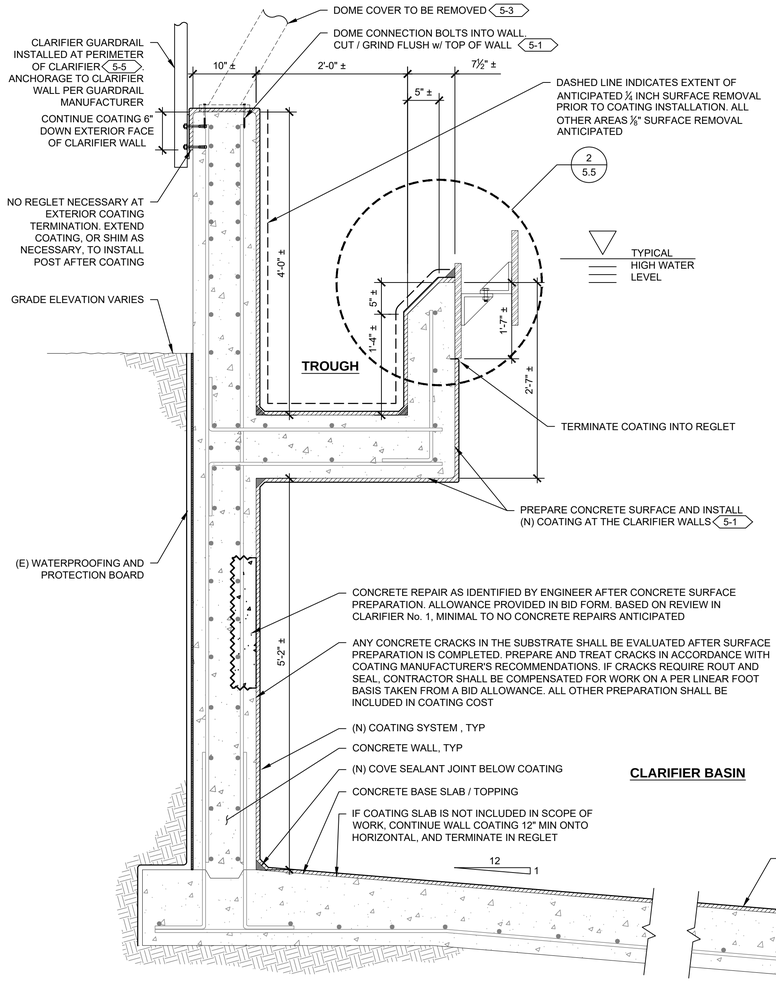
PRIMARY CLARIFIER PLAN

5.4

PROJECT NO. F0010-F001051

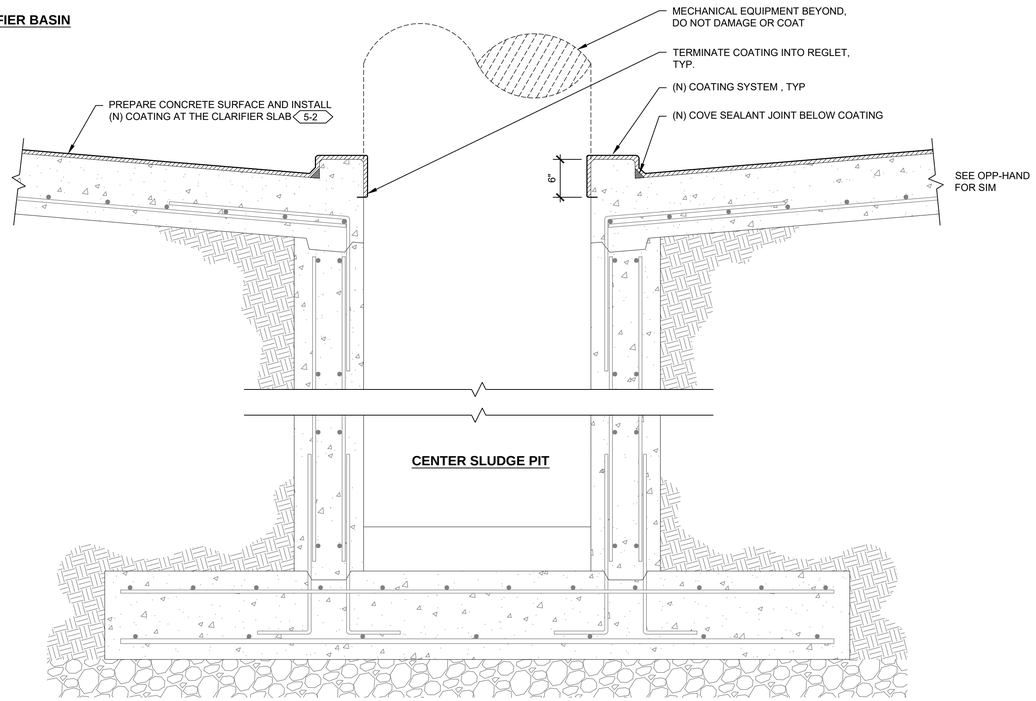
WJE PROJECT NO. 2019.3776.2

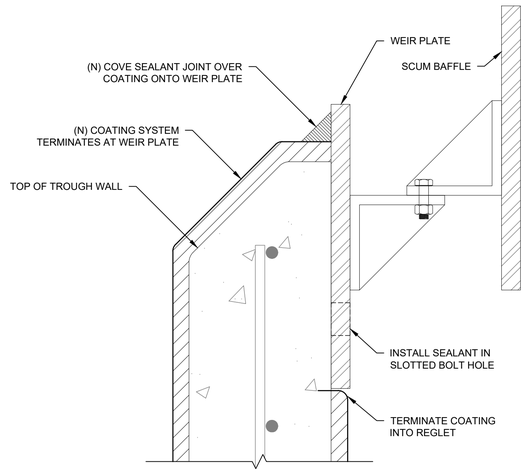


1 Typical Clarifier Section

SCALE: 1" = 1'-0"

CLARIFIER BASIN





2 Weir Plate at Upper Trough Wall

SCALE: 3" = 1'-0"

SHEET NOTES:

1. REFERENCE ORIGINAL DRAWINGS IV-12 TO IV-13, AND V-7 TO V-8 FOR ADDITIONAL INFORMATION.
2. MECHANICAL EQUIPMENT AND PLUMBING NOT SHOWN IN FULL. DO NOT DAMAGE, COORDINATE MOVEMENT OF EQUIPMENT WITH OWNER.
3. SKIMMER NOT SHOWN FOR CLARITY.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY AGL/TMM DATE 04/07/21
CHECKED BY SWF DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

SCALES: AS NOTED

0 1/2" 1" 2"

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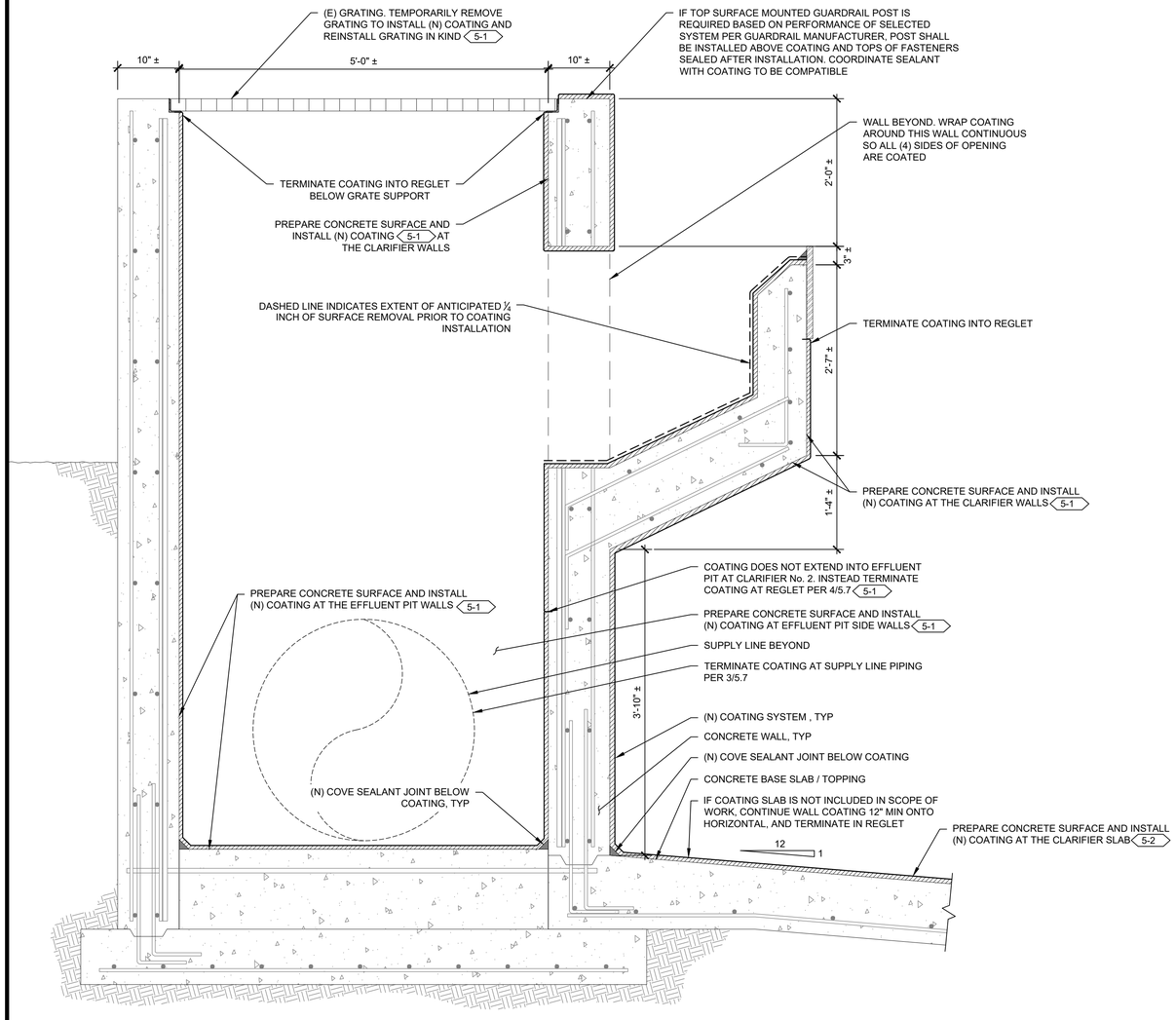
PRIMARY CLARIFIER SECTION AND DETAILS

5.5

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2



1 Typical Effluent Pit Section

SCALE: 1" = 1'-0"

SHEET NOTES:

1. REFERENCE ORIGINAL DRAWINGS IV-12 TO IV-13, AND V-7 TO V-8 FOR ADDITIONAL INFORMATION.
2. MECHANICAL EQUIPMENT AND PLUMBING NOT SHOWN IN FULL. DO NOT DAMAGE, COORDINATE MOVEMENT OF EQUIPMENT WITH OWNER.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY	BRS/CRS	DATE	04/07/21
DESIGNED BY	AGL/TMM	DATE	04/07/21
CHECKED BY	SWF	DATE	04/07/21
APPROVED BY	TMM	DATE	04/07/21

SCALES:
AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

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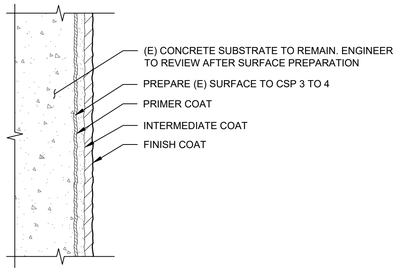
PRIMARY CLARIFIER SECTION AND DETAILS

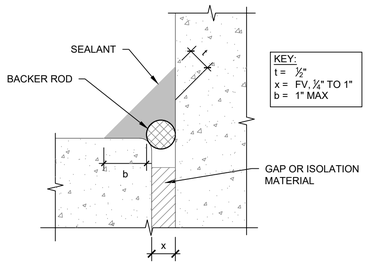
5.6



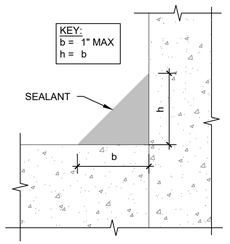
TYPICAL COATING NOTES:
THESE NOTES SHALL APPLY TO ALL COATING WORK UNLESS OTHERWISE NOTED ON A SPECIFIC DETAIL. REFERENCE THE SPECIFICATION SECTION 09 97 23 FOR ADDITIONAL INFORMATION.

1. COATING TERMINATIONS AND DETAILS AT JOINTS, CRACKS AND SIMILAR SHALL CONFORM TO THE DETAILS HEREIN, OR MANUFACTURER DETAILS FOR ITEMS NOT SHOWN. CONFIRM REQUIREMENTS OF DETAILS/REQUIREMENTS HEREIN WITH COATING MANUFACTURER. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THESE DRAWINGS AND MANUFACTURER TYPICAL DETAILS OR WRITTEN INSTRUCTIONS. ENGINEER SHALL DETERMINE WHICH REQUIREMENT(S) APPLY. DO NOT PROCEED WITH WORK UNTIL RECEIVING DIRECTION FROM ENGINEER.
2. PREPARE SURFACE TO PROFILE OF CSP 3 TO 4.
3. PREPARE METAL SURFACES IN ACCORDANCE WITH COATING MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR THIS SERVICE ENVIRONMENT. STEEL SHALL MEET SSPC-SP6 MINIMUM.
4. UNIFORMLY CLEAN AND INCREASE CONCRETE SURFACE POROSITY BY ABRASIVE BLAST PER ASTM D4259.
5. REMOVE LOOSE MATERIAL AND ANY NEAR SURFACE CONCRETE WITH DEGRADED PASTE AND CLEAN CONCRETE SURFACES PER ASTM D4258.
6. INSTALL JOINT SEALANT. (UNLESS SPECIFICALLY INDICATED OR SHOWN TO BE INSTALLED OVER/AFTER COATING).
7. CONFIRM MOISTURE LEVELS ARE BELOW ALLOWABLE LIMITS.
8. INSTALL COATING SYSTEM PER MANUFACTURER'S DIRECTIONS.

1 Typical Coating Detail 5-1 5-2
SCALE: NOT TO SCALE



ISOLATED COVE JOINT

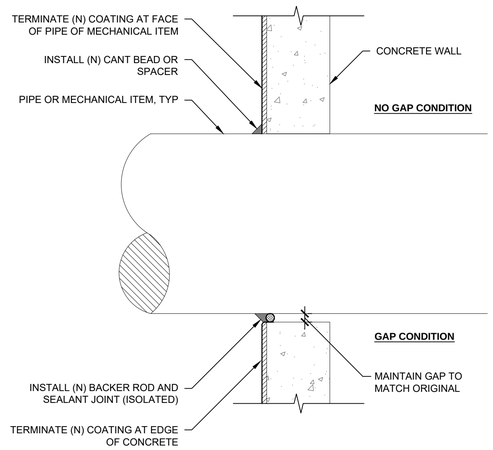


COVE JOINT

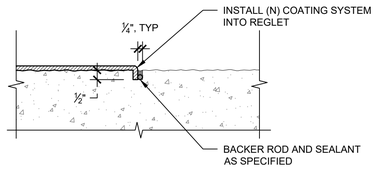
TYPICAL SEALANT NOTES:
THESE NOTES SHALL APPLY TO ALL SEALANT JOINT WORK UNLESS NOTED OTHERWISE ON A SPECIFIC DETAIL. THESE NOTES SERVE TO SUPPLEMENT THE SPECIFICATIONS. REFERENCE SPECIFICATION SECTION 07 92 00 FOR ADDITIONAL INFORMATION.

1. ABBREVIATIONS: h = SEALANT HEIGHT, t = SEALANT THICKNESS, b = BOND LINE, AND x = JOINT GAP.
2. REMOVE ALL GROUT, SEALANT, BACKER ROD, BOND BREAKER TAPE, ETC. IN JOINT OR CRACK.
3. SLIGHTLY GRIND THE CONCRETE SURFACES WITHIN THE JOINT WITH A GRINDING WHEEL HAVING A PROFILE APPROXIMATELY THE SAME AS THE JOINT.
4. PROVIDE PROPER JOINT DEPTH PER DETAILS.
5. CLEAN STEEL OF RUST AND PROVIDE STEEL SURFACE EQUAL TO SSPC SP3, POWER TOOL CLEANING.
6. AFTER GRINDING, CLEAN DEBRIS FROM THE JOINT USING A STIFF BRUSH AND OIL-FREE COMPRESSED AIR. VACUUM THE JOINT AND SURFACES WITHIN 6 INCHES OF JOINT.
7. INSTALL PRIMER ON ALL SURFACES. POROUS SURFACES SHALL BE PRIMED REGARDLESS OF MANUFACTURER RECOMMENDATIONS TO EXCLUDE PRIMER.
8. INSTALL BACKER ROD OR BOND BREAKER TAPE WHERE INDICATED AND SEALANT PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND THESE DOCUMENTS.
9. CONFIRM REQUIREMENTS OF SEALANT MANUFACTURER PRIOR TO SUBMITTING BID. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THESE DOCUMENTS AND MANUFACTURERS TYPICAL DETAILS, WRITTEN RECOMMENDATIONS, OR INSTRUCTIONS. ENGINEER SHALL DETERMINE WHICH APPLY.

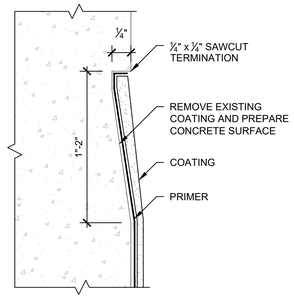
2 Typical Joint Sealant Details and Notes 5-1 5-2
SCALE: NOT TO SCALE



3 Typical Coating Termination at Pipe or Mechanical Item 5-1 5-2
SCALE: 1" = 1'-0"



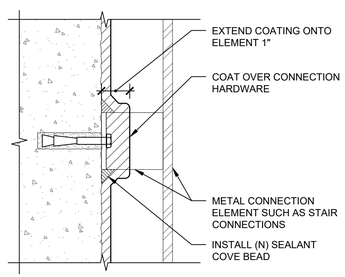
4A Typical Coating Reglet Termination 5-1 5-2
SCALE: 3" = 1'-0"



DETAIL NOTES:

1. SAW CUT EDGE AND TAPER CONCRETE REMOVAL ACROSS 1" TO 2" TO SET EDGE OF COATING FLUSH WITH SURFACE OF CONCRETE (I.E. NO EXPOSED COATING LIP AT LEADING EDGE OF COATING).
2. THE ¼"x½" SAW-CUT AND TAPERED REMOVAL SHALL BE DRIED AND CLEANED OF ALL DUST AND RESIDUE PRIOR TO PRIMING.
3. AREAS NOT TO BE COATED, BUT WHICH ARE ADJACENT TO A LEADING EDGE, SHALL BE NEATLY TAPED OFF AND PROTECTED FROM PRIMER AND TOPCOAT MATERIAL OR OVERSPRAY.

4B Alternate Coating Termination 5-1 5-2
SCALE: 1'-0" = 1'-0"



5 Typical Coating Termination at Ladder and Misc. Conn. 5-1 5-2
SCALE: 3" = 1'-0"

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
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SCALES: AS NOTED
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PRIMARY CLARIFIER DETAILS

PROJECT NO. F0010-F001051
WJE PROJECT NO. 2019.3776.2

PERSIGO WASTE WATER TREATMENT PLANT
SLUDGE PROCESSING UNIT REPAIRS

Owner: City of Grand Junction
Grand Junction, Colorado

Owners Representative: Kirsten Armbruster, PE
970.244.1421
kirstena@gjcity.org

Engineer-of-Record: Wiss, Janney, Elstner Associates, Inc. (WJE)
3609 South Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80232

Engineer-of-Record Representative: Mr. Terry McGovern, PE
303.914.4300
tmcgovern@wje.com

Project Address: Persigo Wastewater Treatment Plant
2145 River Road
Grand Junction, Colorado 81505

PROJECT DESCRIPTION

The work at the Sludge Processing Unit includes repairs to the blending tank framing located at the northwest corner of the building. Repair work consists of replacement of stainless steel bolted connection hardware with new hot-dipped galvanized connections at the perimeter of the tank (perimeter beams and main beams), removal and inspection of bolted connections not at the perimeter, and cleaning and coating of all existing steel framing and connection hardware.

SPECIAL CONSIDERATIONS

The Sludge Processing Unit will taken out-of-service during the repairs. The mechanical equipment used within the tank will be locked out by the Owner prior to the contractors access to the site. Limited cleaning of the Sludge Processing Unit will be performed by the Owner. Limiting the time of shutdown is critical for the work at the Sludge Processing Unit. Contractors are encouraged to take reasonable steps to limit shutdown time.

DRAWING SUBMITTALS

1. Access plan, 2/6.1. Submit with bid.
2. Shutdown plan for taking structures offline to perform the work. Submit with bid.

REQUIRED MOCKUP SUMMARY

A steel coating mockup on a beam shall be prepared and tested prior to full coating installation. Mockup shall include a connection and a minimum of 3-feet of beam length. See Specification Section 09 97 23.

Keyed Note Schedule

Callout	Plan Hatch/Symbol	Name	Unit	Total Estimated Quantity	Description	Reference Specification Section(s)	Reference Detail(s)
6-1	None	Installation of Coating System	LUMP SUM	1	Removal of surface contaminants, preparation of steel substrates, and the application of new coating system.	09 97 13	N/A
6-2	None	Replace S.S threaded rod connections at perim. beams - north & west elevations	LUMP SUM	1	Remove and replace existing stainless steel threaded rod and nut connections with new hot-dipped galvanized threaded rods and nuts at perimeter beams at west and north elevations.	05 04 00	N/A
6-3	None	Replace S.S threaded rod connections at perim. beams - south & east elevations	LUMP SUM	1	Remove and replace existing stainless steel threaded rod and nut connections with new hot-dipped galvanized threaded rods and nuts at perimeter beams at east elevation.	05 04 00	N/A
6-4	None	Replace S.S threaded rod connections at main beams - north & west elevations	LUMP SUM	1	Remove and replace existing stainless steel threaded rod and nut connections with new hot-dipped galvanized threaded rods and nuts at main beams at north and west elevations.	05 04 00	N/A
6-5	None	Replace S.S threaded rod connections at main beams - south & east elevations	LUMP SUM	1	Remove and replace existing stainless steel threaded rod and nut connections with new hot-dipped galvanized threaded rods and nuts at main beams at south and east elevations.	05 04 00	N/A
6-6	None	Sealant Installation	LF	160	Install new sealant joint at top edge of perimeter steel framing at 3/4" maximum width.	07 92 00	5/6.2

ABBREVIATIONS:

CLR	CLEAR
(E)	EXISTING
FV	FIELD VERIFY
HDG	HOT-DIPPED GALVANIZED
LF	LINEAL FEET
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
PL	PLATE
RE	REFERENCE
SIM	SIMILAR
SF	SQUARE FEET
TYP	TYPICAL
w/	WITH

INDEX TO DRAWINGS:

SYMBOLS LEGEND:

EXISTING FULL HEIGHT WALL
SLOPE
GUARDRAIL

GENERAL NOTES

A. Drawings and associated Specifications (referred to in general as the Construction Documents) apply only to the specific project identified in Titleblock, and shall not be used for any other purpose without specific written consent of Engineer, Engineer's sub-consultants, and Owner. Any unauthorized use of Engineer's work product shall be at user's sole risk and user shall indemnify Engineer against any liability or legal exposure related to the unauthorized use.
B. Drawings and Specifications are complementary, are to be taken as a whole, and should include sufficient information necessary for the execution and completion of the work in a manner consistent with the design intent. In the absence of explicit or reasonably inferable information on drawings or in specifications, promptly seek clarification from Engineer as a request for information.
C. Contractor is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Engineer has no such responsibilities beyond its own employees.
D. In an emergency affecting safety of persons or property, act to prevent or stop further damage, injury, or loss.
E. If a hazardous material or substance not addressed in the Construction Documents is encountered, immediately stop work in affected area and notify Owner and Engineer of the condition.
F. Temporarily relocate and restore existing equipment and appurtenances (whether or not shown on the drawings) that obstruct access to portions of the Work. Notify and coordinate with Owner prior to doing so.
G. Develop, implement, erect, and maintain safeguards to prevent damage, injury, or loss resulting from the work to (a) workers, occupants, passers-by, and other persons; (b) in-progress work, materials, and equipment under care, custody, and control of the contractor (whether on or off site); and (c) other property at the site or adjacent thereto not designated as part of the work for removal, relocation, or replacement. In the event of damage, injury, or loss, promptly notify Engineer and Owner and present proposed remedy. All damage to these elements must be repaired to the satisfaction of the Owner.
H. Promptly correct work rejected by Engineer or failing to conform to requirements of the Construction Documents. Associated costs (including additional testing or inspections, cost of uncovering and correction, and compensation for Engineer's services and expenses made necessary thereby) shall be the Contractor's responsibility.
I. Dimensions, quantities, and geometries provided for existing construction are based on original drawings and limited field documentation by Engineer. Field verify applicable information prior to submitting a bid, ordering materials, or otherwise committing resources to the Work. Provided dimensions take precedence over scaled dimensions. Dimensions of the new construction shall be adjusted as necessary to fit the existing conditions. The Engineer shall be notified in writing of any significant deviations from the dimensions or conditions shown on these drawings.
J. Drawings illustrate the completed work with elements in their final intended positions. Provide shoring, bracing, support, and sequence work as required to maintain the structural integrity of new or existing construction during the work.
K. Contractor is solely responsible for, and shall have sole control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the work. Engineer has no such responsibilities. Specific instruction that may be given in Construction Documents concerning construction means, methods, techniques, sequences, or procedures shall not relieve contractor of its responsibility for control and coordination.
L. Provide labor, materials, equipment, supervision, and coordination directly and incidentally necessary to perform the work in accordance with Construction Documents.
M. Promptly report to Engineer as a request for information known or suspected errors, inconsistencies, or omissions within or between Construction Documents, as well as known or suspected variance of the Construction Documents from existing conditions. Await direction from Engineer prior to proceeding with Work. For bidding purposes only, and unless otherwise directed by Engineer, the more stringent requirement or better quality shall take precedence as determined by Engineer.
N. Activities or duties of Engineer, or tests, inspections, or approvals required or performed by third parties shall not relieve Contractor of its obligation to perform the Work in accordance with Construction Documents.
O. Secure and pay for all permits, fees, licenses, and inspections by government agencies necessary for proper and compliant execution and completion of the work. Contractor shall be properly licensed to perform the specified Work.
P. Comply with and give notices required by laws, statutes, ordinances, codes, rules and regulations, and lawful orders of authorities having jurisdiction applicable to the Work.
Q. The Work will be performed at an occupied and operational facility. Coordinate construction activities and procedures with Owner to (a) maintain unobstructed existing means of egress from facility; (b) comply with facility's existing security procedures and requirements; and (c) provide not less than 48 hours advance notice to and gain approval from Owner prior to construction activities that will disrupt normal use of facility (including exceptional noise and/or vibrations, uncontrolled dust, obtrusive odors, or interruptions of utilities). Work not coordinated and approved in advance that disrupts the normal use of the facility may be stopped until proper coordination and approval is achieved. Contractor shall be responsible for any costs incurred as a consequence of stoppage.
R. Coordinate locations of on-site storage of materials and equipment with Owner so as to not unreasonably encumber facility or site. Do not allow construction materials, equipment, or procedures to overload or exceed the structural capacity of existing construction to remain, partially completed work, or completed work. Make inspections and/or perform analyses and tests necessary to verify that existing elements have adequate capacity to support proposed construction loads.

BUILDING CODES AND LOADS

A. Original Building Code Under Which the Structures were Constructed: Not Specified
   1. Original Construction Documents prepared by Henningson, Durham and Richardson (HDR), Inc. dated May 1985, are available for review from Owner's Representative.
B. Current Building Code and Basis for Repair Work: The 2018 International Existing Building Code (IEBC), as adopted by the Mesa County Building Inspection Department, shall serve as the Governing Building Code for the Work.

INSPECTIONS AND OBSERVATIONS

A. Observations are performed by the Engineer, or licensed design professional.
B. Special Inspections shall be performed by a qualified Testing Agency or Special Inspector. Additional inspections may be performed by the local building authority.
C. All construction shall be subject to review (observation) by the Engineer before it is concealed from view. Coordinate expected review items with the Engineer prior to the start of construction. Provide reasonable notification to the Engineer to allow for such review as the Work proceeds, 48 hours minimum unless noted otherwise.
D. Contractor to pay for and provide access for all inspections and observations, regardless of the entity retaining such services.

MATERIAL PROPERTIES

A. Original Construction
   1. All original structural steel: ASTM A36.
   2. Blending tank structural steal: Unknown
B. Repair Construction
   1. New steel plates shall be ASTM A36, minimum.
   2. Connection bolts shall be ASTM A325, hot-dip galvanized (ASTM A 143)

Quality Control Testing Summary

Item or Test	Keyed Note(s)	Frequency	Reference Specification Section(s)	Reference Standard(s)
Coating adhesion testing (Puck Pull-Off)	6-1	1 Addit'l location during production	09 97 13	ASTM D4541
Sealant Adhesion Testing	6-6	Every 200 LF	07 92 00	ASTM C1521

Notes:
1. This testing shall be performed by the Testing Agency, Coating Inspector or Engineer, with assistance from the Contractor as noted in the Specification Sections.

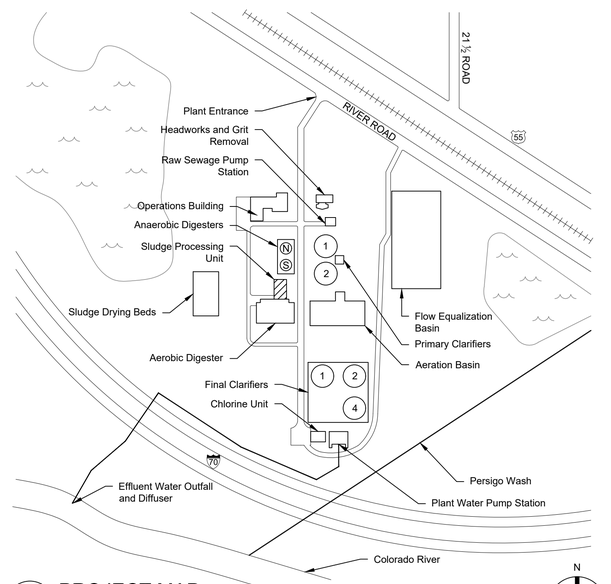
Special Inspection Schedule

Verification And Inspection	Frequency	Inspector	IBC Reference	Referenced Standard
Steel Construction				
Inspection Of Bolts	TABLE 1	QA & QC	1705.2.1	AISC 360

NOTES:
A. Quality control (qc) shall be provided by the erector and fabricator. Quality Assurance (QA) shall be provided by the Special Inspector retained by Owner. Inspections shall be made by both parties in accordance with the table below.
B. Tasks marked "P" shall be performed for 100% of all joints or members. Tasks marked "O" shall be observed on a random basis but including not less than 20% of the total population.
C. The Engineer may specify more or less stringent inspection requirements for specific connections and details as noted in the construction documents. Where noted otherwise, follow the detail specific inspection requirements.
D. For inspection tasks with frequencies less than 100%, inspection frequency shall be increased to 100% if failure is observed in more than 1 out of 20 tests, or 5% of the test population.

TABLE 1: Inspection Of Bolts

Inspection Tasks Prior To Bolting	QC	QA
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Proper bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O
Inspection Tasks During Bolting	**QC**	**QA**
Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required	O	O
Joint brought to the snug-tight condition	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Inspection Tasks After Bolting	**QC**	**QA**
Document acceptance or rejection of bolted connections	P	P



1 PROJECT MAP
SCALE: NTS

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

DRAWN BY BRS/CRS DATE 04/07/21
DESIGNED BY AGL/TMM DATE 04/07/21
CHECKED BY SWF DATE 04/07/21
APPROVED BY TMM DATE 04/07/21

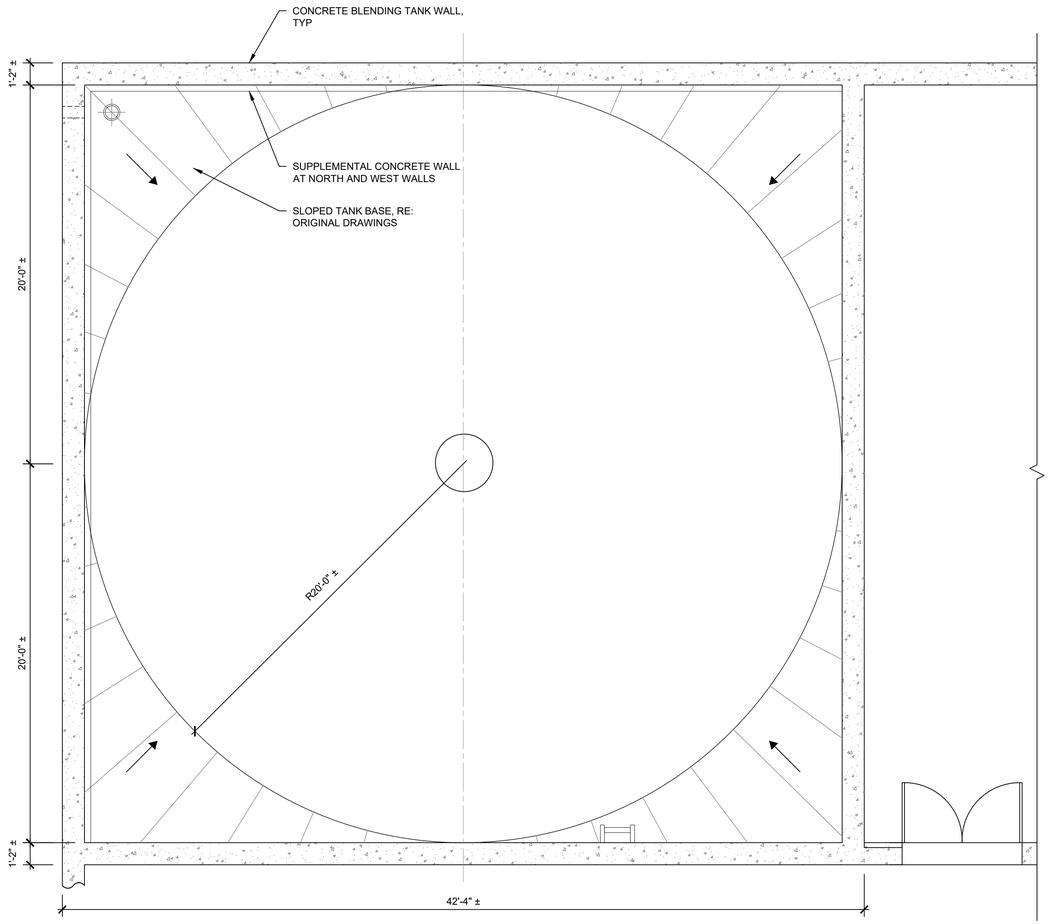
SCALES: AS NOTED
0 1/2" 1" 2"
THIS SHEET PLOTS FULL SIZE AT 22x34 (INCHES)

CITY OF Grand Junction COLORADO

WJE
Wiss, Janney, Elstner Associates, Inc.
Engineers, Architects, Materials Scientists
3609 S. Wadsworth Boulevard, Suite 400
Lakewood, Colorado 80235

SLUDGE PROCESSING UNIT
COVER SHEET & GENERAL NOTES

6.0

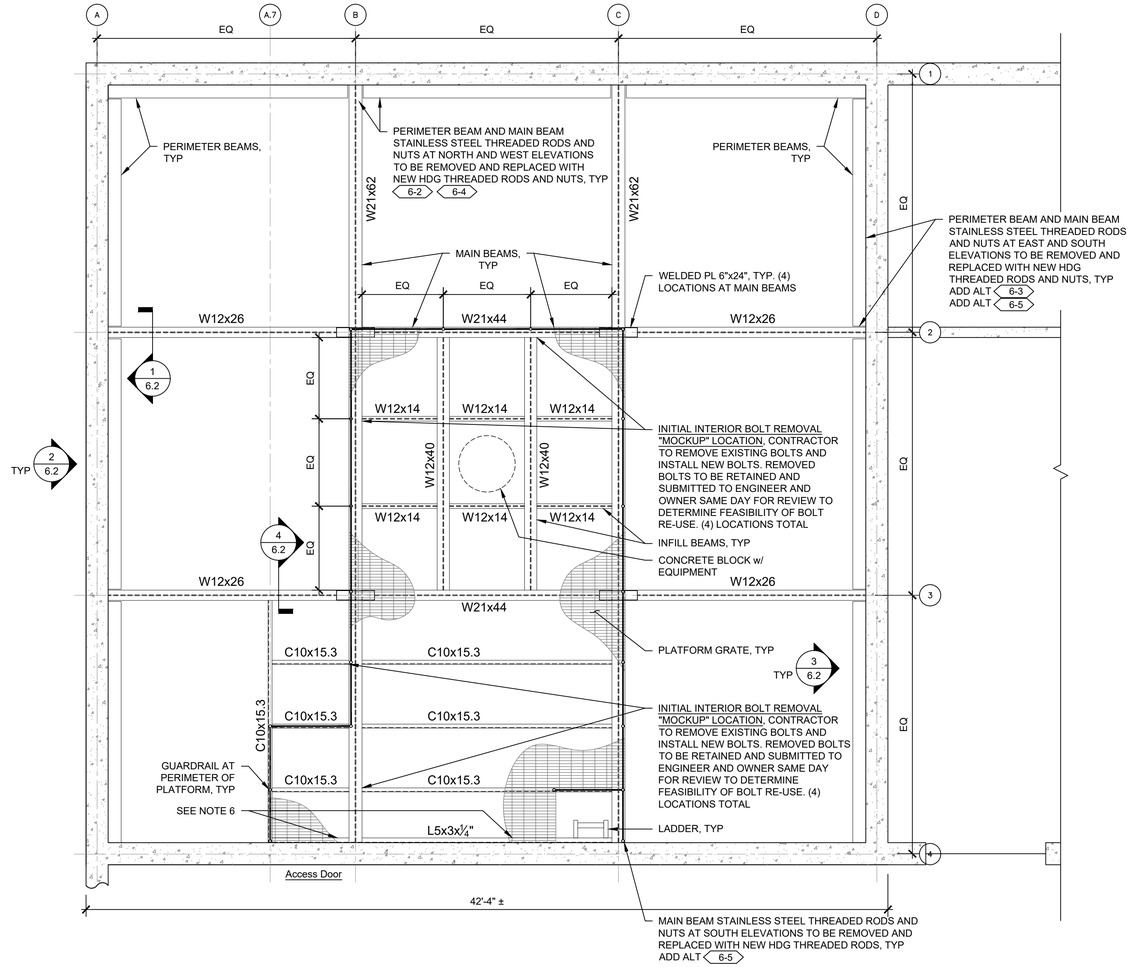


1 Sludge Processing Unit - Ground Floor Plan

SCALE: 1/4" = 1'-0"

PLAN NOTES:

1. REFERENCE ORIGINAL DRAWING SHEETS III-20, III-23, III-24, III-25, IV-30 AND IV-31 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL VERIFY EXTENT OF SLOPING BASE AND MECHANICAL EQUIPMENT FOR CONFLICTS WITH THEIR PROPOSED ACCESS PLAN.



2 Sludge Processing Unit - Roof Framing Plan

SCALE: 1/4" = 1'-0"

PLAN NOTES:

1. REFERENCE ORIGINAL DRAWING SHEETS III-20, III-23, III-24, III-25, IV-30 AND IV-31 FOR ADDITIONAL INFORMATION.
2. ORIGINAL CONCRETE ROOF FRAMING WAS REPLACED WITH STEEL FRAMING SHOWN, AND NO ORIGINAL DESIGN INFORMATION IS AVAILABLE FOR THE STEEL FRAMING.
3. BEAM SIZES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AS NECESSARY FOR ANY QUANTITIES INCLUDED IN BIDS.
4. NORTH AND WEST SUPPLEMENTAL CONCRETE WALL BUILDOUT NOT SHOWN FOR CLARITY.
5. PLATFORM GRATE AND GUARDRAILS SHALL BE REMOVED, STORED, PROTECTED AND RE-INSTALLED AFTER COATING WORK IS COMPLETED. PROVIDE SUPPLEMENTAL CONNECTION HARDWARE AS NECESSARY.
6. REMOVE L5 FROM WALL. REMOVE, SALVAGE, AND REPLACE PORTIONS OF EXISTING GRATING AS NECESSARY TO REMOVE L5 ANGLE. TAKE CARE TO CLEAN AND COAT INSIDE OF EXISTING BOLT HOLES. RE-INSTALL L5 USING EXISTING CONNECTION BOLTS.
7. CONTRACTOR SHALL SUBMIT AN ACCESS PLAN TO PROVIDE ACCESS TO COMPLETE THE COATING WORK WITHIN THE INTERIOR OF THE STRUCTURE WITH THEIR BID. THE PLAN SHALL INCLUDE A WRITTEN DESCRIPTION OF THE MEANS AND METHODS PROPOSED TO PROVIDE SAFE ACCESS TO COMPLETE THE FRAMING COATING AND BOLTED CONNECTION INSTALLATIONS.

DESCRIPTION	DATE
REVISION 1	
REVISION 2	
REVISION 3	
REVISION 4	

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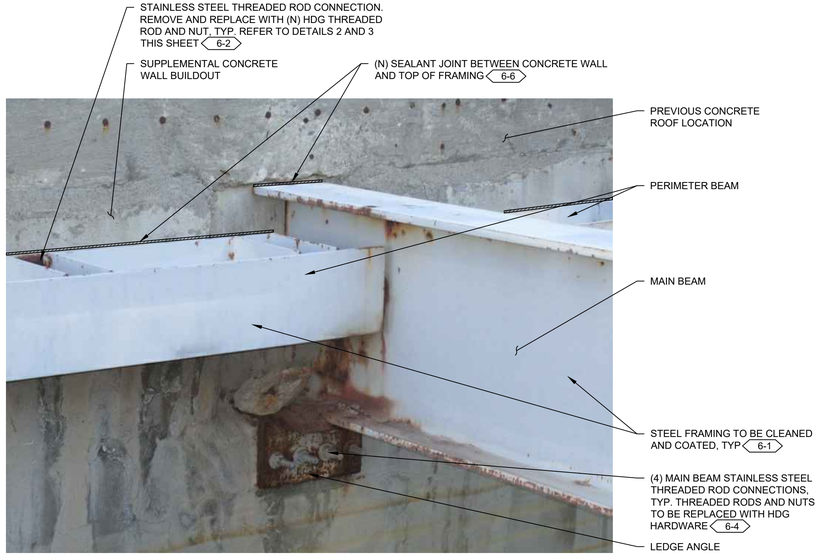
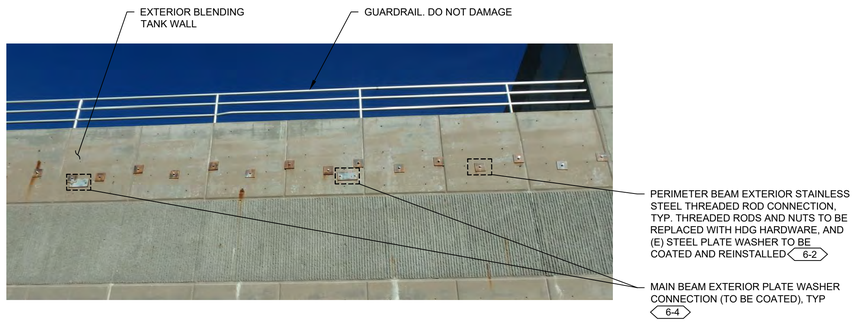
SLUDGE PROCESSING UNIT PLANS

6.1



1 Main Beam Edge Connection Detail

SCALE: NOT TO SCALE



2 Typical Exterior Edge Beam Connection Detail

SCALE: NOT TO SCALE

DETAIL NOTES:

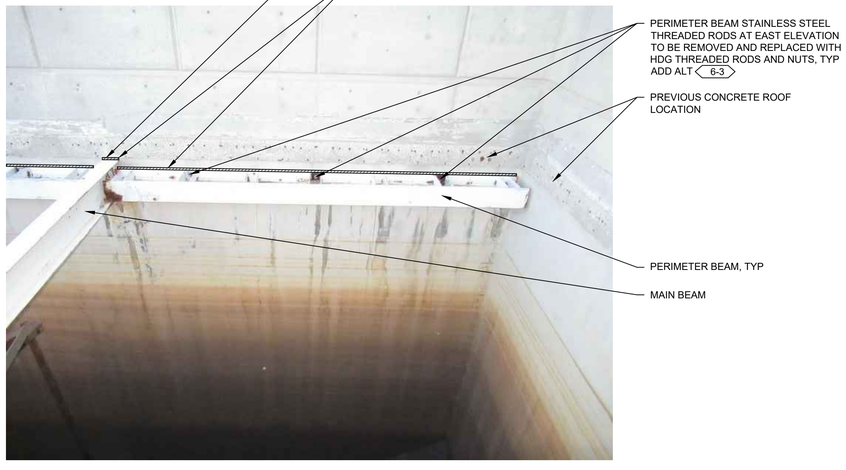
1. REMOVE AND REPLACE STAINLESS STEEL THREADED RODS AND NUTS WITH NEW HDG THREADED RODS AND NUTS.
2. CLEAN AND COAT ALL SIDES OF STEEL PLATE WASHERS AND RE-INSTALL.
3. PARTIAL WEST WALL SHOWN. SIMILAR CONDITIONS ON NORTH AND WEST WALLS.

TYPICAL CONNECTION REPLACEMENT (AND INSPECTION) NOTES:

1. ONLY ONE BOLT/CONNECTOR MAY BE REMOVED FROM ANY ONE MEMBER AT A TIME. IF THE CONTRACTOR WISHES TO REMOVE ADDITIONAL BOLTS FROM MEMBERS AT THE SAME TIME, THEY SHALL SUBMIT FOR REVIEW A PROPOSED PROCEDURE/PLAN TO THE ENGINEER FOR REVIEW WHICH IS SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF COLORADO. INCLUDE SEQUENCE, PLAN, AND CORRESPONDING CALCULATIONS FOR PROPOSED BOLT REMOVAL.
2. AT INITIAL INTERIOR BOLT REMOVAL "MOCK-UP" LOCATION. CONTRACTOR TO REMOVE EXISTING BOLTS AND INSTALL NEW BOLTS. REMOVED BOLTS TO BE RETAINED AND SUBMITTED TO ENGINEER AND OWNER SAME DAY FOR REVIEW TO DETERMINE FEASIBILITY OF BOLT RE-USE. ALL REMOVED AND RETAINED CONNECTIONS SHALL BE GROUPED AND LABELED BY CONNECTION LOCATION BASED ON GRIDLINES (FOR EXAMPLE, 2/B.3).
3. AFTER REMOVAL OF BOLT, CLEAN AND PRIME STEEL FRAMING AT CONNECTION LOCATION. AT EXTERIOR PLATE WASHERS, INSTALL FULL COATING SYSTEM ON PLATES PRIOR TO RE-INSTALLATION.
4. RE-INSTALL BOLT/CONNECTOR. ALL BOLTS SHALL BE TIGHTENED TO "SNUG-TIGHT" CONDITION, NO PRE-TENSIONING IS REQUIRED.
5. PERFORM SPECIAL INSPECTION OF CONNECTION(S) AS REQUIRED. INSPECTIONS MAY BE COMPLETED AFTER ALL CONNECTION HARDWARE IS COMPLETED, BUT PRIOR TO REMOVAL OF ACCESS.
6. INSTALL REMAINDER OF COATING SYSTEM OVER BOLTS AND STEEL FRAMING. AT EXTERIOR PLATE WASHERS, INSTALL COATING OVER BOLTS AFTER INSTALLATION TO MATCH ADJACENT PLATE WASHER FINISH COAT.

TYPICAL COATING NOTES:

1. COATING SHALL BE INSTALLED ON ALL STEEL SURFACES AS DEFINED BELOW.
   a. FOR PERIMETER BEAMS, THE BACKSIDE ADJACENT TO THE CONCRETE WALL SHALL NOT BE COATED.
   b. FOR PLATE WASHERS, THEY SHALL BE REMOVED, COATED ON ALL SIDES AND RE-INSTALLED.
2. TAKE CARE TO COAT DIFFICULT TO REACH AREAS.
3. AT SHARP CORNERS, OR INTERFACES BETWEEN ADJACENT ELEMENTS WHERE A SHARP CORNER OR GAP EXISTS, INSTALL SURFACING COMPOUND TO SMOOTH TRANSITION AND ENSURE COMPLETE COATING COVERAGE.
4. INSTALL A STRIPE OR DETAIL COAT AT ALL CORNERS AND CONNECTION HARDWARE PIECES. STRIPE OR DETAIL COAT SHALL BE OF INTERMEDIATE COATING LAYER.

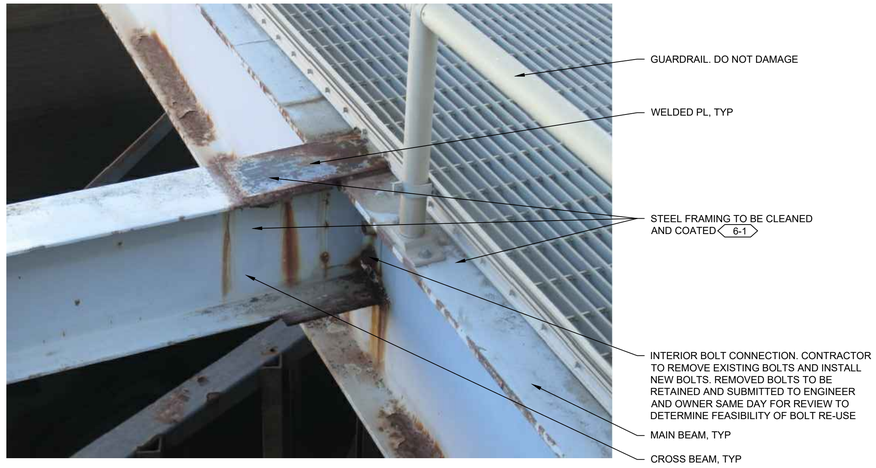


3 Typical Perimeter Beam Connection Detail

SCALE: NOT TO SCALE

DETAIL NOTES:

1. EAST WALL SHOWN, SIMILAR ON NORTH, EAST AND WEST WALLS.
2. REMOVE AND REPLACE STAINLESS STEEL BOLTS.
3. CLEAN AND COAT STEEL FRAMING.



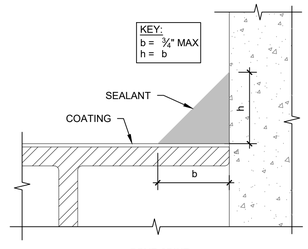
4 Typical Interior Connection Detail

SCALE: NOT TO SCALE

TYPICAL SEALANT NOTES:

THESE NOTES SHALL APPLY TO ALL SEALANT JOINT WORK UNLESS NOTED OTHERWISE ON A SPECIFIC DETAIL. THESE NOTES SERVE TO SUPPLEMENT THE SPECIFICATIONS. REFERENCE SPECIFICATION SECTION 07 92 00 FOR ADDITIONAL INFORMATION.

1. ABBREVIATIONS: h = SEALANT HEIGHT, AND b = BOND LINE.
2. REMOVE ALL GROUT, SEALANT, BACKER ROD, BOND BREAKER TAPE, ETC. AT JOINT LOCATION.
3. SLIGHTLY GRIND THE CONCRETE SURFACES TO RECEIVE SEALANT WITH A GRINDING WHEEL.
4. PROVIDE PROPER JOINT DEPTH PER DETAILS.
5. AFTER GRINDING, CLEAN DEBRIS FROM THE JOINT USING A STIFF BRUSH AND OIL-FREE COMPRESSED AIR. VACUUM THE JOINT AND SURFACES WITHIN 6 INCHES OF JOINT.
6. INSTALL PRIMER ON ALL SURFACES. POROUS SURFACES SHALL BE PRIMED REGARDLESS OF MANUFACTURER RECOMMENDATIONS TO EXCLUDE PRIMER.
7. PREPARE NEW STEEL COATING PER MANUFACTURER'S RECOMMENDATIONS TO RECEIVE SEALANT.
8. CONFIRM REQUIREMENTS OF SEALANT MANUFACTURER PRIOR TO SUBMITTING BID. NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THESE DOCUMENTS AND MANUFACTURERS TYPICAL DETAILS, WRITTEN RECOMMENDATIONS, OR INSTRUCTIONS. ENGINEER SHALL DETERMINE WHICH APPLY.



COVE JOINT

5 Typical Sealant Joint

SCALE: NOT TO SCALE

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REVISION 1	–	
REVISION 2	–	
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REVISION 4	–	

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