



Climax Mine
Highway 91 - Fremont Pass
Climax, CO 80429
Phone (719) 486-7718
Fax (719) 486-2251

July 27, 2021

Mr. Dustin Czapla
Environmental Protection Specialist
Division of Reclamation, Mining and Safety
Department of Natural Resources
1313 Sherman St. Room 215
Denver, Colorado 80203

RE: Climax Mine, Permit No. M-1977-493, Technical Revision 31 – Mayflower Flood Bypass Stage 2 Tower Riser and Access Bridge

Dear Mr. Czapla,

Climax Mine submitted TR-31 in February of 2020. During the adequacy review DRMS requested a certification for the Mayflower Flood Bypass Stage 2 Tower Riser and Access Bridge once construction was complete. The tower construction work and the bridge construction work was completed by two separate contractors in 2021. Please find attached the as-builts and the certification from the Engineer of Record for both the Mayflower Flood Bypass Stage 2 Tower Riser and for the Access Bridge designs. Please contact me at 719-486-7717 or Diana Kelts at 719-486-7525 if you need additional information.

Sincerely,

Alex Ungers
Senior Environmental Scientist

Attachments

cc: Diana Kelts

\\SPOH\FILE03\AD CONTECH-CPI\COMMERLIN\PROJECT\ACTIVE\610100\610177\610177-10-CONTINENTAL PEDESTRIAN\DRAWINGS\FABRICATION\610177-10 REV B.DWG 2/1/2021 12:46 PM

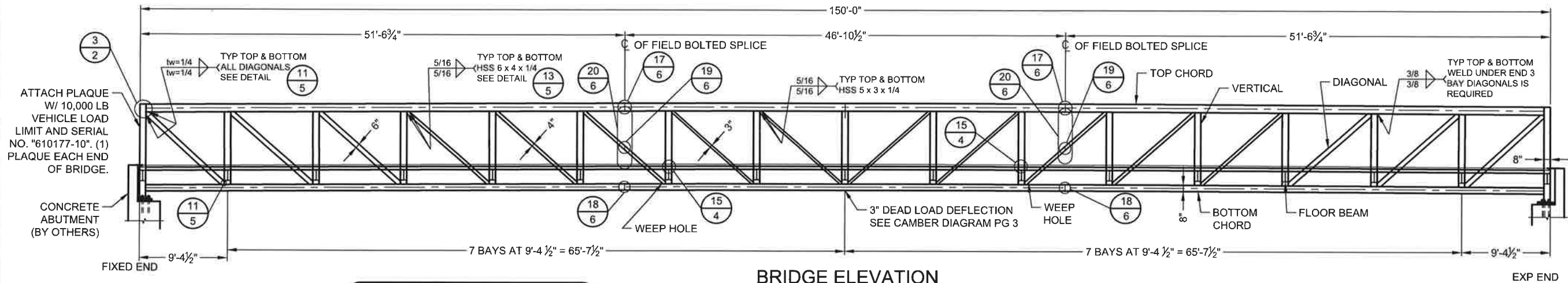


- ## QUALITY ASSURANCE NOTES

- 
- ASE CERTIFIED
FABRICATOR**

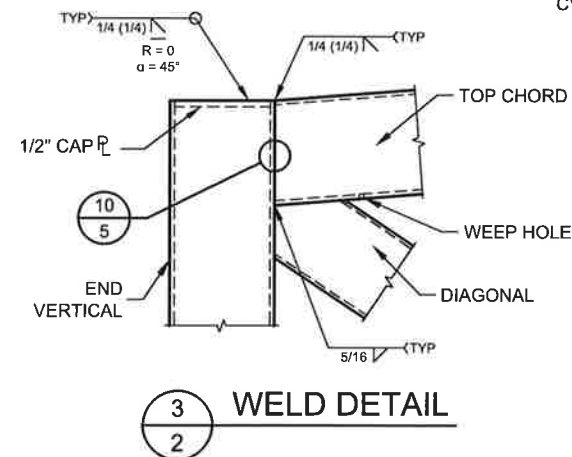
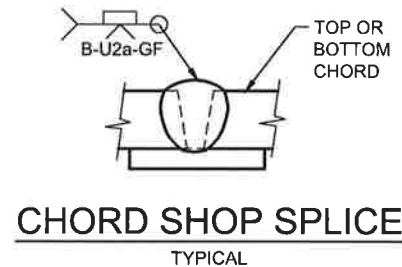
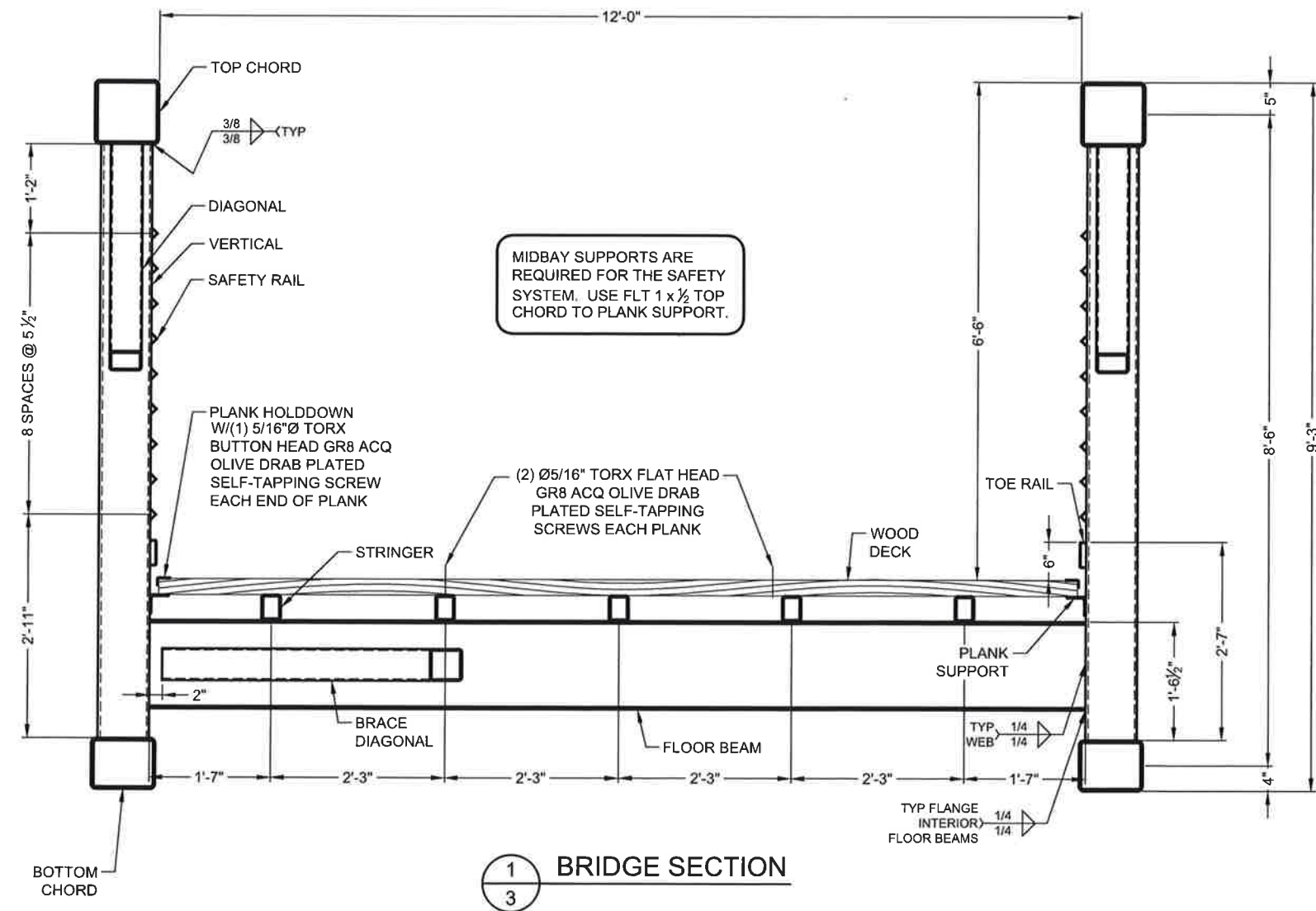
 ENGINEERED SOLUTIONS LLC www.ContechES.com 8301 State Highway 28 North, Alexandria, MN 55308 800-328-2047 320-345-9126 320-566-3148 FAX						150'-0" x 12'-0" CLIMAX COLORADO INTAKE ACCESS BRIDGE LEADVILLE, CO											
DATE:						4/29/2020											
DESIGNED:			MJH			DRAWN:			CMA								
CHECKED:			SEC			APPROVED:			MJH								
PROJECT No.: 610177						SEQUENCE No.: 10											
SHEET: 1 OF 6																	

\\SP0HAFLE03.A0 CONTECH-CPI.COMMERLINPROJECT\ACTIVE\01000610177610177-10-CONTINENTAL PEDESTRIANDRAWINGS\FABRICATION\0177-10 REV B.DWG 2/1/2021 12:46 PM



SAFETY RAIL AND TOE RAIL ARE NOT SHOWN IN ELEVATION FOR CLARITY. SEE BRIDGE SECTION FOR CORRECT NUMBER AND LOCATION.

SHOP NOTE: EXTEND STRINGERS FROM END SECTIONS.



A

SCHEDULE OF MEMBERS	
TOP CHORD	HSS 10 x 10 x 3/8
BOTTOM CHORD	HSS 10 x 8 x 3/8
VERTICAL	HSS 8 x 8 x 3/8
END VERTICAL	HSS 10 x 8 x 3/8
DIAGONAL	HSS 5 x 3 x 1/4 ①
BRACE DIAGONAL	HSS 5 x 5 x 1/4
FLOOR BEAM	W 14 x 43
STRINGER	HSS 4 x 3 x 1/4
END FLOOR BEAM	W 14 x 43
PLANK SUPPORT	∠ 3 x 2 x 3/16
PLANK HOLDDOWN	∠ 2 x 1 1/4 x 10 GA
SAFETY RAIL	∠ 1 1/4 x 1 1/4 x 1/8
TOE RAIL	C 4 x 1 x 10 GA R.F.

① USE HSS 8 x 6 x 1/4 END 3 BAYS, HSS 6 x 4 x 1/4 4TH-6TH BAYS, TYP BOTH ENDS OF BRIDGE. DOUBLE MITER ALL DIAGONALS.
CVN- SEE QUALITY ASSURANCE NOTES

150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

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8301 State Highway 29 North, Alexandria, MN 56208
800-328-2047 320-345-9126 320-566-3118 FAX

COLORADO LICENSED
MICHAEL HEMANN
PE 0050434
2/1/21

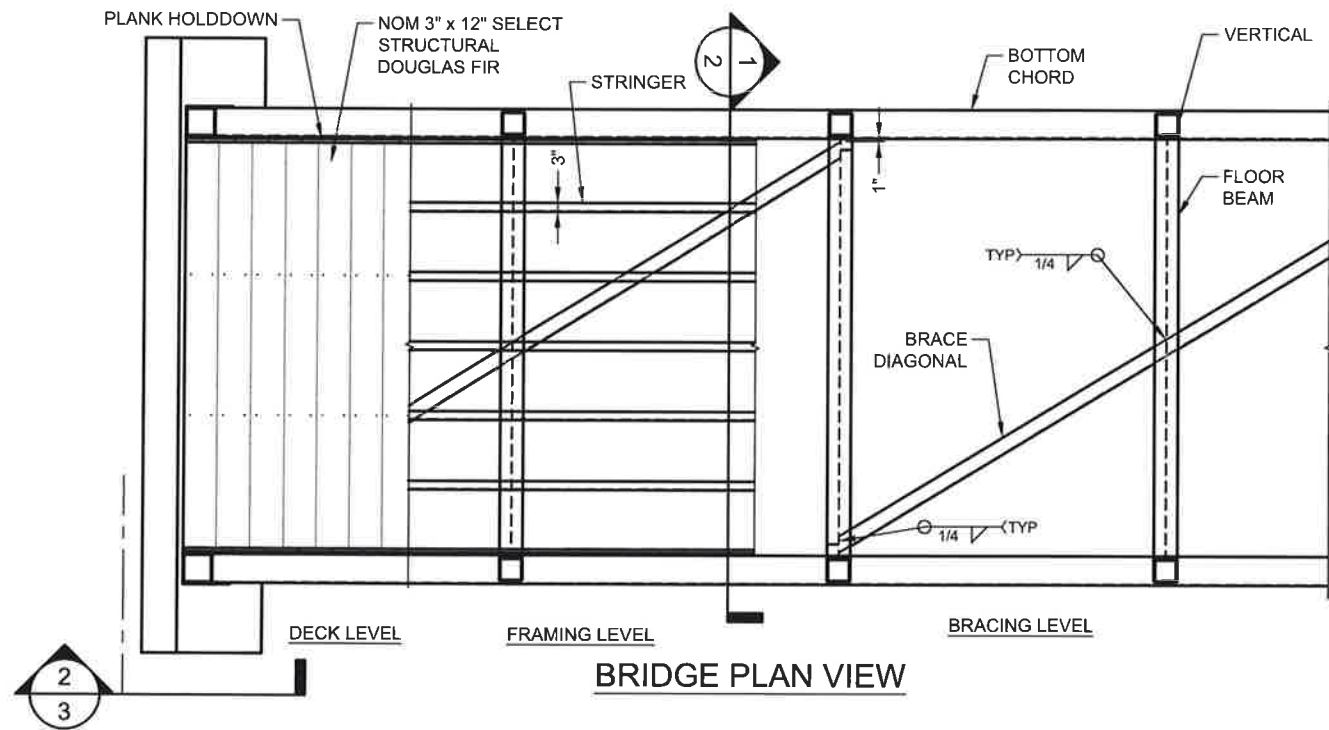
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ENGINEERED SOLUTIONS LLC
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800-328-2047 320-345-9126 320-566-3118 FAX

DATE: 4/29/2020
DESIGNED: MJH
CHECKED: SEC
PROJECT No.: 610177
SEQUENCE No.: 10
SHEET: 2 OF 6

The design and information shown on this drawing is provided as a service to the project owner. Engineer and contractor shall be responsible for verifying the accuracy of the information and for the proper use of the drawing. No warranty is made by the engineer for the accuracy of the information or for the proper use of the drawing. The engineer shall not be responsible for the accuracy of the information or for the proper use of the drawing. The engineer shall not be responsible for the accuracy of the information or for the proper use of the drawing.

CMA	BY
CMA	REVISION DESCRIPTION
AS-BUILT	REVISOR
2/1/21	DATE
9/4/2020	DATE
MARK	DATE

\\SP0HAFLE03 AD CONTECH-CP COMMERLINPROJECT\ACTIVE\6101001610177610177-10-CONTINENTAL PEDESTRIANDRAWINGS\FABRICATION\610177-10 REV B DWG 2/1/2021 12:46 PM

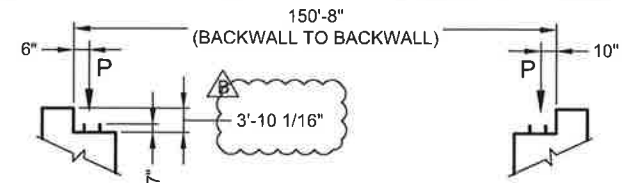


COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

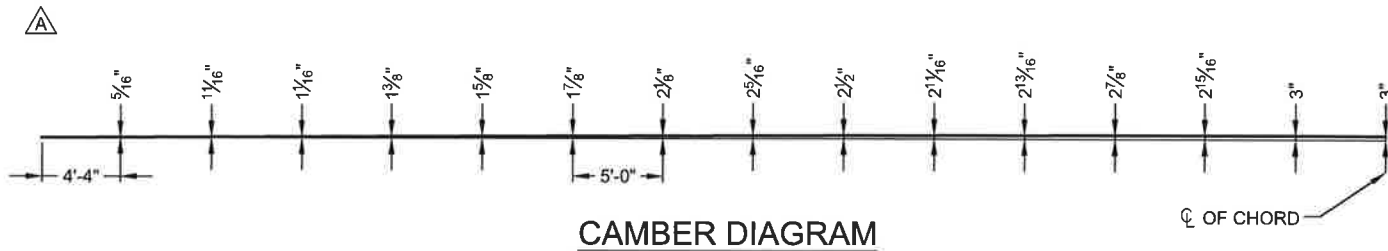
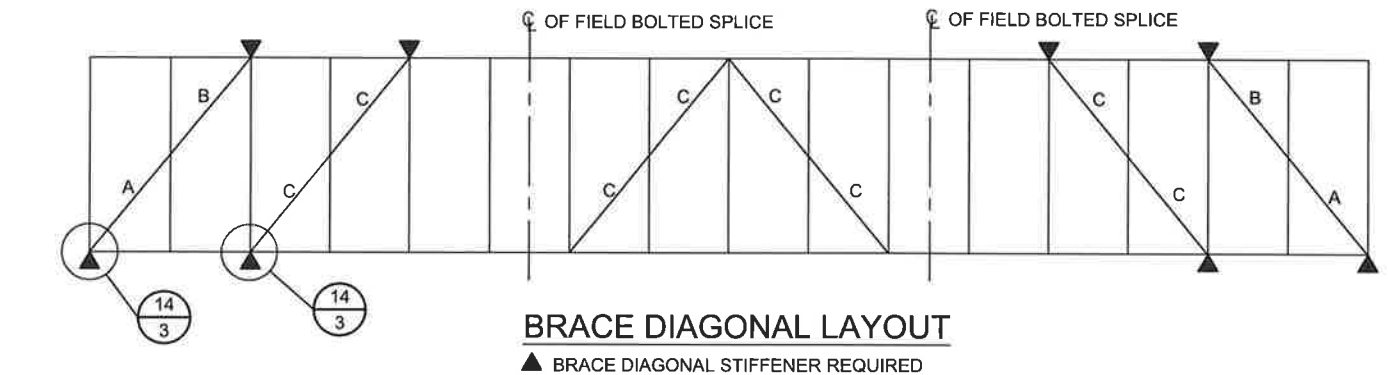
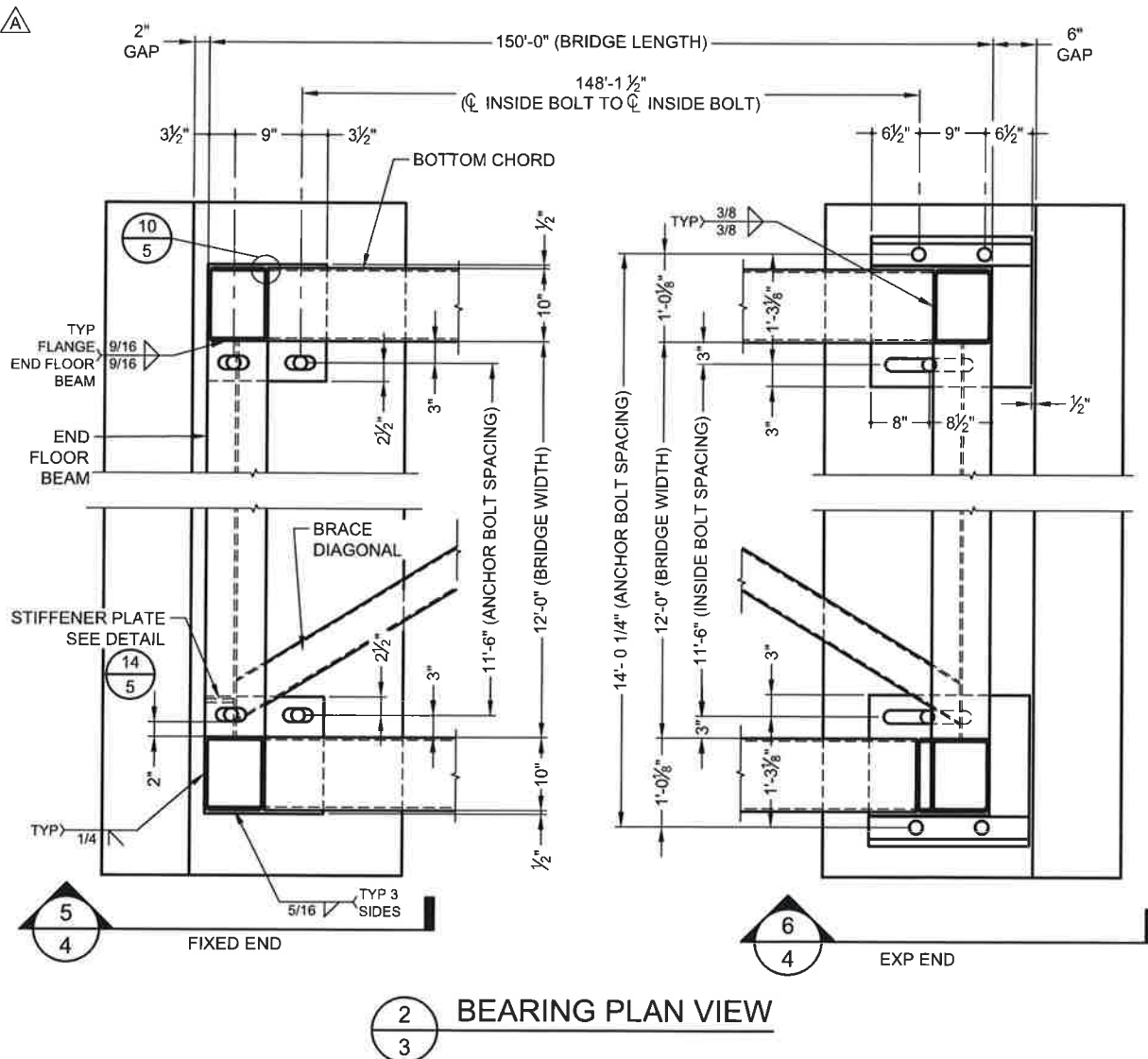
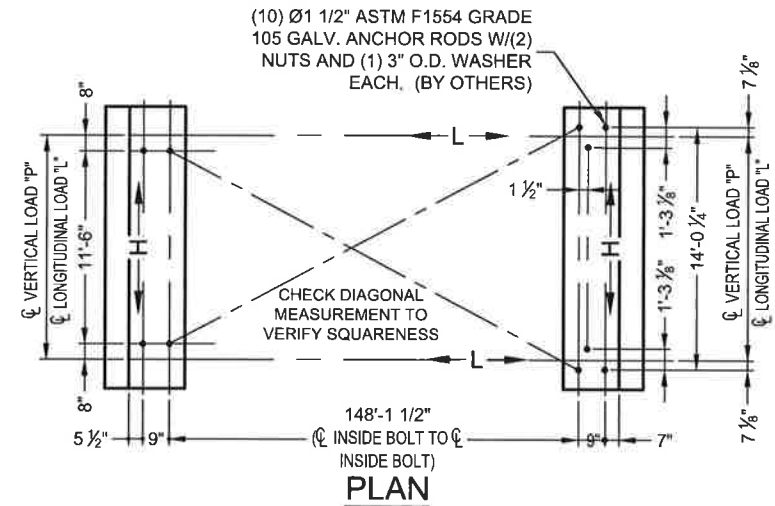
BRIDGE REACTIONS				+ DOWNWARD LOAD - UPWARD LOAD	
	P (LBS)	H (LBS)	L (LBS)		
DEAD LOAD ②	28,500				
UNIFORM LIVE LOAD	40,500				
VEHICLE LOAD	10,000				
WIND UPLIFT 20 PSF					
WINDWARD	-15,000				
LEEWARD	-5,000				
WIND	±13,870	37,465			
THERMAL ②					4,275
SEISMIC ②		16,000	16,000		

"P" - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)
+ LONGITUDINAL SEISMIC APPLIED TO FLOOR BEAMS ONLY

- ① BRIDGE LIFTING WEIGHT: 87,000 LBS - DOES NOT INCLUDE FUTURE DECK
② BRIDGE DEAD LOAD: 114,000 LBS - INCLUDES FUTURE DECK



ANCHOR BOLT ELEVATION



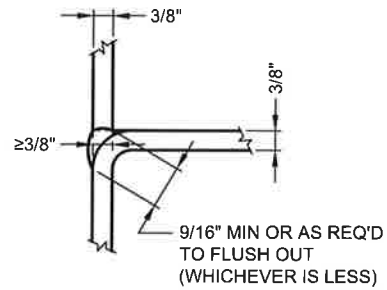
CONTECH
CONTRACT
DRAWING



150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO



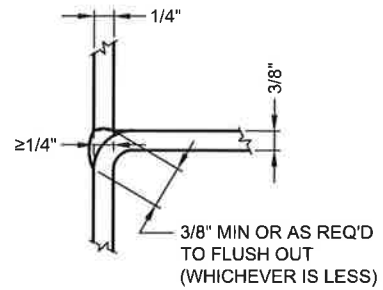
DATE:	4/29/2020
DESIGNED:	MJH
DRAWN:	CMA
CHECKED:	SEC
APPROVED:	MJH
PROJECT No.:	610177
SEQUENCE No.:	10
SHEET:	3 OF 6



MATCHED EDGES OF:
1. CHORDS TO END VERTICALS

TO BE PARTIAL PENETRATION WELDS.

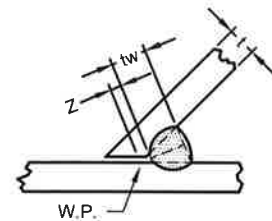
10 WELD DETAIL
2,3



MATCHED EDGES OF:
1. HSS 8 x 6 x 1/4 DIAGONALS TO VERTICALS

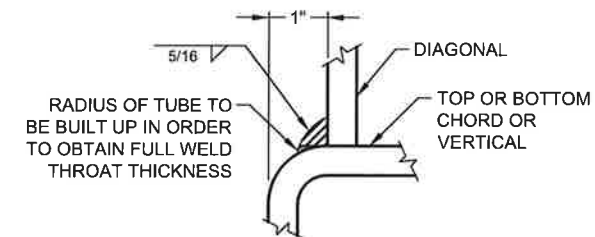
TO BE PARTIAL PENETRATION WELDS.

11 WELD DETAIL
2

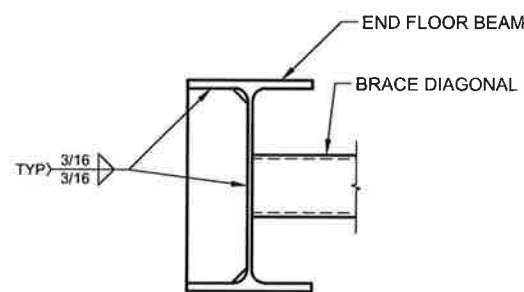


"Z" LOSS DIMENSION TO BE DETERMINED IN ACCORDANCE WITH AWS D1.1 - TABLE 2.9

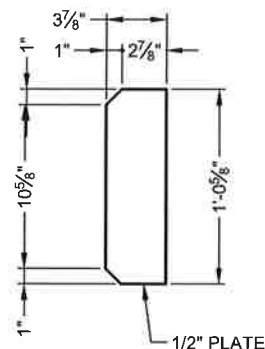
12 WELD DETAIL
2



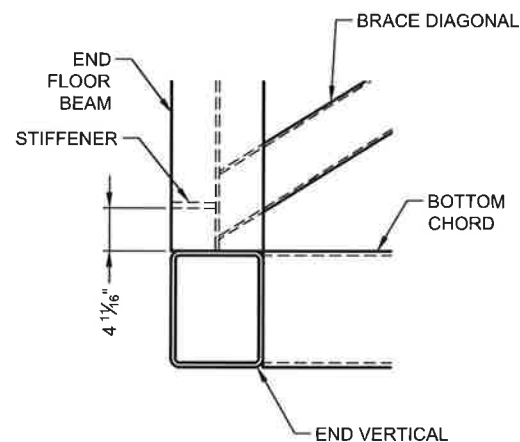
13 WELD DETAIL
2



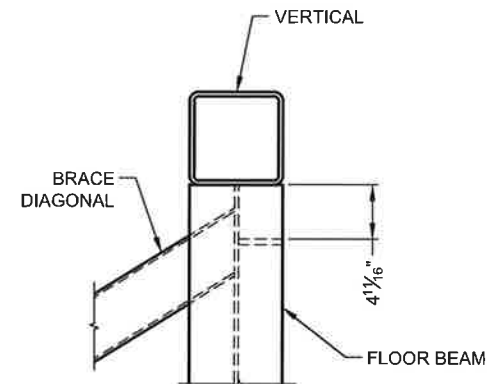
ELEVATION VIEW



STIFFENER

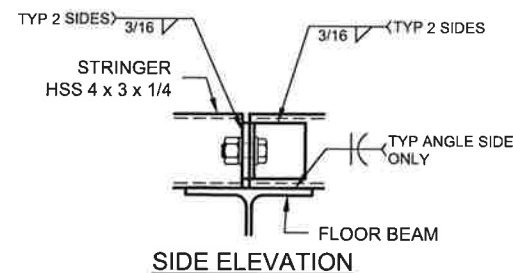
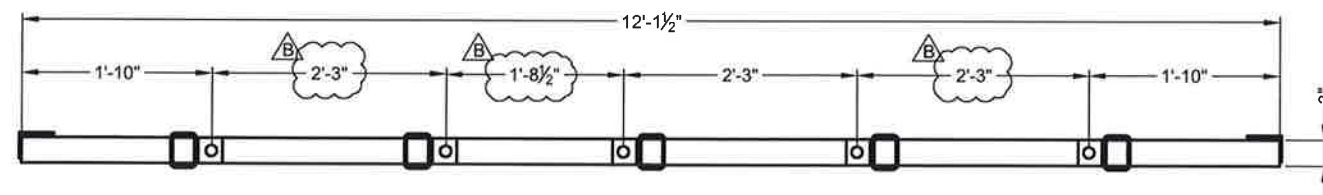


PLAN VIEW - END FLOOR BEAM



PLAN VIEW - TYP FLOOR BEAM

14 END BRACE DIAGONAL STIFFENER
3 SEE BRACE DIAGONAL LAYOUT FOR LOCATIONS

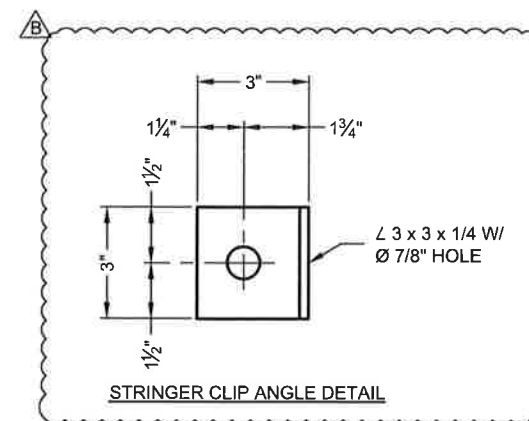


SIDE ELEVATION

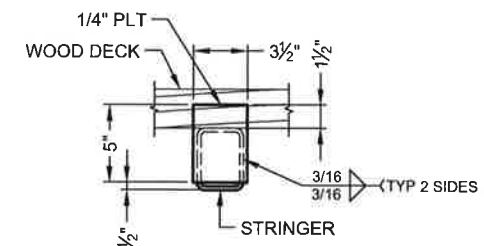
MATERIAL (PER SPLICE)

- (5) Ø3/4" x 2" ASTM F3125 GRADE A325 T3 BOLTS W/(1) DH3 A563 NUT & (2) F436 T3 WASHER EA.
- (5) L 3 x 3 x 1/4 x 3" LG W/ (1) 7/8" DIA HOLE
- (1) 3" x 3/8" x 12'-1 1/2" ASTM A588 PLATE W/ 7/8" DIA HOLES

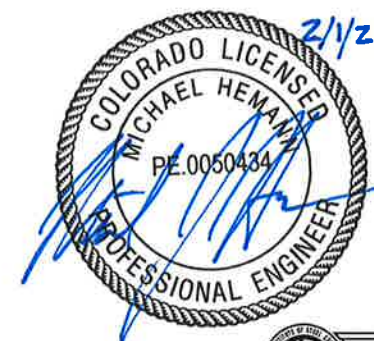
15 STRINGER SPLICE
2



STRINGER CLIP ANGLE DETAIL



16 DECK CAP DETAIL
4 TYP ALL STRINGERS



CONTECH
CONTRACT
DRAWING



150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

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REVISION DESCRIPTION	DATE	MARK	BY
AS-BUILT	2/1/21	B	CMA
REVISED TO WOOD DECK - NEW DESIGN	9/4/2020	A	CMA

CONTECH
ENGINEERED SOLUTIONS LLC
www.conteches.com
8301 State Highway 28 North, Alexandria, MN 56308
800-328-2047 320-566-3146 FAX

CONTINENTAL
BRIDGE

DATE:	4/29/2020
DESIGNED:	MJH
DRAWN:	CMA
CHECKED:	SEC
APPROVED:	MJH
PROJECT No.:	610177
SEQUENCE No.:	10
SHEET:	5 OF 6

June 3, 2021

Miles McElhinney P.E. - Sr. Engineer
Climax Mine
11230 CO-91
Climax, CO 80429

RE: Certificate of Compliance
Environmental Protection Facility Certification
Climax Mine – Permit No. M-1977-493
Technical Revision 31
Mayflower Flood Bypass Stage 2 Tower Riser and Access Bridge

Mr. McElhinney;

This is to certify that the Climax Colorado Intake Access Bridge (Contech Project No. 610177-10) which we supplied for Climax Mine was designed and fabricated in accordance with the following provisions:

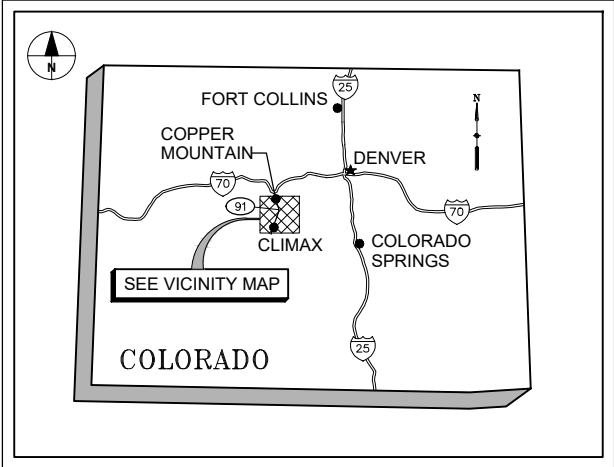
This bridge was designed in accordance with the AASHTO Standard specification for highway bridges, 2017 (8th Edition) & "Guide specifications for design of pedestrian bridges", 2009 (including 2015 interim revisions) by the American association of state highway and transportation officials (AASHTO). The bridge members were fabricated from high strength steel, ASTM A847 Structural Tubing (Fy=50,000 Psi), ASTM A588, Or ASTM A709-50w (Fy=50,000 Psi) structural steel shapes and plates. The bridge decking is 3" thick nominal select structural fir timber decking. The bridge was designed for a 90-psf uniform live load on the full deck area or two H5 vehicles (end to end only). The design wind loading is 54 psf. All exposed surfaces of steel were cleaned in accordance with the Steel Structures Painting Council Surface preparations specifications No. 7, brush-off blast cleaning.



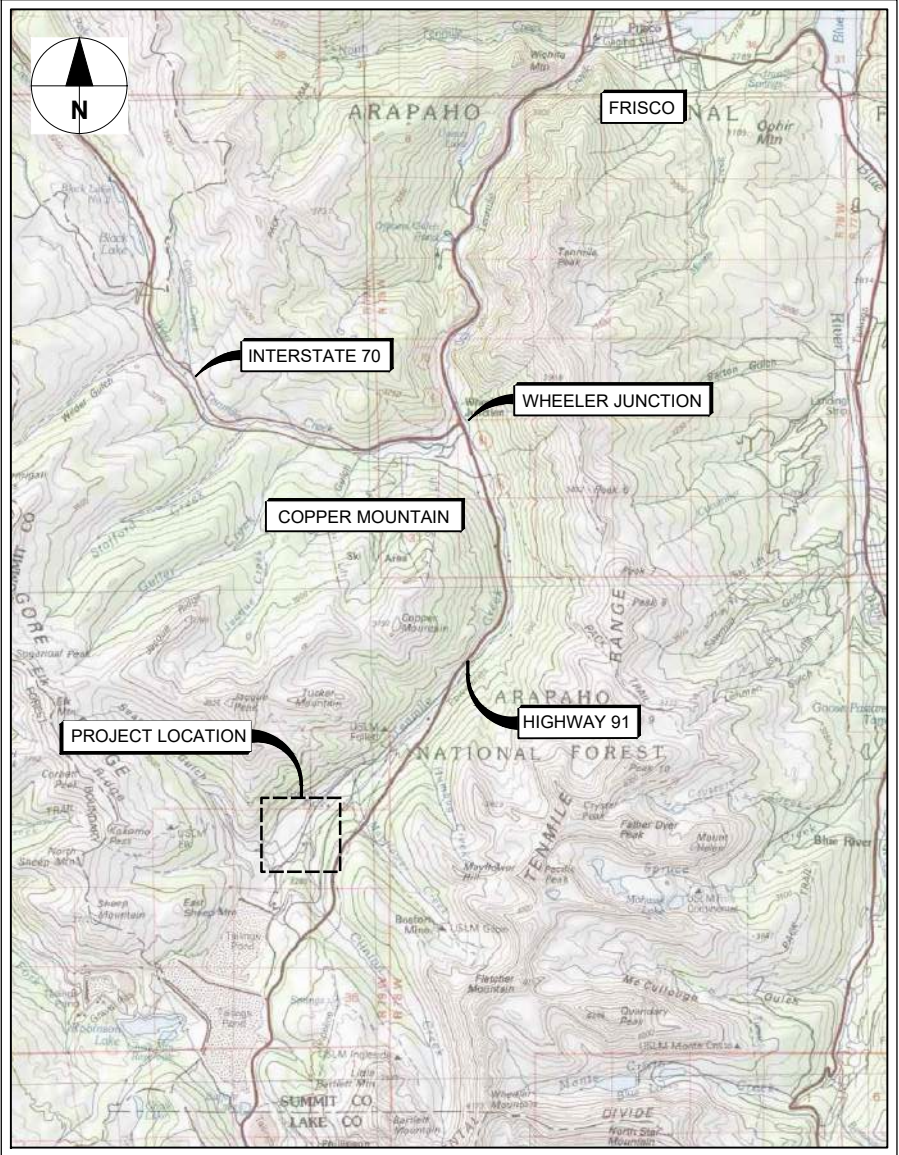
Michael Hemann, PE
Design Engineer
Contech Engineered Solutions
320-345-9150

MAYFLOWER FLOOD BYPASS TUNNEL
PHASE II VERTICAL INTAKE STRUCTURE
VERTICAL INTAKE TOWER AND ACCESS BRIDGE
RECORD DRAWINGS
CLIMAX, COLORADO

PREPARED FOR
CLIMAX MOLYBDENUM COMPANY
PREPARED BY
AECOM
MAY 2021



STATE MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET INDEX	
SHEET NUMBER	DESCRIPTION
G-01	VERTICAL INTAKE TOWER COVER SHEET
C-01	VERTICAL INTAKE TOWER EXISTING CONDITIONS - PLAN
C-02	VERTICAL INTAKE TOWER EXISTING CONDITIONS - PROFILE
C-03	VERTICAL INTAKE TOWER GENERAL PLAN
C-04	VERTICAL INTAKE TOWER GENERAL PROFILE
C-05	STABILIZATION AND FOUNDATION EXCAVATION
C-06	STABILIZATION DETAILS
C-07	VERTICAL INTAKE TOWER MACCAFERRI ROCKFILL NETTING DETAILS (1 OF 4)
C-08	VERTICAL INTAKE TOWER MACCAFERRI ROCKFILL NETTING DETAILS (2 OF 4)
C-09	VERTICAL INTAKE TOWER MACCAFERRI ROCKFILL NETTING DETAILS (3 OF 4)
C-10	VERTICAL INTAKE TOWER MACCAFERRI ROCKFILL NETTING DETAILS (4 OF 4)
S-01	VERTICAL INTAKE TOWER PLAN AND SECTION
S-02	VERTICAL INTAKE TOWER SECTIONS (1 OF 7)
S-03	VERTICAL INTAKE TOWER SECTIONS (2 OF 7)
S-04	VERTICAL INTAKE TOWER SECTIONS (3 OF 7)
S-05	VERTICAL INTAKE TOWER SECTIONS (4 OF 7)
S-06	VERTICAL INTAKE TOWER SECTIONS (5 OF 7)
S-07	VERTICAL INTAKE TOWER SECTIONS (6 OF 7)
S-08	VERTICAL INTAKE TOWER SECTIONS (7 OF 7)
S-09	VERTICAL INTAKE TOWER DETAILS
S-10	VERTICAL INTAKE TOWER FOUNDATION ANCHORS
S-11	VERTICAL INTAKE TOWER REINFORCEMENT (1 OF 9)
S-12	VERTICAL INTAKE TOWER REINFORCEMENT (2 OF 9)
S-13	VERTICAL INTAKE TOWER REINFORCEMENT (3 OF 9)
S-14	VERTICAL INTAKE TOWER REINFORCEMENT (4 OF 9)
S-15	VERTICAL INTAKE TOWER REINFORCEMENT (5 OF 9)
S-16	VERTICAL INTAKE TOWER REINFORCEMENT (6 OF 9)
S-17	VERTICAL INTAKE TOWER REINFORCEMENT (7 OF 9)
S-18	VERTICAL INTAKE TOWER REINFORCEMENT (8 OF 9)
S-19	VERTICAL INTAKE TOWER REINFORCEMENT (9 OF 9)
S-20	VERTICAL INTAKE TOWER SHAFT PLAN AND SECTIONS
S-21	VERTICAL INTAKE TOWER BRIDGE ABUTMENT
S-22	VERTICAL INTAKE TOWER BRIDGE ABUTMENT DRILLED CONCRETE SHAFTS
S-23	VERTICAL INTAKE TOWER STOPLOGS (1 OF 2)
S-24	VERTICAL INTAKE TOWER STOPLOGS (2 OF 2)
S-25	VERTICAL INTAKE TOWER HANDRAIL DETAILS
S-26	VERTICAL INTAKE TOWER BELL MOUTH
S-27	VERTICAL INTAKE TOWER STRUCTURAL NOTES
S-28	VERTICAL INTAKE TOWER STRUCTURAL DETAILS (1 OF 2)
S-29	VERTICAL INTAKE TOWER STRUCTURAL DETAILS (2 OF 2)
S-30	TRASHRACK SUPPORT PLAN AND DETAILS
S-31	TRASHRACK SUPPORT ELEVATION AND DETAIL
S-32	TRASHRACK SUPPORT DETAILS
S-33	VERTICAL INTAKE STRUCTURE TRASHRACK GUIDES
S-34	VERTICAL INTAKE TOWER HANDRAIL AND GRATING
S-35	VERTICAL INTAKE TOWER GRATING AND SUPPORT BEAM DETAILS
S-36	VERTICAL INTAKE TOWER HANDRAIL DETAILS SHEET 1 OF 2
S-37	VERTICAL INTAKE TOWER HANDRAIL DETAILS SHEET 2 OF 2
S-38	VERTICAL INTAKE TOWER WEIR WALL SEAL PLATE
1-6	VERTICAL INTAKE ACCESS BRIDGE DRWAINGS (CONTECH)

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT

AECOM
804 COLORADO AVE.
Suite 201
GLENWOOD SPRINGS, CO. 81601

www.aecom.com

CONSULTANTS

REGISTRATION



ISSUE/REVISION

B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60591226

SHEET TITLE

VERTICAL INTAKE TOWER
COVER SHEET

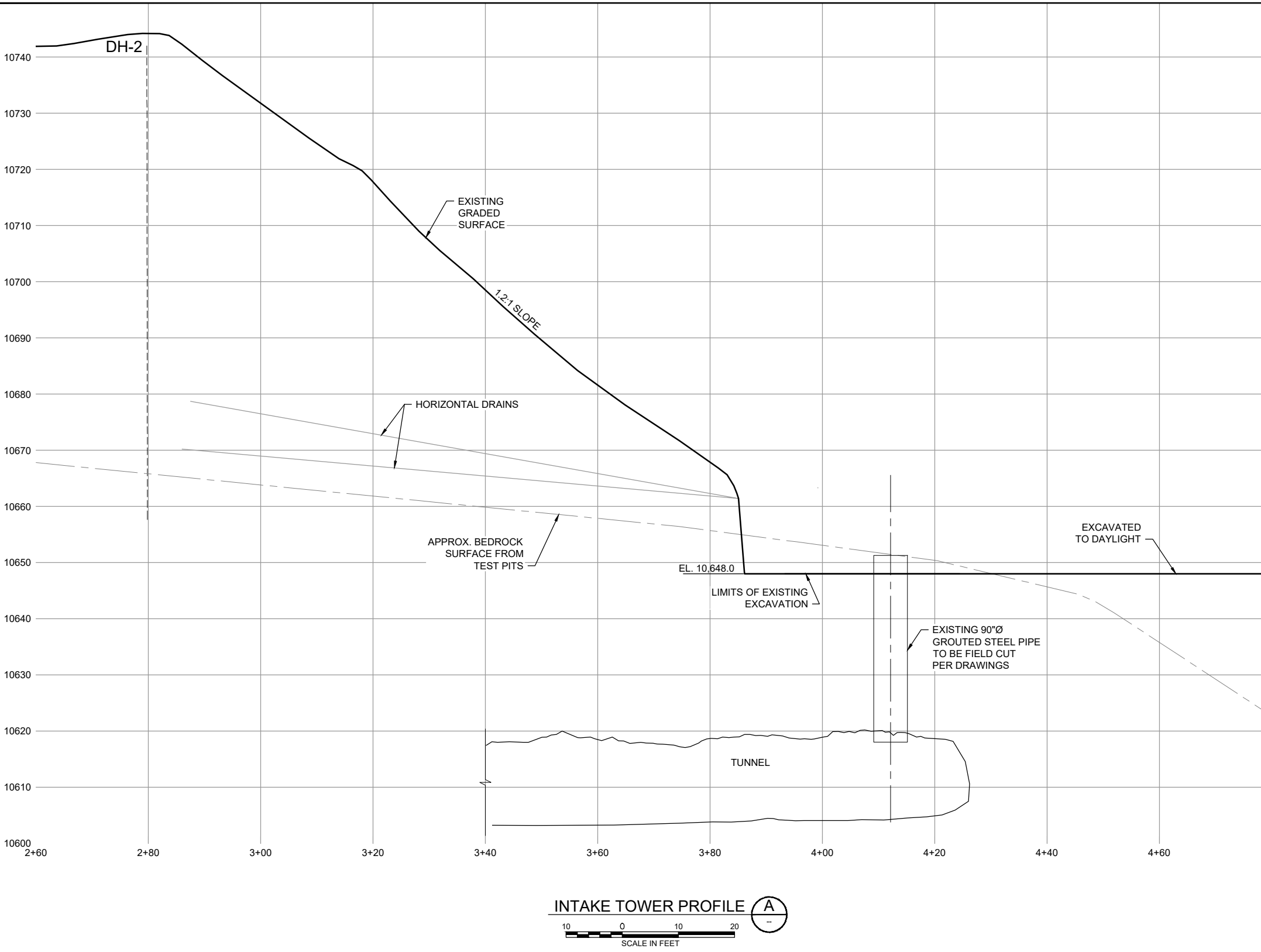
SHEET NUMBER

G-01

Project Management Initials: _____ Designer: _____ Checked: _____ Approved: _____
ANSI D 22" x 34"

Last saved by: JUDITH MCCRAY(2021-06-30) Last Plotted: 2021-06-30
Filename: M:\DCSP\PROJECTS\WTR\60591226_CLX\MAY2900_CAD_GIS\910_CAD\20-SHEETS\VERTICAL INTAKE STRUCTURE\COVER SHEET.DWG

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PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT
 Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT
AECOM
804 COLORADO AVE.
Suite 201
GLENWOOD SPRINGS, CO. 81601
www.aecom.com
CONSULTANTS

REGISTRATION

ISSUE/REVISION		
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER
60591226
SHEET TITLE
VERTICAL INTAKE TOWER
EXISTING CONDITIONS - PROFILE
SHEET
C-02

Project Management Initials: _____ Designer: _____ Checked: _____ Approved: _____ ANS/D 22" x 34"

Last saved by: TIM.SMITH(6(2021-05-28)) Last Plotted: 2021-06-21
Filename: M:\DCS\PROJECT\SWTR\60591226_CLX\MAY2020_CAD_GIS\910_CAD\20-SHEETS\AS-BUILT\TC-01-REGRADE-BR-ASBT SURVEY POINTS.DWG

VERTICAL TOWER INTAKE STRUCTURE BRIDGE ABUTMENT AS-BUILT POINTS				
POINT #	NORTHING	EASTING	ELEV	DESC
9009	29986.09	5355.99	10740.70	CONC
9010	29973.45	5362.72	10740.69	CONC
9011	29972.93	5361.76	10740.71	CONC
9012	29979.32	5358.36	10740.72	CONC
9013	29979.97	5357.99	10740.72	NAIL 8M
9014	29971.72	5344.13	10740.72	CONC
9015	29965.38	5347.47	10740.71	CONC
9016	29964.84	5346.49	10740.70	CONC
9017	29977.57	5339.77	10740.73	CONC
9018	29978.11	5340.78	10740.73	CONC
9019	29973.68	5343.11	10740.73	CONC
9020	29973.21	5344.61	10740.72	CONC
9021	29979.78	5356.83	10740.73	CONC
9022	29981.28	5357.32	10740.74	CONC
9023	29985.61	5355.01	10740.72	CONC
9024	29972.84	5361.61	10733.87	CONC
9025	29979.12	5358.29	10733.93	CONC
9026	29971.65	5344.33	10733.89	CONC
9027	29965.45	5347.59	10733.87	CONC

Points collected by AECOM 02/26/2021

VERTICAL TOWER INTAKE STRUCTURE TOP OF TOWER AS-BUILT POINTS				
POINT #	NORTHING	EASTING	ELEV	DESC
9030	29978.87	5357.51	10740.79	out side edge .33 offset
9031	29972.52	5345.40	10740.78	out side edge .33 offset
9032	29975.13	5351.72	10740.81	cl bridge
9033	29850.99	5417.30	10744.56	cl bridge
9034	29818.71	5417.70	10740.71	cor concrete
9035	29820.88	5422.11	10740.77	cor concrete
9036	29835.35	5414.13	10740.70	cor concrete
9037	29837.27	5408.07	10740.69	cor concrete
9038	29840.10	5413.60	10740.67	cor concrete
9039	29838.25	5414.51	10740.69	cor concrete
9040	29824.74	5429.19	10740.77	cor concrete
9041	29825.87	5431.26	10740.77	cor concrete
9042	29840.24	5423.32	10740.67	cor concrete
9043	29839.54	5422.03	10740.70	cor concrete
9044	29847.66	5427.59	10740.63	cor concrete
9045	29850.55	5433.02	10740.66	cor concrete
9046	29845.91	5428.55	10740.63	cor concrete
9047	29844.57	5431.29	10740.65	cor concrete
9048	29832.05	5442.80	10740.67	cor concrete
9049	29829.71	5438.50	10740.68	cor concrete
9050	29845.43	5427.75	10740.69	edge bridge .50 offset
9051	29838.91	5415.67	10740.70	edge bridge .75 offset

Points collected by SEMA on 04/09/2021

VERTICAL TOWER INTAKE STRUCTURE TOP OF WEIR WALLS AS-BUILT POINTS				
POINT #	NORTHING	EASTING	ELEV	DESC
9001	29828.30	5418.64	10670.14	SW COR W WEIR WALL
9002	29829.72	5417.99	10670.13	NW COR W WEIR WALL
9003	29833.20	5424.73	10670.14	NE COR W WEIR WALL
9004	29831.96	5425.48	10670.15	SE COR W WEIR WALL
9005	29833.26	5427.99	10670.14	SW COR E WEIR WALL
9006	29834.67	5427.19	10670.15	NW COR E WEIR WALL
9007	29838.42	5434.21	10670.15	NE COR E WEIR WALL
9008	29837.00	5434.87	10670.15	SE COR E WEIR WALL

Points collected by AECOM 04/22/2021

NOTES:
1) TOPO IS FROM DRONE SURVEY ON JAN 31, 2020
AND IS THE BASIS FOR DESIGN.

AECOM

PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

A Freeport-McMoRan Company

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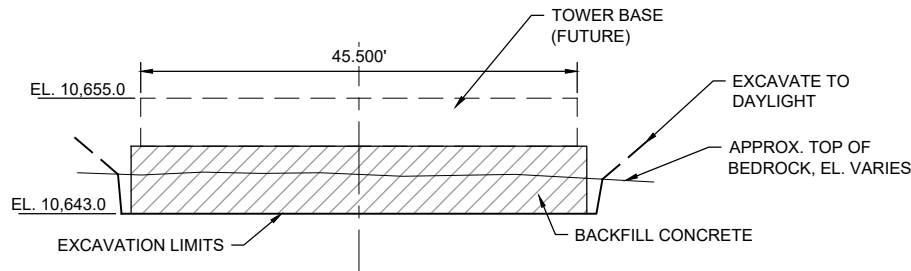
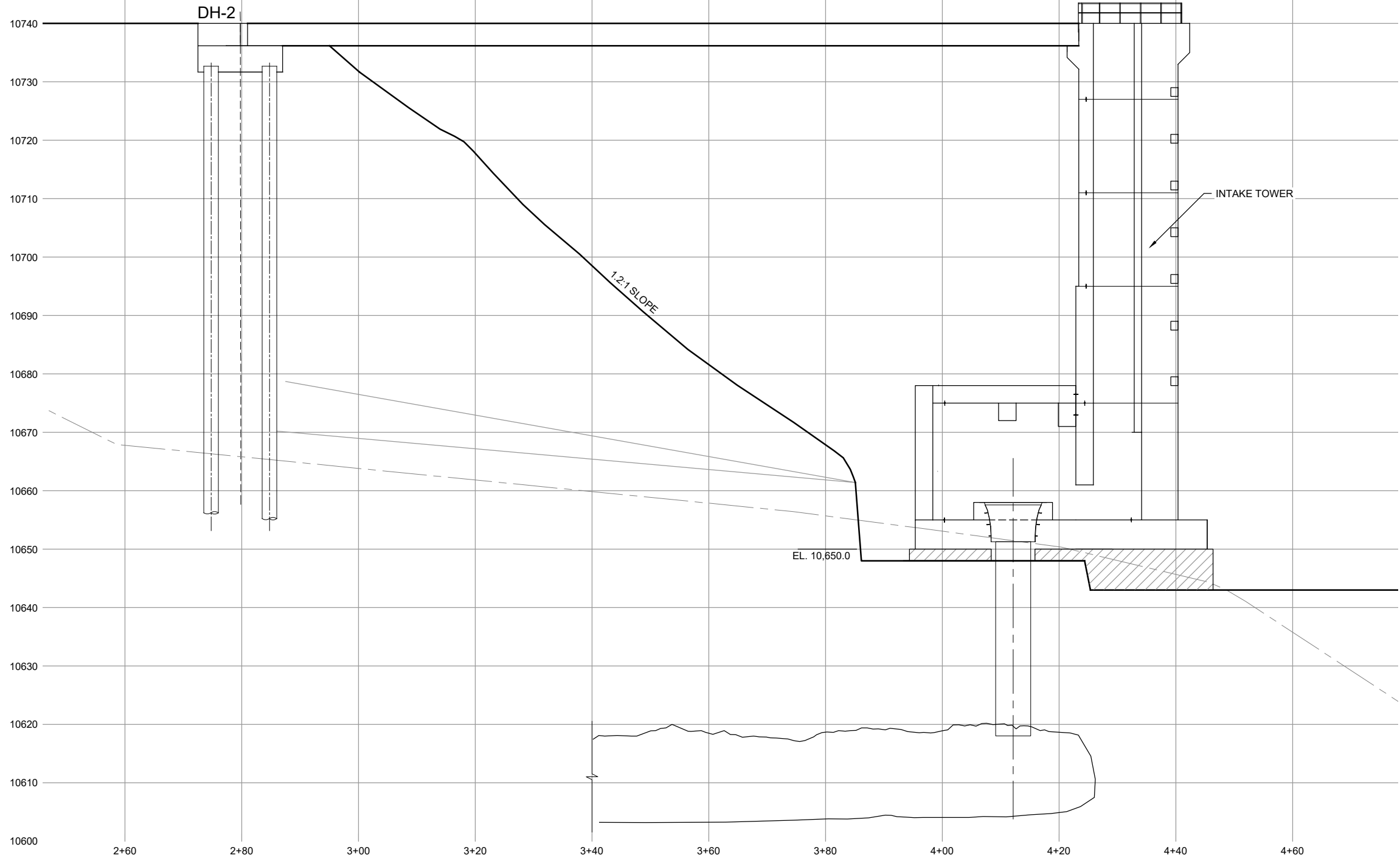
REGISTRATION



KEY PLAN

PROJECT NUMBER
60591226
SHEET TITLE
VERTICAL INTAKE TOWER
GENERAL PLAN

SHEET
C-03



INTAKE TOWER PROFILE **A**
C-03

10 0 10 20
SCALE IN FEET

INTAKE TOWER PROFILE **B**
C-03

10 0 10 20
SCALE IN FEET

AECOM

PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

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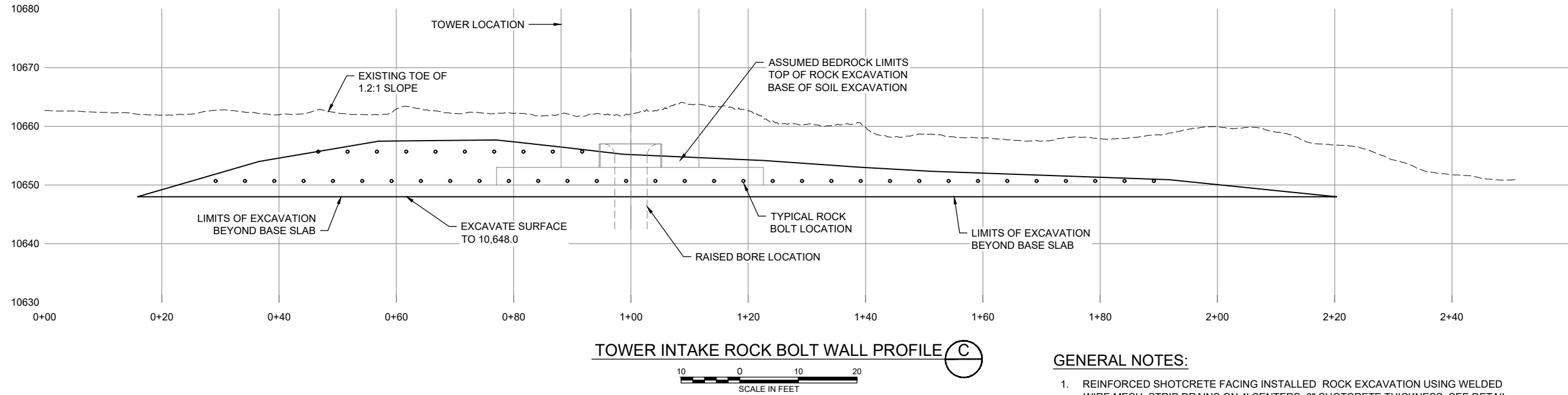
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SHEET TITLE

VERTICAL INTAKE TOWER
GENERAL PROFILE

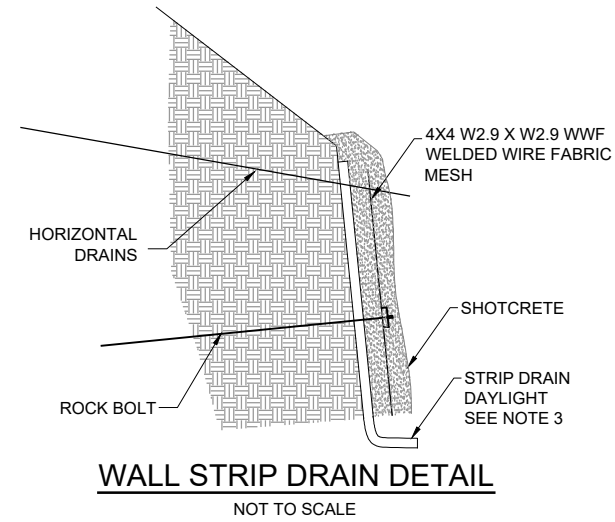
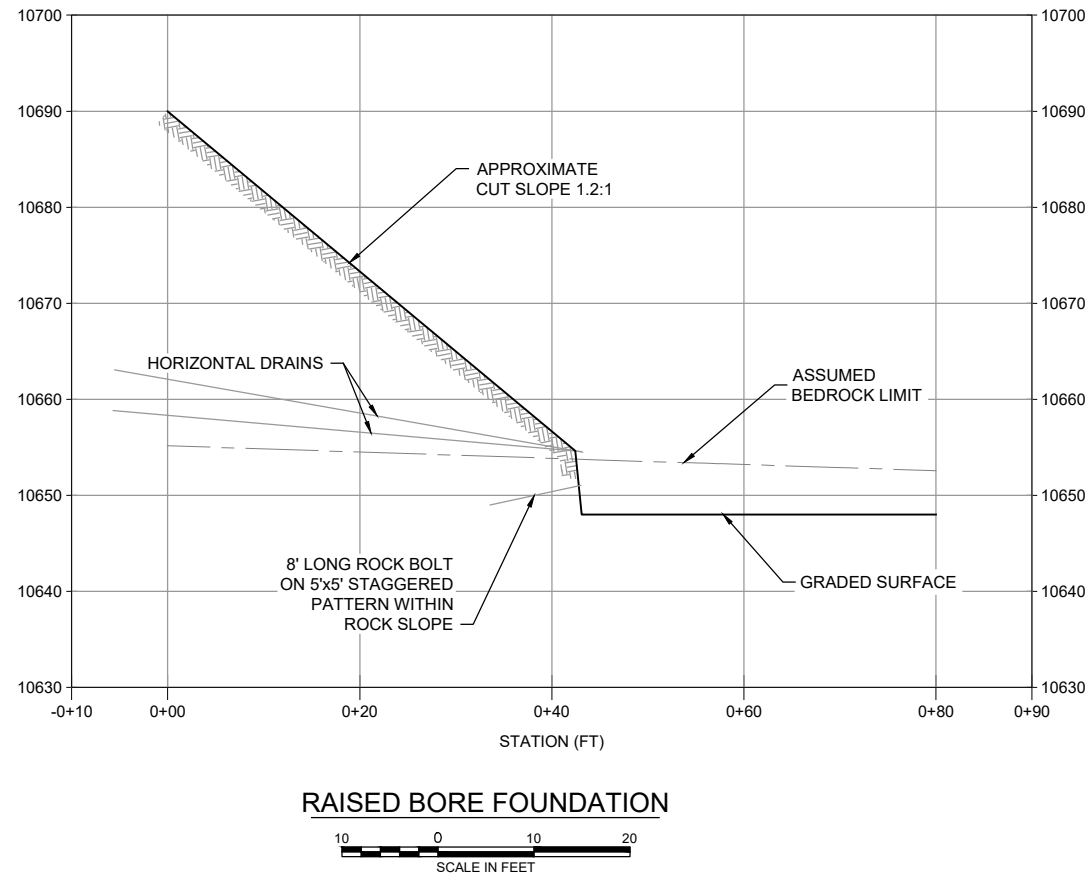
SHEET

C-04



GENERAL NOTES:

1. REINFORCED SHOTCRETE FACING INSTALLED. ROCK EXCAVATION USING WELDED WIRE MESH, STRIP DRAINS ON 4' CENTERS, 6" SHOTCRETE THICKNESS, SEE DETAIL C-06.
2. ALL ROCK BOLTS WILL BE FULLY GROUTED AND CENTRALIZED, 20-DEG. INCLINATION FROM HORIZONTAL, 5X5 STAGGARED PATTERN.



NOTES:

1. STRIP DRAIN JDR-SD-12 OR EQUIVALENT. FULLY ENCAPSULATED IN GEO FABRIC.
2. STRIP DRAIN JOINTS MUST HAVE A 12" MIN OVERLAP TO BE SECURED
3. STRIP DRAIN DAYLIGHT ENDS MUST EXTEND THROUGH THE SHOTCRETE FACE AND BE TRIMMED BACK ONCE SHOTCRETE CURES.

AECOM

PROJECT

PHASE II VERTICAL INTAKE STRUCTURE

CLIENT

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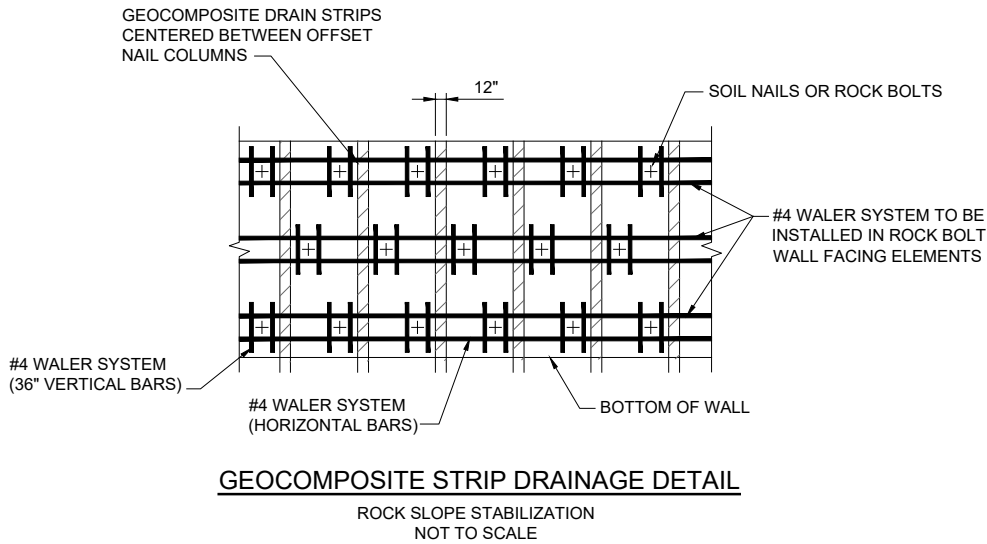
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SHEET TITLE

STABILIZATION AND FOUNDATION EXCAVATION

SHEET

C-05



VERIFICATION TEST SCHEDULE

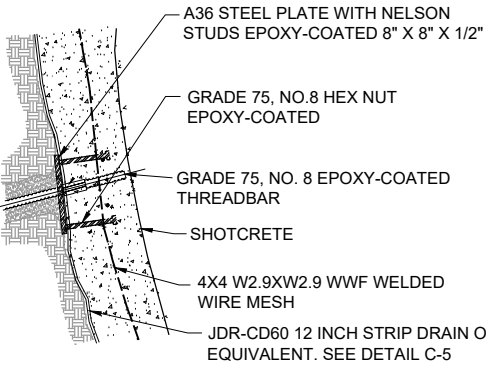
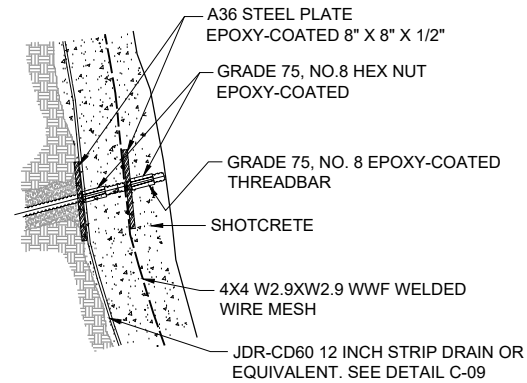
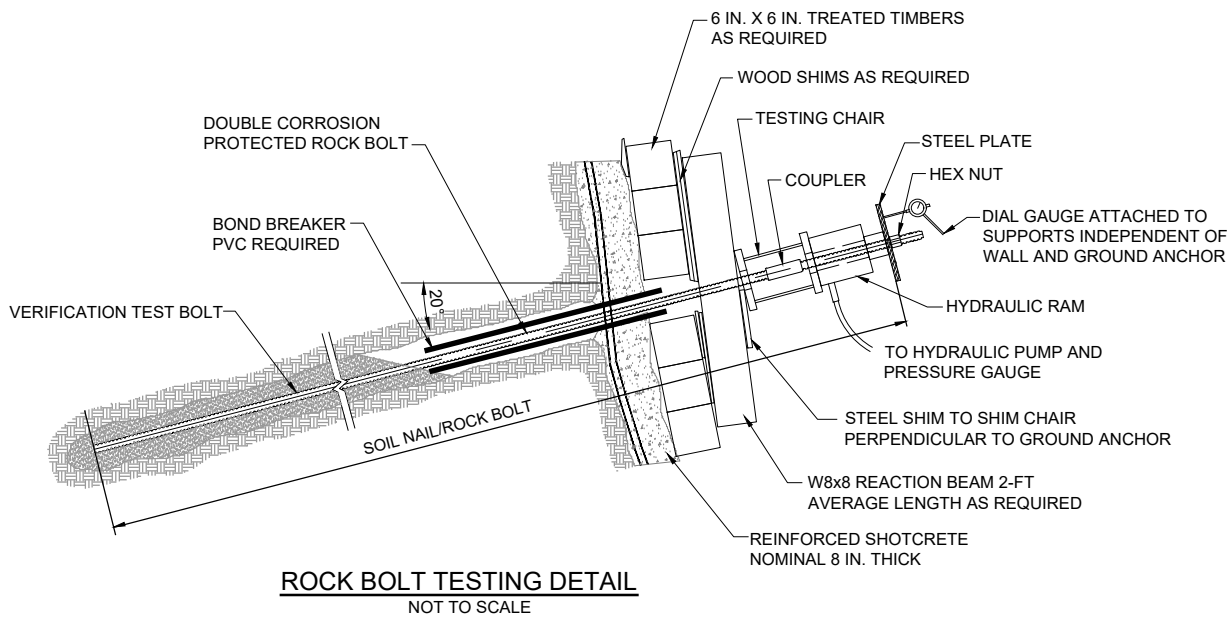
LOAD	HOLD TIME
AL(.05 DL MAX)	1 MINUTE
0.25DL	10 MINUTE
0.50DL	10 MINUTE
0.75DL	10 MINUTE
1.00DL	10 MINUTE
1.25DL	10 MINUTE
1.50DL (CREEP TEST)	60 MINUTE
1.75DL	10 MINUTE
2.00DL (MAX. TEST LOAD)	10 MINUTE

AL - ALIGNMENT LOAD
DL - SOIL NAIL DESIGN LOAD

PROOF TEST SCHEDULE

LOAD	HOLD TIME
AL(.05 DL MAX)	UNTIL STABLE
0.25DL	UNTIL STABLE
0.50DL	UNTIL STABLE
0.75DL	UNTIL STABLE
1.00DL	UNTIL STABLE
1.25DL	UNTIL STABLE
1.33DL(MAX. TEST LOAD)	10 MINUTE

AL - ALIGNMENT LOAD
DL - SOIL NAIL DESIGN LOAD



PROJECT

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CLIENT



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SHEET TITLE

STABILIZATION DETAILS

SHEET NUMBER

C-06

CLIMAX MOLYBDENUM COMPANY – CLIMAX MINE

MAYFLOWER RISER PROJECTS – PHASE I SOILS STABILIZATION - BID #WS1808753517

INSTRUCTIONS TO BIDDERS

MACCAFERRI ROCKFALL MESH SPECIFICATIONS AND DETAILS

1. Mesh shall be Maccaferri Double twist hexagonal wire mesh, Type 8 x 10 Mesh, (wire diameter 0.120 in., galvanized to ASTM A975), or approved equivalent.
2. Mesh Anchors shall be Maccaferri Radial Wire Rope Anchor, see Detail A.2.2(Figure 2) or approved equivalent. Mesh anchors should be drilled to minimum depth of 10 feet.
3. Minimum pullout Capacity is for Mesh Anchors 20 kips. 1 proof test to be performed on Mesh Anchor.
4. Maximum spacing between Mesh Anchors is 50’
5. Perimeter Support Cables shall be 5/8 inch Wire Rope Class 6x19 IWRC EIPS, Galvanized to ASTM A1023 or approved equivalent.
6. Galvanized thimbles shall be used for all wire rope connections.
7. Mesh panels shall be connected using high tensile steel rings (such as Spenax Fasteners) or Lacing Wire, in accordance with manufactures recommendations.
8. Wire Rope clips shall be galvanized and configured to Detail B.2 (Figure 2) or according to manufactures recommendations.
- 9.

Mesh shall be connected and anchored per Figure 1 to Figure 4 (provided by the manufacture), see below.



PROJECT
PHASE II VERTICAL
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PROJECT NUMBER

60591226

SHEET TITLE

VERTICAL INTAKE TOWER
MACCAFERRI ROCKFILL NETTING
DETAILS (1 OF 4)

SHEET

C-07

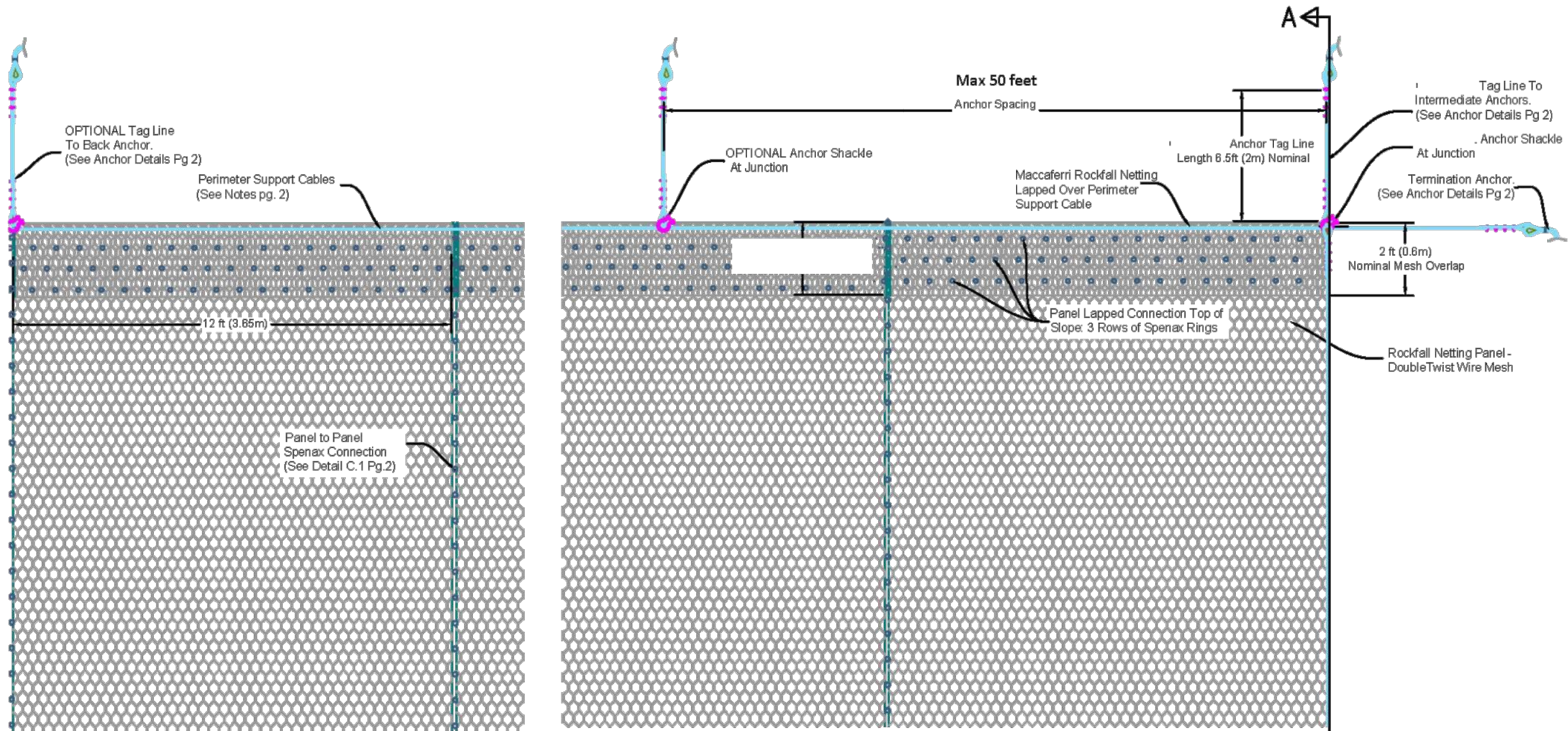
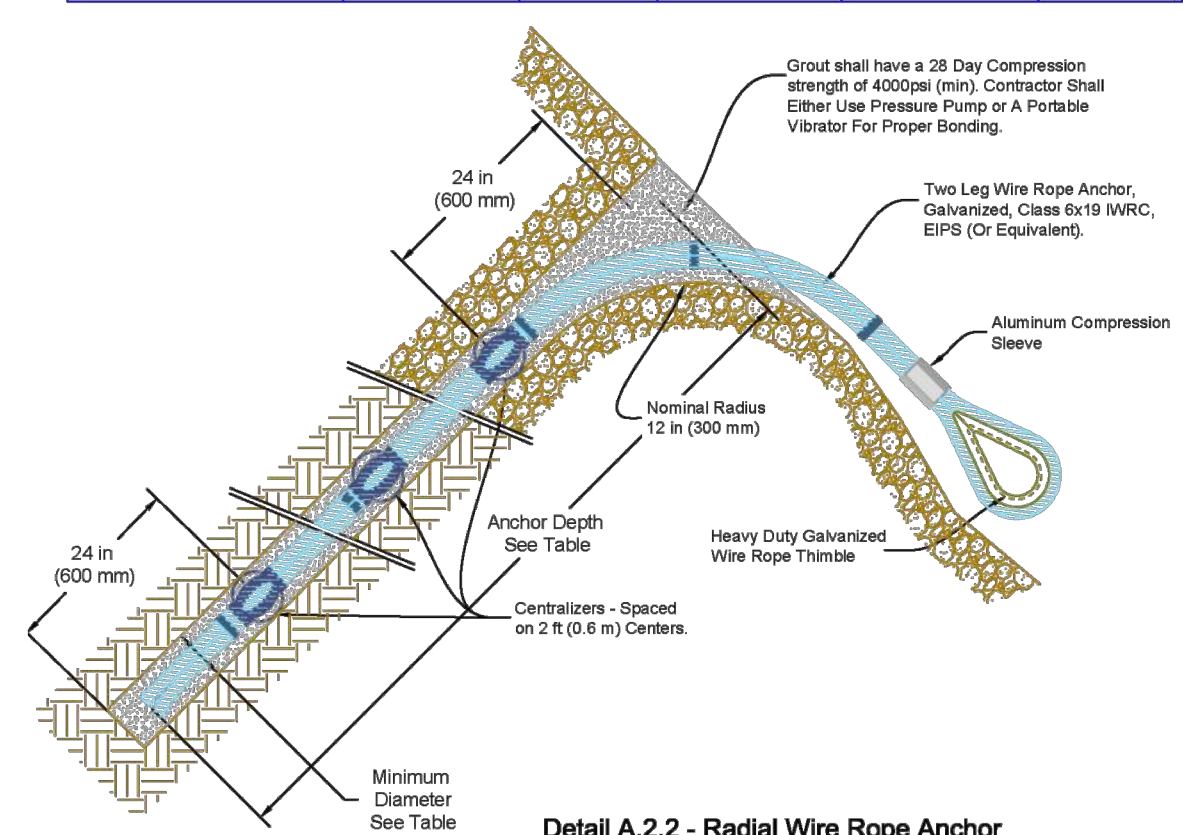


Figure 1:Typical Plan View

I/R	DATE	DESCRIPTION
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LATERAL AND INTERMEDIATE UPSLOPE WIRE ROPE ANCHOR DETAILS					
Anchor Designation / Anchor Type	Suggested Spacing	Foundation Material	Suggested Embedment	Suggested Drill Hole	Minimum Pullout
Intermediate Anchors Double Leg Rope Ø= 5/8in (16mm)	18 - 24 ft (5.5 - 7.3 m)	Soil	8 ft (2.5 m)	4 in (102 mm)	20 Kips (88 kN)
Termination Anchors Double Leg Rope Ø= 5/8in (16mm)	200 ft Max (60 m) Max	Soil	10 ft (3 m)	4 in (102 mm)	25 Kips (110 kN)



Detail A.2.2 - Radial Wire Rope Anchor
- Pressed Aluminum Sleeve w/ Heavy Thimble -

Maccaferri Inc. assumes no responsibility for the drawings and calculations it provides, as they must be intended as a general indication to suggest the proper use of its products.

Rev:	Issue / Revision:	Drawn:	App:	Date:

Drawing Title:
Rockfall Netting Drapery
Notes, Rope Splicing and Anchor Details

Project No: --- Client: -

Drawing No: 2 / 2 Units: Feet Scale: NTS Rev: 1 Printed on: 4/11/17

Designed: - Date: -

Drawn: BL Date: 01/01/15

Checked: - Date: -

Project:
ROCKFALL NETTING -
SIMPLE DRAPERY

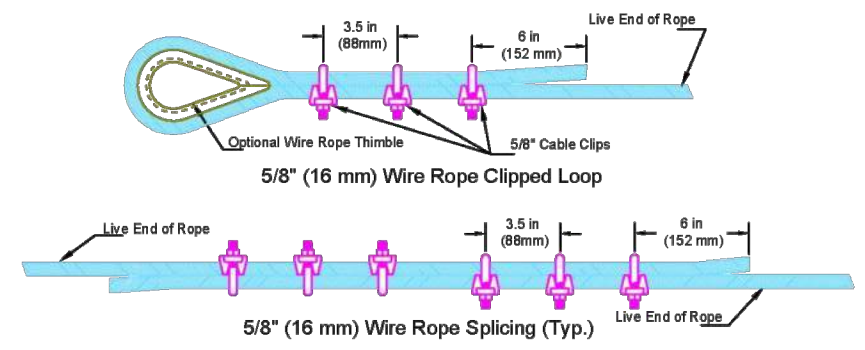
NOT FOR CONSTRUCTION

MACCAFERRI

Maccaferri, Inc.
10303 Governor Lane Blvd.
Williamsport, MD 21795-3116 USA
Ph. (301) 223-6910 Fax (301) 223-6134

Figure 2: Anchorage and Wire Rope Details

- Notes:
- All Wire Ropes As Listed Unless Otherwise Noted.**
- Perimeter Support Cables, Ø= 5/8 in (16 mm) Wire Rope Class 6x19 IWRC EIPS, Galvanized to ASTM A1023 or Equivalent.
 - Tag Lines / Bracing Cables, (If Applicable), Ø= 5/8 in (16 mm) Wire Rope Class 6x19 IWRC EIPS, Galvanized to ASTM A1023 or Equivalent.
 - Panel to Panel Lacing Via Spenax Clips, Galvanized To ASTM A975.
 - Anchors, See Anchor Details
- Rockfall Netting Drapery.**
- Rockfall Netting Maccaferri DT Wire Mesh Type 8x10 Galvanized to ASTM A975.



- Note: 1.) Always Place Saddle of Clamp on Live Rope End, U-Bolt on Dead End.
2.) First Wire Rope Clip Should Be Placed As Close As Possible To The Thimble.
3.) Minimum Clip to Clip Distance should be greater than the width of the Saddle.

Detail B.2: 5/8" (16.0 mm) Wire Rope Ends and Spliced Connections

Wire Rope Clip Specifications Table					
Clip Size Ø mm [in]	Cable Diameter mm [in]	Number of Clips	Nominal Turnback mm [in]	Nominal Spacing mm [in]	Tightening torque Nm [ft.lbs]
16 [5/8]	16 [5/8]	3	375 [15]	100 [4.0]	128 [95]
*If a greater number of clips are used than shown in the table, the amount of turnback should be increased proportionally. *The tightening torque values shown are based upon the threads being clean, dry, and free of lubrication.					

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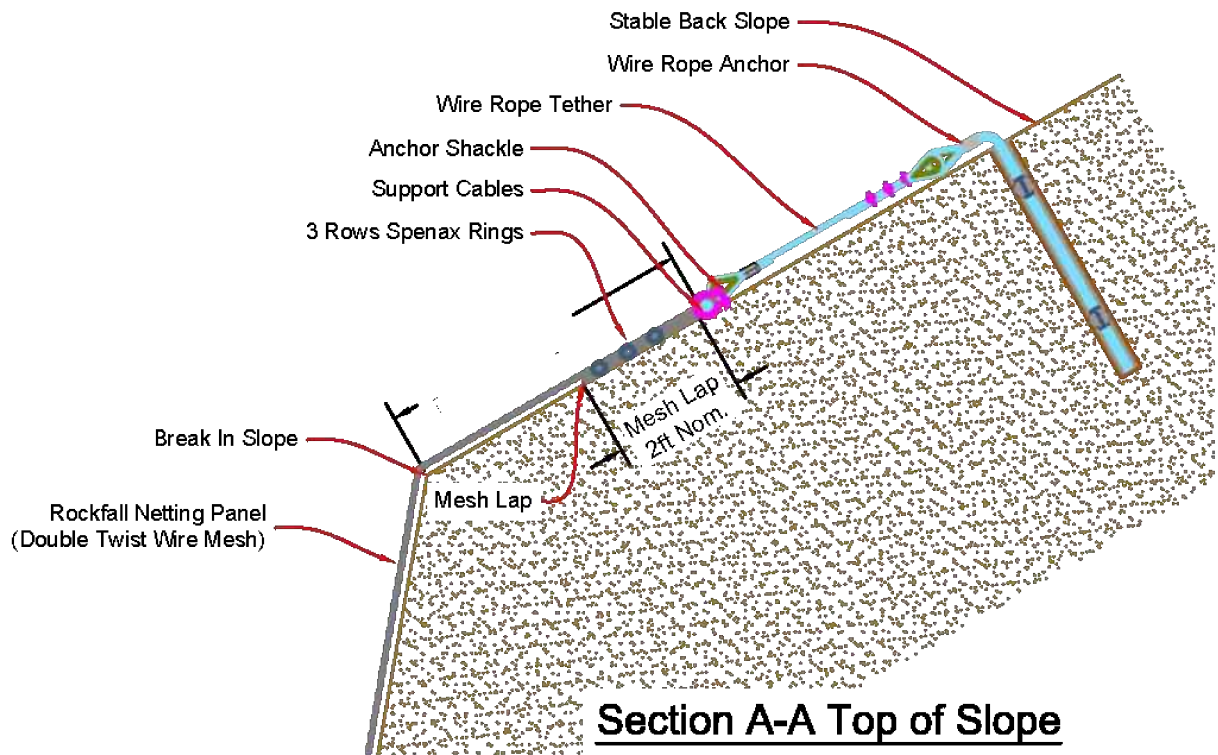
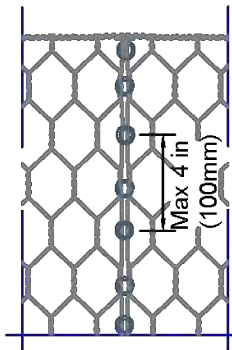


Figure 3:Typical details at top of slope

MECHANICAL: Using a pneumatic or hand power tool, employing galvanized "C" shaped fasteners. For continuity and strength, the Maximum spacing is 4 inches (150mm)



Detail H.4 - Rockfall Netting Lacing / Wire Fastener

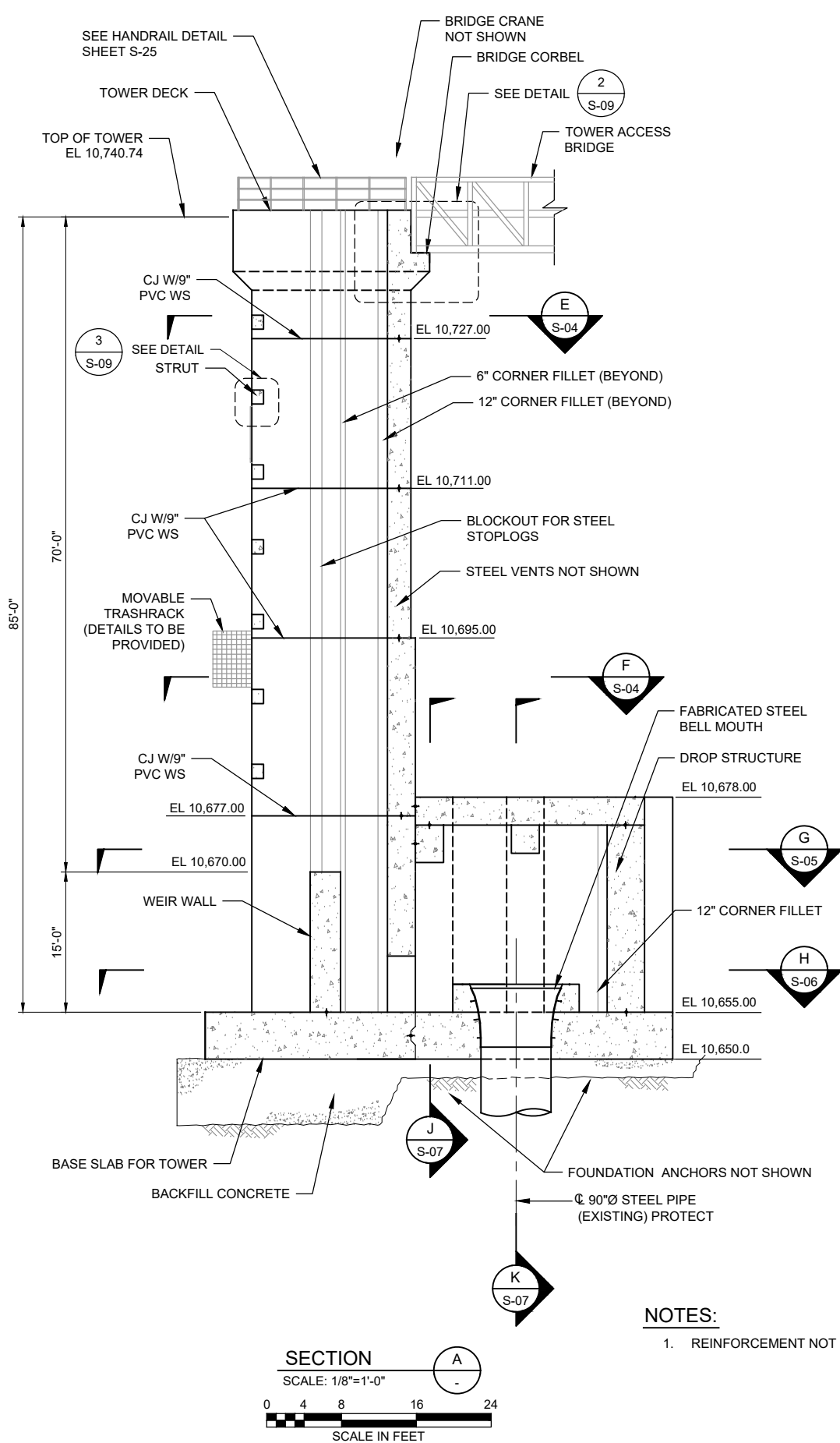
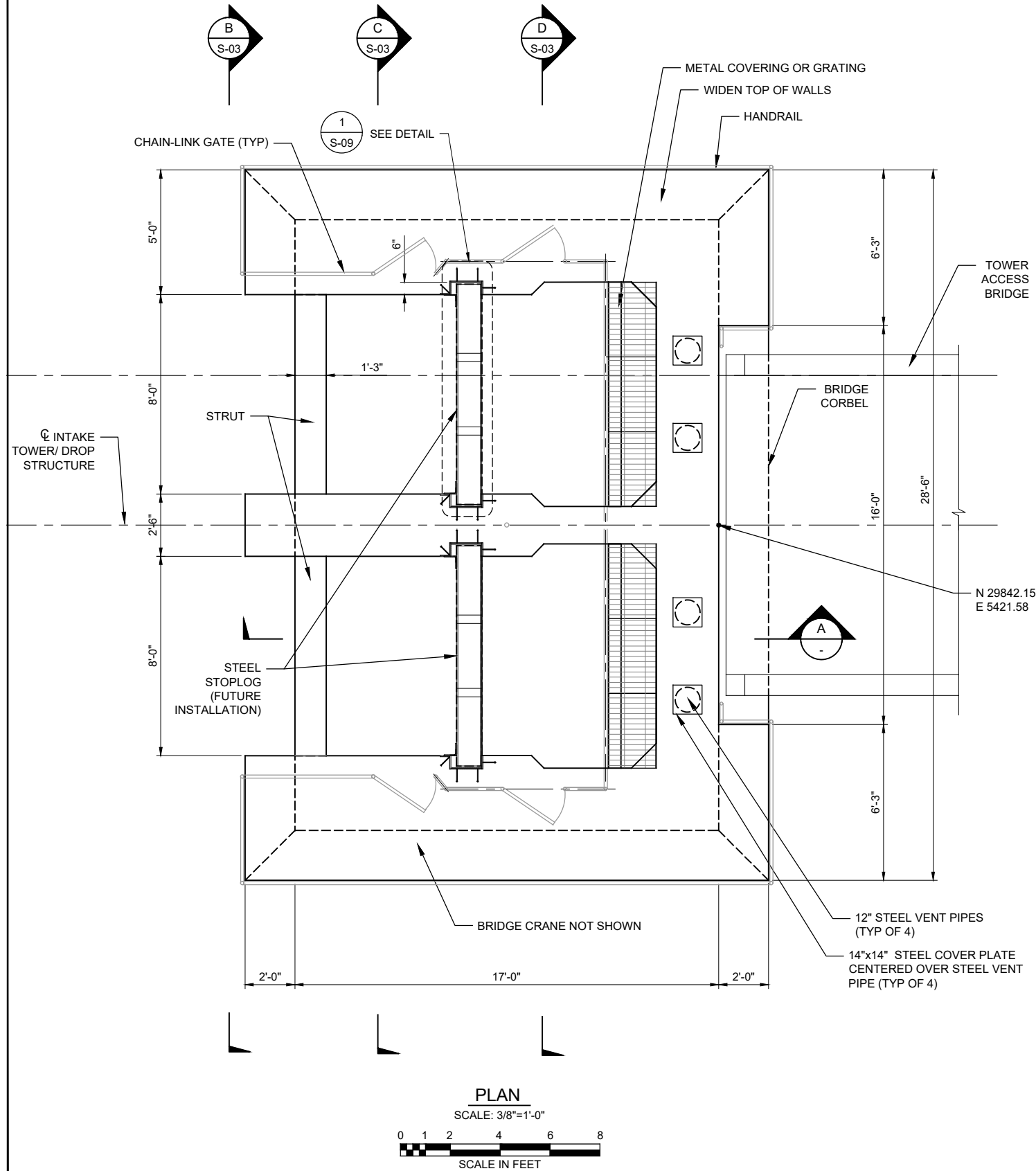


- 1.) Spenax Fastener $\varnothing$ = 2in (50mm) open and 3/4in (20 mm) closed.
- 2.) Spenax Fastener has 170 Kg/mm² Breaking Load
- 3.) Spenax Fastener Wire $\varnothing$ = 0.120in (3.00mm), Nominal 11 Gauge Wire Fastener

Detail H.1 - Spenax Fastener

Figure 4:Mesh panel connection details.

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- NOTES:**
- REINFORCEMENT NOT SHOWN.

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

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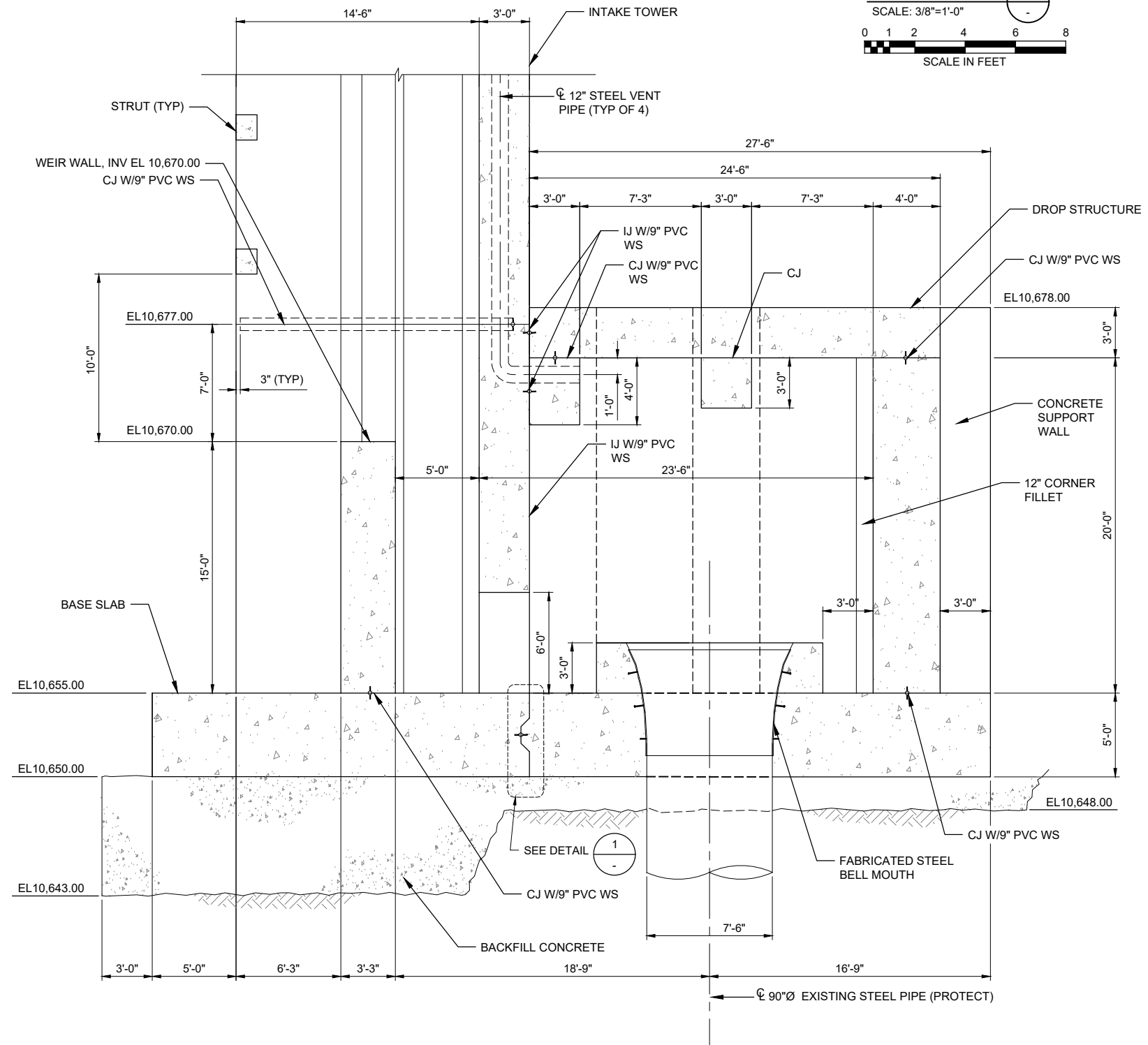
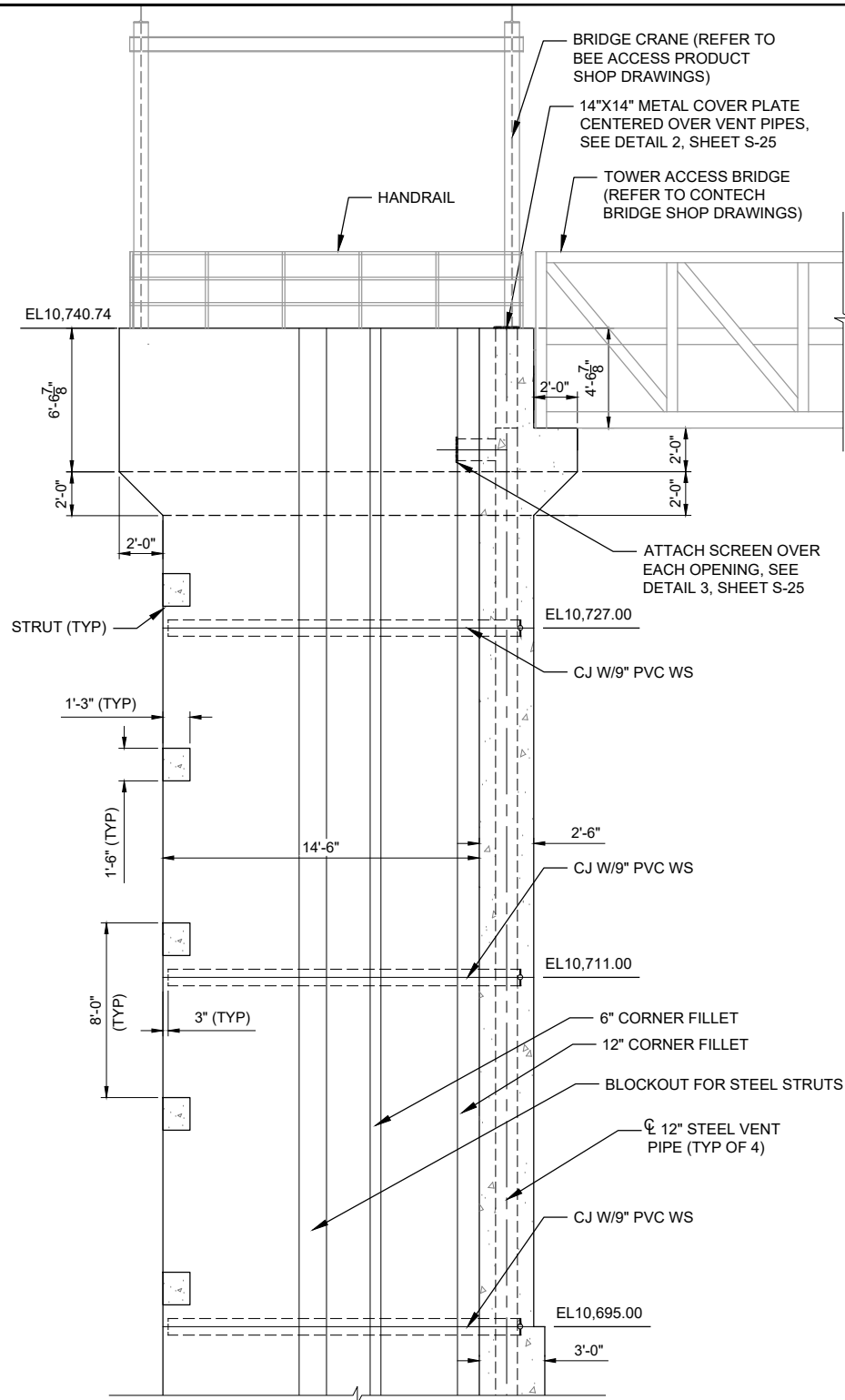
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
PLAN AND SECTION

SHEET NUMBER

S-01



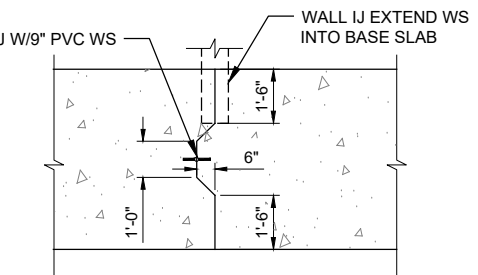
SECTION

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



DETAIL

SCALE: 3/8"=1'-0"



NOTES:

1. REINFORCEMENT NOT SHOWN.

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PHASE II VERTICAL INTAKE STRUCTURE

CLIENT



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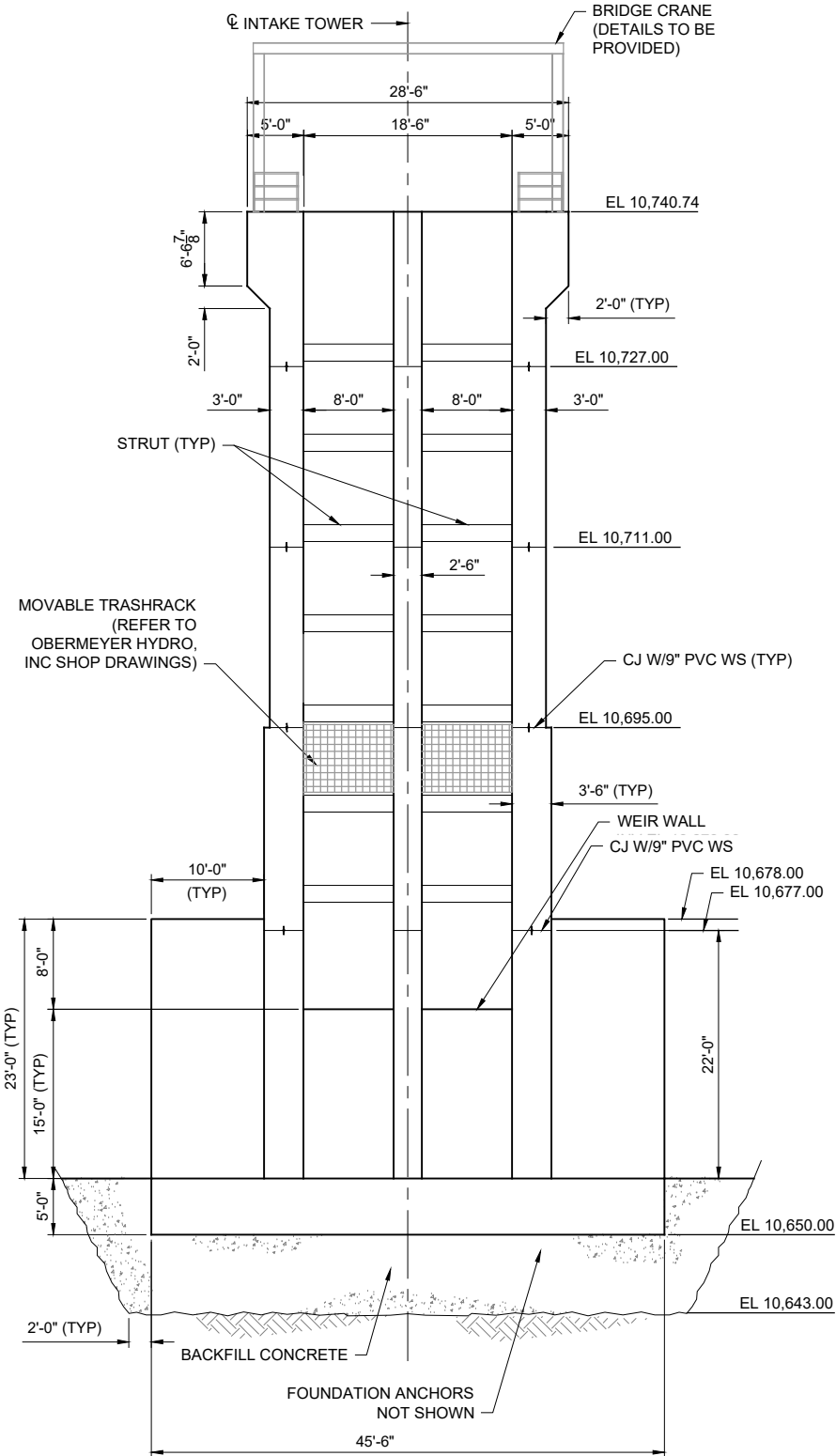
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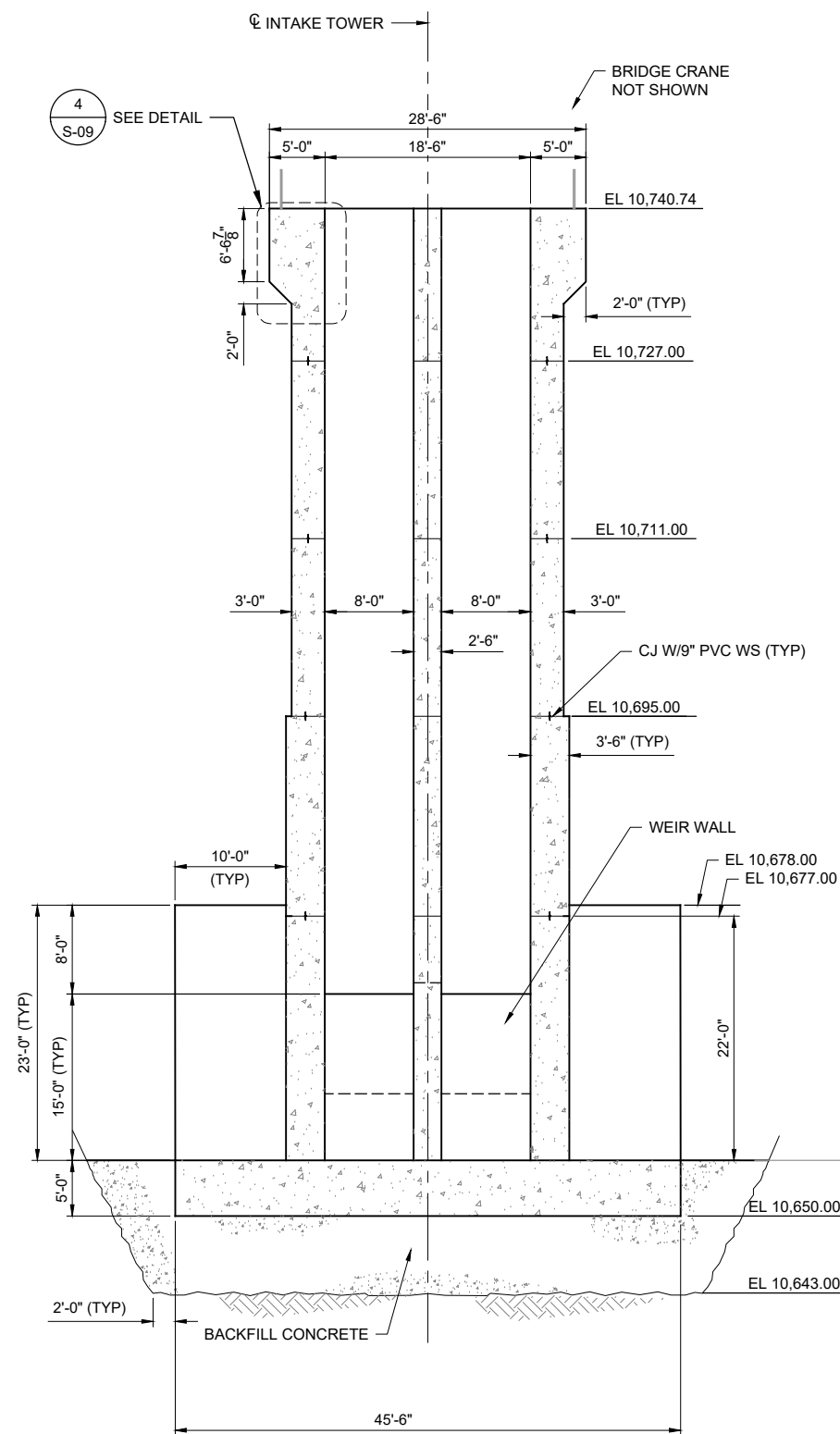
VERTICAL INTAKE TOWER
SECTIONS (1 OF 7)

SHEET NUMBER

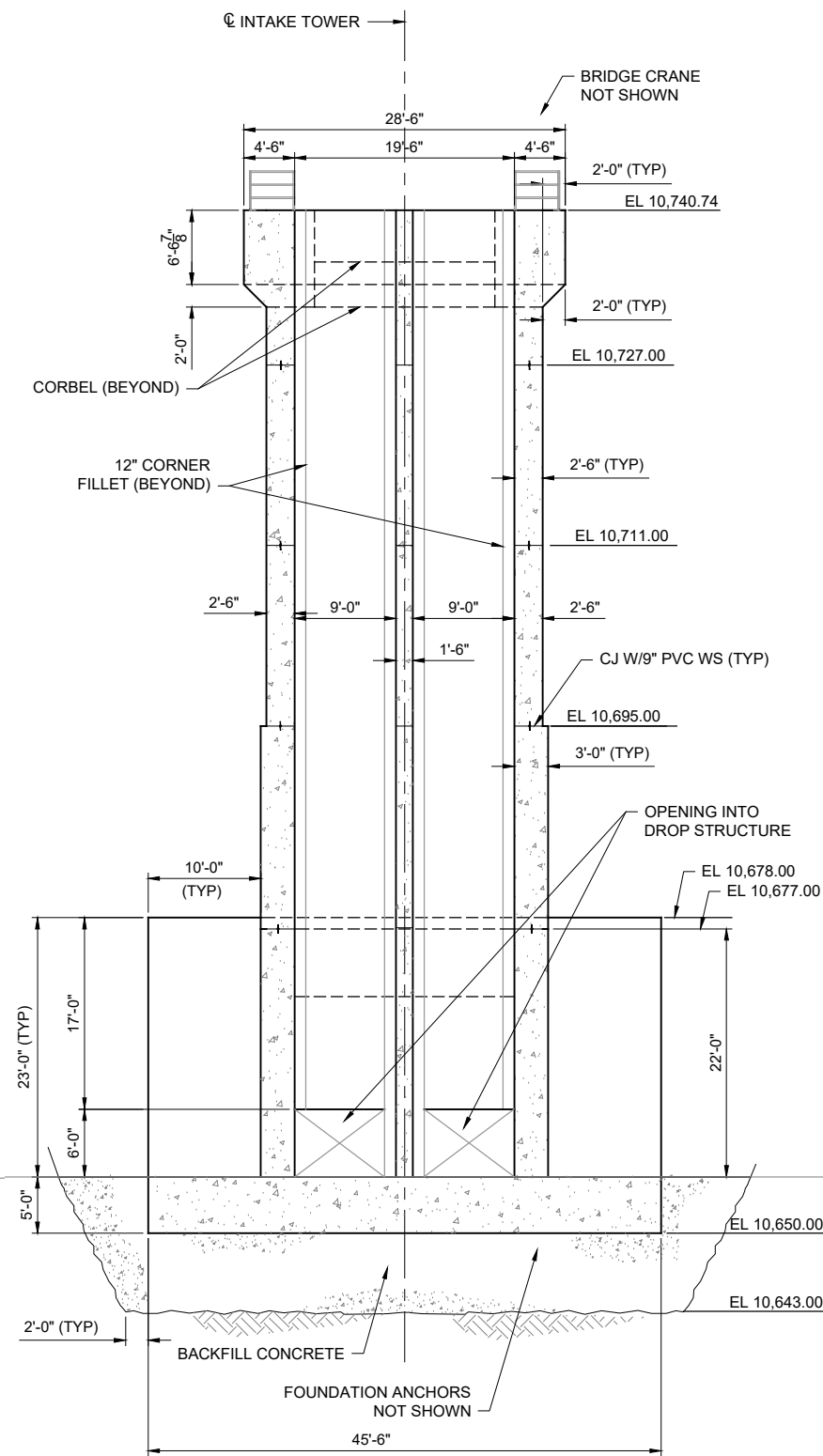
S-02



SECTION B
SCALE: 1/8"=1'-0"
0 4 8 16 24
SCALE IN FEET



SECTION C
SCALE: 1/8"=1'-0"
0 4 8 16 24
SCALE IN FEET



SECTION D
SCALE: 1/8"=1'-0"
0 4 8 16 24
SCALE IN FEET

NOTES:

1. REINFORCEMENT NOT SHOWN.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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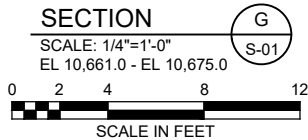
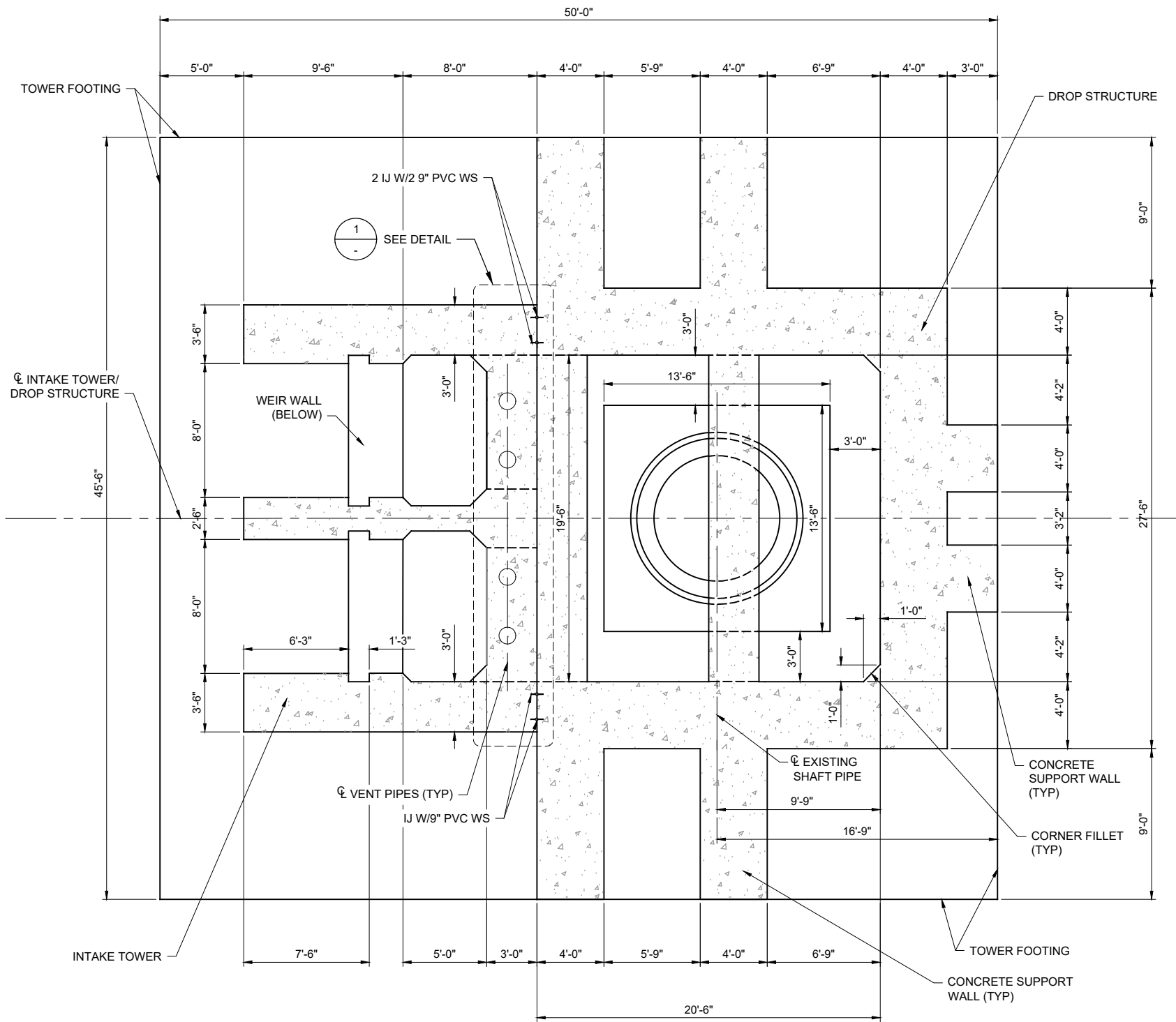
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VERTICAL INTAKE TOWER
SECTIONS (2 OF 7)

SHEET NUMBER

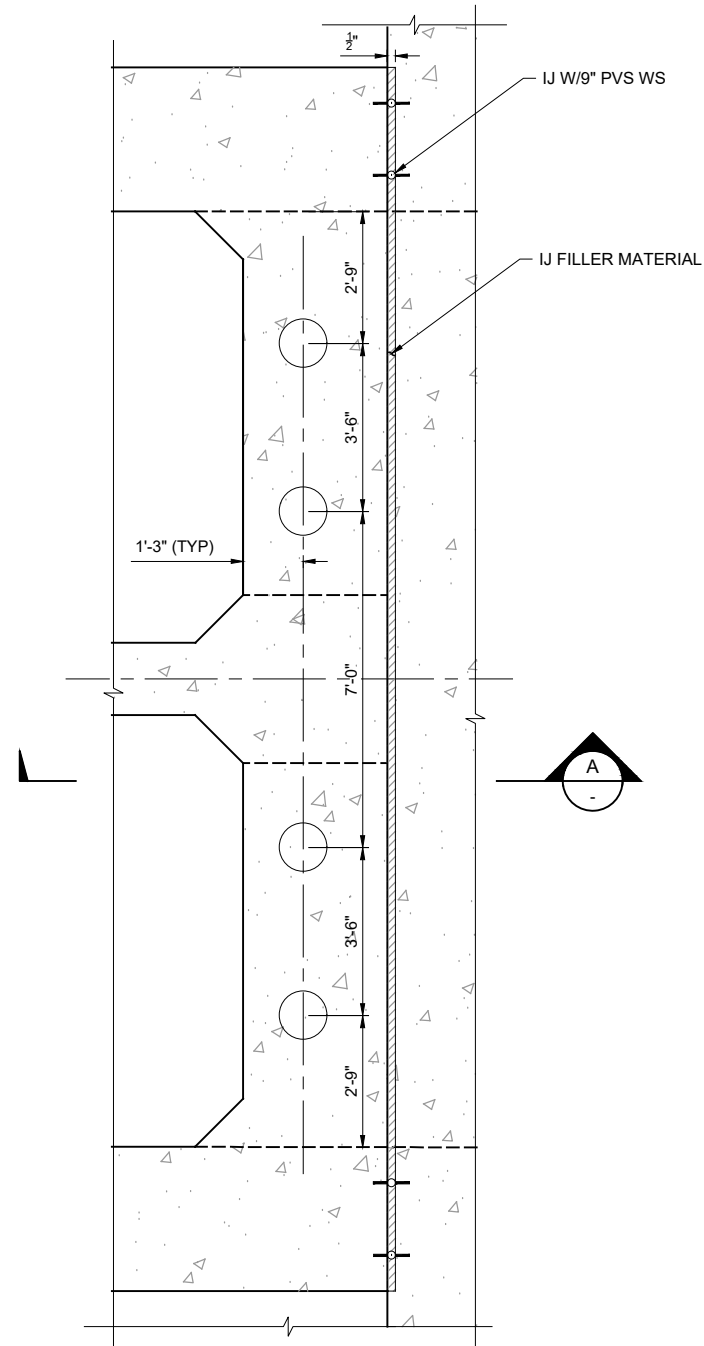
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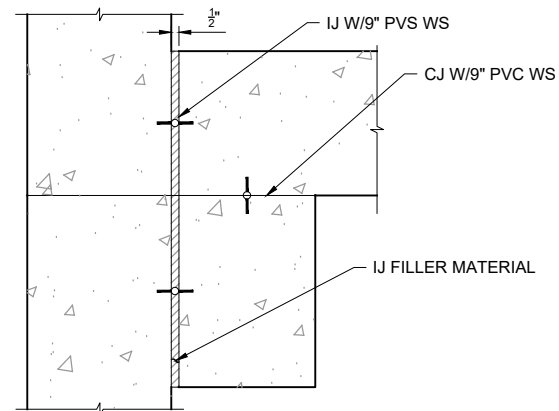


NOTES:

- REINFORCEMENT NOT SHOWN.
- PROVIDE $\frac{1}{2}$ INCH GAP BETWEEN THE TOWER WALL AND DROP STRUCTURE (ROOF AND WALLS) TO CREATE ISOLATION JOINT. THE ISOLATION JOINT SHALL BE FILLED WITH JOINT FILLER MATERIAL AS SHOWN ON THE DETAIL.
- USE PVC 9-INCH WATERSTOP (SIKA - STYLE 735 - RIBBED STRAIGHT WITH $\frac{1}{2}$ INCH I.D. AND 1 INCH O.D. CENTER BULB) AT THE ISOLATION JOINTS.



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



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

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PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

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A Freeport-McMoRan Company

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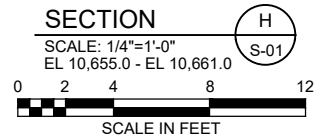
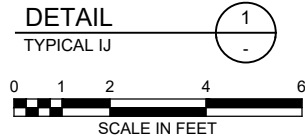
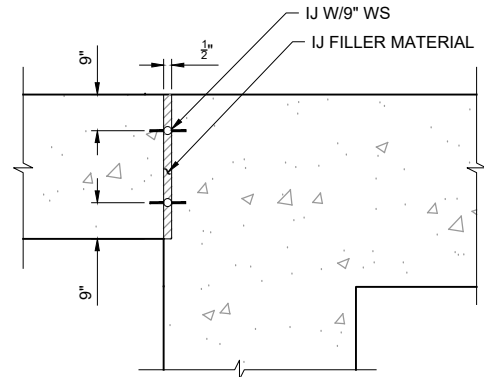
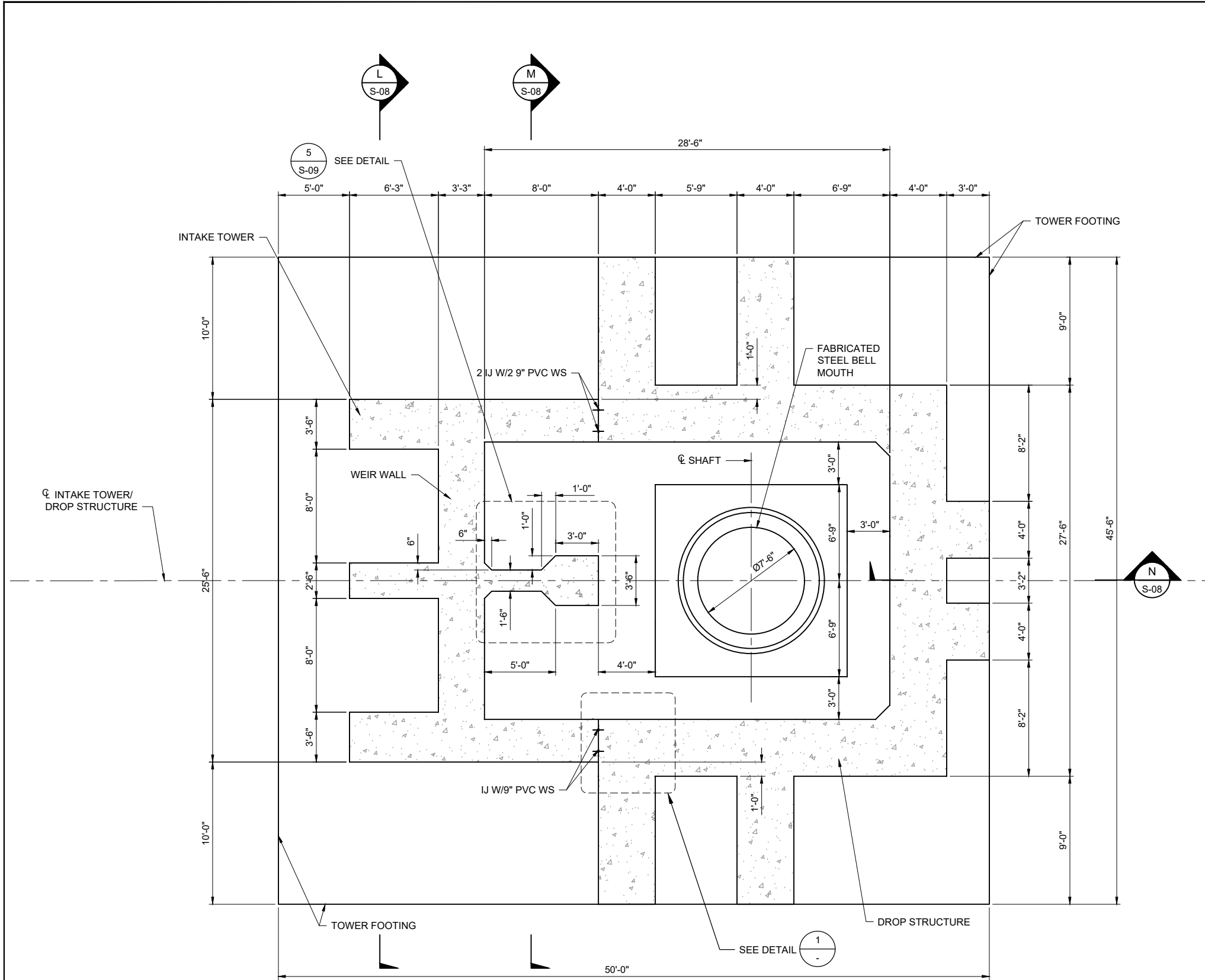
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SHEET TITLE

VERTICAL INTAKE TOWER
SECTIONS (4 OF 7)

SHEET NUMBER

S-05



NOTES:

1. REINFORCEMENT NOT SHOWN.
2. PROVIDE 1/2 INCH GAP BETWEEN THE TOWER WALL AND DROP STRUCTURE (ROOF AND WALLS) TO CREATE ISOLATION JOINT. THE ISOLATION JOINT SHALL BE FILLED WITH JOINT FILLER MATERIAL AS SHOWN ON THE DETAIL.
3. USE PVC 9-INCH WATERSTOP (SIKA - STYLE 735 - RIBBED STRAIGHT WITH 1/2 INCH I.D. AND 1 INCH O.D. CENTER BULB) AT THE ISOLATION JOINTS.

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PROJECT

PHASE II VERTICAL INTAKE STRUCTURE

CLIENT

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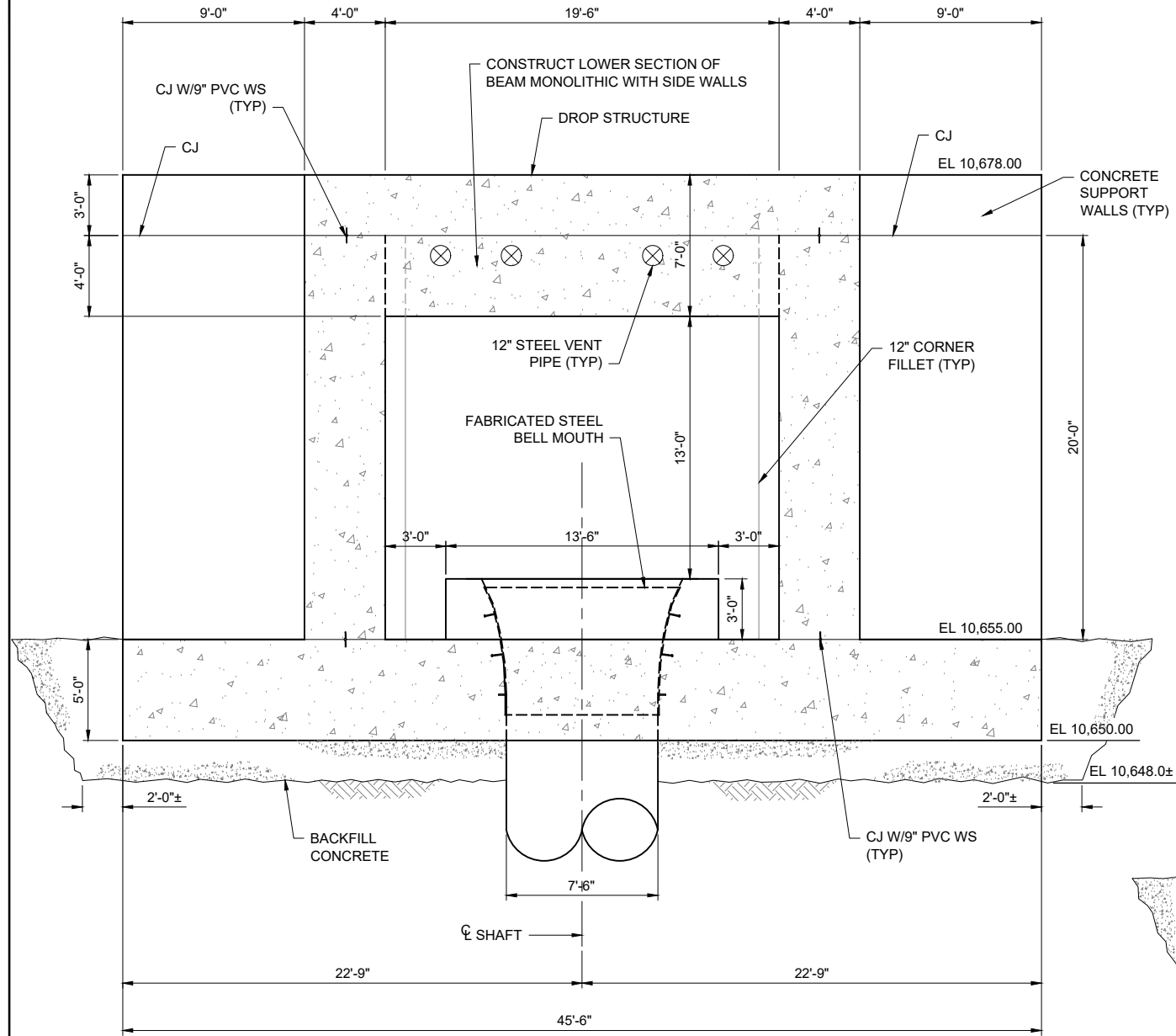
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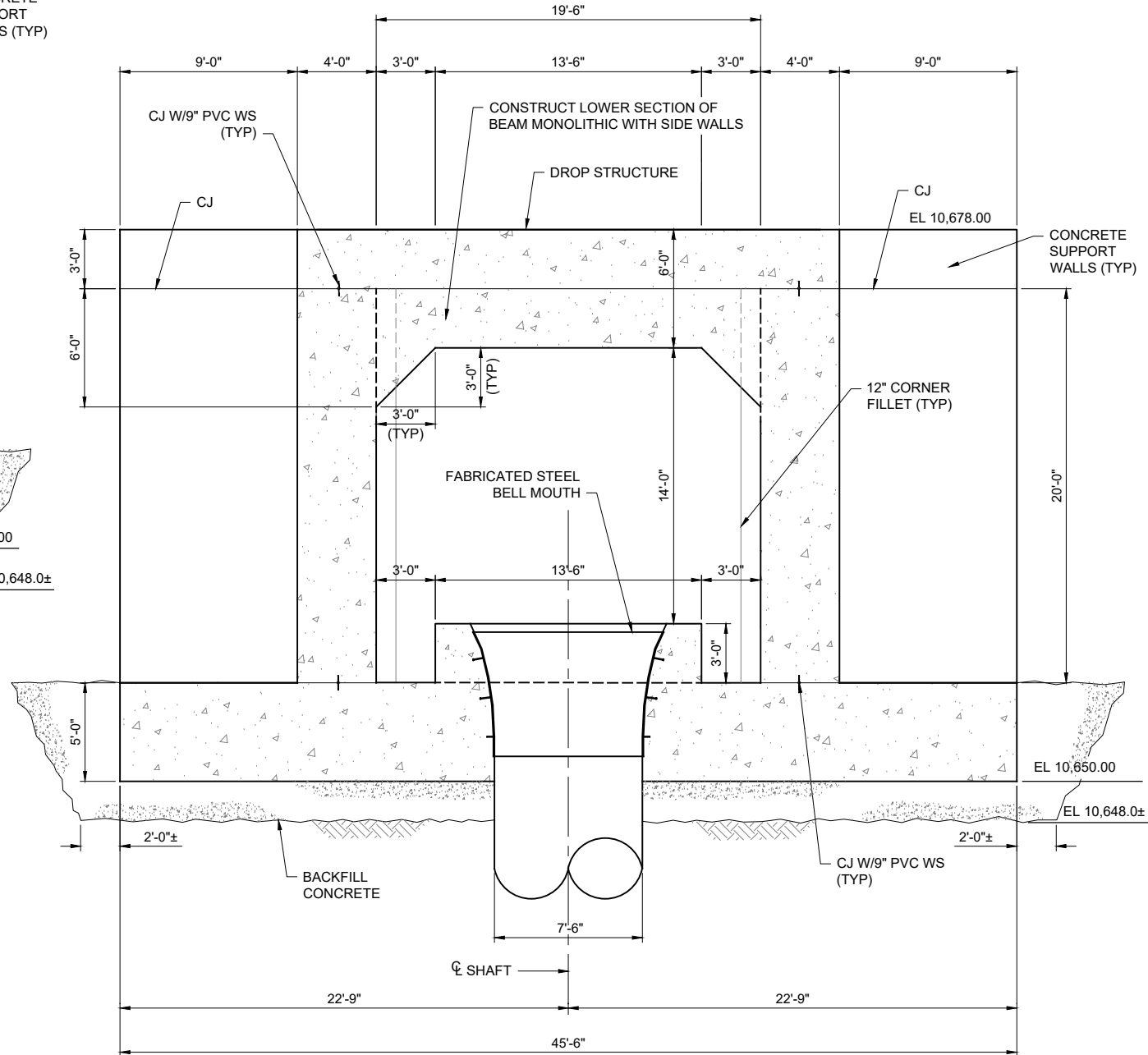
VERTICAL INTAKE TOWER
SECTION (5 OF 7)

SHEET NUMBER

S-06



SECTION J
SCALE: 1/4"=1'-0"
0 2 4 8 12
SCALE IN FEET



SECTION K
SCALE: 1/4"=1'-0"
0 2 4 8 12
SCALE IN FEET

NOTES:
1. REINFORCEMENT NOT SHOWN.



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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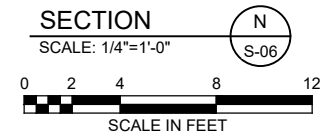
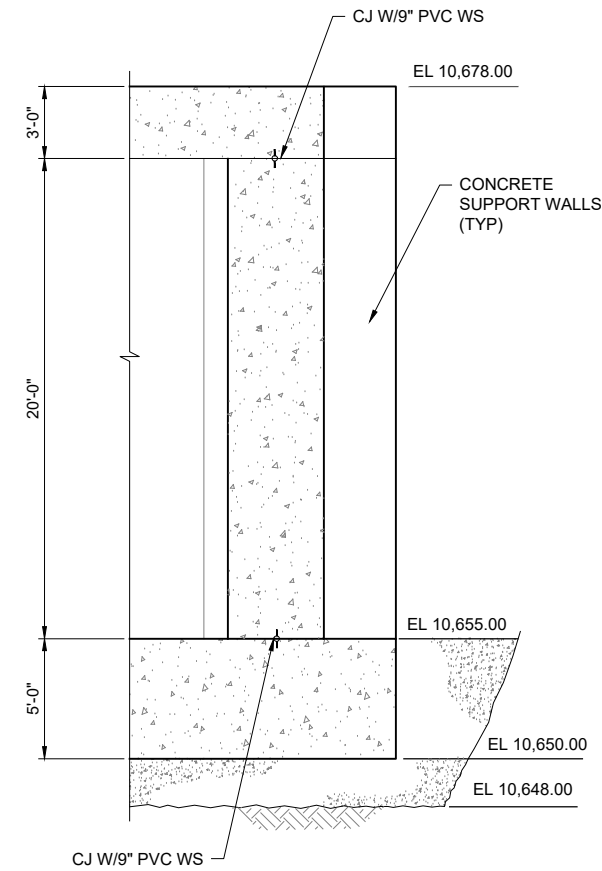
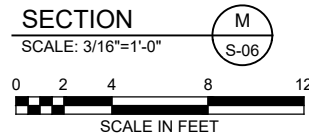
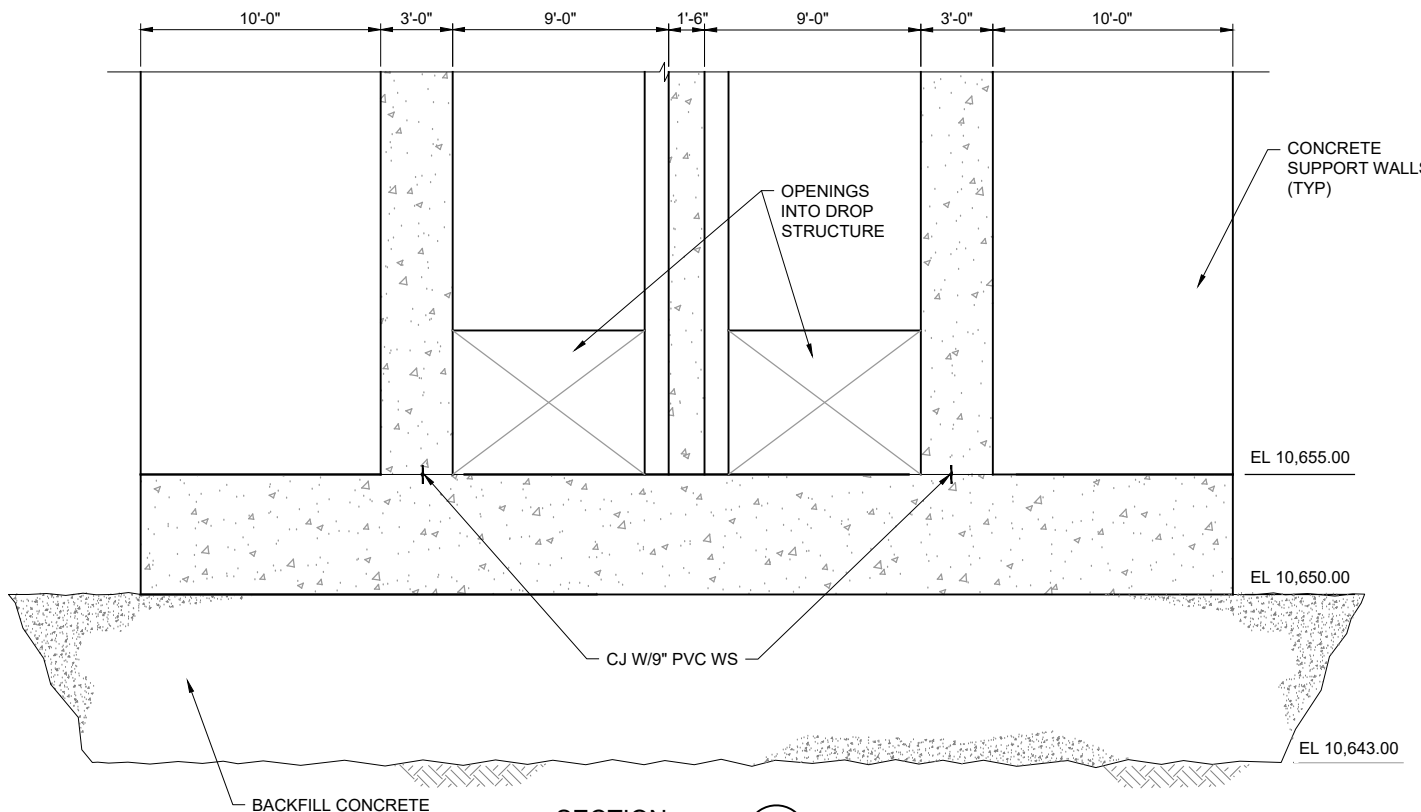
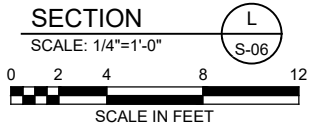
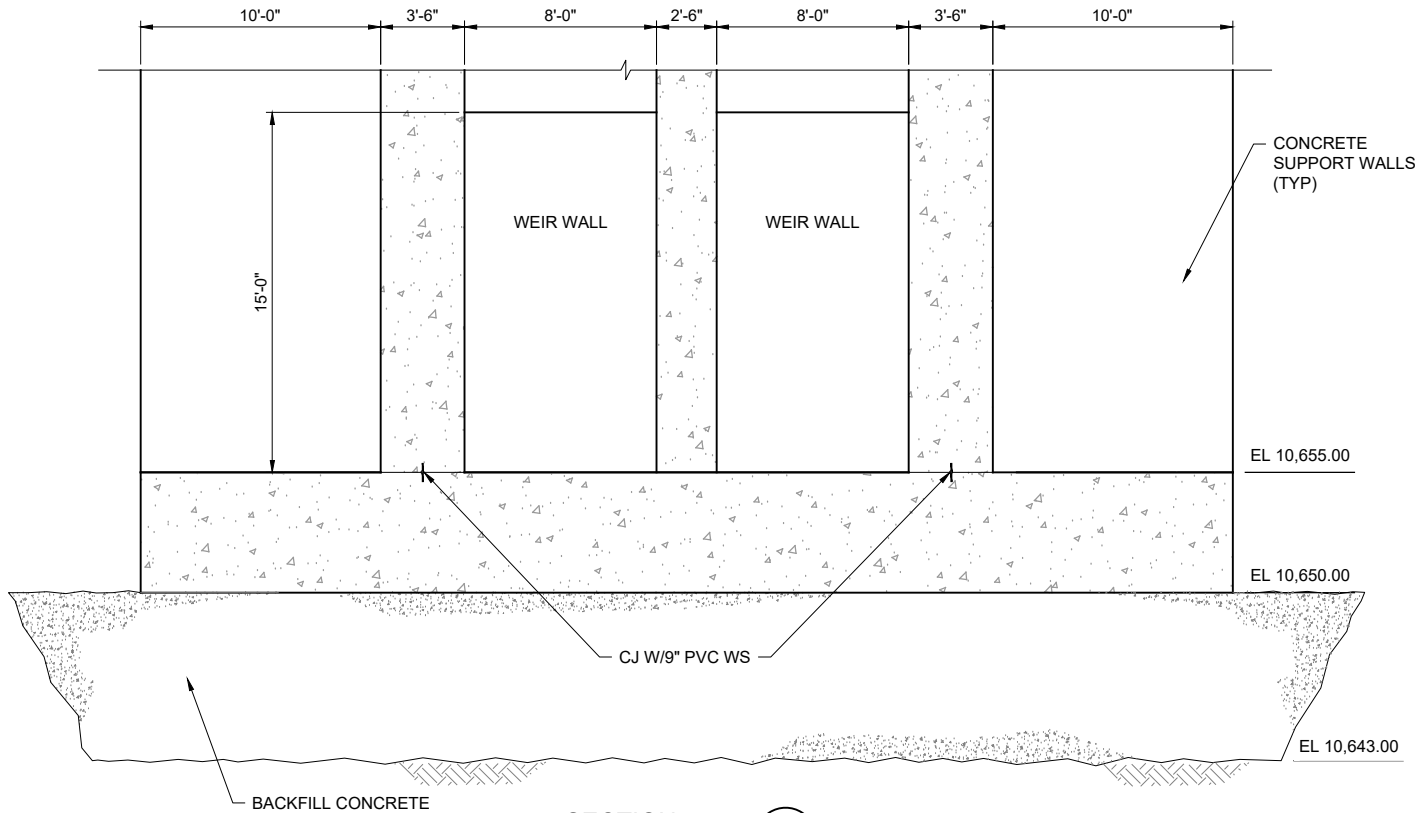
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
SECTIONS (6 OF 7)

SHEET NUMBER

S-07



NOTES:

1. REINFORCEMENT NOT SHOWN.

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT

AECOM
804 COLORADO AVE.
Suite 201
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www.aecom.com

CONSULTANTS

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC

KEY PLAN

PROJECT NUMBER

60591226

SHEET TITLE

VERTICAL INTAKE TOWER
SECTIONS (7 OF 7)

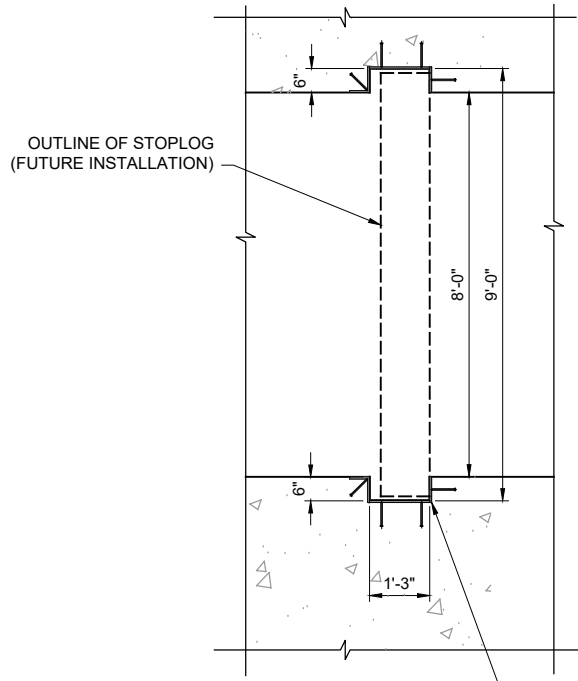
SHEET NUMBER

S-08

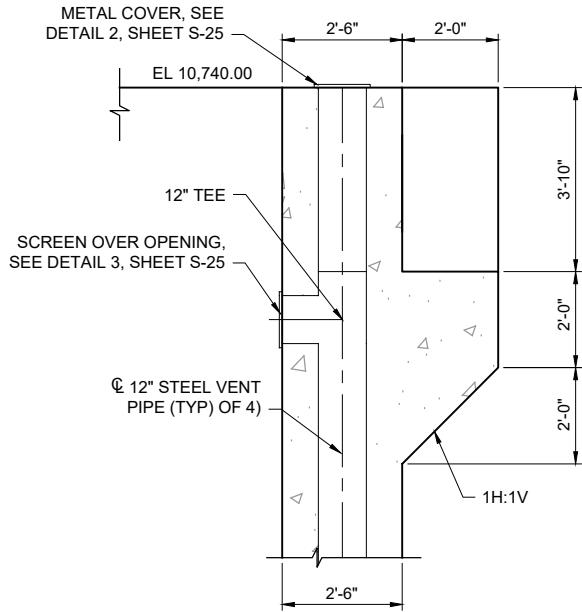
Project Management Initials: _____ Designer: _____ Checked: _____ Approved: _____

Last saved by: JUDITH.MCCRAY(2020-03-23) Last Plotted: 2021-06-11
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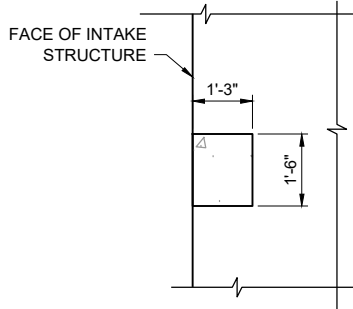
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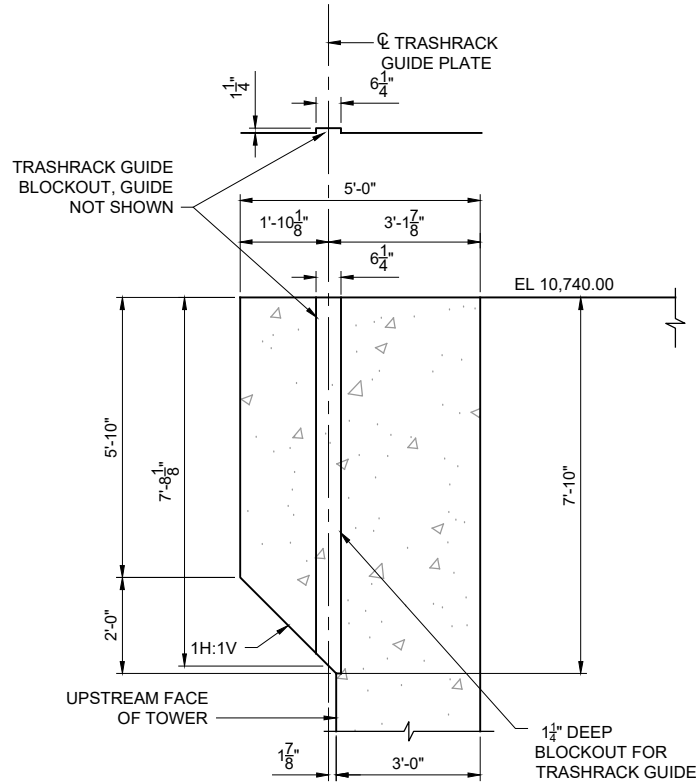
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SCALE IN FEET



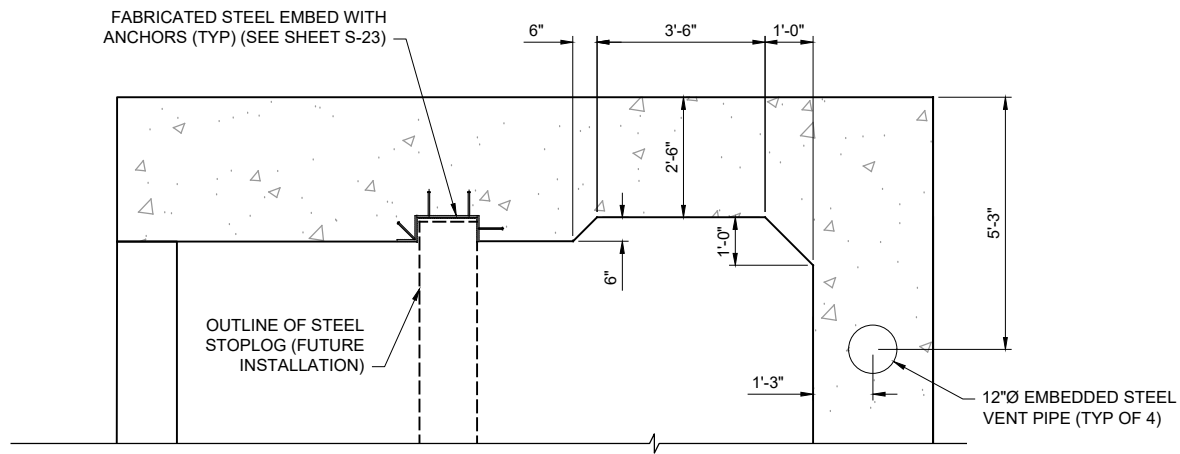
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SCALE: 1/2"=1'-0"
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SCALE IN FEET



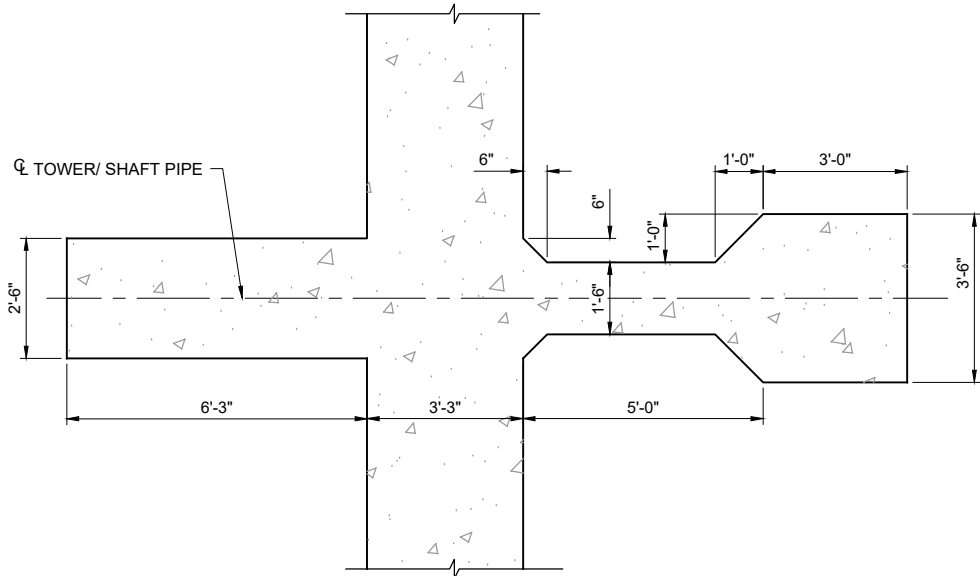
DETAIL 3
SCALE: 1/2"=1'-0"
0 1 2 4 6
SCALE IN FEET



DETAIL 4
SCALE: 1/2"=1'-0"
0 1 2 4 6
SCALE IN FEET



DETAIL 5
SCALE: 1/2"=1'-0"
0 1 2 4 6
SCALE IN FEET



DETAIL 6
SCALE: 1/2"=1'-0"
0 1 2 4 6
SCALE IN FEET

NOTES:
1. REINFORCEMENT NOT SHOWN.

AECOM

PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT
Climax Molybdenum
A Freeport-McMoRan Company

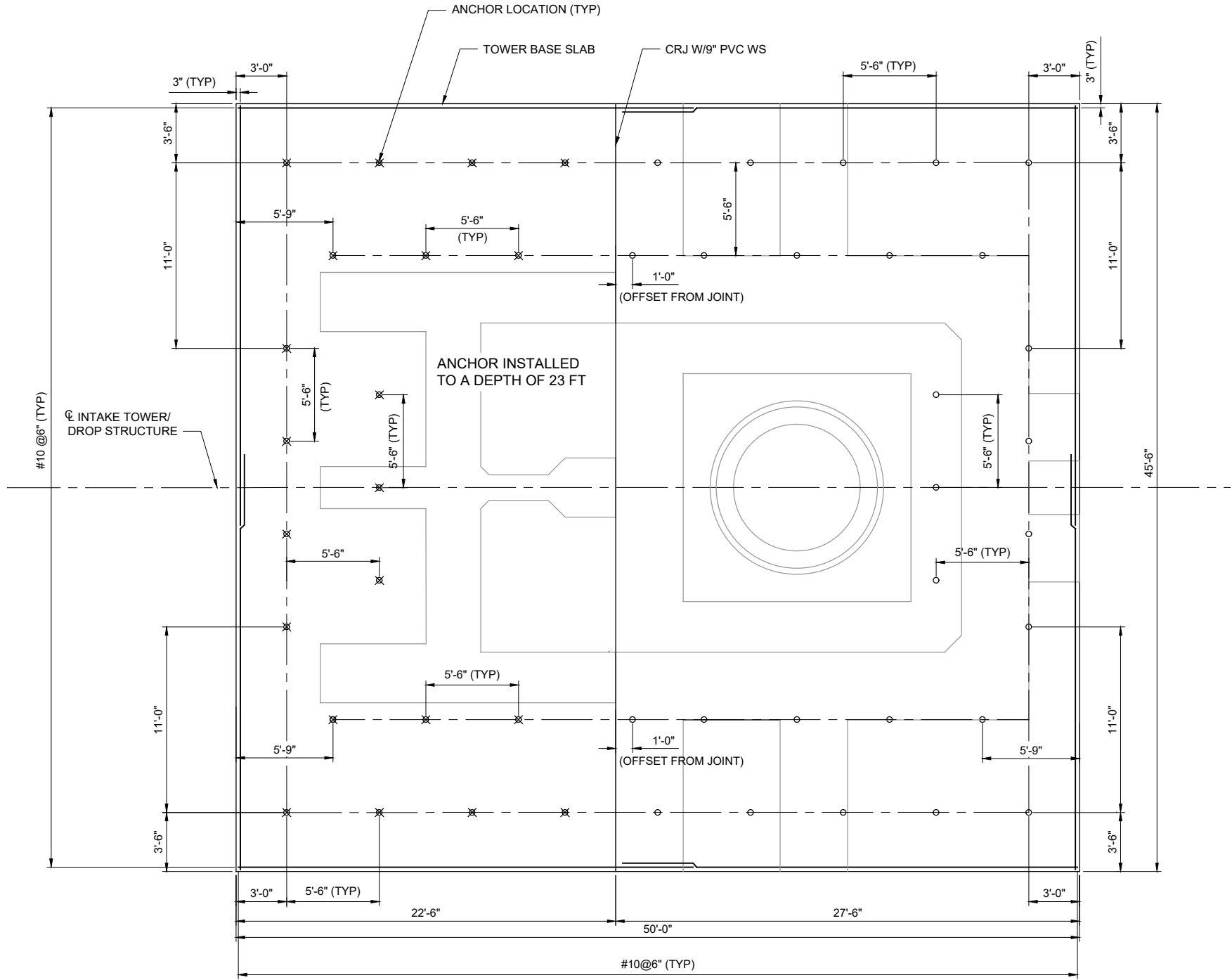
CONSULTANT
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REGISTRATION
COLORADO LICENSE
30358
12/23/2020

ISSUE/REVISION		
1	12/23/2020	TRASHRACK GUIDES
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

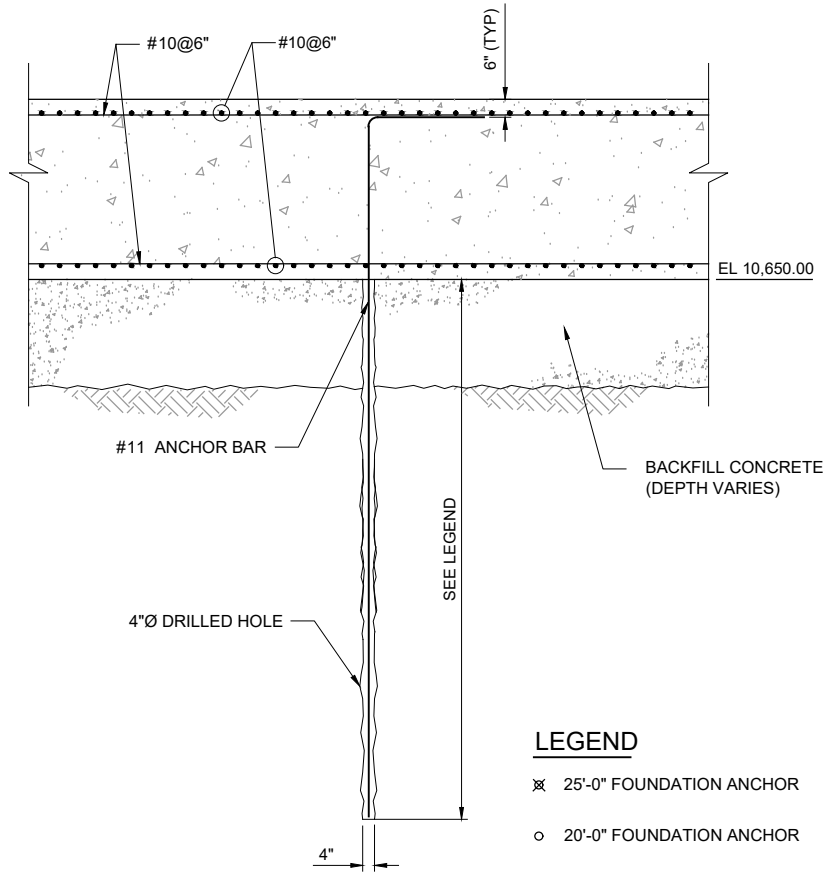
KEY PLAN

PROJECT NUMBER
60591226
SHEET TITLE
VERTICAL INTAKE TOWER
DETAILS
SHEET NUMBER
S-09



FOUNDATION ANCHOR PLAN

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



TYPICAL FOUNDATION ANCHOR DETAIL

SCALE: 3/8"=1'-0"



LEGEND

- ⊗ 25'-0" FOUNDATION ANCHOR
- 20'-0" FOUNDATION ANCHOR

NOTES:

- FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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KEY PLAN

PROJECT NUMBER

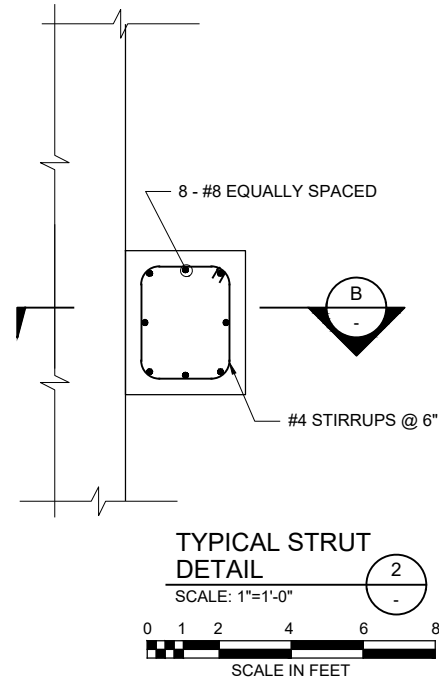
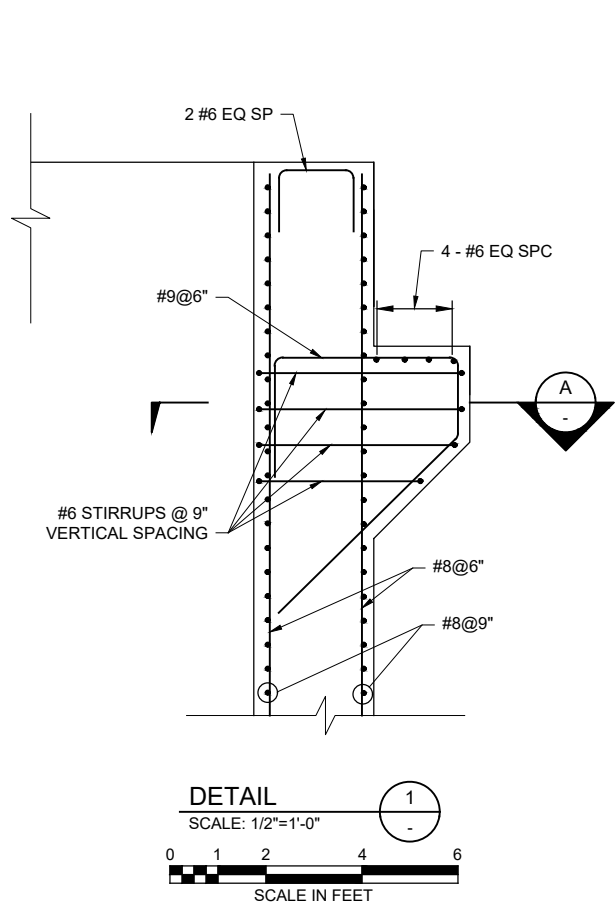
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SHEET TITLE

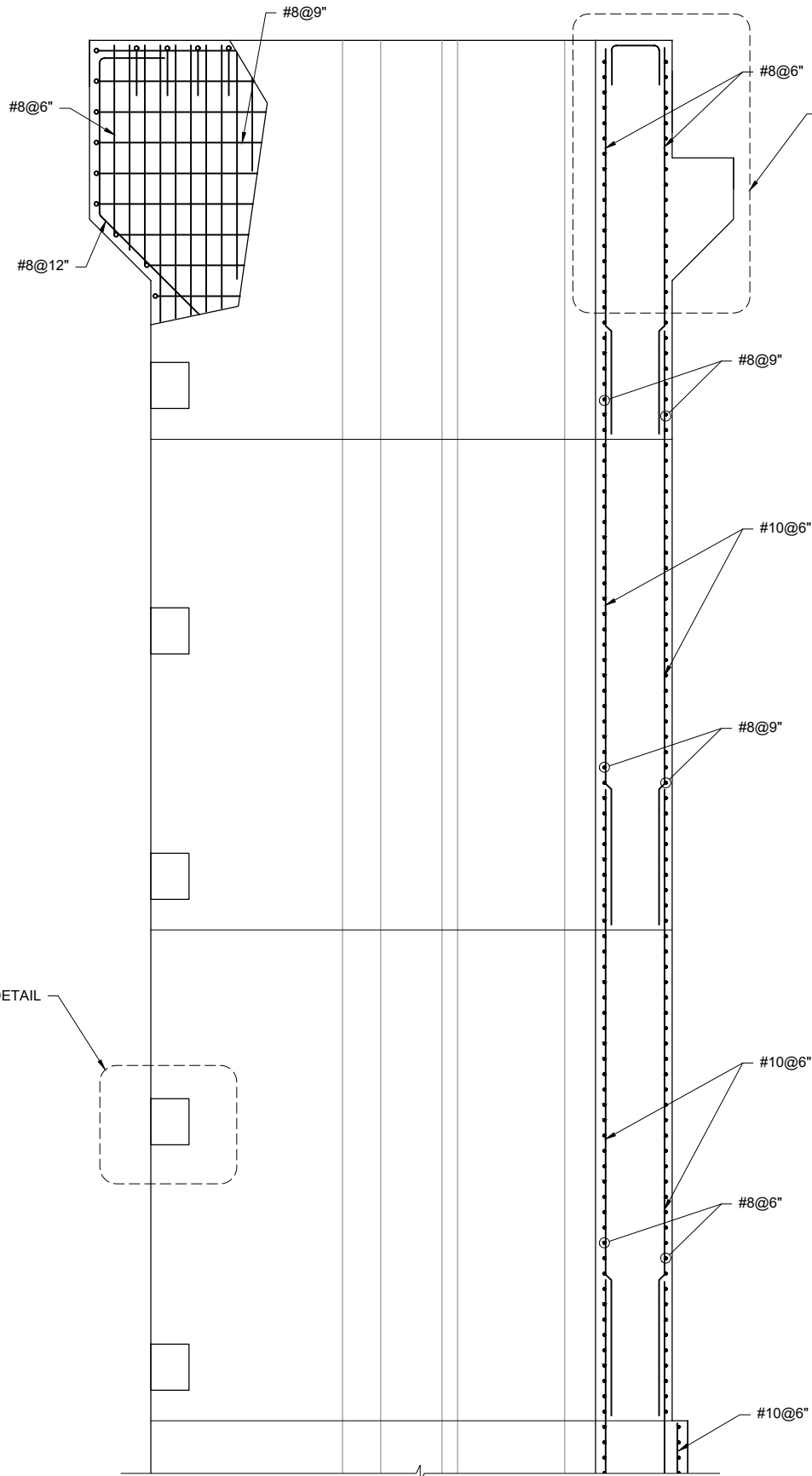
VERTICAL INTAKE TOWER
FOUNDATION ANCHORS

SHEET NUMBER

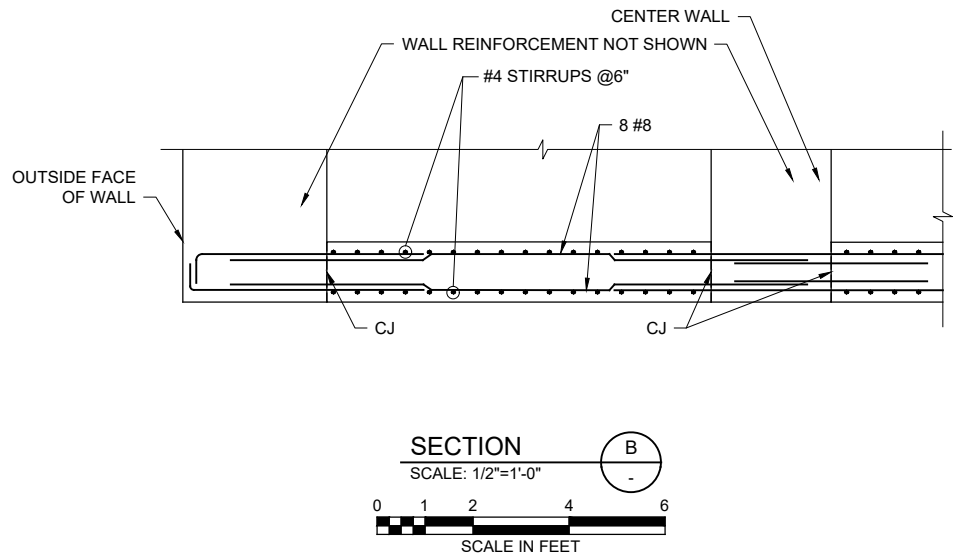
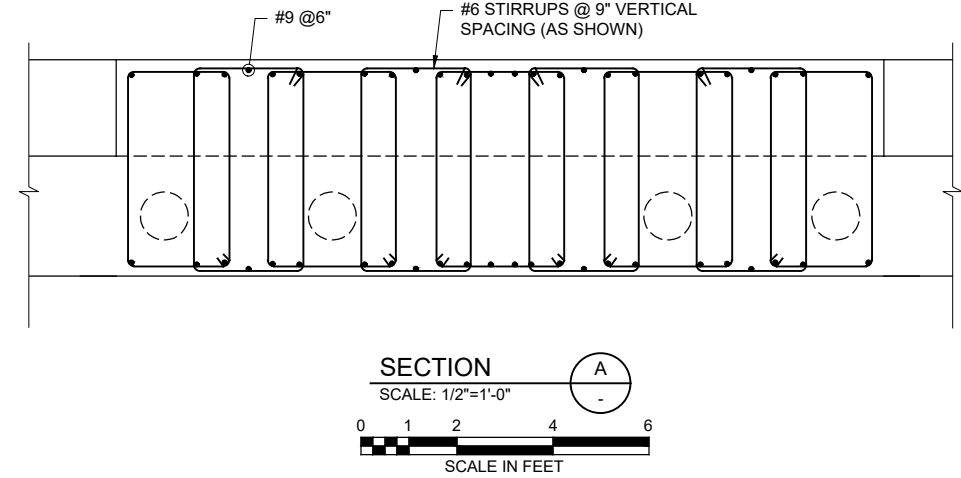
S-10



SEE DETAIL



SEE DETAIL



- NOTES:
- FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.

AECOM

PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

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REGISTRATION

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KEY PLAN

PROJECT NUMBER

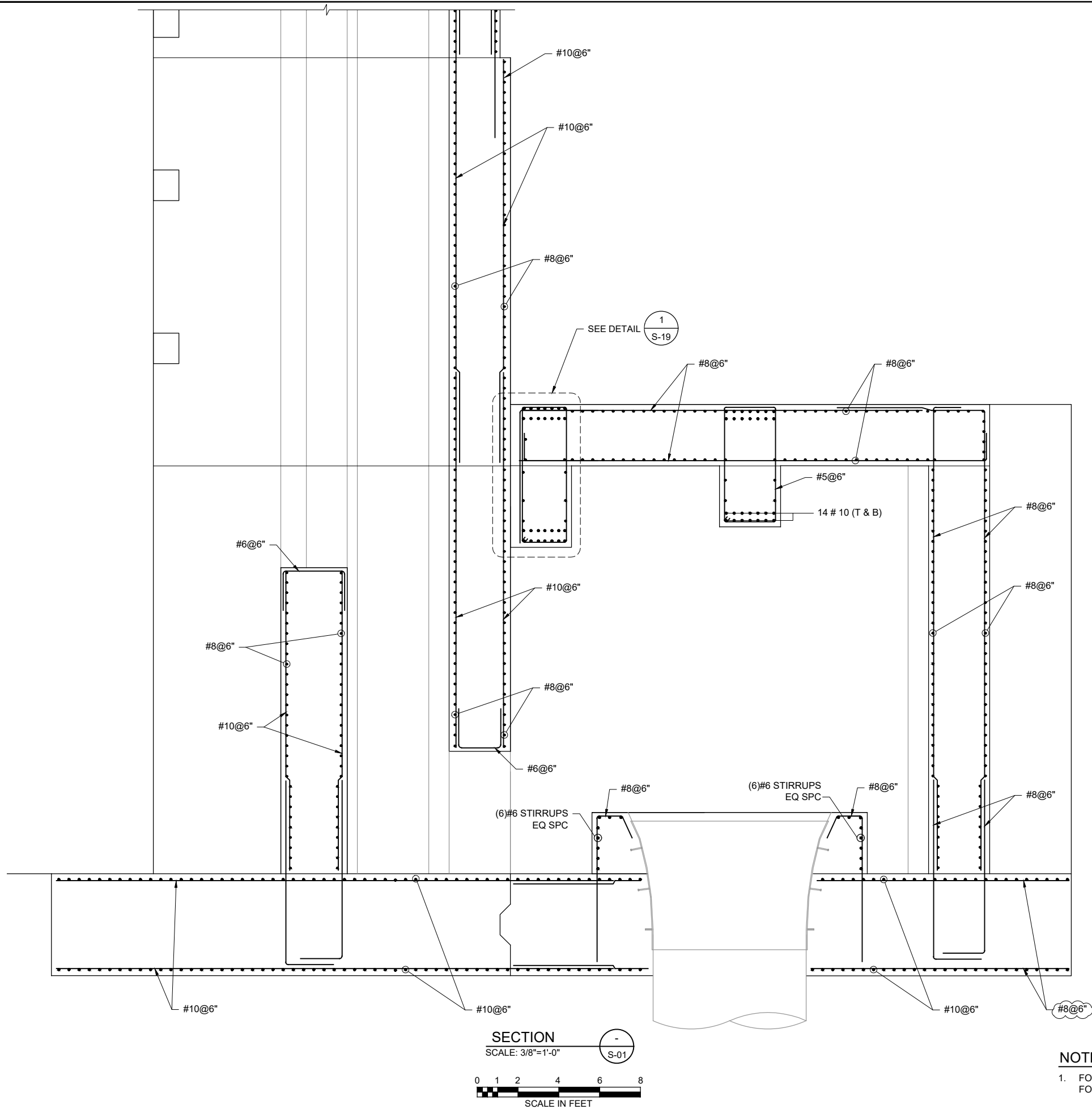
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SHEET TITLE

VERTICAL INTAKE TOWER
REINFORCEMENT (1 OF 9)

SHEET NUMBER

S-11



NOTES:

1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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1	04/21/2020	FOUNDATION ANCHOR LENGTH
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

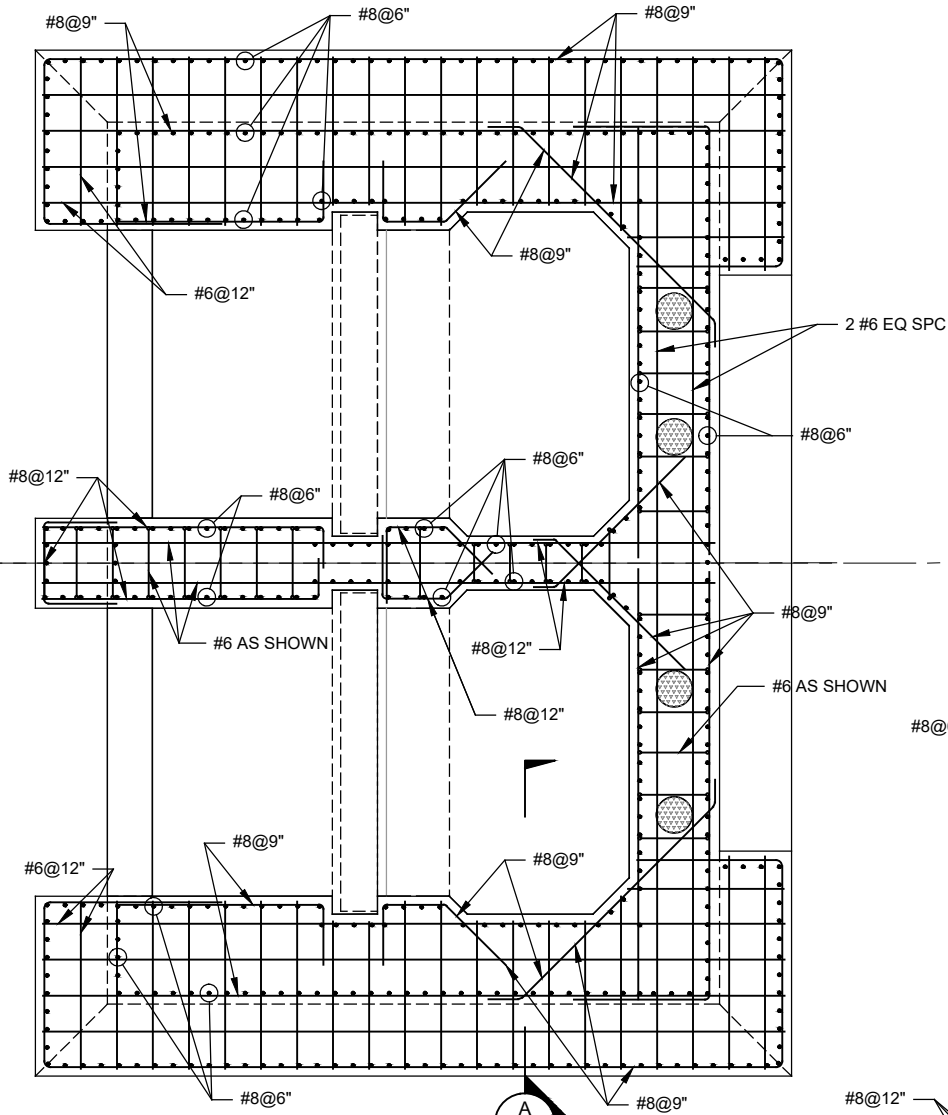
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SHEET TITLE

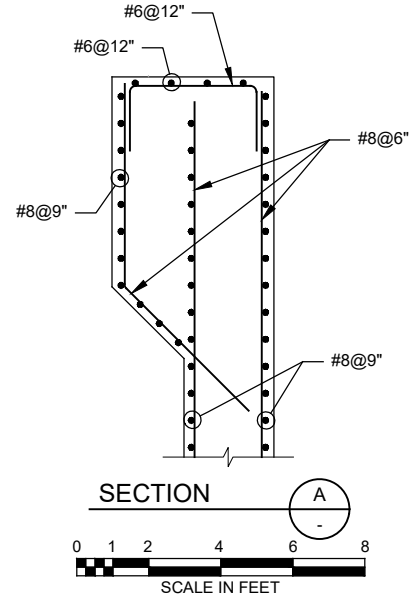
VERTICAL INTAKE TOWER
REINFORCEMENT (2 OF 9)

SHEET NUMBER

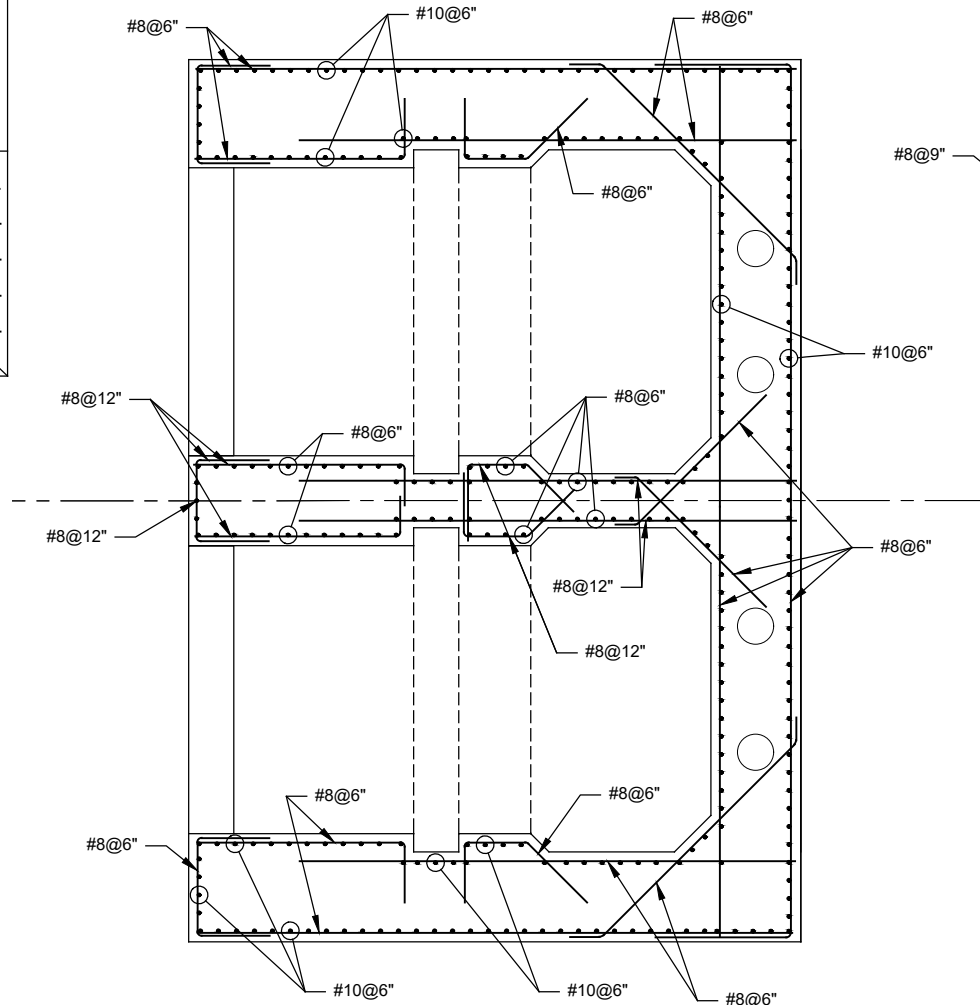
S-12



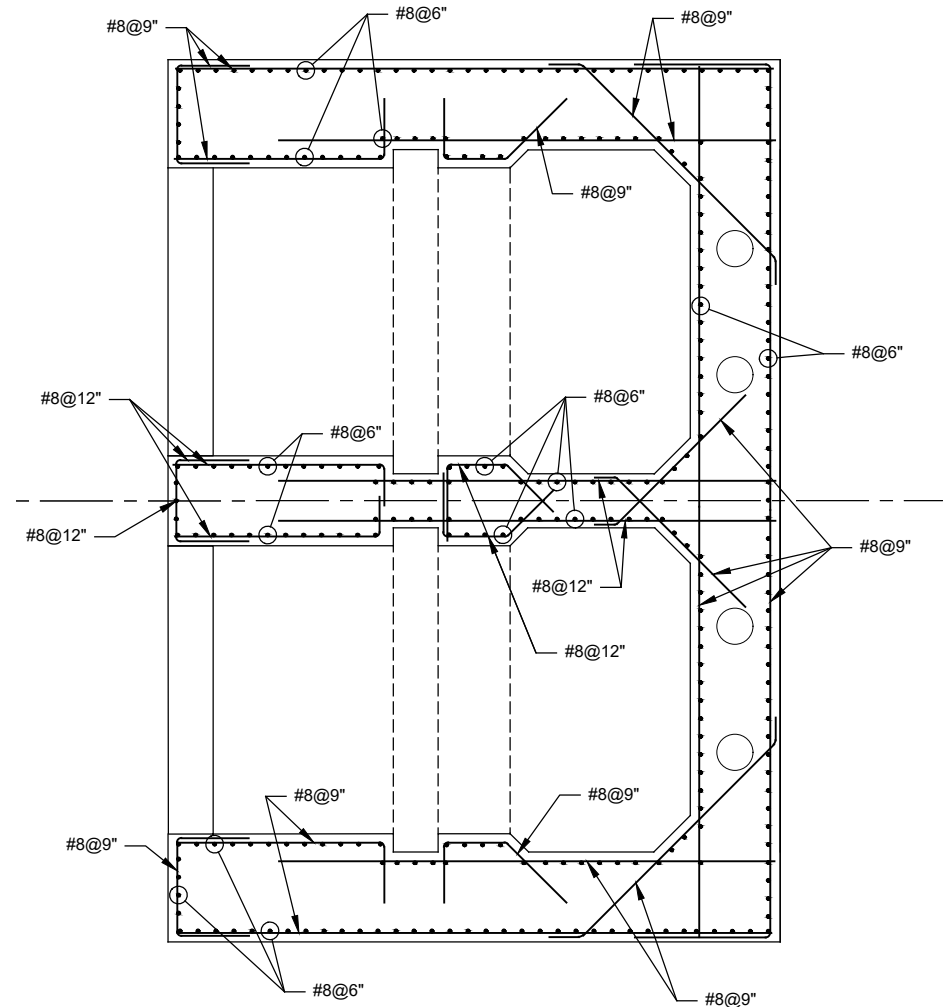
DECK REINFORCEMENT PLAN
SCALE: 3/8"=1'-0"
EL 10,740 - EL 10,738.5
0 1 2 4 6 8
SCALE IN FEET



SECTION A-A
SCALE: 3/8"=1'-0"
0 1 2 4 6 8
SCALE IN FEET



SECTION E-E
SCALE: 3/8"=1'-0"
EL 10,727.0 - EL 10,695.0
0 1 2 4 6 8
SCALE IN FEET



SECTION E-E
SCALE: 3/8"=1'-0"
EL 10,740.0 - EL 10,727.0
0 1 2 4 6 8
SCALE IN FEET

- NOTES:**
- FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT
 Climax Molybdenum
A Freeport-McMoRan Company

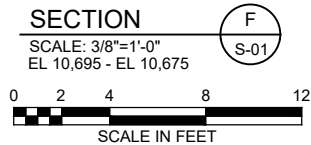
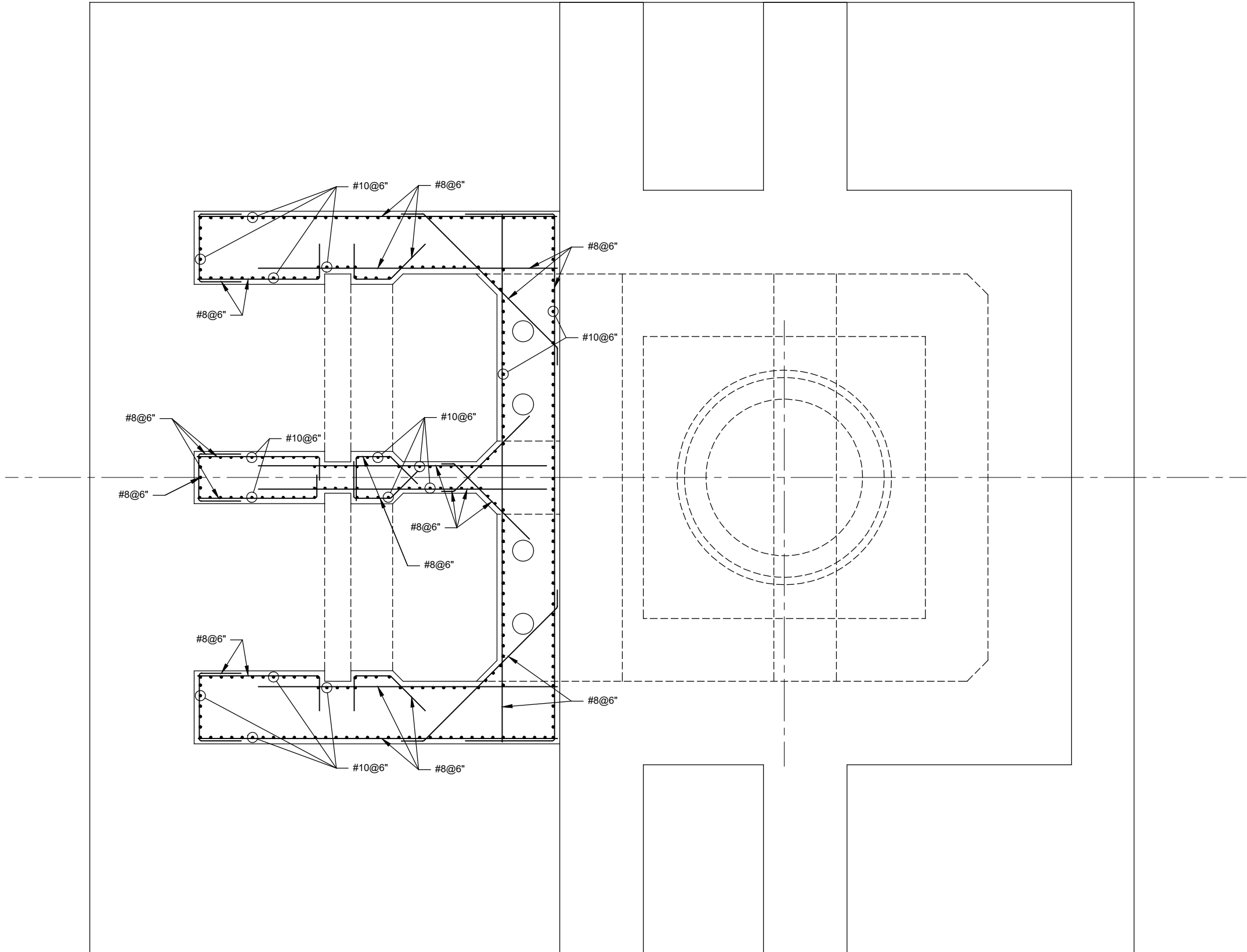
CONSULTANT
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www.aecom.com
CONSULTANTS

REGISTRATION

ISSUE/REVISION		
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER
60591226
SHEET TITLE
VERTICAL INTAKE TOWER
REINFORCEMENT (3 OF 9)
SHEET NUMBER
S-13



NOTES:

- FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC

KEY PLAN

PROJECT NUMBER

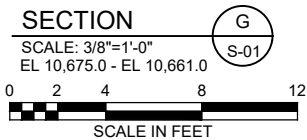
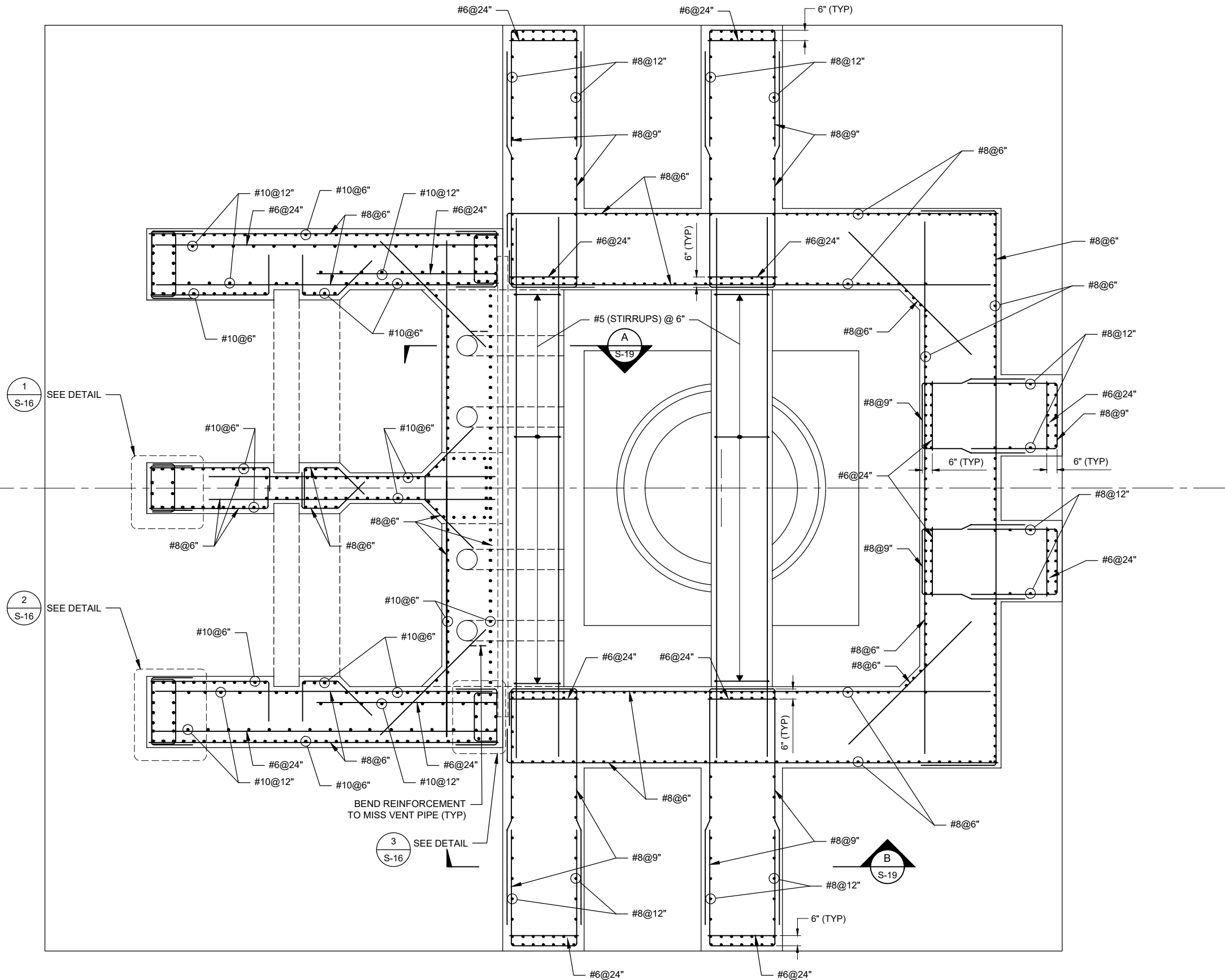
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
REINFORCEMENT (4 OF 9)

SHEET NUMBER

S-14



- NOTES:**
1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT
 Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT
AECOM
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GLENWOOD SPRINGS, CO. 81601
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CONSULTANTS

REGISTRATION

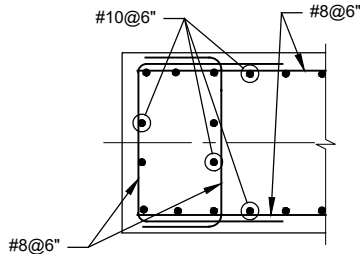
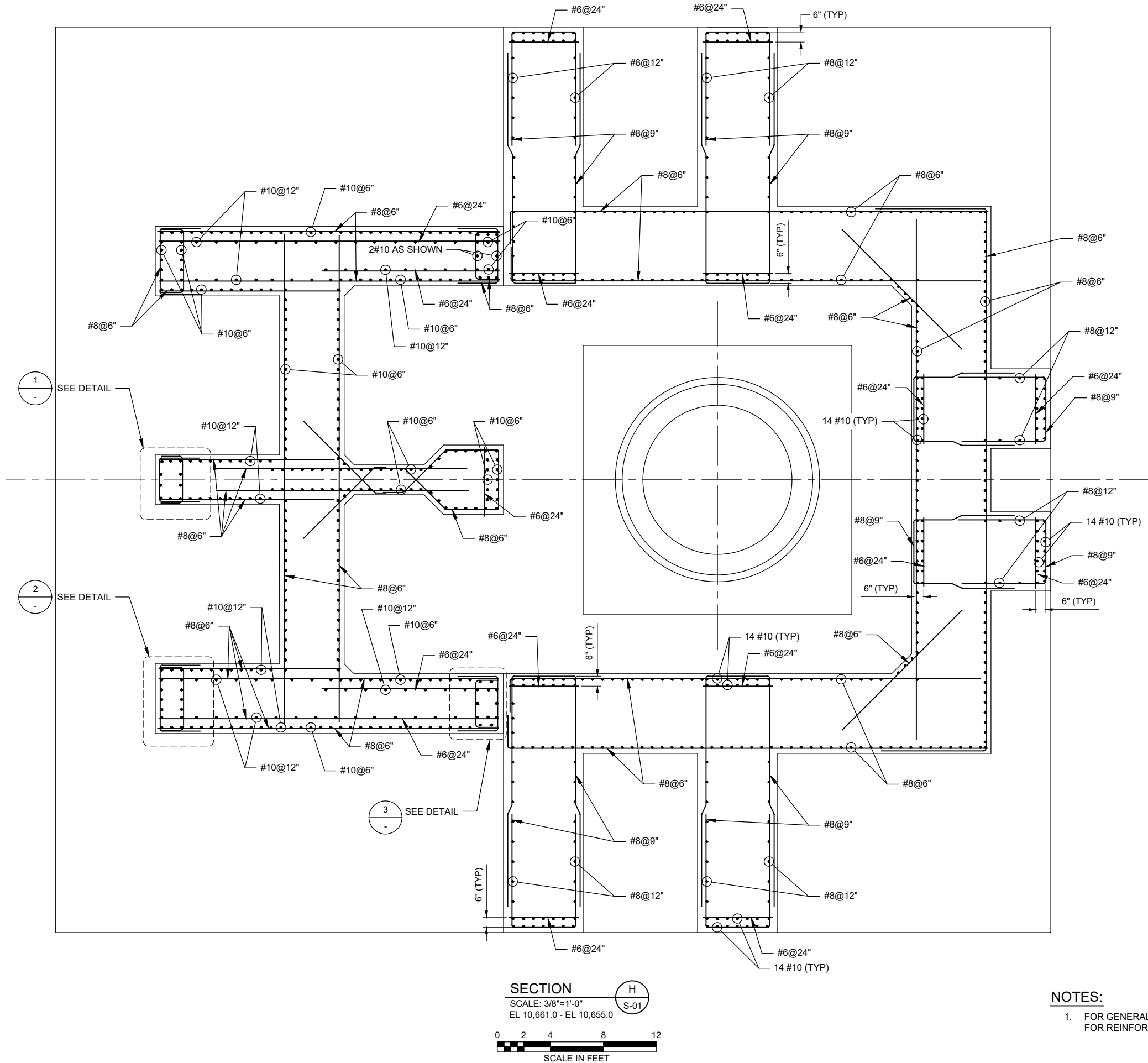
ISSUE/REVISION		
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

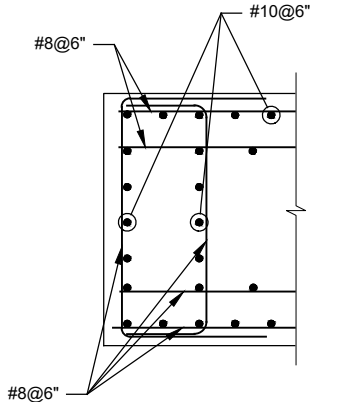
PROJECT NUMBER
60591226

SHEET TITLE
VERTICAL INTAKE TOWER
REINFORCEMENT (5 OF 9)

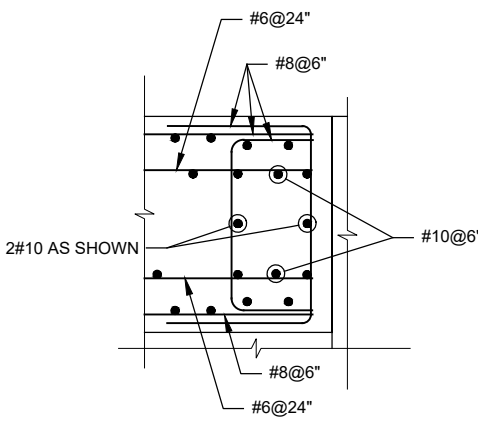
SHEET NUMBER
S-15



DETAIL 1
SCALE: 3/4"=1'-0"
0 .5 1 2 3 4
SCALE IN FEET



DETAIL 2
SCALE: 3/4"=1'-0"
0 .5 1 2 3 4
SCALE IN FEET



DETAIL 3
SCALE: 3/4"=1'-0"
0 .5 1 2 3 4
SCALE IN FEET

NOTES:

1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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KEY PLAN

PROJECT NUMBER

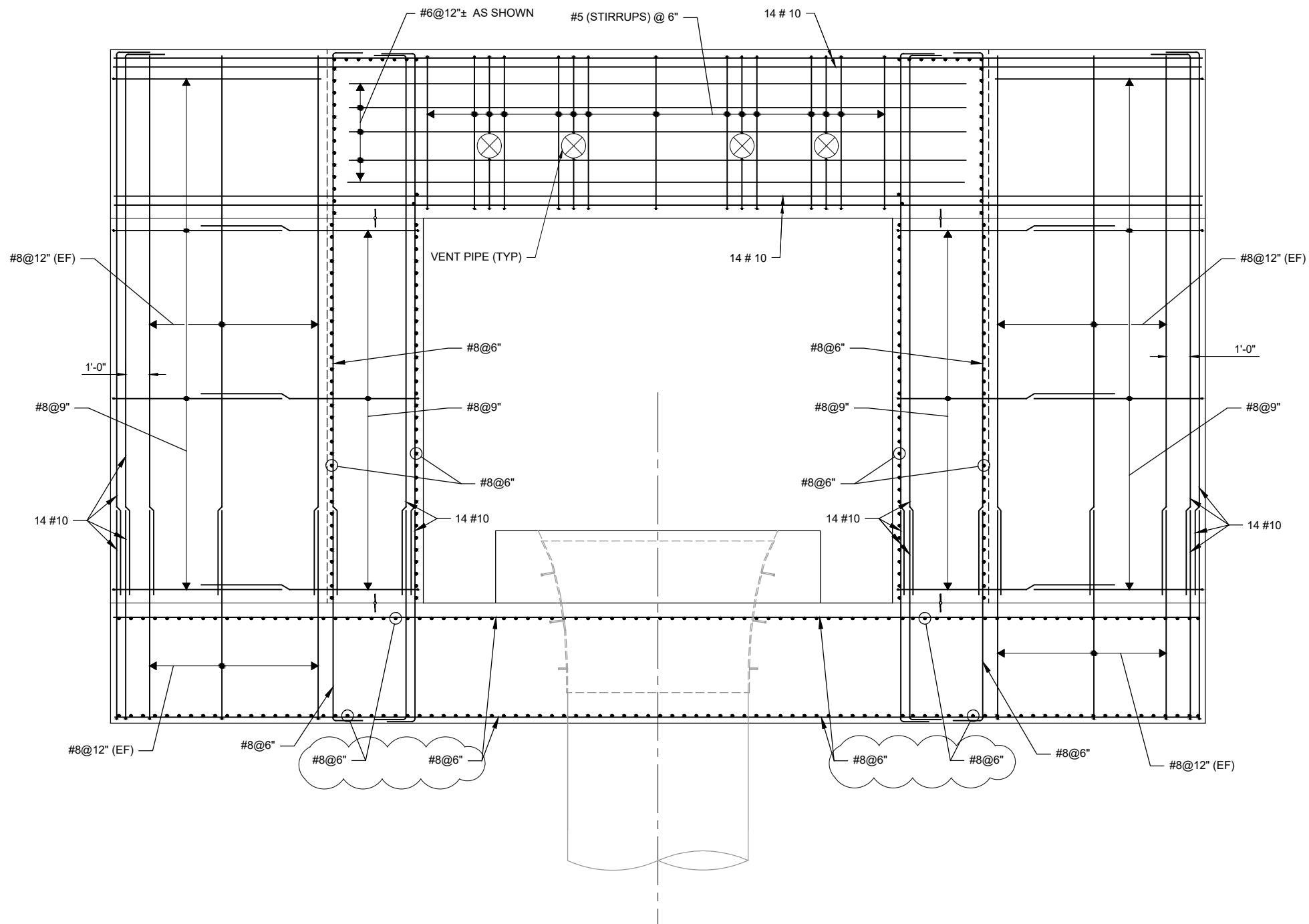
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
REINFORCEMENT (6 OF 9)

SHEET NUMBER

S-16



SECTION
SCALE: 3/8"=1'-0"
0 2 4 8 12
SCALE IN FEET
J
S-01

NOTES:

1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

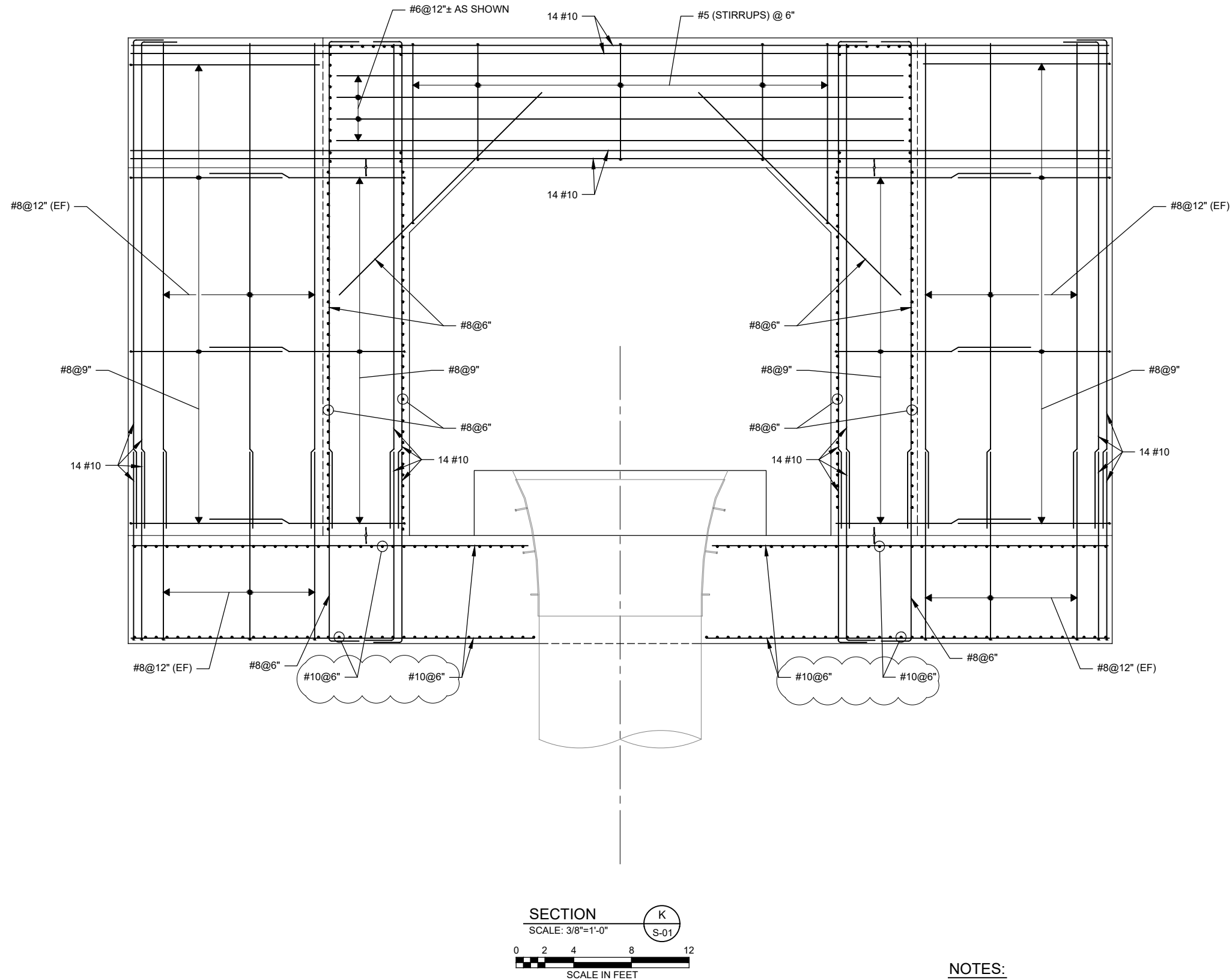
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
REINFORCEMENT (7 OF 9)

SHEET NUMBER

S-17



NOTES:

1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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ISSUE/REVISION

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1	04/21/2020	FOUNDATION ANCHOR LENGTH
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC

KEY PLAN

PROJECT NUMBER

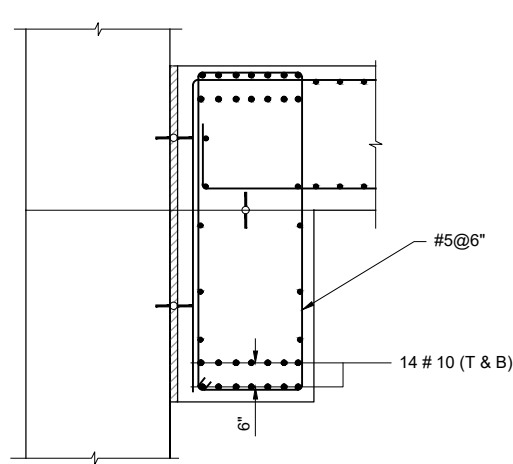
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SHEET TITLE

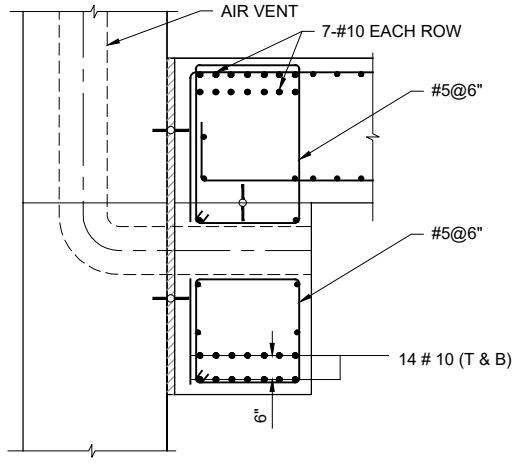
VERTICAL INTAKE TOWER
REINFORCEMENT (8 OF 9)

SHEET NUMBER

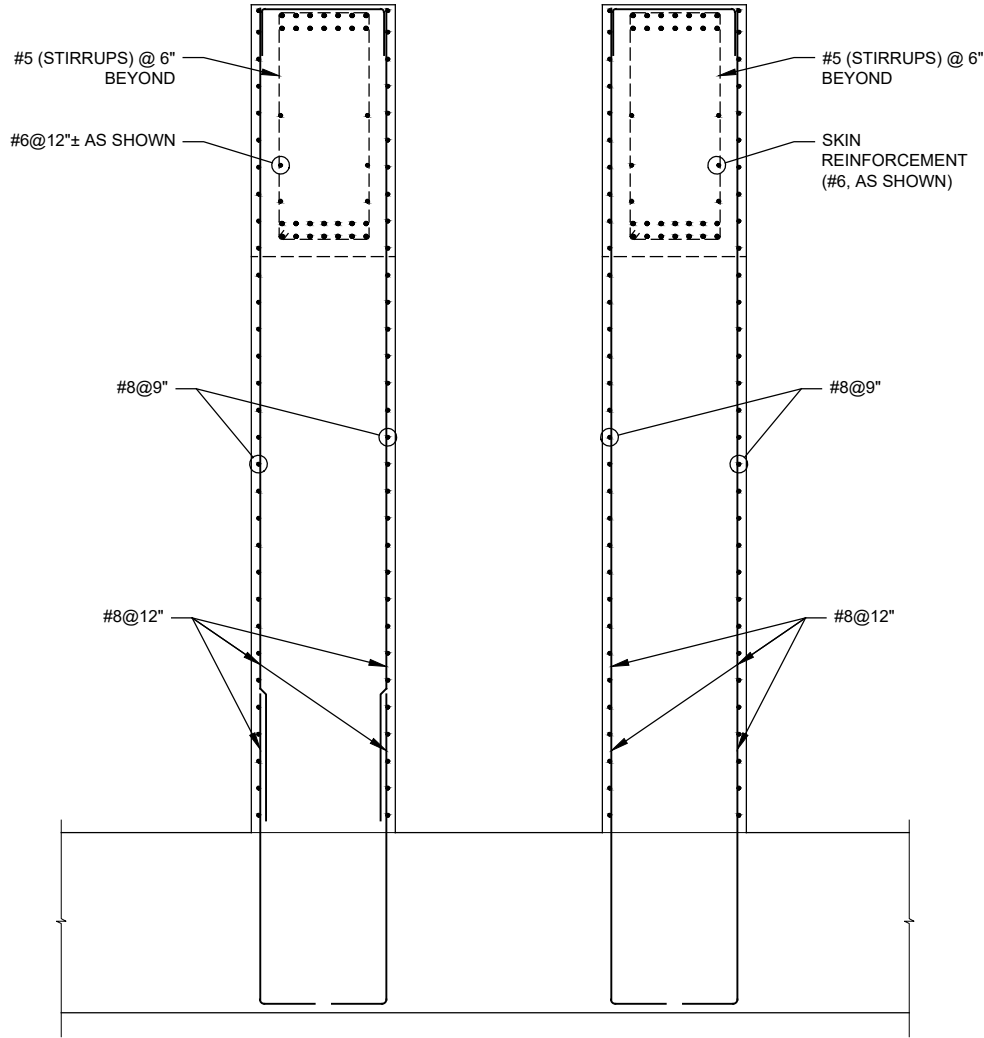
S-18



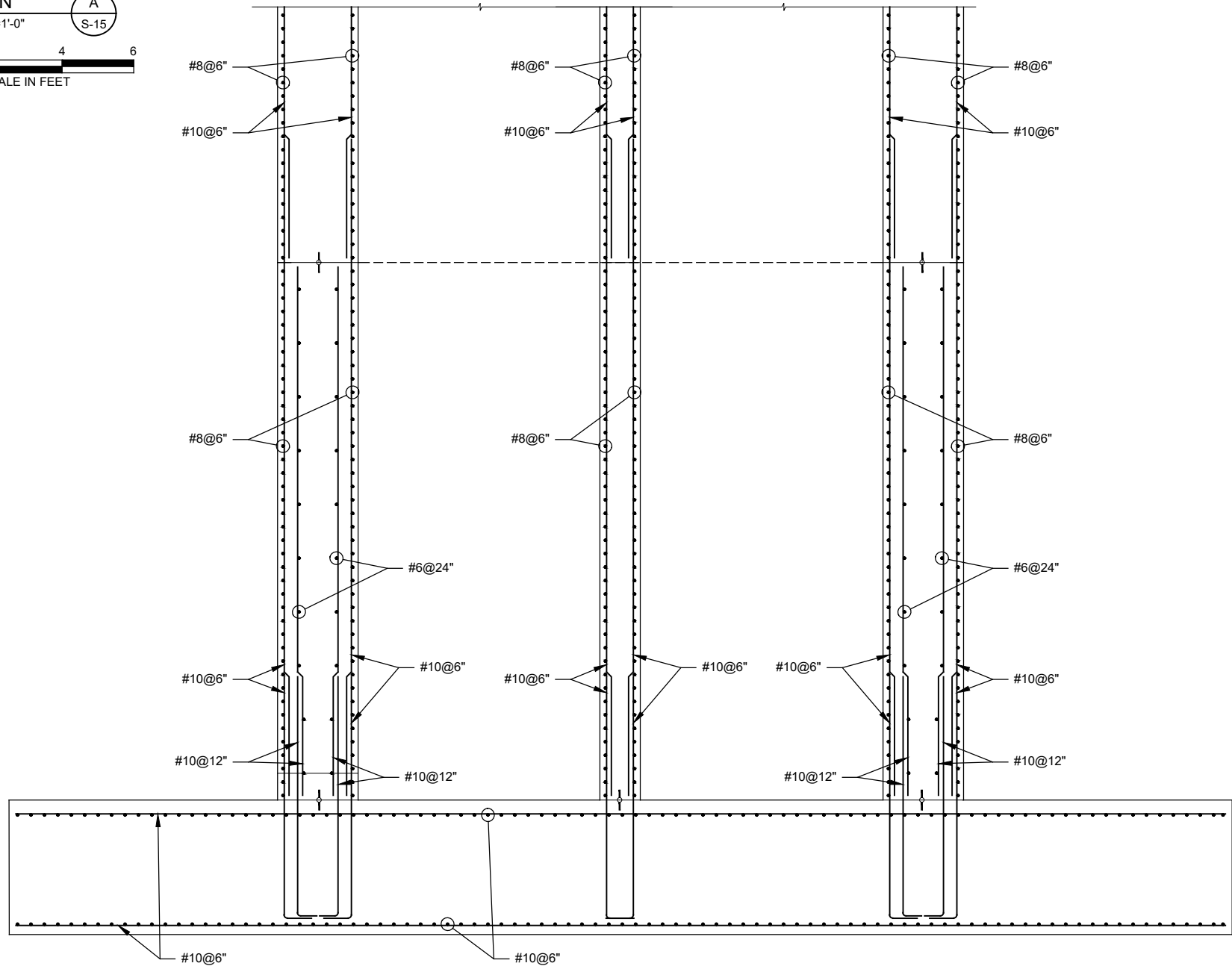
DETAIL
SCALE: 1/2"=1'-0"
SCALE IN FEET



SECTION
SCALE: 1/2"=1'-0"
SCALE IN FEET



SECTION
SCALE: 3/8"=1'-0"
SCALE IN FEET



SECTION
SCALE: 3/8"=1'-0"
SCALE IN FEET

NOTES:

1. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC

KEY PLAN

PROJECT NUMBER

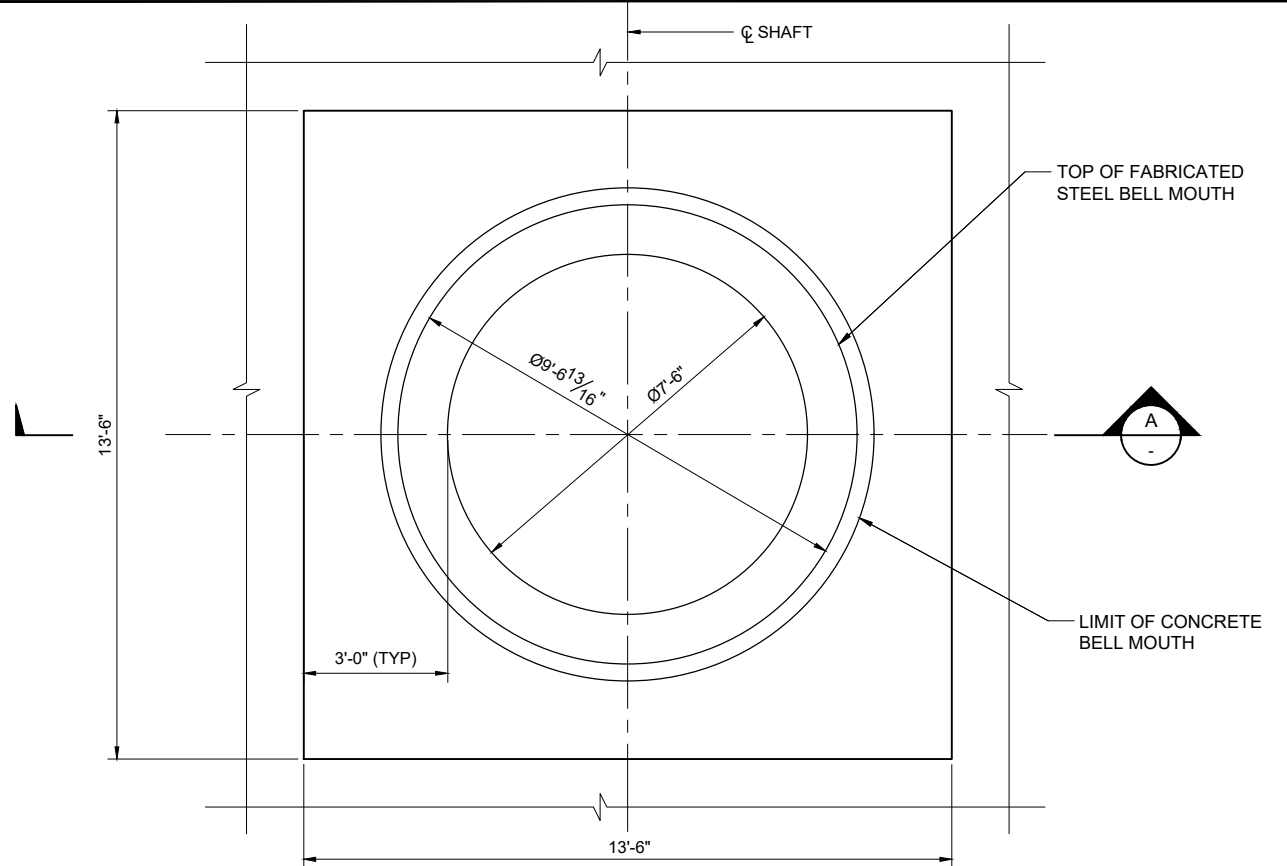
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SHEET TITLE

VERTICAL INTAKE TOWER
REINFORCEMENT (9 OF 9)

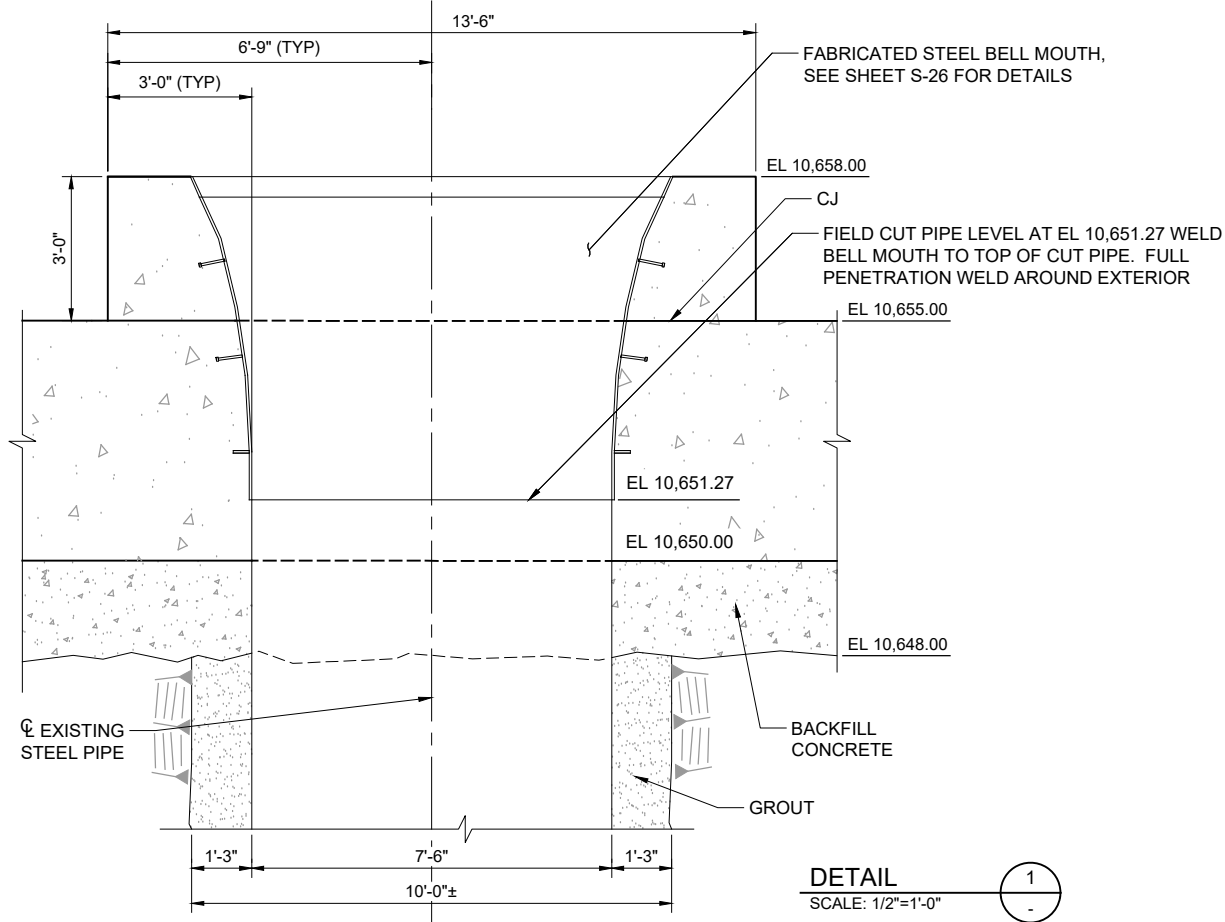
SHEET NUMBER

S-19



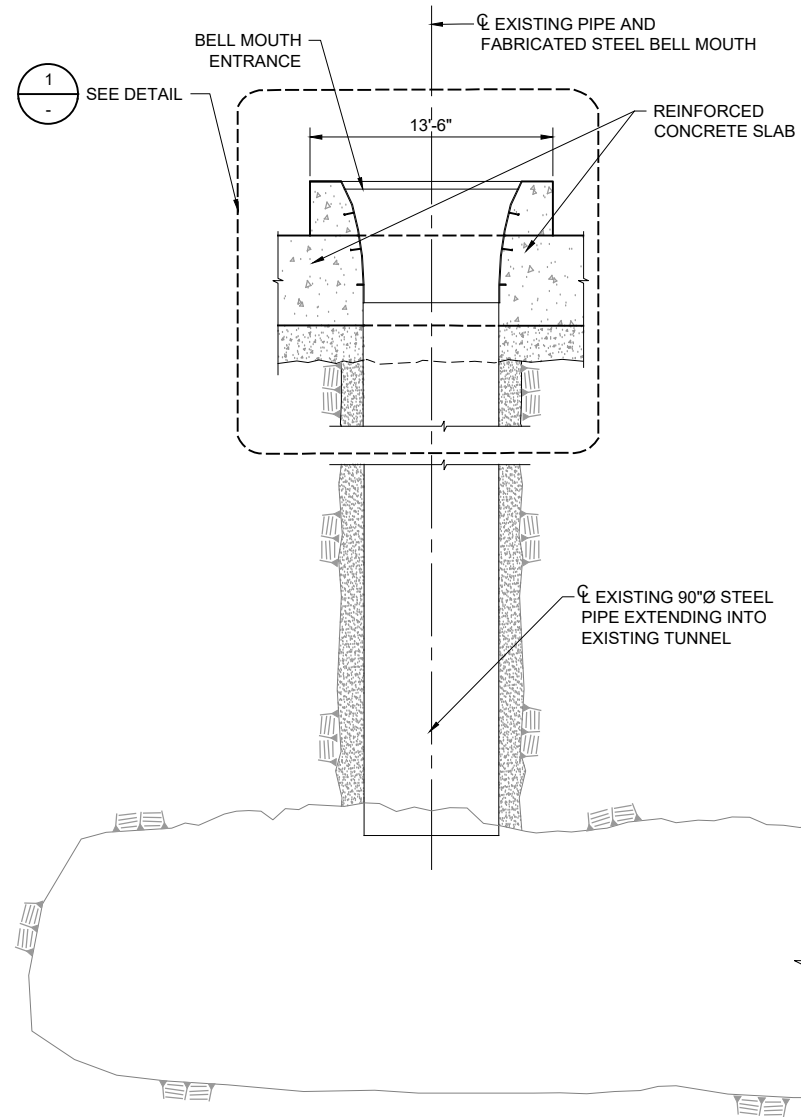
BELL MOUTH ENTRANCE

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



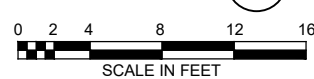
DETAIL

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



SECTION

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



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PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

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KEY PLAN

PROJECT NUMBER

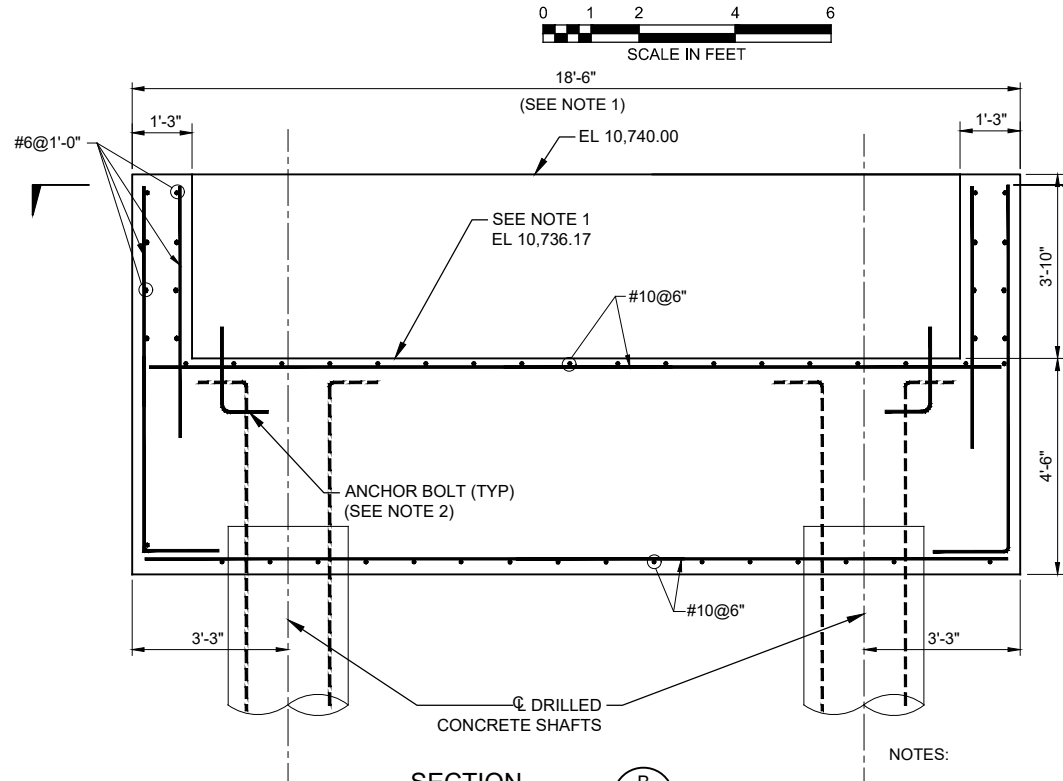
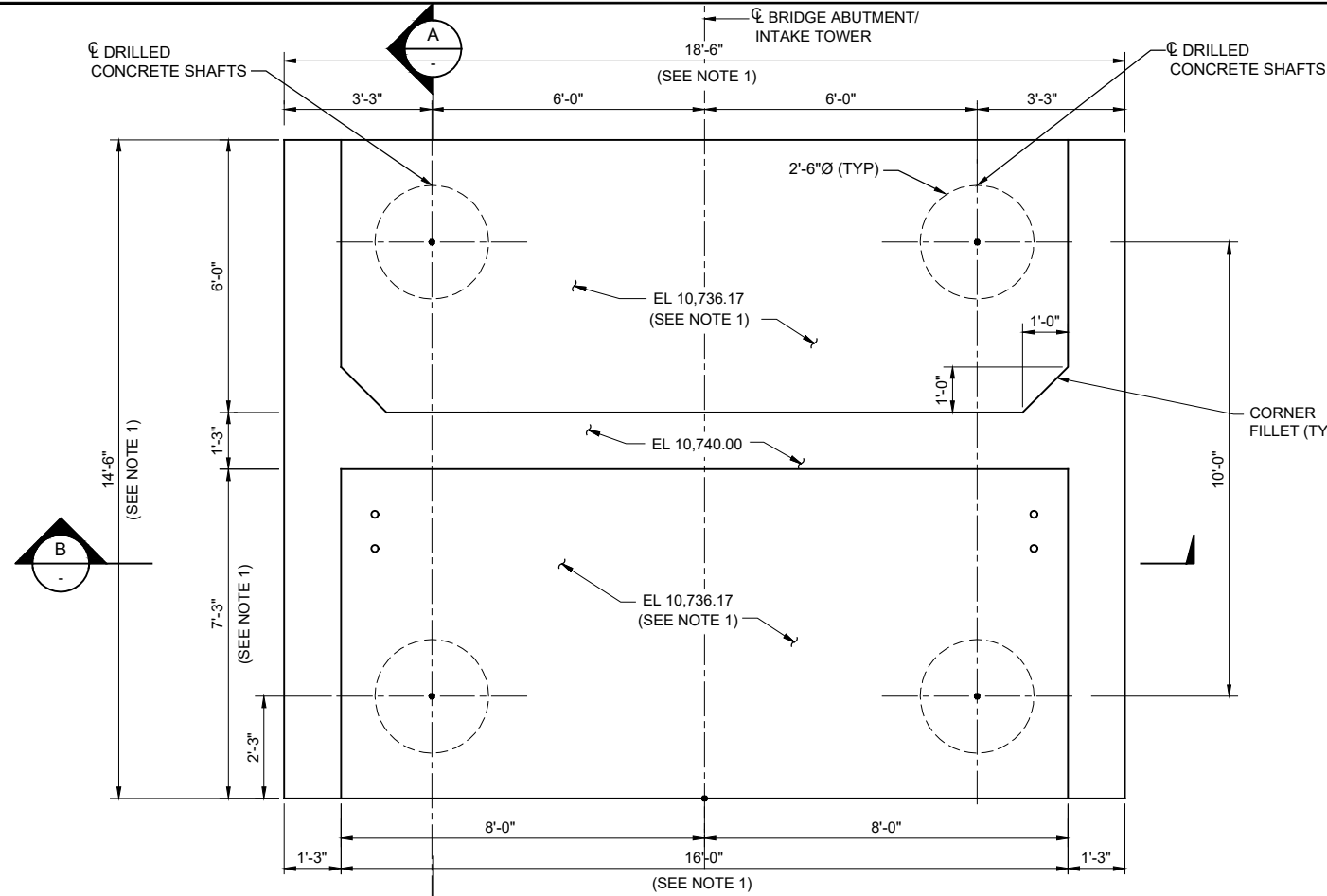
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SHEET TITLE

VERTICAL INTAKE TOWER
SHAFT PLAN AND SECTIONS

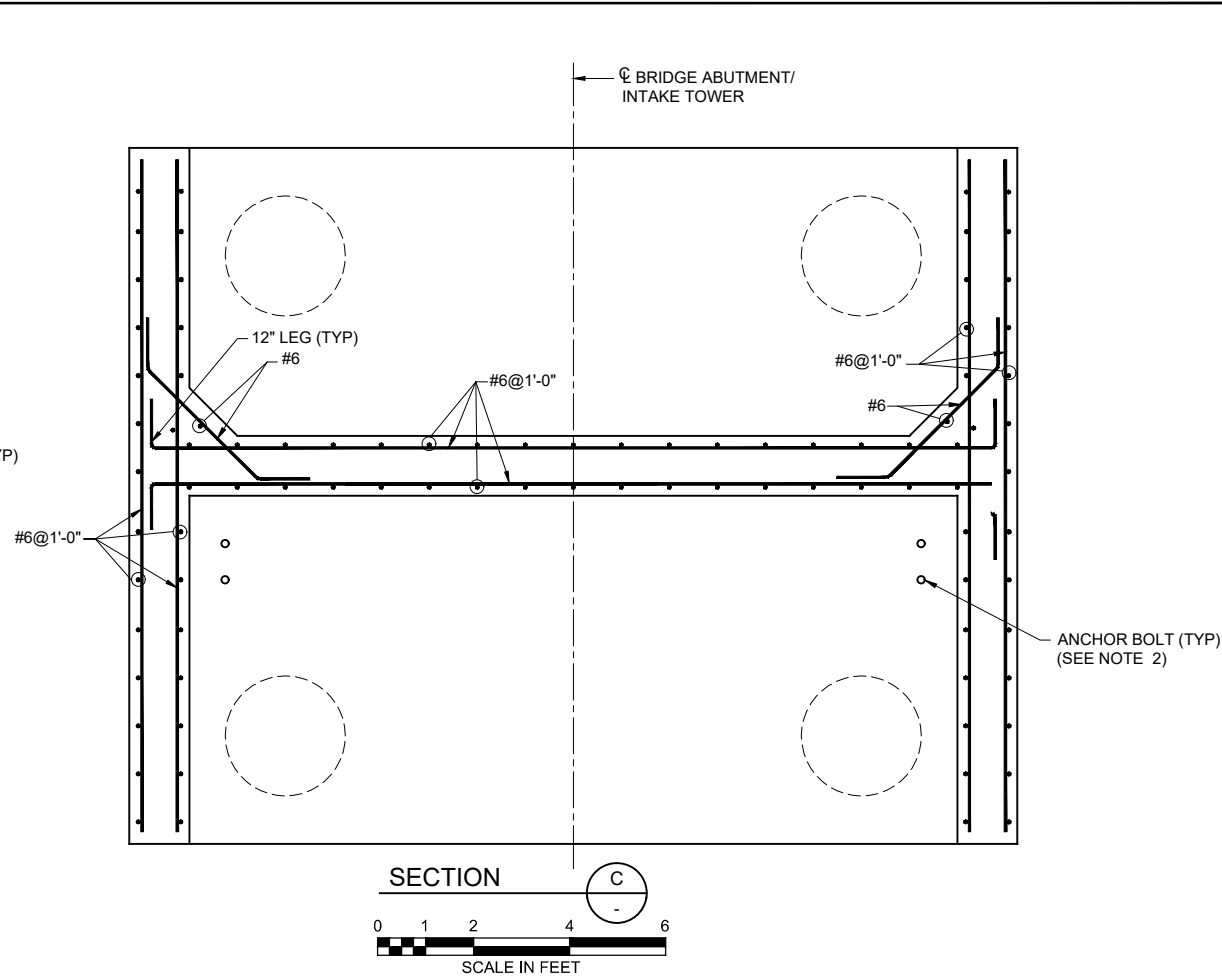
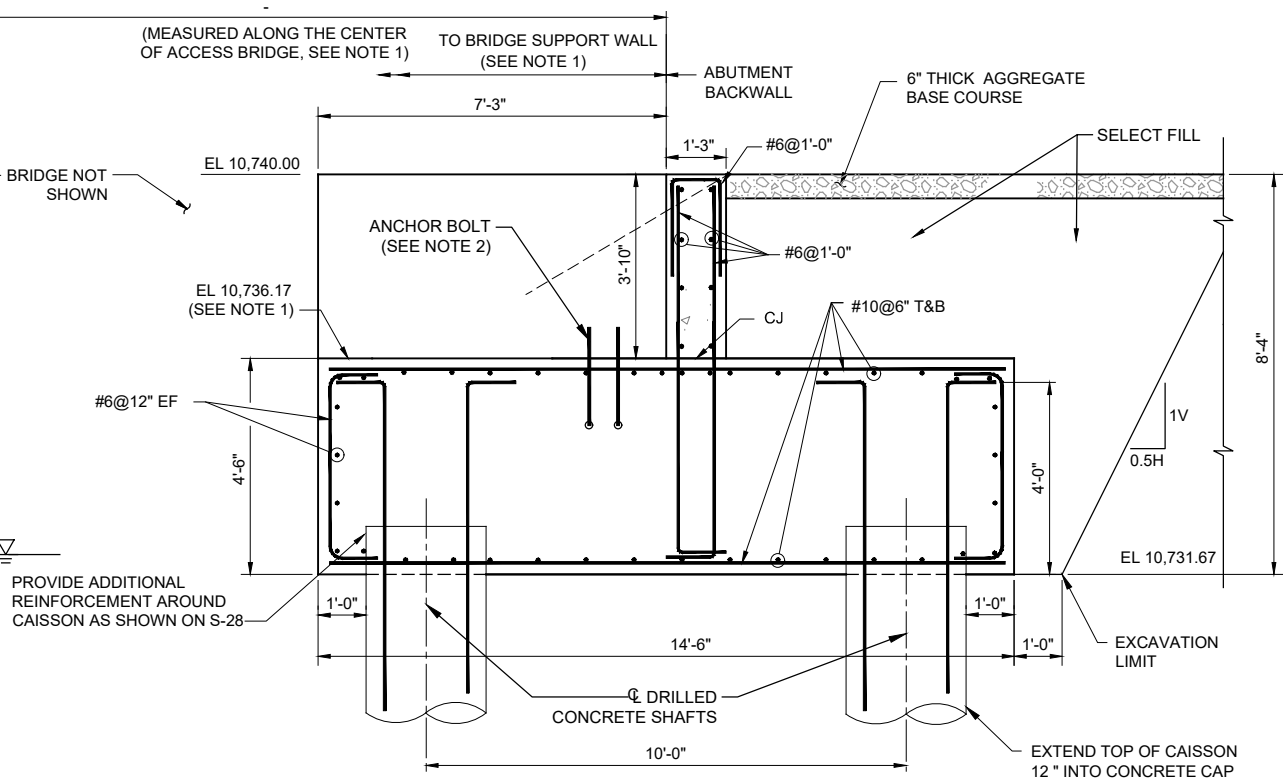
SHEET NUMBER

S-20



NOTES:

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR PREFABRICATED STEEL BRIDGE. IN ADDITION, ALL DIMENSIONS SHOWN ON THIS DRAWING THAT ARE CONTINGENT ON THE BRIDGE SHALL BE VERIFIED AND ADJUSTED IF NECESSARY.
2. ANCHOR BOLTS AND STEEL BEARING PLATES WILL BE REQUIRED AS PER PREFABRICATED STEEL BRIDGE MANUFACTURER. ANCHOR BOLT HOLES IN THE SUPERSTRUCTURE SHALL BE SLOTTED AND APPROPRIATELY SIZED TO ACCOUNT FOR THERMAL MOVEMENTS FOR ALL APPLICABLE HORIZONTAL AND VERTICAL FORCES INCLUDING A HORIZONTAL EARTHQUAKE ACCELERATION OF 0.09g.
3. FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT SEE DWG S-27.
4. REFER TO SHEET C-03 FOR NORTHING AND EASTING OF BRIDGE ABUTMENT STRUCTURE LOCATION.



AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

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KEY PLAN

PROJECT NUMBER

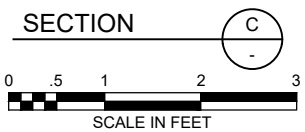
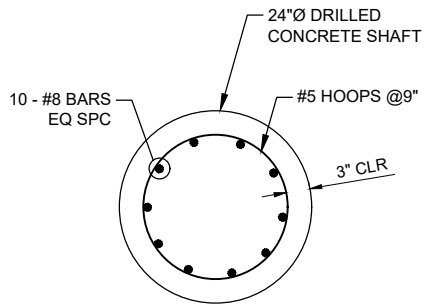
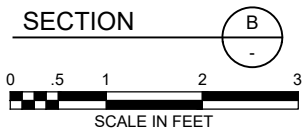
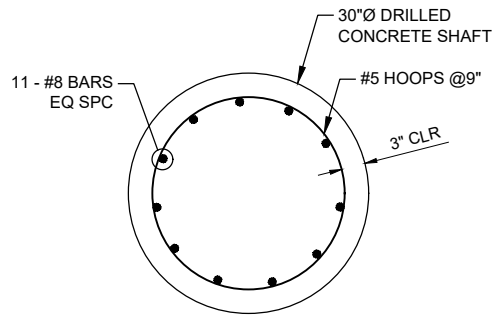
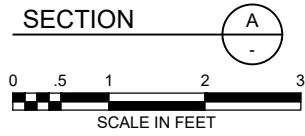
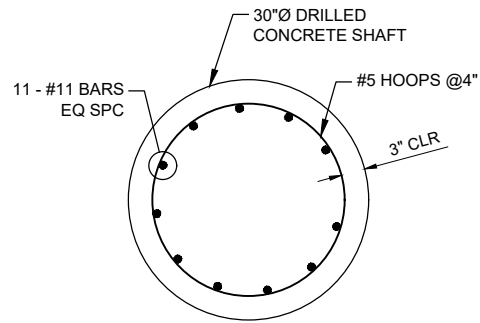
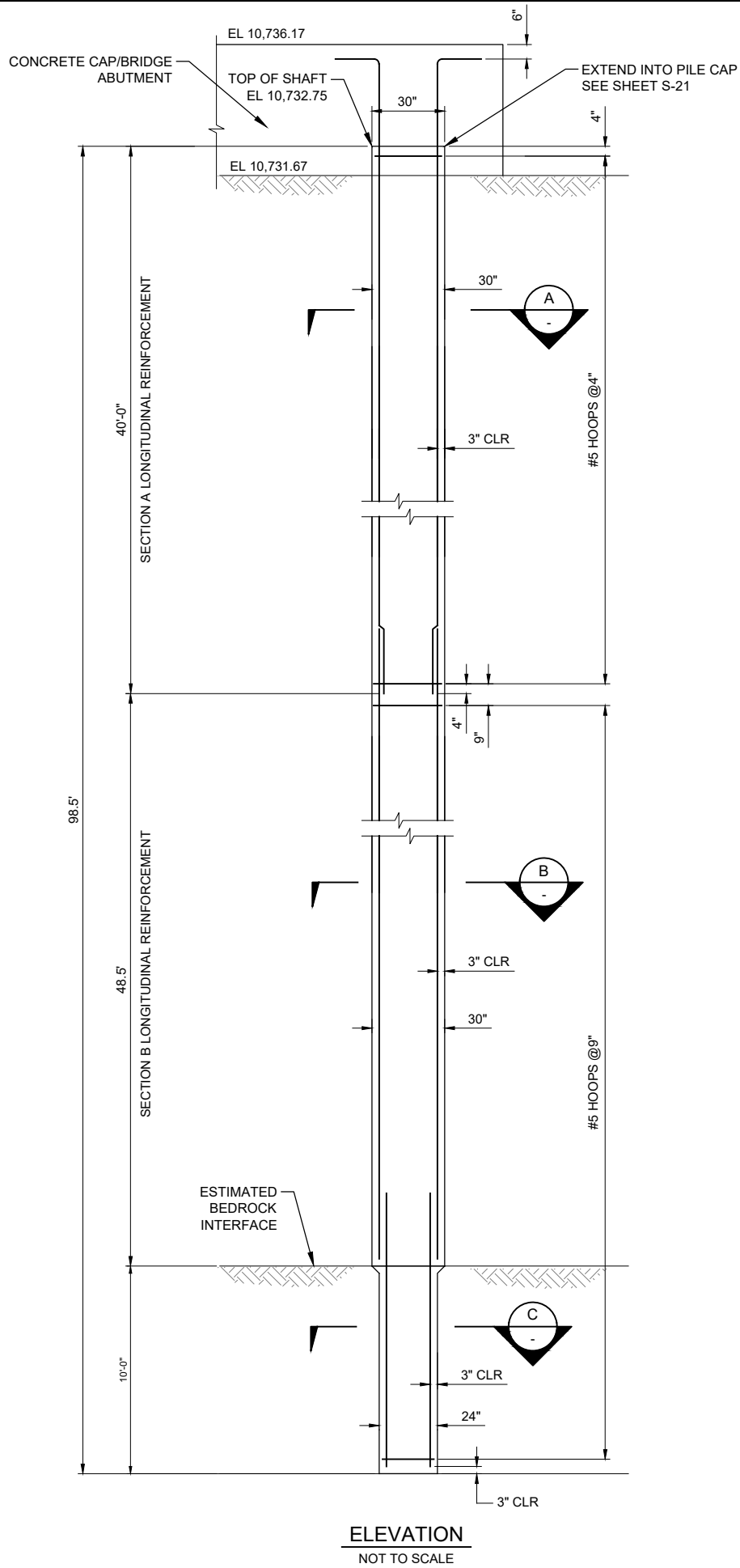
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
BRIDGE ABUTEMENT

SHEET NUMBER

S-21



NOTES:

- FOR GENERAL NOTES AND MINIMUM REQUIREMENTS FOR REINFORCEMENT. SEE SHEET S-27.
- 10' MINIMUM ROCK SOCKET. BEDROCK TO BE VERIFIED BY THE ENGINEER.
- USE TEMPORARY STEEL CASING TO PREVENT CAVING AND GROUNDWATER INFILTRATION.



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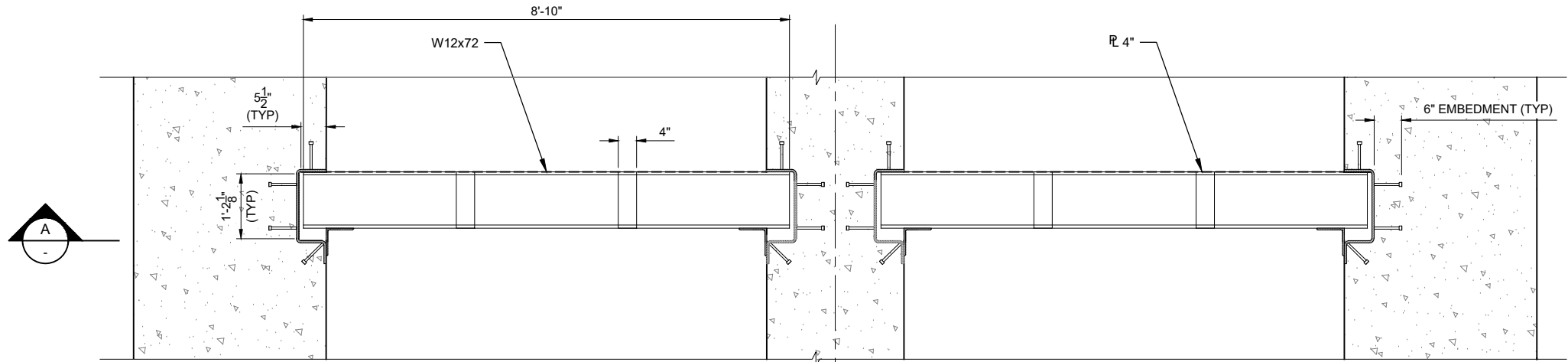
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SHEET TITLE

VERTICAL INTAKE STRUCTURE
BRIDGE ABUTMENT
DRILLED CONCRETE SHAFTS

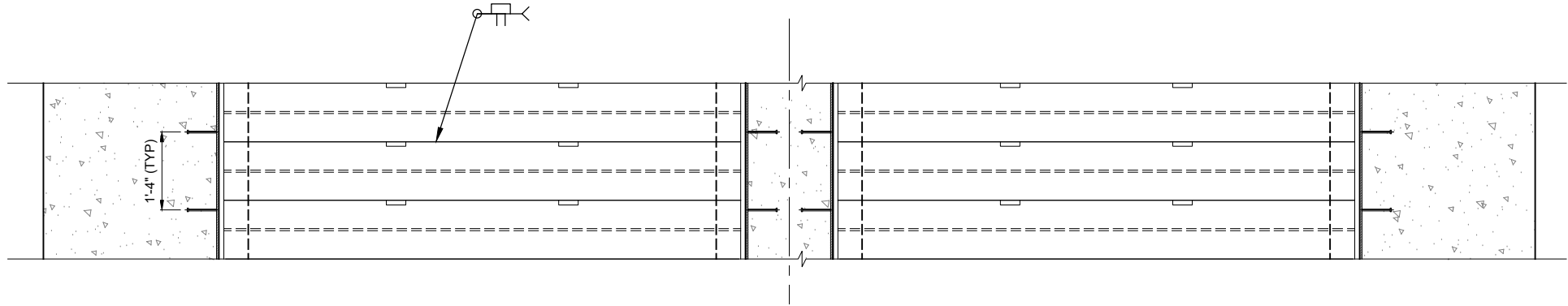
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S-22



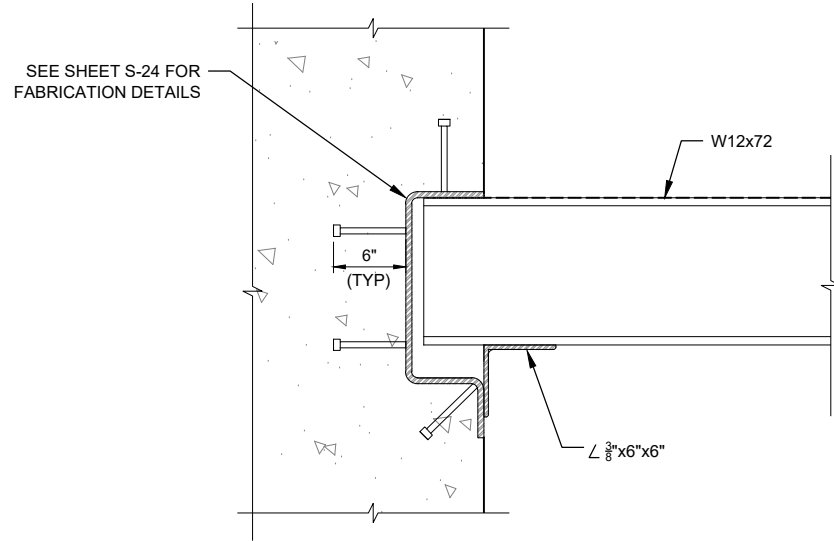
SECTIONAL PLAN
SCALE: 3/4"=1'-0"

0 .5 1 2 3 4
SCALE IN FEET



SECTION
SCALE: 3/4"=1'-0"

0 .5 1 2 3 4
SCALE IN FEET



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

0 .25 .5 1 1.5 2
SCALE IN FEET

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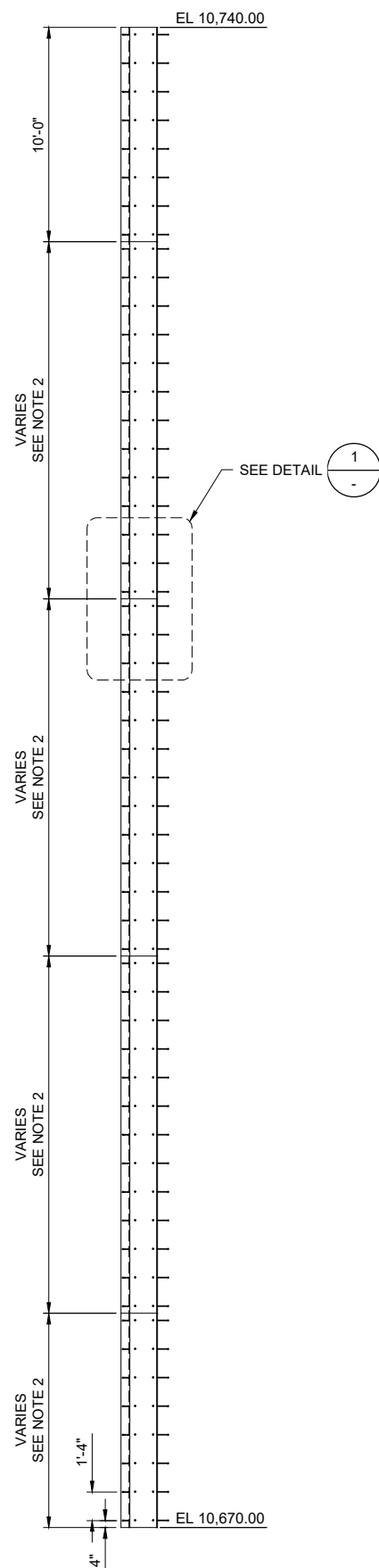
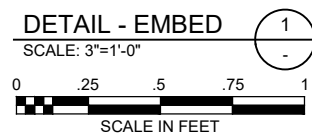
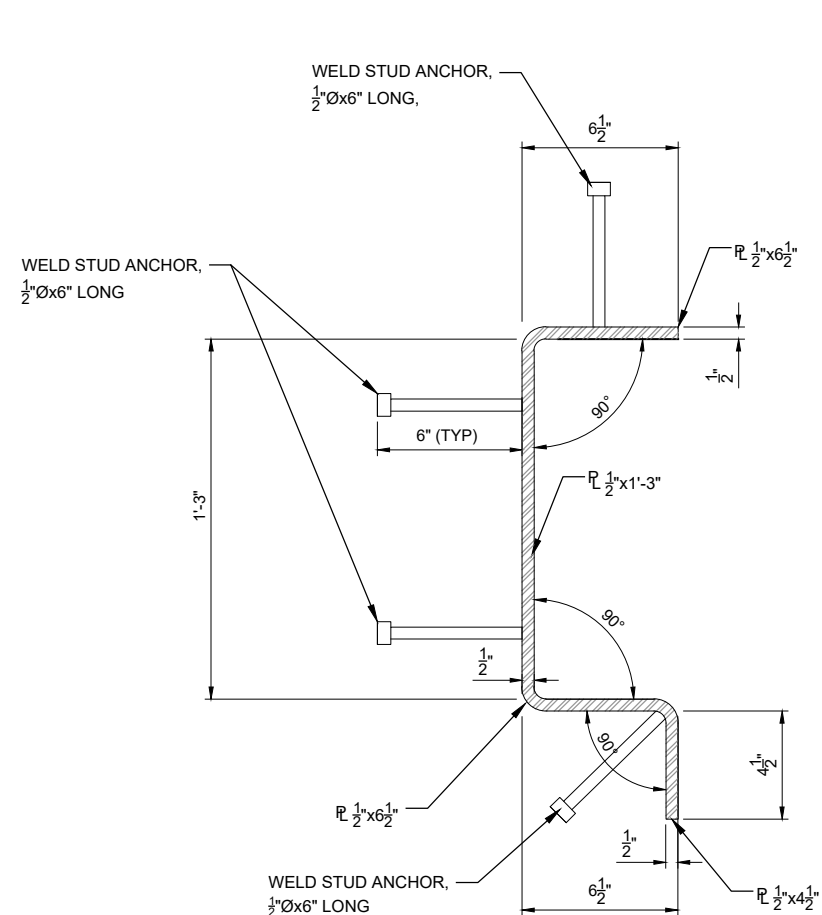
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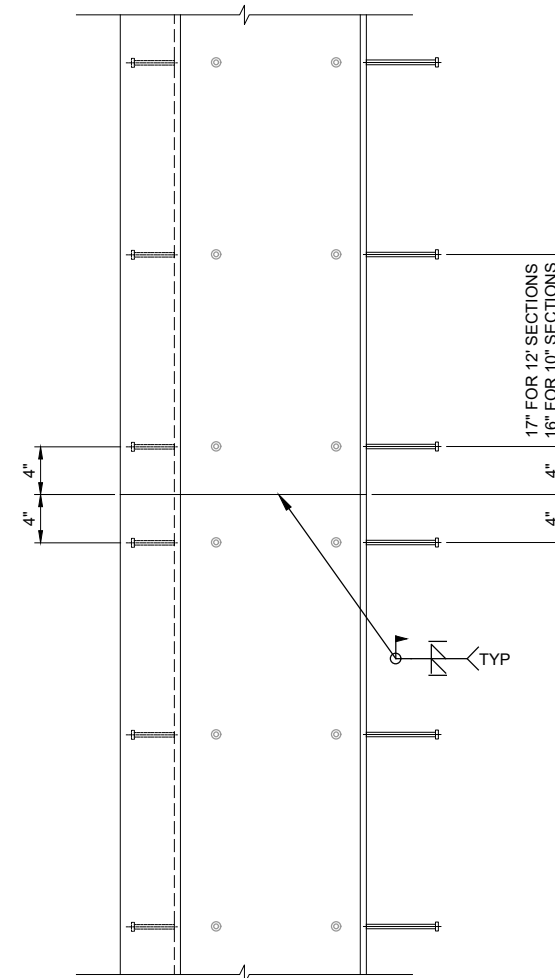
VERTICAL INTAKE STRUCTURE
STOPLOGS

SHEET NUMBER

S-23



COLUMN OF STOPLOG GUIDES (TYP)



DETAIL

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

0 .25 .5 1 1.5

SCALE IN FEET

1

-

NOTES:

1. SUPPORT STOPLOG GUIDES IN POSITION DURING CONCRETE PLACEMENT.
2. EACH STOPLOG GUIDE FABRICATED TO DIFFERENT LENGTH NOT TO EXCEED 12 FEET.



PROJECT

PHASE II VERTICAL INTAKE STRUCTURE

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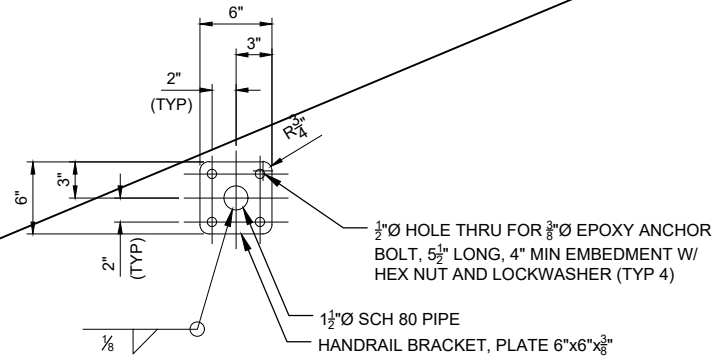
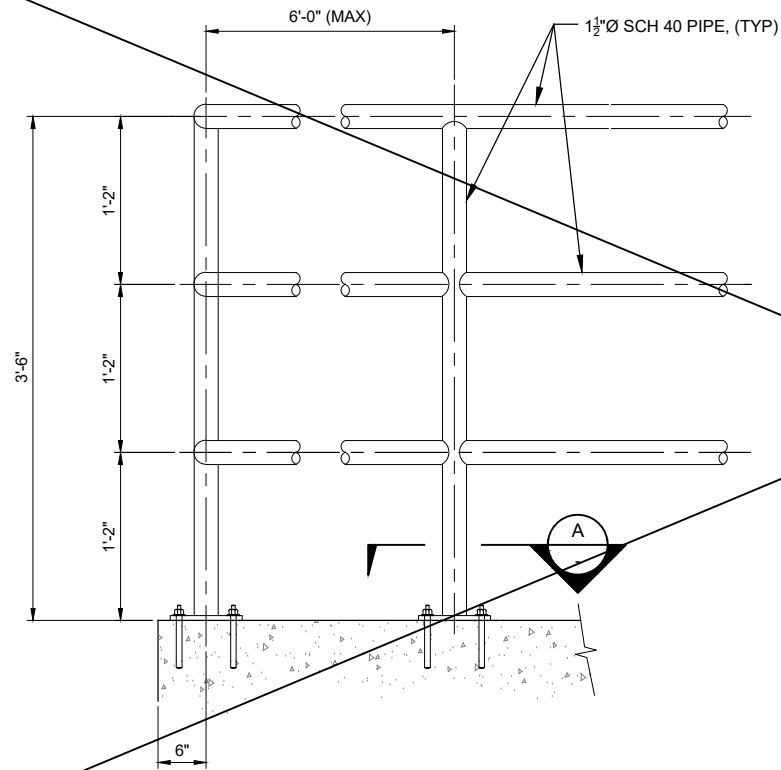
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
STOPLOG DETAILS
(2 OF 2)

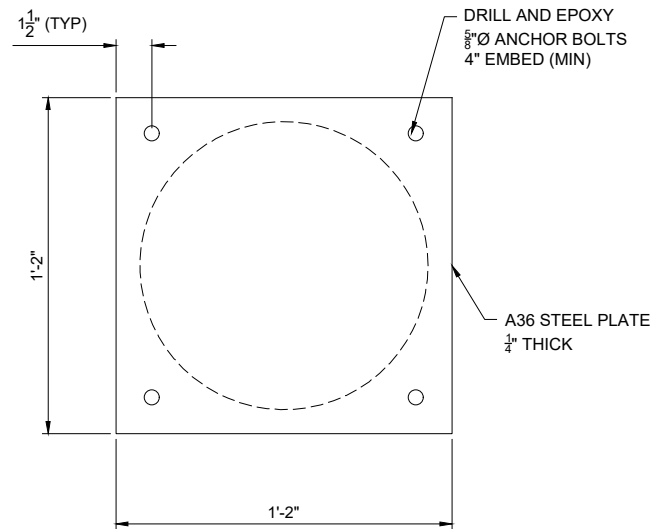
SHEET NUMBER

S-24

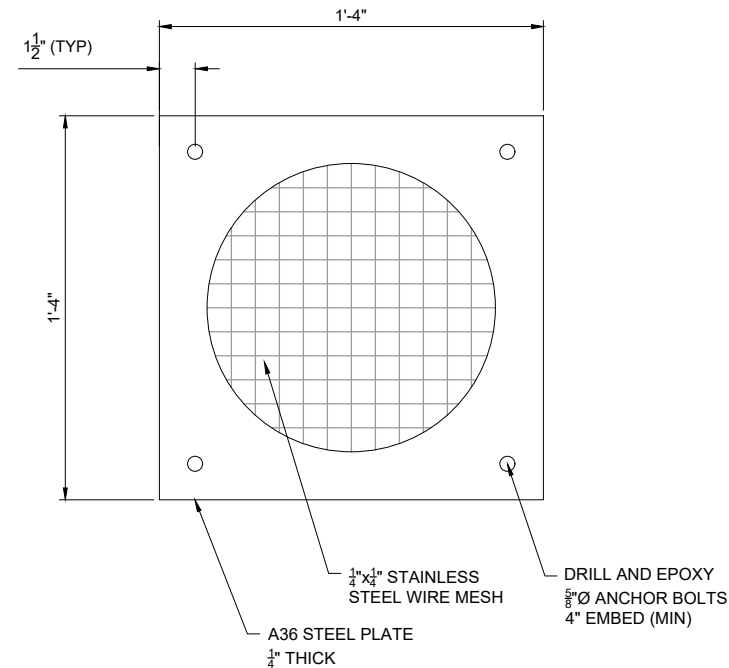


SECTION A
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET

DETAIL 1
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



DETAIL 2
NOT TO SCALE



DETAIL 3
NOT TO SCALE



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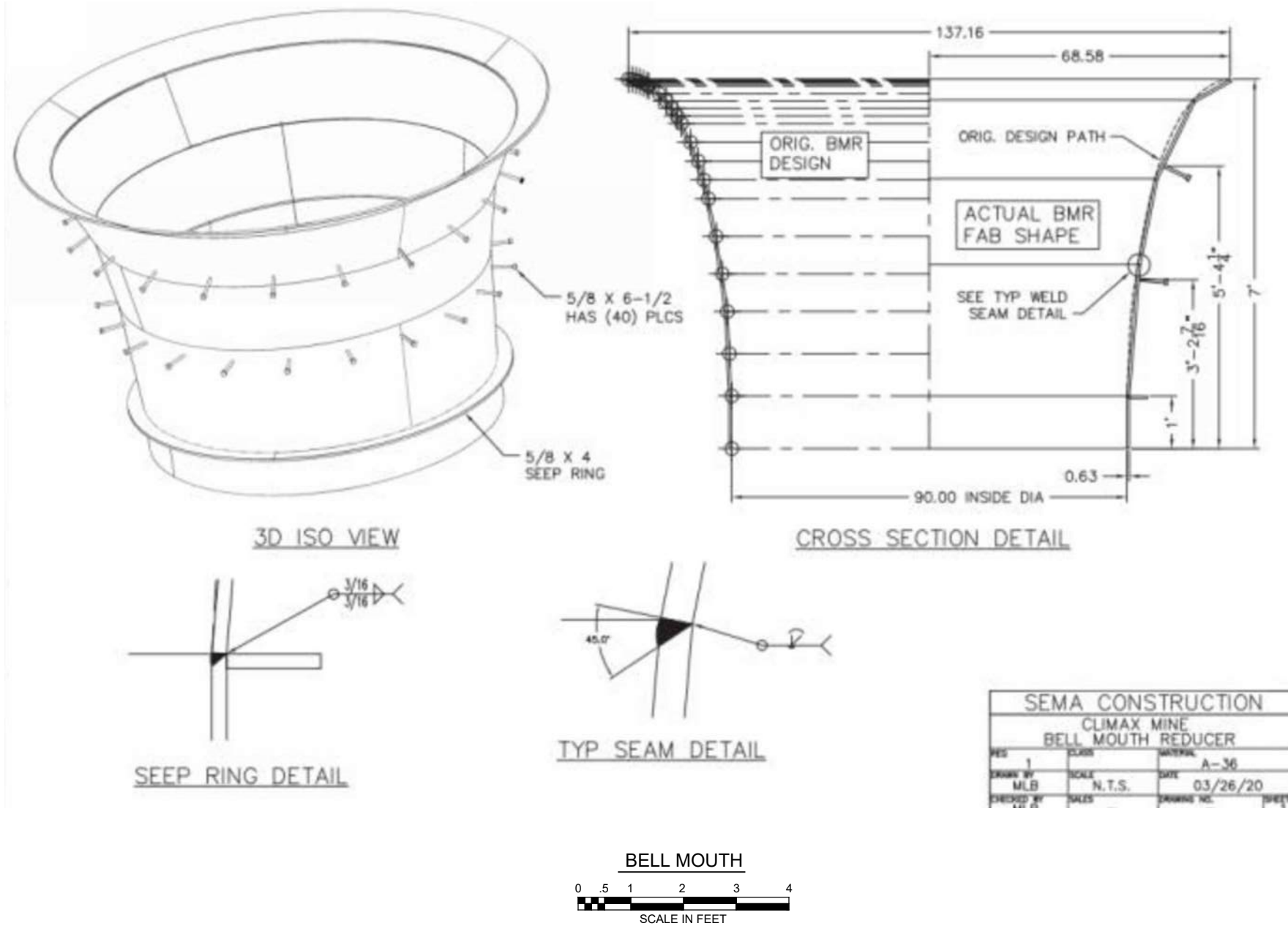
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
HANDRAIL DETAILS

SHEET NUMBER

S-25



NOTES:

- BELL MOUTH STEEL LINER TO BE ASTM A36 WITH $\frac{5}{8}$ " THICKNESS.
- STUD ANCHORS TO BE ASTM A29 AND WELDED WITH NELSON ELECTRIC ARC STUD WELDING SYSTEM OR ALTERNATATE AS APPROVED.
- SEEPAGE RING TO BE ASTM A36 WITH $\frac{5}{8}$ " THICKNESS.

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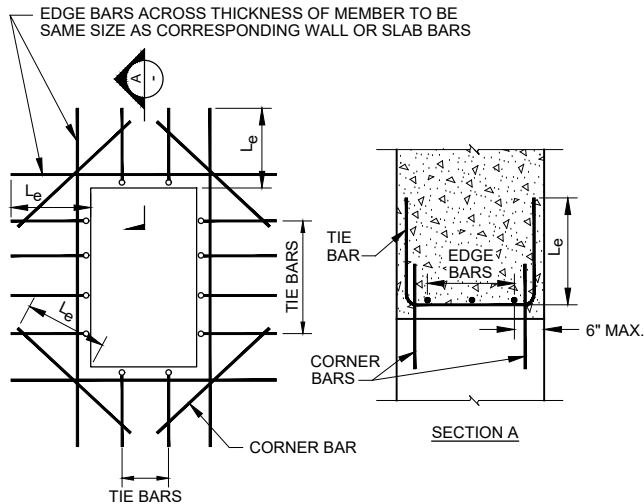
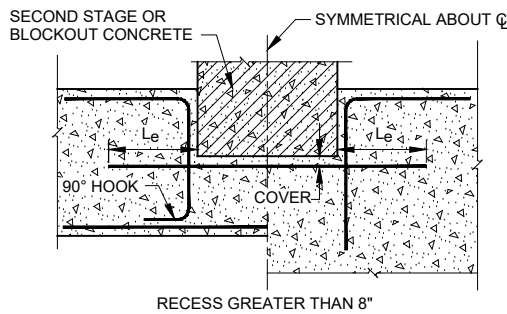
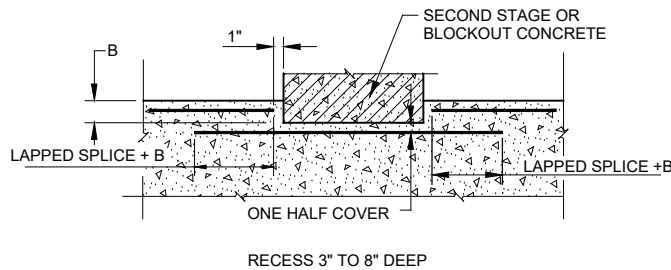


TABLE FOR REINFORCEMENT AROUND OPENINGS			
MEMBER THICKNESS	TIE BAR	EDGE BARS	CORNER BARS
LESS THAN 10"	NONE	1-CTR.	1-#4 CTR.
10" THRU 1'-6"	NONE	2-(1-EF)	2-#4 (1EF)
1'-7" THRU 3'-0"	#4 @1'-0"	3-EQ. SPC.	2-#6 (1EF)
OVER 3'-0"	#6 @1'-0"	SPC.@1'-0"	2-#8 (1EF)

1. OMIT EDGE BARS AND TIE BARS ALONG SIDES OF OPENINGS WHERE DIMENSION IS LESS THAN 18".
2. OMIT CORNER BARS AT SIDES OF OPENINGS ADJACENT TO FLOORS, WALLS, OR BEAMS.
3. CORNER BARS REQUIRED IF EITHER DIMENSION OF OPENING IS GREATER THAN 18".
4. USE CORNER BARS IN FACE OF RECESSES DEEPER THAN 4" IF EITHER DIMENSION OF RECESS IS GREATER THAN 18".

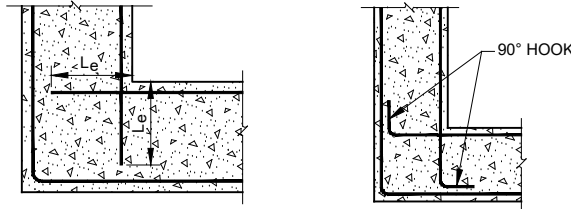
ADDITIONAL REINFORCEMENT AROUND OPENINGS



TYPICAL BLOCKOUT RECESS OR OFFSET DETAILS

GENERAL NOTE

1. UNLESS OTHERWISE SHOWN ON THE REINFORCEMENT DESIGN DRAWINGS, THE DETAILS AND NOTES SHOWN ON THIS DRAWING ARE TYPICAL FOR ALL REINFORCEMENT DRAWINGS.



TYPICAL CORNER DETAILS

ABBREVIATIONS

BF = BOTTOM FACE
TF = TOP FACE
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
IF = INSIDE FACE
OF = OUTSIDE FACE
CJ = CONSTRUCTION JOINT
OCJ = OPTIONAL CONSTRUCTION JOINT
CTJ = CONTROL JOINT

CRJ = CONTRACTION JOINT
EJ = EXPANSION JOINT
BR = BOTTOM ROW
TR = TOP ROW
NR = NEAR ROW
FR = FAR ROW
ER = EACH ROW
IR = INSIDE ROW
IJ = ISOLATION JOINT
OR = OUTSIDE ROW
MR = MIDDLE ROW

BL = BOTTOM LAYER
TL = TOP LAYER
ML = MIDDLE LAYER
NS = NEAR SIDE
FS = FAR SIDE
ES = EACH SIDE
EW = EACH WAY
EC = EACH CORNER
Le = EMBEDMENT LENGTH
db = NOMINAL DIAMETER OF REINFORCING BAR

SPC. = SPACE OR SPACES
EQ. SPC. = EQUALLY SPACED, EQUAL SPACES
D = NORMAL DIAMETER OF REINFORCING BAR
UV = UNIFORMLY VARYING LENGTHS OF BARS BETWEEN LENGTHS SHOWN
CL. = CLEAR
CTR. = CENTER OR CENTERS

SYMBOLS

○ AN OPEN CIRCLE AT THE END OF A BAR INDICATES A BEND WITH THE BAR TURNED AWAY FROM THE OBSERVER.
● A CLOSED CIRCLE AT THE END OF A BAR INDICATES A BEND WITH THE BAR TURNED TOWARDS THE OBSERVER.
SPICES SHOWN THUS  INDICATE A LAPPED SPlice, NOT A BEND IN THE BAR.

DIMENSIONS

DIMENSIONS ARE TO THE CENTERLINE OF THE BARS UNLESS OTHERWISE SHOWN.
CLEAR COVER DIMENSIONS ARE MARKED "CL".

COVER

PLACE THE REINFORCEMENT SO THAT THE CLEAR DISTANCE BETWEEN FACE OF CONCRETE AND NEAREST REINFORCEMENT IS 1 1/2" FOR #5 BARS AND SMALLER, 2" FOR #6 BARS AND LARGER. PROVIDE 3" CLEAR DISTANCE FROM FACE OF CONCRETE FOR ALL BARS WHEN THE CONCRETE IS PLACED AGAINST EARTH OR ROCK. CLEAR DISTANCE IS THE DESIGN DIMENSION LINE. REINFORCEMENT PARALLELING CONSTRUCTION JOINTS SHALL HAVE A MINIMUM OF 2" CLEAR COVER.

BENT BARS:

UNLESS OTHER RADIUS BENDS ARE INDICATED ON THE DRAWINGS, ALL REINFORCEMENT REQUIRING BENDING SHALL BE BENT AROUND A PIN HAVING THE FOLLOWING DIAMETER:

TABLE 1

PIN DIAMETER IN INCHES

BAR NO.	3	4	5	6	7	8	9	10	11
STANDARD BENDS	2 1/4	3	3 3/4	4 1/2	5 1/4	6	9 1/2	10 3/4	12
STIRRUP AND TIE BENDS	1 1/2	2	2 1/2	4 1/2	5 1/4	6	-	-	-

REINFORCEMENT DOWELS:

DOWELS INDICATED ON THE DRAWING, SUCH AS #8 (d), SHALL BE EMBEDDED A LENGTH EQUAL TO L AND SHALL HAVE A PROJECTION EQUAL TO THAT REQUIRED FOR TOP SPlicing TO A BAR OF THE SAME DIAMETER.

PLAIN DOWELS:

PLAIN DOWELS ACROSS CONTRACTION JOINTS SHALL BE SMOOTH BARS UNIFORMLY COATED WITH A FILM OF OIL BEFORE CONCRETE PLACEMENT. VISCOSITY OF THE OIL SHALL HAVE A SAE RATING OF NOT LESS THAN 250.

ACCESSORIES:

BAR SUPPORTS, SPACERS, AND OTHER ACCESSORIES ARE NOT SHOWN ON THE DRAWINGS. THE RECOMMENDATIONS OF THE VACANT ACI DETAILING

REFERENCE CODE:

UNLESS OTHERWISE SHOWN FOLLOW THE RECOMMENDATIONS ESTABLISHED BY THE AMERICAN CONCRETE INSTITUTE'S "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 315".

NOTES TO DETAILERS:

SPlice LENGTHS SHOWN IN THE TABLES ON THIS DRAWING ARE FOR CLASS B SPICES IN ACCORDANCE WITH ACI 318-99. SPICES OR DEVELOPMENT LENGTHS OTHER THAN THOSE SHOWN IN THE TABLES MUST BE DETAILED ON THE REINFORCEMENT DESIGN DRAWINGS.

SPICES:

THE MINIMUM LENGTH OF LAP FOR SPlicing PARALLEL BARS SHALL BE GIVEN IN THE APPLICABLE TABLE (TABLE 2). SPICES SHALL BE STAGGERED TO GIVE 12 INCHES CLEAR BETWEEN ENDS OF ADJACENT SPICES. BARS SPliced BY NONCONTACT LAP SPICES SHALL NOT BE SPACED TRANSVERSELY FARTHER APART THAN ONE-FIFTH THE REQUIRED LAP SPlice LENGTH, NOR 6 IN. WHEN REINFORCING BARS OF DIFFERENT SIZE ARE TO BE SPliced, THE LENGTHS OF LAP SHALL BE GOVERNED BY THE SMALLER DIAMETER BAR. SPICES ARE TO BE MADE SO THAT THE REQUIRED CLEAR DISTANCES TO FACE OF CONCRETE WILL BE MAINTAINED.

PLACING:

REINFORCEMENT AT SMALL OPENINGS (MAX. 1'-5") IN WALLS AND SLABS MAY BE SPREAD APART NOT MORE THAN 1.5 TIMES THE BAR SPACING. REINFORCEMENT MAY BE ADJUSTED LATERALLY TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1" BETWEEN THE REINFORCEMENT AND KEYS, WATERSTOPS, ANCHOR BOLTS, FORM TIES, CONDUITS AND OTHER EMBEDDED MATERIALS. IN HEAVILY REINFORCED AREAS, RELOCATION OF THE EMBEDDED MATERIAL MUST BE CONSIDERED. WHEN BARS ARE BENT DUE TO OFFSETS LESS THAN 3" DEEP, THE SLOPE OF THE INCLINED PORTION MUST NOT EXCEED 6 TO 1. REINFORCEMENT PARALLEL TO ANCHOR BOLTS OR OTHER EMBEDDED MATERIAL SHALL BE PLACED TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1.33 TIMES THE MAXIMUM SIZE AGGREGATES.

SPACING:

THE FIRST AND LAST BARS IN WALLS AND SLABS, STIRRUPS IN BEAMS, AND TIES IN COLUMNS ARE TO START AND END AT A MAXIMUM OF ONE HALF OF THE ADJACENT BAR SPACING. A MINIMUM OF 2.5d CLEAR FROM THE EDGE IS REQUIRED FOR #9, #10, AND #11 BARS IF SPlice LENGTHS OR REDUCED DEVELOPMENT LENGTHS GIVEN IN TABLE 2 ARE TO BE USED.

STANDARD HOOKS:

HOOKS SHALL HAVE 180° BENDS AND EXTENSIONS OF 4-BAR DIAMETERS BUT NOT LESS THAN 2 1/2" PARALLEL TO THE MAIN LEG OF THE BAR, OR 90° BENDS AND EXTENSIONS OF AT LEAST 12-BAR DIAMETERS. HOOKS FOR STIRRUP AND TIE ANCHORAGE ONLY SHALL HAVE EITHER A 90° OR 135° BEND PLUS AN EXTENSION OF AT LEAST 6-BAR DIAMETERS BUT NOT LESS THAN 2 1/2" AT THE FREE END OF THE BAR. RADIUS OF BEND TO BE AS SPECIFIED IN THE TABLE OF PIN DIAMETERS.

f _c =4,500 psi		TABLE 2		f _y =60,000 psi	
BAR SIZE #	MINIMUM CLEAR BAR SPACING (INCHES)	EMBEDMENT LENGTH, L _e		CLASS B SPlice LENGTH	
		OTHER BARS (INCHES)	TOP BAR* (INCHES)	OTHER BARS (INCHES)	TOP BAR* (INCHES)
3	3	12	12	16	16
4	3	12	15	16	20
5	4	15	19	19	25
6	5	18	23	23	30
7	5	25	33	33	43
8	6	29	37	38	49
9	7	36	46	47	61
10	8	44	57	58	75
11	9	53	68	69	90

* TOP BARS ARE HORIZONTAL BARS IN BEAMS AND SLABS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

NOTE:

1. THESE LENGTHS ARE BASED ON THE PROVISIONS OF ACI 318, 2019 SECTIONS 25.4 AND 25.5 ASSUMING UNCOATED REINFORCEMENT, NORMAL WEIGHT CONCRETE, CONCRETE COVER CONSISTENT WITH THE REQUIREMENTS OF THIS DRAWING, AND A MINIMUM CLEAR BAR SPACING OF 2 D. CONDITIONS THAT ARE DIFFERENT FROM THOSE ASSUMED REQUIRE LONGER LAP LENGTHS CONSISTENT WITH ACI 318.

PROJECT

PHASE II VERTICAL INTAKE STRUCTURE

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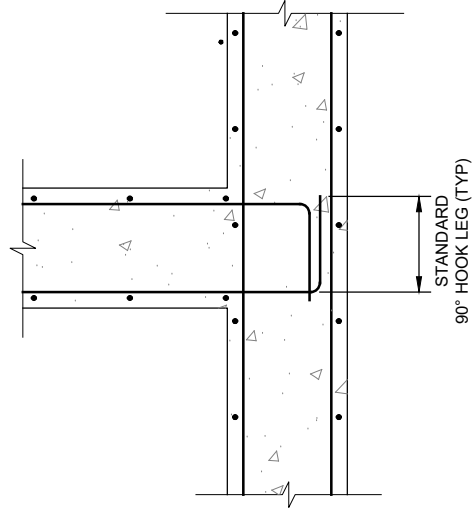
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SHEET TITLE

VERTICAL INTAKE TOWER
STRUCTURAL NOTES

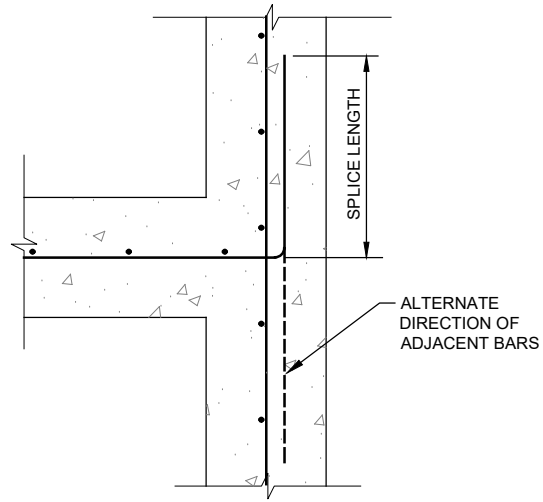
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S-27



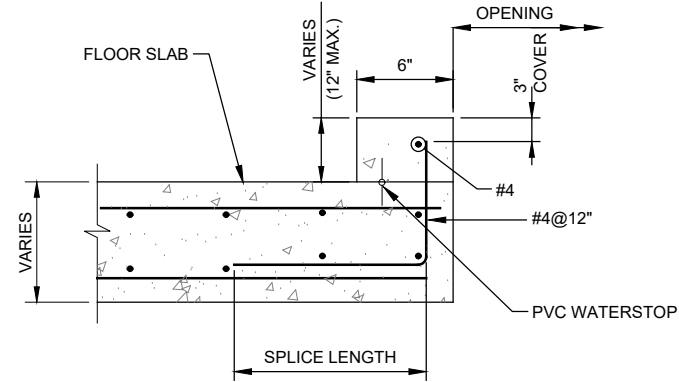
TYPICAL DETAIL AT WALL JUNCTION
DOUBLE MAT STEEL
NOT TO SCALE

1
-



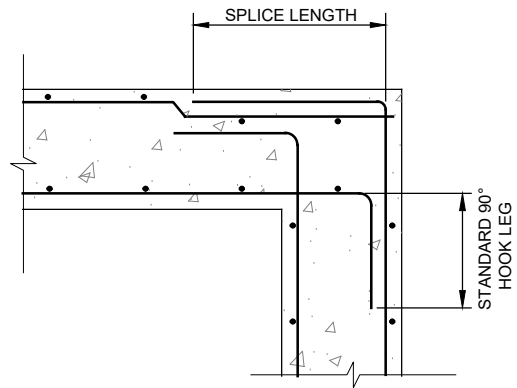
TYPICAL DETAIL AT WALL JUNCTION
SINGLE MAT STEEL
NOT TO SCALE

2
-



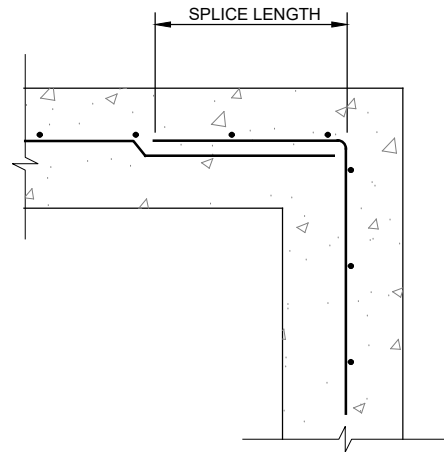
TYPICAL CURB
NOT TO SCALE

3
-



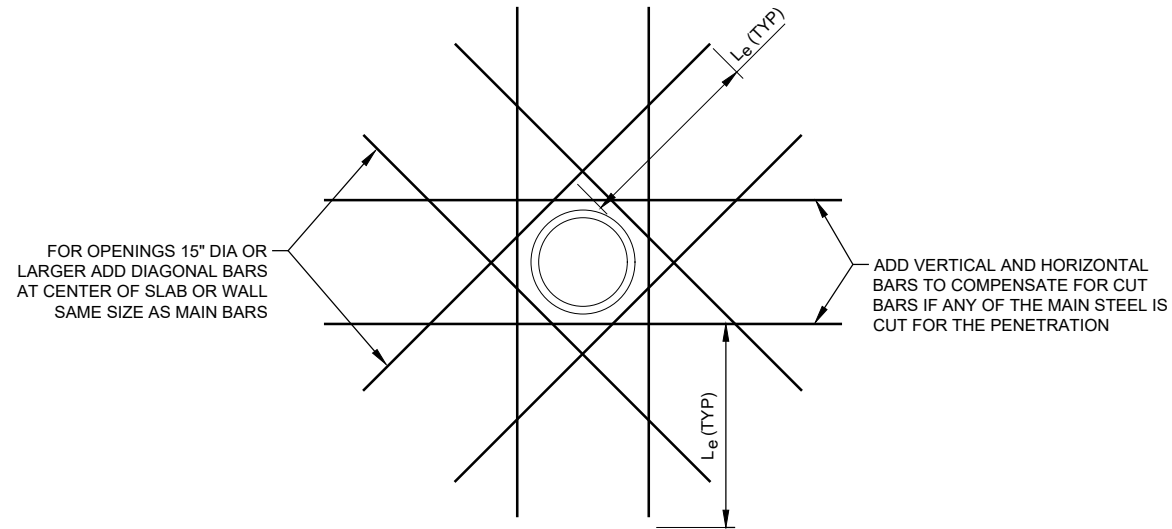
TYPICAL DETAIL AT WALL CORNER
DOUBLE MAT STEEL
NOT TO SCALE

4
-



TYPICAL DETAIL AT WALL CORNER
SINGLE MAT STEEL
NOT TO SCALE

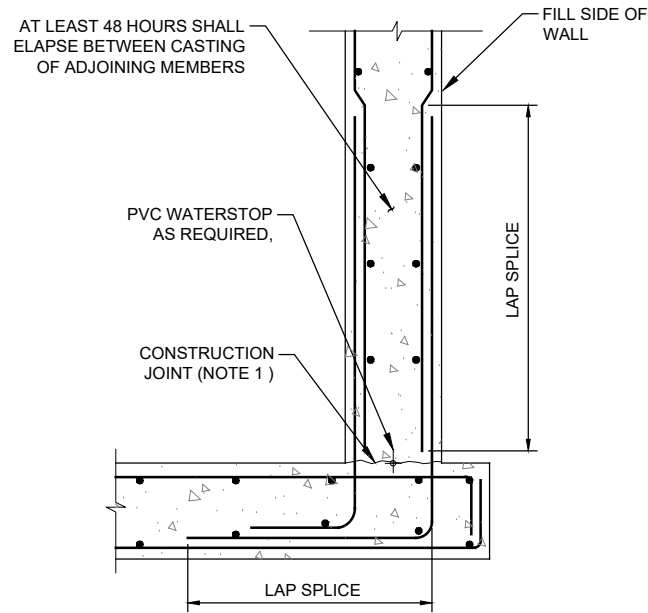
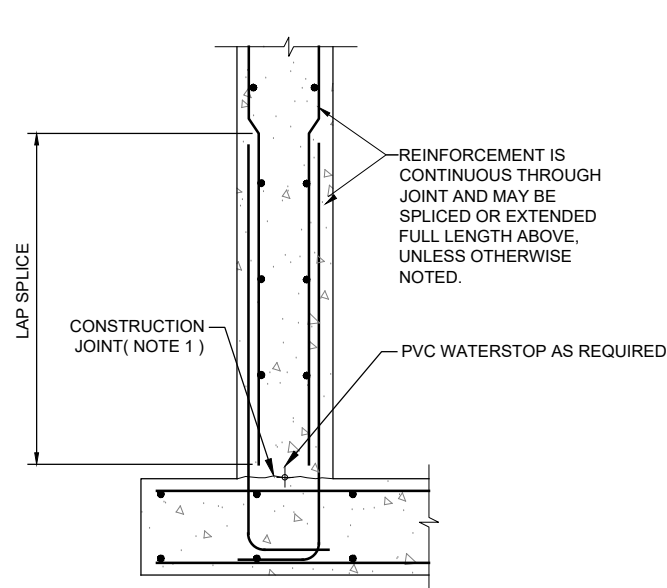
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PIPE SLEEVE REINFORCEMENT
NOT TO SCALE

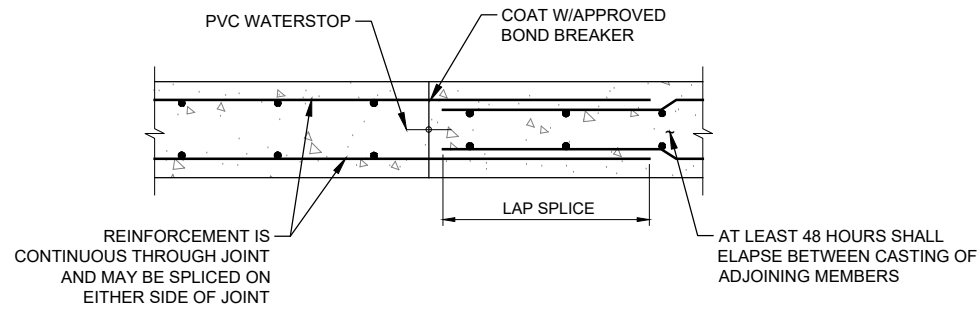
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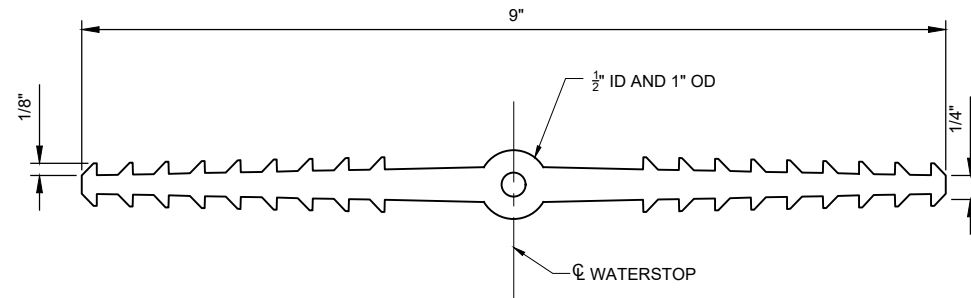
TYPICAL HORIZONTAL CONSTRUCTION JOINT
NOT TO SCALE

7
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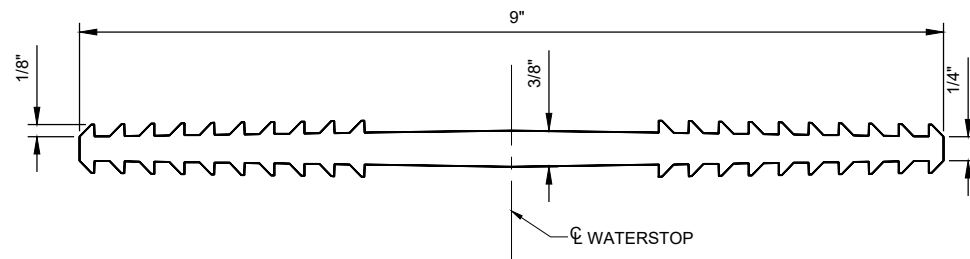
TYPICAL VERTICAL OR HORIZONTAL CONTROL JOINT
NOT TO SCALE

8
-



9" PVC WATERSTOP WITH CENTER BULB
NOT TO SCALE

9
-



9" PVC WATERSTOP
NOT TO SCALE

10
-



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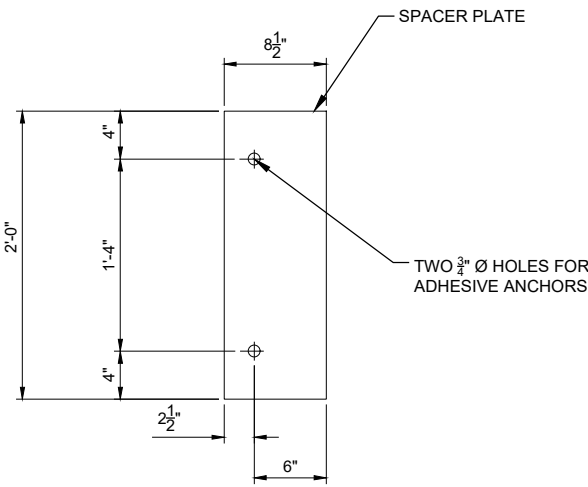
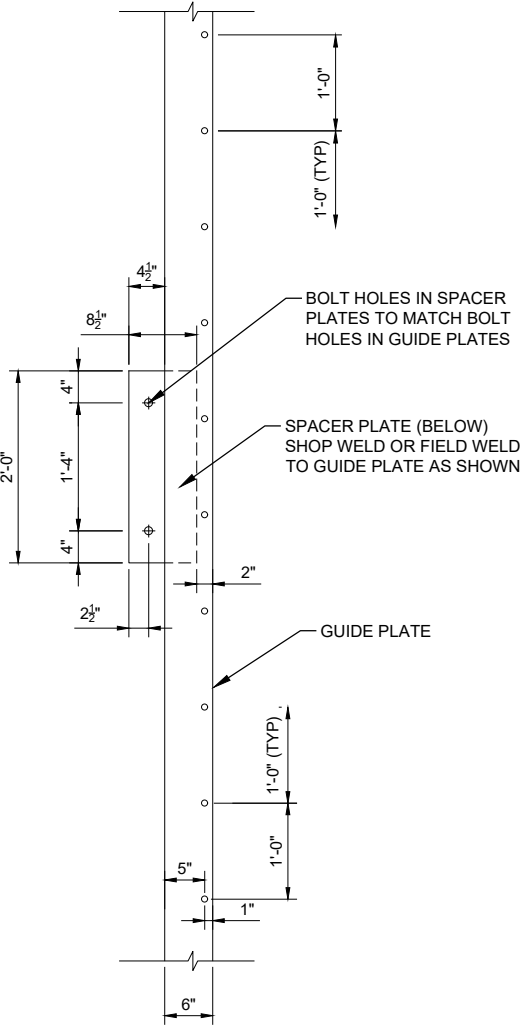
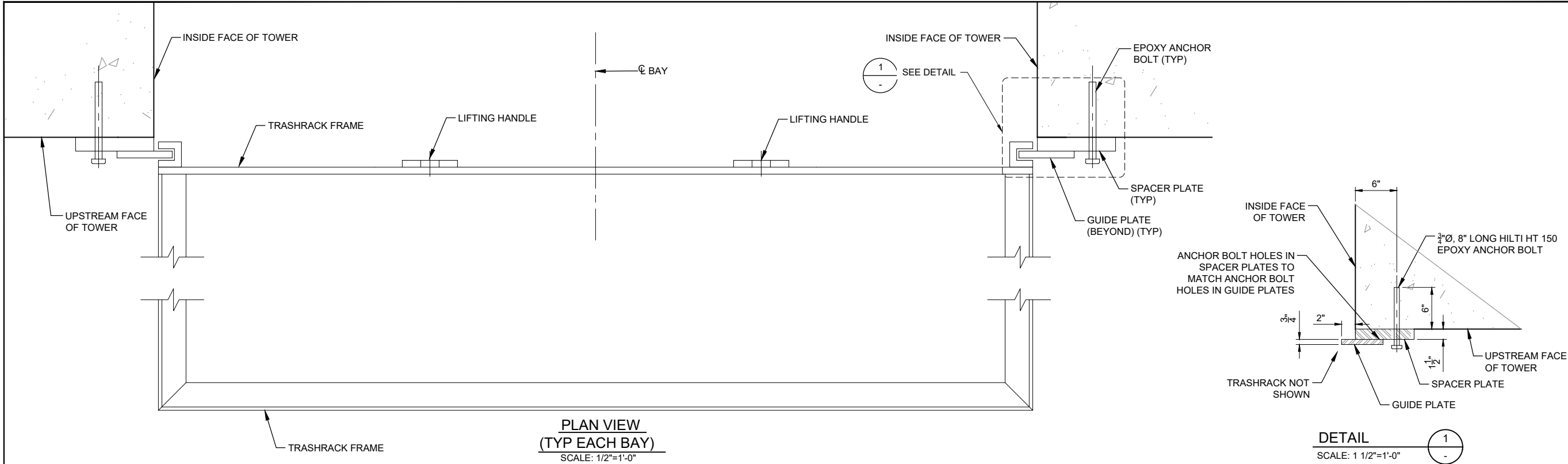
60591226

SHEET TITLE

VERTICAL INTAKE TOWER
STRUCTURAL DETAILS (2 OF 2)

SHEET NUMBER

S-29



MATERIALS LIST

SPACER PLATES - A36 STEEL
TOTAL OF 36
LENGTH = 24 "
WIDTH = 8 "
THICKNESS = 1.5"
DRILL TWO 7/8" DIAMETER HOLES IN EACH PLATE AS SHOWN
SHOP WELD SPACER PLATES TO GUIDE PLATES AS SHOWN
FIELD WELD SPACER PLATES TO GUIDE PLATES AS SHOWN

GUIDE PLATES - A36 STEEL
FOUR AT 17'-0"
EIGHT AT 16'-0"
FOUR AT 14'-0"
WIDTH = 6 "
THICKNESS=3/4"
DRILL 3/4" DIAMETER HOLES ON 1'-0" CENTERS AS SHOWN
SHOP WELD GUIDE PLATES TO SPACER PLATES AS SHOWN
FIELD WELD GUIDE PLATES TO SPACER PLATES AS SHOWN

3/4" DIAMETER, 8" LONG ANCHOR BOLTS
INSTALLATION AS RECOMMENDED BY MANUFACTURER
TOTAL OF 72 REQUIRED

WELDING REQUIREMENTS
USE 3/8" FILLET WELDS CONTINUOUS ON ALL 4 SIDES
USE 3/8" BUTT WELD BETWEEN THE ADJACENT GUIDE PLATE

TOLERANCES
HORIZONTAL - ALL HOLES WITHIN 1/16" SIDE TO SIDE
VERTICAL - ALL HOLES WITHIN 1/16" TOP TO BOTTOM

NOTE:

1. TRASHRACK DESIGN BY OTHERS. SEE HYDROTHANE'S SHOP DRAWINGS.



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



CONSULTANT

AECOM
804 COLORADO AVE.
Suite 201
GLENWOOD SPRINGS, CO. 81601

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CONSULTANTS

REGISTRATION

ISSUE/REVISION

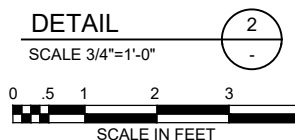
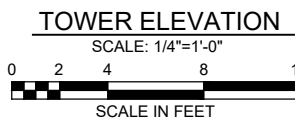
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B	05/28/2021	RECORD DRAWINGS
A	03/23/2020	IFC
I/R	DATE	DESCRIPTION

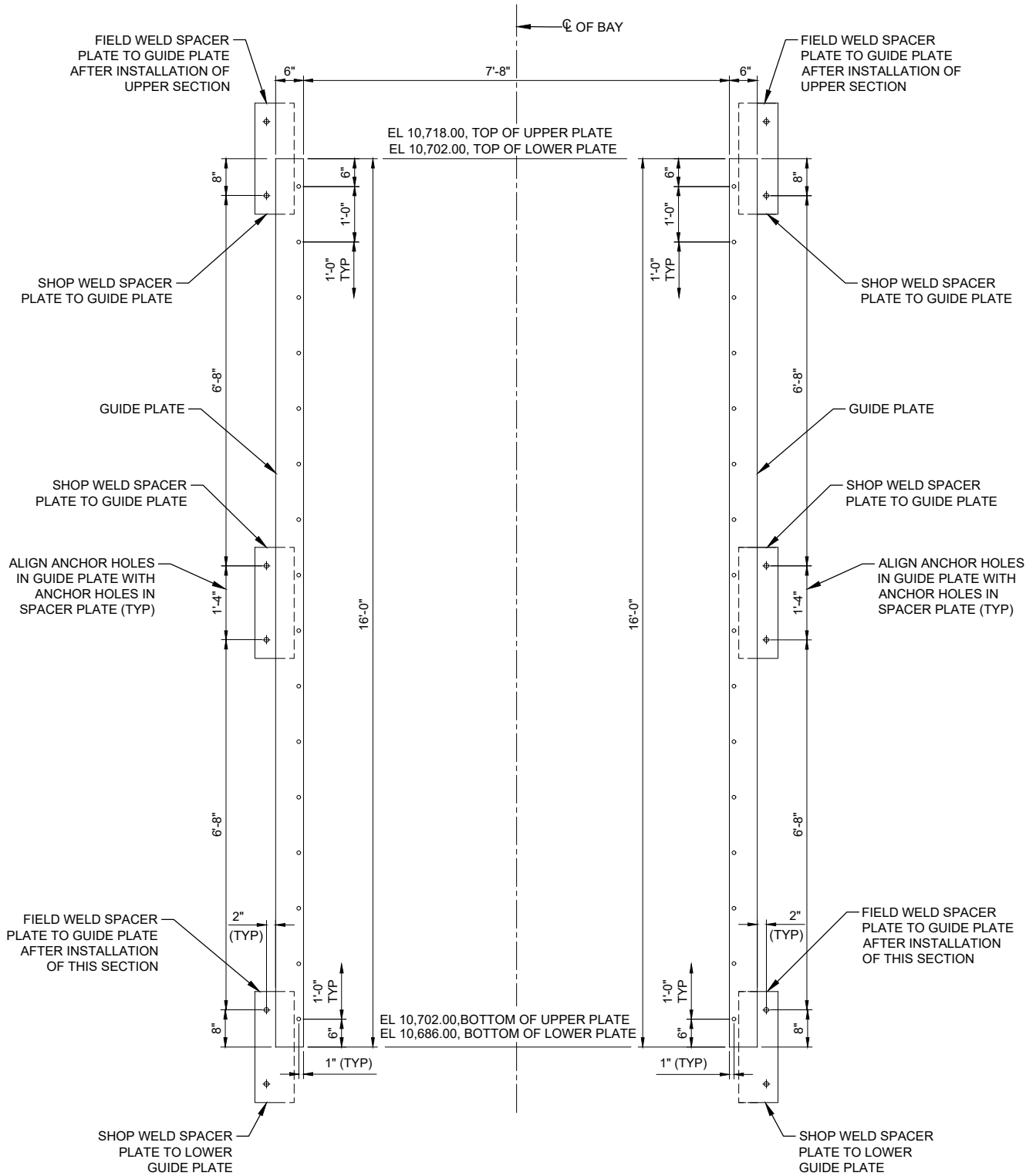
KEY PLAN

PROJECT NUMBER
60591226

SHEET TITLE
TRASHRACK SUPPORT
PLAN AND DETAILS

SHEET NUMBER
S-30

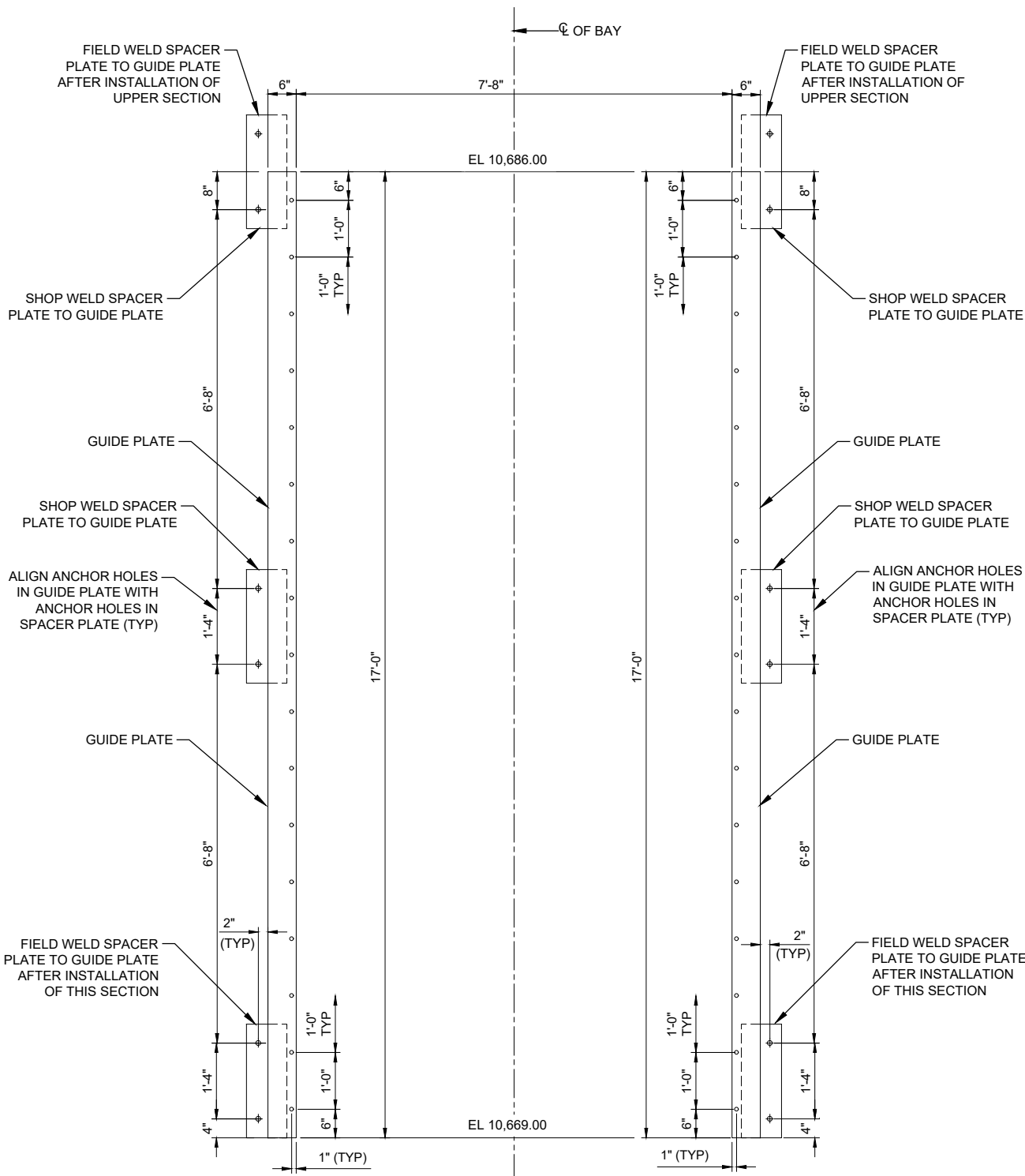
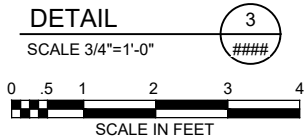




16'-0" SECTIONS TYPICAL

LEFT SIDE
LOOKING DOWNSTREAM
FOUR REQUIRED

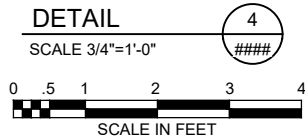
RIGHT SIDE
LOOKING DOWNSTREAM
FOUR REQUIRED



17'-0" SECTIONS TYPICAL

LEFT SIDE
LOOKING DOWNSTREAM
TWO REQUIRED

RIGHT SIDE
LOOKING DOWNSTREAM
TWO REQUIRED



PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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SHEET TITLE

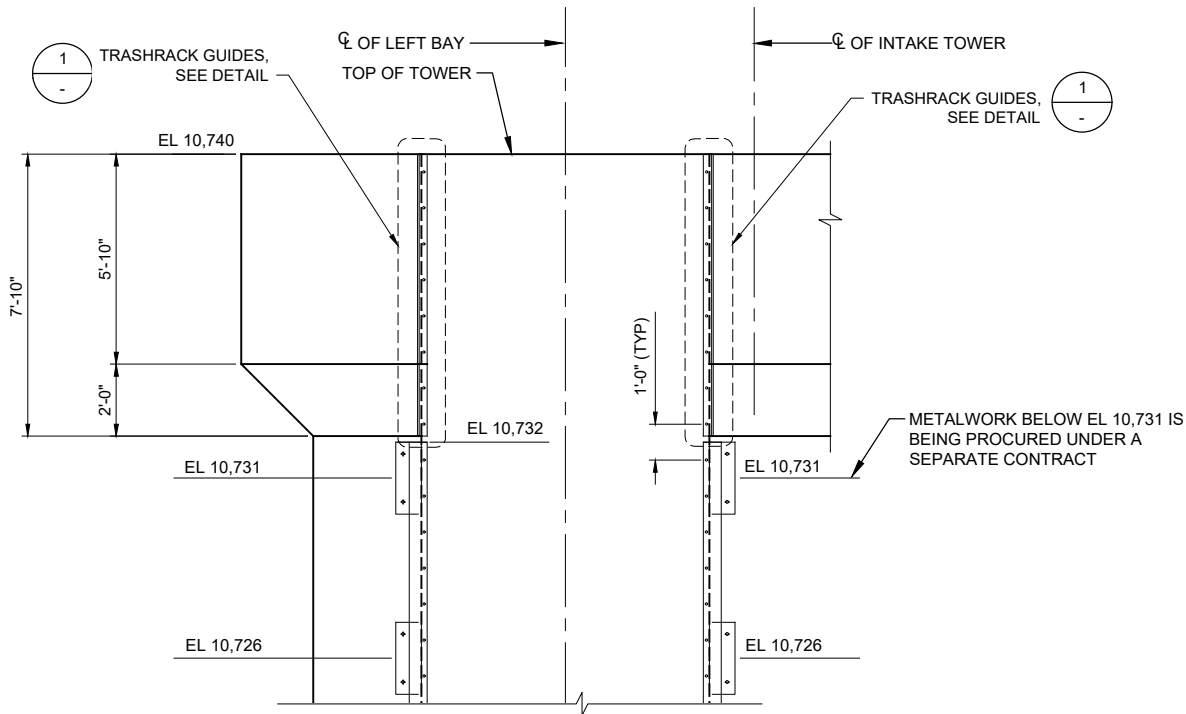
TRASHRACK SUPPORT
DETAILS

SHEET NUMBER

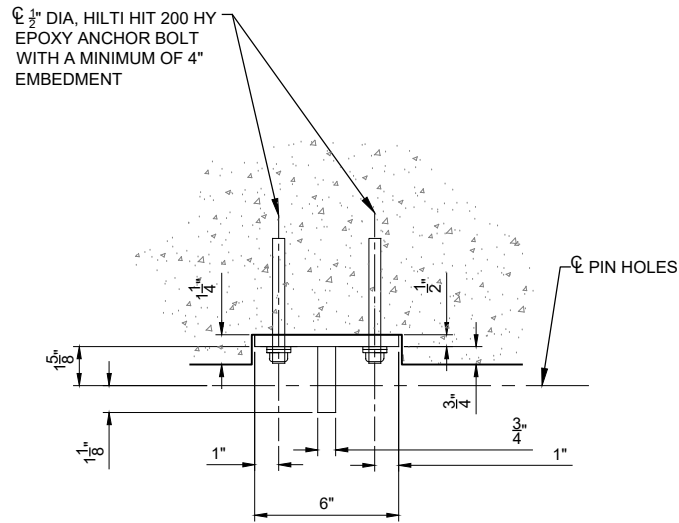
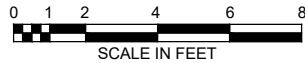
S-32

Project Management Initials: _____ Designer: _____ Checked: _____ Approved: _____
ANSI D 22" x 34"

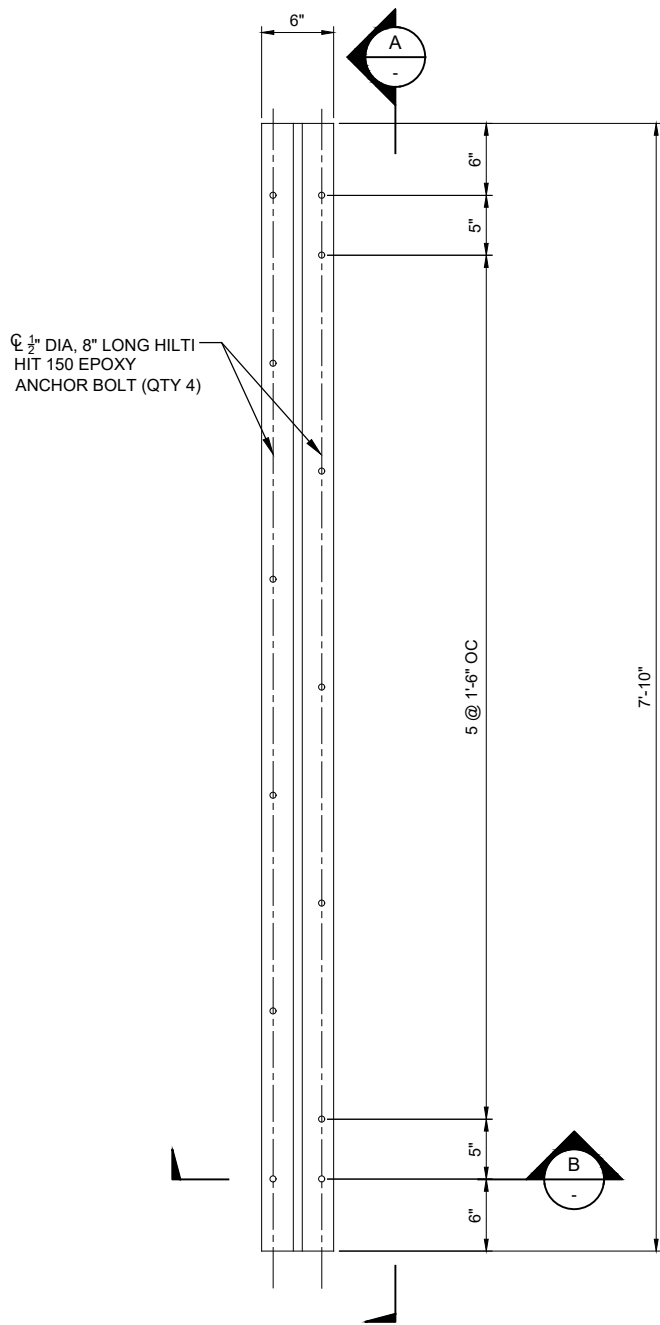
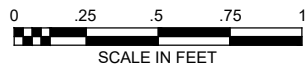
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Last saved by: JUDITH MCCRAY(2021-06-11) Last Plotted: 2021-06-11
Title: VERTICAL INTAKE STRUCTURE TRASHRACK GUIDES



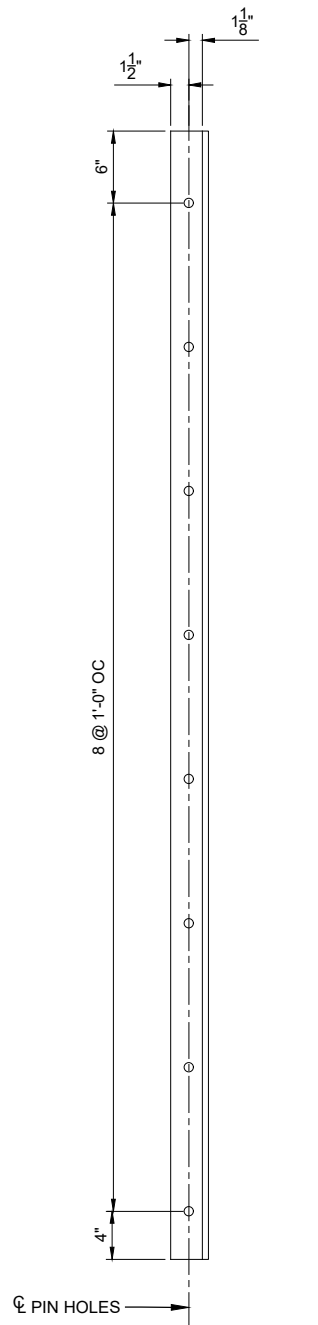
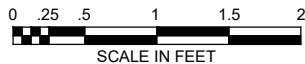
TOWER ELEVATION
SCALE: 3/8"=1'-0"



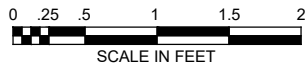
SECTION
SCALE: 3"=1'-0"



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



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



MATERIAL LIST

- GUIDE PLATE A36 STEEL. THICKNESS 3/4"
- DRILL 3/4" DIAMETER HOLES ON 1'-0" CENTER AS SHOWN FOR PIN.
- 1/2" DIAMETER ANCHOR BOLTS SHALL BE INSTALLED FOLLOWING MANUFACTURER RECOMMENDATION. THE ANCHOR BOLT SHALL NOT EXTEND LONGER THAN 1/8" BEYOND THE NUT AND INSTALL AS RECOMMENDED BY MANUFACTURER.
- USE 3/4" FILLET WELD CONTINUOUS ON BOTH SIDES.

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT

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804 COLORADO AVE.
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GLENWOOD SPRINGS, CO. 81601

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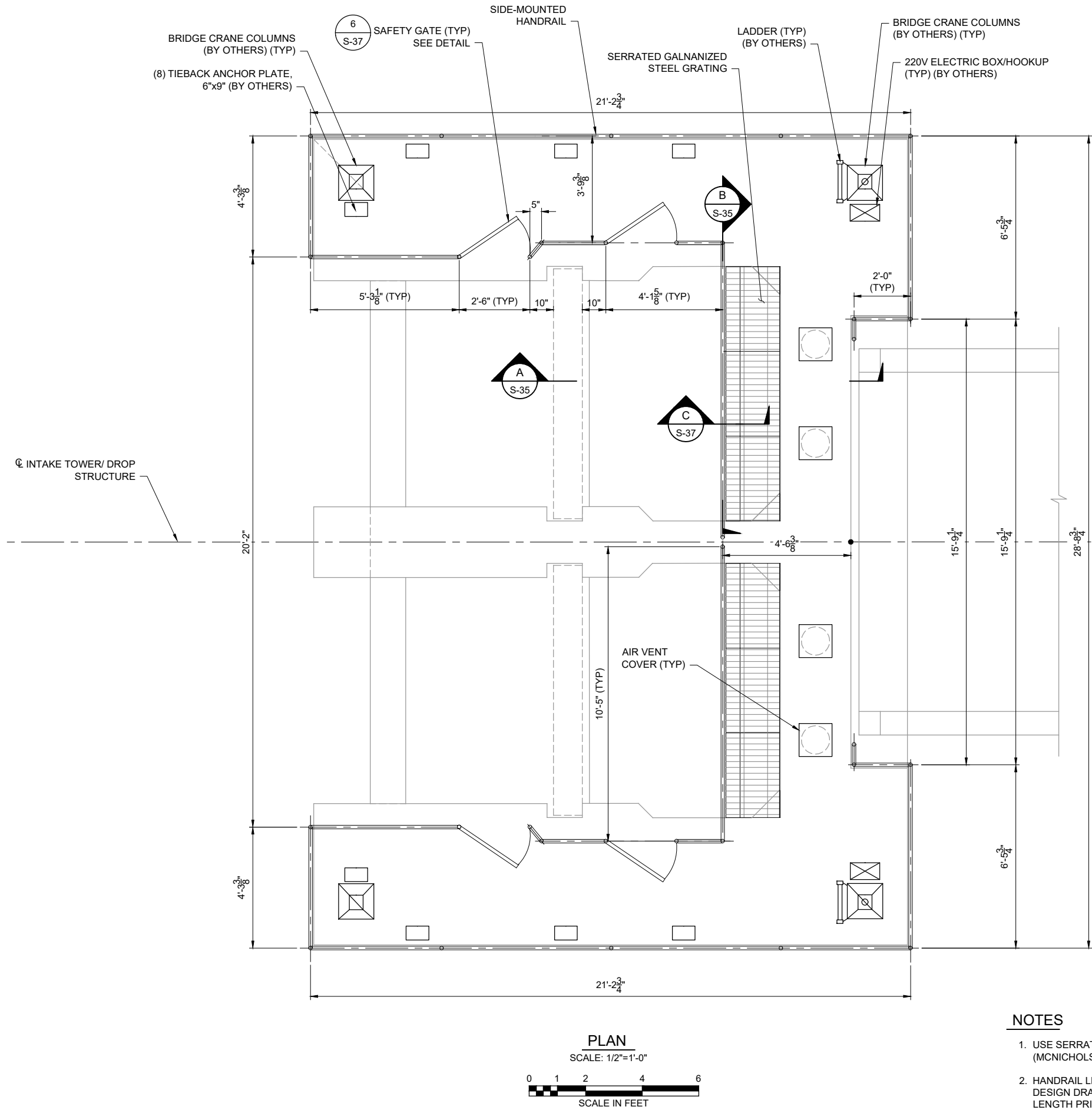
60591226

SHEET TITLE

VERTICAL INTAKE STRUCTURE
TRASHRACK GUIDES

SHEET NUMBER

S-33



NOTES

- USE SERRATED GALVANIZED STEEL GRATING $1\frac{1}{4} \times \frac{3}{16}$ " (MCNICHOLS BAR GRATING GW SERIES 19-W-4).
- HANDRAIL LENGTHS SHOWN ARE BASED ON THE DESIGN DRAWINGS. CONTRACTOR SHALL VERIFY THE LENGTH PRIOR TO FABRICATION OF HANDRAIL.

AECOM

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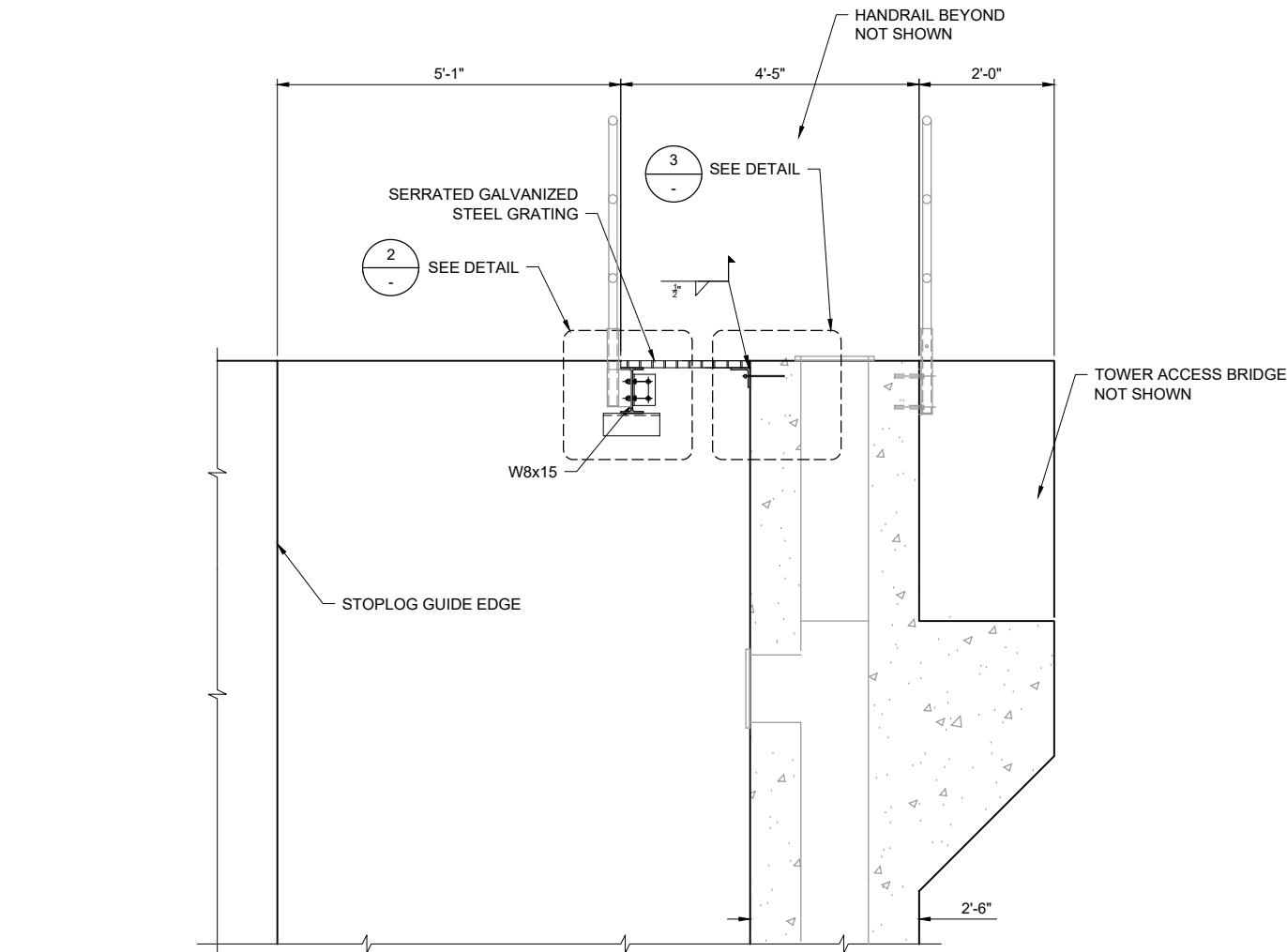
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SHEET TITLE

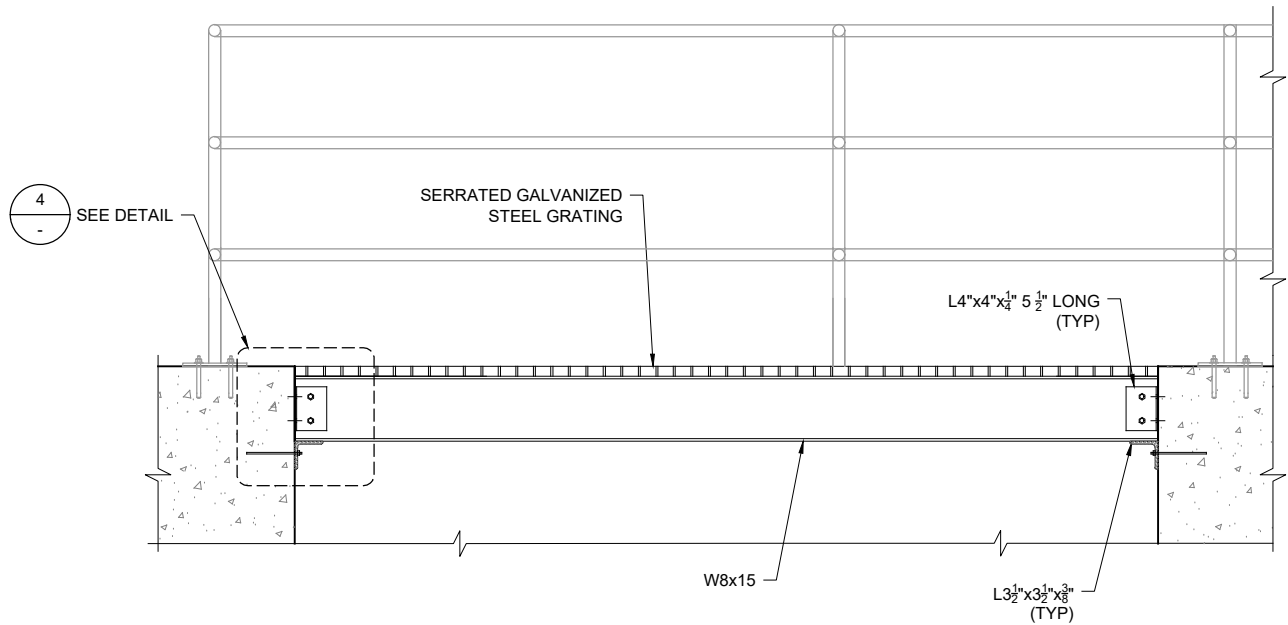
VERTICAL INTAKE TOWER
HANDRAIL AND GRATING PLAN

SHEET NUMBER

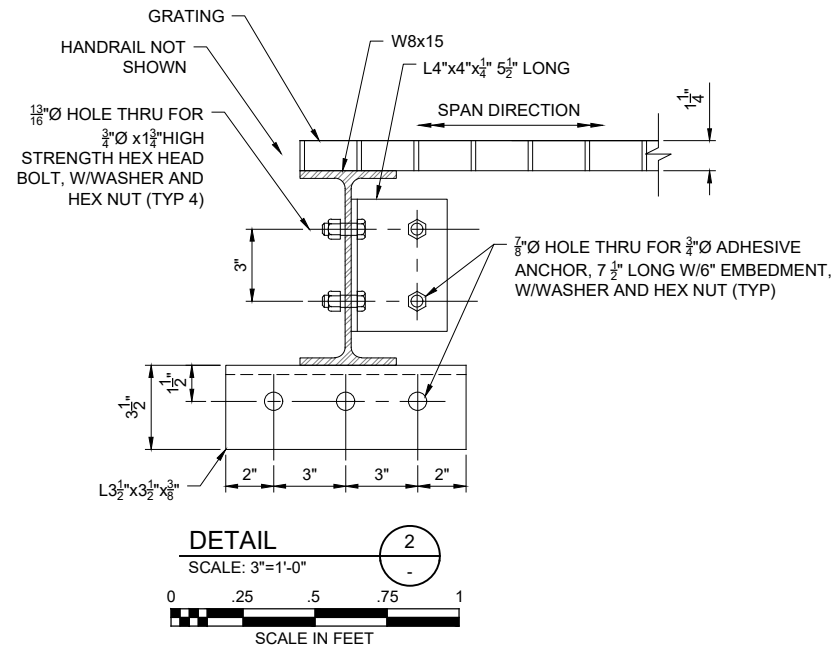
S-34



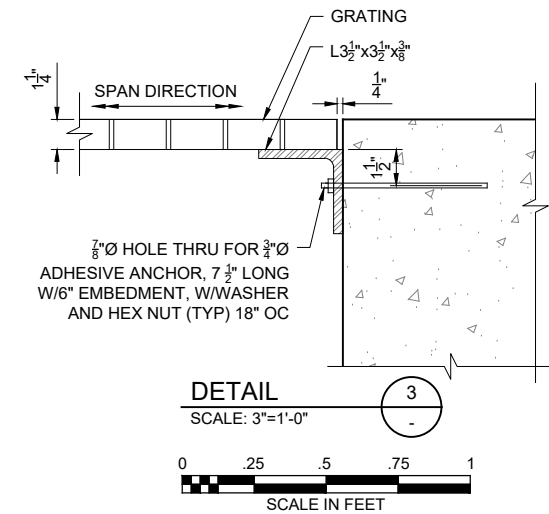
SECTION A
SCALE: 3/4"=1'-0"
S-34
0 .5 1 2 3 4
SCALE IN FEET



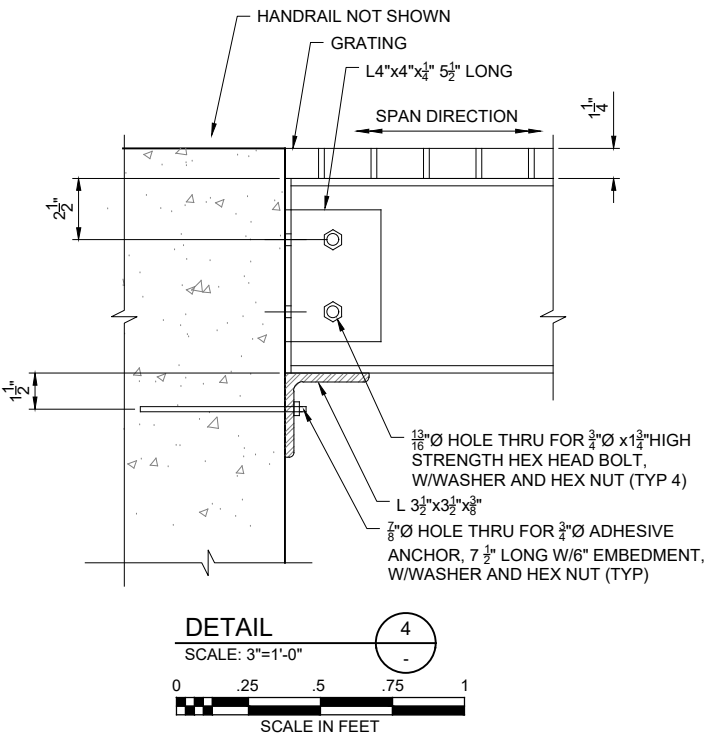
SECTION B
SCALE: 12"=1'-0"
S-34
0 .5 1 2 3
SCALE IN FEET



DETAIL 2
SCALE: 3"=1'-0"
0 .25 .5 .75 1
SCALE IN FEET



DETAIL 3
SCALE: 3"=1'-0"
0 .25 .5 .75 1
SCALE IN FEET



DETAIL 4
SCALE: 3"=1'-0"
0 .25 .5 .75 1
SCALE IN FEET



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT



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PROJECT NUMBER

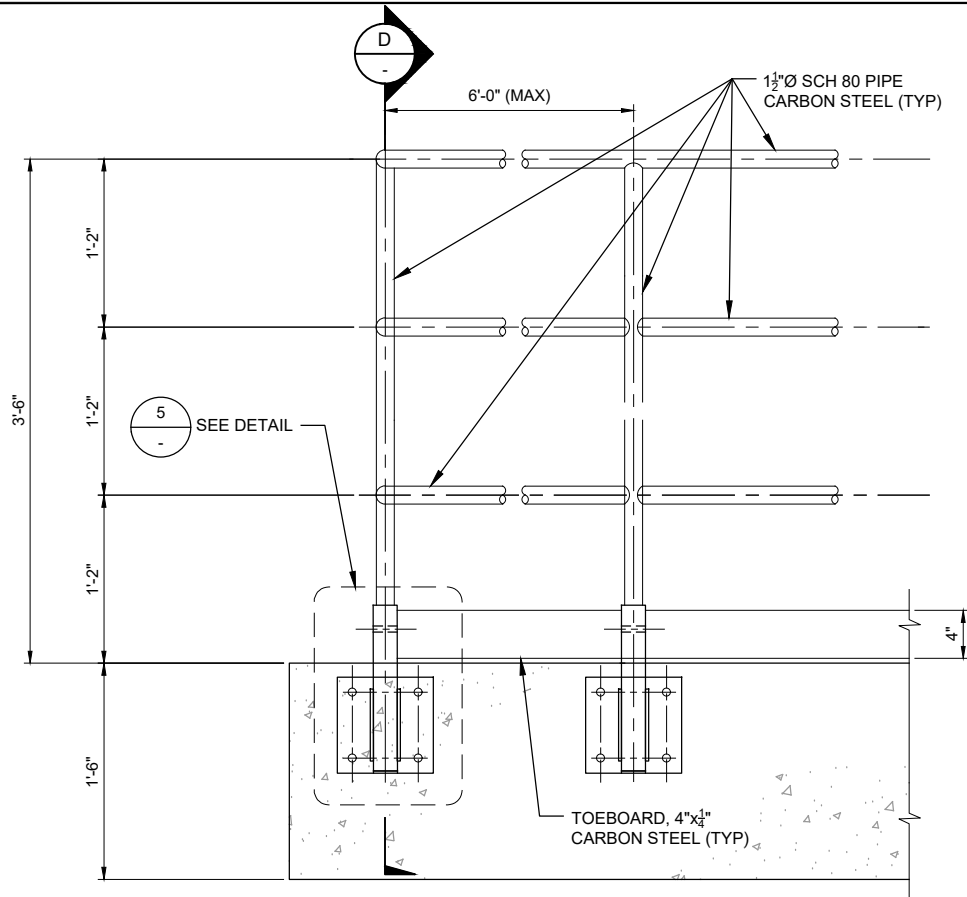
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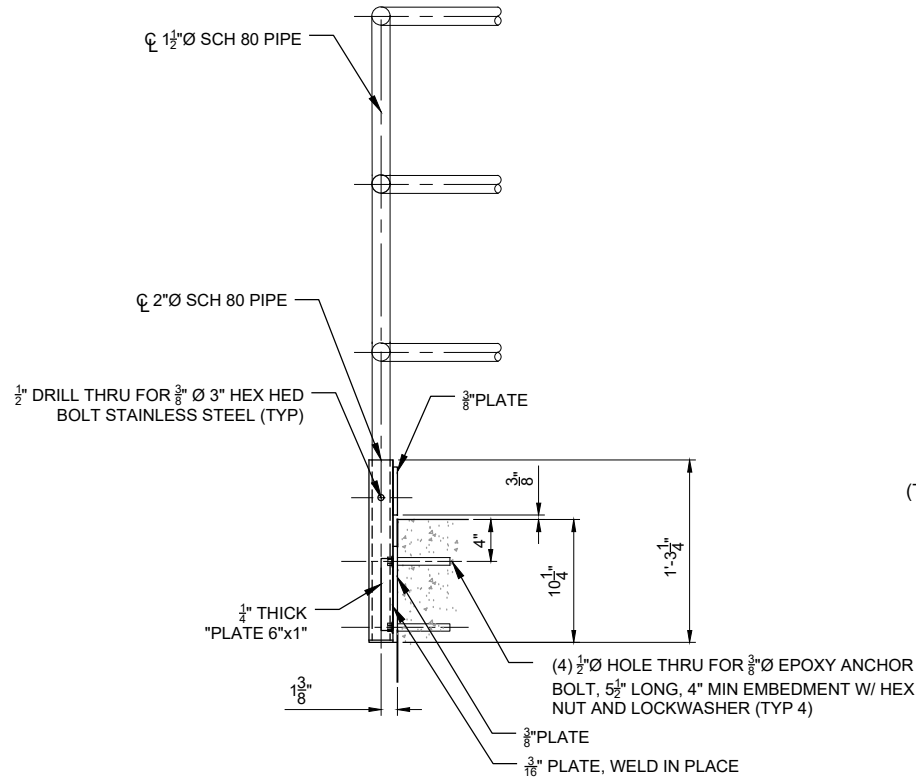
VERTICAL INTAKE TOWER
GRATING AND SUPPORT BEAM
DETAILS

SHEET NUMBER

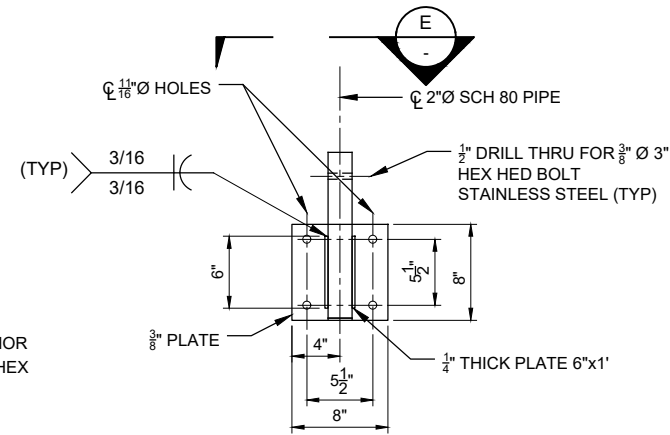
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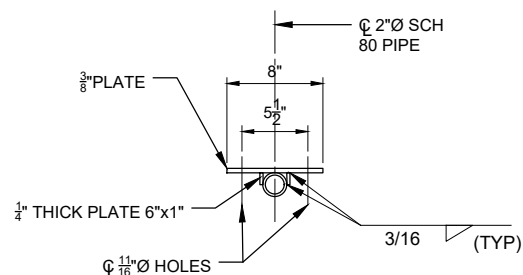
HANDRAIL DETAIL (SIDE-MOUNTED)
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



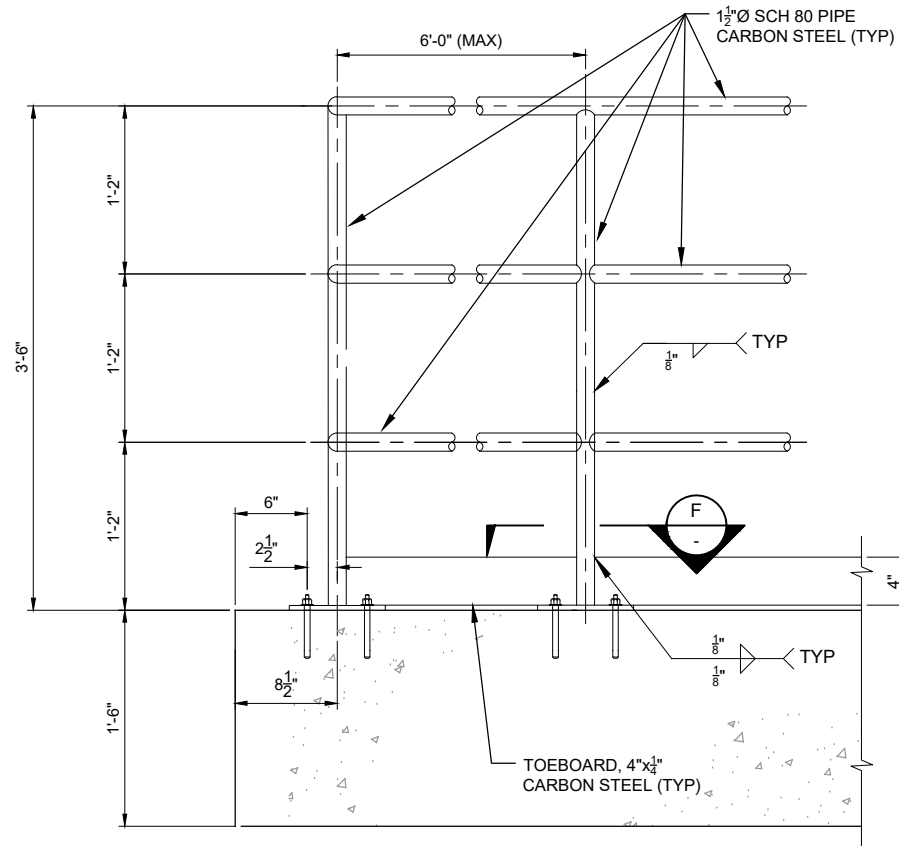
SECTION D
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



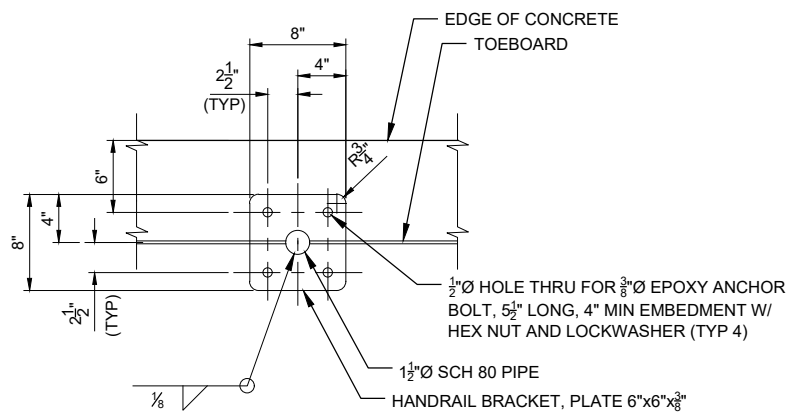
HANDRAIL BASE DETAIL
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



SECTION E
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



HANDRAIL DETAIL (TOP-MOUNTED)
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



SECTION F
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET

NOTES

- USE HIT-HY 200 (OR EQUAL) ADHESIVE TO ANCHOR. ICC-ES LISTING REPORT (ELC-3187).

AECOM

PROJECT

PHASE II VERTICAL INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT

AECOM
804 COLORADO AVE.
Suite 201
GLENWOOD SPRINGS, CO. 81601

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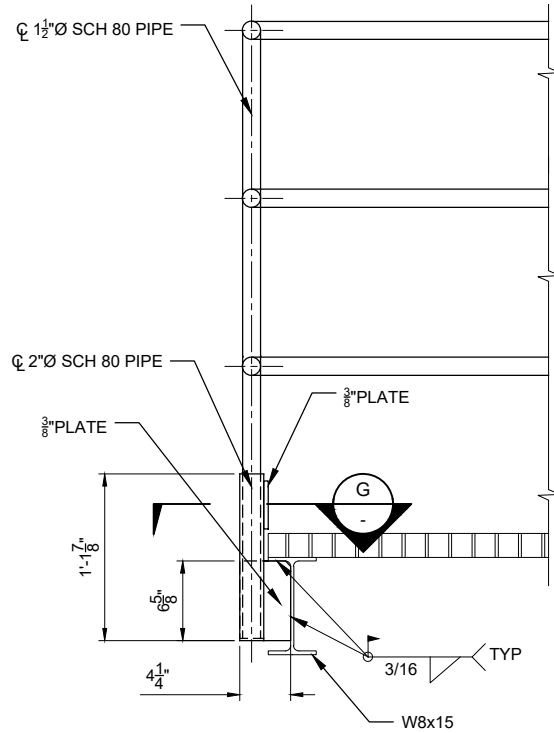
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SHEET TITLE

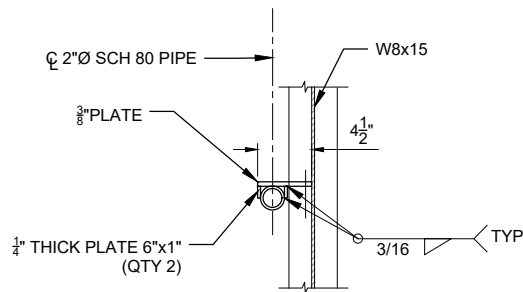
VERTICAL INTAKE TOWER
HANDRAIL DETAILS
SHEET 1 OF 2

SHEET NUMBER

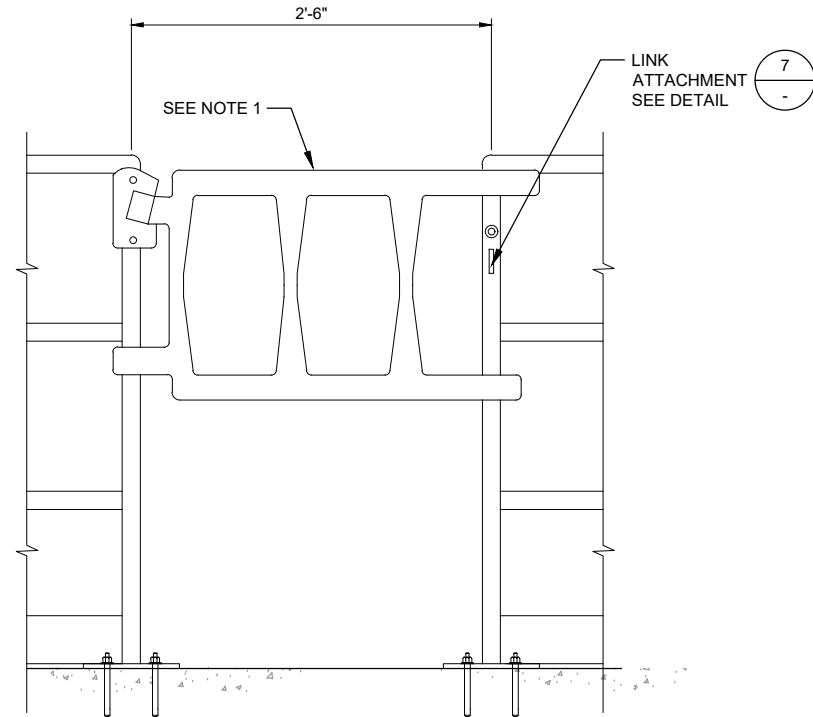
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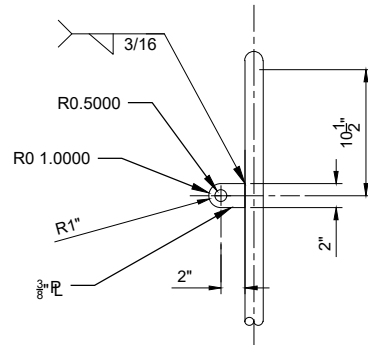
SECTION C
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



SECTION G
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



TYPICAL SAFETY GATE DETAIL 6
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET



LINK ATTACHMENT DETAIL 7
SCALE: 1 1/2"=1'-0"
0 .25 .5 1 1.5 2
SCALE IN FEET

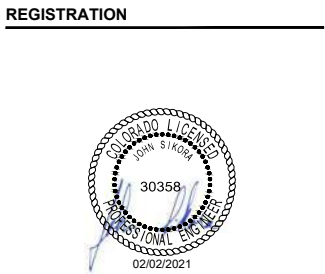
- NOTES:
1. UNIVERSAL DOUBLE BAR SAFETY GATE (UDG-37), INTREPID INDUSTRIES INC.



PROJECT
PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT
 Climax Molybdenum
A Freeport-McMoRan Company

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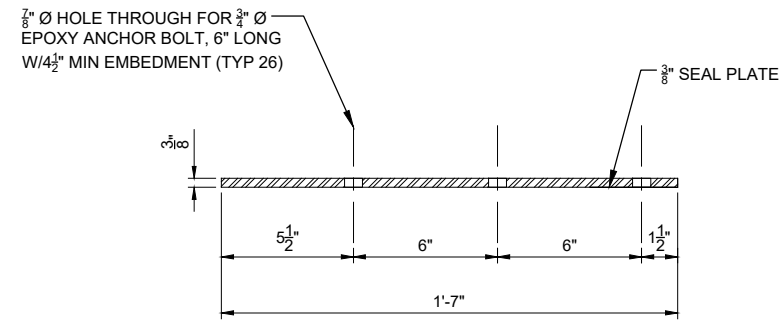
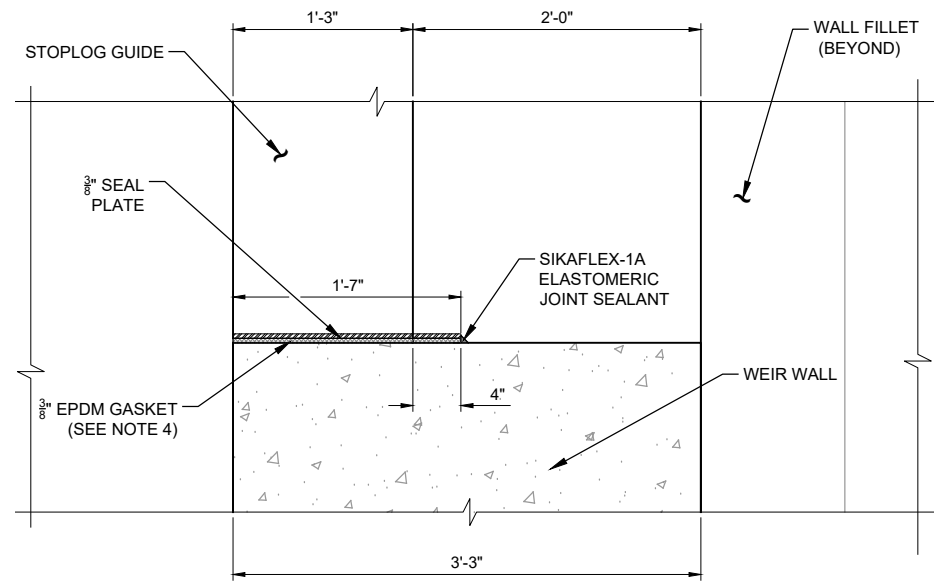
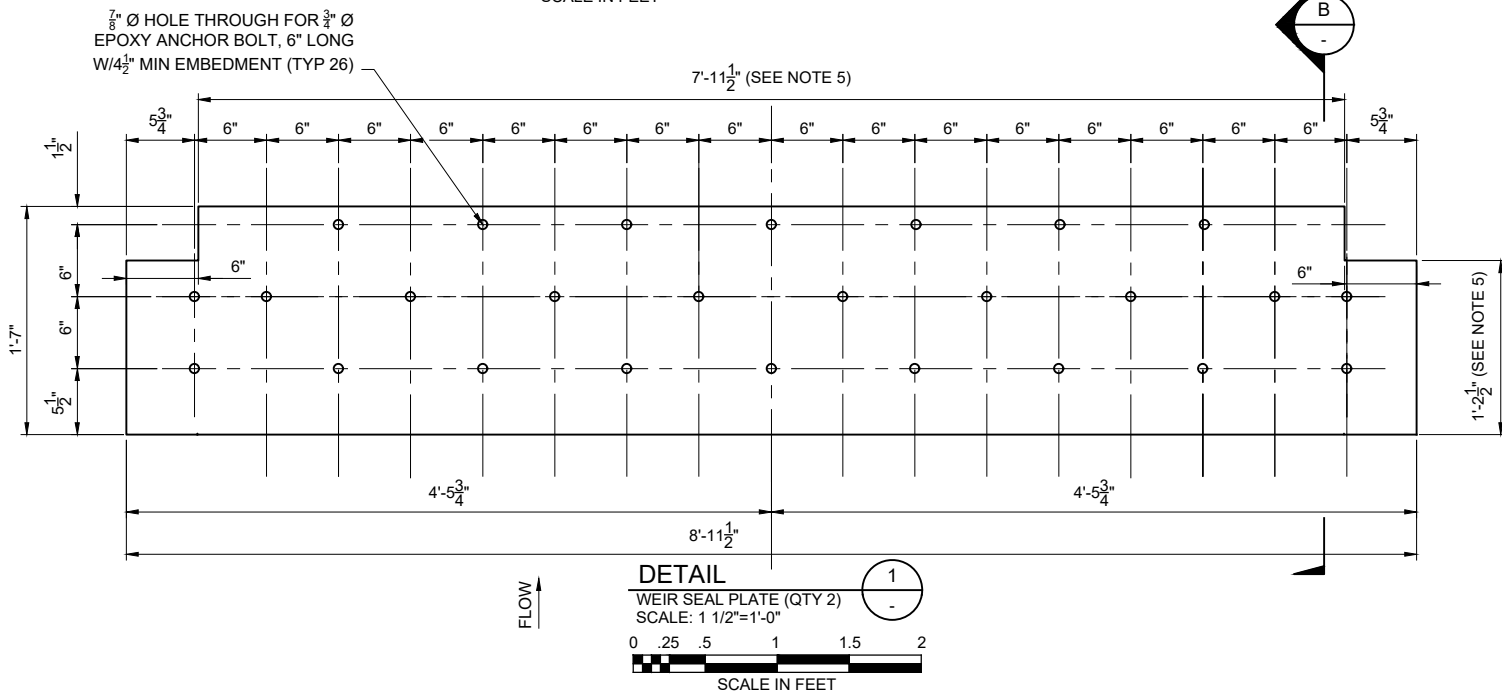
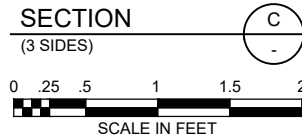
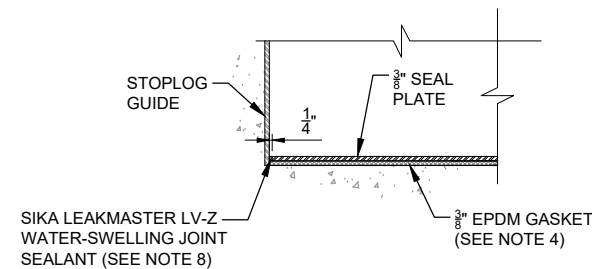
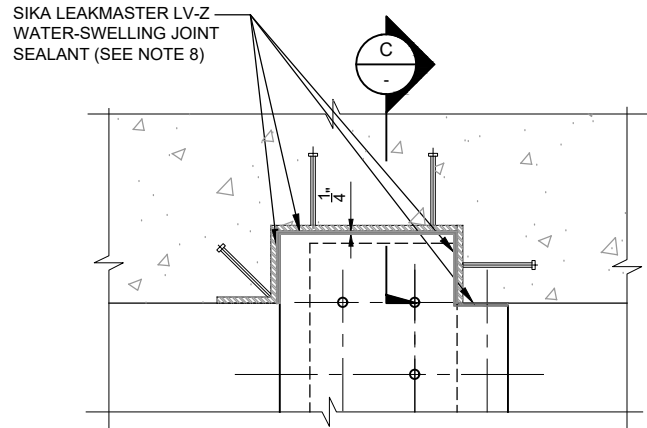
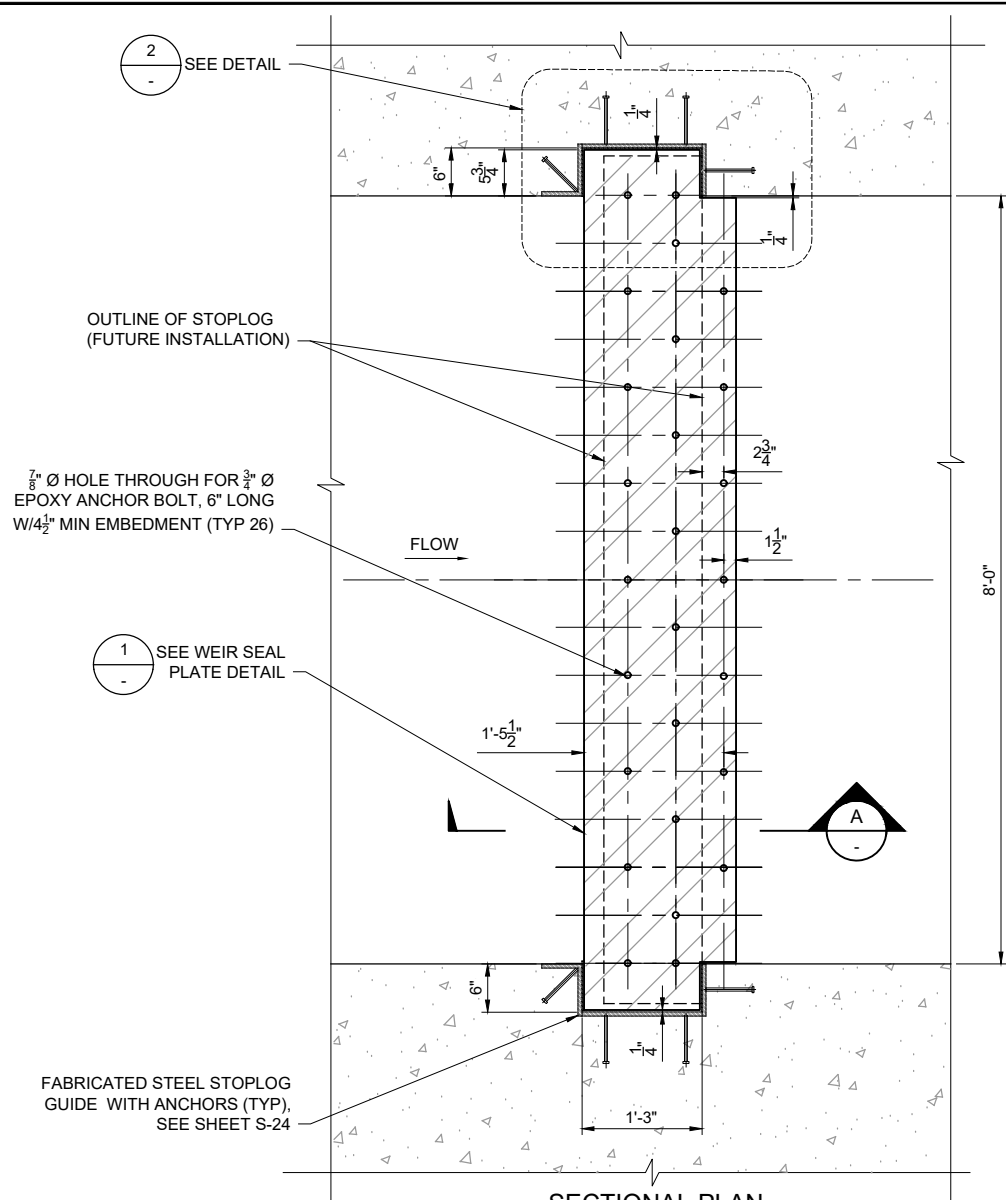
A	02/02/2021	ISSUED FOR CONSTRUCTION
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I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER
60591226

SHEET TITLE
VERTICAL INTAKE TOWER
HANDRAIL DETAILS
SHEET 2 OF 2

SHEET NUMBER
S-37



NOTES:

1. PLATES: CARBON STEEL, ASTM A36.
2. EPOXY ANCHOR ADHESIVE: HILTI HIT HY 200 OR EQUAL .
3. STEEL FASTENERS:
BOLTS: ASTM A325, GALVANIZED
NUTS: ASTM A563, GALVANIZED
WASHER: ASTM F436, GALVANIZED
4. EPDM GASKET SHEET SHALL BE CUT TO COVER THE ENTIRE STOPLOG GUIDE BLOCKOUT AREA IN ADDITION TO COVERING THE ENTIRE BOTTOM OF WEIR SEAL PLATE.
5. THE WEIR SEAL PLATE LENGTH AND WIDTH ARE SIZED BASED ON DESIGN DRAWINGS ISSUED FOR CONSTRUCTION. INSTALLATION OF THE WEIR PLATE MAY REQUIRE SOME GRINDING TO FIT.
6. TOP OF INSTALLED WEIR SEAL PLATE BETWEEN THE TWO BAYS SHALL NOT HAVE MORE THAN 0.02 FEET ELEVATION DIFFERENCE.
7. ADJUST PLATE WITHIN THE STOPLOG SO THERE IS EVEN GAP AROUND THE PERIMETER OF THE BLOCKOUT AREA.
8. FILL THE GAP AS SHOWN WITH SIKA LEAKMASTER LV-Z WATER-SWELLING JOINT SEALANT.

AECOM

PROJECT

PHASE II VERTICAL
INTAKE STRUCTURE

CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CONSULTANT

AECOM
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GLENWOOD SPRINGS, CO. 81601

www.aecom.com

CONSULTANTS

REGISTRATION



12/23/2020

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U/R	DATE	DESCRIPTION
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A	12/23/2020	1#EC

KEY PLAN

PROJECT NUMBER

60591226

SHEET TITLE

VERTICAL INTAKE TOWER
WEIR WALL SEAL PLATE

SHEET NUMBER

S-38

\\SPOH\FILE03\AD CONTECH-CPI.COM\MERLIN\PROJECT\ACTIVE\6101006\6101776\610177-10-CONTINENTAL PEDESTRIAN DRAWINGS\FABRICATION\610177-10 REV B DWG 2/1/2021 12:46 PM

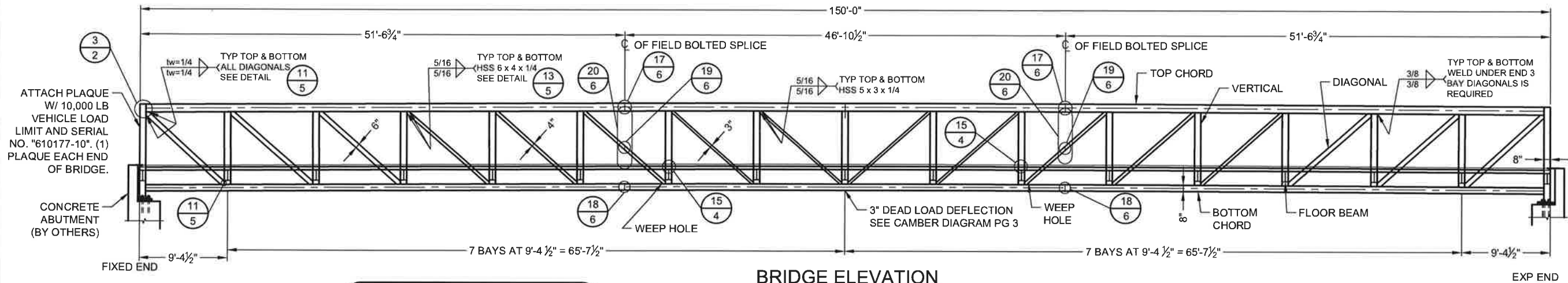


- ## QUALITY ASSURANCE NOTES

- 

 ENGINEERED SOLUTIONS LLC www.conteches.com 8301 State Highway 28 North, Alexandria, MN 55308 800-328-2047 320-345-9126 320-566-3148 FAX						150'-0" x 12'-0" CLIMAX COLORADO INTAKE ACCESS BRIDGE LEADVILLE, CO											
DATE:						4/29/2020											
DESIGNED:			MJH			DRAWN:			CMA								
CHECKED:			SEC			APPROVED:			MJH								
PROJECT No.: 610177						SEQUENCE No.: 10											
SHEET:						1 OF 6											

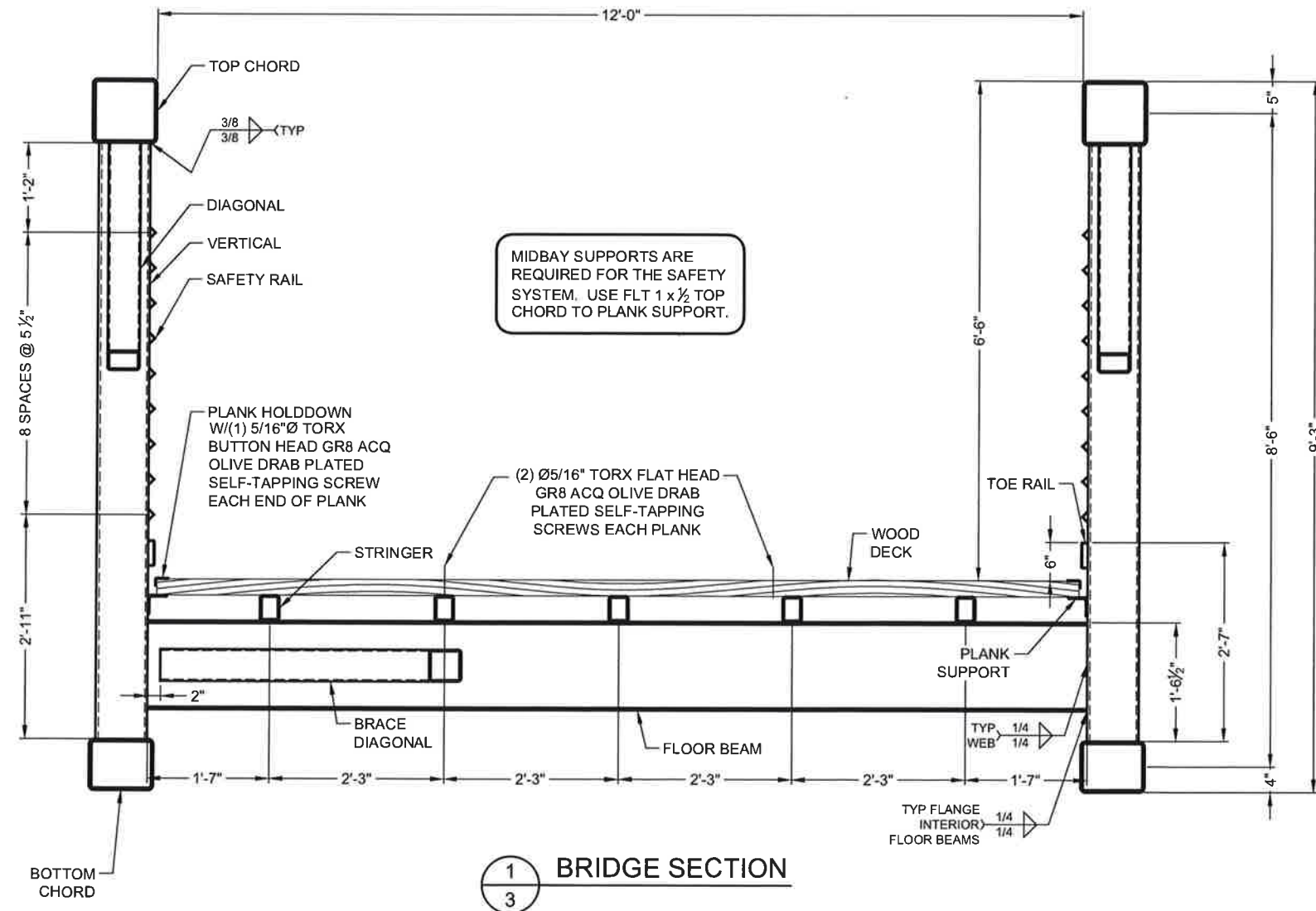
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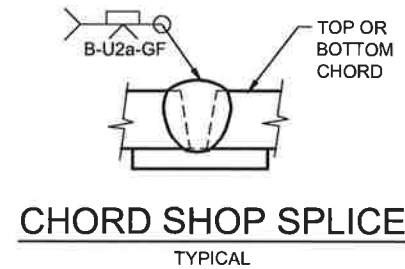
BRIDGE ELEVATION

SAFETY RAIL AND TOE RAIL ARE NOT SHOWN IN ELEVATION FOR CLARITY. SEE BRIDGE SECTION FOR CORRECT NUMBER AND LOCATION.

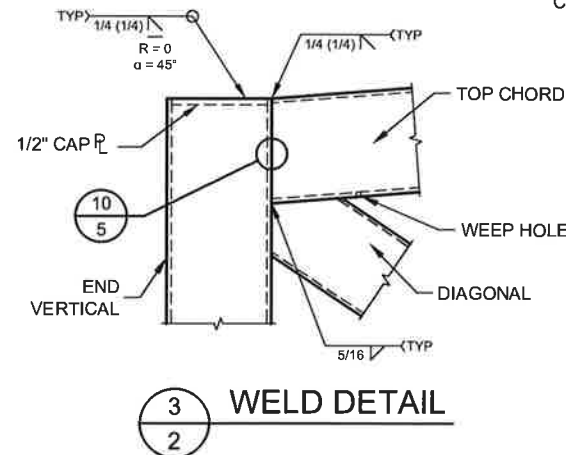
SHOP NOTE: EXTEND STRINGERS FROM END SECTIONS.



BRIDGE SECTION



CHORD SHOP SPLICE
TYPICAL



WELD DETAIL

A

SCHEDULE OF MEMBERS

CVN	TOP CHORD	HSS 10 x 10 x 3/8
CVN	BOTTOM CHORD	HSS 10 x 8 x 3/8
CVN	VERTICAL	HSS 8 x 8 x 3/8
CVN	END VERTICAL	HSS 10 x 8 x 3/8
CVN	DIAGONAL	HSS 5 x 3 x 1/4 ①
CVN	BRACE DIAGONAL	HSS 5 x 5 x 1/4
CVN	FLOOR BEAM	W 14 x 43
CVN	STRINGER	HSS 4 x 3 x 1/4
CVN	END FLOOR BEAM	W 14 x 43
CVN	PLANK SUPPORT	L 3 x 2 x 3/16
CVN	PLANK HOLDDOWN	L 2 x 1 1/4 x 10 GA
CVN	SAFETY RAIL	L 1 1/4 x 1 1/4 x 1/8
CVN	TOE RAIL	C 4 x 1 x 10 GA R.F.

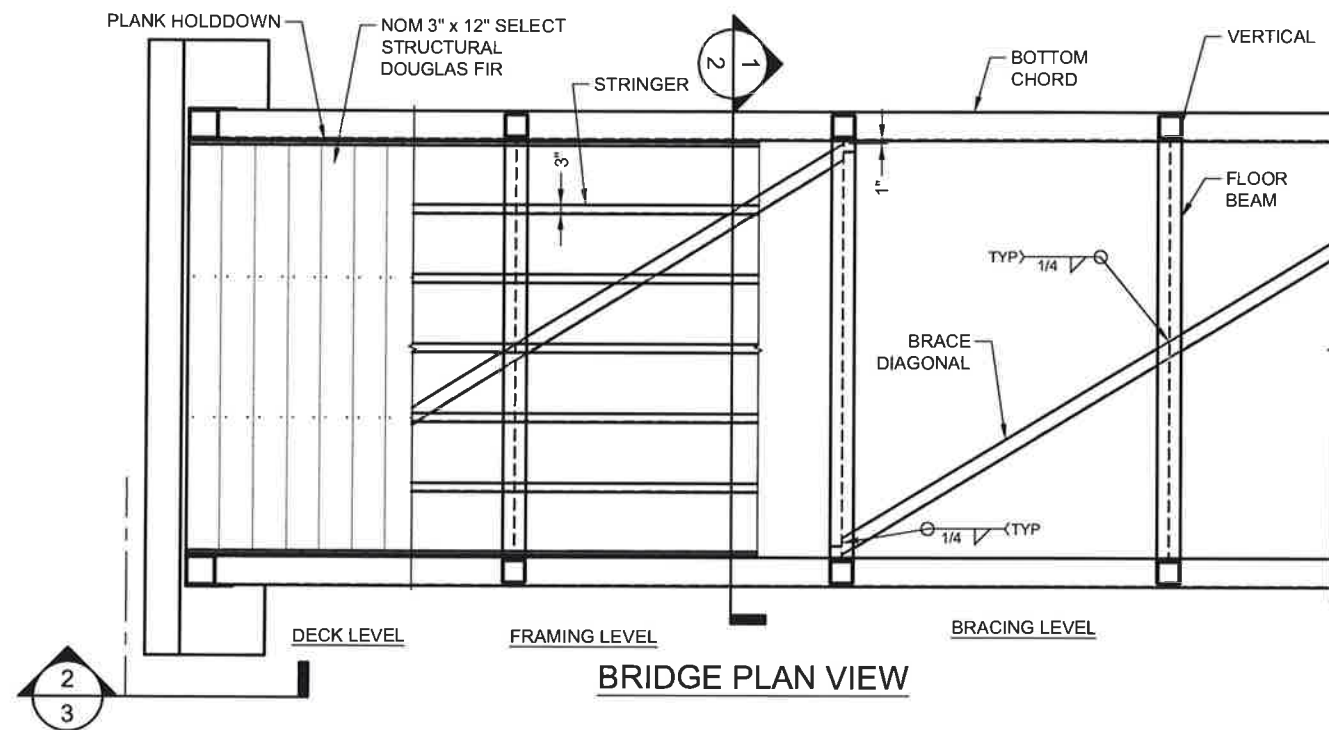
① USE HSS 8 x 6 x 1/4 END 3 BAYS, HSS 6 x 4 x 1/4 4TH-6TH BAYS, TYP BOTH ENDS OF BRIDGE. DOUBLE MITER ALL DIAGONALS.
CVN- SEE QUALITY ASSURANCE NOTES

150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO



DATE: 4/29/2020
DESIGNED: MJH
CHECKED: SEC
PROJECT No.: 610177
SEQUENCE No.: 10
SHEET: 2 OF 6

2 OF 6

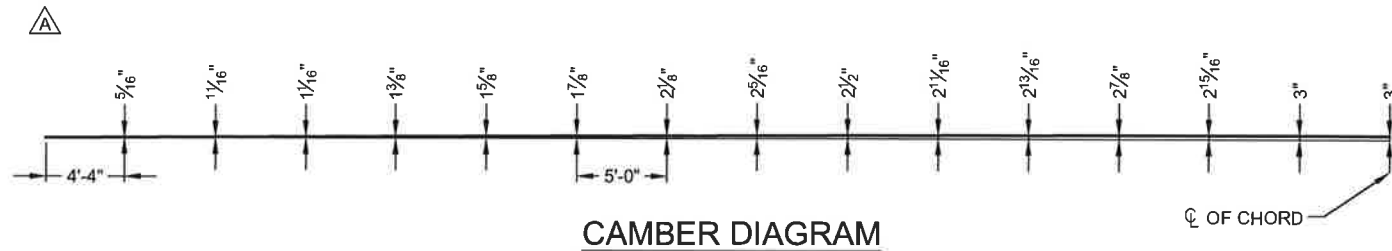
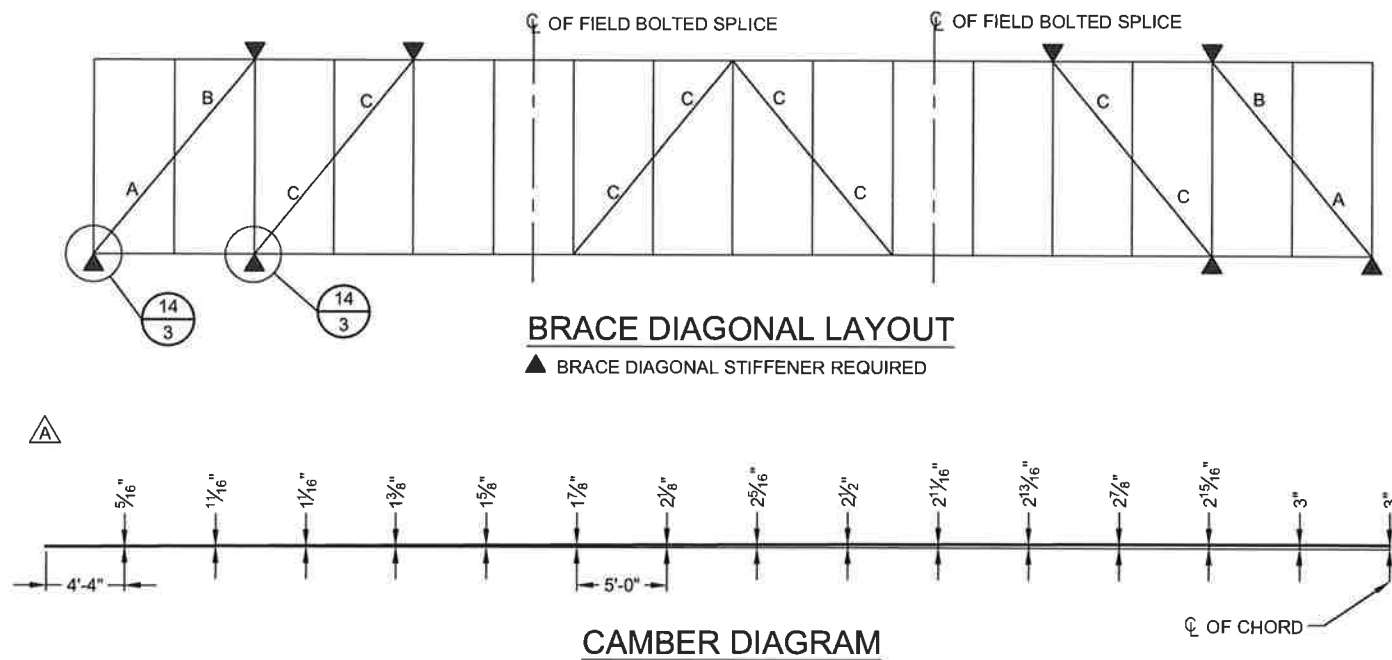
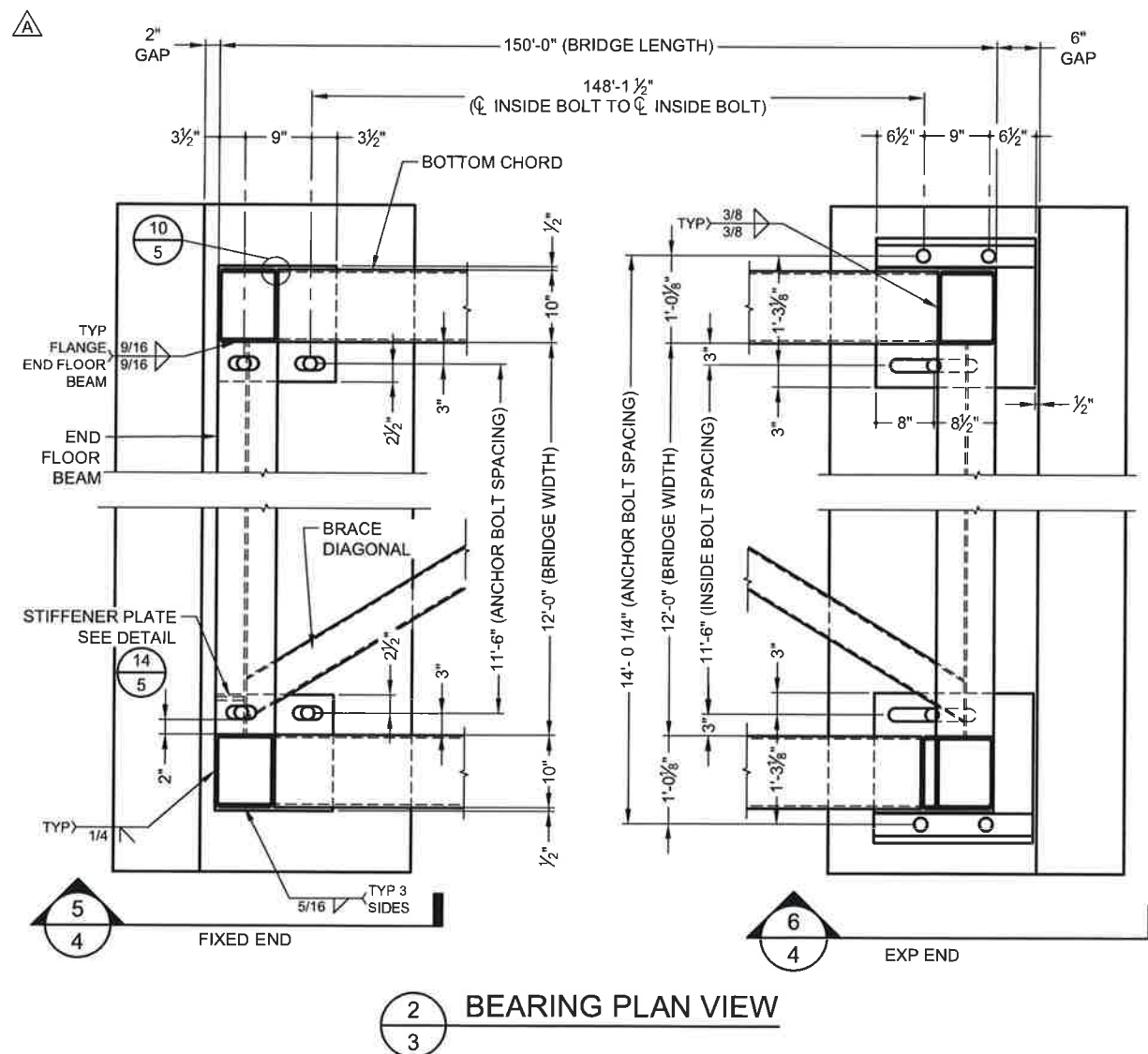
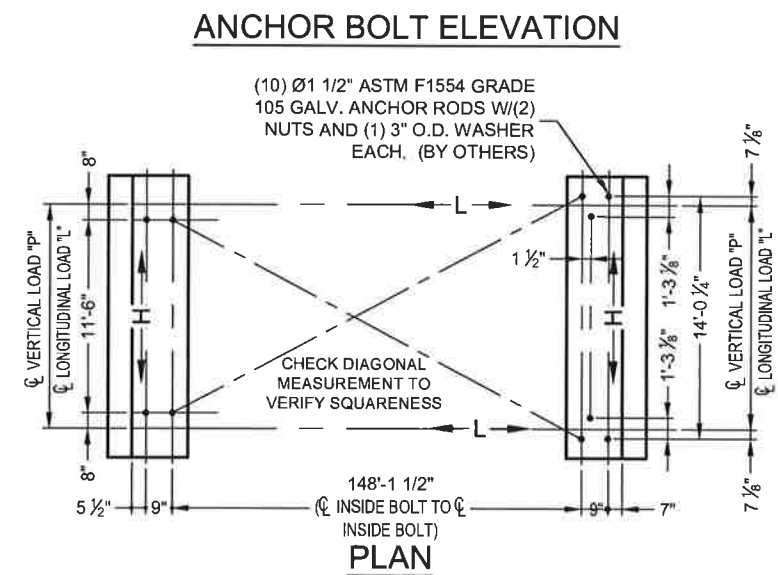
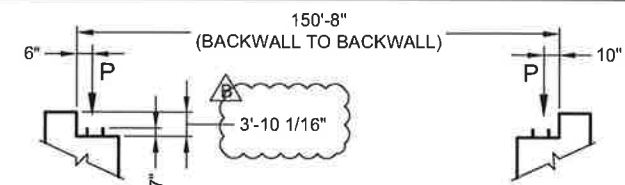


COMBINE REACTIONS AS PER LOCAL OR
GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS			+ DOWNWARD LOAD - UPWARD LOAD	
	P (LBS)	H (LBS)	L (LBS)	
DEAD LOAD ②	28,500			
UNIFORM LIVE LOAD	40,500			
VEHICLE LOAD	10,000			
WIND UPLIFT 20 PSF WINDWARD LEeward	-15,000 -5,000			
WIND	±13,870			
THERMAL ②			4,275	
SEISMIC ②		16,000	16,000	

"P" - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
 "H" - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
 "L" - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)
 + LONGITUDINAL SEISMIC APPLIED TO FLOOR BEAMS ONLY

- ① BRIDGE LIFTING WEIGHT: 87,000 LBS - DOES NOT INCLUDE FUTURE DECK
- ② BRIDGE DEAD LOAD: 114,000 LBS - INCLUDES FUTURE DECK



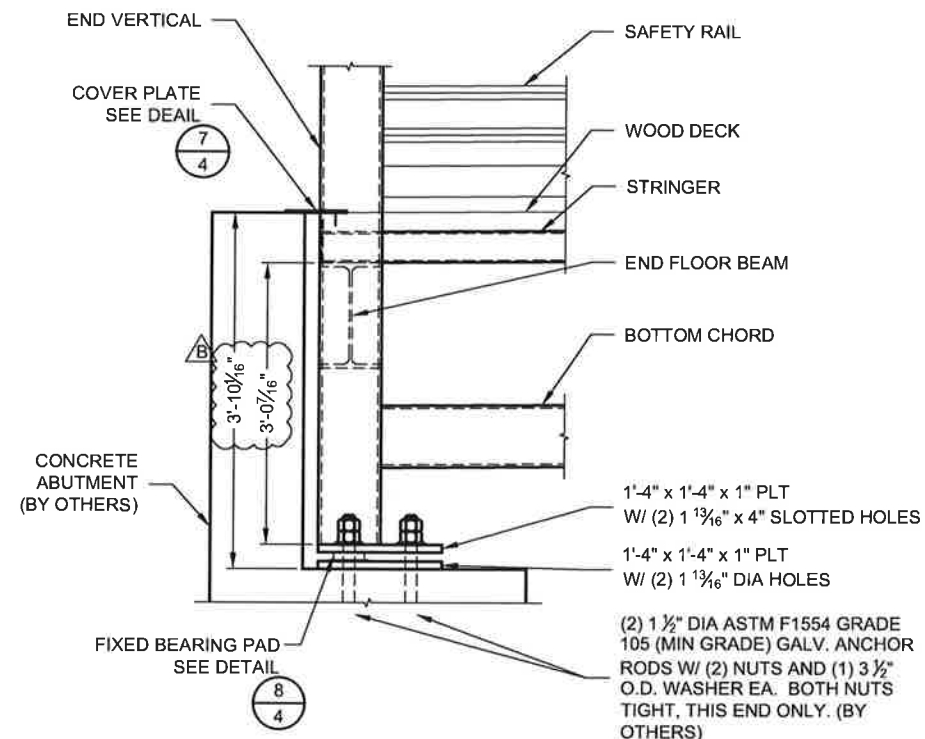
150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

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CONTINENTAL®
BRIDGE

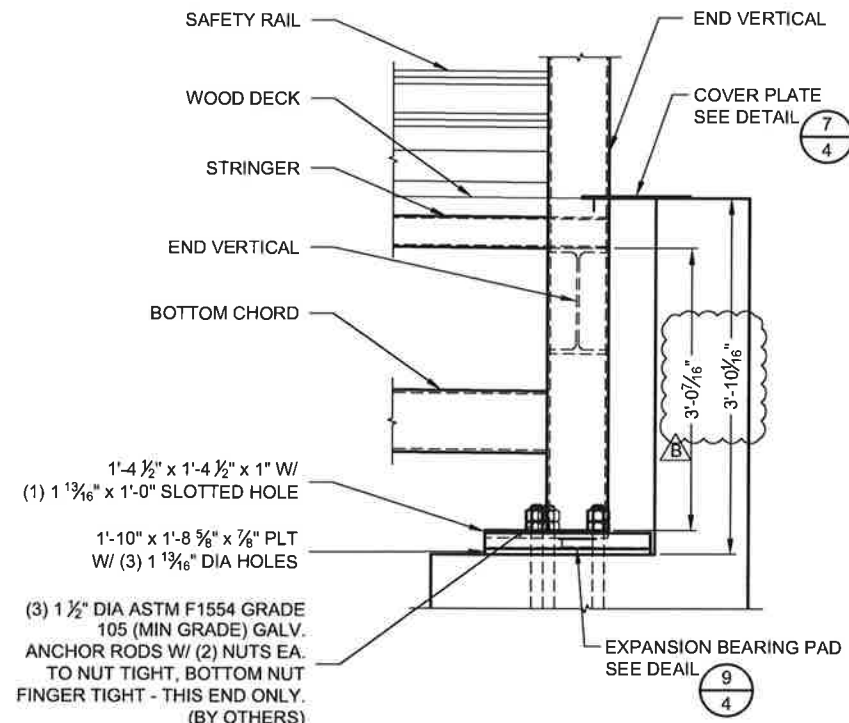
CONTINENTAL®
BRIDGE

DATE: 4/29/2020	
DESIGNED: MJH	DRAWN: CMA
CHECKED: SEC	APPROVED: MJH
PROJECT No.: 610177	SEQUENCE No.: 10
SHEET: 3 of 6	

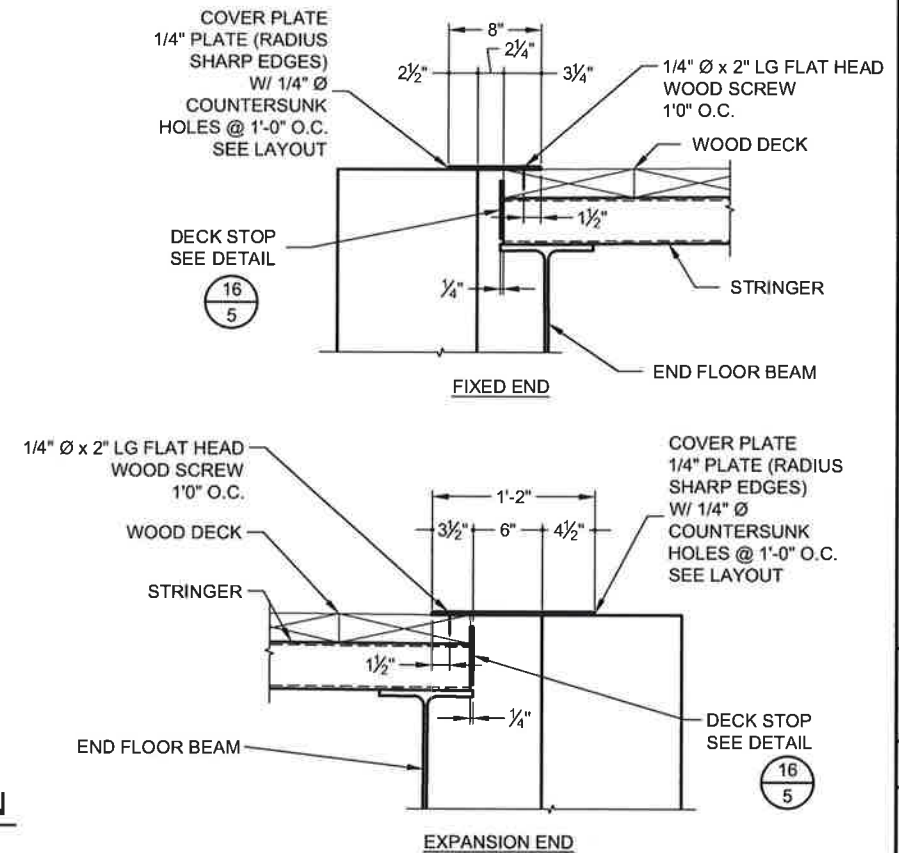


5
3

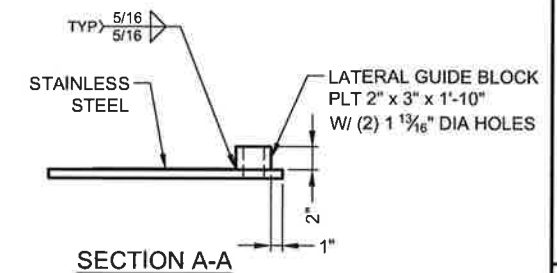
FIXED BEARING ELEVATION



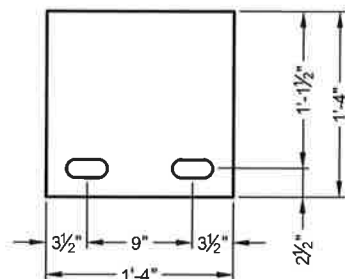
6 EXPANSION BEARING ELEVATION
3



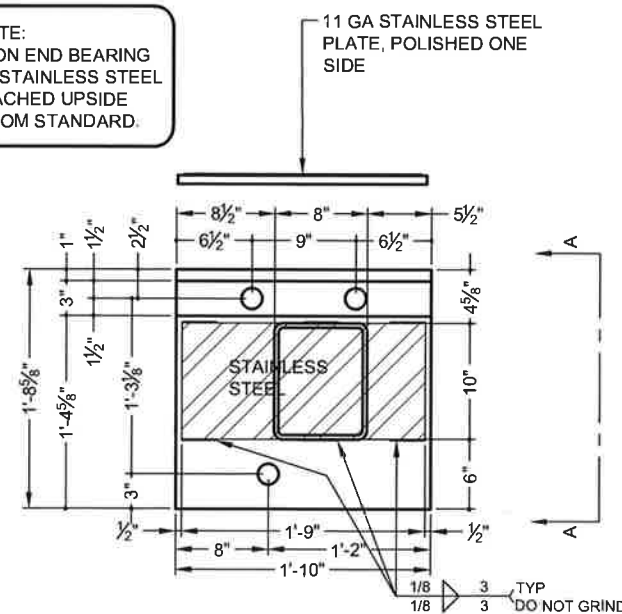
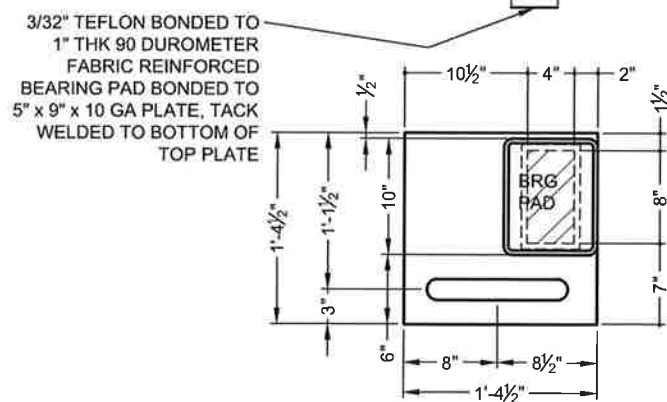
COVER PLATE DETAIL



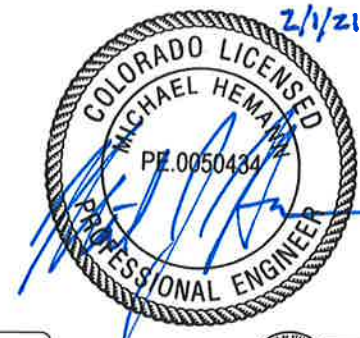
8 FIXED BEARING PAD DETAIL
4 (2) REQUIRED



9 EXPANSION BEARING PAD
4 (2) REQUIRED



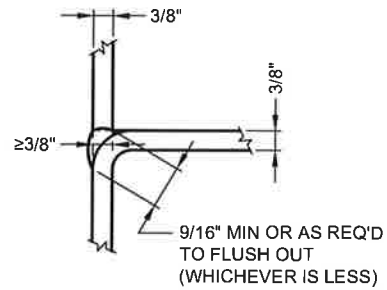
CONTECH
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DRAWING



AISC CERTIFIED FABRICATOR

150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

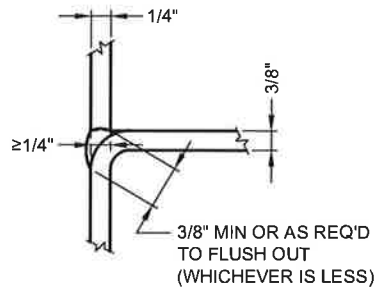
 CONTECH[®] ENGINEERED SOLUTIONS LLC www.ContechES.com 9301 State Highway 28 North, Alexandria, MN 55308 800-328-2047 320-345-9126 320-565-3148 FAX		 CONTINENTAL[®] BRIDGE	
DATE:		4/29/2020	
DESIGNED:	MJH	DRAWN:	CMA
CHECKED:	SEC	APPROVED:	MJH
PROJECT No.:	610177	SEQUENCE No.:	10
SHEET:		4 OF 6	



MATCHED EDGES OF:
1. CHORDS TO END VERTICALS

TO BE PARTIAL PENETRATION WELDS.

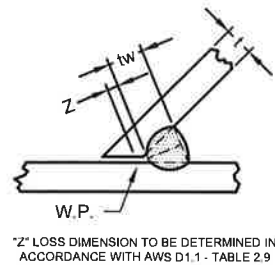
10 WELD DETAIL
2,3



MATCHED EDGES OF:
1. HSS 8 x 6 x 1/4 DIAGONALS TO VERTICALS

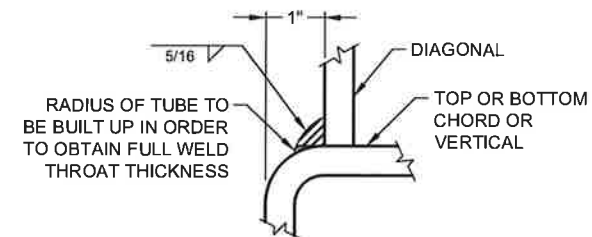
TO BE PARTIAL PENETRATION WELDS.

11 WELD DETAIL
2

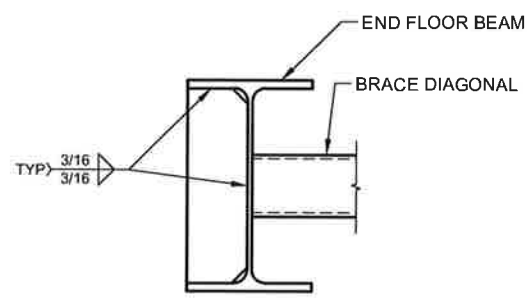


"Z" LOSS DIMENSION TO BE DETERMINED IN ACCORDANCE WITH AWS D1.1 - TABLE 2.9

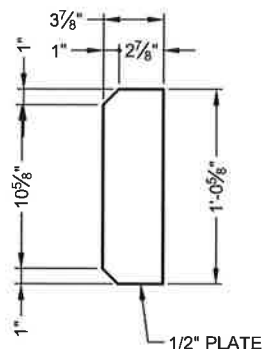
12 WELD DETAIL
2



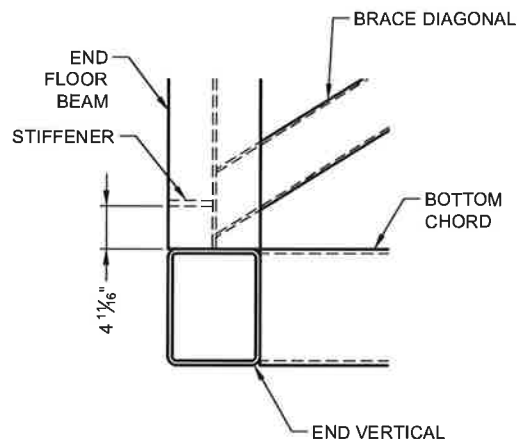
13 WELD DETAIL
2



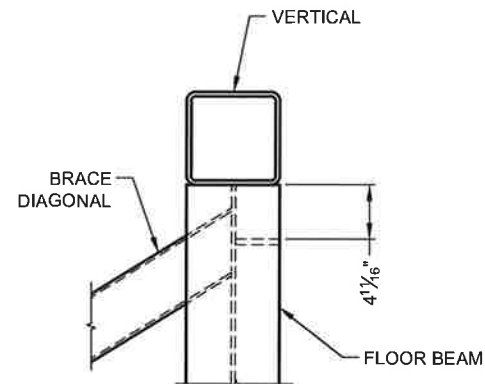
ELEVATION VIEW



STIFFENER

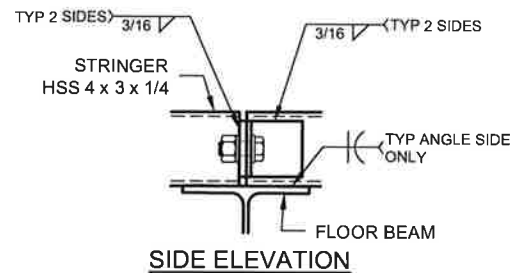
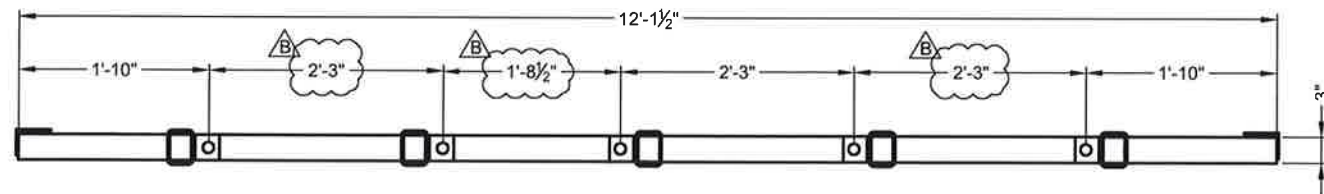


PLAN VIEW - END FLOOR BEAM



PLAN VIEW - TYP FLOOR BEAM

14 END BRACE DIAGONAL STIFFENER
3 SEE BRACE DIAGONAL LAYOUT FOR LOCATIONS

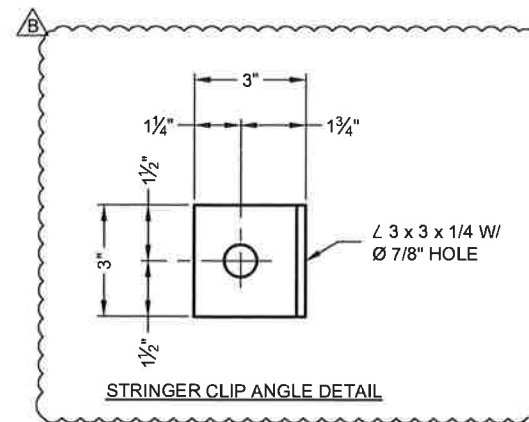


SIDE ELEVATION

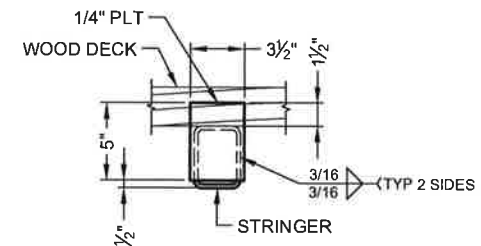
MATERIAL (PER SPLICE)

- (5) Ø3/4" x 2" ASTM F3125 GRADE A325 T3 BOLTS W/(1) DH3 A563 NUT & (2) F436 T3 WASHER EA.
- (5) L 3 x 3 x 1/4 x 3" LG W/ (1) 7/8" DIA HOLE
- (1) 3" x 3/8" x 12'-1 1/2" ASTM A588 PLATE W/ 7/8" DIA HOLES

15 STRINGER SPLICE
2



STRINGER CLIP ANGLE DETAIL



16 DECK CAP DETAIL
4 TYP ALL STRINGERS



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DRAWING



150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions, LLC. It is the responsibility of the project owner, engineer and contractor to verify the accuracy of the information and to ensure that the design and information is used in accordance with the applicable codes and standards. Contech Engineered Solutions, LLC does not accept any liability for damages, injury or loss of life or property resulting from the use of this drawing.

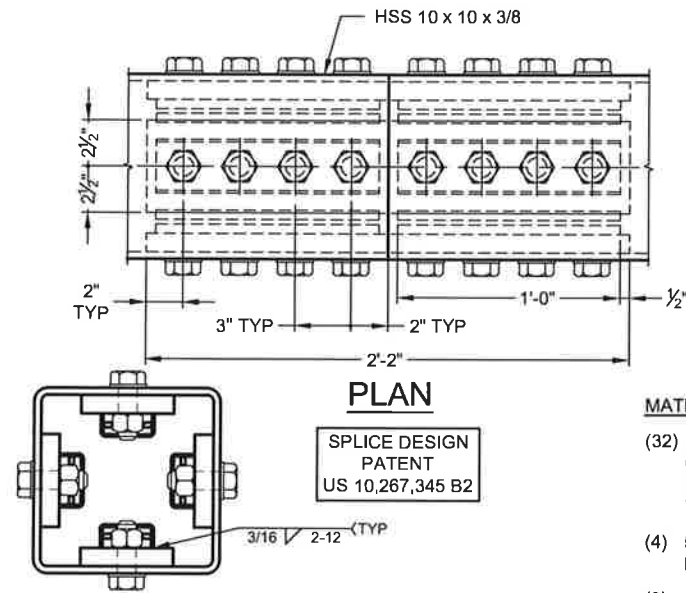
REVISION DESCRIPTION	DATE	MARK	BY
AS-BUILT	2/1/21	B	CMA
REVISED TO WOOD DECK - NEW DESIGN	9/4/2020	A	CMA

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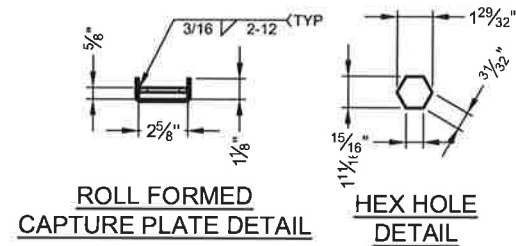
DATE:	4/29/2020
DESIGNED:	MJH
DRAWN:	CMA
CHECKED:	SEC
APPROVED:	MJH
PROJECT No.:	610177
SEQUENCE No.:	10
SHEET:	5 OF 6

\\SP0HAF\FILED\3D\CONTECH\CPI\COMMERLIN\PROJECT\ACTIVE\610100610177610177-10-CONTINENTAL_FEDESTRIANDRAWINGS\FABRICATION\610177-10 REV B.DWG 2/1/2021 12:46 PM

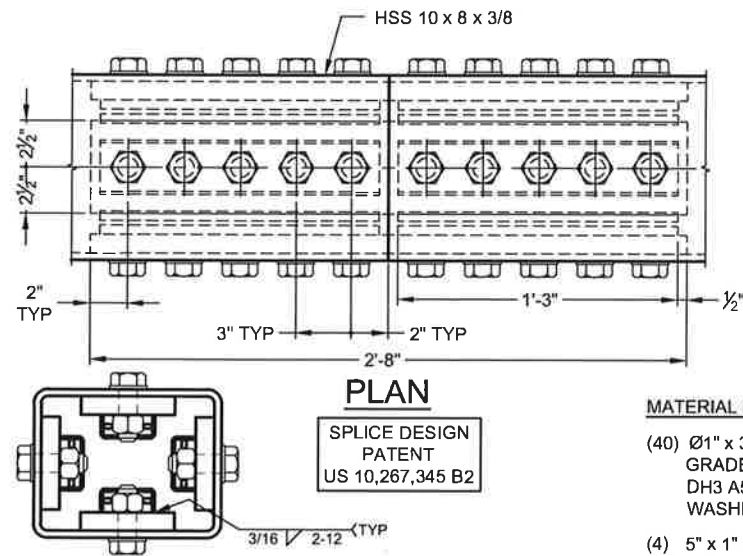


MATERIAL (PER SPLICE)

- (32) Ø1" x 3" LONG ASTM F3125 GRADE A325 T3 BOLTS, DH3 A563 NUTS & F436 T3 WASHERS
- (4) 5" x 1" x 2'-2" ASTM A588 PLATES
- (8) 2 9/16" x 1/4" x 1'-0" ASTM A588 PLATES W/ HEX HOLES
- (8) 10 GA x 1'-0" LONG ASTM A606 ROLL FORMED CAPTURE PLATES

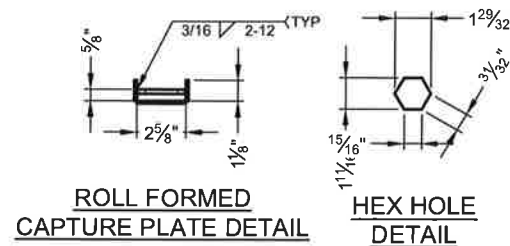


17
2 TOP CHORD SPLICE DETAIL

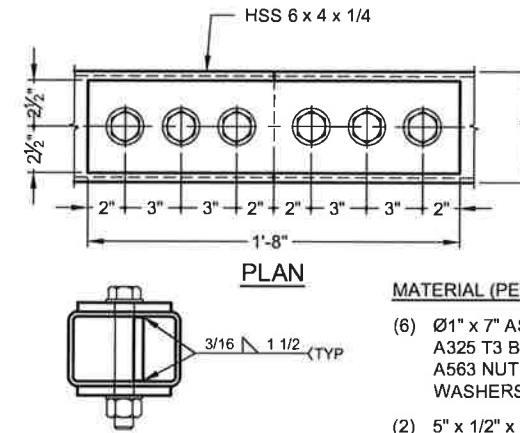


MATERIAL (PER SPLICE)

- (40) Ø1" x 3" LONG ASTM F3125 GRADE A325 T3 BOLTS, DH3 A563 NUTS & F436 T3 WASHERS
- (4) 5" x 1" x 2'-8" ASTM A588 PLATES
- (8) 2 9/16" x 1/4" x 1'-3" ASTM A588 PLATES W/ HEX HOLES
- (8) 10 GA x 1'-3" LONG ASTM A606 ROLL FORMED CAPTURE PLATES



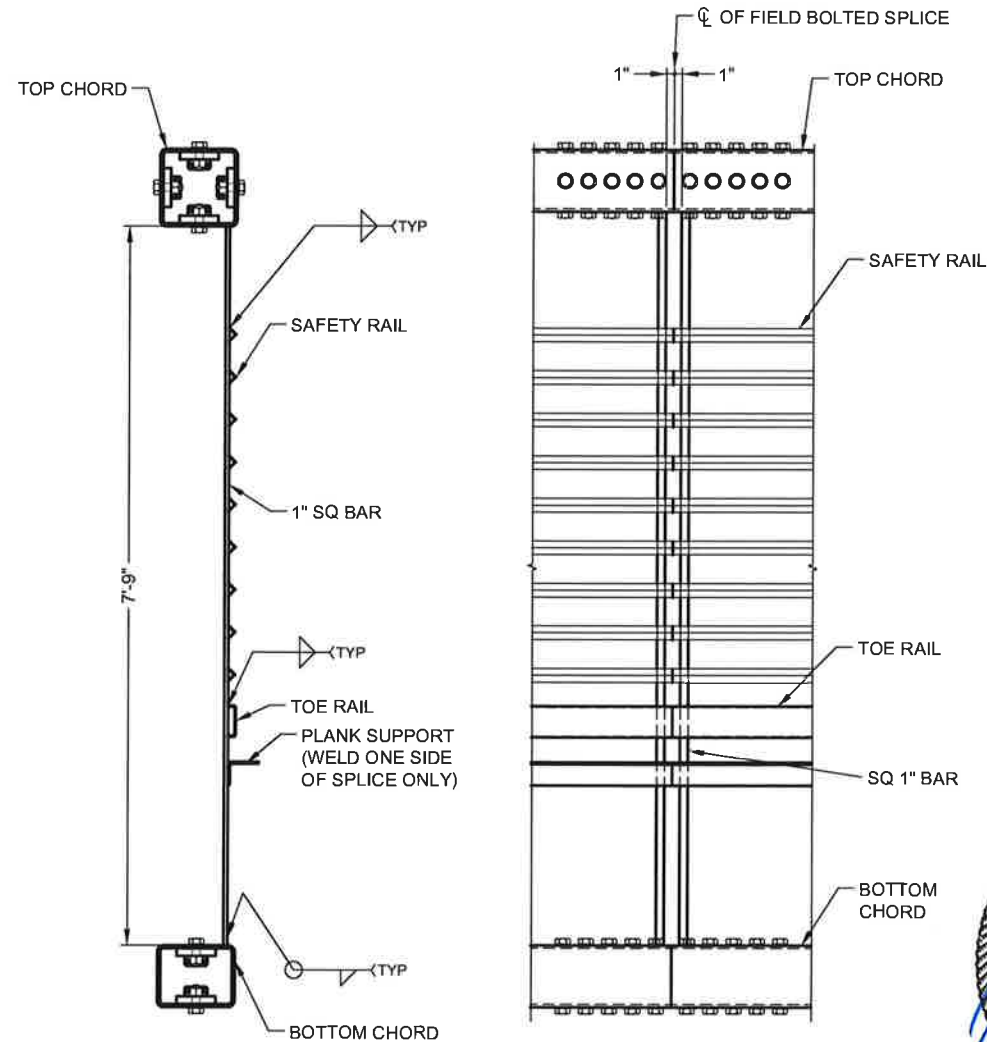
18
2 BOTTOM CHORD SPLICE DETAIL



MATERIAL (PER SPLICE)

- (6) Ø1" x 7" ASTM F3125 GRADE A325 T3 BOLTS W/(1) DH3 A563 NUT & (2) F436 T3 WASHERS EA.
- (2) 5" x 1/2" x 1'-8" ASTM A588 PLATES
- (2) 3 7/16" x 1/2" x 10" ASTM A588 PLATES

19
2 DIAGONAL SPLICE DETAIL



20
2 SAFETY RAIL SPLICE

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CONTRACT
DRAWING



150'-0" x 12'-0"
CLIMAX COLORADO INTAKE
ACCESS BRIDGE
LEADVILLE, CO

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DATE	BY	REVISION DESCRIPTION
2/1/21	AS-BUILT	
9/4/2020	CMA	REVISED TO WOOD DECK - NEW DESIGN
	CMA	
	BY	

DATE:	4/29/2020
DESIGNED:	MJH
CHECKED:	SEC
PROJECT No.:	610177
SEQUENCE No.:	10
SHEET:	6 OF 6

Climax Mine – Permit No. M-1977-493

Technical Revision 31

Mayflower Stage 2 Tower Riser and Access Bridge

On February 19, 2020 a request for a permit to construct the Mayflower Flood Bypass Stage 2 Tower Riser and Access Bridge (TR 31) was submitted to the Division of Reclamation, Mining and Safety (Division). TR-31 involved the construction of the Stage 2 Tower Riser to connect to the Stage 2 Tunnel via a raise bore and an access bridge to access the vertical tower. The project is depicted in the drawings submitted with the permit request dated and signed February 7, 2020. The Division approved the request on March 19, 2020. The undersigned was responsible for the design of the project and QA/QC for the construction of the project.

Construction of the project is structurally complete. The Record Drawings are attached.

Pursuant to Rule 7.3.2, the Professional Engineer that has signed and sealed below certifies that the project was completed in general conformance with the approved design as submitted to the Division of Reclamation, Mining, and Safety. This statement is based in part on information that has been provided by others.



John H. Sikora, P.E.
AECOM Technical Services

6/30/21
Date