

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH COLORADO DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION SPECIFICATIONS, 2022 EDITION, APPLICABLE TO THIS PROJECT.

LOCAL OWNER CRITERIA INCLUDING CITY OF COLORADO SPRINGS REQUIREMENTS SHALL ALSO APPLY AND WHEN IN CONFLICT WITH CDOT REQUIREMENTS, SHALL SUPERCEDE CDOT REQUIREMENTS AT THE OWNER'S DISCRETION.

STRUCTURE EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH DETAILS SHOWN IN THESE PLANS AND SECTION 206 OF THE CDOT STANDARD SPECIFICATIONS. DETAILED ITEMS SHALL GOVERN.

EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.

THE FINAL FINISH FOR ALL EXPOSED CONCRETE SURFACES SHALL BE CLASS 2 TO 1'-0" BELOW FINISHED GRADE, UNLESS NOTED OTHERWISE.

WHERE SPECIFIED IN THE PLANS, THE FORMLINER FINISH SHALL EXTEND TO 1'-0" MINIMUM BELOW FINISHED GRADE.

GRADE 60 REINFORCING STEEL IS REQUIRED.

ALL CAST-IN-PLACE CONCRETE SHALL BE CLASS D UNLESS NOTED OTHERWISE.

ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 INCH, UNLESS NOTED OTHERWISE IN PLANS.

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE IN DRAWINGS:

- CONCRETE CAST AGAINST EARTH = 3 IN
- #6 AND LARGER = 2 IN
- #5 AND SMALLER = 1 1/2 IN

ALL REINFORCING STEEL SHALL BE EPOXY-COATED UNLESS NOTED OTHERWISE.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS PLACED.

THE CONTRACTOR SHALL NOT BACKFILL STRUCTURES UNTIL RETAINING WALLS HAVE REACHED 80% OF DESIGN STRENGTH.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURES DURING CONSTRUCTION.

STATIONS, ELEVATIONS, AND DIMENSIONS CONTAINED IN THESE PLANS ARE CALCULATED FROM CIVIL PLAN SET. THE CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS IN THE FIELD BEFORE ORDERING OR FABRICATING ANY MATERIAL.

THE INFORMATION SHOWN ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

ABBREVIATIONS:

- AH. = AHEAD
ABUT. = ABUTMENT
B.F. = BACK FACE
BLVD. = BOULEVARD
BOT. = BOTTOM
C = CENTERLINE
CLR. = CLEAR
C&G = CURB AND GUTTER
CONST. = CONSTRUCTION
CONT. = CONTINUOUS
E.F. = EACH FACE
ELEV. = ELEVATION
EMBED. = EMBEDMENT
EQ. = EQUALLY
EXP. = EXPANSION
HCL = HORIZONTAL CONTROL LINE
IB = INBOUND
JT. = JOINT
MAX. = MAXIMUM
MIN. = MINIMUM
NO. = NUMBER
OB = OUTBOUND
PC = POINT OF CURVE
PI = POINT OF INTERSECTION
PL = PLATE
PROJ. = PROJECTION
PT = POINT OF TANGENT
PVC = POLYVINYL CHLORIDE
PVI = POINT OF VERTICAL INTERSECTION
ROW = RIGHT OF WAY
SPA. = SPACED
ST = STREET
STA. = STATION
STD. = STANDARD
TYP. = TYPICAL
V.I.F. = VERIFY IN FIELD

GENERAL DESIGN DATA

REINFORCED CONCRETE: CLASS D CONCRETE: f'c = 4,500 psi
TYPE II CEMENT REQUIRED
REINFORCING STEEL: fy = 60,000 psi

REFER TO GEOTECHNICAL REPORTING NO. 211647 BY ENTECH ENGINEERING, IN., DATED APRIL 5, 2022 AND ANY ADDENDA THERETO, FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

PER GEOTECH REPORT LISTED ABOVE BEARING CAPACITIES ARE AS FOLLOWS: 2400 PSF (NATIVE SAND)
3000 PSF (STRUCTURAL FILL)
3500 PSF (SANDSTONE BEDROCK)

DESIGN DATA FOR CULVERTS

DESIGNED IN ACCORDANCE WITH AASHTO LRFD, 9th EDITION 2020

ALL BOX CULVERTS

LIVE LOAD: HL-93
LIVE LOAD SURCHARGE: 2 FT DEPTH
EQUIVALENT FLUID PRESSURE: 30-90 PCF

THREE-CELL BOX CULVERT

INTERIOR FLUID: 8 FT ABOVE TOP SLAB
FILL RANGE: 2 FT TO 8 FT
MAXIMUM CALCULATED BEARING PRESSURE = 1300 PSF

10x12 BOX CULVERT

INTERIOR FLUID: 13.5 FT ABOVE TOP SLAB
FILL RANGE: 5.5 FT TO 17.5 FT
MAXIMUM CALCULATED BEARING PRESSURE = 3100 PSF

10x10 BOX CULVERT

INTERIOR FLUID: 3.5 FT ABOVE TOP SLAB
FILL RANGE: 5 FT TO 7 FT
MAXIMUM CALCULATED BEARING PRESSURE = 1500 PSF

DESIGN DATA POND OUTLET STRUCTURES

DESIGNED IN ACCORDANCE WITH IBC 2018 / ACI 318

POND STRUCTURE #1

EQUIVALENT FLUID PRESSURE: 60-90 PCF
LIVE LOAD: 100 PSF OR 200 LBS CONCENTRATED LOAD ON STEEL GRATING
LIVE LOAD SURCHARGE: N/A
INTERIOR FLUID DEPTH: FULL AND EMPTY CONSIDERED FOR STRUCTURAL CAPACITY AND BUOYANCY
MAXIMUM CALCULATED BEARING PRESSURE: 2,500 PSF

POND STRUCTURE #2

EQUIVALENT FLUID PRESSURE: 60-90 PCF
LIVE LOAD: 100 PSF OR 200 LBS CONCENTRATED LOAD ON STEEL GRATING
LIVE LOAD SURCHARGE: N/A
INTERIOR FLUID DEPTH: FULL AND EMPTY CONSIDERED FOR STRUCTURAL CAPACITY AND BUOYANCY
MAXIMUM CALCULATED BEARING PRESSURE: 1,500 PSF

DESIGN DATA FOR WINGWALLS AND HEADWALLS

DESIGNED AND DETAILED BY JR ENGINEERING. REFER TO CIVIL SETS FOR DETAILS.

SUBMITTALS AND SUBSTITUTIONS

CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR REVIEW AND APPROVAL OF THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION:

- MANUFACTURED PRODUCTS
- REINFORCING SHOP DRAWINGS
- CONCRETE MIX DESIGN
- STRUCTURAL STEEL SHOP DRAWINGS

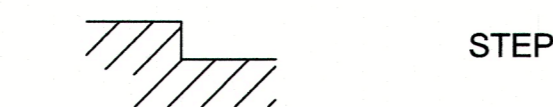
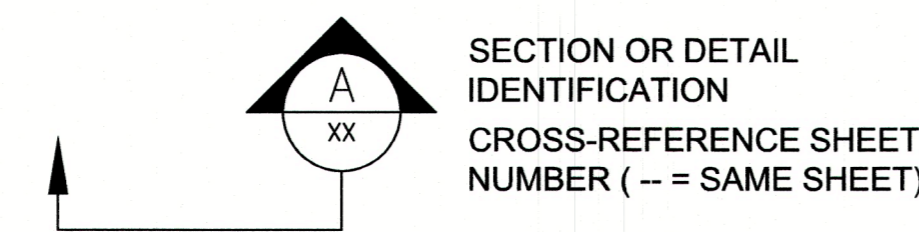
IF THE CONTRACTOR REQUESTS A CHANGE FROM THE STRUCTURAL DRAWINGS, IT SHALL BE APPROVED BY THE ENGINEER AND DESIGNED BY SAN ENGINEERING LLC. PRIOR TO SUBMITTING SHOP DRAWINGS. VARIATION SHALL BE INDICATED ON THE SHOP DRAWINGS. CONTRACTOR SHALL COMPENSATE MARTIN/MARTIN, INC. FOR MAKING THE CHANGE.

CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE IN SUBMITTALS

ALL SHOP DRAWINGS SHALL REFERENCE THE STRUCTURAL DRAWING NUMBER AND DETAIL USED TO PREPARE THE SUBMITTAL

SUBSTITUTIONS: ENGINEER'S APPROVAL SHALL BE SECURED FOR ALL SUBSTITUTIONS

SYMBOLS:



STRUCTURE DESCRIPTION AND STRUCTURAL SCOPE OF WORK NARRATIVE

THREE-CELL CAST-IN-PLACE REINFORCED CONCRETE BOX CULVERT CARRYING POND BERM AND CUTOFF WALL OVER SAND CREEK CHANNEL OUTLET FROM POND W-3.

13'-0" INTERIOR WIDTH (ALL CELLS)
4'-0" INTERIOR HEIGHT (EXTERIOR CELLS)
2'-0" INTERIOR HEIGHT (INTERIOR CELL)
93'-0" HEADWALL-TO-END

SINGLE-CELL CAST-IN-PLACE REINFORCED CONCRETE BOX CULVERT CARRYING POND EMERGENCY SPILLWAY AND CUTOFF WALL OVER SAND CREEK CHANNEL OUTLET FROM POND #1.

12'-0" INTERIOR WIDTH
10'-0" INTERIOR HEIGHT
8'-6" INTERMEDIATE DROP
149'-0" HEADWALL TO POND OUTLET RISER

SINGLE-CELL CAST-IN-PLACE REINFORCED CONCRETE BOX CULVERT CARRYING POND EMERGENCY SPILLWAY AND CUTOFF WALL OVER SAND CREEK CHANNEL OUTLET FROM POND #2.

10'-0" INTERIOR WIDTH
10'-0" INTERIOR HEIGHT
68'-8" HEADWALL TO POND OUTLET RISER

CAST-IN-PLACE REINFORCED CONCRETE VERTICAL OUTLET RISER FROM POND #1.

25'-0" SQUARE INTERIOR WIDTH
24'-1 1/2" INTERIOR HEIGHT
STEEL-FRAMED GRATED TOP

CAST-IN-PLACE REINFORCED CONCRETE VERTICAL OUTLET RISER FROM POND #2.

25'-0" SQUARE INTERIOR WIDTH
16'-8 3/4" INTERIOR HEIGHT
STEEL-FRAMED GRATED TOP

REFER TO CIVIL PLAN SET BY JR ENGINEERING FOR DETAILS OF HEADWALLS, WINGWALLS AND CUTOFF WALLS.

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

Signature of James F. Morley, dated 11/20/2023.

SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903

DISTRICT APPROVALS

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

Signature of San Engineering LLC, dated 11/20/2023.

EL PASO COUNTY STATEMENT

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE.

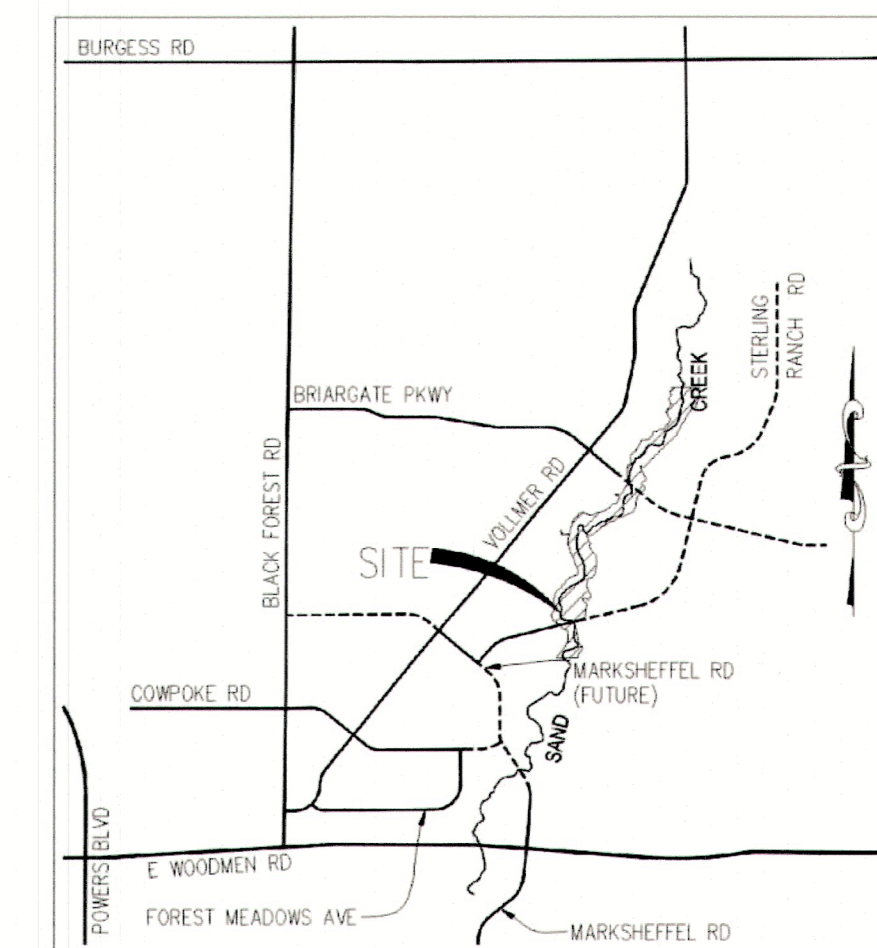
FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTORS DISCRETION.

JOSHUA PALMER, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

STRUCTURAL DRAWING INDEX

Table with 2 columns: Drawing ID and Description. Includes drawings for site structures, key plans, layouts, and details for various ponds and culverts.



KEY MAP
SCALE: 1"=1500'

STRUCTURAL ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

Signature of John Migliaccio, dated 07/25/2023.

JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, LLC.

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC logo and contact information: 1150 W. Littleton Blvd, Littleton, CO 80120, 303.953.9014

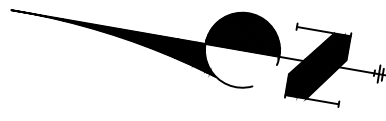
Table with columns: DATE, BY, REVISION, AS NOTED, AS NOTED, DATE, DESIGNED BY, DRAWN BY, CHECKED BY.

SAND CREEK RESTORATION
STERLING RANCH
SITE STRUCTURES
GENERAL STRUCTURAL
INFORMATION AND INDEX
SHEET S01 OF 25
JOB NO. 25188.04

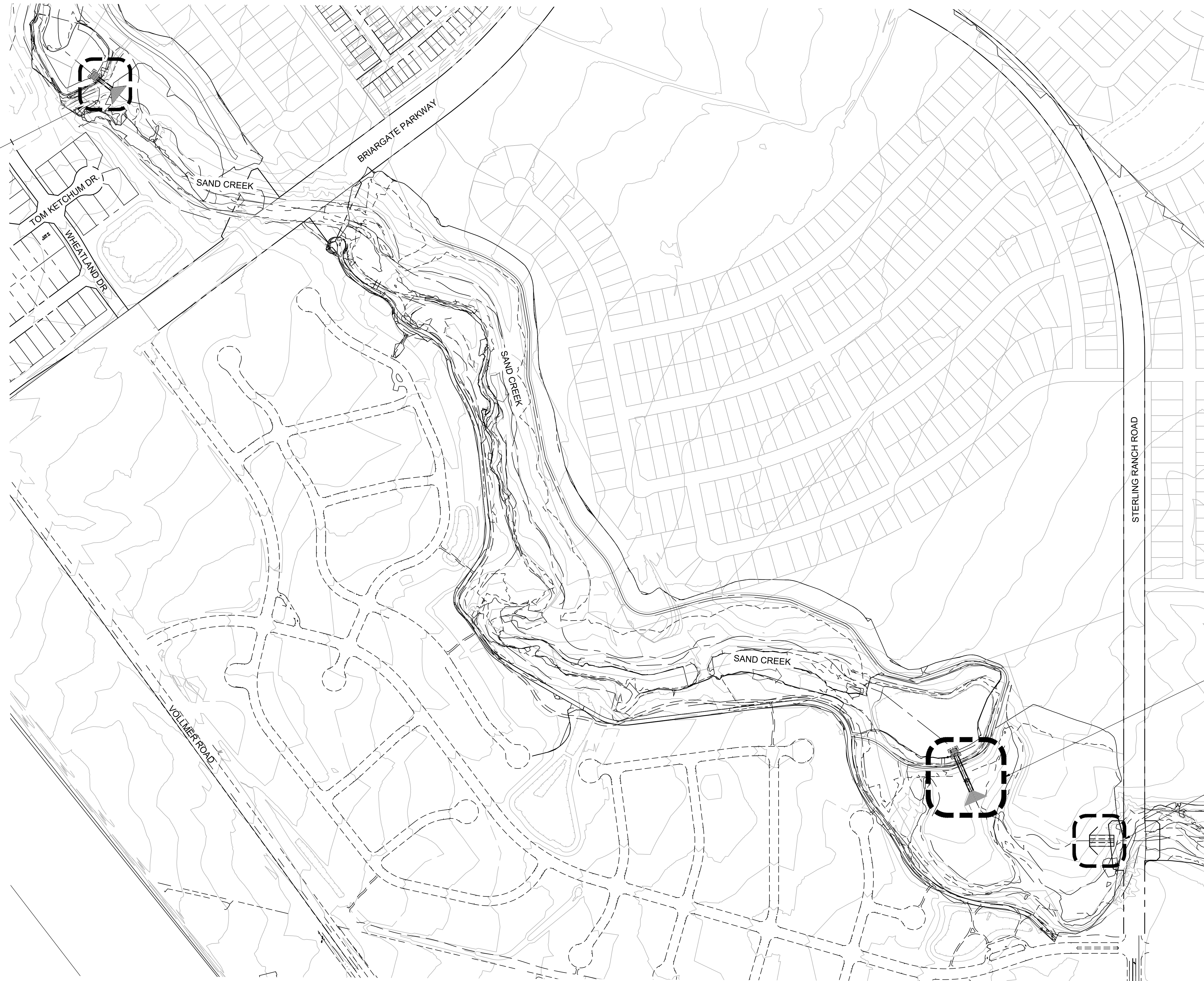
F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural_Details



F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Key Plan



SRMD POND #2: 10 x 10' BOX CULVERT WITH POND OUTLET RISER STRUCTURE



SRMD POND #1: 12 x 10' BOX CULVERT WITH INTERMEDIATE DROP STRUCTURE AND POND OUTLET RISER STRUCTURE

POND W-3: 3-CELL BOX CULVERT AND CONCRETE OUTLET BASIN

STRUCTURES KEY PLAN



STRUCTURAL ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
 07/25/2023
 PROFESSIONAL ENGINEER

JOHN MIGLIACCIO, P.E.
 COLORADO NO. 34333
 FOR AND ON BEHALF OF SAN ENGINEERING, LLC. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
 SR LAND, LLC
 20 BOULDER CRESCENT ST.
 COLORADO SPRINGS, CO 80903
 JAMES F. MORLEY
 (719) 419-3024

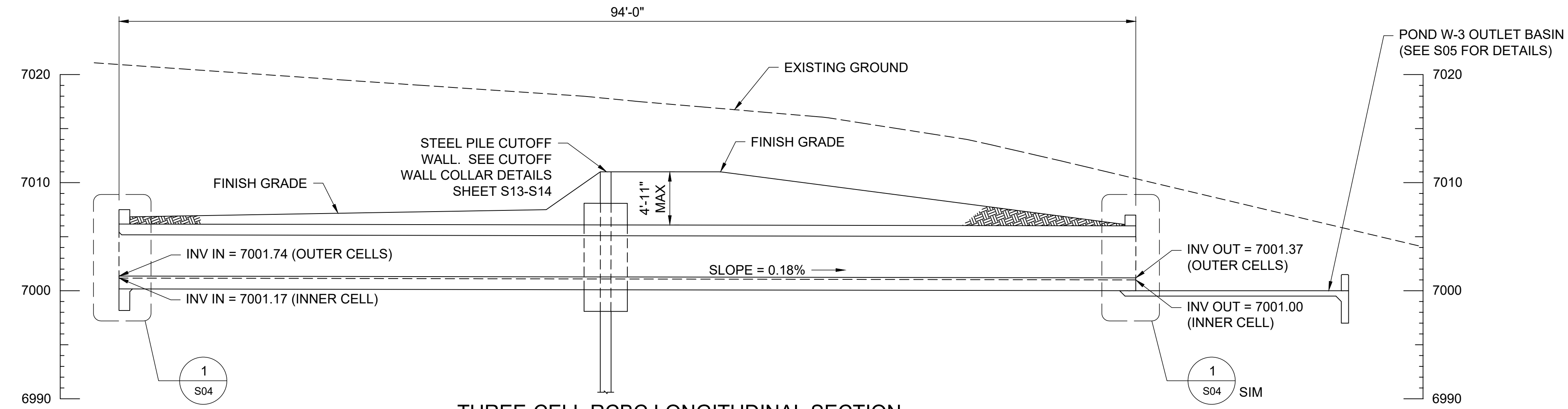
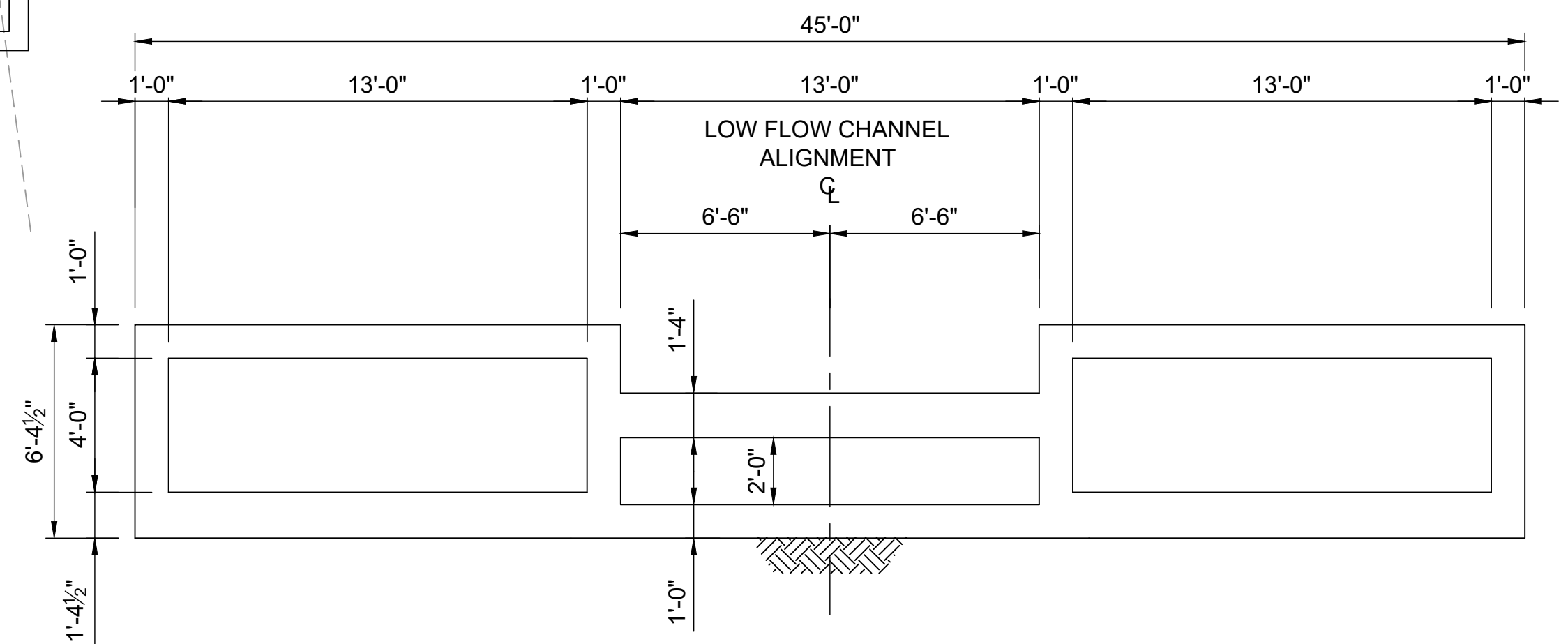
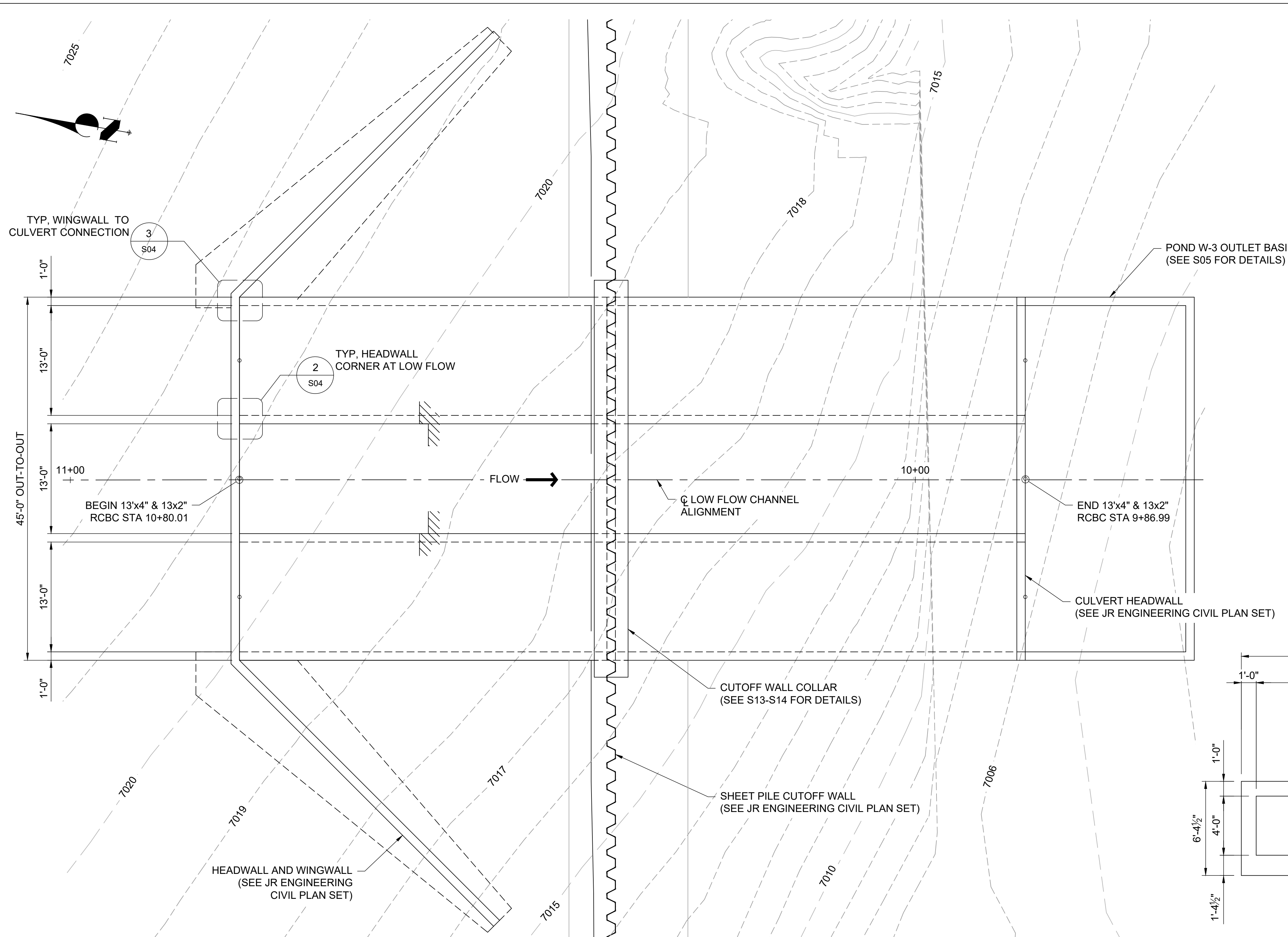



1150 W. Littleton Blvd. #200
 Littleton, CO 80120
 303.953.9014 www.sanengineeringllc.com


H-SCALE	AS NOTED	No.	REVISION	BY	DATE
V-SCALE <td>AS NOTED</td> <td></td> <td></td> <td></td> <td></td>	AS NOTED				
DESIGNED BY	DATE	DESIGNED BY	DATE	DESIGNED BY	DATE
DRAWN BY	DATE	DRAWN BY	DATE	DRAWN BY	DATE
CHECKED BY	DATE	CHECKED BY	DATE	CHECKED BY	DATE

SAND CREEK RESTORATION STERLING RANCH	SHEET S02 OF 25
STRUCTURES KEY PLAN	JOB NO. 25188.04

F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural



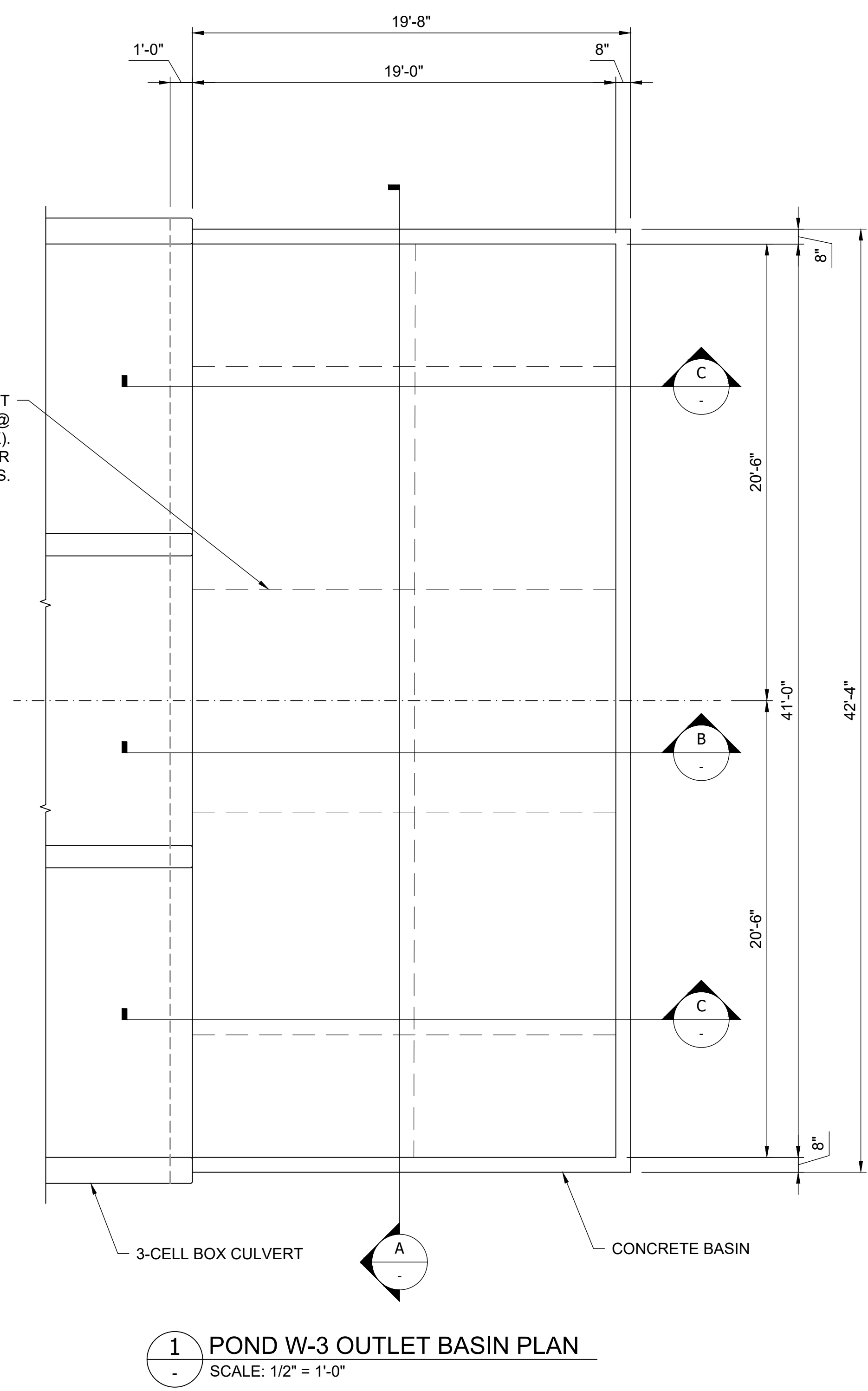
UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR	SR LAND, LLC 20 BOULDER CRESCENT ST. COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 419-3024
 San Engineering LLC Civil and Structural Engineering 1150 W. Littleton Blvd. #200 Littleton, CO 80120 303.953.9014 www.sanengineeringllc.com	
BY	DATE
REVISION	DATE
AS NOTED	AS NOTED
H-SCALE	V-SCALE
DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
SAND CREEK RESTORATION STERLING RANCH STOCK POND W-3 OUTLET 3-CELL BOX CULVERT GENERAL LAYOUT	
SHEET	S03 OF 25
JOB NO.	25188.04

STRUCTURAL ENGINEER'S STATEMENT
 PREPARED UNDER MY DIRECT SUPERVISION

 JOHN MIGLIACCIO, P.E.
 COLORADO NO. 34333
 FOR AND ON BEHALF OF SAN ENGINEERING, LLC. DATE 07/25/2023

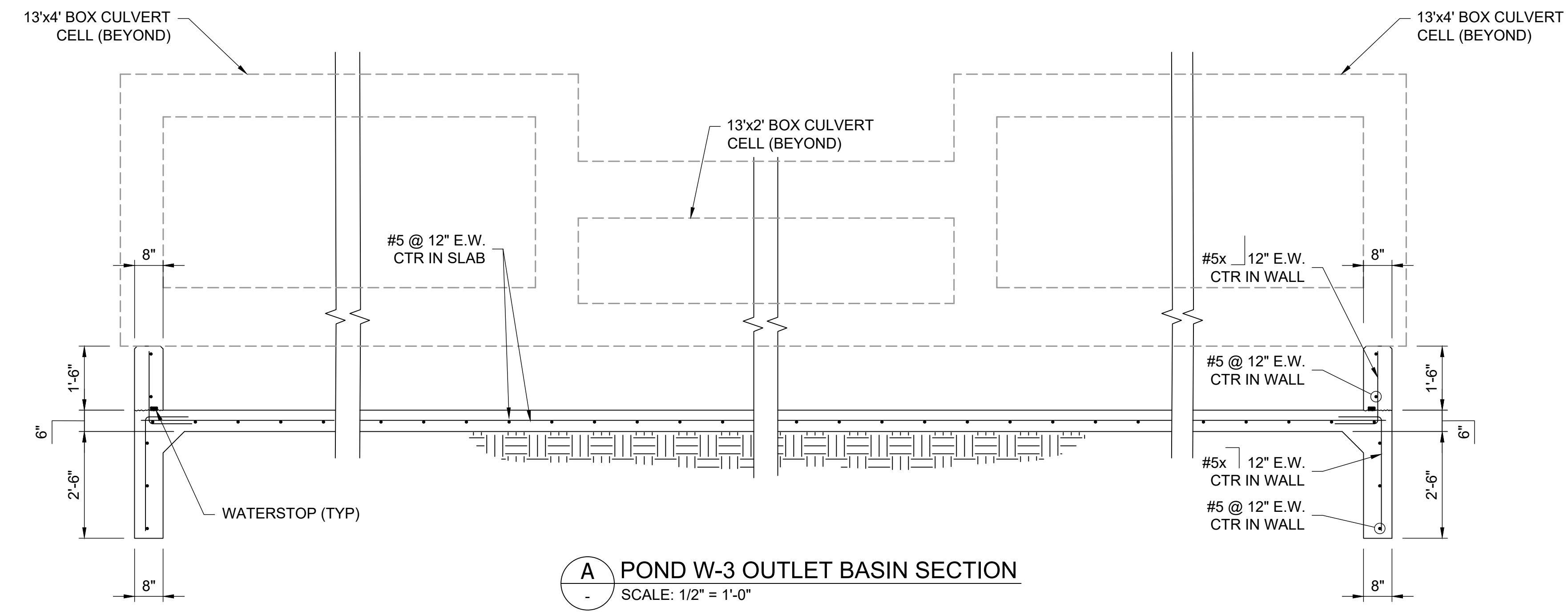
F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural Details



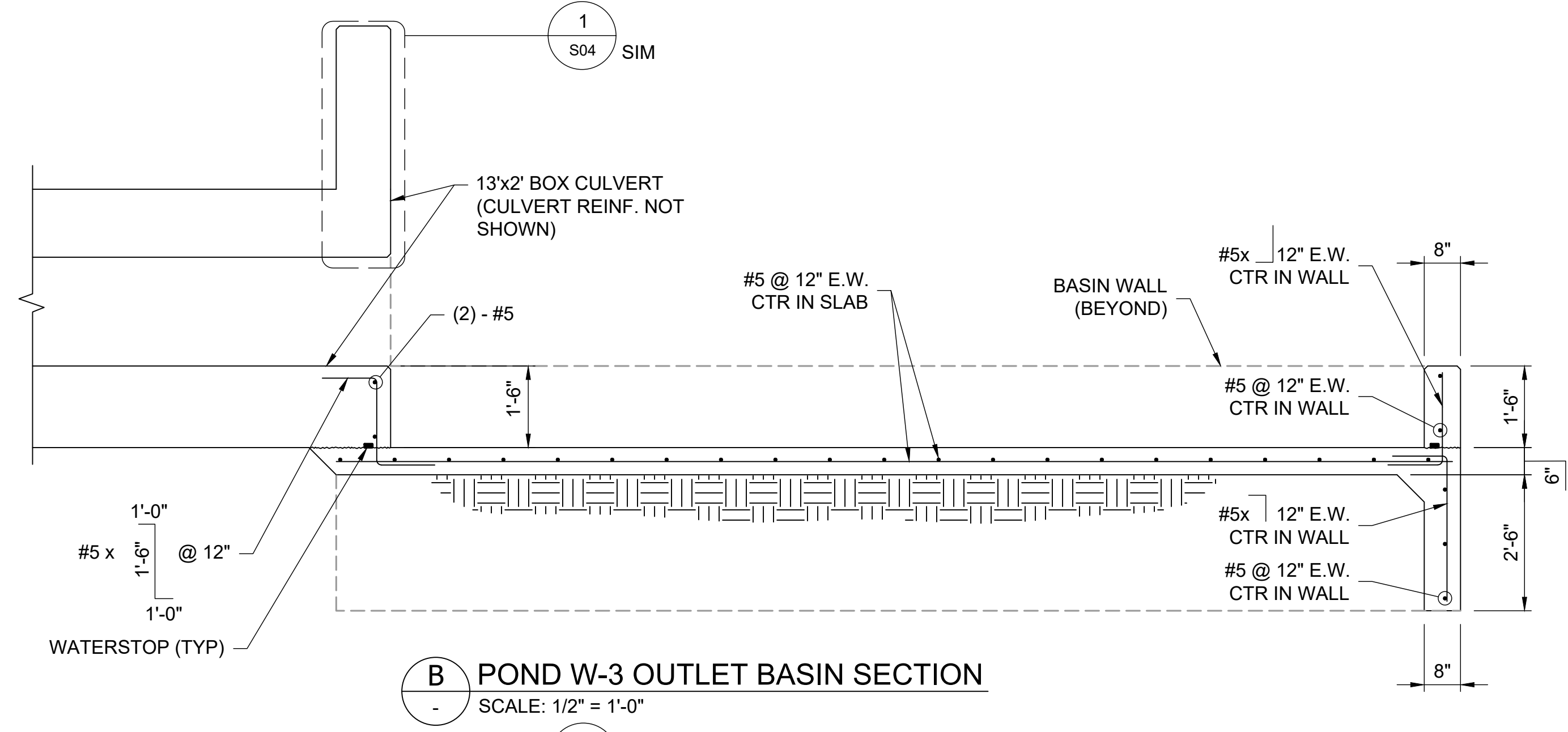
1" DEEP SAWCUT CONTROL JOINTS @ 10'-0" EACH WAY (MAX). EXTEND UP AND OVER TOPS OF BASIN WALLS.



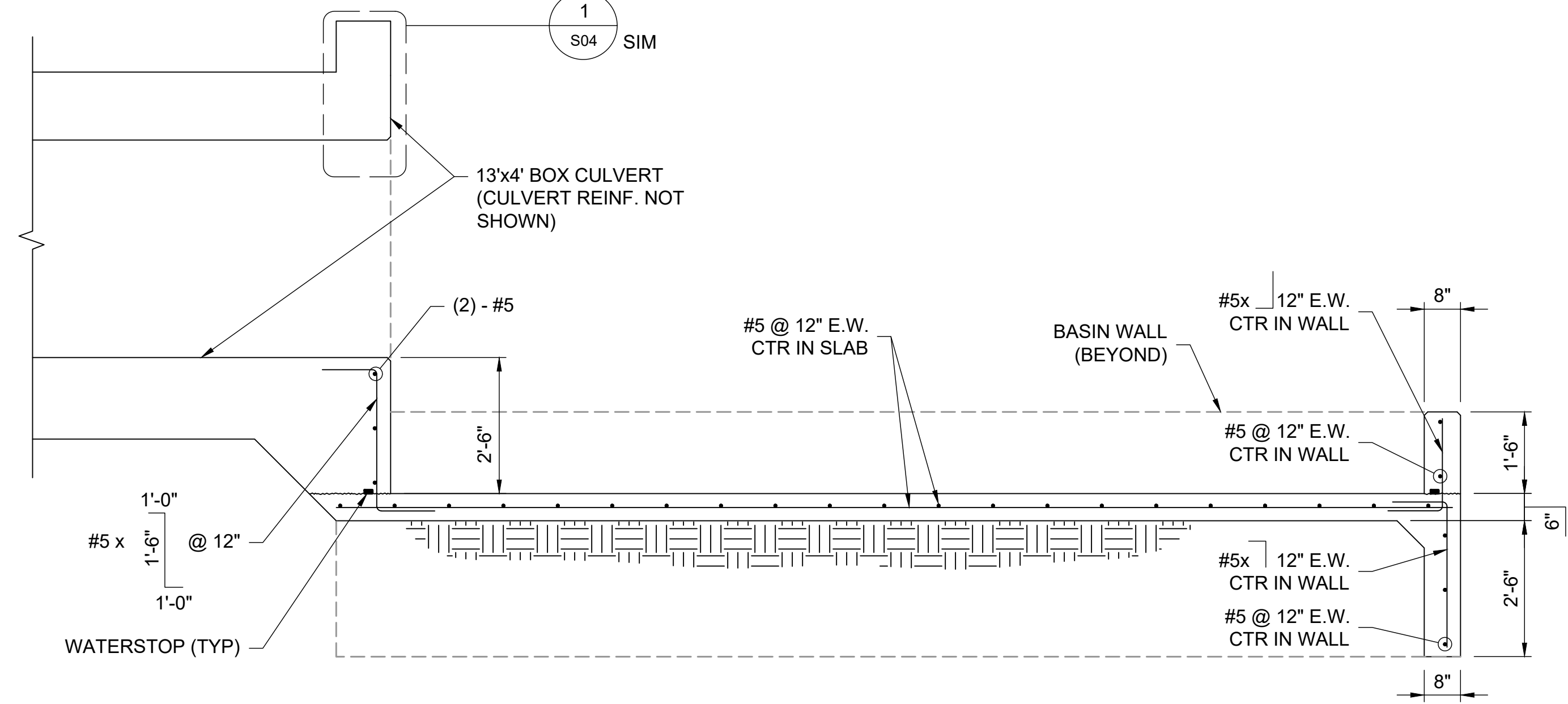
1 POND W-3 OUTLET BASIN PLAN
SCALE: 1/2" = 1'-0"



A POND W-3 OUTLET BASIN SECTION
SCALE: 1/2" = 1'-0"



B POND W-3 OUTLET BASIN SECTION
SCALE: 1/2" = 1'-0"




C POND W-3 OUTLET BASIN SECTION
SCALE: 1/2" = 1'-0"

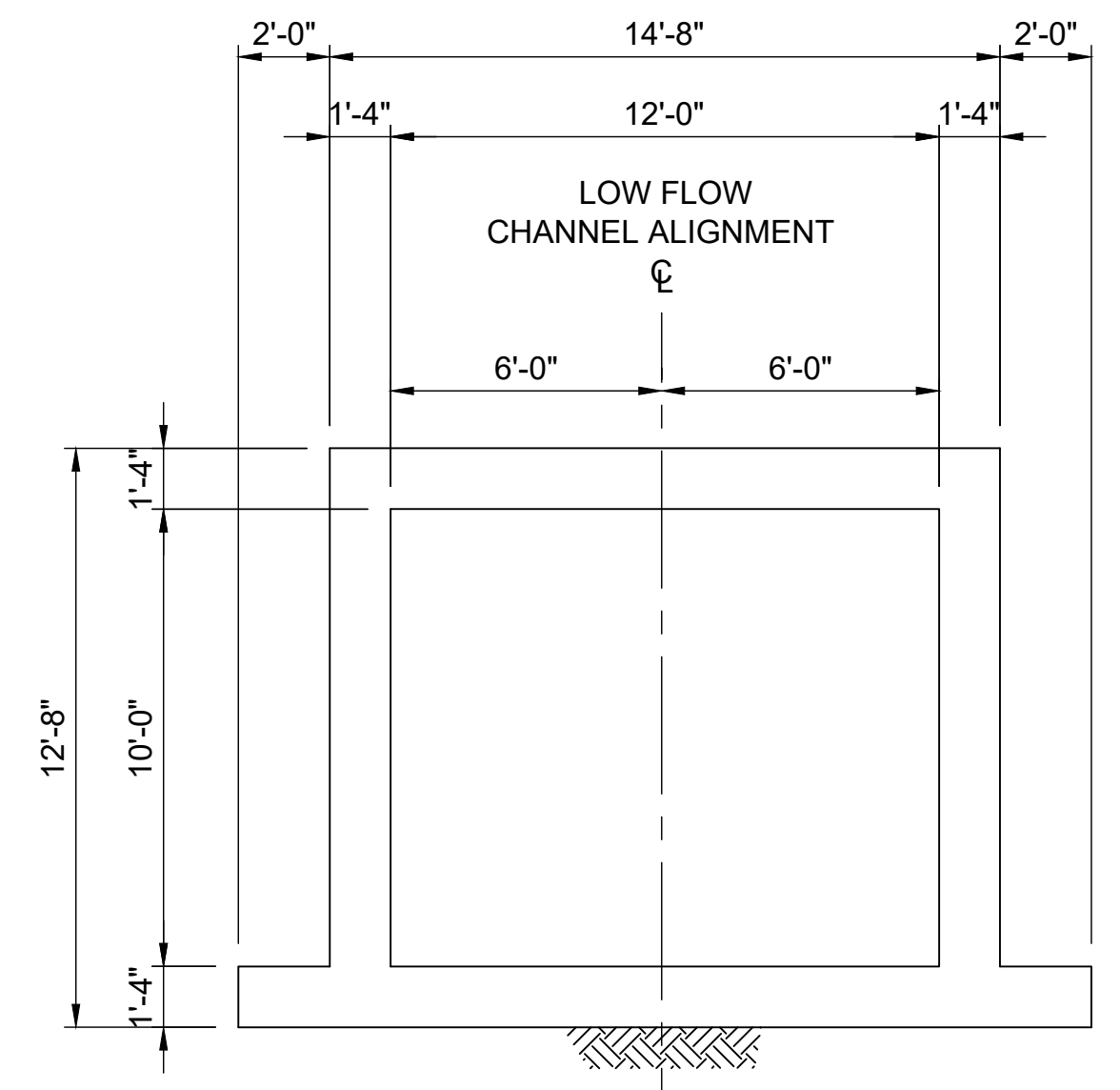
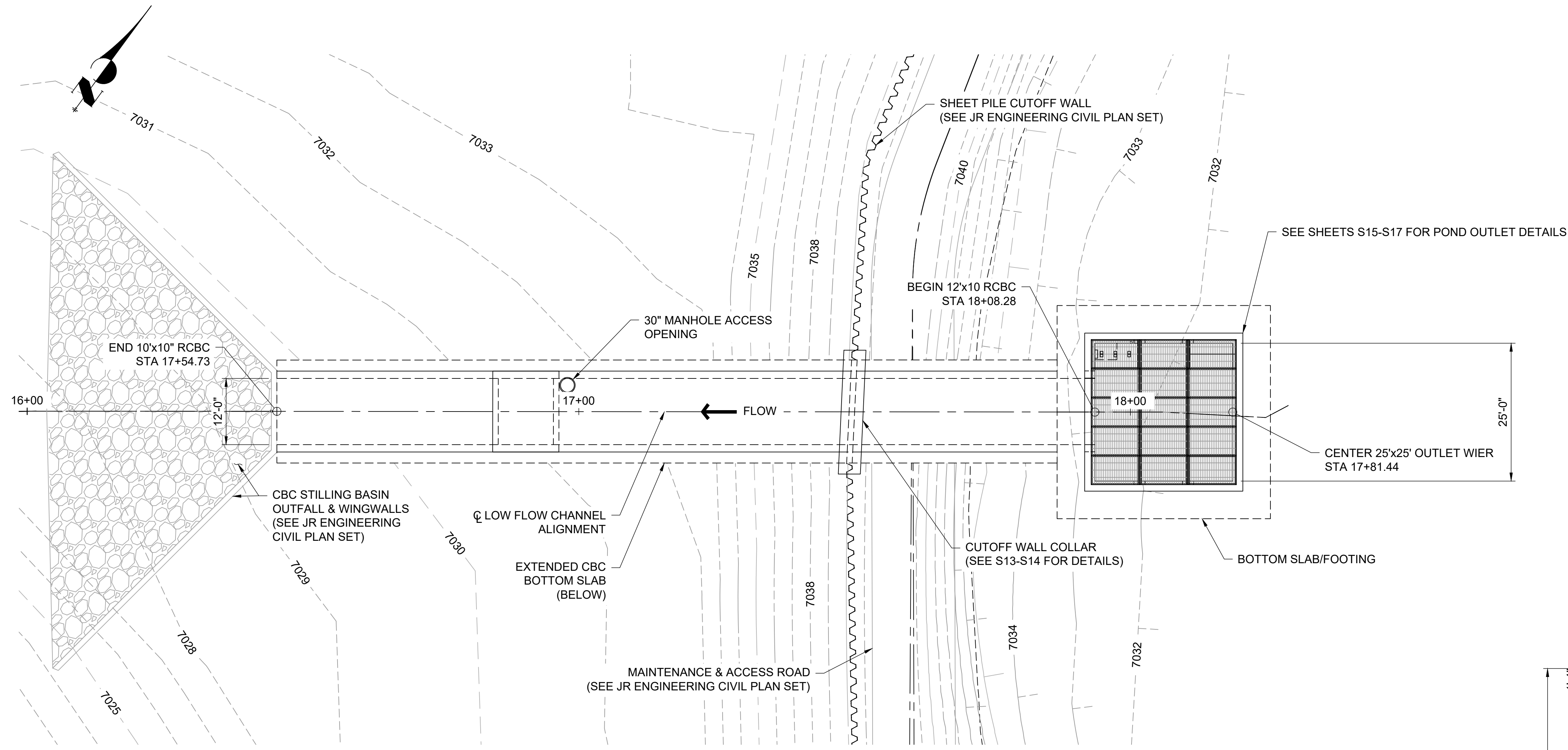
STRUCTURAL ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
07/25/2023

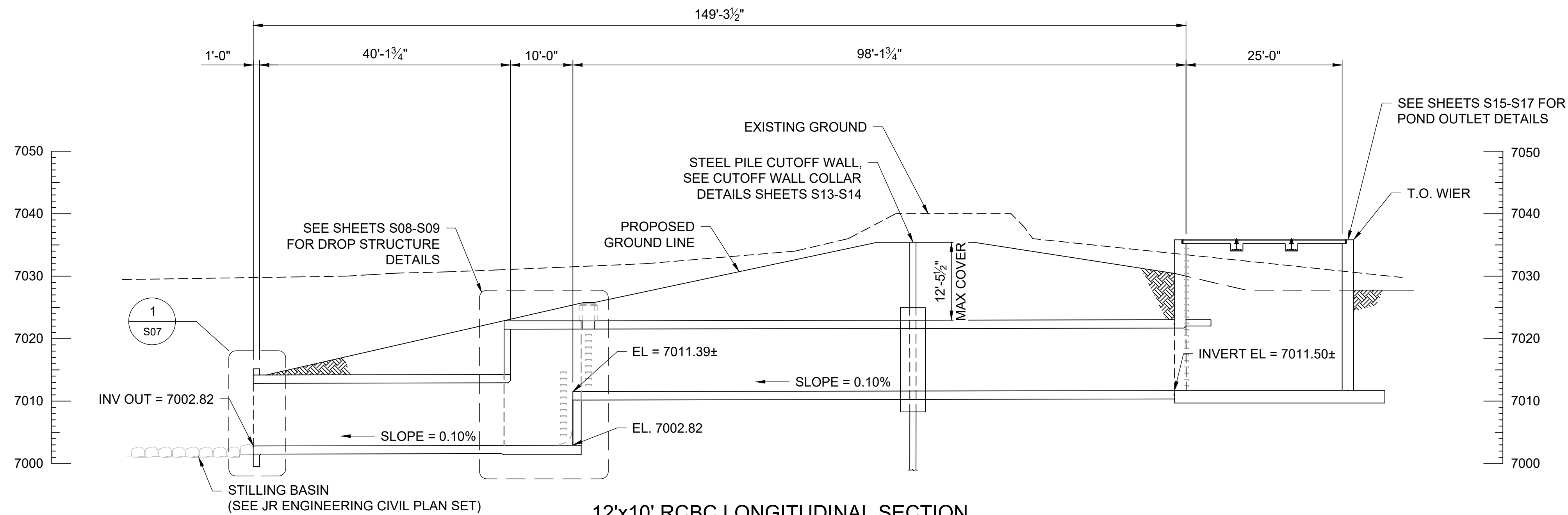
JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, L.L.C. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR	SR LAND, LLC 20 BOULDER CRESCENT ST. COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 419-3024
 San Engineering LLC Civil and Structural Engineering 1150 W. Littleton Blvd. #200 Littleton, CO 80120 303.953.9014 www.sanengineeringllc.com	
BY	DATE
REVISION	No.
AS NOTED	AS NOTED
H-SCALE	V-SCALE
DATE	DESIGNED BY
7/26/2023	KSP
DRAWN BY	CHECKED BY
JUN	JUN
SAND CREEK RESTORATION STERLING RANCH	
STOCK POND W-3 OUTLET BASIN STRUCTURAL DETAILS	
SHEET	S05 OF 25
JOB NO.	25188.04



PLAN VIEW 12'x10' RCBC
STOCK POND #1 OUTLET STRUCTURE

12'x10' TYPICAL SECTION
STOCK POND #1 OUTLET STRUCTURE



12'x10' RCBC LONGITUDINAL SECTION
STOCK POND #1 OUTLET STRUCTURE

F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THESE DRAWINGS FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering
1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014
www.sanengineeringllc.com

NO.	REVISION	DATE	BY

H-SCALE	AS NOTED	NO.	REVISION
V-SCALE <td>AS NOTED</td> <td> </td> <td> </td>	AS NOTED		
DATE	7/26/2023	DESIGNED BY	KSP
DRAWN BY	JJM	CHECKED BY	JJM

STRUCTURAL ENGINEER'S STATEMENT

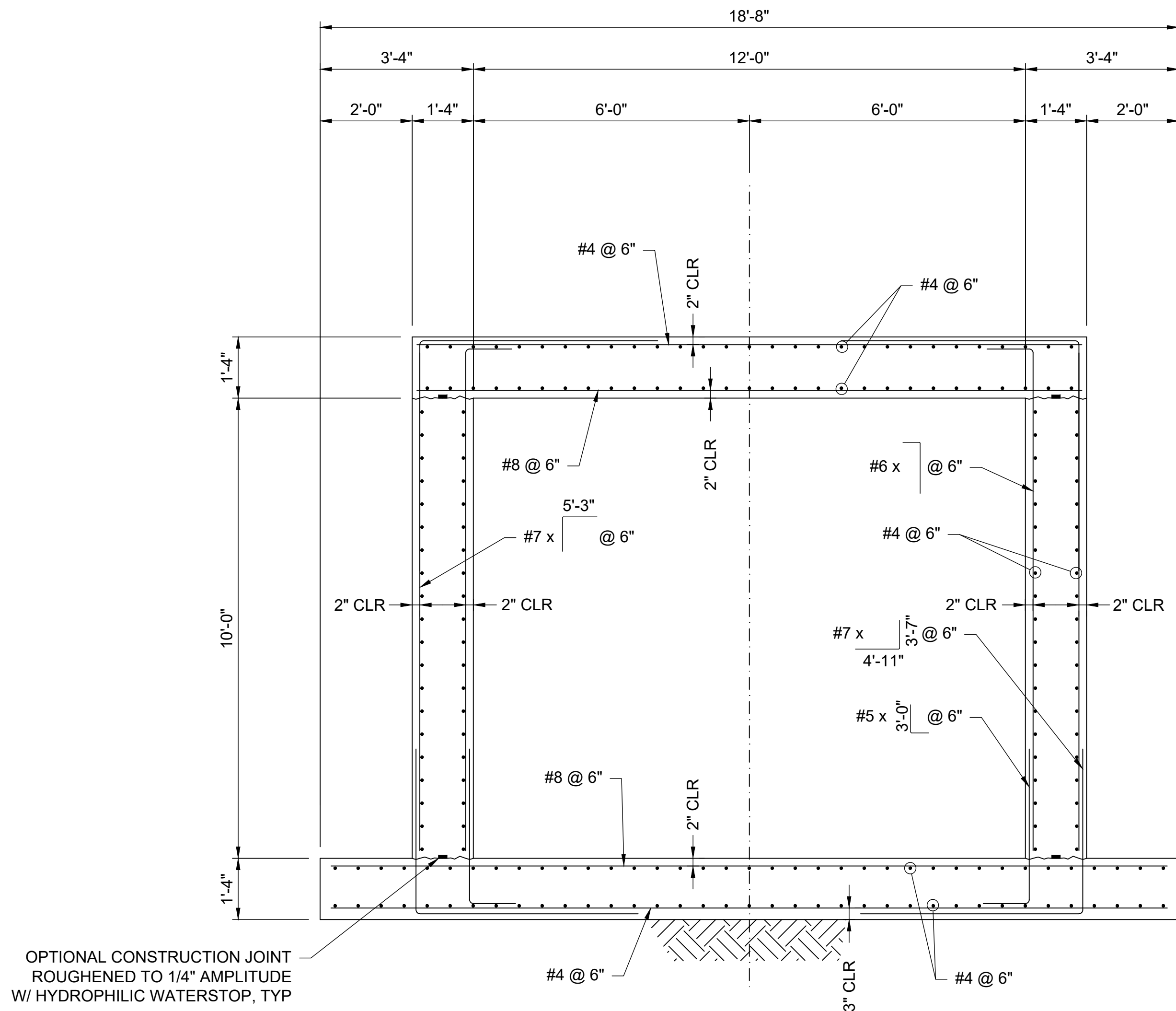
PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
DATE: 07/25/2023
PROFESSIONAL ENGINEER

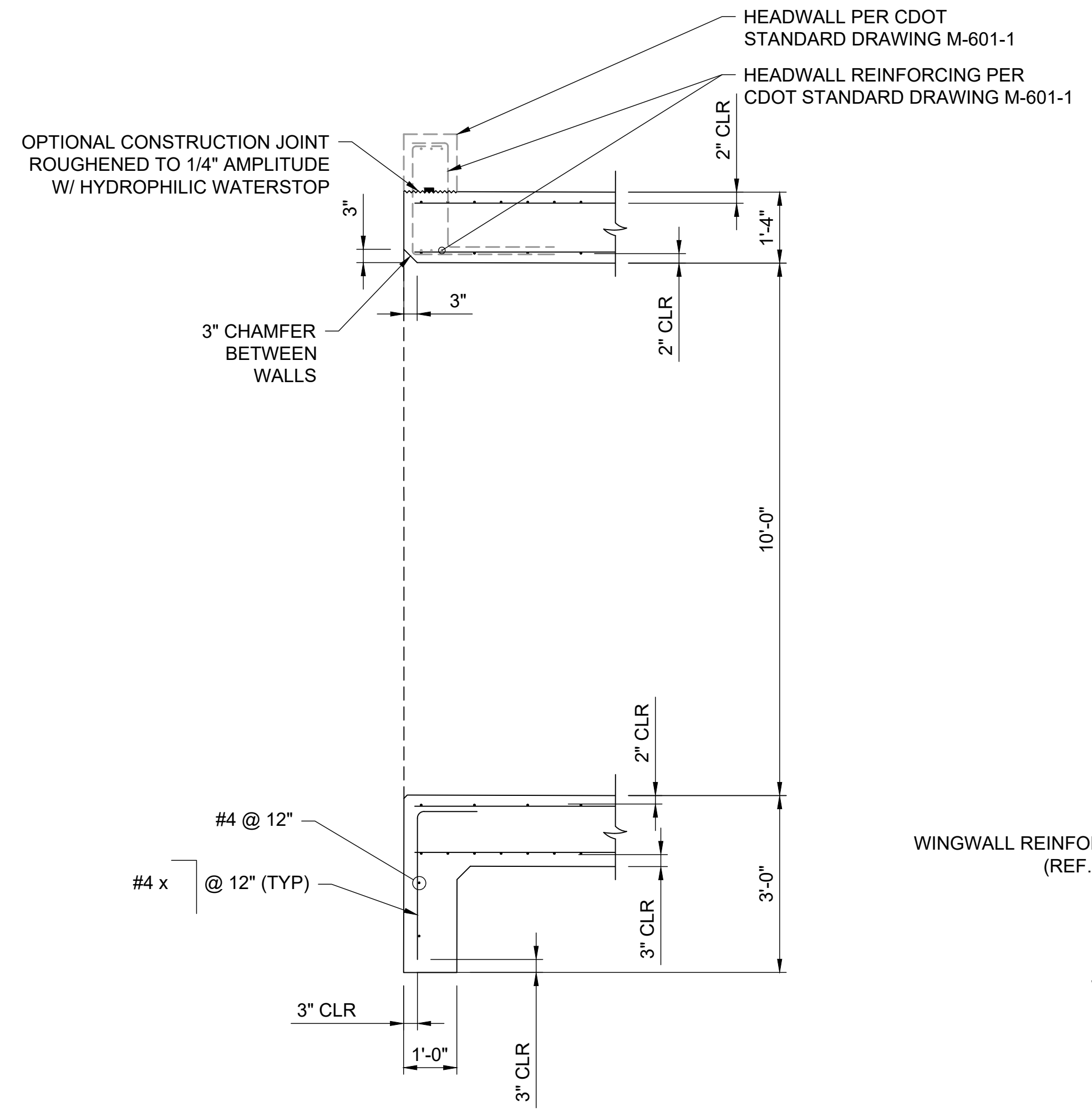
JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, LLC. DATE



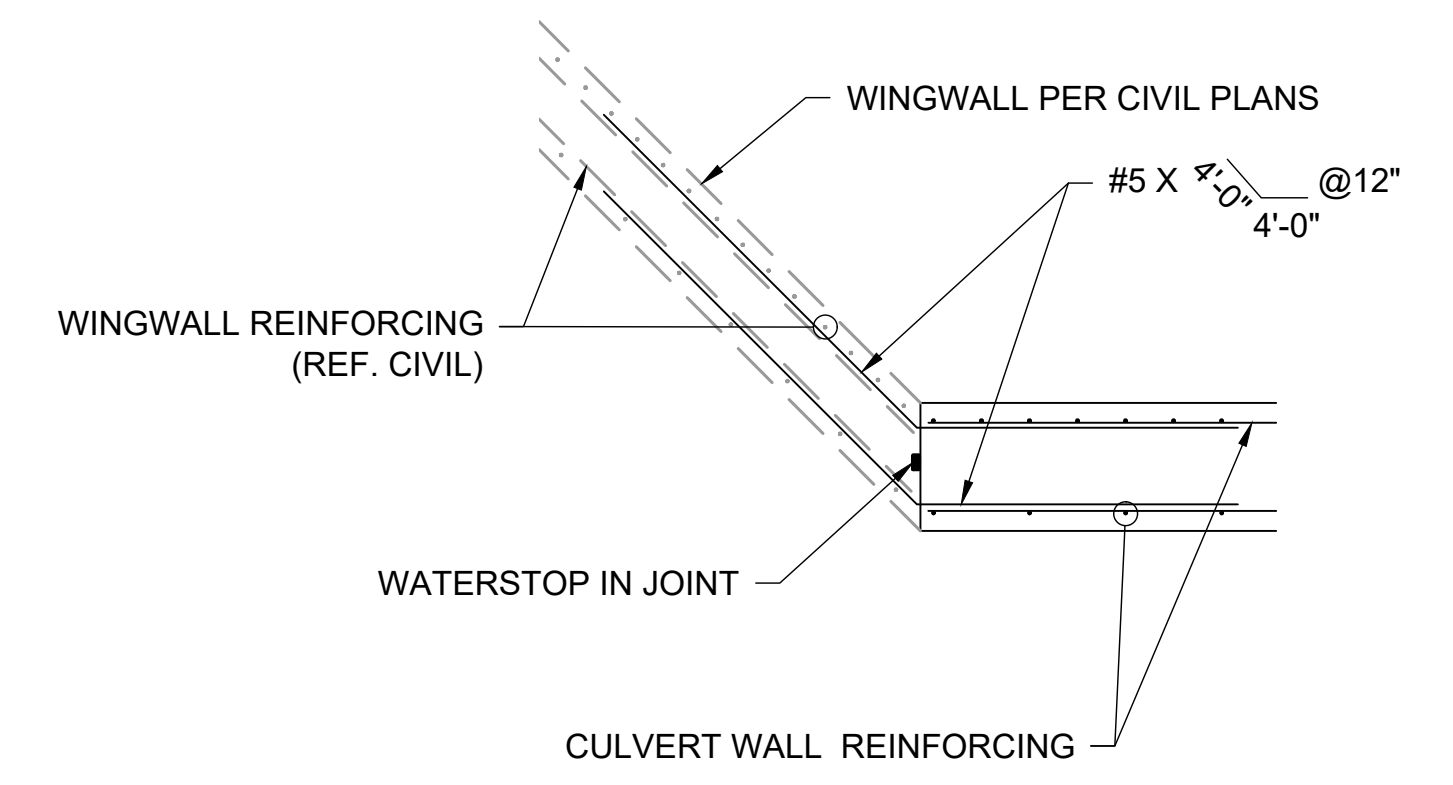
A 12'x10' REINFORCING SECTION
STOCK POND #1 OUTLET STRUCTURE



1 INLET/ OUTLET REINFORCING SECTION



2 CULVERT TO WINGWALL CONNECTION



UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THESE DRAWINGS FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering

1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014 www.sanengineeringllc.com

BY	DATE	REVISION	NO.

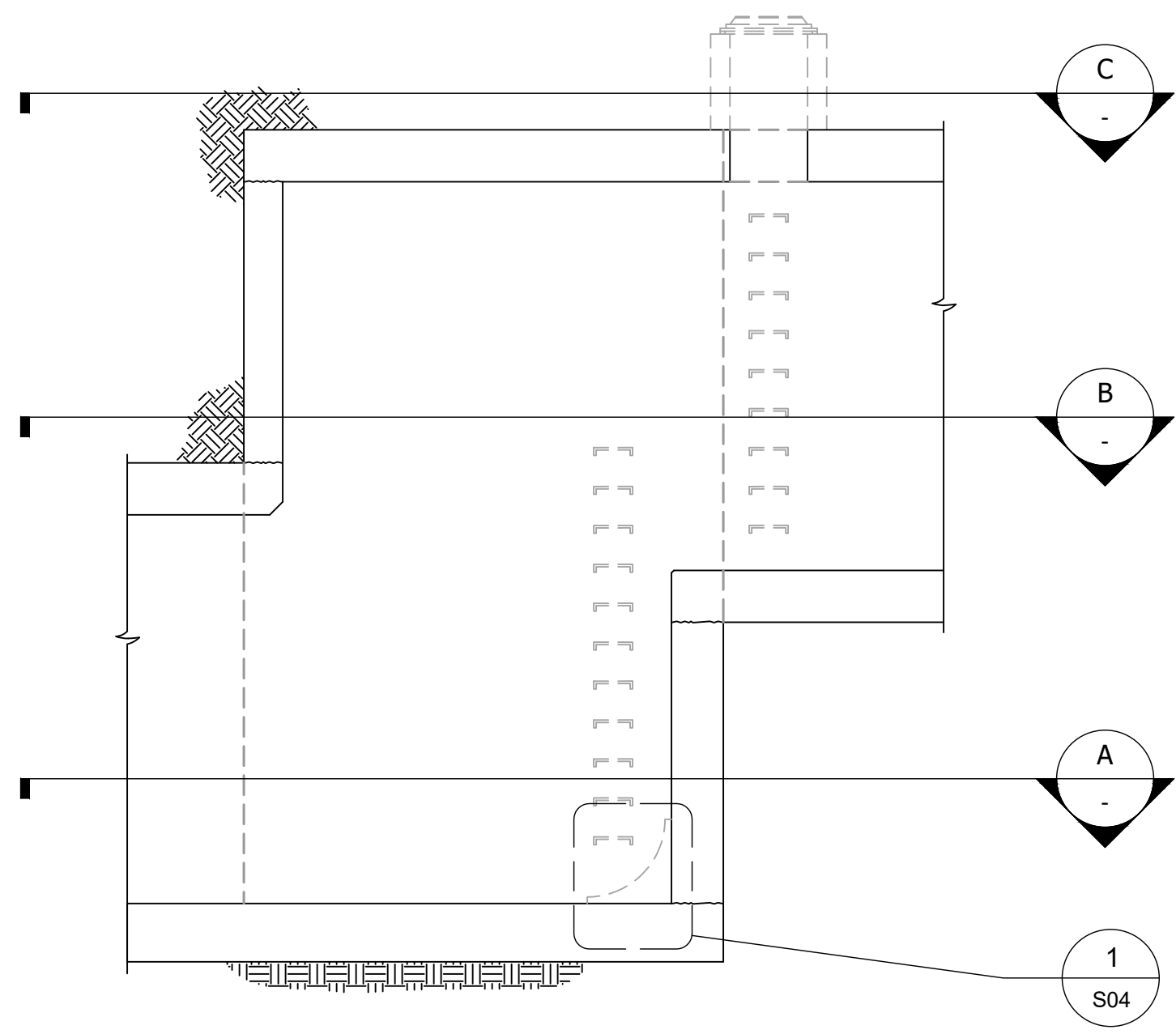
H-SCALE	AS NOTED	V-SCALE	AS NOTED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				7/26/2023	KSP	JJM	JJM

STRUCTURAL ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
07/25/2023
PROFESSIONAL ENGINEER

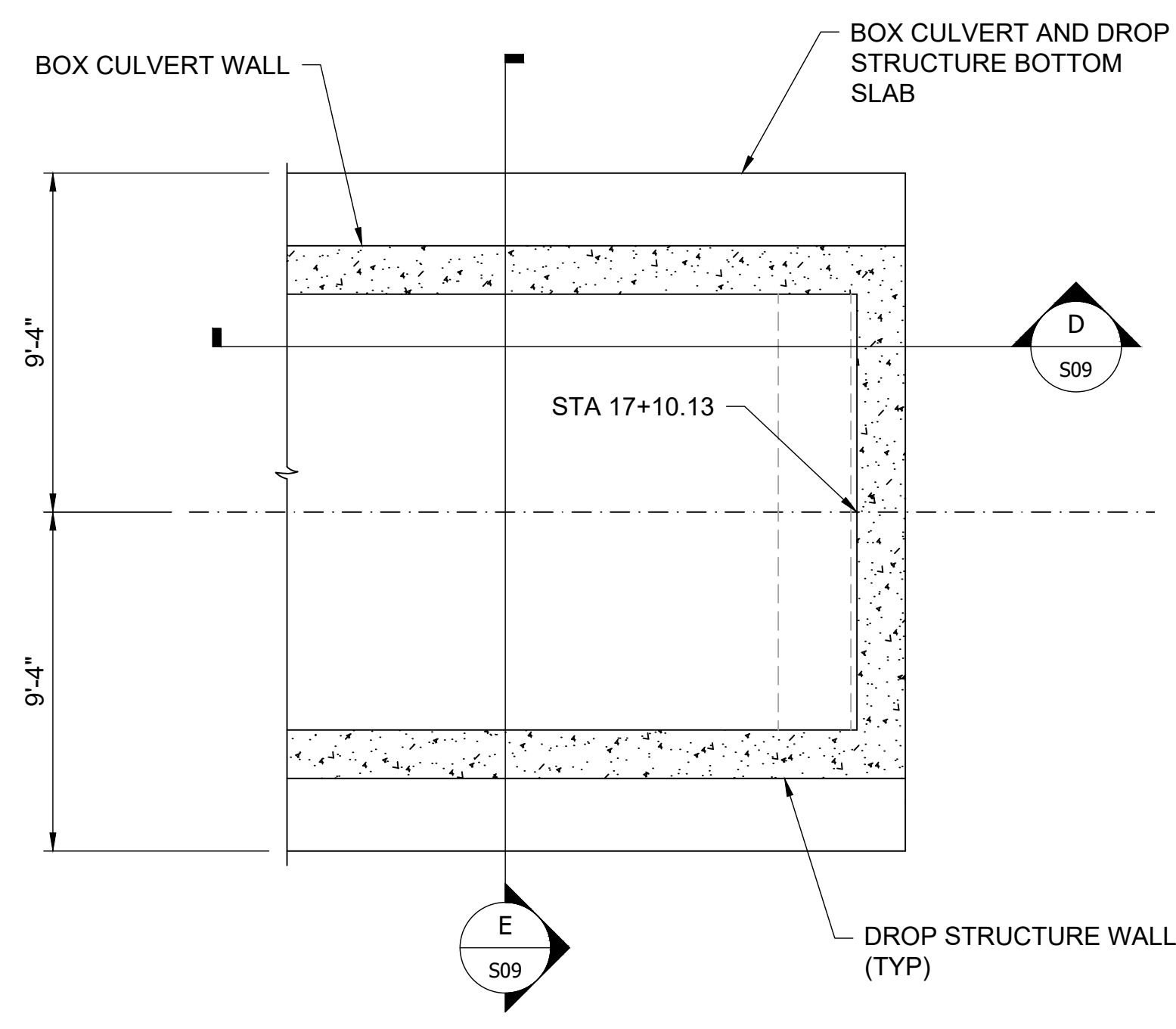
JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, LLC.

DATE

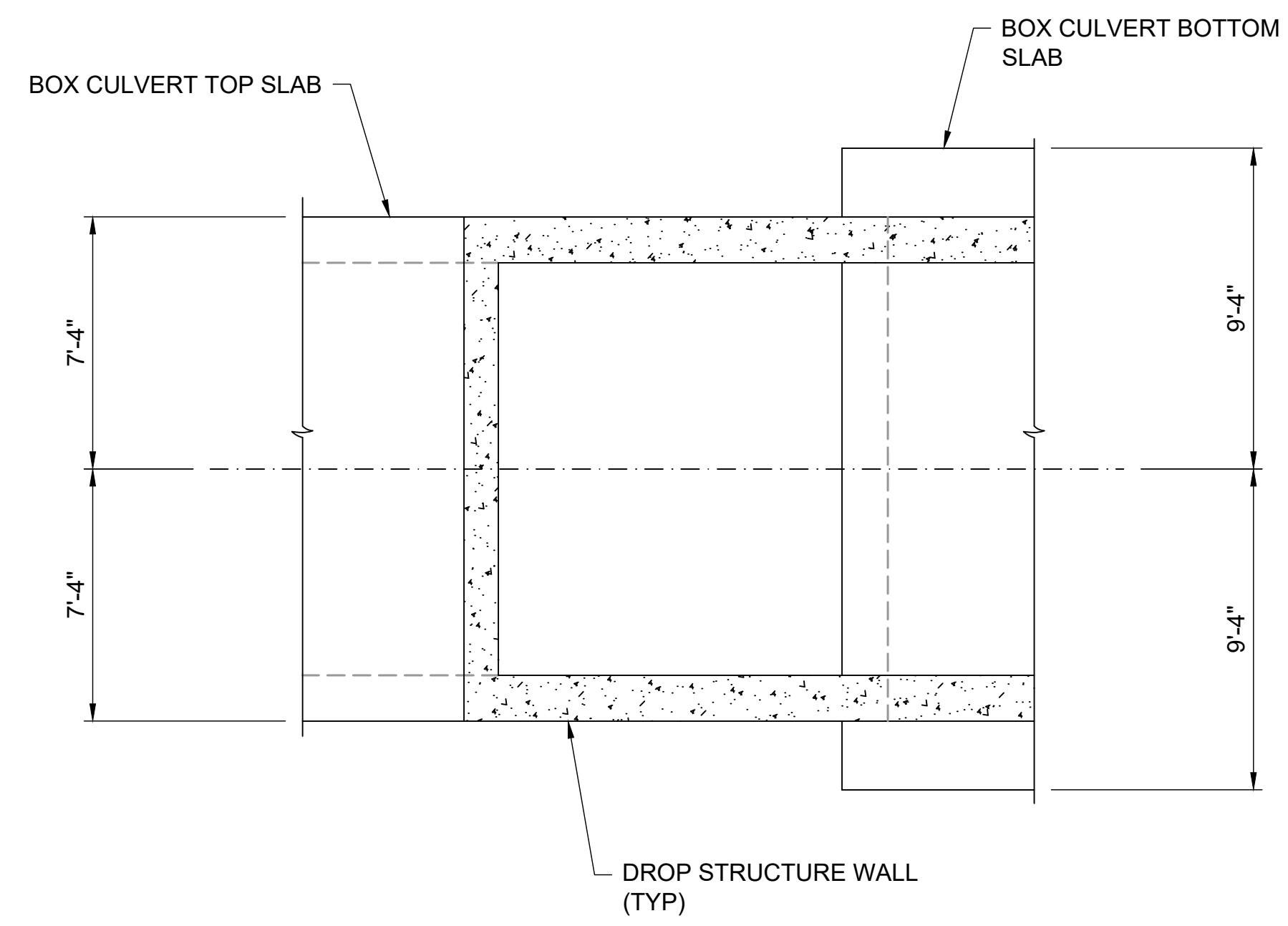


NOTES:
 1. SEE 3/S10 FOR BACKFILL REQUIREMENTS AT DROP STRUCTURE.
 2. SEE 2/S10 FOR OPTIONAL CONSTRUCTION JOINT REQUIREMENTS.

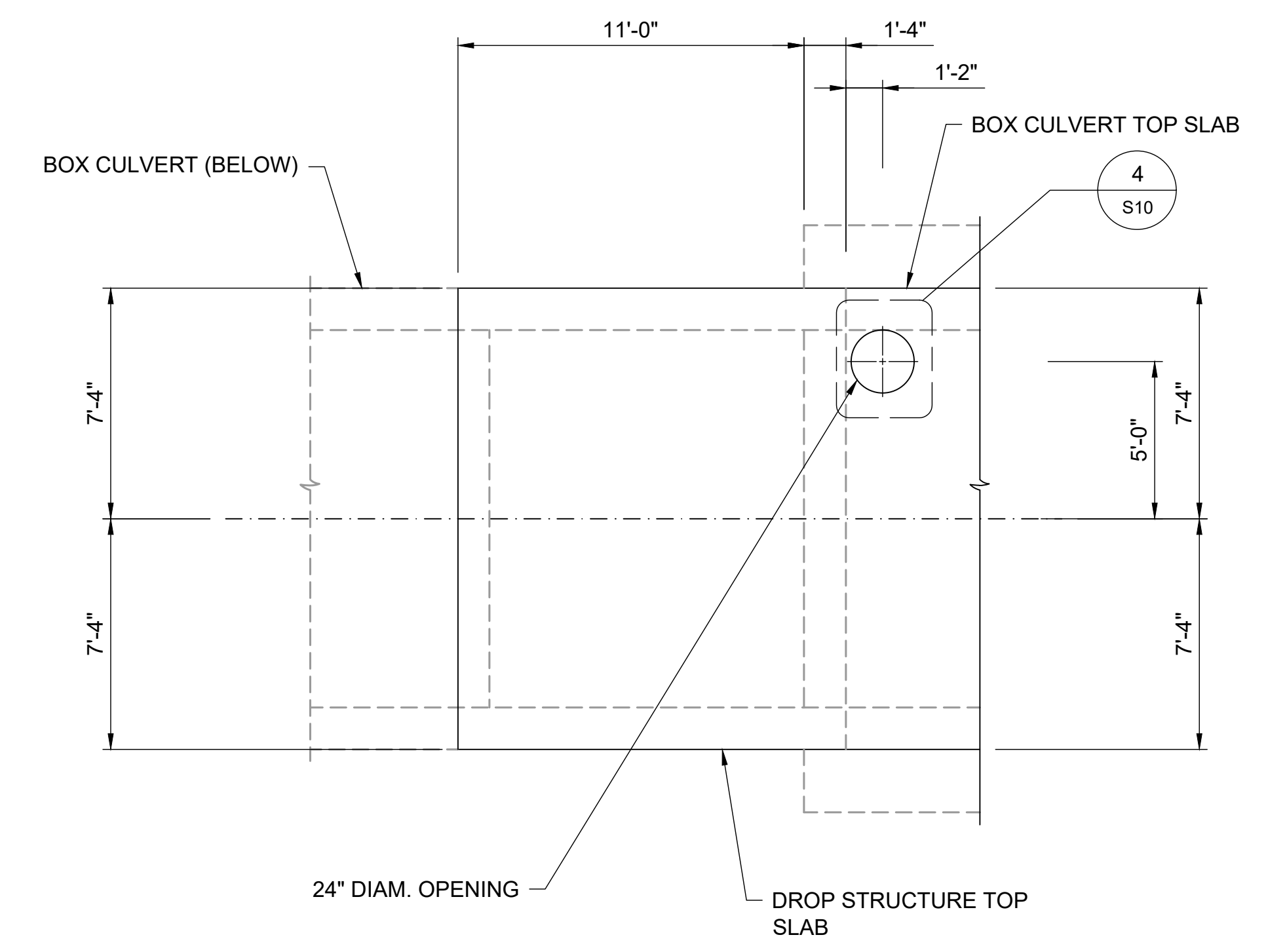
1 12'x10' RCBC DROP STRUCTURE SECTION
 SCALE: 1/4" = 1'-0"



A 12'x10' RCBC DROP STRUCTURE PLAN (BOTTOM)
 SCALE: 1/4" = 1'-0"



B 12'x10' RCBC DROP STRUCTURE PLAN (MIDDLE)
 SCALE: 1/4" = 1'-0"



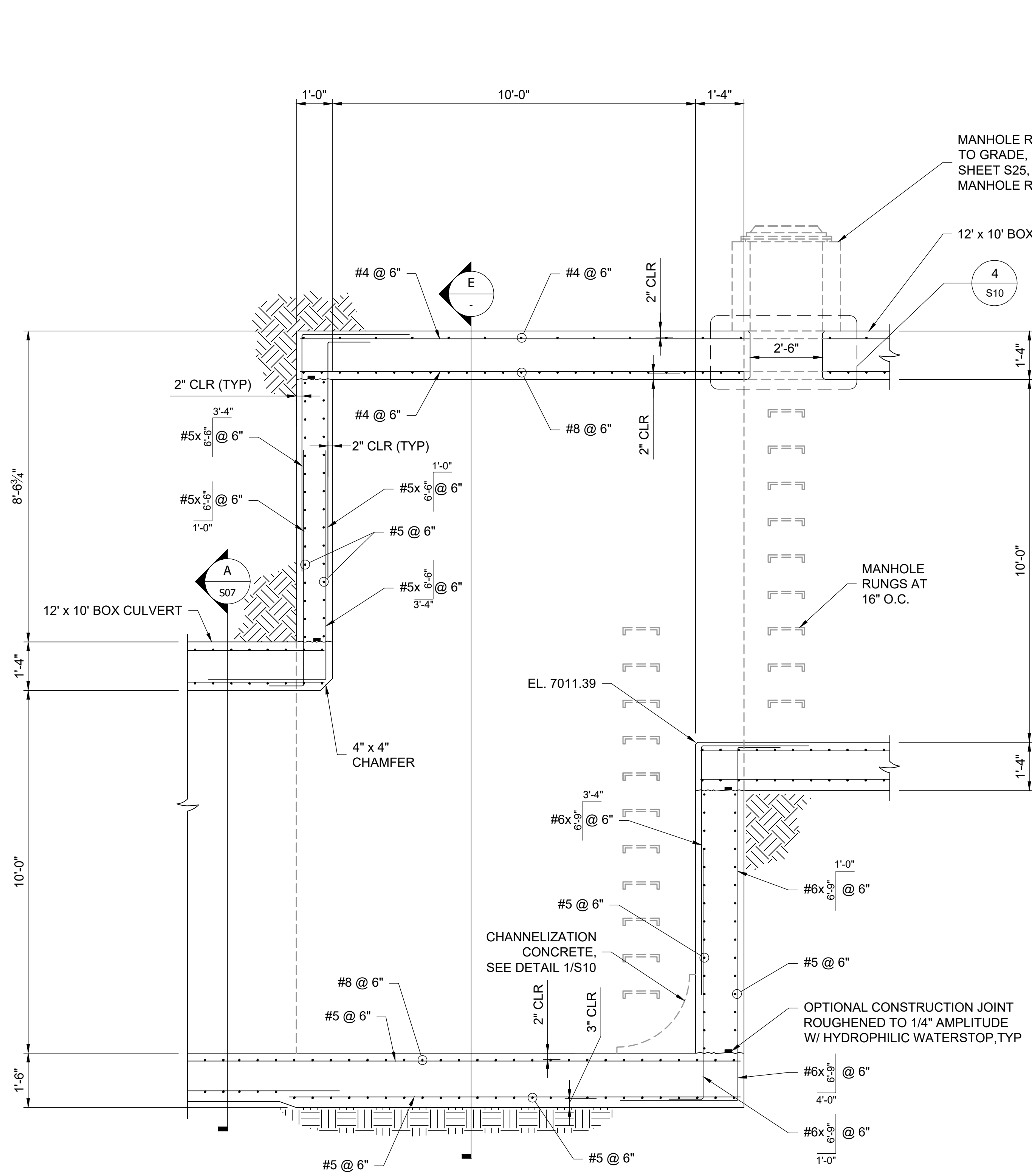
C 12'x10' RCBC DROP STRUCTURE PLAN (TOP)
 SCALE: 1/4" = 1'-0"

F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural Details

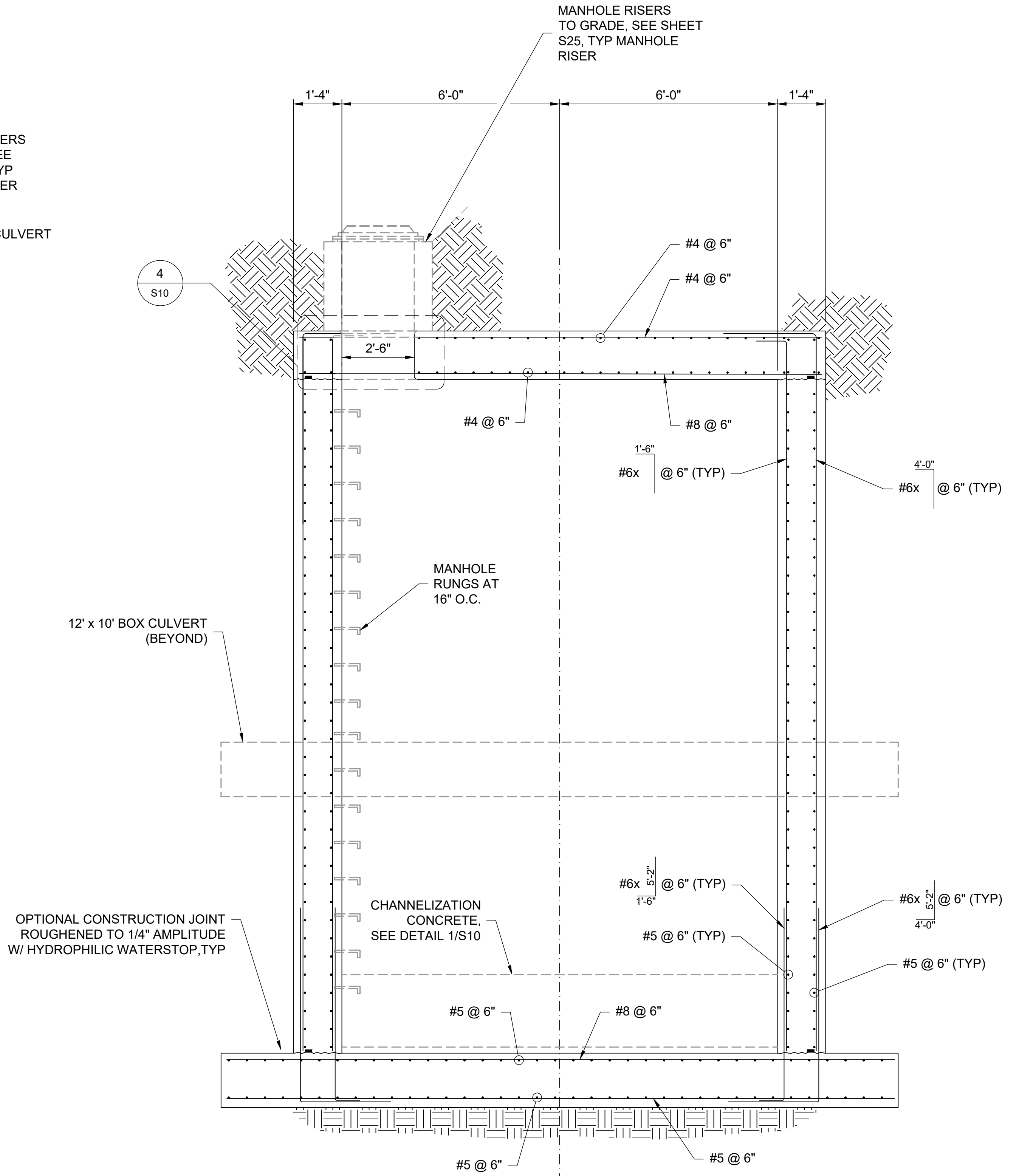


STRUCTURAL ENGINEER'S STATEMENT
 PREPARED UNDER MY DIRECT SUPERVISION
 [Signature]
 07/25/2023
 JOHN MIGLIACCIO, P.E.
 COLORADO NO. 34333
 FOR AND ON BEHALF OF SAN ENGINEERING, LLC. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THESE DRAWINGS FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR	SR LAND, LLC 20 BOULDER CRESCENT ST. COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 419-3024
San Engineering LLC Civil and Structural Engineering	1150 W. Littleton Blvd. #200 Littleton, CO 80120 303.953.9014 www.sanengineeringllc.com
H-SCALE	AS NOTED
V-SCALE	AS NOTED
DATE	7/26/2023
DESIGNED BY	KSP
DRAWN BY	JJM
CHECKED BY	JJM
REVISION	
BY	DATE
SAND CREEK RESTORATION STERLING RANCH STOCK POND 1 OUTLET 12'x10' RCBC DROP STRUCTURE PLANS	
SHEET	S08 OF 25
JOB NO.	25188.04



D 12'x10' RCBC DROP STRUCTURE REINFORCING SECTION
SCALE: 1/2" = 1'-0"

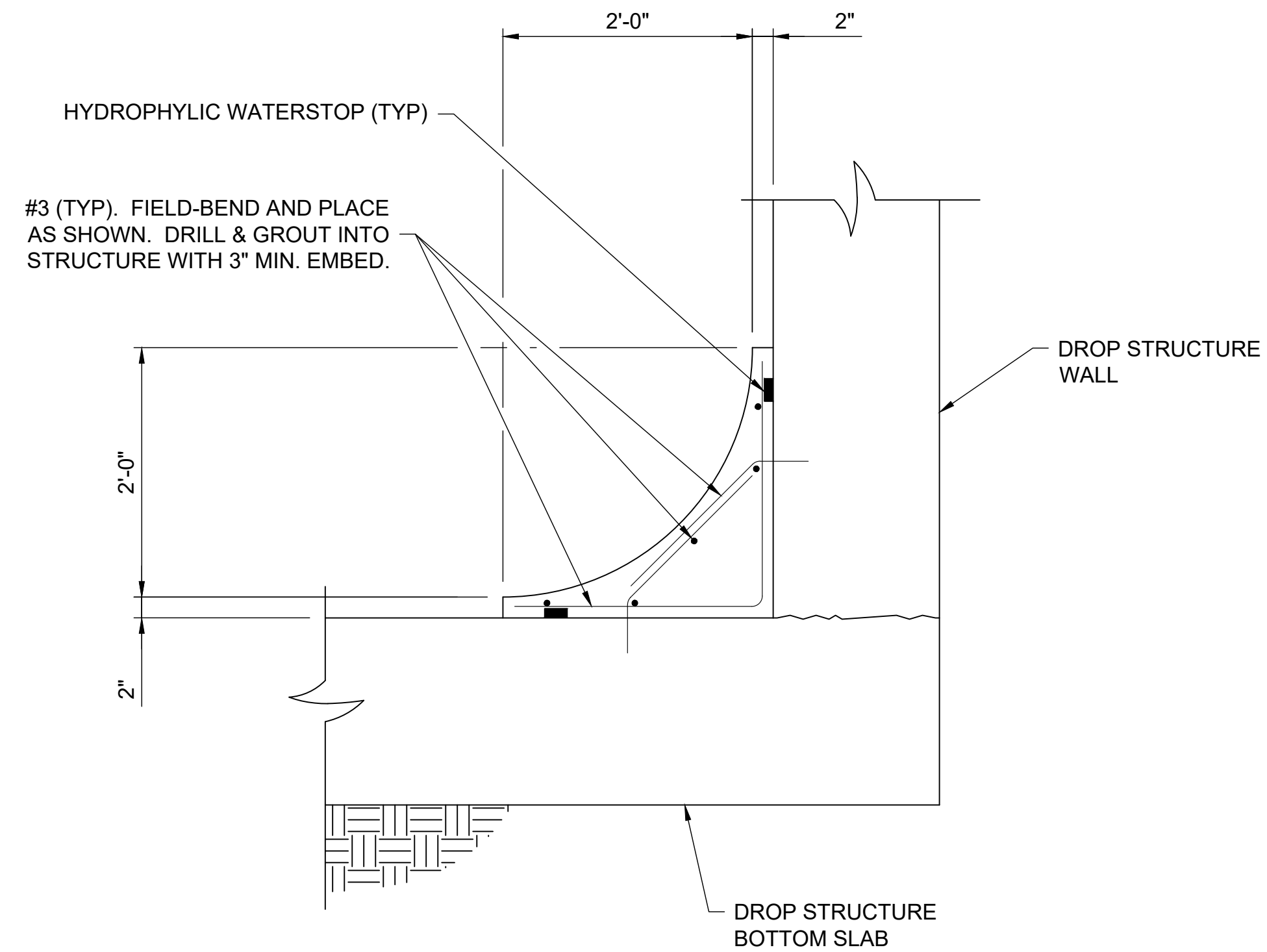


E 12'x10' RCBC DROP STRUCTURE REINFORCING SECTION
SCALE: 1/2" = 1'-0"

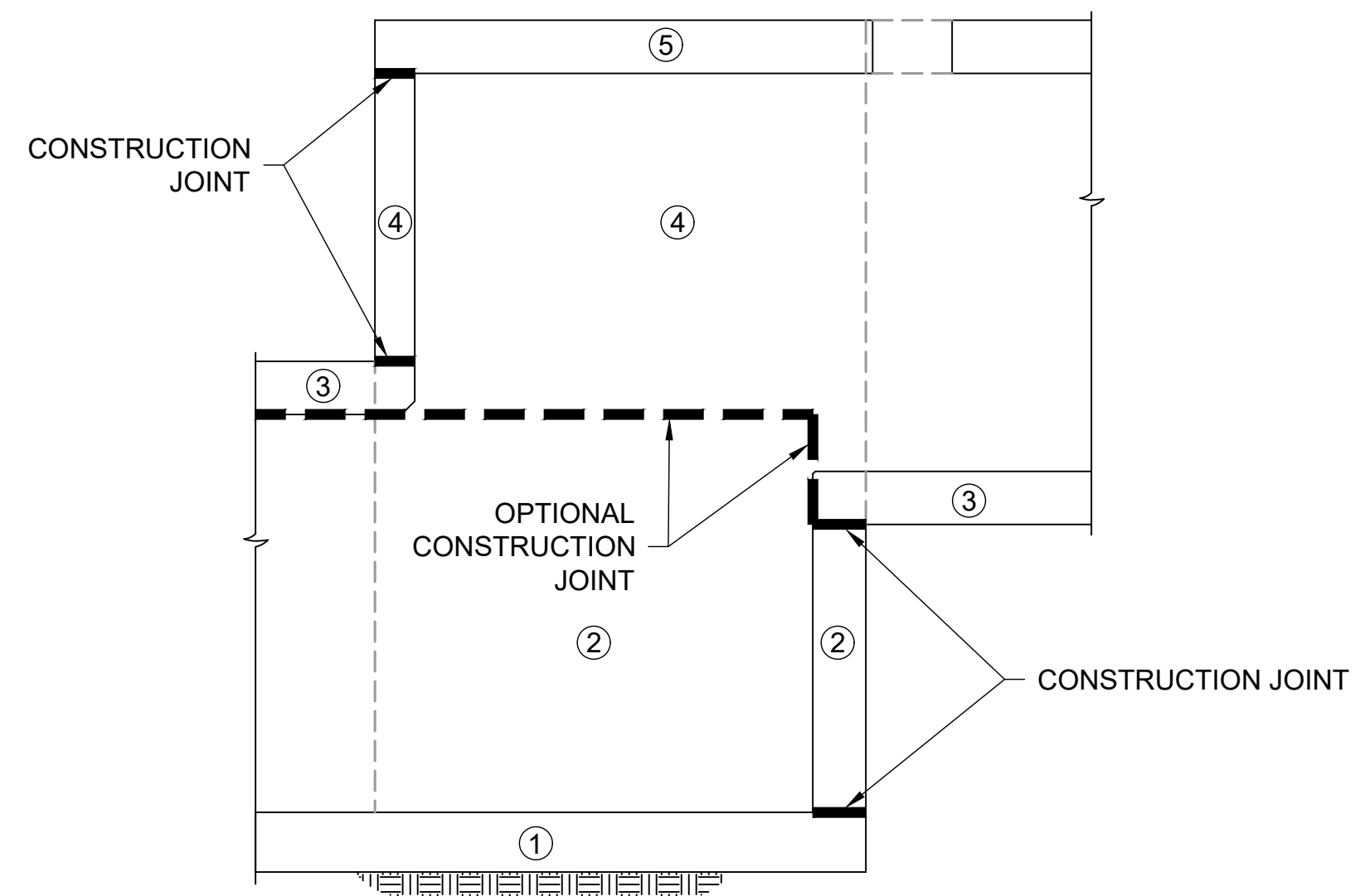
STRUCTURAL ENGINEER'S STATEMENT
 PREPARED UNDER MY DIRECT SUPERVISION

 JOHN MIGLIACCIO, P.E.
 COLORADO NO. 34333
 FOR AND ON BEHALF OF SAN ENGINEERING, LLC. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR SR LAND, LLC 20 BOULDER CRESCENT ST. COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 419-3024	San Engineering LLC Civil and Structural Engineering 1150 W. Littleton Blvd. #200 Littleton, CO 80120 303.953.9014 www.sanengineeringllc.com
SAND CREEK RESTORATION STERLING RANCH STOCK POND 1 OUTLET 12'x10' RCBC DROP STRUCTURE REINFORCING SECTIONS	SHEET S09 OF 25 JOB NO. 25188.04
H-SCALE AS NOTED V-SCALE AS NOTED DATE 7/26/2023 DESIGNED BY KSP DRAWN BY JUM CHECKED BY JUM	BY DATE REVISION No. AS NOTED AS NOTED

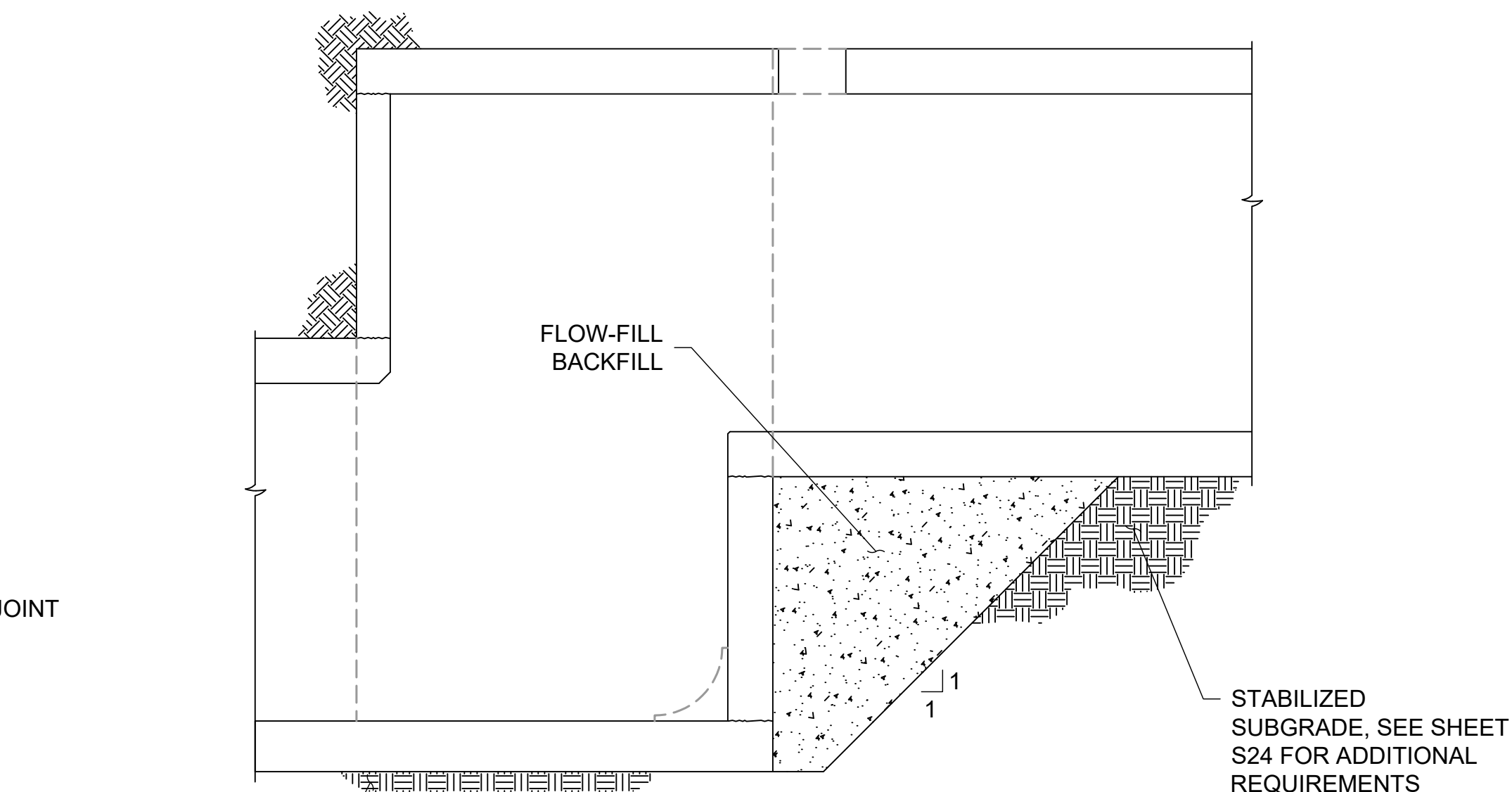


1 CHANNELIZATION CONCRETE DETAIL



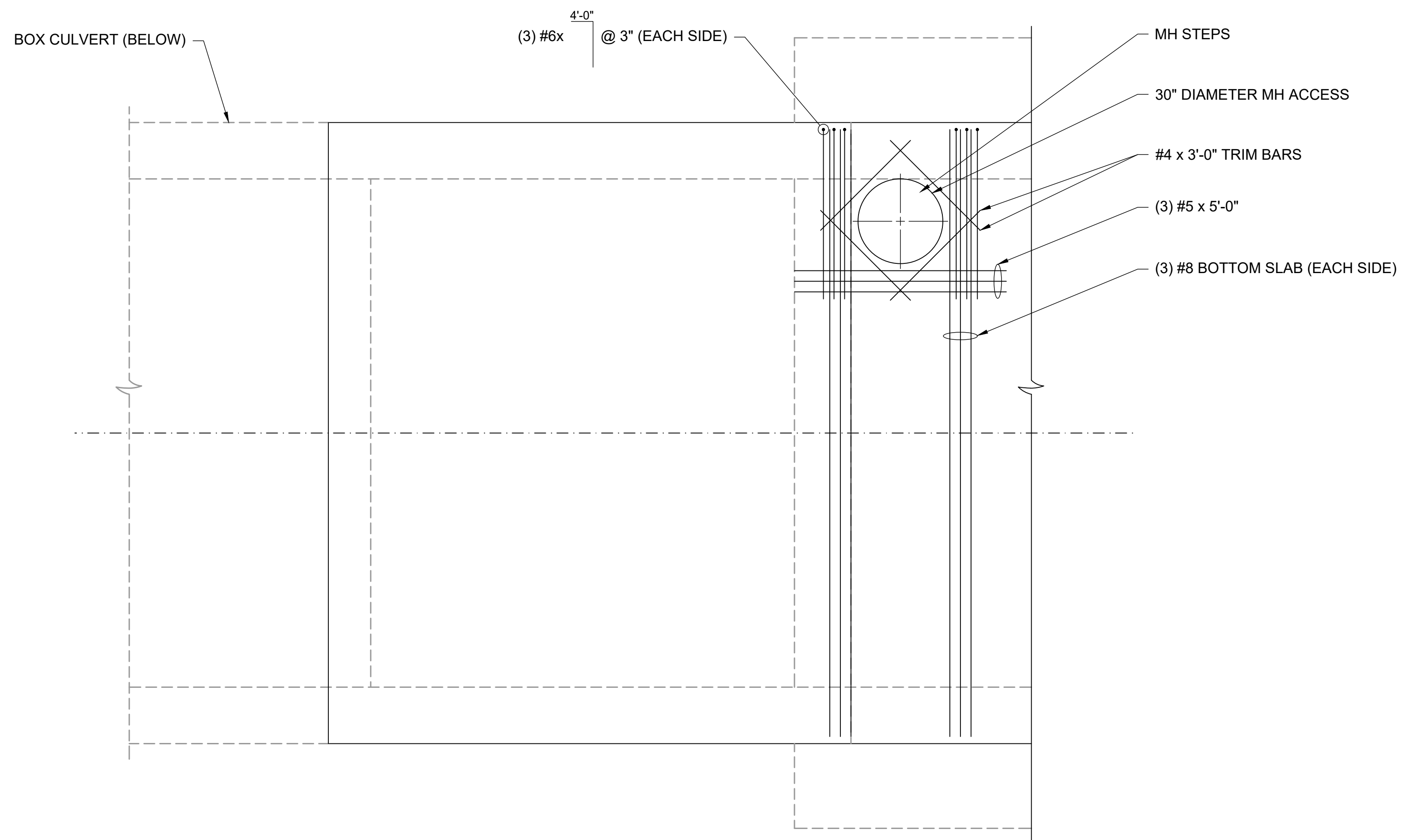
SEQUENCE OF SLAB AND WALL CONSTRUCTION
PHASING AND CONSTRUCTION JOINT LOCATIONS ARE SUGGESTED. ACTUAL CONSTRUCTION PHASING AND MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

2 OPTIONAL CONSTRUCTION JOINT DIAGRAM



STABILIZED SUBGRADE, SEE SHEET S24 FOR ADDITIONAL REQUIREMENTS
WALLS SHALL BE ADEQUATELY BRACED FOR TEMPORARY HYDROSTATIC PRESSURES FROM FLOW-FILL BACKFILL.
CONTRACTOR MAY PROPOSE AN ALTERNATE METHOD OF BACKFILL OR TEMPORARY EXCAVATION SUPPORT. ANY METHOD SHALL ELIMINATE THE POTENTIAL FOR SETTLEMENT OF UPPER BOX CULVERT.

3 BACKFILL REQUIREMENTS AT STEP



4 12'x10' RCBC ADDITIONAL REINFORCING AT MANHOLE OPENING
SCALE: 1/2" = 1'-0"



STRUCTURAL ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
DATE 07/25/2023

JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, L.L.C. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

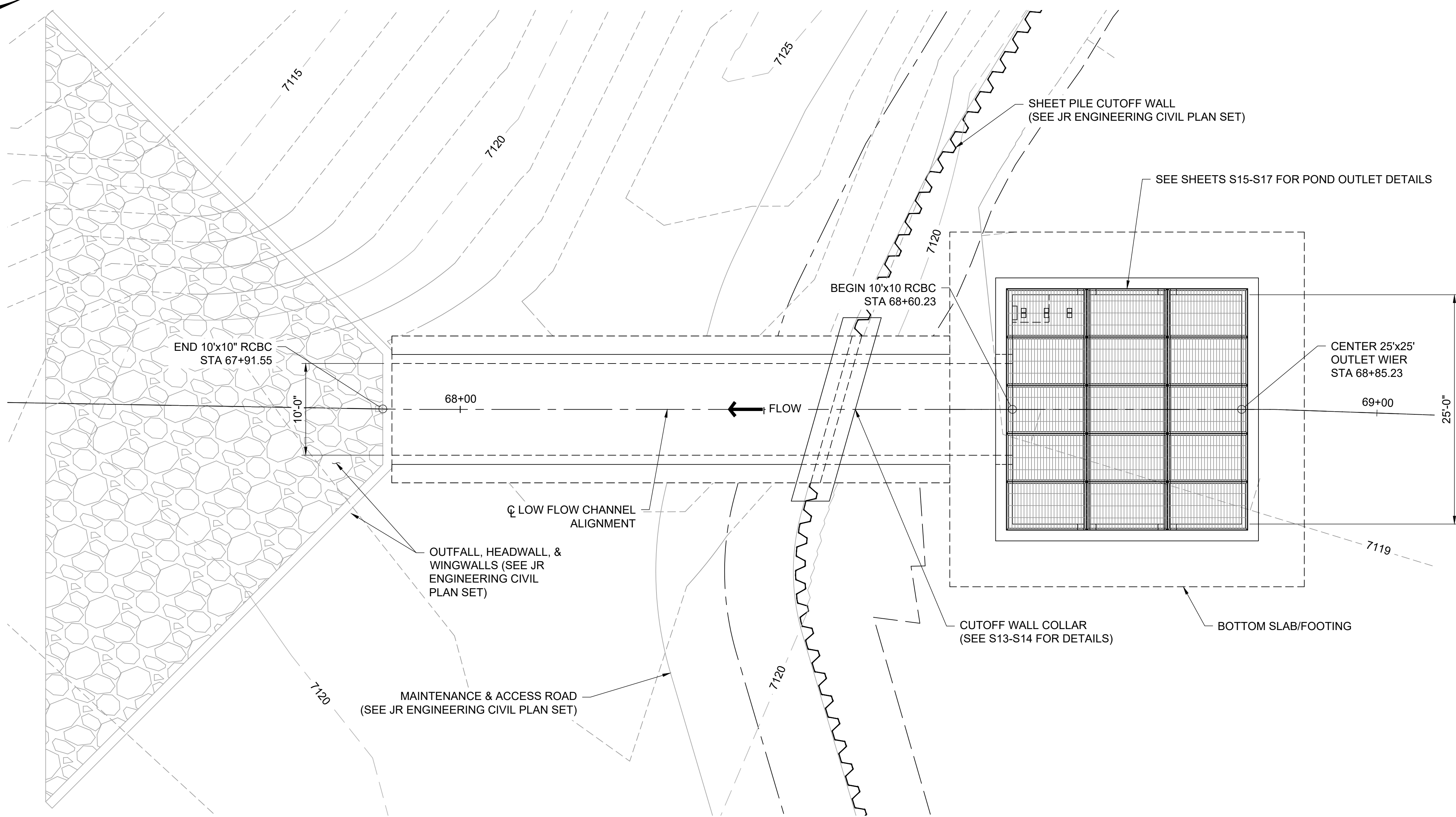
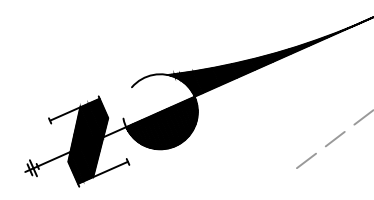
PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering
1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014
www.sanengineeringllc.com

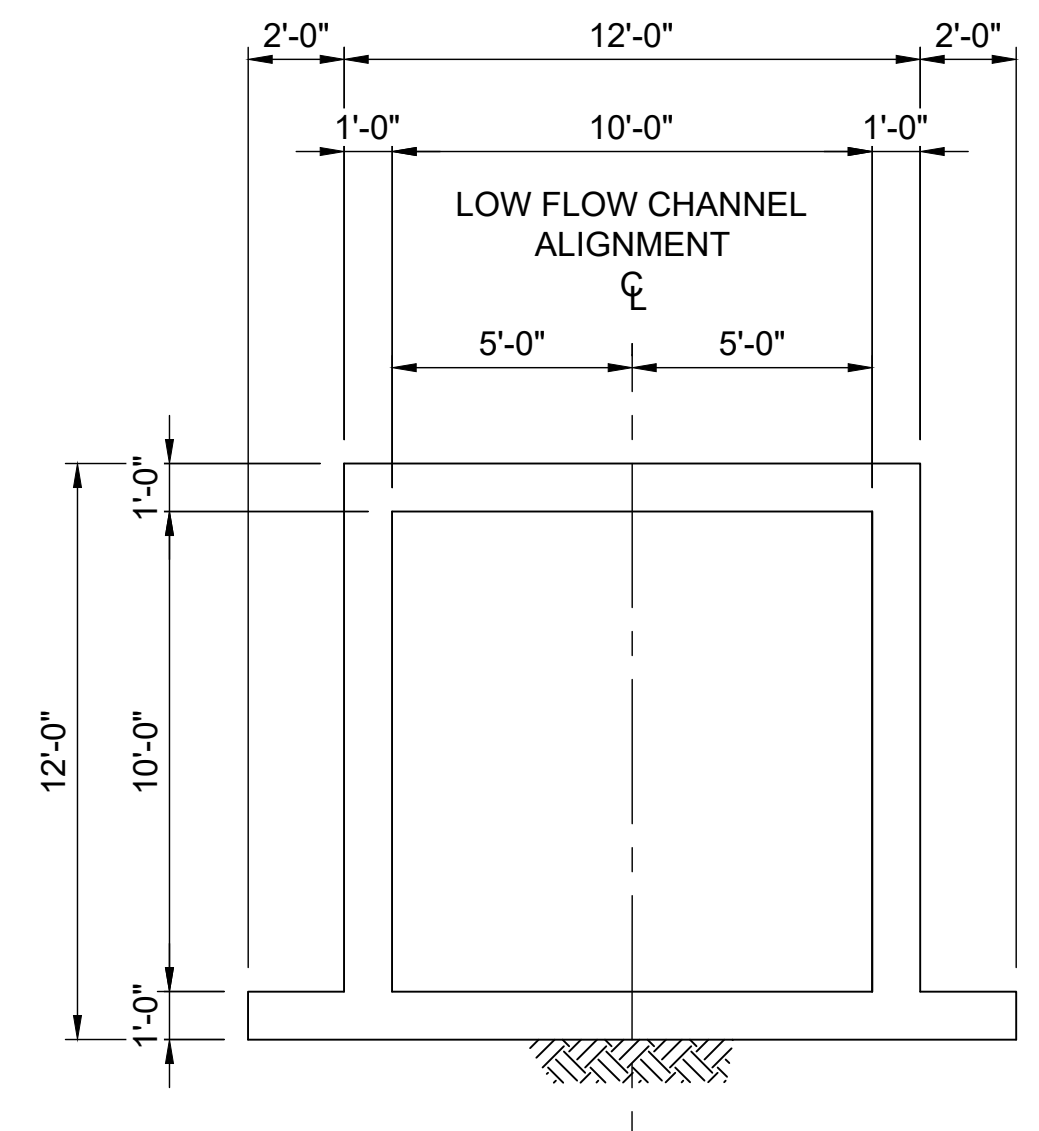
BY	DATE	REVISION

SAND CREEK RESTORATION
STERLING RANCH
STOCK POND 1 OUTLET
12'x10' RCBC DROP STRUCTURE
MISCELLANEOUS DETAILS

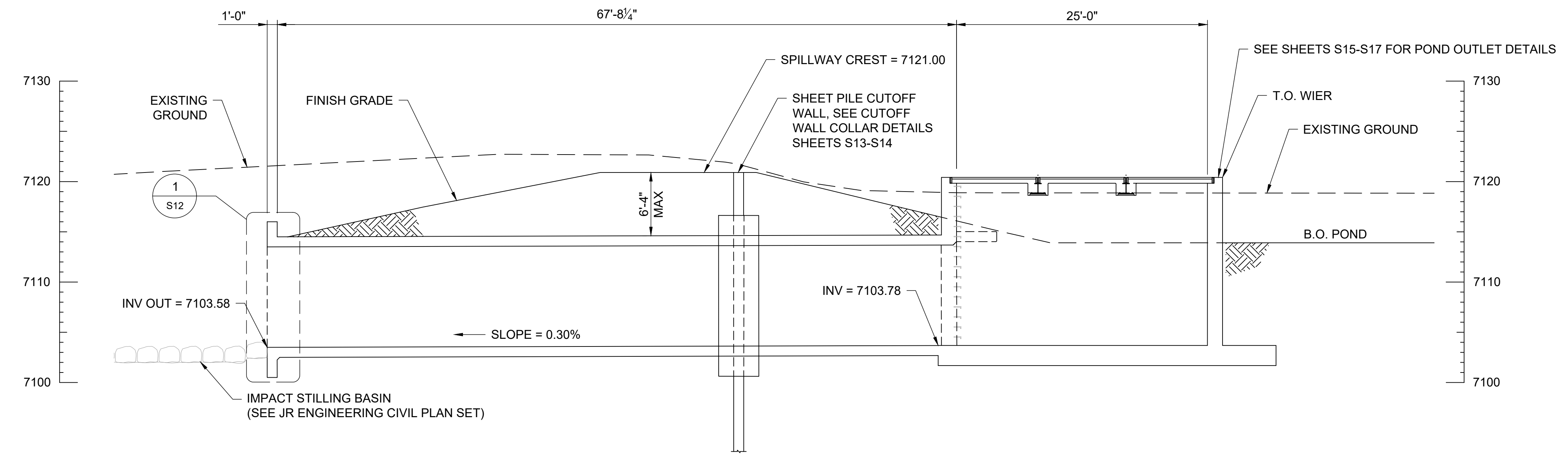
SHEET S10 OF 25
JOB NO. 25188.04



PLAN VIEW 10'x10' RCBC
STOCK POND #2 OUTLET STRUCTURE



10'x10' TYPICAL SECTION
STOCK POND #2 OUTLET STRUCTURE



10'x10' RCBC LONGITUDINAL SECTION
STOCK POND #2 OUTLET STRUCTURE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering
1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014
www.sanengineeringllc.com

BY	DATE	REVISION

H-SCALE	AS NOTED	V-SCALE	AS NOTED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				7/26/2023	KSP	JJM	JJM

SAND CREEK RESTORATION
STERLING RANCH
STOCK POND 2 OUTLET
10'x10' RCBC GENERAL LAYOUT

SHEET S11 OF 25
JOB NO. 25188.04

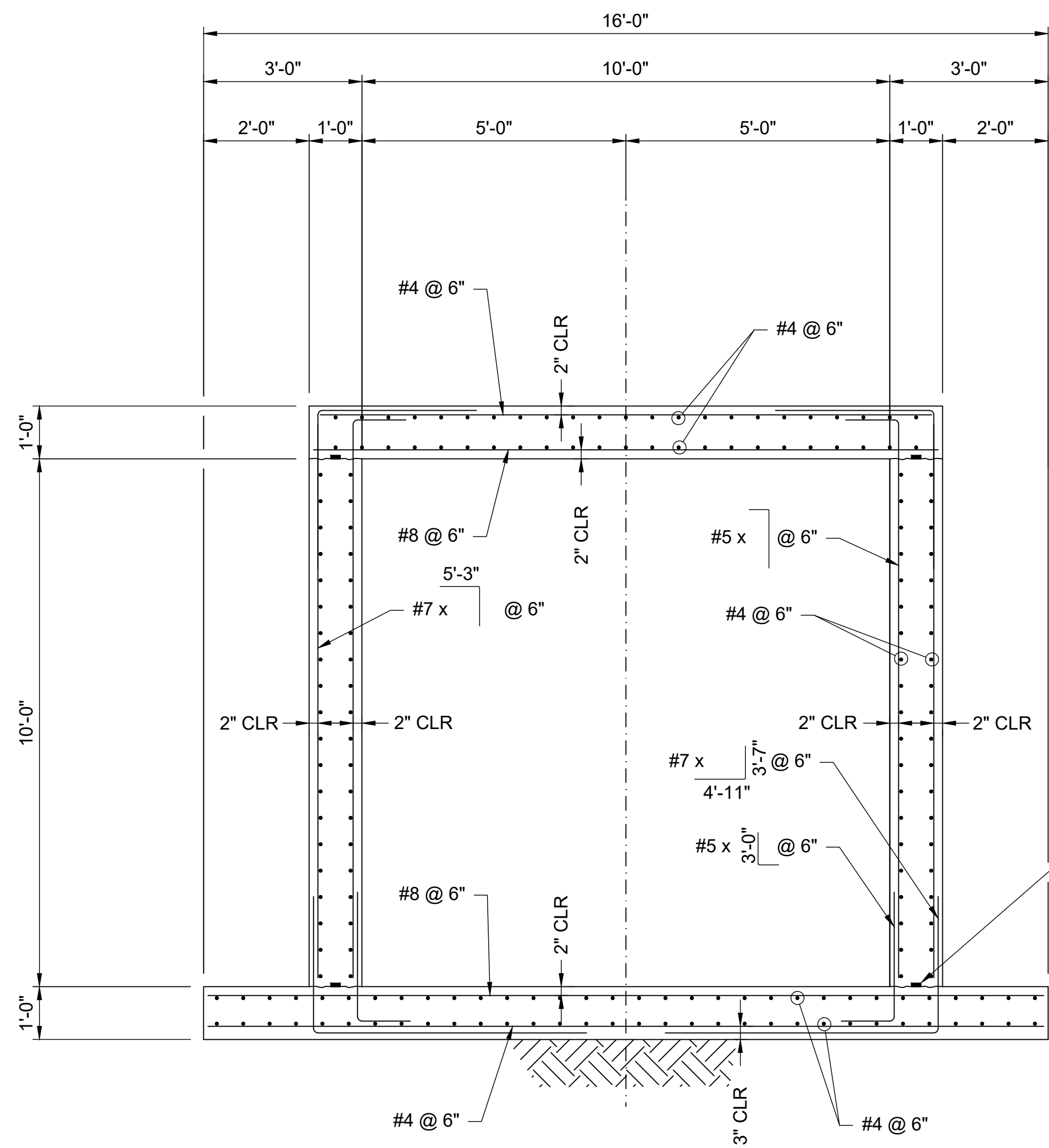
STRUCTURAL ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

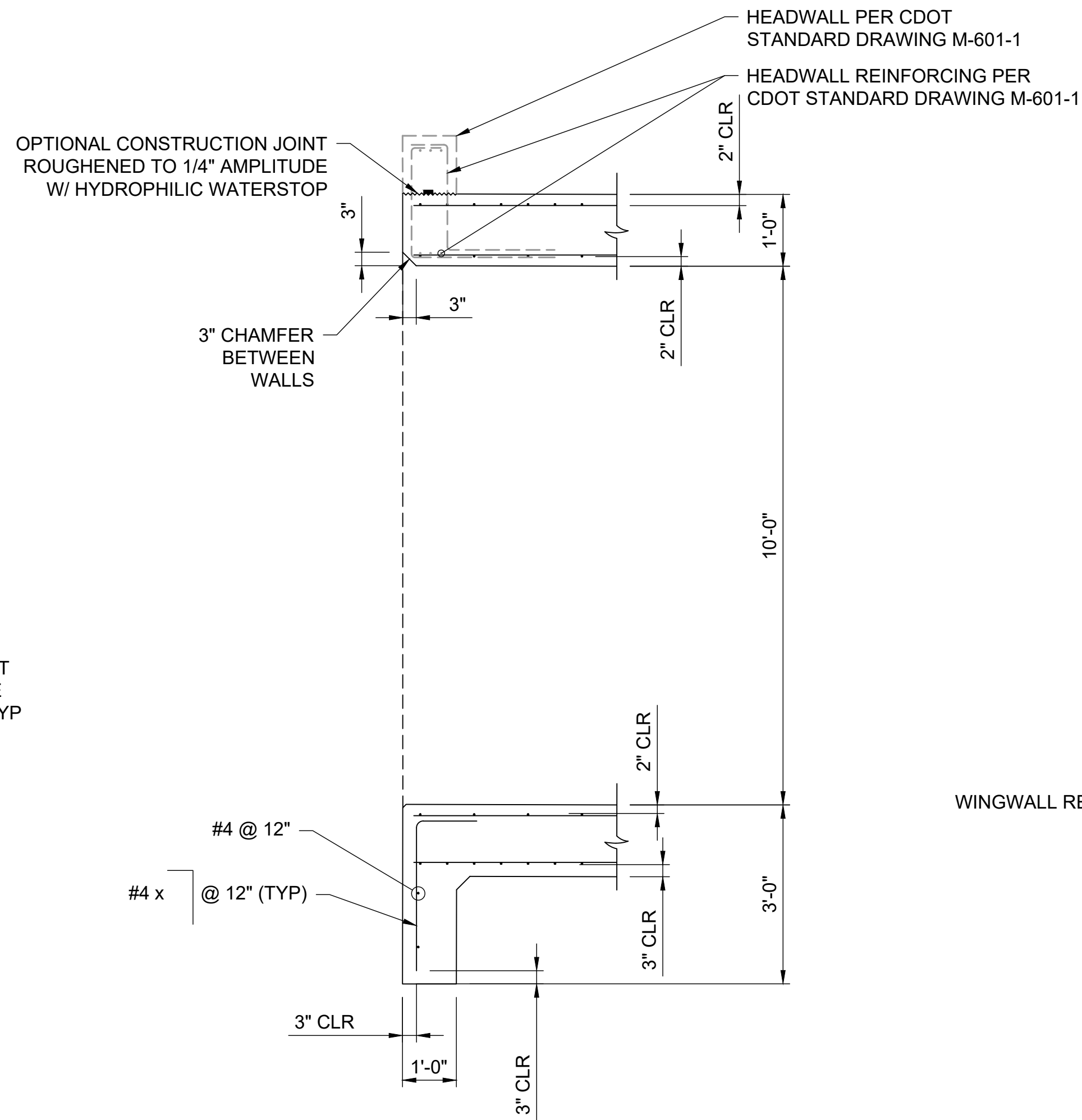
John Migliaccio
07/25/2023

JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, L.L.C. DATE

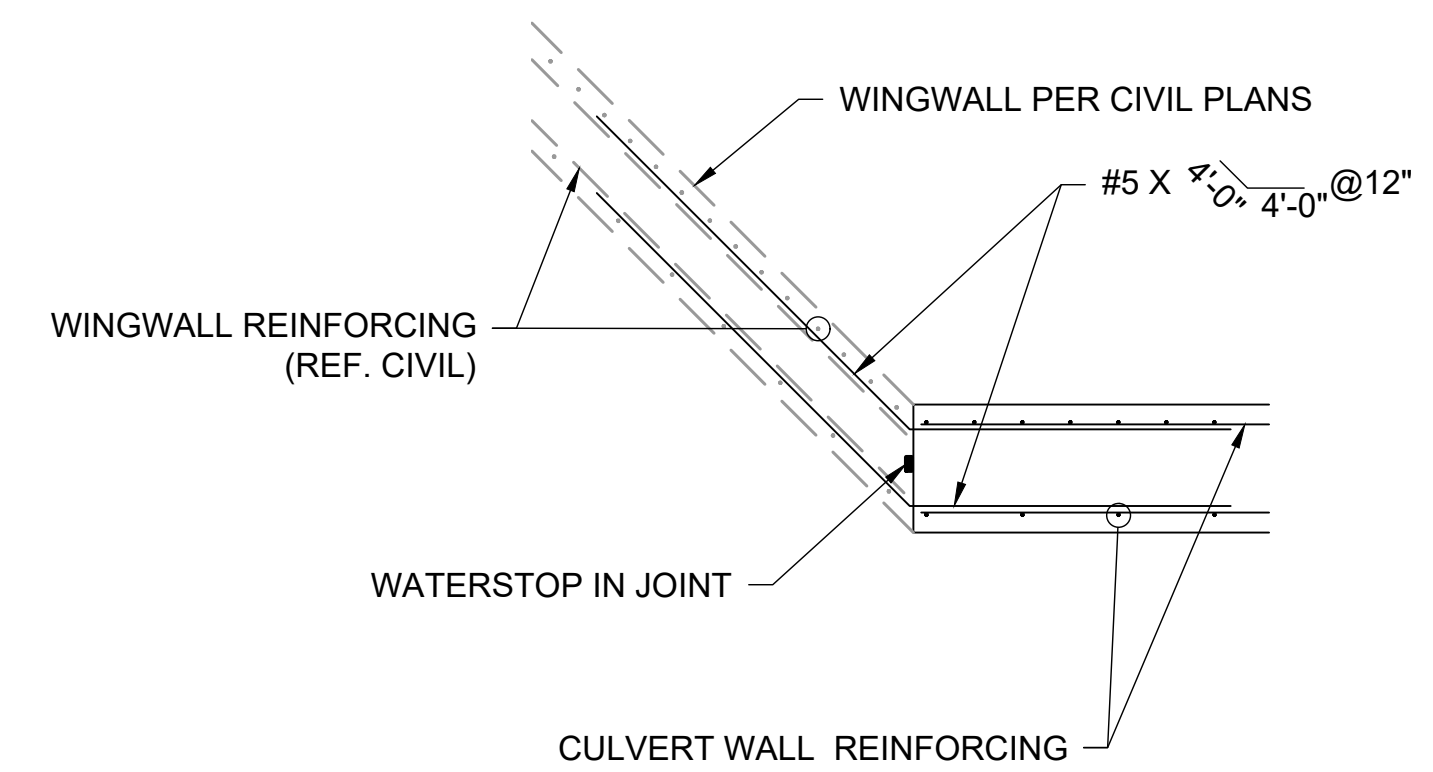




A 10'x10' REINFORCING SECTION
STOCK POND #2 OUTLET STRUCTURE



1 INLET/ OUTLET REINFORCING SECTION



2 CULVERT TO WINGWALL CONNECTION

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THESE DRAWINGS FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering
1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014
www.sanengineeringllc.com

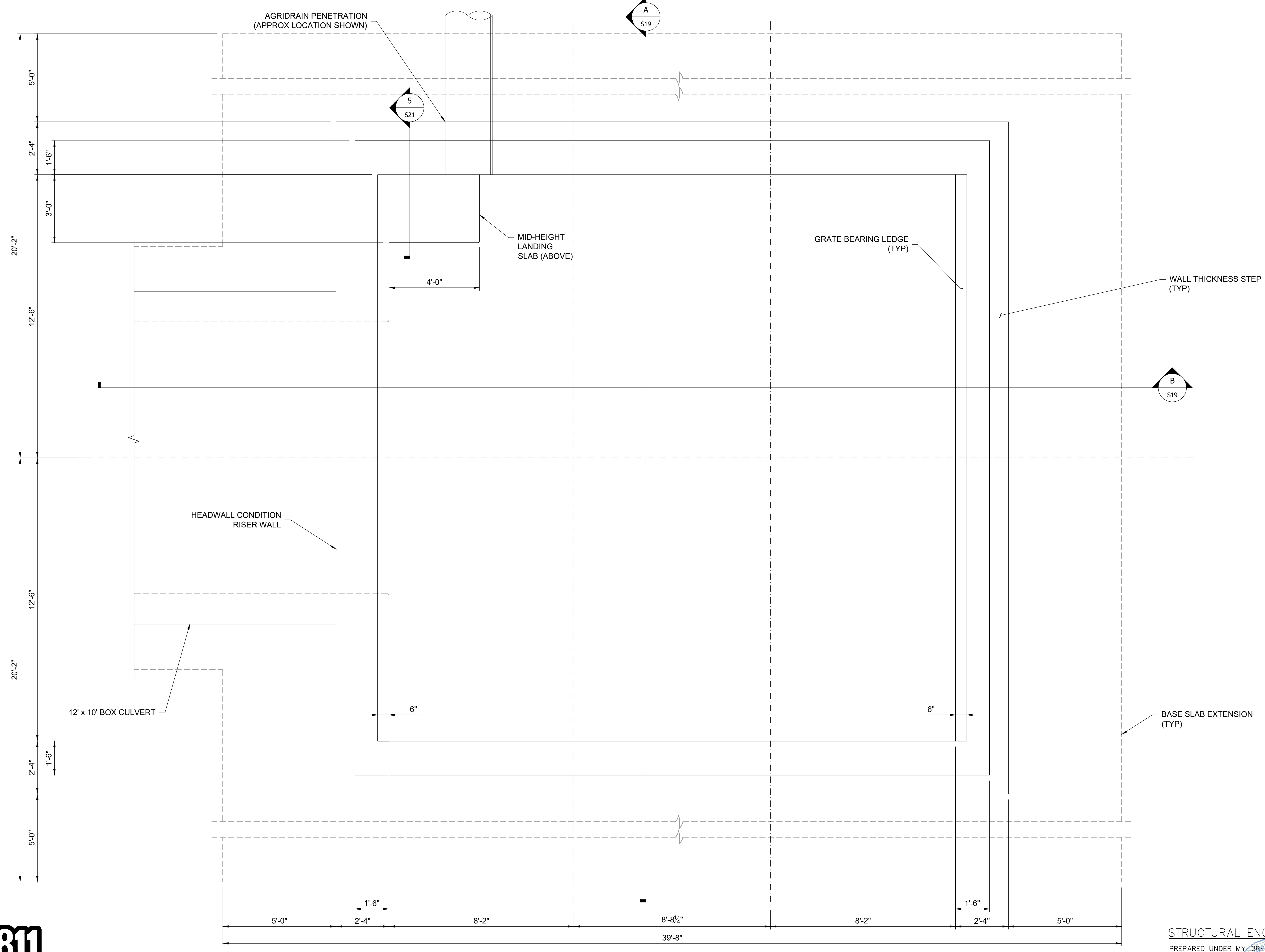
BY	DATE	REVISION

STRUCTURAL ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION
John Migliaccio
07/25/2023
DATE
JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, LLC.

SAND CREEK RESTORATION
STERLING RANCH
POND #2 OUTLET
10' x 10' BOX CULVERT
TYPICAL REINFORCING SECTIONS

SHEET S12 OF 25
JOB NO. 25188.04

F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural Details



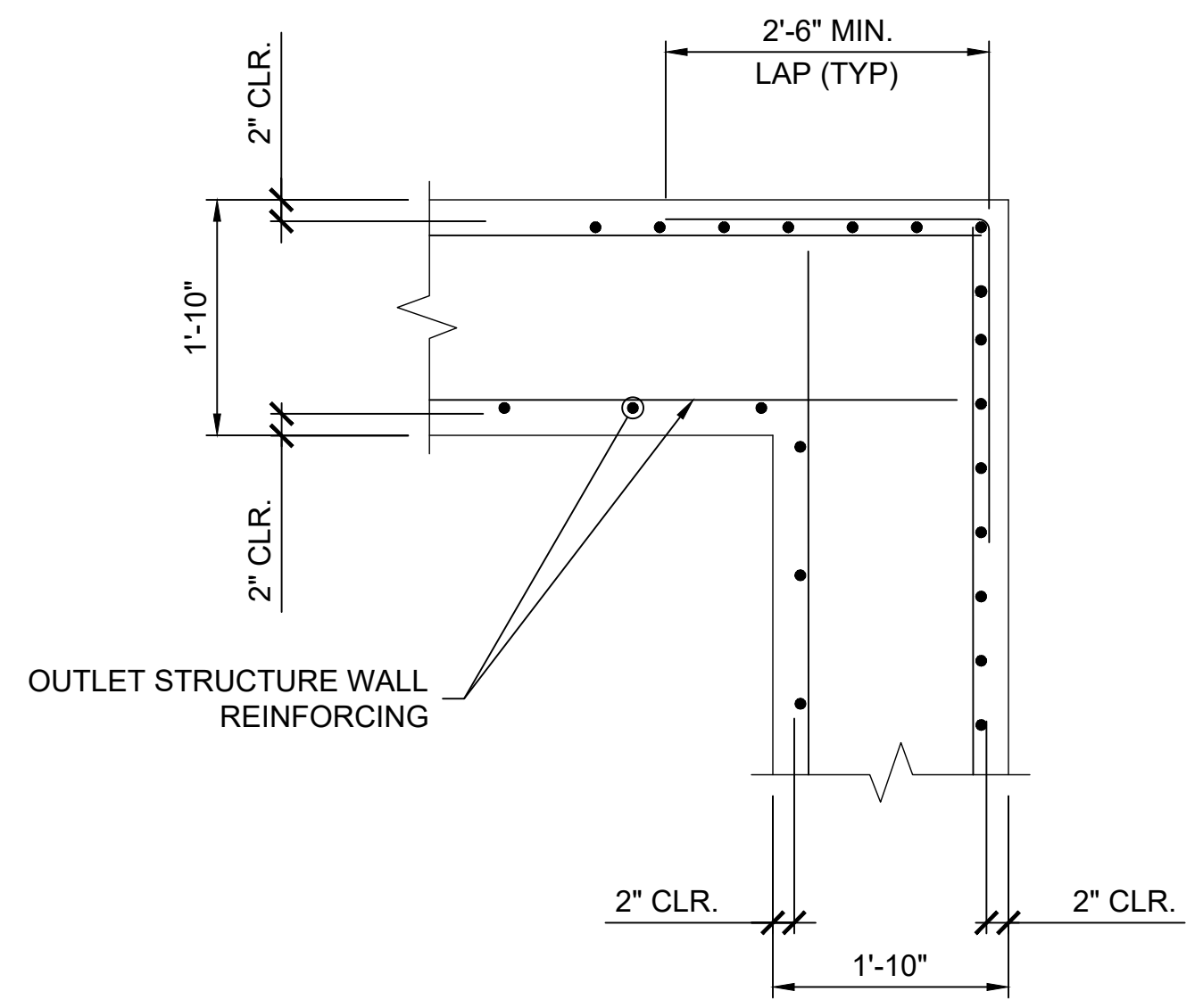
1 BASE SLAB AND WALL PLAN
 STOCK POND #1
 SCALE: 1/2" = 1'-0"

STRUCTURAL ENGINEER'S STATEMENT
 PREPARED UNDER MY DIRECT SUPERVISION

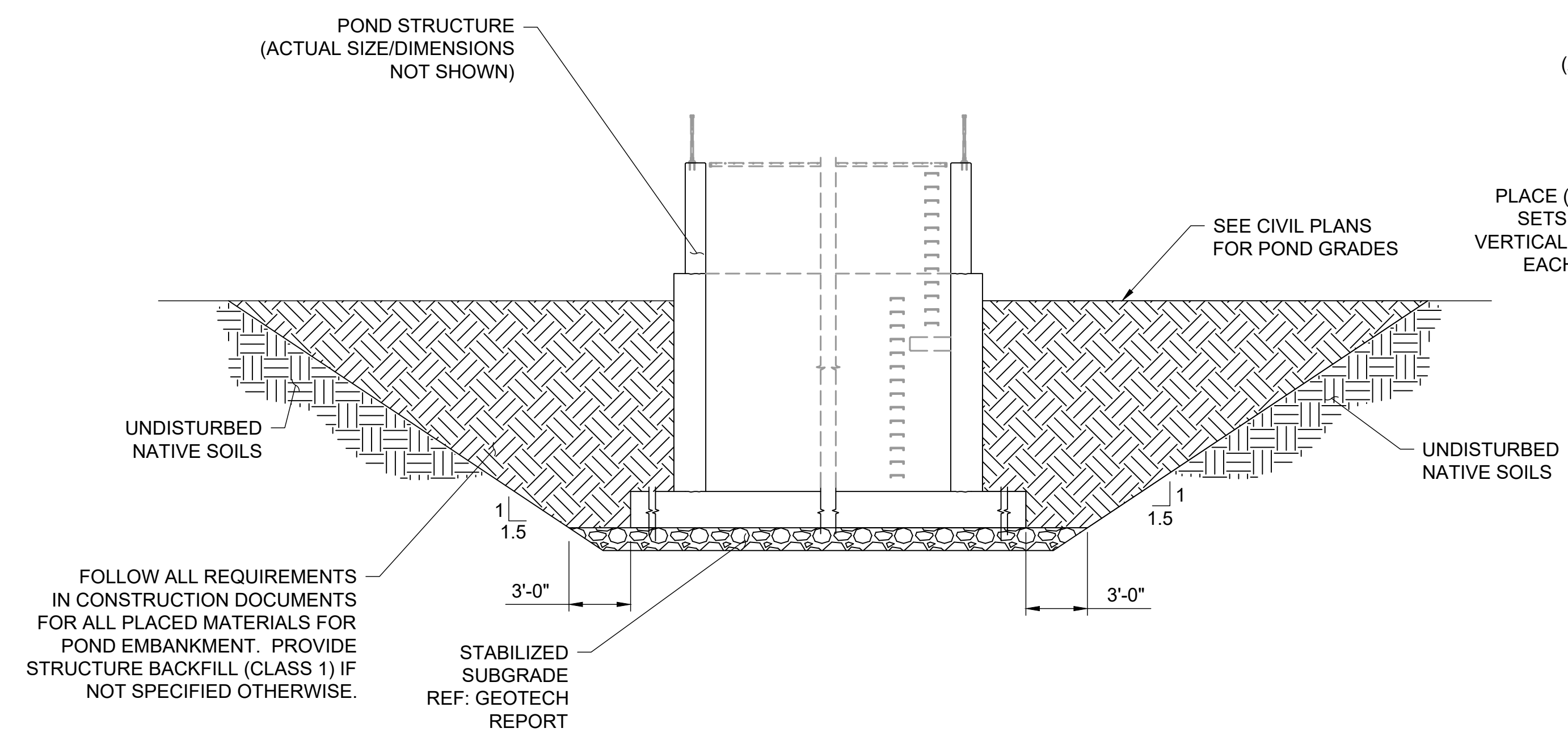
 JOHN MIGLIACCIO, P.E.
 COLORADO NO. 34333
 FOR AND ON BEHALF OF SAN ENGINEERING, L.L.C. DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE AGENCIES, SAN ENGINEERING APPROVES THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.	
PREPARED FOR	SR LAND, LLC 20 BOULDER CRESCENT ST. COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 419-3024
 San Engineering LLC Civil and Structural Engineering 1150 W. Littleton Blvd. #200 Littleton, CO 80120 303.953.9014 www.sanengineeringllc.com	
BY	DATE
REVISION	DATE
AS NOTED	AS NOTED
H-SCALE	V-SCALE
DATE	DESIGNED BY
7/26/2023	KSP
DRAWN BY	JUM
CHECKED BY	JUM
SAND CREEK RESTORATION STERLING RANCH	STOCK POND #1 OUTLET STRUCTURE BASE SLAB AND WALL PLAN
SHEET S15 OF 25	JOB NO. 25188.04

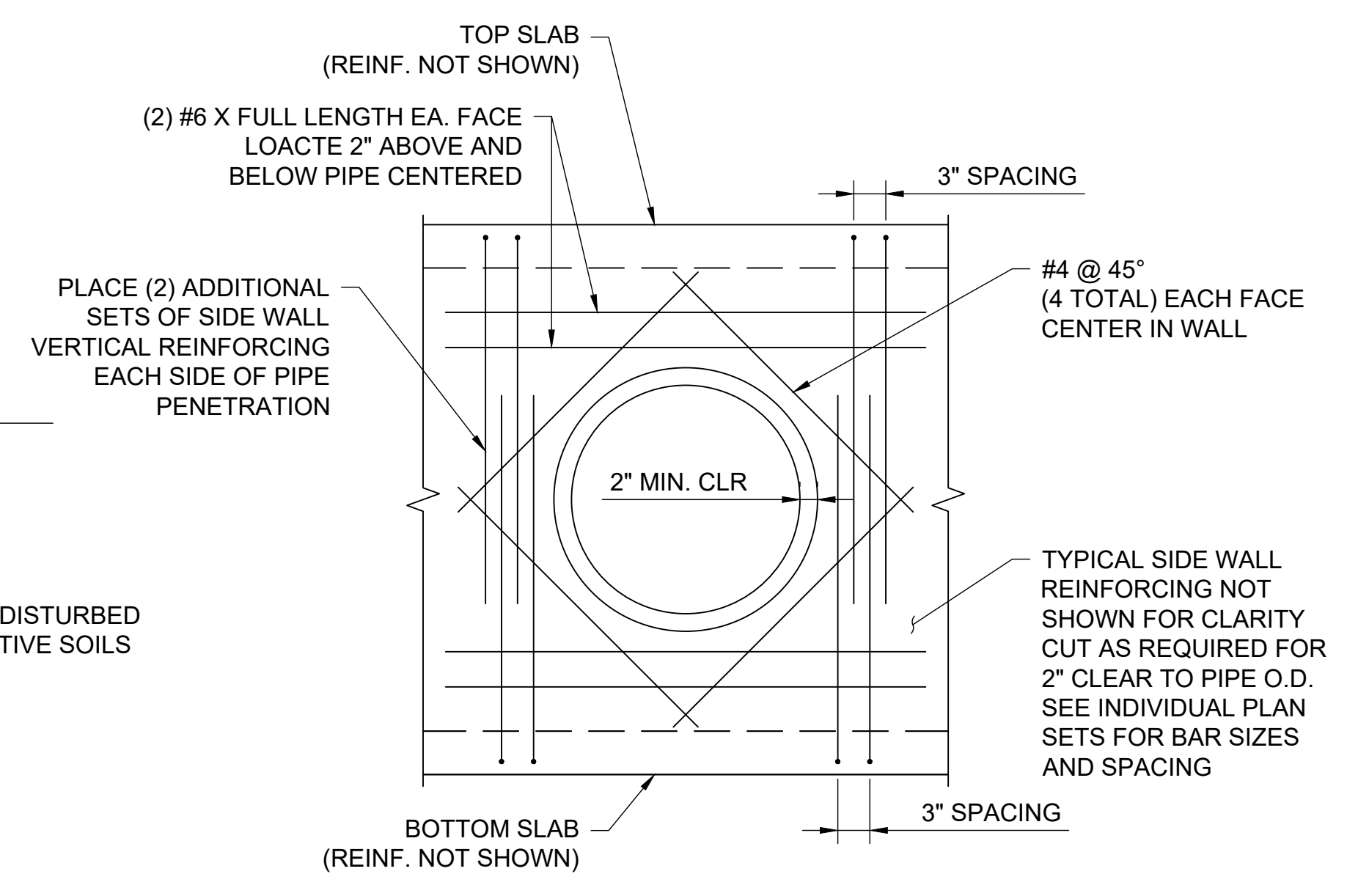
F:\Projects\Sand Creek Channel at Sterling Ranch\02 Drawings\Sand Creek Restoration_Structural Details



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

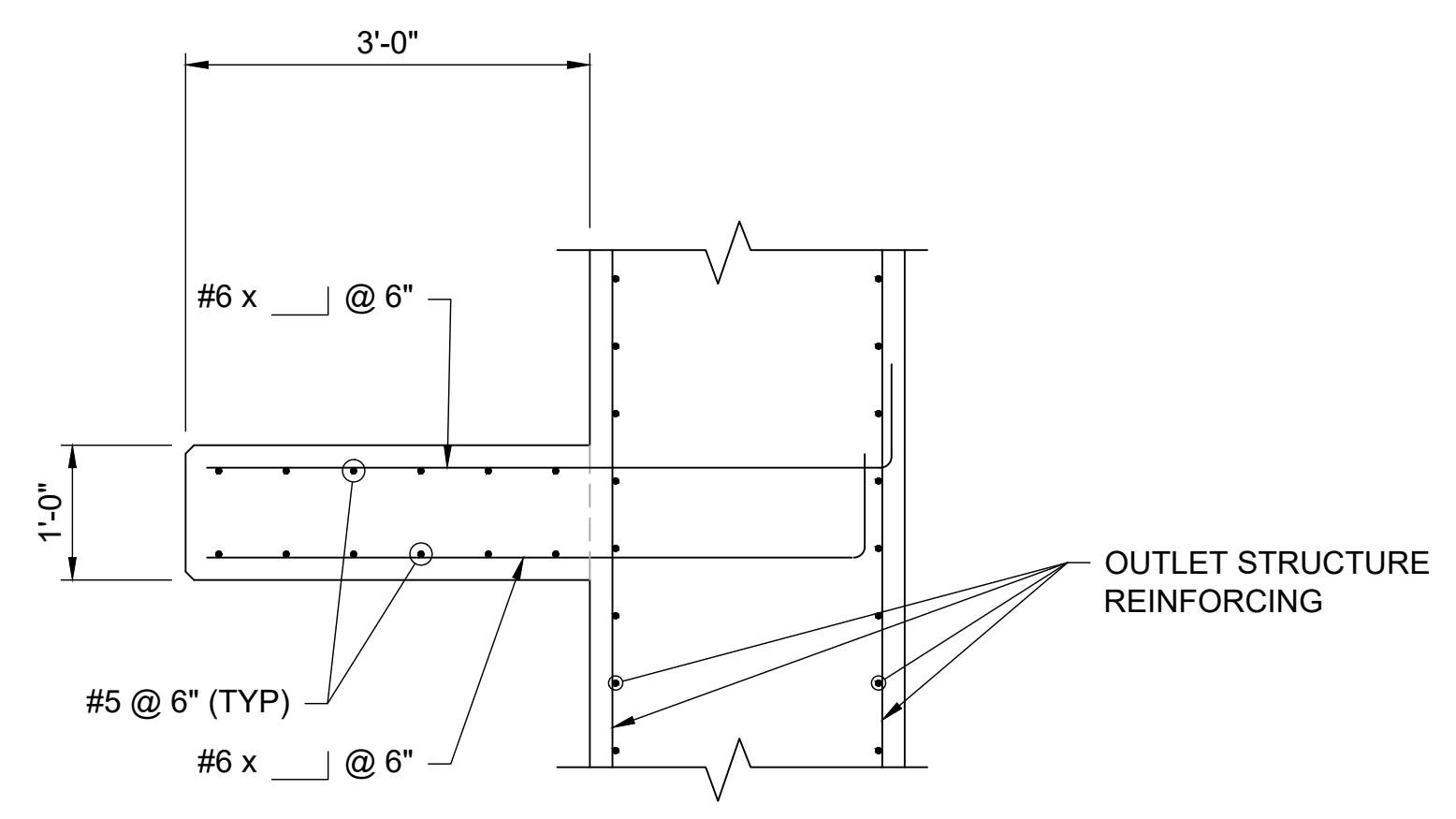


2 EXCAVATION AND BACKFILL REQUIREMENTS
SCALE: 1/2" = 1'-0"

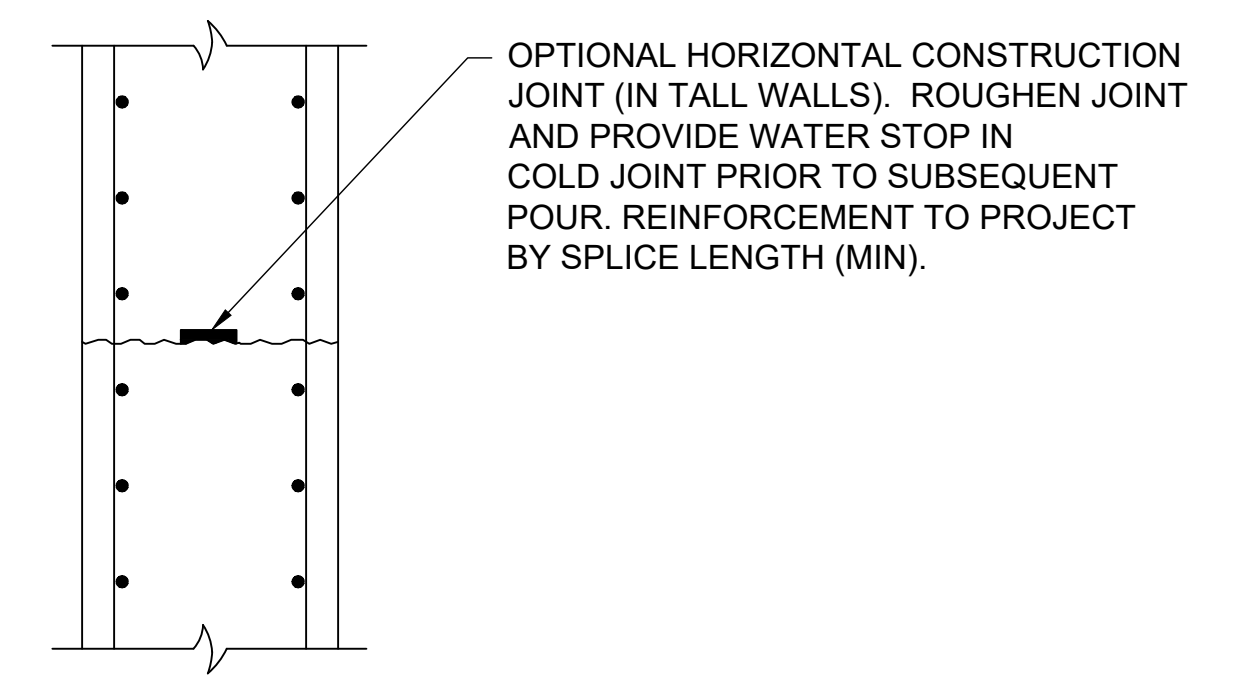


3 PIPE PENETRATION DETAIL
SCALE: 1/2" = 1'-0"

4 NOT USED
SCALE: N/A



5 MID-HEIGHT LANDING SECTION
SCALE: 1/2" = 1'-0"



6 HORIZONTAL WALL CONSTRUCTION JOINT

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, SAN ENGINEERING APPROVES THESE DRAWINGS FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT ST.
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 419-3024

San Engineering LLC
Civil and Structural Engineering
1150 W. Littleton Blvd. #200
Littleton, CO 80120
303.953.9014
www.sanengineeringllc.com

BY	DATE	REVISION	AS NOTED	AS NOTED	DESIGNED BY	DRAWN BY	CHECKED BY
					KSP	JJM	JJM

SAND CREEK RESTORATION STERLING RANCH	SHEET S21 OF 25
STOCK PONDS #1 & #2 OUTLET STRUCTURES MISCELLANEOUS DETAILS	JOB NO. 25188.04



STRUCTURAL ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

John Migliaccio
DATE: 07/25/2023
PROFESSIONAL ENGINEER

JOHN MIGLIACCIO, P.E.
COLORADO NO. 34333
FOR AND ON BEHALF OF SAN ENGINEERING, LLC.

