

Riverview Jr. High School Rebuild

751 Tripp Ln.
Murray, Utah 84123

Bid Package 3 Vol 1

For
The Murray City School District Board of Education

Design Team:

NWL Architects
Architect
723 Pacific Avenue, Ste. 101
Salt Lake City, Utah 84104
(801) 355-5959

BDK
Construction Manager
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Salt Lake City, Utah 84101
(602) 432-2535

Hughes Construction
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BHB Engineers
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(801) 466-1699

Van Boerum & Frank Associates
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Kaysville, UT 84037
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Jedrziewski Designs
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Salt Lake City, Utah 84105
(801) 582-9747

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LI-101	Irrigation Plan
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LI-500	Irrigation Details
LI-501	Irrigation Details
LI-502	Irrigation Details
Grand total: 62	

Stamp



NAYLOR WENTWORTH LUND ARCHITECTS

723 W Pacific Avenue, Suite 101
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Murray City School District
5102 S. Commerce Drive
Murray, Utah 84107

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

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751 Tripp Ln.
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date

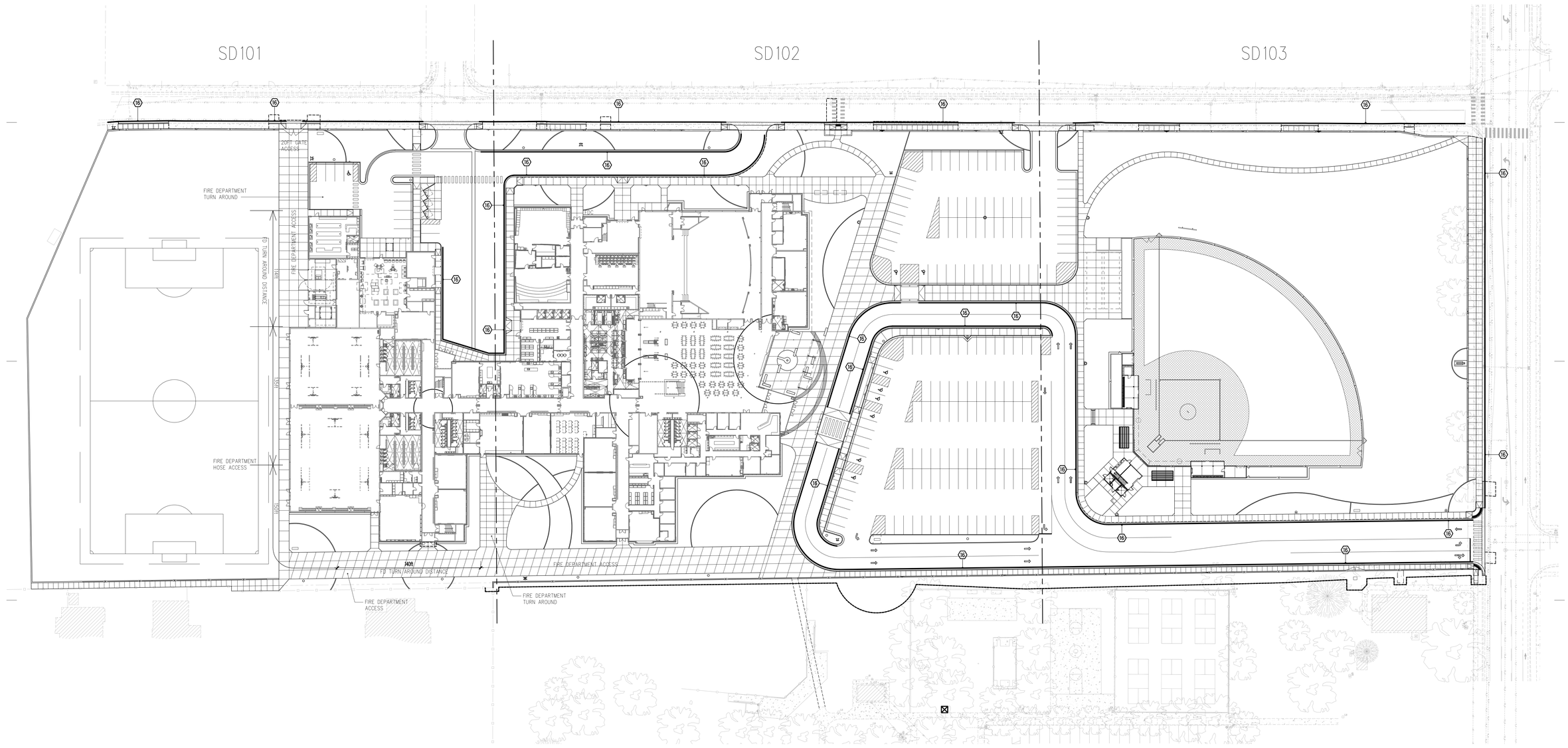
Project Number
134.028

Project Issue Date
31 March 2025

Sheet Title
Title Sheet Volume 1

Sheet Number
G101

Bid Package 3



4A **Site Development Composite Plan**
Scale: 1" = 40'-0"

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STATE OF UTAH
TAYLOR WENTWORTH
REGISTERED
NO. 7357292
#7247356
LICENSED ARCHITECT

NAYLOR
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1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

Project Number
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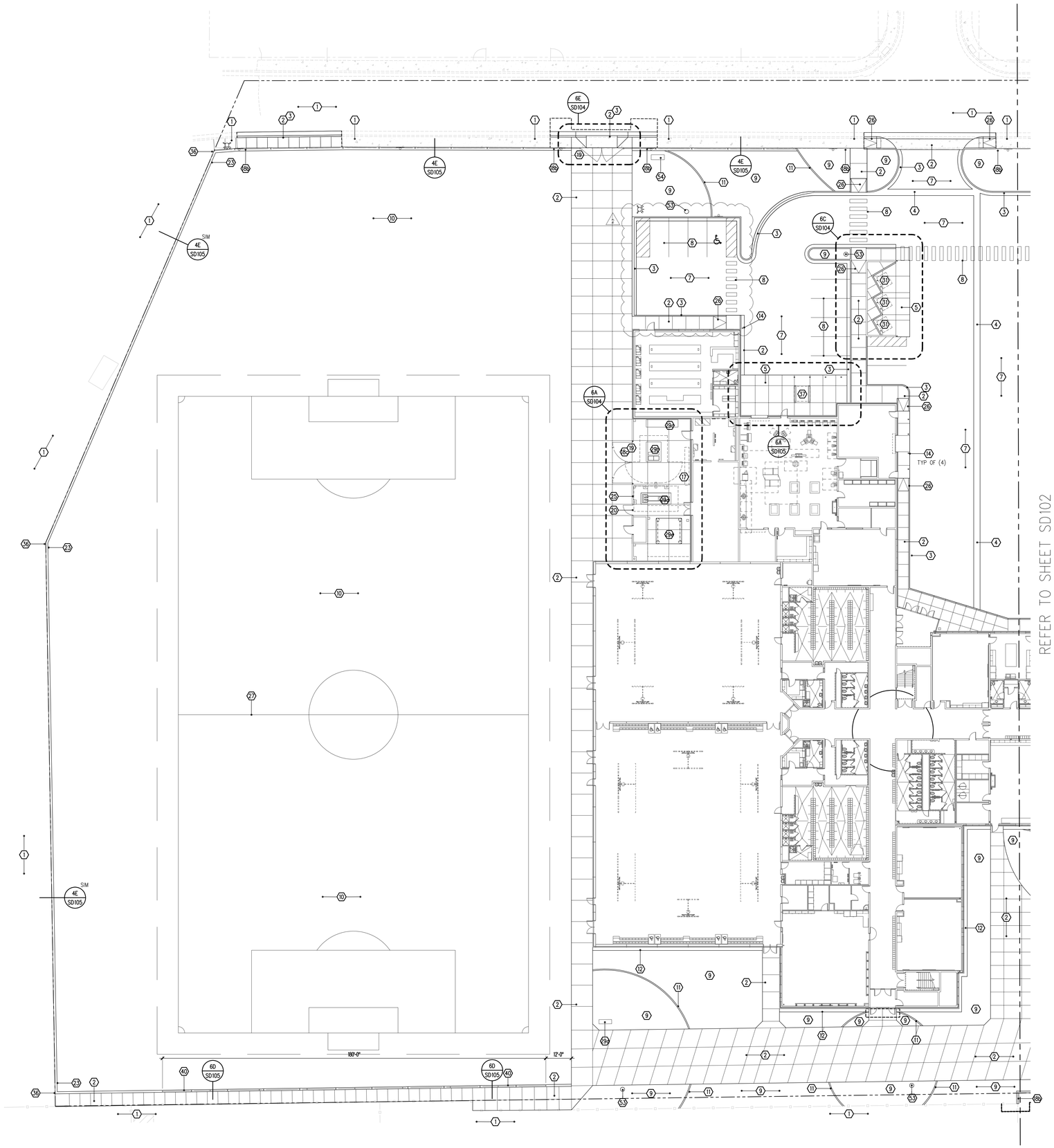
Project Issue Date
31 March 2025

Sheet Title
Site Development Composite Plan

Sheet Number
SD100

Bid Package 3

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4A **Site Development Plan**
Scale: 1" = 20'-0"

Site Development Keyed Notes

XX	Description
1	Existing construction, including but not limited to existing building, asphalt and concrete paving, concrete sidewalks, curbs, ramps, curb and gutter, chain link fencing etc. to remain unless noted otherwise and shall be protected from construction damage
2	Concrete walk (refer to civil for thickness), un-reinforced concrete, control joints as shown with expansion joints at 50'-0" o.c. maximum
3	Concrete curb/gutter - refer to civil drawings
4	Concrete waterway - refer to civil drawings
5	Concrete paving - refer to civil drawings
6	Raised concrete walk - refer to civil
7	Asphalt paving - refer to civil drawings
8	Asphalt striping/painting
9	Planting area - refer to landscape drawings
10	Grass area - refer to landscape drawings
11	6" x 6" concrete mow curb - refer to landscape drawings
12	18" concrete apron - refer to detail 5E/SD105
13	12" Pre-cast concrete bollard - see specification 12 9300
14	Concrete filled steel bollard (painted)- refer to detail 2E/SD105
15	Aluminum flagpole
16	Concrete curb - painted - face and top of curb - color as directed by owner - coordinate with owner / architect prior to painting
17	Gas meter - refer to plumbing drawings
18	Chain link fence -
	a. 4ft high - type 1 fabric (galvanized)
	b. 6ft high - type 1 fabric (galvanized)
	c. 8ft high - type 1 fabric (galvanized)
19	20ft wide double swinging gate - height to match adjacent fencing
20	4ft wide x 8ft high swinging gate - type 1 fabric
21	Pre-cast concrete bench - refer to detail 6A/A520
22	Accessible parking signage - refer to Civil drawings
23	Concrete mow strip at fence line - refer to noted detail
24	Concrete softball infield mix cubicles - refer to detail 3A/SD106
25	CMU masonry wall (colored/honed)
26	ADA curb ramp - refer to civil
27	Soccer field striping and goals future by owner (165ft x 300ft)
28	Marque - refer to SD111
29	Equipment
	a. Generator - refer to electrical drawings
	b. Transformer - refer to electrical drawings
	c. CT/Meter/Switch gear - refer to electrical drawings
	d. Murray power - above grade junction box
	e. Cooling tower - refer to mechanical drawings
30	Candlestick light fixture - refer to electrical
31	Garbage dumpster by owner
32	Alternate No 1. Kalwall canopy
33	(E) power pole - protect from damage
34	Concrete curb - painted - face and top - color as directed by owner - coordinate with owner / architect prior to painting
35	Bike Rack - bolt in place to concrete - review location with architect prior to install
36	Fence by adjacent property owner - coordinate construction of concrete mowstrip
37	Sawdust collection system - refer to mechanical
38	Alternate 2 - batting cage netting, posts, foundation - refer to specification 11 6833
39	Aluminum bleachers
40	20ft high netting and post system - refer to specification 11 6833
41	(E) Softball scoreboard reinstalled on new steel structure - refer to detail 2C/SD106
42	Chainlink fence backstop, concrete wall, and padding
43	Home Plate
44	Pitchers Rubber
45	Base Bag
46	Softball Foul Pole
47	Softball infield mix - refer to landscape drawings
48	Warning track mix - refer to landscape drawings
49	Softball field grass - refer to landscape drawings
50	Fence top guard cap
51	3ft wide gate - match height of adjacent fence
52	14ft wide gate - match height of adjacent fence
53	Light pole with concrete base - refer to electrical - install 6" minimum concrete apron where installed in grass
54	Irrigation equipment - refer to irrigation drawings
55	Sidewalk by adjacent property owner.
56	Grading blended into adjacent property - refer to civil drawings; Patch landscape and irrigation as required - refer to landscaping drawings
57	Concrete walk removed - bring to grade and patch landscape / irrigation
58	(N) power pole location

Stamp

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Bid Documents

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1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

Project Number
134.028

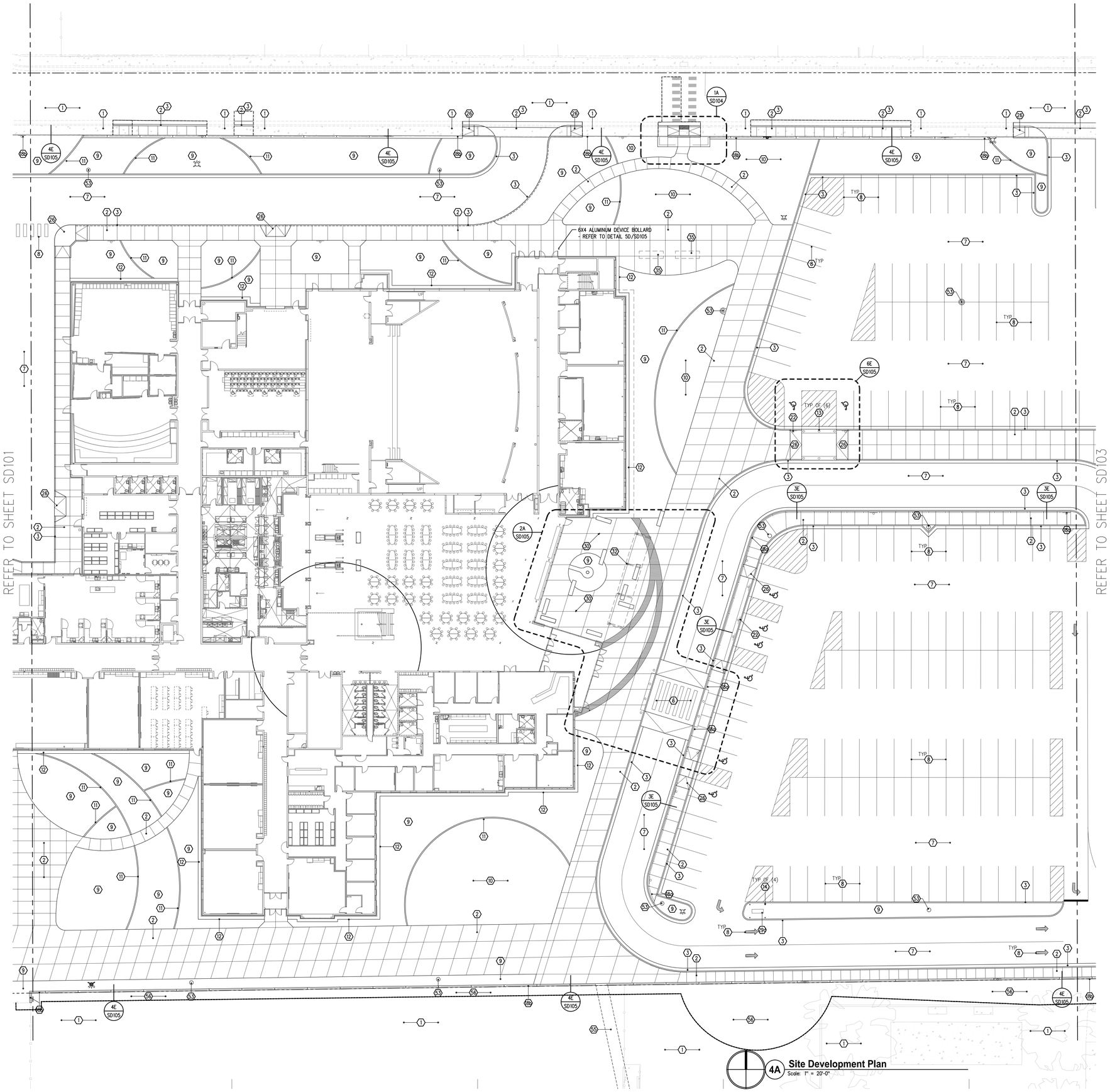
Project Issue Date
31 March 2025

Sheet Title
Site Development Plan

Sheet Number
SD101

Bid Package 3

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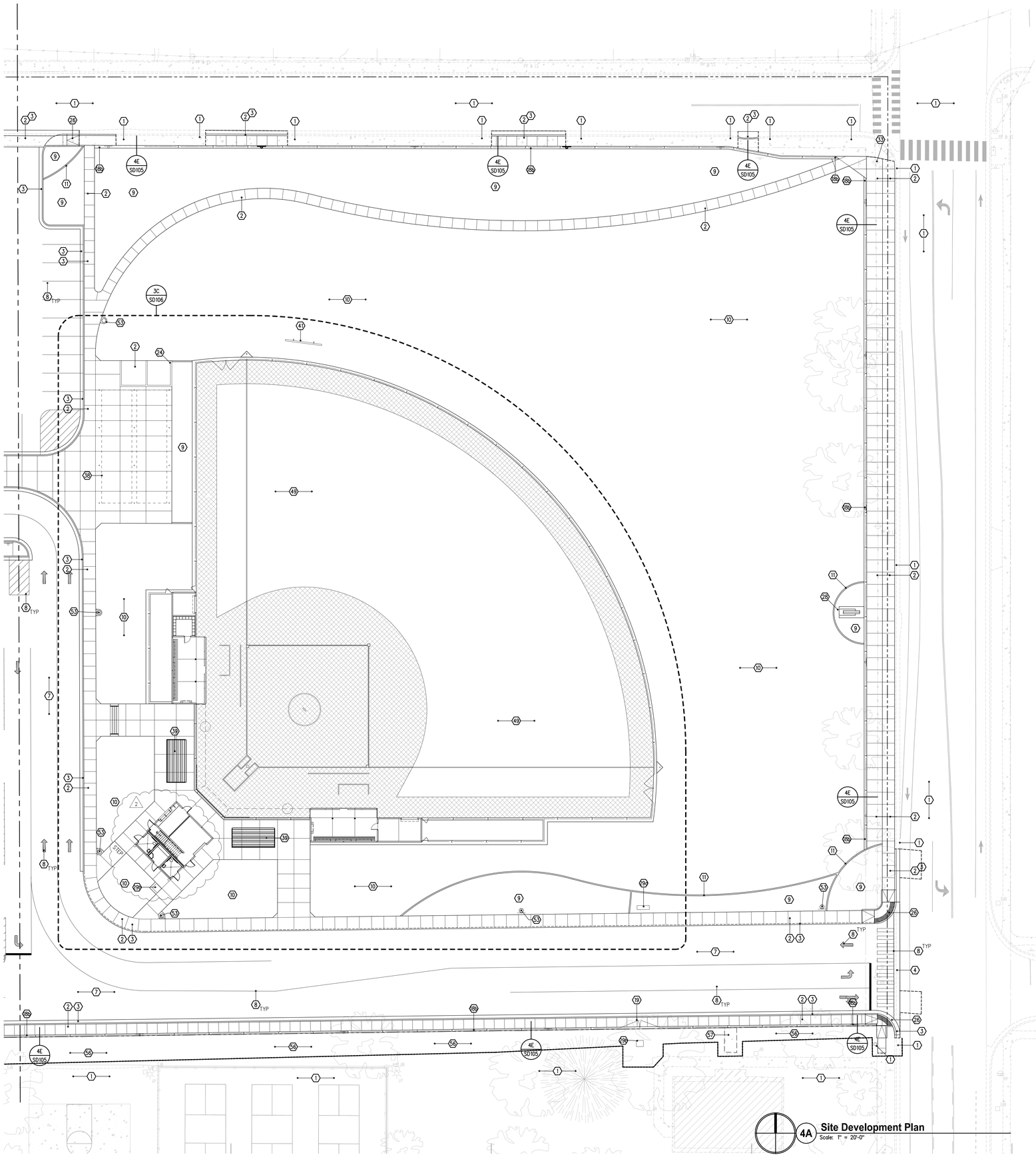
Project Number
134.028

Project Issue Date
31 March 2025

Sheet Title
Site Development Plan

Sheet Number
SD102
Bid Package 3

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4A **Site Development Plan**
Scale: 1" = 20'-0"

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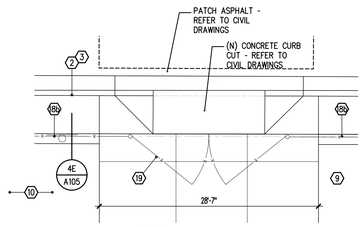
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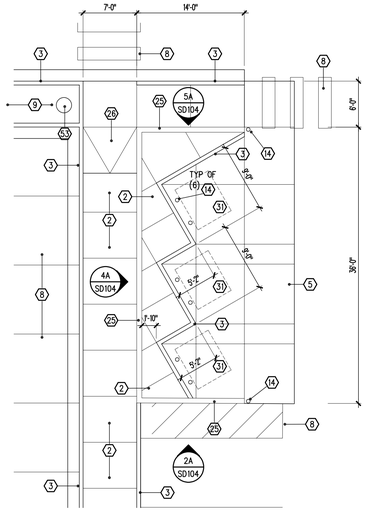
Sheet Title
Site Development Plan

Sheet Number
SD103
Bid Package 3

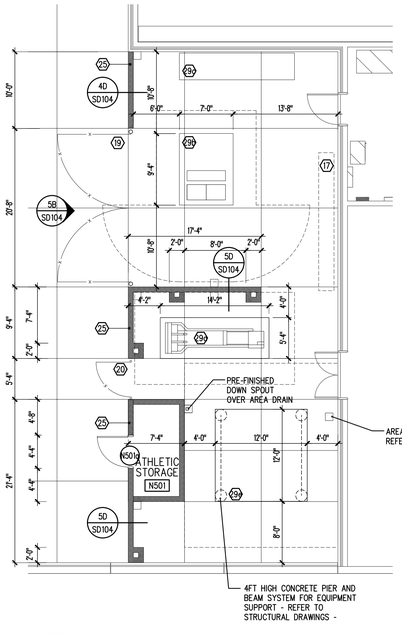
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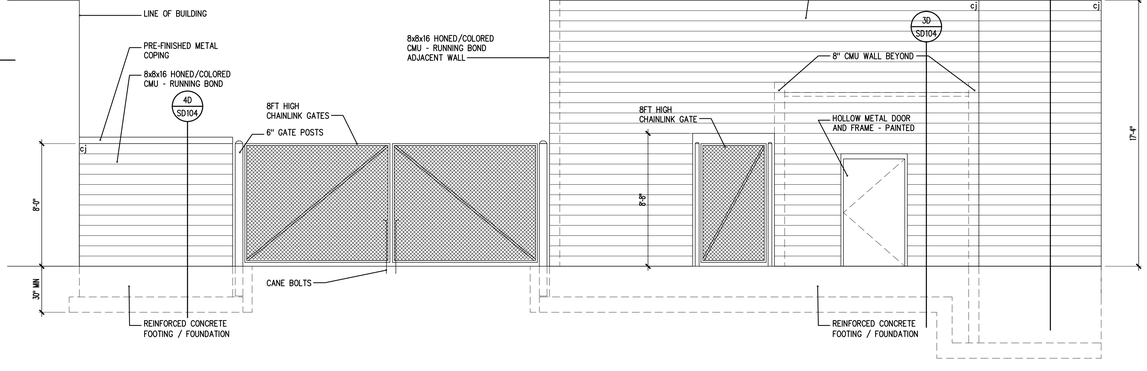
6E Enlarged Site Development Plan
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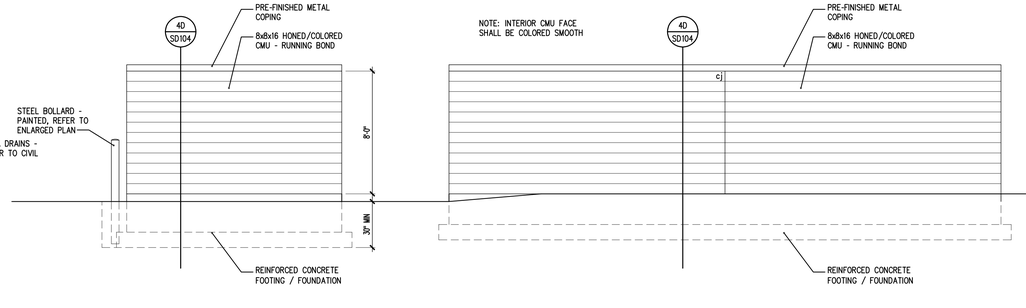
6C Enlarged Site Development Plan
Scale: 1/8" = 1'-0"



6A Enlarged Site Development Plan
Scale: 1/8" = 1'-0"

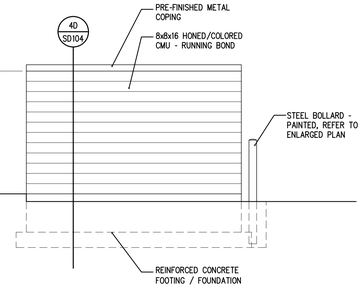


5B Exterior Elevation
Scale: 1/4" = 1'-0"



5A Exterior Elevation
Scale: 1/4" = 1'-0"

4A Exterior Elevation
Scale: 1/4" = 1'-0"



2A Exterior Elevation
Scale: 1/4" = 1'-0"

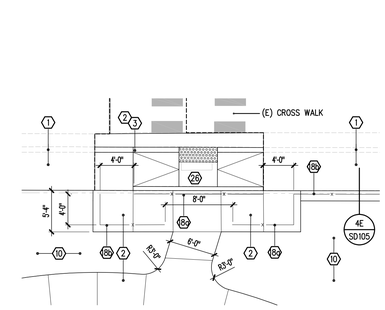
5B Exterior Elevation
Scale: 1/4" = 1'-0"

5B Exterior Elevation
Scale: 1/4" = 1'-0"

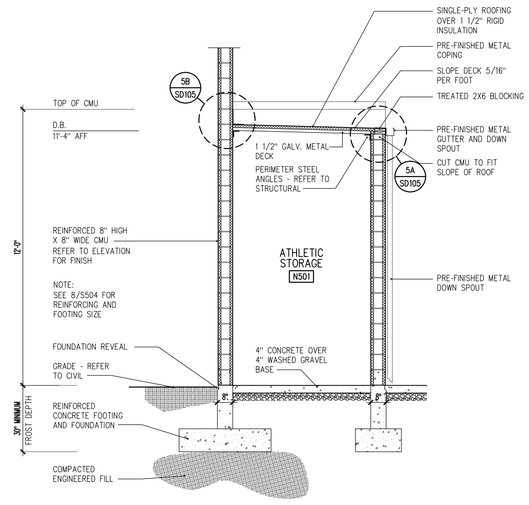
5A Exterior Elevation
Scale: 1/4" = 1'-0"

4A Exterior Elevation
Scale: 1/4" = 1'-0"

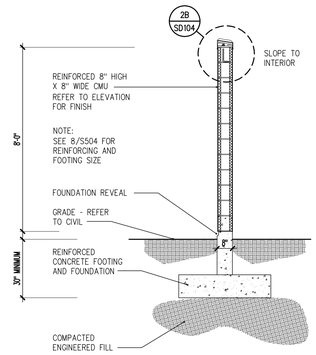
2B Wall Cap Detail
Scale: 2" = 1'-0"



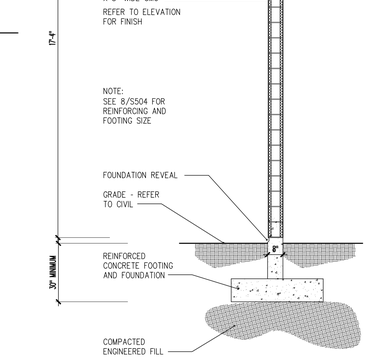
5B Exterior Elevation
Scale: 1/4" = 1'-0"



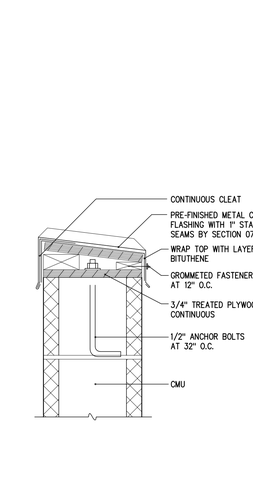
3D Wall Section
Scale: 3/8" = 1'-0"



4D Wall Section
Scale: 3/8" = 1'-0"



5D Wall Section
Scale: 3/8" = 1'-0"



1A Enlarged Site Development Plan
Scale: 1/8" = 1'-0"

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58	(N) power pole location

Stamp

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Main Office 801.355.5959

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Project For
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751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

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2	bp2 to bp3 revision	03/31/25

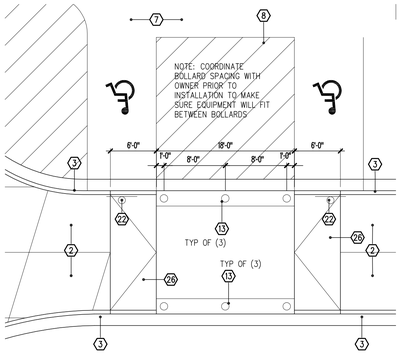
Project Number
134.028

Project Issue Date
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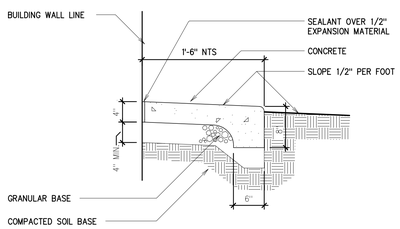
Sheet Title
Site Development Plan and Details

Sheet Number
SD104
Bid Package 3

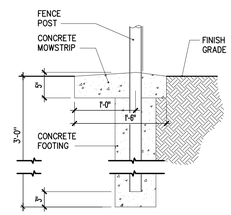
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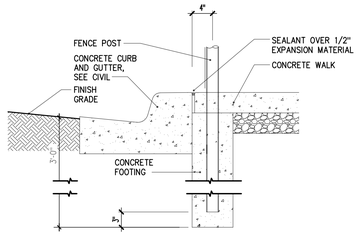
6E Site Development Plan
Scale: 1/8" = 1'-0"



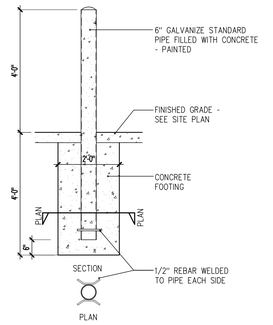
5E Concrete Apron Detail
Scale: 1" = 1'-0"



4E Fence Mowstrip Detail
Scale: 1" = 1'-0"



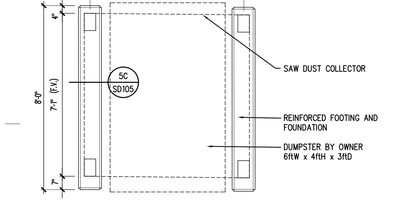
3E Fence Mowstrip Detail
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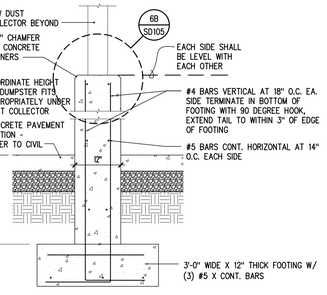
2E Bollard Detail
Scale: 1/2" = 1'-0"

Site Development Keyed Notes

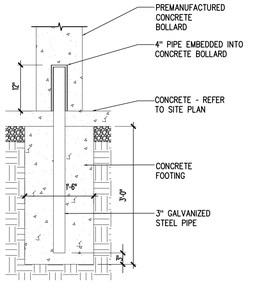
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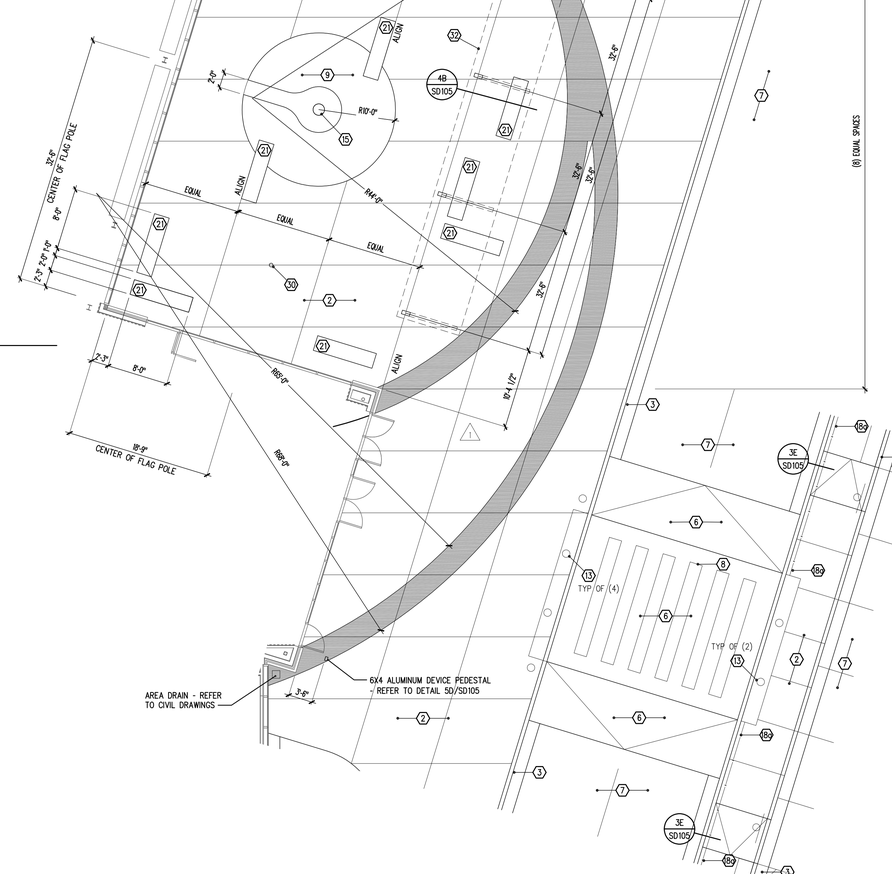
6D Netting Post Detail
Scale: 1" = 1'-0"



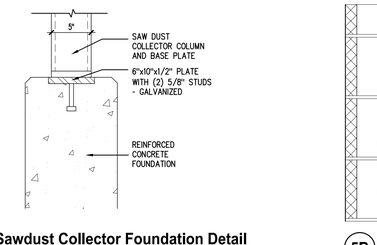
5D Device Pedestal
Scale: 1/2" = 1'-0"



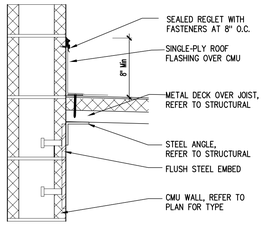
4D Stair Section
Scale: 1/2" = 1'-0"



2A Enlarged Site Development Plan
Scale: 1/8" = 1'-0"



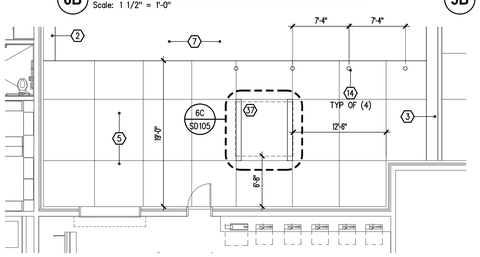
6C Sawdust Collector Foundation Detail
Scale: 3/8" = 1'-0"



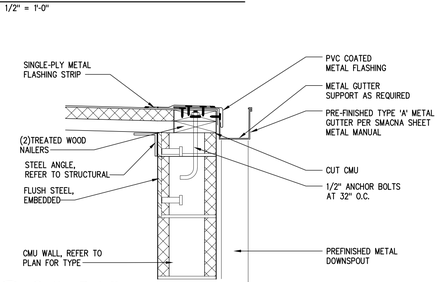
5C Sawdust Collector Foundation Detail
Scale: 3/8" = 1'-0"

5B Roof Detail
Scale: 1 1/2" = 1'-0"

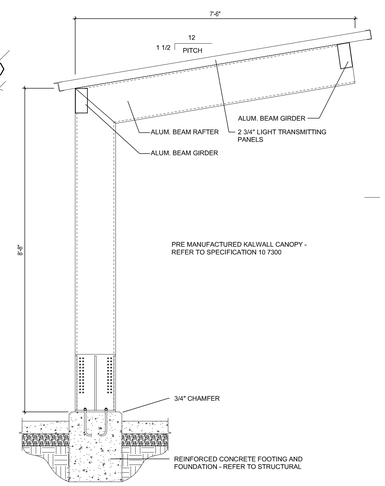
6B Sawdust Collector Foundation Detail
Scale: 1 1/2" = 1'-0"



6A Enlarged Site Development Plan
Scale: 1/8" = 1'-0"



5A Gutter Detail
Scale: 1 1/2" = 1'-0"



4B Canopy Section
Scale: 3/4" = 1'-0"

Stamp

STATE OF UTAH
JAMES D. WENTWORTH
REGISTERED
ARCHITECT
#7247705
LICENSED ARCHITECT

NAYLOR WENTWORTH LUND ARCHITECTS

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2	bp2 to bp3 revision	03/31/25

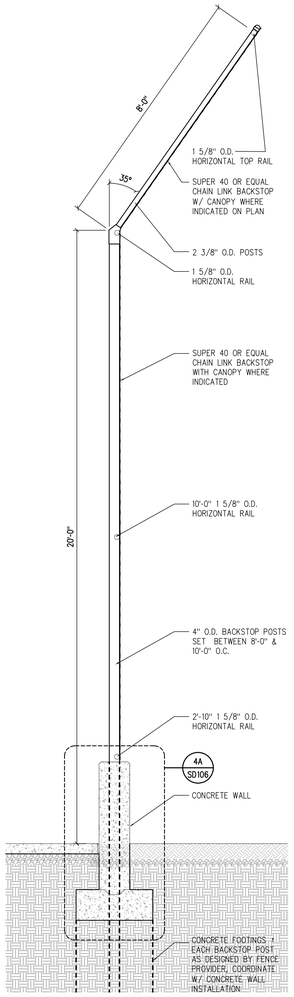
Project Number
134.028

Project Issue Date
31 March 2025

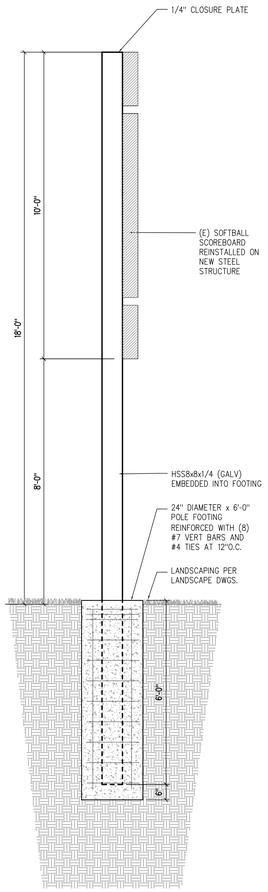
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Sheet Number
SD105
Bid Package 3

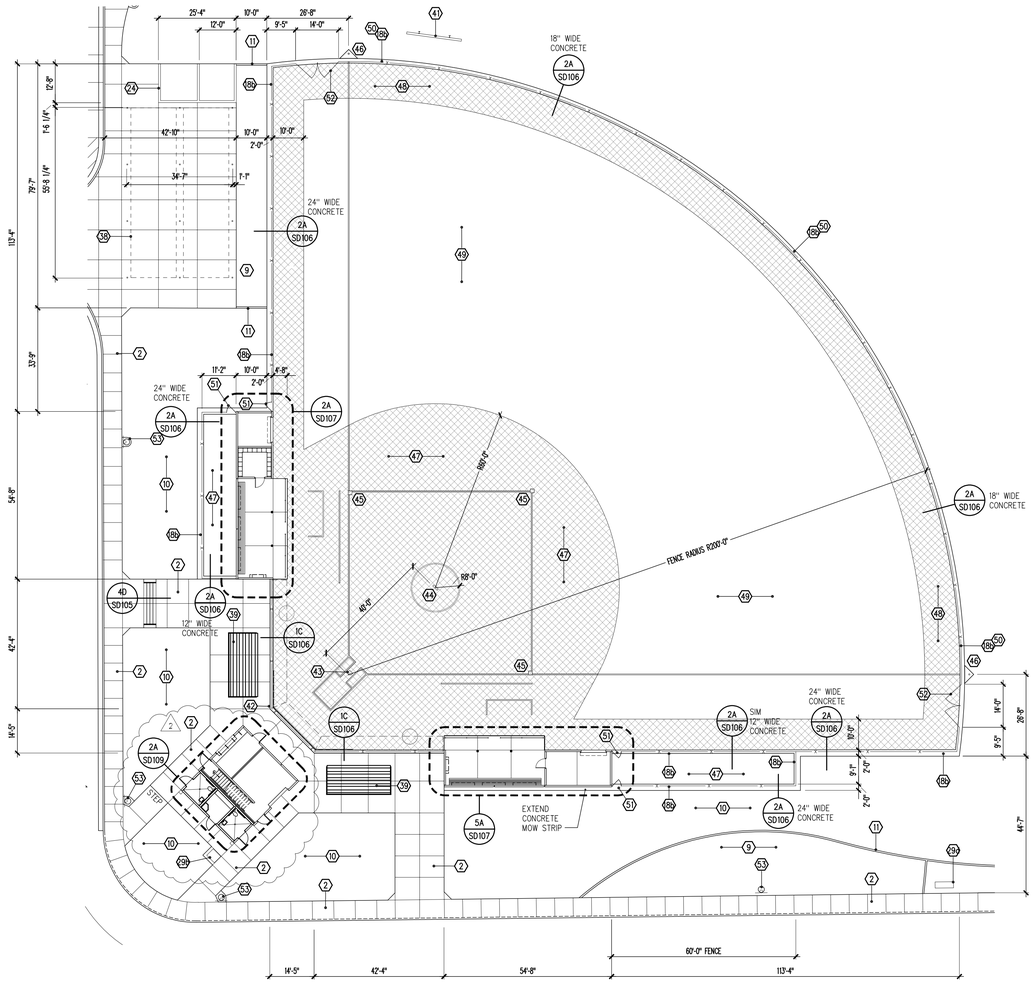
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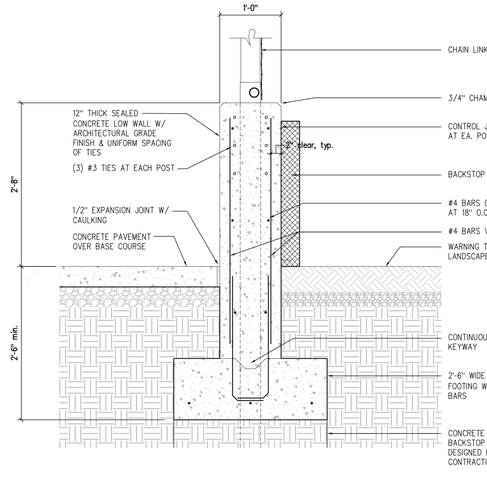
1C Softball Backstop Section
Scale: 1/2" = 1'-0"



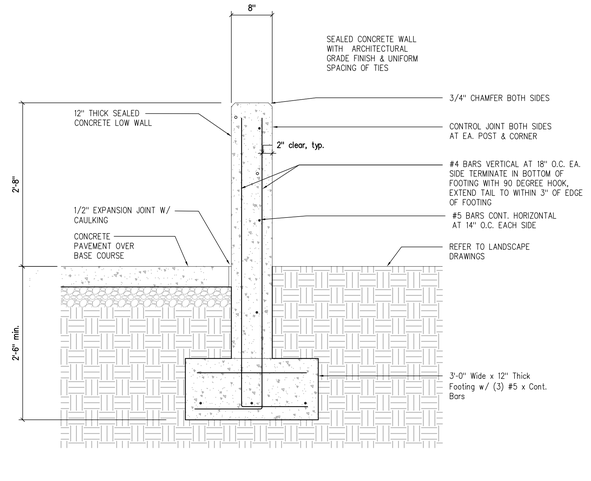
2C Softball Scoreboard Section
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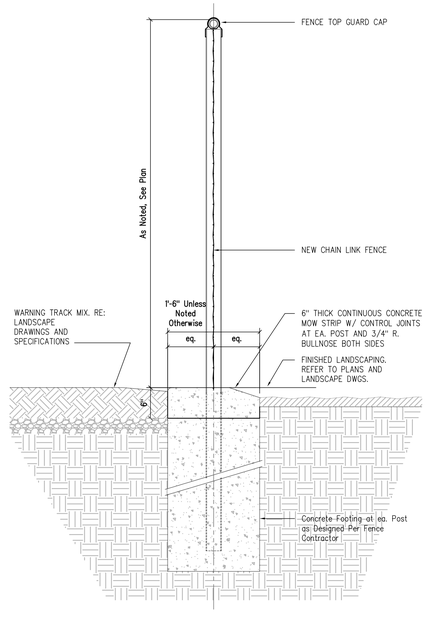
3C Softball Field Plan
Scale: 1" = 20'-0"



4A Softball Backstop Wall Detail
Scale: 1" = 1'-0"



3A Infield Mix Storage Wall Detail
Scale: 1" = 1'-0"

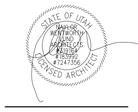


2A Softball Fence Detail
Scale: 1" = 1'-0"

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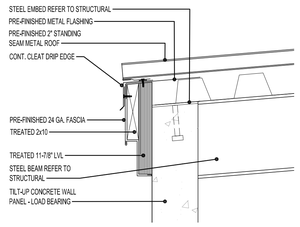
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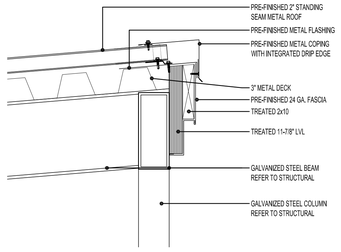
Sheet Title
Softball Field Details

Sheet Number
SD106
Bid Package 3

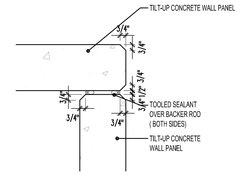
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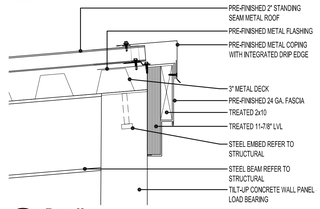
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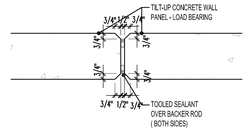
5E Detail
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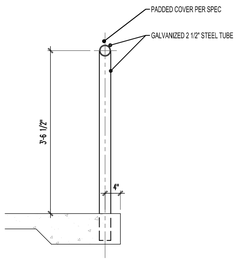
4E Tilt Detail
Scale: 1-1/2" = 1'-0"



6D Detail
Scale: 1-1/2" = 1'-0"



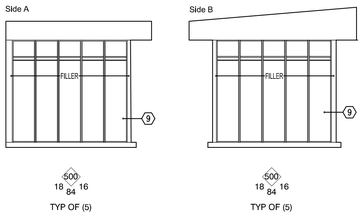
4D Tilt Detail
Scale: 1-1/2" = 1'-0"

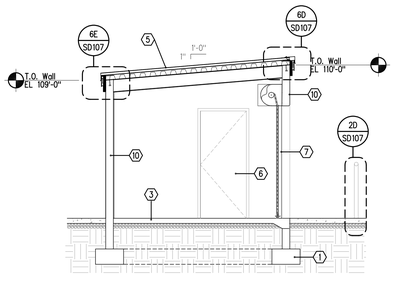


2D Dugout Rail Detail
Scale: 3/4" = 1'-0"

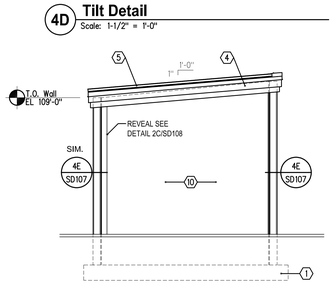
General Notes	
Mark	Description
1	See Electrical sheets for locations of outlets, switches, data, telephone, television, intercoms, clocks, speakers, horns, strobes, etc. Coordinate location with all trades.
2	Coordinate furnishings plans and interior elevations for miscellaneous items that may only be shown on one or the other.
3	Coordinate location of electrical fixtures and outlets with electrical sheets.

(X) Annotation Plan Keyed Notes	
Mark	Description
1	Reinforced concrete footings / foundation - refer to structural for reinforcing
2	Galvanized steel column (primed and painted - two finish coats) - refer to structural
3	4" concrete slab over 6" washed gravel, Provide 1/4" per foot min. slope to front and away from building, Extend slab beyond as shown on plans - coordinate with civil grading drawings
4	Pre-finished metal fascia and metal soffit - (color as selected by architect),
5	Pre-finished standing seam metal roofing - (color as selected by architect),
6	Hollow metal door and frame (primed and painted - two finish coats) - refer to door schedule
7	Overhead rolling door - refer to door schedule
8	Dugout bench
9	Plastic laminate casework with concrete toe kick
10	6" reinforced concrete tilt-up wall - sealed (refer to structural)

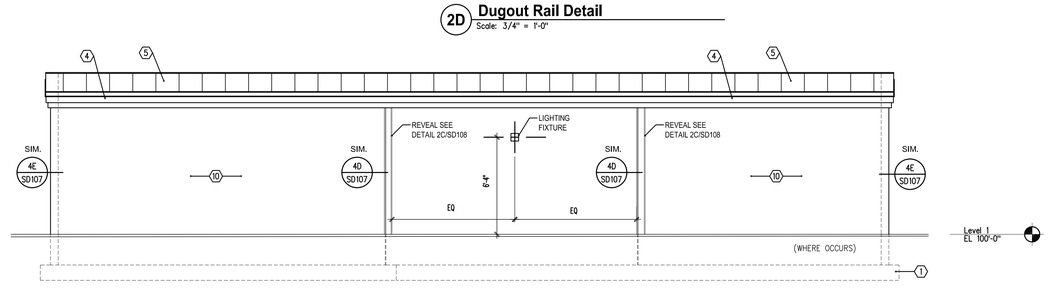




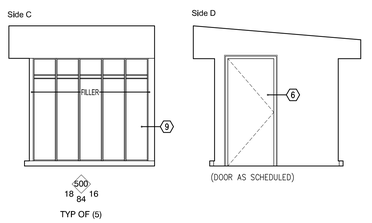
5C Building Section
Scale: 1/4" = 1'-0"



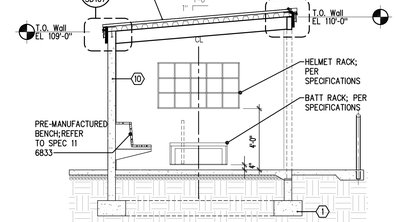
4C Building Elevation - Side A
Scale: 1/4" = 1'-0"



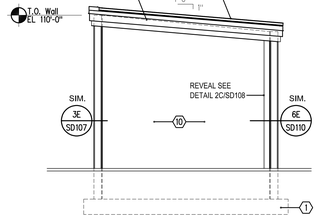
2C Building Elevation - Side B
Scale: 1/4" = 1'-0"



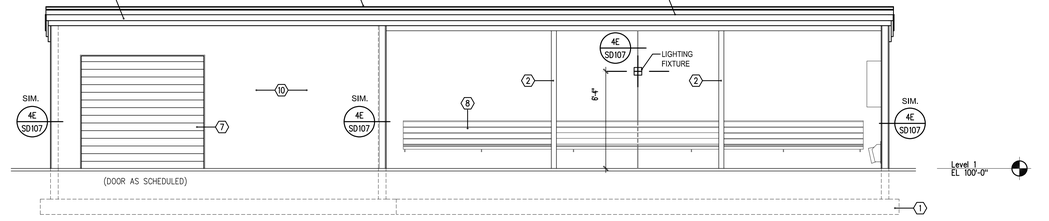
6B Interior Elevations - Team N402
Scale: 1/4" = 1'-0"



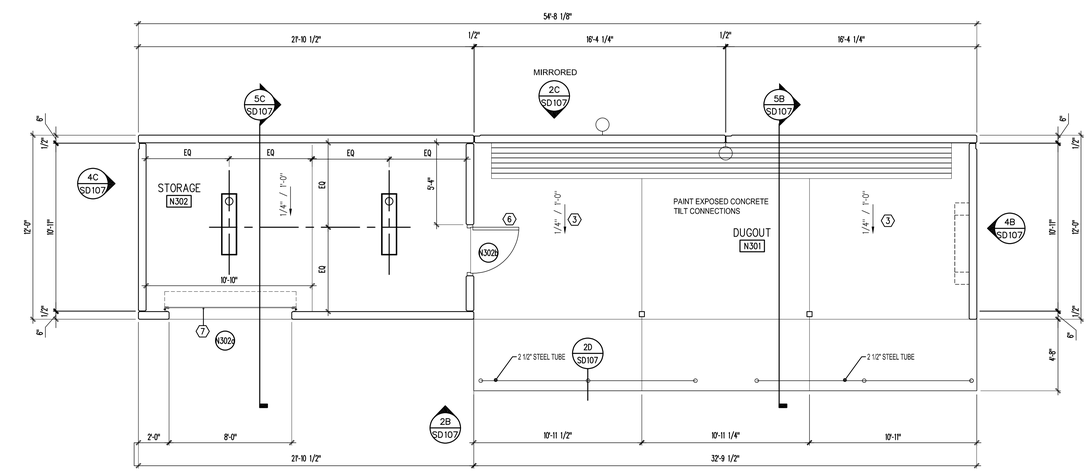
5B Building Section
Scale: 1/4" = 1'-0"



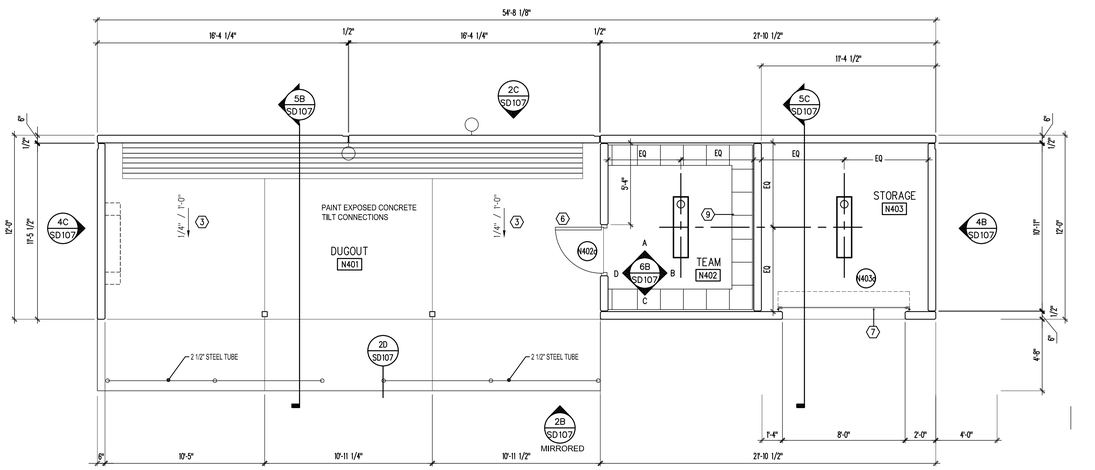
4B Building Elevation - Side C
Scale: 1/4" = 1'-0"



2B Building Elevation - Side D
Scale: 1/4" = 1'-0"



5A Level 1 - Dugout N301
Scale: 1/4" = 1'-0"



2A Level 1 - Dugout N401
Scale: 1/4" = 1'-0"

Stamp

STATE OF UTAH
JAMES D. WENTWORTH
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ARCHITECT
7247706
REGISTERED ARCHITECT

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MURRAY CITY SCHOOL DISTRICT
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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

Project Number
134.028

Project Issue Date
31 March 2025

Sheet Title
Softball Dugout Plan

Sheet Number
SD107
Bid Package 3

S	Size
S1	3'-0" x 7'-0" x 1 3/4"
S2	8'-0" x 7'-4" (overhead coiling door)
S3	7'-8" x 4'-2" (overhead coiling door)

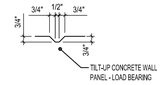
	General Notes
1	Due to multiple use, some of the details refered to on the door schedule are reversed and/or turned from the direction shown on the floor plan. The general intent of details shall in all cases be followed and the architect consulted should questions arise.
2	Doors to be set to clear finished floor surface by 1/2"

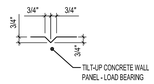
T	Threshold
T1	Metal Threshold

R	Remarks
R1	Properly prepare and paint metal door and frame

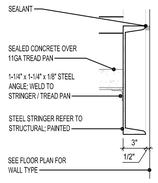
DOOR SCHEDULE

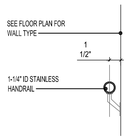
MARK	DOOR ROOM	DOOR TYPE	DOOR PAIR	DOOR SINGLE	DOOR SIZE	DOOR GLASS	FRAME PROFILE	FRAME FRAME TYPE	FRAME FRAME WIDTH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS JAMB/SILL	FIRE RATING	THRESHOLD	HARDWARE	REMARKS
PRESS BUILDING																
N101a	N101	M		●	S1	-	C	1	4 1/2"	3B/SD108	3A/SD108	-	-	-	39	-
N101b	N101	OC		●	S2	-	-	-	-	4C/SD108	4B/SD108	4A/SD108	-	-	OH01	-
N201a	N201	M		●	S1	-	C	1	11 1/2"	1B/SD108	1A/SD108	-	-	-	39	-
N102a	N102	M		●	S1	-	C	1	5 3/4"	2B/SD108	2A/SD108	-	-	-	-	-
N103a	N103	M		●	S1	-	C	1	4 1/2"	3B/SD108	3A/SD108	-	-	-	39	-
N104a	N104	M		●	S1	-	C	1	4 1/2"	2B/SD108	2A/SD108	-	-	-	03	-
N105a	N105	M		●	S1	-	C	1	4 1/2"	3B/SD108	3A/SD108	-	-	-	39	-
N105b	N105	OC		●	S3	-	-	-	-	5C/SD108	5B/SD108	5A/SD108			OH01	
VISITING DUGOUT																
N302a	N302	OC		●	S2	-	-	-	-	4C/SD108	4B/SD108	4A/SD108	-	-	OH01	-
N302b	N302	M		●	S1	-	C	1	4 1/2"	3B/SD108	3A/SD108	-	-	-	39	-
HOME DUGOUT																
N402a	N402	M		●	S1	-	C	1	4 1/2"	3B/SD108	3A/SD108	-	-	-	39	-
N403a	N403	OC		●	S2	-	-	-	-	4C/SD107	4B/SD108	4A/SD108	-	-	OH01	-

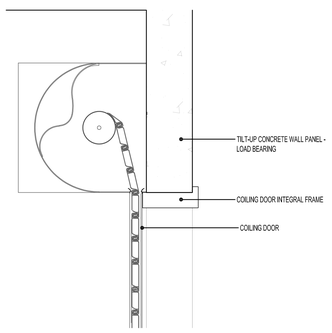


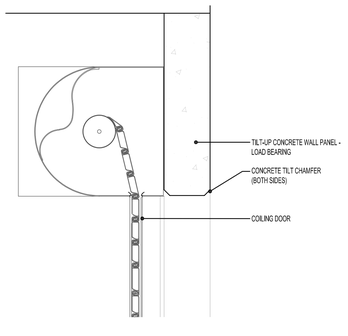


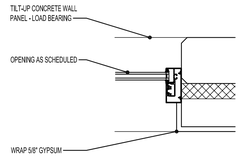
MARK

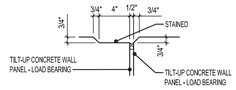


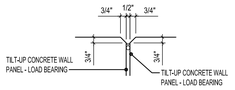


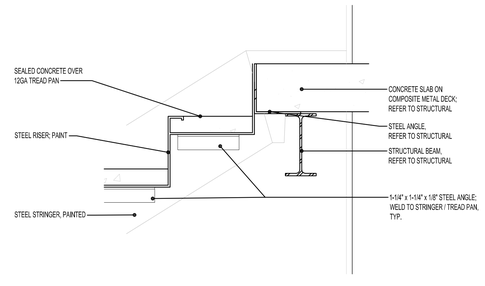


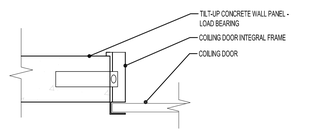


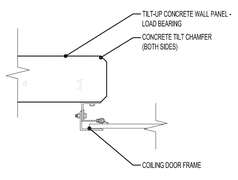


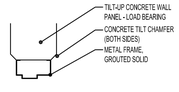


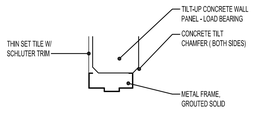


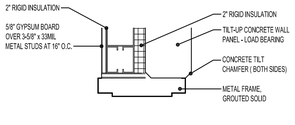


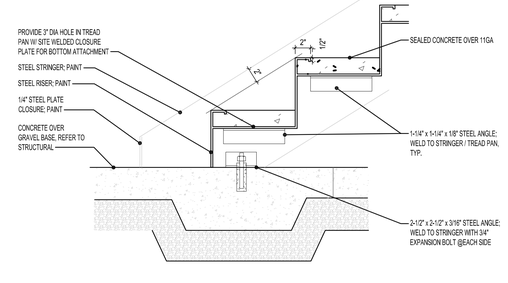


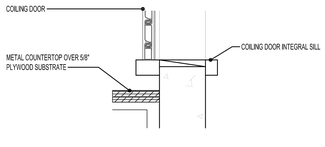


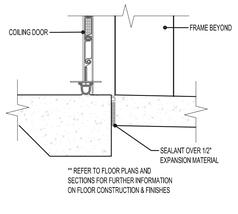


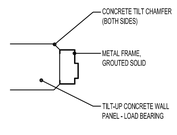


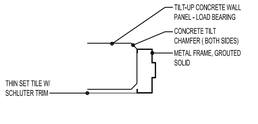


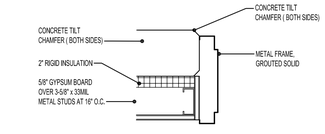












7C Jamb Detail
Scale: 1-1/2" = 1'-0"

6C Jamb Detail
Scale: 1-1/2" = 1'-0"

5C Jamb Detail
Scale: 1-1/2" = 1'-0"

4C Jamb Detail
Scale: 1-1/2" = 1'-0"

3C Jamb Detail
Scale: 1-1/2" = 1'-0"

2C Jamb Detail
Scale: 1-1/2" = 1'-0"

1C Jamb Detail
Scale: 1-1/2" = 1'-0"

6B Jamb Detail
Scale: 1-1/2" = 1'-0"

5B Jamb Detail
Scale: 1-1/2" = 1'-0"

4B Jamb Detail
Scale: 1-1/2" = 1'-0"

3B Jamb Detail
Scale: 1-1/2" = 1'-0"

2B Head Detail
Scale: 1-1/2" = 1'-0"

1B Head Detail
Scale: 1-1/2" = 1'-0"

6A Jamb Detail
Scale: 1-1/2" = 1'-0"

5A Sill Detail
Scale: 1-1/2" = 1'-0"

4A Sill Detail
Scale: 1-1/2" = 1'-0"

3A Sill Detail
Scale: 1-1/2" = 1'-0"

2A Jamb Detail
Scale: 1-1/2" = 1'-0"

1A Jamb Detail
Scale: 1-1/2" = 1'-0"

2D Jamb Detail
Scale: 1-1/2" = 1'-0"

1D TILT-UP HORIZONTAL REVEAL
Scale: 1-1/2" = 1'-0"

Stamp

STATE OF UTAH
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LICENSED
6329792
#7247356
LICENSED ARCHITECT

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751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

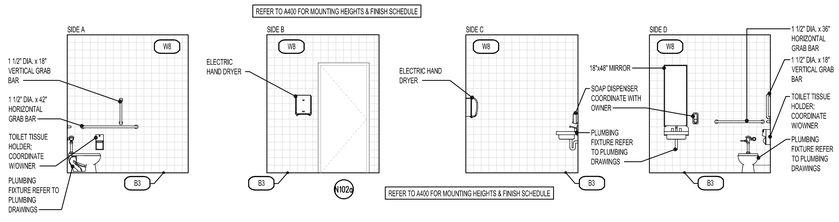
Project Number
134.028

Project Issue Date
31 March 2025

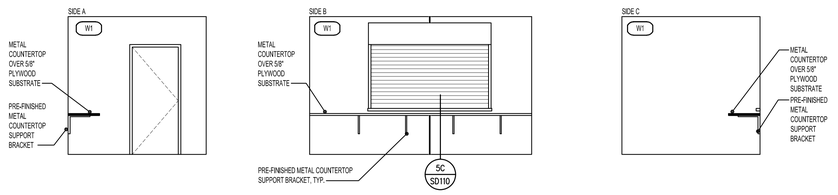
Sheet Title
Site Development Composite Plan

Sheet Number
SD108
Bid Package 3

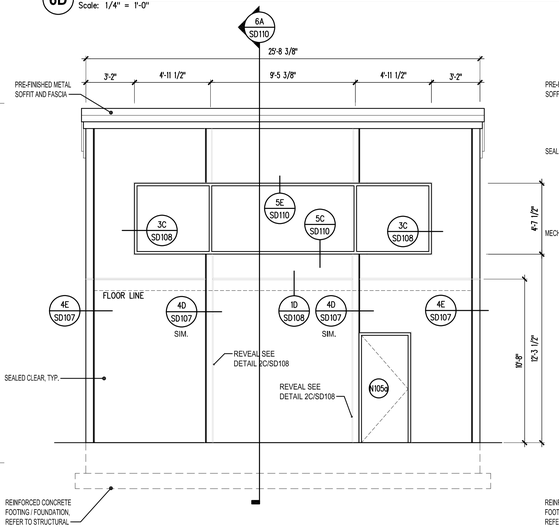
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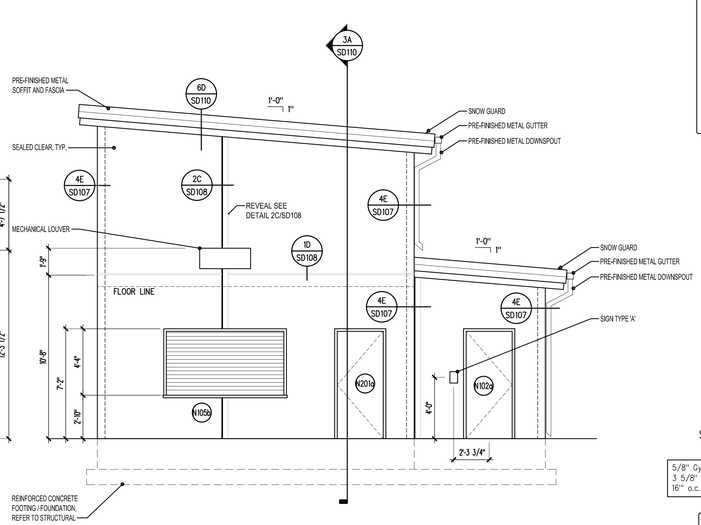
6E Interior Elevations
Scale: 1/4" = 1'-0"



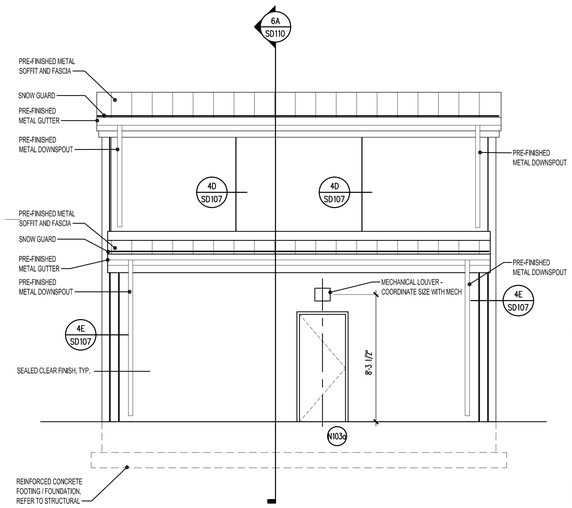
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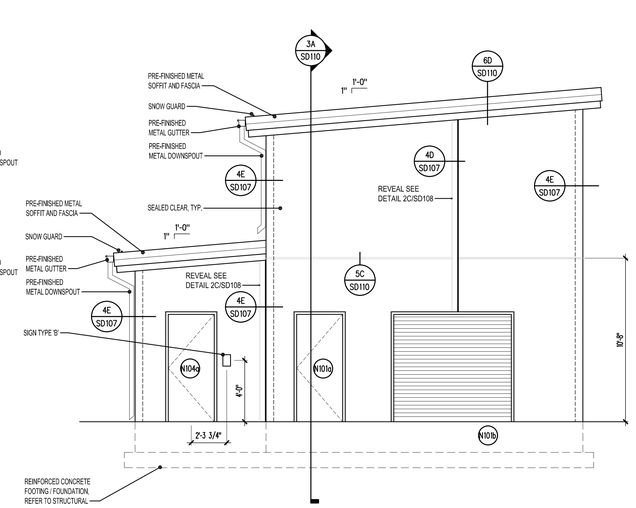
6C Elevation
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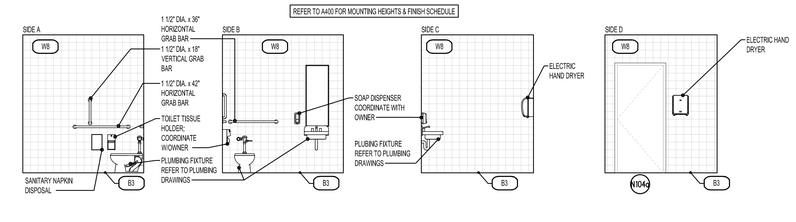
5C Elevation
Scale: 1/4" = 1'-0"



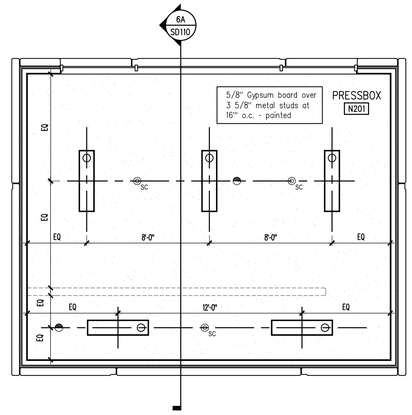
6A Elevation
Scale: 1/4" = 1'-0"



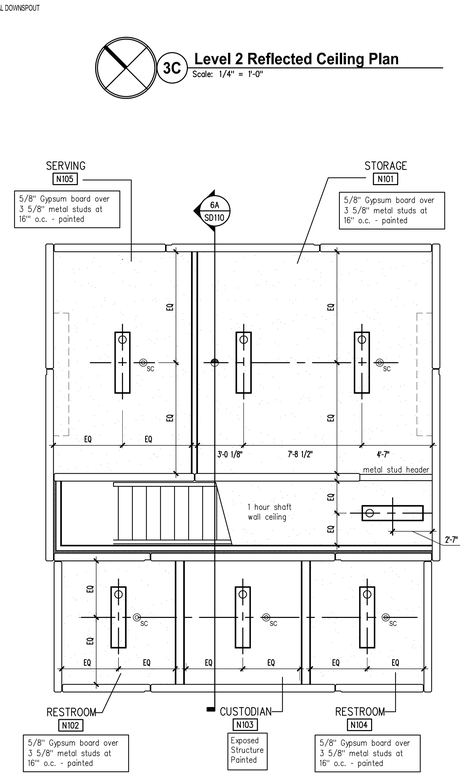
5A Elevation
Scale: 1/4" = 1'-0"



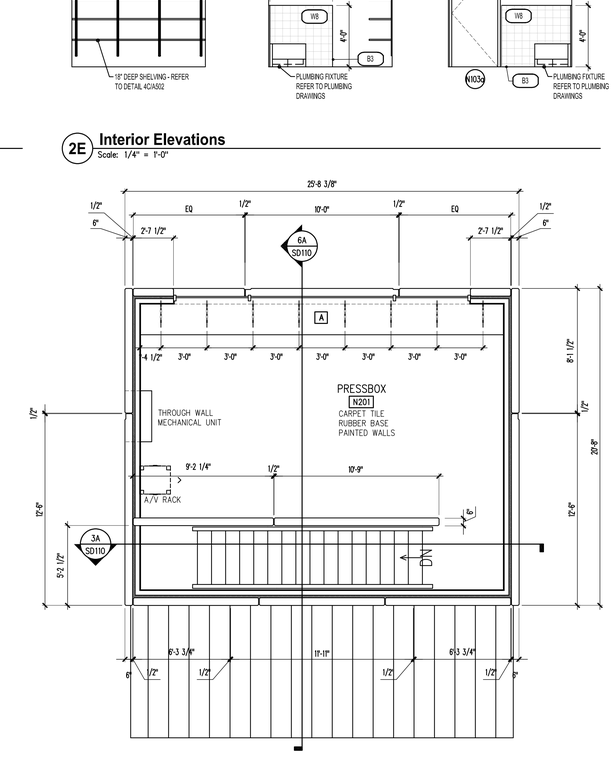
4E Interior Elevations
Scale: 1/4" = 1'-0"



3C Level 2 Reflected Ceiling Plan
Scale: 1/4" = 1'-0"

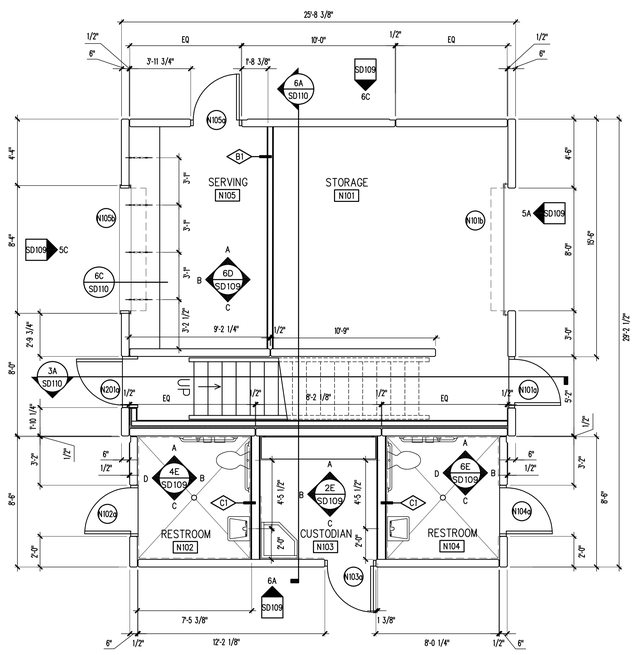


3A Level 1 Reflected Ceiling Plan
Scale: 1/4" = 1'-0"



2E Interior Elevations
Scale: 1/4" = 1'-0"

2C Level 2 Floor Plan
Scale: 1/4" = 1'-0"



2A Level 1 Floor Plan
Scale: 1/4" = 1'-0"

Stamp

STATE OF UTAH
JAMES W. NAYLOR
6373202
REGISTERED
ARCHITECT
#7247356
LICENSED ARCHITECT

NAYLOR WENTWORTH LUND ARCHITECTS

723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.9939

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

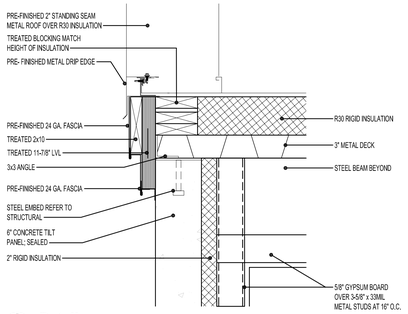
Project Number
134.028

Project Issue Date
31 March 2025

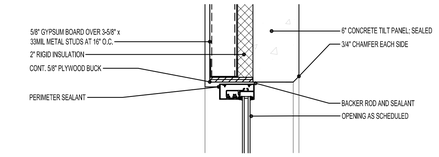
Sheet Title
Site Development Plan

Sheet Number
SD109
Bid Package 3

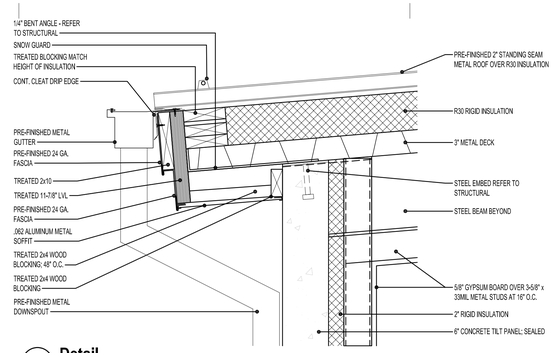
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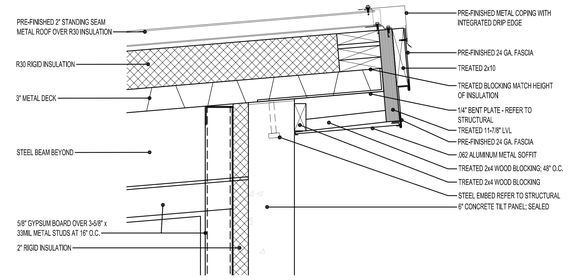
6D Detail
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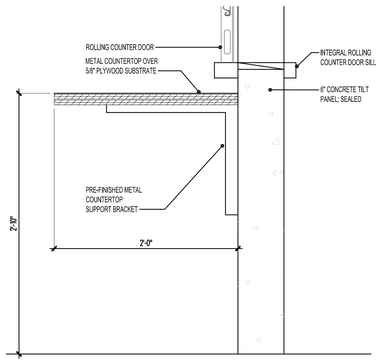
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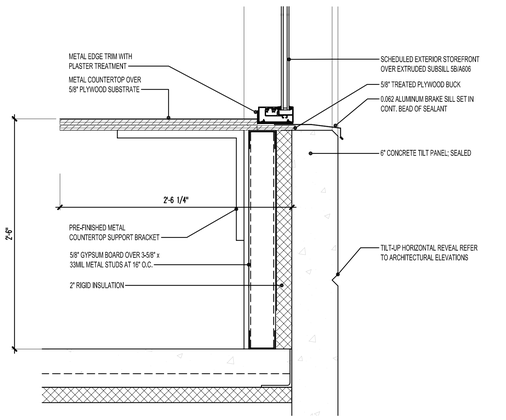
2D Detail
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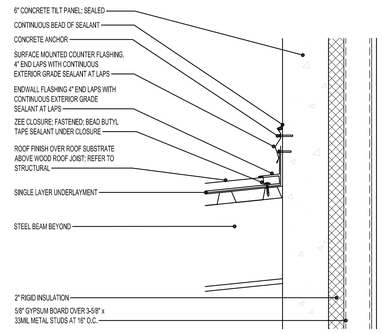
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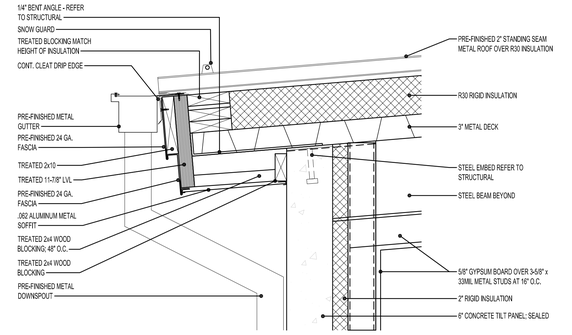
6C Detail
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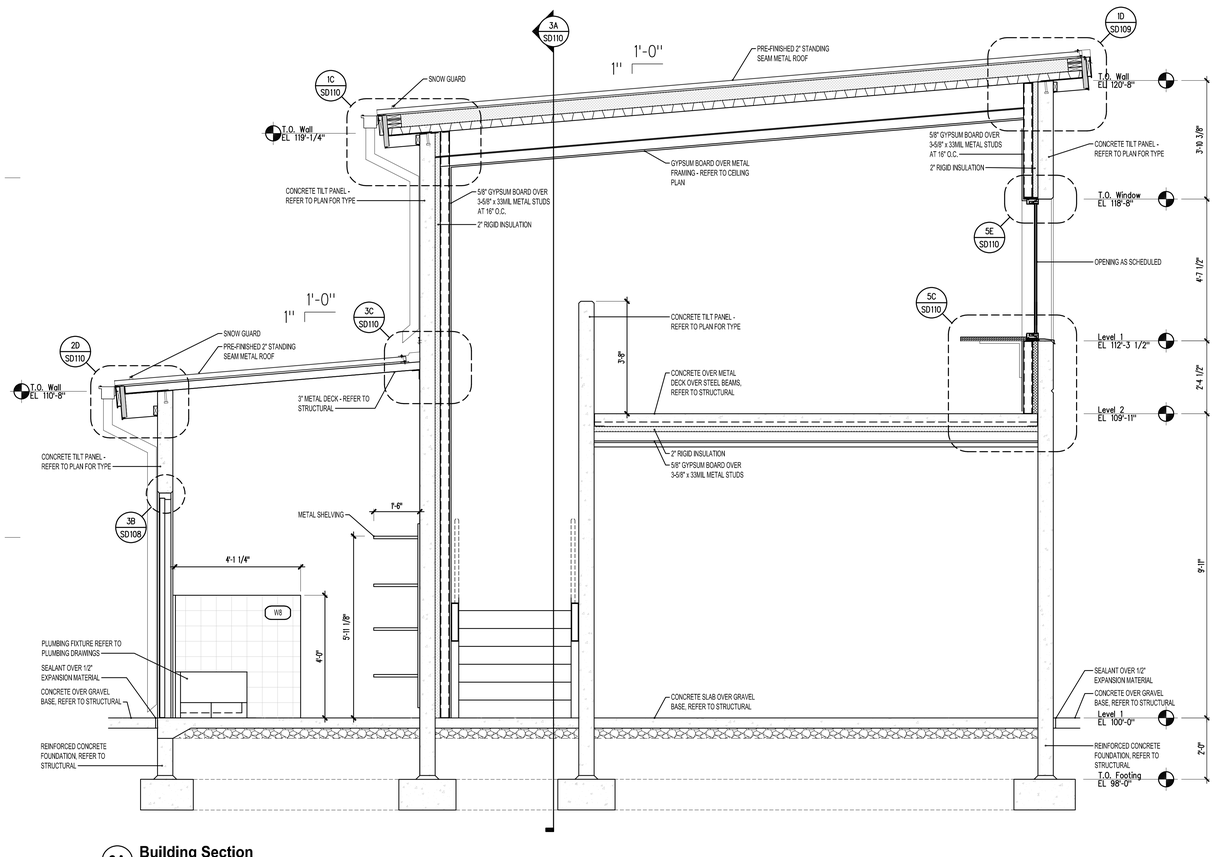
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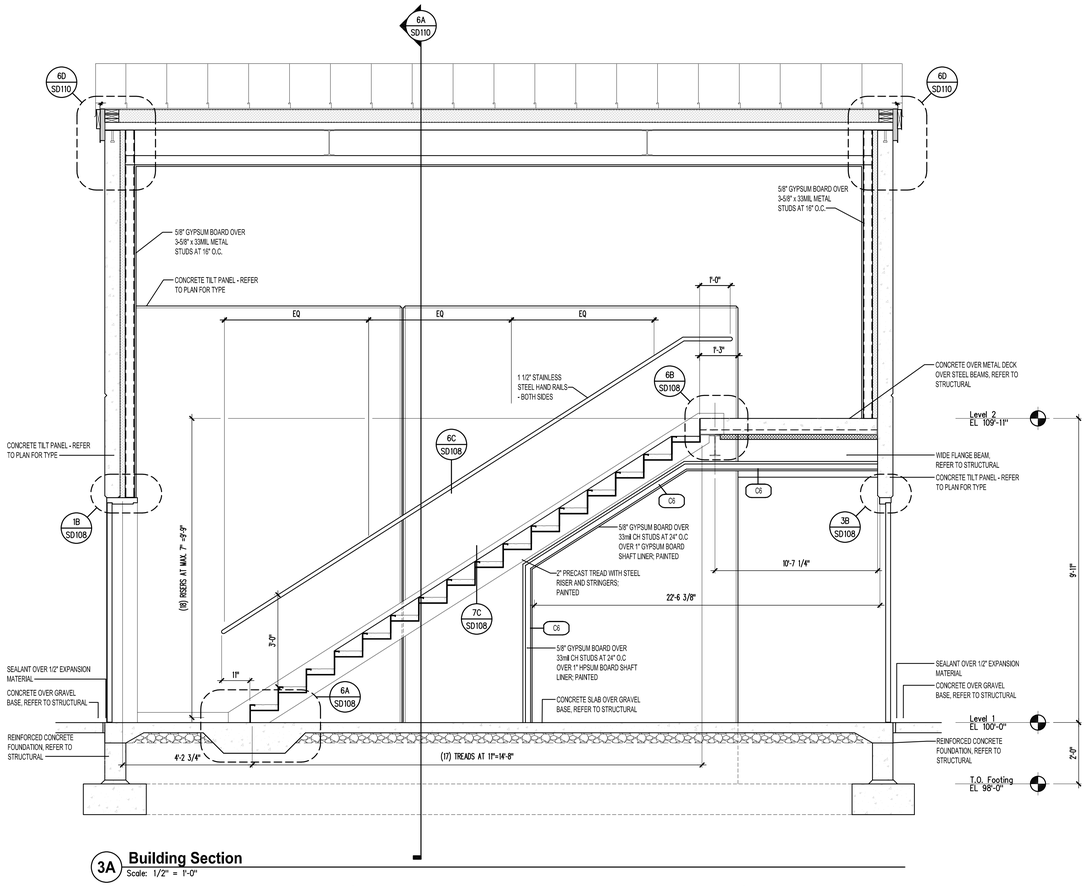
3C Detail
Scale: 1 1/2" = 1'-0"



1C Detail
Scale: 1 1/2" = 1'-0"



6A Building Section
Scale: 1/2" = 1'-0"



3A Building Section
Scale: 1/2" = 1'-0"

Stamp

STATE OF UTAH
JAMES M. WENTWORTH
REGISTERED
ARCHITECT
#7247356
LICENSED ARCHITECT

NAYLOR WENTWORTH LUND ARCHITECTS

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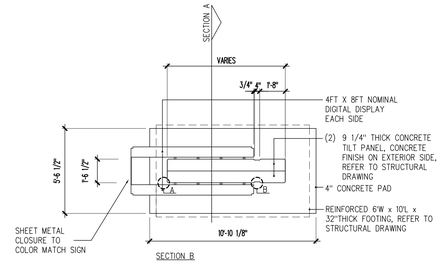
Project Number
134.028

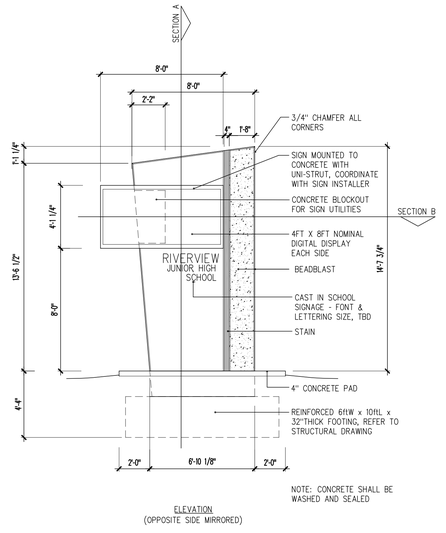
Project Issue Date
31 March 2025

Sheet Title
Site Development Sections and Elevations

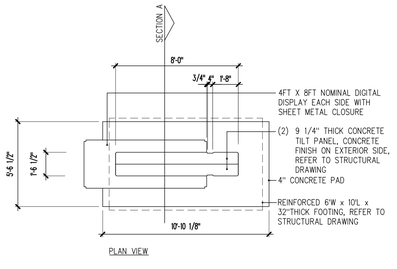
Sheet Number
SD110
Bid Package 3

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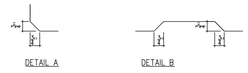




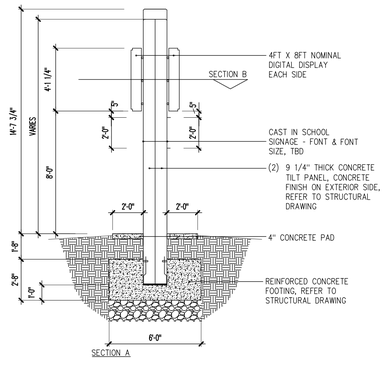
ELEVATION
(OPPOSITE SIDE MIRRORED)



PLAN VIEW



DETAIL A DETAIL B



SECTION A

1A **Marquee Detail**
Scale: 1/4" = 1'-0"

Stamp

STATE OF UTAH
TAYLOR
WENTWORTH
LICENSED
ARCHITECT
#7247356

NAYLOR
WENTWORTH
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Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	bp2 Addenda No 1	03/05/25
2	bp2 to bp3 revision	03/31/25

Project Number
134.028

Project Issue Date
31 March 2025

Sheet Title
Site Development Details

Sheet Number
SD111
Bid Package 3

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GENERAL NOTES

SPECIAL PROJECT NOTE:

- ALL CONSTRUCTION ACTIVITY WITHIN STREET ROW AND FOR SITE WATER LINES AND SEWER LINES SHALL CONFORM TO MURRAY CITY STANDARD PLANS AND "APWA MANUAL OF STANDARD PLANS" (LATEST EDITION) AND THE DEVELOPMENT GUIDELINES AND SPECIFICATIONS. CONTRACTOR SHALL OBTAIN COPIES OF SAID CITY STANDARDS AND APWA STANDARDS PRIOR TO CONSTRUCTION.

GENERAL

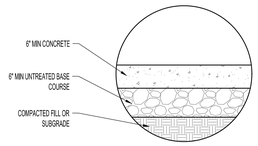
1. ANY MODIFICATION TO THIS CONSTRUCTION PACKAGE SHALL BE APPROVED BY THE OWNER, PRIOR TO SAID APPROVAL, ALL IMPROVEMENT DRAWINGS SHALL BE RESUBMITTED AND APPROVED BY THE CITY ENGINEER.
2. THE CONTRACTOR SHALL LOCATE, RETAIN AND PROTECT ALL EXISTING UTILITIES UNLESS OTHERWISE DIRECTED BY THE ENGINEER. EXISTING GAS, TELEPHONE, POWER, OR WATERLINES WHICH MUST BE RELOCATED OR LOWERED FOR NEW GRAVITY LINES WILL BE COMPLETED BY THE CONTRACTOR TO THE UTILITY COMPANY SPECIFICATIONS.
3. ALL SUITABLE EXCAVATION MATERIAL MAY BE STOCKPILED ON LANDSCAPE AREAS (NOT OVER 3' DEEP) AND GRADED TO DRAIN. EXCESS TOPSOIL SHALL BE REMOVED AND STORED AS INDICATED ON THE LANDSCAPE PLANS. SUITABLE MATERIAL IS DEFINED IN THE PROJECT GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT AS well AS CITY EARTHWORK SPECIFICATIONS. ALL EARTHWORK SHALL BE COMPLIANT WITH THESE DOCUMENTS. IF CITY SPECIFICATIONS AND THE GEOTECHNICAL REPORT ARE IN CONFLICT REFER TO THE CITY ENGINEER FOR DIRECTION ON WHICH REQUIREMENTS MUST BE FOLLOWED IN THE FIELD.
4. TRACER TAPE SHALL BE PLACED ABOVE ALL SEWER, PVC ROOF DRAIN LINES. WATER AND SECONDARY WATER LINES PER CITY AND DISTRICT STANDARD SPECIFICATIONS. TRACER WIRE SHALL BE INSTALLED OVER THE WATER LINES.
5. ALL EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. AS INDICATED ON THE C200 SHEET, CONTRACTOR SHALL NOTIFY BLUE STAKES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION. CONTRACTOR SHALL POTHOLE AND FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL UTILITY CONFLICTS UPON DISCOVERY.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BACKFILLING, COMPACTING, AND PAVEMENT RESTORATION WHERE NECESSARY TO INSTALL NEW UTILITIES ON NEW IMPROVEMENTS PER CITY STANDARDS IN EXISTING ROADWAYS.
7. CONTRACTOR SHALL PROVIDE CITY INSPECTOR WITH CONSTRUCTION SCHEDULE AFTER SAID SCHEDULE HAS BEEN APPROVED BY OWNER.
8. CONTRACTOR SHALL COORDINATE CONSTRUCTION DEMOLITION AND INSTALLATION OF ELECTRICAL, AND COMMUNICATION SERVICES WITH THE UTILITY COMPANY. OWNER SHALL PAY ALL ASSOCIATED UTILITY COMPANY FEES. CONTRACTOR TO PROVIDE ELECTRICAL LINE OR COMMUNICATION TRENCHING AND BACKFILL. COORDINATE LOCATIONS WITH POWER AND COMMUNICATION COMPANY. ALL DEMOLITION OF EXISTING AND PROPOSED NEW SITE ELECTRICAL EQUIPMENT STRUCTURES AND LINES SHOWN ON CIVIL PLANS ARE SCHEMATICALLY SHOWN ONLY AS A COORDINATION BETWEEN ELECTRICAL AND CIVIL. PLEASE REFER DIRECTLY TO ELECTRICAL PLANS FOR THE LAYOUT AND DETAILS OF ALL SITE ELECTRICAL EQUIPMENT AND LINES.
9. CONTRACTOR TO KEEP A SET OF NEAT PLANS ON WHICH ALL CHANGES HAVE BEEN CLEARLY SHOWN. THIS SET OF REDLINES SHALL BE TURNED IN TO THE ARCHITECT.
10. CONTRACTOR TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY PRIOR TO ANY WORK.
11. ALL UTILITY STRUCTURES WITHIN PAVEMENT SHALL BE RAISED TO ACCURATE FINISHED GRADE WITH A CONCRETE COLLAR. SEE DETAIL ON SHEET C101.
12. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS, BONDS, AND APPROVALS HAVE BEEN OBTAINED. ALL PERMIT AND BOND FEES ARE TO BE PAID BY THE OWNER.
13. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED, AND THOROUGHLY REVIEWED, ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
14. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE CURRENT REQUIREMENTS AND DEVELOPMENT STANDARDS OF THE CITY. THE SOILS REPORT AND RECOMMENDATIONS SET FORTH THEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND SHALL TAKE PRECEDENCE IN CASE OF CONFLICT UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCY BETWEEN THE SOILS REPORT AND PLANS ETC.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST AND EROSION CONTROL, CLEANING STREET AND OTHER SWPP REGULATIONS.
16. ALL EXISTING ASPHALT TO REMAIN SHALL BE SAW CUT IN NEAT, STRAIGHT LINES BY THE CONTRACTOR PRIOR TO EXCAVATION.
17. NO CHANGE IN DESIGN LOCATIONS OR GRADE WILL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN APPROVAL OF THE OWNER AND ENGINEER.
18. CONTRACTOR SHALL NOT ALLOW ANY GROUND WATER, SURFACE WATER, ANIMALS, OR DEBRIS TO ENTER NEW PIPING DURING CONSTRUCTION.
19. CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PROTECT ALL NEW FACILITIES DURING THE CONSTRUCTION PERIOD UNTIL THE DESIGN GRADE AND COVER HAVE BEEN REACHED AND WORK HAS BEEN ACCEPTED BY OWNER.
20. CONTRACTOR IS TO REMAIN WITHIN THE CONTRACT LIMITS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT SURFACE IMPROVEMENTS DURING CONSTRUCTION.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF, OR DAMAGE TO, EXISTING AND NEW UTILITIES AND FACILITIES, INCLUDING WORK DONE WITHIN THE WARRANTY PERIOD.
22. ALL ONSITE PAVEMENT SECTIONS, GRADING, EXCAVATION, BACKFILLING, AND OTHER EARTHWORK OPERATIONS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS PREPARED FOR THIS PROJECT. STRUCTURAL FILL, BEDDING, IMPORTED BACKFILL, GRANULAR SUBBASE, BASE COURSE AND ASPHALTIC CONCRETE MATERIALS SHALL MEET THE REQUIREMENTS OUTLINED IN THE PROJECT SPECIFICATIONS. ALL EARTHWORK AND PAVING IN CITY R.O.W. SHALL MEET CITY SPEC'S.
23. COORDINATE GAS INSTALLATION WITH THE GAS COMPANY. GAS COMPANY WILL ROUTE GAS TO THE METER LOCATION SHOWN ON THE PLANS. ACCOMMODATE GAS COMPANY CONTRACTOR ON SITE DURING GAS LINE INSTALLATION.
24. SEE SHEET C200 FOR SURVEY CONTROL. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING THAT MAY BE NEEDED TO COMPLETE THE JOB.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS AND TRAFFIC PERMITS AND TRAFFIC CONTROL PLANS FOR ALL WORK IN CITY R.O.W. (EXISTING AND NEW ROADWAYS) PRIOR TO BEGINNING WORK.
26. CONTRACTOR SHALL COORDINATE CONSTRUCTION AND INSTALLATION OF ELECTRICAL, TELEPHONE, NATURAL GAS, AND SERVICES WITH THE UTILITY COMPANY. ASSOCIATED UTILITY COMPANY FEES WILL BE PAID AS OUTLINED IN CONTRACT GENERAL CONDITIONS. CONTRACTOR TO PROVIDE ELECTRICAL AND TELEPHONE LINE TRENCHING AND BACKFILL. COORDINATE LOCATIONS WITH ROCKY MOUNTAIN POWER AND CENTURY LINK. COORDINATE AND SCHEDULE WITH ENBRIDGE GAS, CENTURY LINK, AND ROCKY MOUNTAIN POWER FOR CONNECTION OF THESE UTILITIES TO THE NEW BUILDING. GAS, TELEPHONE AND POWER ALL MUST BE EXTENDED TO THE SITE FROM THE NEW DEVELOPMENT IN THE AREA. COORDINATE WITH THESE UTILITIES FOR LOCATION OF THESE NEW EXTENSIONS.
27. THE USE OF MOTOR OILS AND OTHER PETROLEUMABASED OR TOXIC LIQUIDS, FOR DUST SUPPRESSION, IS ABSOLUTELY PROHIBITED.
28. NO DRIVEWAY SHALL BE CONSTRUCTED TO CONVEY STORM RUNOFF TOWARDS ANY BUILDING.
29. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, MAINTAINING, OR RESTORING ALL MONUMENTS AND MONUMENT REFERENCE MARKS WITHIN THE PROJECT SITE. CONTACT THE CITY OR COUNTY SURVEYOR FOR MONUMENT LOCATIONS AND CONSTRUCTION DETAILS.
30. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMING TO LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES AND FOR THE PROTECTION OF WORKERS.
31. CONTACT FOR UTILITY COORDINATION INCLUDE:
    - SEWER - MURRAY CITY - 801-270-2440
    - WATER - MURRAY CITY - 801-270-2440
    - STORM - MURRAY CITY - 801-270-2440
    - IRRIGATION - MURRAY CITY - 801-270-2440
    - GAS - ENBRIDGE GAS - 1-800-323-5517
    - POWER - MURRAY POWER - 801-246-2730
32. CONTRACTOR TO COORDINATE INSTALLATION OF ALL LANDSCAPE SLEEVES PRIOR TO FORMING CONCRETE SIDEWALKS, RETAINING WALLS, SEAT WALLS OR STAIR WALLS. SEE LANDSCAPE PLANS.

SYMBOL LEGEND

- YARD HYDRANT
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- POST INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION
- WATER CAP
- WATER TEE
- WATER CROSS
- WATER WYE
- WATER REDUCER
- WATER BENDS
- AREA DRAIN (SIZE PER PLAN)
- CATCH BASIN (SIZE PER PLAN)
- PRE-TREATMENT CURB INLET BOX (PRE-TREAT CIB)
- CURB INLET BOX (CIB)
- COMBO BOX (COMBO)
- STORM DRAIN FLARED END SECTION
- STORM DRAIN / SANITARY SEWER CLEANOUT
- 49 STORM DRAIN /SANITARY SEWER MANHOLE
- 59 STORM DRAIN /SANITARY SEWER MANHOLE
- ELECTRIC METER
- GAS METER
- LIGHT POLE
- DOUBLE LIGHT POLE
- CURB & GUTTER (24")
- CURB WALL (6")
- 33.05 TBC — SPOT ELEVATION
- HANDICAPPED PARKING
- STOP BAR
- PAVEMENT MARKING
- POWER POLE
- SIGN
- CLEANOUT BOX
- THREE CHAMBER PRE-TREATMENT BOX
- OVERFLOW BOX
- DECORATIVE SITE LIGHTING

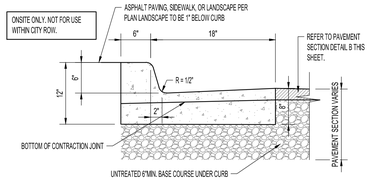
LINE LEGEND

PROPOSED	EXISTING	
		PROPERTY LINE
		LIMITS OF PROJECT
		MATCHLINE
		CENTERLINE
		SAW CUT LINE
4435	4435	PROPOSED MAJOR CONTOUR
4434	4434	PROPOSED MINOR CONTOUR
SS	SS	SANITARY SEWER PIPELINE
SD	SD	STORM DRAIN PIPELINE
LD	LD	LAND DRAIN
T	T	TELEPHONE
W	W	WATER PIPELINE
IRR	IRR	SECONDARY WATER PIPELINE
G	G	GAS PIPELINE
P	P	BURIED POWER
CATV	CTV	CATV
FO	FO	FIBER OPTIC
RIDGE	RIDGE	RIDGE LINE
		FLOW LINE
X		FENCE
SF		SILT FENCE
XX	XX	TEMPORARY SHORING
		REMOVAL
		ABANDON



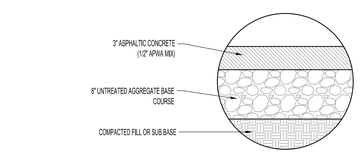
NOTES:
1. USE FOR DUMPSTER PADS AND OTHER CONCRETE PAVING WITH VEHICLE TRAFFIC, AS INDICATED BY HATCH ON CIVIL SITE LAYOUT PLAN. REINFORCING FOR DUMPSTER PADS REFER TO ARCHITECTURAL SPEC'S.
2. PROOF ROLL NATURAL SUBGRADE PER SPEC'S.
3. PAVEMENT CONSTRUCTION DURING WET PERIODS WILL REQUIRE 12" OF GRANULAR FILL MATERIAL PLACED DIRECTLY BELOW THE GRANULAR FILL SUBBASE LAYER. INSTALL GEOTEXTILE FABRIC (MIRAFI 600X OR EQUIVALENT) WHERE SUBGRADE COMPACTION IS NOT FEASIBLE. PROVIDE ADDITIONAL FILL & FABRIC IF NECESSARY FOR COMPLETION SCHEDULE AT NO ADDITIONAL COST TO OWNER.
4. SEALED CONTRACTION JOINTS TO BE 1/4" DEEP, JOINT PATTERN AS OUTLINED ON ARCHITECTURAL SITE PLANS. 15' MAXIMUM SPACING
5. SEAL ALL EXPANSION JOINTS PER SPEC'S.
6. IF EXISTING PAVEMENT IS PULVERIZED AND MIXED WITH NEW BASE COURSE MATERIAL, THE ASPHALT THICKNESS SHALL BE INCREASED 1/2" OVER THE RECYCLED ASPHALT BASE COURSE MIXTURE.

CONCRETE PAVEMENT SECTION (ON SITE ONLY) — N.T.S. — A



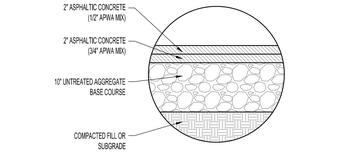
NOTES:
1. CONCRETE SHALL BE MONOLITHIC 4000 PSI @ 28 DAYS (6% AIR ENTRAINED).
2. PLACE EXPANSION-CONTRACTION JOINTS AT ALL BC AND EC POINTS. PLACE CONTROL JOINTS AT 10' INTERVALS.
3. PLACE JOINT FILLER STRIPS BETWEEN WALK AND CURB TO DEPTH OF CONCRETE PLUS ONE INCH WITH TIP SET FLUSH WITH TOP BACK OF CURB.
4. REMOVE NONENGINEERED FILL BELOW CURB AND 2' MINIMUM BEYOND THE EDGE OF CONCRETE AND REPLACE STRUCTURAL FILL. REFER TO SPEC. SECTION 312000 FOR SUBGRADES PREPARATION OVEREXCAVATION REQUIREMENTS.
5. ALL COLD JOINTS ON SITE NEED TO BE DOWELED.
6. WHEN PAVEMENT IS PLACED ON 3 FEET OR MORE OF SITE FILL, THE GENERAL SITE FILL SHOULD MEET THE REQUIREMENTS OUTLINED IN THE EARTH MOVING SPEC. THE TOP 24" OF FILL MUST BE STRUCTURAL FILL WITH MIRAFI RS280i OR APPROVED EQUIVALENT FOR STABILIZATION FABRIC OVER THE STRUCTURAL FILL TO GET TO SUBGRADE. FABRIC SHOULD BE PLACED OVER RELATIVELY LEVEL SURFACES. ABRUPT ELEVATION CHANGES SHOULD BE SMOOTHED.

CURB & GUTTER — N.T.S. — D



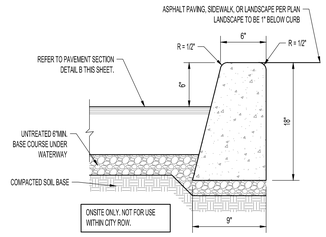
NOTES:
1. USE FOR PARKING AREAS OR OTHER LIGHT VEHICLE TRAFFIC.
2. PROOF ROLL NATURAL SUBGRADE PER SPEC'S.
3. PAVEMENT CONSTRUCTION DURING WET PERIODS WILL REQUIRE 12" OF GRANULAR FILL MATERIAL PLACED DIRECTLY BELOW THE GRANULAR FILL SUBBASE LAYER. INSTALL GEOTEXTILE FABRIC (MIRAFI 600X OR EQUIVALENT) WHERE SUBGRADE COMPACTION IS NOT FEASIBLE. PROVIDE ADDITIONAL FILL & FABRIC IF NECESSARY FOR COMPLETION SCHEDULE AT NO ADDITIONAL COST TO OWNER.
4. ASPHALT MIX TO COMPLY WITH APWA SPECIFICATIONS.
5. STREET REPAIR IN CITY RIGHT OF WAY TO MEET CITY STANDARD ON SHEET C103.
6. IF EXISTING PAVEMENT IS PULVERIZED AND MIXED WITH NEW BASE COURSE MATERIAL, THE ASPHALT THICKNESS SHALL BE INCREASED 1/2" OVER THE RECYCLED ASPHALT BASE COURSE MIXTURE.

ASPHALT PAVEMENT SECTION (ON SITE ONLY) — N.T.S. — B



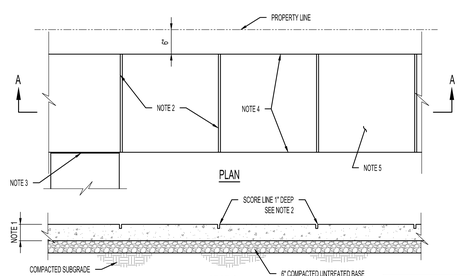
NOTES:
1. USE FOR SITE ROADWAYS AND BUS AREAS, AND OTHER HEAVY TRAFFIC AREAS, AS INDICATED BY HATCH ON CIVIL SITE LAYOUT PLAN.
2. PROOF ROLL NATURAL SUBGRADE PER SPEC'S.
3. PAVEMENT CONSTRUCTION DURING WET PERIODS WILL REQUIRE 12" OF GRANULAR FILL MATERIAL PLACED DIRECTLY BELOW THE GRANULAR FILL SUBBASE LAYER. INSTALL GEOTEXTILE FABRIC (MIRAFI 600X OR EQUIVALENT) WHERE SUBGRADE COMPACTION IS NOT FEASIBLE. PROVIDE ADDITIONAL FILL & FABRIC IF NECESSARY FOR COMPLETION SCHEDULE AT NO ADDITIONAL COST TO OWNER.
4. ASPHALT MIX TO COMPLY WITH APWA SPECIFICATIONS.
5. STREET REPAIR IN CITY RIGHT OF WAY TO MEET CITY STANDARD ON SHEET C103.
6. IF EXISTING PAVEMENT IS PULVERIZED AND MIXED WITH NEW BASE COURSE MATERIAL, THE ASPHALT THICKNESS SHALL BE INCREASED 1/2" OVER THE RECYCLED ASPHALT BASE COURSE MIXTURE.

HEAVY DUTY ASPHALT PAVEMENT SECTION (ON SITE ONLY) — N.T.S. — C



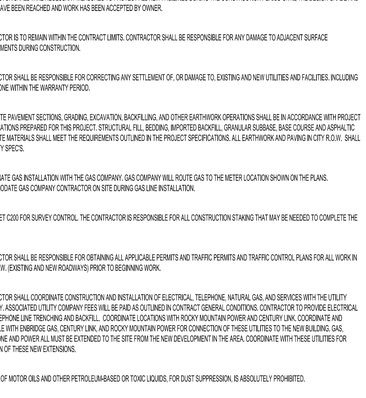
NOTES:
1. CONCRETE SHALL BE MONOLITHIC 4000 PSI @ 28 DAYS (6% AIR ENTRAINED).
2. PLACE EXPANSION-CONTRACTION JOINTS AT ALL BC AND EC POINTS. PLACE CONTROL JOINTS AT 10' INTERVALS.
3. PLACE JOINT FILLER STRIPS BETWEEN WALK AND CURB TO DEPTH OF CONCRETE PLUS ONE INCH WITH TIP SET FLUSH WITH TOP BACK OF CURB.
4. REMOVE NONENGINEERED FILL BELOW CURB AND 2' MINIMUM BEYOND THE EDGE OF CONCRETE AND REPLACE STRUCTURAL FILL. REFER TO SPEC. SECTION 312000 FOR SUBGRADES PREPARATION OVEREXCAVATION REQUIREMENTS.
5. WHEN PAVEMENT IS PLACED ON 3 FEET OR MORE OF SITE FILL, THE GENERAL SITE FILL SHOULD MEET THE REQUIREMENTS OUTLINED IN THE EARTH MOVING SPEC. THE TOP 24" OF FILL MUST BE STRUCTURAL FILL WITH MIRAFI RS280i OR APPROVED EQUIVALENT FOR STABILIZATION FABRIC OVER THE STRUCTURAL FILL TO GET TO SUBGRADE. FABRIC SHOULD BE PLACED OVER RELATIVELY LEVEL SURFACES. ABRUPT ELEVATION CHANGES SHOULD BE SMOOTHED.

CURB DETAIL — N.T.S. — E

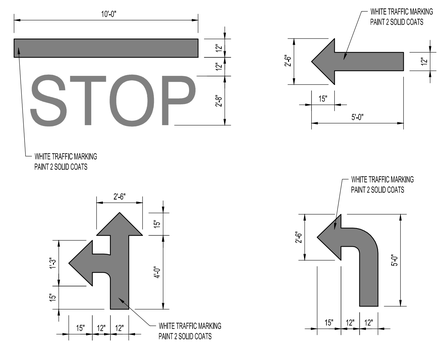


NOTES:
1. USE MONOLITHIC CONSTRUCTION 4" THICK EXCEPT AT DRIVEWAYS WHERE THICKNESS OF 6" IS REQUIRED.
2. SAWCUT AND CHAMFER SCORE LINES AT INTERVALS EQUAL TO 1 TIMES THE WIDTH OF THE SIDEWALK UNIFORMLY PLACED ALONG LENGTH OF SIDEWALK AFTER POUR. SAW CUTTING SHOULD BE DONE 4 TO 12 HOURS AFTER THE CONCRETE HAS BEEN FINISHED. IN HOT WEATHER EARLY-ENTRY DRY-CUT JOINTS SHOULD BE CUT 1 TO 4 HOURS AFTER FINISHING.
3. SIDEWALK EXPANSION JOINTS SHALL BE 20' ON CENTER MAXIMUM. THE EXPANSION JOINT SHALL INCLUDE ASPHALT IMPREGNATED FIBER EXPANSION MATERIAL. THE CONTRACTOR WILL USE BOND BREAKER TAPE WITH POLYURETHANE JOINT SEALANT TO A DEPTH OF 3/8".
4. EDGE SIDEWALK WITH 1/2" RADIUS EDGING TOOL. ROUND EDGES AT EXPANSION JOINTS TO A RADIUS OF 1/2".
5. USE HAIR-BROOM BRUSH TO FINISH SIDEWALKS.
6. OVER NEWLY BACKFILLED TRENCHES. PLACEMENT OF 2-1/2" #4 BARS IN SIDEWALK IS REQUIRED.
7. REMOVE NON-ENGINEER FILL BELOW SIDEWALK AND 2' MINIMUM BEYOND THE EDGE OF CONCRETE AND REPLACE WITH STRUCTURAL FILL.
8. ALL CONCRETE SIDEWALK SLABS SHALL BE DOWELED TO ADJACENT SLABS WITH REBAR DOWELS AT EXPANSION JOINTS OR ANY BREAK IN THE POUR. DOWELS ARE TO BE EVENLY SPACED WITH MAXIMUM DISTANCE BETWEEN DOWELS NOT TO EXCEED 24". REBAR DOWELS MUST BE #4 OR LARGER AND AT LEAST 24" LONG. DOWELS MUST BE EMBEDDED AT LEAST 3" DEEP AND NO CLOSER THAN 6" FROM THE EDGE OF THE SLAB.

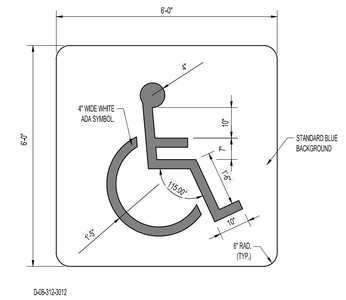
CONCRETE SIDEWALK — N.T.S. — F



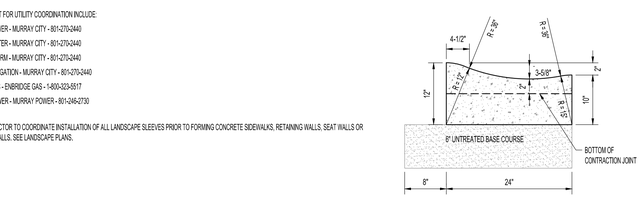
RAISED CROSSWALK — N.T.S. — G



PAINTED TRAFFIC MARKINGS — N.T.S. — H



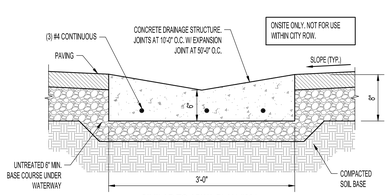
PAINTED ADA SYMBOL — N.T.S. — I



ROLLED CURB TYPE G

NOTES:
1. CONCRETE SHALL BE MONOLITHIC 4500 PSI CONCRETE.
2. PLACE CONTRACTION JOINTS AT ALL BC AND EC POINTS. PLACE CONTROL JOINTS AT 10' INTERVALS.
3. PLACE EXPANSION JOINT FILLER STRIPS BETWEEN NEW CONCRETE PAVEMENT AND GUTTER UNLESS NOTED OTHERWISE. SEAL JOINT PER SPECIFICATIONS
4. PER APWA STANDARD PLAN #205 TYPE G CURB.

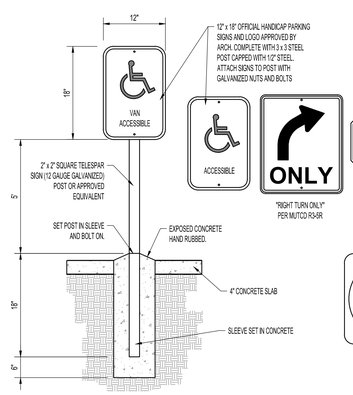
TYPE G CURB DETAIL — N.T.S. — J



SIMILAR TO APWA PLAN #221

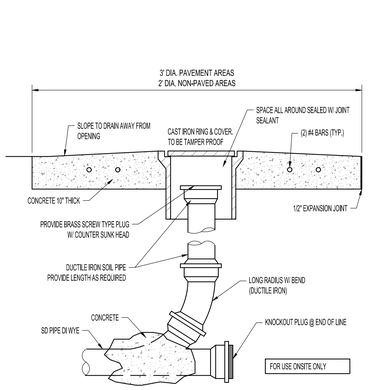
NOTES:
1. CONCRETE SHALL BE MONOLITHIC 4000 PSI @ 28 DAYS (6% AIR ENTRAINED).
2. PLACE EXPANSION-CONTRACTION JOINTS AT ALL BC AND EC POINTS. PLACE CONTROL JOINTS AT 10' INTERVALS.
3. PLACE JOINT FILLER STRIPS BETWEEN WALK AND CURB TO DEPTH OF CONCRETE PLUS ONE INCH WITH TIP SET FLUSH WITH TOP BACK OF CURB.
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3' WATERWAY — N.T.S. — K



NOTES:
1. ALL SIGNS TO CONFORM TO MUTCD 2009 STANDARDS.
2. SOME SIGNS WILL NEED TO BE HUNG ON LIGHT POLES OR FENCING AS INDICATED IN THE PLANS

SIGN DETAIL 1 — N.T.S. — L



EXTERIOR CLEAN OUT — N.T.S. — M

Stamp
STATE OF UTAH
CHRISTOPHER JUDD LUTHI
2025-02-13
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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray.*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

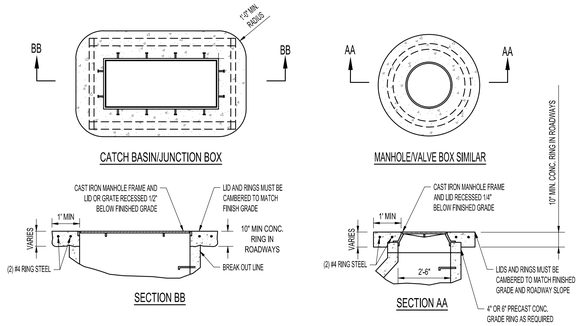
Project Issue Date
31 MARCH 2025

Sheet Title
GENERAL NOTES AND DETAILS

Sheet Number
C100

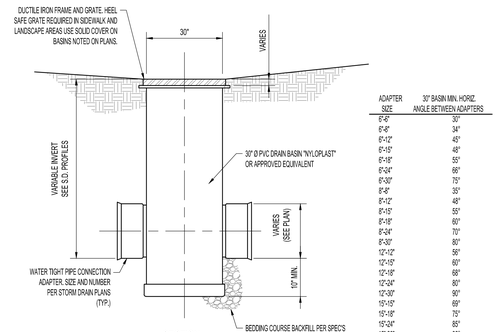
BID PACKAGE 3

Blue Stakes of Utah 811 — Know what's below. Call before you dig.



NOTES:
1. REQUIRED FOR EXISTING OR NEW CATCH BASINS (OUTSIDE OF C&G), CLEAN OUTS, VALVES OR MANHOLES AND ALL OTHER UTILITY STRUCTURES IN THE PROJECT LIMITS.
2. WHERE CONCRETE PAVING IS COMPLETED AROUND UTILITY STRUCTURE, USE REINFORCEMENT SHOWN AROUND THE UTILITY STRUCTURE.
3. CONCRETE COLLARS ARE REQUIRED ON ALL STRUCTURES INCLUDING IN LANDSCAPE AREAS.

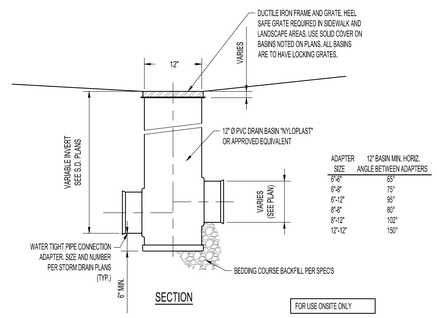
CONCRETE RING AROUND SURFACE UTILITY STRUCTURES — N.T.S. — A



ADAPTER SIZE	30" BASIN MIN. HORIZ. ANGLE BETWEEN ADAPTERS
6"-6"	30°
6"-8"	34°
6"-12"	45°
6"-15"	45°
6"-18"	55°
6"-24"	95°
6"-30"	75°
8"-8"	35°
8"-12"	45°
8"-15"	55°
8"-18"	80°
8"-24"	70°
8"-30"	80°
12"-12"	90°
12"-15"	60°
12"-18"	68°
12"-24"	80°
12"-30"	90°
15"-15"	69°
15"-18"	72°
15"-24"	85°
15"-30"	96°
18"-18"	78°
18"-24"	88°
18"-30"	100°
24"-24"	90°
24"-30"	115°
30"-30"	150°

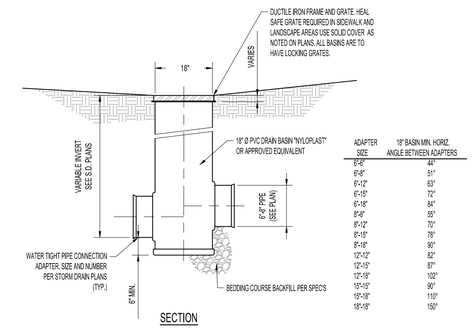
NOTES:
1. USE H-20 GRATES AND FRAMES FOR COVERS IN PAVED AREAS. USE H-10 GRATES AND FRAMES FOR COVERS IN LANDSCAPE AREAS. DEPTH OF GRATE PER MANUFACTURER'S STANDARDS.
2. CONSTRUCT BASINS PER MANUFACTURER'S REQUIREMENTS.
3. USE LOCKING GRATES ON ALL CATCH BASINS USED IN DETENTION BASIN AREAS.
4. CONCRETE COLLARS ARE REQUIRED IN DETENTION BASINS.

30" CATCH BASIN (CB) — N.T.S. — B



ADAPTER SIZE	12" BASIN MIN. HORIZ. ANGLE BETWEEN ADAPTERS
6"-6"	75°
6"-12"	95°
8"-8"	80°
8"-12"	102°
12"-12"	150°

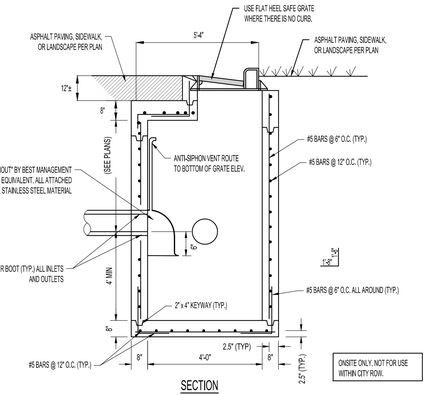
12" AREA DRAIN (AD) — N.T.S. — C



ADAPTER SIZE	18" BASIN MIN. HORIZ. ANGLE BETWEEN ADAPTERS
6"-6"	44°
6"-8"	51°
6"-12"	63°
6"-15"	72°
6"-18"	94°
8"-8"	55°
8"-12"	70°
8"-15"	78°
8"-18"	90°
12"-12"	82°
12"-15"	87°
12"-18"	102°
15"-15"	90°
15"-18"	110°
18"-18"	150°

NOTES:
1. USE H-10 GRATES AND FRAMES FOR 18" Ø COVERS.
2. CONSTRUCT BASINS PER MANUFACTURER'S REQUIREMENTS.
3. USE LOCKING GRATES ON ALL CATCH BASINS USED IN DETENTION BASIN AREAS.
4. CONCRETE COLLARS ARE REQUIRED IN DETENTION BASINS.

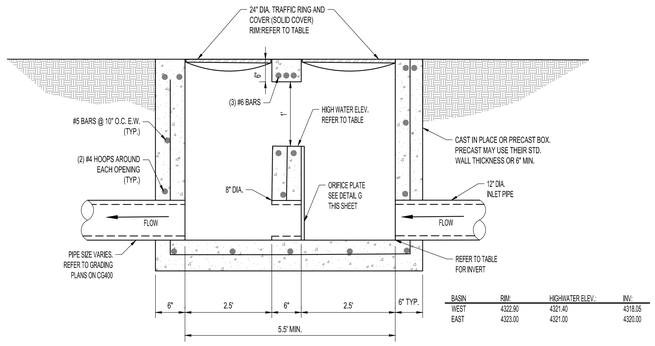
18" AREA DRAIN (AD) — N.T.S. — D



NOTES:
1. PRECAST BOXES DESIGNED FOR HS-20 TRAFFIC LOAD. PRECAST BOX DIMENSIONS MAY VERY. SUBMIT DIMENSIONS AND DESIGN FOR APPROVAL.
2. CONCRETE 4000 PSI 28-DAY COMPRESSIVE STRENGTH.
3. STEEL GRADE 60 DEFORMED BARS.
4. ALL SCREENS, STRAPS, BELTS AND MISC. HARDWARE CONNECTING THE STAINLESS STEEL SCREEN SHALL BE CONSTRUCTED OF STAINLESS STEEL.
5. CUT PIPING SMOOTH WITH BOX WALL. PIPING JOINT WITH BOX WALL AND ALL LEDGES SHALL BE GROUTED SMOOTH WITH EPOXY GROUT.

ONSITE ONLY. NOT FOR USE WITHIN CITY ROW.

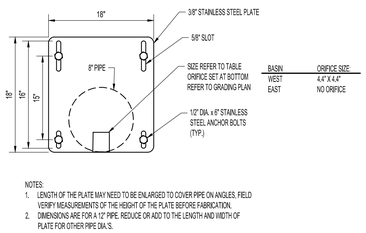
PRETREATMENT CURB INLET BOX (PRE CIB) — N.T.S. — E



BASIN	RIM:	HIGH WATER ELEV.:	INV:
WEST	4322.90	4321.40	4318.05
EAST	4323.00	4321.00	4320.00

NOTES:
1. BOX TO BE 5.5' X 4' MINIMUM.

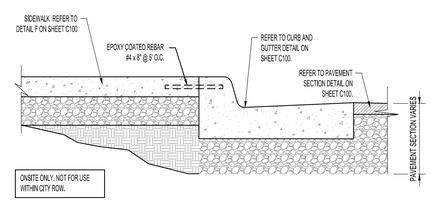
OVERFLOW BOX — N.T.S. — F



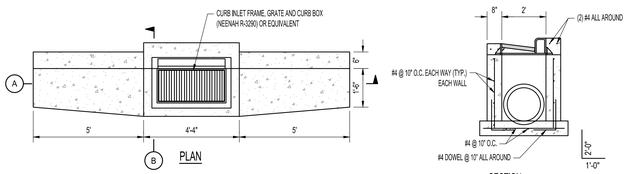
BASIN	ORIFICE SIZE:
WEST	4-4" X 4-4"
EAST	NO ORIFICE

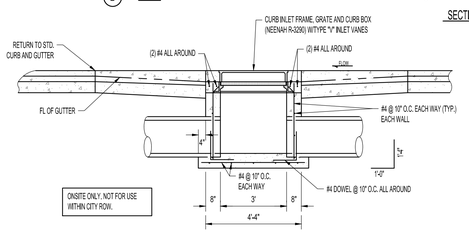
NOTES:
1. LENGTH OF THE PLATE MAY NEED TO BE ENLARGED TO COVER PIPE ON ANGLES. FIELD VERIFY MEASUREMENTS OF THE HEIGHT OF THE PLATE BEFORE FABRICATION.
2. DIMENSIONS ARE FOR A 12" PIPE. REDUCE OR ADD TO THE LENGTH AND WIDTH OF PLATE FOR OTHER PIPE DIA'S.

ORIFICE PLATE DETAIL — N.T.S. — G



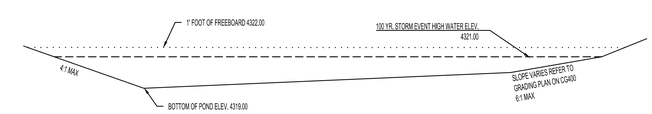
DOWELED SIDEWALK AND CURB & GUTTER — N.T.S. — H





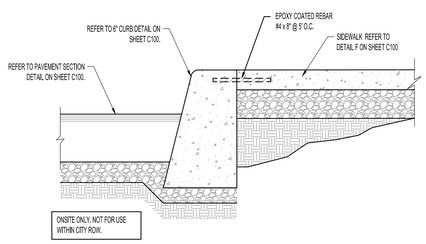
NOTES:
1. CUT PIPING SMOOTH WITH BOX WALL. PIPING JOINT WITH BOX WALL AND ALL LEDGES SHALL BE GROUTED SMOOTH WITH EPOXY GROUT.
2. REVISE BARS TO #5 AT 12" O. C. IF DEPTH IS GREATER THAN 4'-0" AND LESS THAN 6'-0". USE 3' x 3' MIN. BOX IF DEPTH IS MORE 6'-0". USE 4' x 4' MIN. BOX IF NECESSARY TO FIT ANGLED PIPING CONNECTIONS OR TO FIT LARGER PIPE. THE PIPE BELL SHALL NOT TERMINATE IN THE BOX.
3. ALL REBAR TO BE EPOXY COATED.
4. NYLOPLAST 2' x 3' INLET BOX WITH HOODED INLET (OR APPROVED EQUAL) IS ALLOWED AS SUBSTITUTION.

CURB AND GUTTER INLET — N.T.S. — K

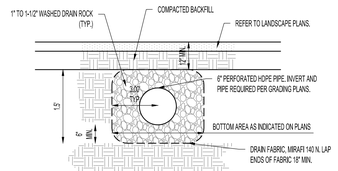


WEST POND SECTION — N.T.S. — L

EAST POND SECTION — N.T.S. — M



DOWELED SIDEWALK AND 6" CURB DETAIL — N.T.S. — I



UNDERDRAIN PIPELINE — N.T.S. — J

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

NAYLOR WENTWORTH LUND ARCHITECTS
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Salt Lake City, UT 84104
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MERIDIAN ENGINEERING, INC.
1628 W 1130 N, SUITE 102
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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
GENERAL DETAILS

Sheet Number
C101

BID PACKAGE 3

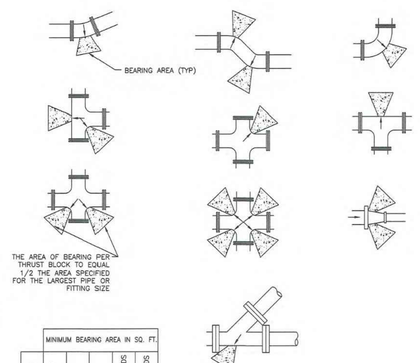
Blue Stakes of Utah 811

Direct bearing thrust block

1. **GENERAL**
   A. Thrust design for pipe sizes or configurations not shown require special design.
   B. Bearing areas, volumes, and special thrust blocking details shown on Drawings take precedence over this plan.
   C. Restraint sizing is based upon a maximum operating pressure of 150 psi and a test pressure of 200 psi, and a minimum soil bearing strength of 2,000 psf. Operating pressures in excess of 150 psi or soils with less than 2,000 pound bearing strength will require special design.
   D. Before backfilling around thrust block, secure inspection of installation by ENGINEER.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Thrust Bocks: Concrete Class 4000, APWA Section 03 30 04.
   D. Grease: Non-oxide poly-FM.

3. **EXECUTION**
   A. Pour concrete against undisturbed soil.
   B. Pipe Joints: Do not cover with concrete. Leave completely accessible.
   C. Grease: Apply grease to all buried metal surfaces. Wrap with polyethylene sheet and tape wrap.
   D. Locking restraint devices may be used in conjunction with concrete thrust blocking (at discretion of ENGINEER).
   E. Base Course and Backfill Placement: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.



SIZE OF PIPE	TEES, VALVES DEAD ENDS	90° BENDS	45° BENDS	22 1/2° BENDS	11 1/4° BENDS
	MINIMUM BEARING AREA IN SQ. FT.				
4"	2	3	2	2	2
6"	4	5.5	3	2.5	2
8"	6.5	9.5	5	2.75	2.5
12"	14	20	11	5.5	3
14"	19	26.5	14.5	7.5	4
16"	24	34	18.5	9.5	6
20"	27	52	28.5	14.5	9
24"	53	74	41	21	12
30"	81	114	62	32	16

APWA Utah Chapter

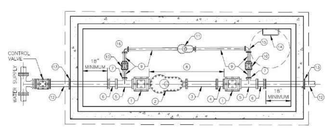
Direct bearing thrust block

Plan 561 August 2010

Installation (Continued)

MURRAY CITY WATER

3" & 4" Meters



LEGEND	
①	1" OR 4" FLANGED RESILIENT SEAT GATE VALVE
②	1" OR 4" METER-CITY WILL DETERMINE AND PROVIDE THE METER
③	1" OR 4"x90° FLANGE/MJ-MJ-MJ END DUCTILE IRON SPOOL
④	1" OR 4" ROMAC ALPHA FC OR HYMAX GRIP FLANGE ADAPTOR
⑤	1" OR 4" FLANGED TEE
⑥	1" OR 4" MJ/FLANGE ADAPTOR
⑦	1" OR 4" BLIND FLANGE WITH A 2" IP THREAD OUTLET
⑧	4" MEASUREMENT FROM VALVE FLANGE TO VALVE FLANGE
⑨	1" BRASS FITTING
⑩	2" RESILIENT SEAT GATE VALVE – FEMALE IP THREADED
⑪	2" WEBER AMG METER FLANGES – CITY WILL DETERMINE AND PROVIDE THE METER
⑫	1" OR 4" CLASS 52 DUCTILE IRON – POLYWRAPPED – COULD REQUIRE FIELD LOCK GASKETS INSTALLED – 2 TO 3 LENGTHS FROM OR TOWARDS THE METER VAULT
⑬	LOCKING RESTRAINT
⑭	ACCESS STEPS @12" O.C. M.A. INDUSTRIES OR EQUAL. POP STEP SHALL BE NO MORE THAN 12" LOWER THAN THE OPENING
⑮	23" FRAME AND COVER LOCATED OVER ACCESS STEP
⑯	METER ELEVATION SHALL MEET APWA PLAN 523 – MUST USE PIPE SPANDS FOR BLOCKING
⑰	WATER VALVE SHALL MEET APWA PLAN 522

IF THERE IS A REDUCTION IN METER SIZE COMPARED TO THE WATER MAIN SIZE, THE REDUCERS MUST BE INSIDE THE METER BOX WITH A MINIMUM OF 18" FROM THE MECHANICAL JOINT FITTING TO THE EDGE OF THE METER BOX. THE SIZES OF ALL PIPING, FITTINGS, VALVING AND METER, INBETWEEN THE REDUCERS WILL BE REDUCED BY ONE SIZE IN THIS SCENARIO.

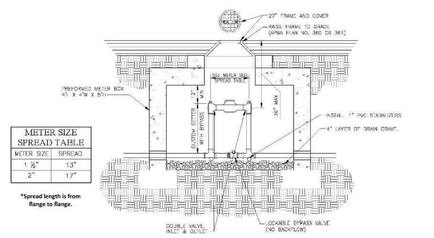
REV. NO.	MURRAY CITY WATER DEPARTMENT	STANDARD DWG. NO.
	3" AND 4" METER	XX

METER BOX MUST BE ENGINEERED (BY DEFERRED SUBMITTAL) AND APPROVED BY MURRAY WATER. MUST BE CONCRETE WITH REMOVABLE TOP AND WITHOUT A FLOOR. DESIGNS MUST HAVE ADEQUATE ROOM FOR SERVICE AND MAINTENANCE PER MURRAY CITY STANDARDS.

Installation (Continued)

MURRAY CITY WATER

1 1/2" & 2" Meter



1. All work must be inspected by City personnel prior to backfill.
2. From the top of the lid to the center line of the meter to be 20" ± 4".
3. Center of manhole over meter.
4. 6" grade ring where required.
5. Allow a 1" clearance around water line where passing through concrete walls. Seal hole with Ram-Nek sealant.
6. Minimum depth for water service to be frost line + 12" or 48".
7. Turbine meters to be used exclusively for irrigation.
8. Murray City to supply water meter.
9. Bypass valve to be left in open position until meter set.
10. Substitutions: APWA 01 25 00.

METER BOX TO BE 4X4X4 DURA-CRETE CONCRETE METER BOX. MUST BE CONCRETE WITH REMOVABLE TOP AND WITHOUT A FLOOR. SUITABLE EQUIPMENT CAN BE APPROVED BY MURRAY WATER PRIOR TO INSTALLATION PER MURRAY CITY STANDARDS.

Installation (Continued)

MURRAY CITY WATER

Hydrant Installation

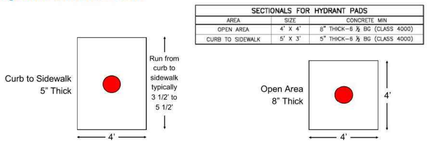
(Sectional Drawing on Page 10)

Fire hydrants will not be accepted by the City unless all criteria listed below is met.

1. Hydrants shall be set at the location shown with a minimum of 1' from the back of curb. Each hydrant shall be set in true vertical alignment. The 4 1/2" steamer nozzle shall face the street.
2. Hydrants shall be bedded on a firm foundation; undisturbed soil or solid concrete blocks.
3. All nuts and bolts below the finished grade shall be given a heavy coat of FM food quality grease. Everything below the finished grade shall be wrapped completely with 8 mil polyethylene and 20 mil tape appropriately. Polyethylene shall be cut at the bottom to allow drainage from the drain ports.
4. Concrete thrust block required from the rear of the hydrant to the end of the trench with a minimum of 6 square feet bearing on undisturbed soil. Entire pipe system must be polyethylene wrapped prior to pouring concrete. Special care must be taken so that concrete does not plug the drain ports. 6 1/2 Bag Class 4000 is the minimum requirement for concrete.
5. When there is a bell between an auxiliary valve and a hydrant there must be a locking gasket and blocking installed. Anytime the distance between the auxiliary valve and hydrant is under 17' a solid length of pipe must be installed.
6. Where the distance between the main and hydrant is greater than 17', two gate valves may be required (one at main, and one at hydrant). Where gate valves are installed at hydrants, provide a riser such that a standard valve key will clear top of the hydrant.
7. During backfill a minimum of 1/2 cubic yard of clean 1 1/2" minus gravel shall be placed around the base of the hydrant to a point 12" above the drain port.
8. All work must be inspected by city personnel prior to backfill. No hydrant shall be backfilled until directed by a Murray City Water Division inspector.
9. All hydrant bonnets must be painted by the contractor to coincide with the size of the water main serving the hydrant, specifically the larger main in the street not the 6" auxiliary line between the main and the hydrant (See color code on page 10). Must be painted with Sherwin Williams B-54Z Industrial Enamel or equal.
10. Concrete pads must be installed around all completed fire hydrants, with 6 1/2 Bag Class 4000 concrete. When hydrants are installed in an open area the pads are to be 4' X 4' and 8" thick. When hydrants are installed in a park strip the pads are to be 5" thick, 4' wide and run from curb to sidewalk approximately 3 1/2' to 5 1/2'. If the bolts on the hydrant are touching or are in the concrete a hydrant riser must be installed.
11. Bury line mark on hydrant shall not be more the 6" above finish grade.
12. Contractor shall place and maintain a black plastic bag over new fire hydrants until they are placed in service.
13. Hydrants must be clean, with no chipped paint, vertically aligned & operating properly

Hydrant Concrete Pads

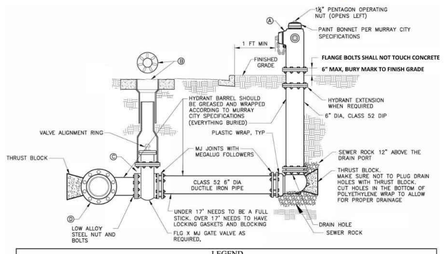
SECTIONALS FOR HYDRANT PADS		
AREA	SIZE	CONCRETE MIN
OPEN AREA	4' X 4'	8" THICK–6 ⅜ BG (CLASS 4000)
CURB TO SIDEWALK	5' X 3'	5" THICK–6 ⅜ BG (CLASS 4000)



Installation (Continued)

MURRAY CITY WATER

Hydrant Sectional Drawing



LEGEND					
ITEM	DESCRIPTION	PART NUMBER	ITEM	DESCRIPTION	PART NUMBER
Ⓐ	FLANGE OR MJ FIRE HYDRANT AS REQUIRED. PAINT BONNET PER MURRAY CITY SPECIFICATIONS	Mueller Super Centurion or Clow Medallion AWWA/ANSI C502	Ⓔ	GATE VALVE WITH 2" X 2" OPERATING NUT	MUELLER 6" RESILIENT SEAT GATE VALVE, OR EQUAL
Ⓑ	SLIDING ADJUSTABLE VALVE BOX WITH DROP LID WITH THE WORD "WATER" CAST INTO IT	D&L M-8040 OR EQUAL	Ⓕ	MJ X FLG TEE WITH ACCESSORIES	MJ X FLG TEE ANSI/AWWA C110/A21.10 WITH 125 POUND FLANGE

- All work and materials to be in accordance with ANSI/AWWA C502 and the APWA general conditions and standard specifications for construction.
- All ductile iron pipe to be in accordance with ANSI/AWWA C115/A21.15 Class 52.
- Gate valves to be in accordance with AWWA C509.
- Standard flange drilling—cast flanges, ANSI/AWWA C110 125/A21.10
- Substitutions to be in accordance with APWA Sec. 01 25 00.

Hydrant Bonnet Color Code

Fire hydrant bonnets shall be color coded to coincide with the size of the water main serving the hydrant.

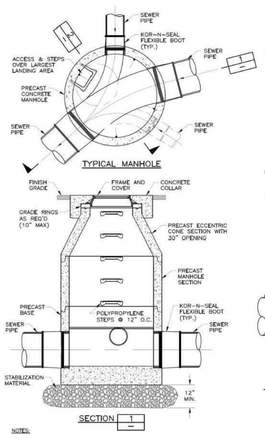
- 4" and smaller main..... White
- 6" main..... Red
- 8" and 10" main..... Orange
- 12" or larger main..... Green



ALL FIRE HYDRANTS TO BE MUELLER-SUPER CENTURION, A-423 OR CLOW MEDALLION PER MURRAY CITY STANDARDS.

Typical Sanitary Sewer Manhole

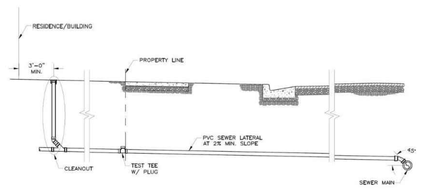
MURRAY

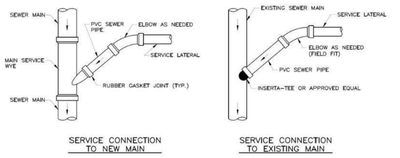


NOTES:
1. MANHOLE SIZE:
   A. DIAMETER IS 4 FEET: FOR SEWERS UNDER 12" DIAMETER.
   B. DIAMETER IS 5 FEET: FOR SEWERS 12" THROUGH 24", OR WHEN 3 OR MORE PIPES INTERSECT THE MANHOLE.
   C. CONSULT WITH MURRAY CITY FOR SEWERS LARGER THAN 24".
2. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ASTM C 478. JOINTS SHALL BE RUBBER GASKET, OR SEALED WITH APPROVED SEALANT.
3. CONCRETE: CLASS 4000, APWA SECTION 03 30 04.
4. GROUT: 2 PARTS SAND TO 1 PART CEMENT MORTAR, ASTM C 1329.

Typical Sewer Lateral and Cleanout

MURRAY





NOTES:
1. SERVICE LATERAL SHALL BE 4" OR 6" AS SHOWN ON PLANS OR AS DIRECTED BY CITY.
2. SEWER LATERALS SHALL CONNECT TO SEWER MAIN AT 45° ANGLE.

Stamp

STATE OF UTAH — NICHOLE LEE LUTHI — 8023335 — 2025-02-13

NAYLOR WENTWORTH LUND ARCHITECTS
723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.5959

MERIDIAN ENGINEERING, INC.
163 W 7075 S, JORDAN, UTAH 84088 102
PHONE (801) 566-1316 FAX (801) 5661319

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

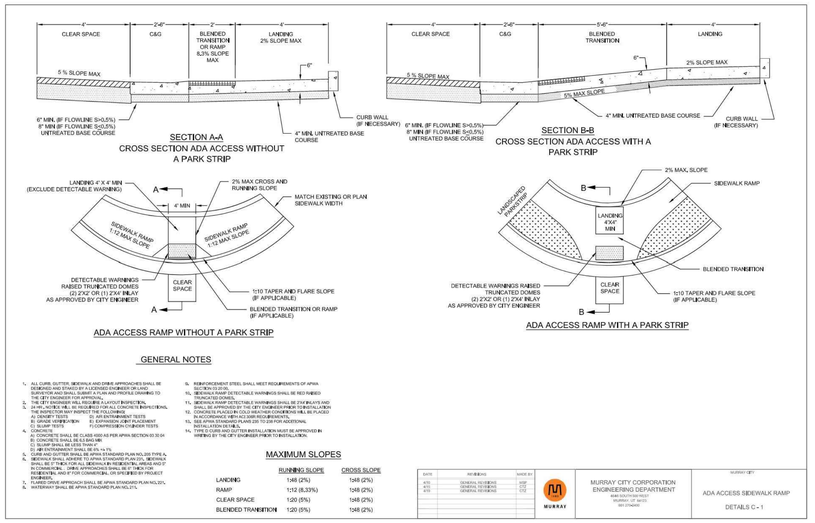
Project Issue Date
31 MARCH 2025

Sheet Title
CITY DETAILS

Blue Stakes of Utah 811

Sheet Number
C102

BID PACKAGE 3



GENERAL NOTES

1. ALL CURB, GUTTER, SIDEWALK AND DRIVE APPROACHES SHALL BE DESIGNED AND STAKED BY A LICENSED ENGINEER OR LAND SURVEYOR. SUBMIT GRADING PLAN AND PROFILE DRAWING TO THE CITY ENGINEER FOR APPROVAL.
2. THE CITY ENGINEER WILL REQUIRE A LAYOUT INSPECTION.
3. THE INSPECTOR MAY INSPECT THE FOLLOWING CONCRETE INSPECTIONS, THE INSPECTOR MAY INSPECT THE FOLLOWING:
   A) DENSITY TESTS
   B) AIR ENTRAINMENT TESTS
   C) SLUMP TESTS
   D) COMPRESSION CYLINDER TESTS
4. CONCRETE
   A) CONCRETE SHALL BE CLASS 4000 AS PER APWA SECTION 03 30 04
   B) CONCRETE SHALL BE ELEVATED MIN.
   C) SLUMP SHALL BE LESS THAN 4"
   D) AIR ENTRAINMENT SHALL BE 4% +/- 1%
5. CURB AND GUTTER SHALL BE APWA STANDARD PLAN NO. 205 TYPE A.
6. SIDEWALK SHALL ADHERE TO APWA STANDARD PLAN 231, SIDEWALK SHALL BE 5" THICK FOR ALL SIDEWALK IN RESIDENTIAL AREAS AND 6" IN COMMERCIAL. DRIVE APPROACHES SHALL BE 6" THICK FOR RESIDENTIAL AND 8" FOR COMMERCIAL, OR SPECIFIED BY PROJECT ENGINEER.
7. FLARED DRIVE APPROACH SHALL BE APWA STANDARD PLAN NO.251.
8. WATERWAY SHALL BE APWA STANDARD PLAN NO.215.
9. REINFORCEMENT STEEL SHALL MEET REQUIREMENTS OF APWA SECTION 03 20 01
10. TRUNCATED DOMES DETECTABLE WARNINGS SHALL BE RED TINTED TRUNCATED DOMES.
11. SIDEWALK RAMP DETECTABLE WARNINGS SHALL BE 2'X4' INLAYS AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
12. CONCRETE PLACED IN COLD WEATHER CONDITIONS WILL BE PLACED IN ACCORDANCE WITH ACI 306R REQUIREMENTS.
13. SEE APWA STANDARD PLANS 235 TO 239 FOR ADDITIONAL INSTALLATION DETAILS.
14. TYPE D CURB AND GUTTER INSTALLATION MUST BE APPROVED IN WRITING BY THE CITY ENGINEER PRIOR TO INSTALLATION.

MAXIMUM SLOPES

	RUNNING SLOPE	CROSS SLOPE
LANDING	1:48 (2%)	1:48 (2%)
RAMP	1:12 (8.33%)	1:48 (2%)
CLEAR SPACE	1:20 (5%)	1:48 (2%)
BLENDED TRANSITION	1:20 (5%)	1:48 (2%)

DATE	AMENDING	MADE BY
4/15	GENERAL REVISIONS	ASP
4/15	GENERAL REVISIONS	CTZ
4/15	GENERAL REVISIONS	CTZ

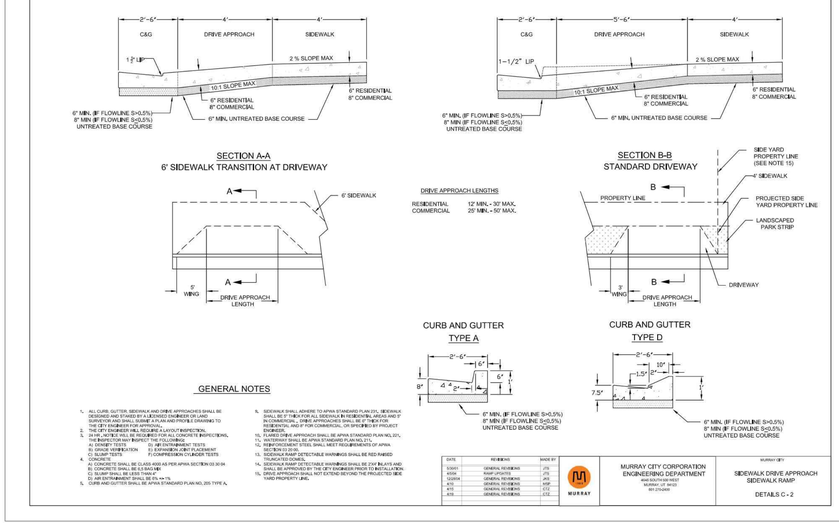
MURRAY

MURRAY CITY CORPORATION
ENGINEERING DEPARTMENT
4646 SOUTH 500 WEST
MURRAY, UT 84123
801.270.2400

MURRAY CITY

ADA ACCESS SIDEWALK RAMP

DETAILS C - 1



GENERAL NOTES

1. ALL CURB, GUTTER, SIDEWALK AND DRIVE APPROACHES SHALL BE DESIGNED AND STAKED BY A LICENSED ENGINEER OR LAND SURVEYOR. SUBMIT GRADING PLAN AND PROFILE DRAWING TO THE CITY ENGINEER FOR APPROVAL.
2. THE CITY ENGINEER WILL REQUIRE A LAYOUT INSPECTION.
3. THE INSPECTOR MAY INSPECT THE FOLLOWING CONCRETE INSPECTIONS, THE INSPECTOR MAY INSPECT THE FOLLOWING:
   A) DENSITY TESTS
   B) AIR ENTRAINMENT TESTS
   C) SLUMP TESTS
   D) COMPRESSION CYLINDER TESTS
4. CONCRETE
   A) CONCRETE SHALL BE CLASS 4000 AS PER APWA SECTION 03 30 04
   B) CONCRETE SHALL BE ELEVATED MIN.
   C) SLUMP SHALL BE LESS THAN 4"
   D) AIR ENTRAINMENT SHALL BE 4% +/- 1%
5. CURB AND GUTTER SHALL BE APWA STANDARD PLAN NO. 205 TYPE A.
6. SIDEWALK SHALL ADHERE TO APWA STANDARD PLAN 231, SIDEWALK SHALL BE 5" THICK FOR ALL SIDEWALK IN RESIDENTIAL AREAS AND 6" IN COMMERCIAL. DRIVE APPROACHES SHALL BE 6" THICK FOR RESIDENTIAL AND 8" FOR COMMERCIAL, OR SPECIFIED BY PROJECT ENGINEER.
10. DRIVE APPROACH SHALL BE APWA STANDARD PLAN NO.251.
11. WATERWAY SHALL BE APWA STANDARD PLAN NO.215.
12. REINFORCEMENT STEEL SHALL MEET REQUIREMENTS OF APWA SECTION 03 20 01
13. SIDEWALK RAMP DETECTABLE WARNINGS SHALL BE RED TINTED TRUNCATED DOMES.
14. SIDEWALK RAMP DETECTABLE WARNINGS SHALL BE 2'X4' INLAYS AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
15. DRIVE APPROACH SHALL NOT EXTEND BEYOND THE PROJECTED SIDE YARD PROPERTY LINE.

DATE	REVISIONS	MADE BY
5/2021	GENERAL REVISIONS	JTK
4/2008	RAMP UPDATES	JTK
4/15	GENERAL REVISIONS	ASP
4/15	GENERAL REVISIONS	ASP
4/15	GENERAL REVISIONS	CTZ
4/15	GENERAL REVISIONS	CTZ

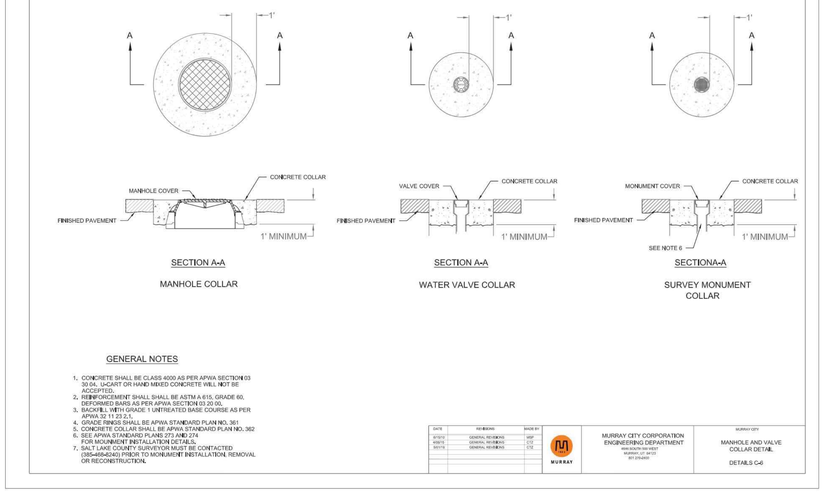
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ENGINEERING DEPARTMENT
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MURRAY, UT 84123
801.270.2400

MURRAY CITY

SIDEWALK DRIVE APPROACH SIDEWALK RAMP

DETAILS C - 2



GENERAL NOTES

1. CONCRETE SHALL BE CLASS 4000 AS PER APWA SECTION 03 30 04, U-CART OR HAND MIXED CONCRETE WILL NOT BE ACCEPTED.
2. REINFORCEMENT SHALL SHALL BE ASTM A 615, GRADE 60, DEFORMED BARS AS PER APWA SECTION 03 20 00.
3. BACKFILL WITH GRADE 1 UNTREATED BASE COURSE AS PER APWA 32 11 23 2.1.
4. GRADE RINGS SHALL BE APWA STANDARD PLAN NO.361
5. CONCRETE COLLAR SHALL BE APWA STANDARD PLAN NO. 362
6. SEE APWA STANDARD PLANS 277 AND 274
7. SALT LAKE COUNTY SURVEYOR MUST BE CONTACTED (385-468-6540/240) PRIOR TO MONUMENT INSTALLATION, REMOVAL OR RECONSTRUCTION.

DATE	REVISIONS	MADE BY
4/15	GENERAL REVISIONS	ASP
4/15	GENERAL REVISIONS	CTZ
10/16	GENERAL REVISIONS	CTZ

MURRAY

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ENGINEERING DEPARTMENT
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801.270.2400

MURRAY CITY

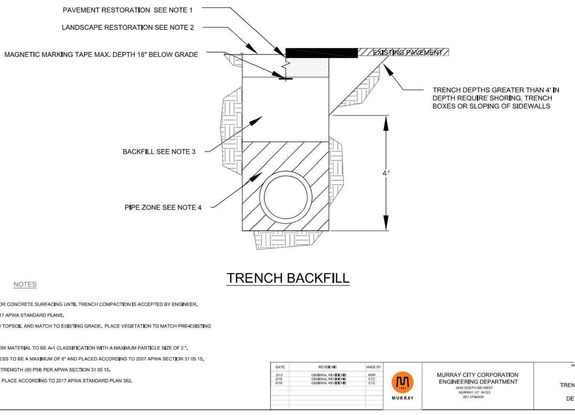
MANHOLE AND VALVE COLLAR DETAIL

DETAILS C-6

SECTION A-A
MANHOLE COLLAR

SECTION A-A
WATER VALVE COLLAR

SECTIONA-A
SURVEY MONUMENT COLLAR



TRENCH BACKFILL

NOTES

1. DO NOT INSTALL ASPHALT OR CONCRETE SURFACING UNTIL TRENCH COMPACTION IS ACCEPTED BY ENGINEER.
2. PROVIDE 4" OF COMPACTED TOPSOIL AND MATCH TO EXISTING GRADE. PLACE VEGETATION TO MATCH PRE-EXISTING CONDITIONS.
3. GRANULAR BACKFILL BORROW MATERIAL TO BE A-1 CLASSIFICATION WITH A MAXIMUM PARTICLE SIZE OF 2". UNCOMPACTED LIFT THICKNESS TO BE A MAXIMUM OF 8" AND PLACED ACCORDING TO 2007 APWA SECTION 31 05 15. FLOWABLE FILL TO BE LOW STRENGTH (50 PSI PER APWA SECTION 31 05 15.
4. PIPE ZONE MATERIAL TO BE PLACE ACCORDING TO 2017 APWA STANDARD PLAN 382.

DATE	REVISIONS	MADE BY
4/15	GENERAL REVISIONS	ASP
4/15	GENERAL REVISIONS	CTZ
4/15	GENERAL REVISIONS	CTZ

MURRAY

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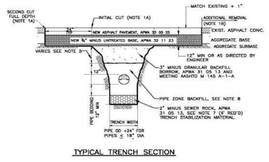
MURRAY CITY

TRENCH BACKFILL

DETAIL C - 7

Typical Trench Detail MURRAY

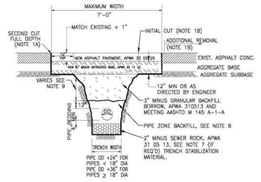
Backfill & Compaction Requirements MURRAY CITY WATER



TYPICAL TRENCH SECTION

NOTES:

1. ASPHALT PAVEMENT REMOVAL: REMOVE PAVEMENT AS SPECIFIED IN APWA 02 41 14):
   A. MILL OR SAW CUT FULL DEPTH OF ASPHALT TO PROVIDE STRAIGHT VERTICAL PAVEMENT EDGE FOR PAVEMENT REPAIR.
   B. IF A LIP OF GUTTER, A CURB, OR AN EDGE OF THE PAVEMENT IS WITHIN 2-FEET OF THE NEW PATCH, REMOVE EXISTING PAVEMENT TO THE STREET FEATURE. RETAIN AND PROTECT EXISTING CURB AND GUTTER.
2. TACK COAT: PROVIDE FULL TACK COAT COVERAGE ON ALL VERTICAL SURFACES.
3. JOINT REPAIR: WHERE CRACKS OCCUR BETWEEN THE PATCH AND ANY EXISTING PAVEMENT OR ANY STREET FIXTURE, REPAIR THE CRACK PER APWA 32 01 17.
4. TRENCH EXCAVATION IN ACCORDANCE WITH APWA 31 23 16, OSHA, AND UOSH SAFETY STANDARDS.
5. ALL BACKFILL PLACED IN TRENCH SHALL MEET SPECIFIED GRADATION AND COMPACTION REQUIREMENTS. NATIVE MATERIAL SHALL BE ALLOWED ONLY IF MEETING THE SPECIFIED GRADATION AND COMPACTION REQUIREMENT AND APPROVED BY THE ENGINEER.
6. COMPACT BACKFILL MATERIALS IN ACCORDANCE WITH APWA 330520, 312326, AND UDOT 02721 (AS APPLICABLE). TRENCH BACKFILL IN UDOT RIGHT-OF-WAY SHALL BE COMPACTED TO 97% OR GREATER, MODIFIED STANDARD PROCTOR. TRENCH BACKFILL IN ALL OTHER STREETS SHALL BE COMPACTED TO 95% OR GREATER MODIFIED STANDARD PROCTOR (PER ASTM D 1557).
7. ENGINEER MUST APPROVE USE OF TRENCH STABILIZATION MATERIAL. IF TRENCH STABILIZATION MATERIAL IS USED, TRENCH STABILIZATION MATERIAL AND PIPE BEDDING SHALL BE SEPARATED USING GEOTEXTILE MEETING THE REQUIREMENTS OF APWA 310519.
8. PIPE ZONE MATERIAL TO BE A-1-a OR A-1-b ASTM D 3282 3/4" MAXIMUM PARTICLE SIZE. PEA GRAVEL AND "SQUEEDY" IS NOT ALLOWED IN ANY PART OF THE PIPE ZONE. MATERIAL SHALL BE PLACED IN LIFT NOT EXCEEDING 8" AND COMPACTED TO A MODIFIED PROCTOR DENSITY OF 95% OR GREATER (PER ASTM 1557) WITHOUT DAMAGING OR DEFLECTING PIPE.
9. PROVIDE AC-20-DM-1/2 ASPHALT CONCRETE UNLESS OTHERWISE DIRECTED BY ENGINEER.
10. RECYCLED ASPHALT SHALL NOT BE USED FOR BACKFILL IN ANY PART OF THE TRENCH.



NOTES:

1. ASPHALT PAVEMENT REMOVAL: REMOVE PAVEMENT AS SPECIFIED IN APWA 024114):
   A. MILL OR SAW CUT FULL DEPTH OF ASPHALT TO PROVIDE STRAIGHT VERTICAL PAVEMENT EDGE FOR PAVEMENT REPAIR.
   B. IF A LIP OF GUTTER, A CURB, OR AN EDGE OF THE PAVEMENT IS WITHIN 2-FEET OF THE NEW PATCH, REMOVE EXISTING PAVEMENT TO THE STREET FEATURE. RETAIN AND PROTECT EXISTING CURB AND GUTTER.
2. TACK COAT: PROVIDE FULL TACK COAT COVERAGE ON ALL VERTICAL SURFACES.
3. JOINT REPAIR: WHERE CRACKS OCCUR BETWEEN THE PATCH AND ANY EXISTING PAVEMENT OR ANY STREET FIXTURE, REPAIR THE CRACK PER APWA 320117.
4. TRENCH EXCAVATION IN ACCORDANCE WITH APWA 312316, OSHA, AND UOSH SAFETY STANDARDS.
5. ALL BACKFILL PLACED IN TRENCH SHALL MEET SPECIFIED GRADATION AND COMPACTION REQUIREMENTS. NATIVE MATERIAL SHALL BE ALLOWED ONLY IF MEETING THE SPECIFIED GRADATION AND COMPACTION REQUIREMENT AND APPROVED BY THE ENGINEER.
6. COMPACT BACKFILL MATERIALS IN ACCORDANCE WITH APWA 330520, 312326, AND UDOT 02721 (AS APPLICABLE). TRENCH BACKFILL IN UDOT RIGHT-OF-WAY SHALL BE COMPACTED TO 97% OR GREATER, MODIFIED STANDARD PROCTOR. TRENCH BACKFILL IN ALL OTHER STREETS SHALL BE COMPACTED TO 95% OR GREATER MODIFIED STANDARD PROCTOR (PER ASTM D 1557).
7. ENGINEER MUST APPROVE USE OF TRENCH STABILIZATION MATERIAL. IF TRENCH STABILIZATION MATERIAL IS USED, TRENCH STABILIZATION MATERIAL AND PIPE BEDDING SHALL BE SEPARATED USING GEOTEXTILE MEETING THE REQUIREMENTS OF APWA 310519.
8. PIPE ZONE MATERIAL SHALL BE SAND MEETING ENGINEER'S APPROVAL (100 PERCENT PASSING 3/8" SCREEN, 35 PERCENT PASSING NO. 4 SCREEN, AND LESS THAN 10 PERCENT PASSING NO. 100 SCREEN) AND CONFORMING TO AASHTO M 145 A-1, PEA GRAVEL AND "SQUEEGY" IS NOT ALLOWED IN ANY PART OF THE PIPE ZONE. MATERIAL SHALL BE PLACED IN LIFT NOT EXCEEDING 8" AND COMPACTED TO A MODIFIED PROCTOR DENSITY OF 95% OR GREATER (PER ASTM 1557) WITHOUT DAMAGING OR DEFLECTING PIPE.
9. PROVIDE A MINIMUM OF 4 FEET OF COVER FROM THE TOP OF THE WATER MAIN TO FINISHED GRADE. FOR PIPING THAT CANNOT BE PROVIDED THE MINIMUM COVER, CONTRACTOR TO PROVIDE SPECIAL DESIGN SUBJECT TO THE APPROVAL OF MURRAY CITY.
10. PROVIDE AC-20-DM-1/2 ASPHALT CONCRETE UNLESS OTHERWISE DIRECTED BY ENGINEER.
11. RECYCLED ASPHALT SHALL NOT BE USED FOR BACKFILL IN ANY PART OF THE TRENCH.
12. FOR UNIMPROVED AREAS, PROVIDE NATIVE TOPSOIL FOR THE TOP 12" OF THE EXCAVATION COMPACTED TO 90 PERCENT MODIFIED PROCTOR (ASTM D 698) AND RESTORE PER APWA 32 92 00 OR 32 93 13 (AS APPLICABLE). THE TRENCH ZONE SHALL BE COMPACTED TO 92 PERCENT MODIFIED PROCTOR (PER ASTM D 698). NATIVE MATERIAL MAY BE ALLOWED IN THE TRENCH ZONE IF FREE OF ROCKS LARGER THAN 3" IN DIAMETER.

Stamp
STATE OF UTAH
2025-02-13
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MURRAY CITY SCHOOL DISTRICT We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
CITY DETAILS

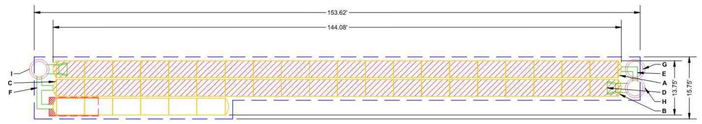
Sheet Number
C103

BID PACKAGE 3

Blue Stakes of Utah 811 Blue Stakes.org

NOTES:
1. WEST BASIN TO BE STORM TECH OR APPROVED EQUIVALENT.

PROPOSED LAYOUT		PROPOSED ELEVATIONS:					*INVERT ABOVE BASE OF CHAMBER
46	STORMTECH SC-800 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	28.25	PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
6	STORMTECH SC-800 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	22.00					
6	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	21.50	PRE-CORED END CAP	A	12" BOTTOM PRE-CORED END CAP, PART#: SC800EPE12BPC / TYP OF ALL 12" BOTTOM CONNECTIONS	1.60"	
6	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	21.50					
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	21.50	PRE-CORED END CAP	B	24" BOTTOM PRE-CORED END CAP, PART#: SC800EPE24BPC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.30"	
4302	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	20.75	PRE-CORED END CAP	C	12" TOP PRE-CORED END CAP PART#: SC800EPE12TPC / TYP OF ALL 12" TOP CONNECTIONS	14.40"	
		TOP OF SC-800 CHAMBER:	20.25	FLAMP	D	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: SC74024RAMP (TYP 2 PLACES)		
		12" x 12" TOP MANIFOLD INVERT:	18.70	MANIFOLD	E	12" x 12" TOP MANIFOLD, ADS N-12	14.40"	
1928	SYSTEM AREA (SF)	24" ISOLATOR ROW PLUS INVERT:	17.69	MANIFOLD	F	12" x 12" TOP MANIFOLD, ADS N-12	14.40"	
338.7	SYSTEM PERIMETER (ft)	24" ISOLATOR ROW PLUS INVERT:	17.69	CONCRETE STRUCTURE	G	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		2.0 CFS OUT
		12" BOTTOM CONNECTION INVERT:	17.63	CONCRETE STRUCTURE	H	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		2.3 CFS IN
		BOTTOM OF SC-800 CHAMBER:	17.50	CONCRETE STRUCTURE	I	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		4.6 CFS IN
		BOTTOM OF STONE:	17.00					



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS625 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

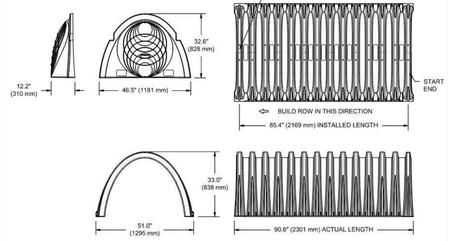
NOTES
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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SC-800 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 33.0" X 85.4"	(1295 mm X 838 mm X 2169 mm)
CHAMBER STORAGE	50.6 CUBIC FEET	(1.43 m³)
MINIMUM INSTALLED STORAGE*	81.0 CUBIC FEET	(2.29 m³)
WEIGHT	81.8 lbs.	(37.1 kg)

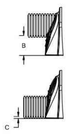
NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	46.5" X 32.6" X 10.5"	(1181 mm X 828 mm X 267 mm)
END CAP STORAGE	3.4 CUBIC FEET	(0.09 m³)
MINIMUM INSTALLED STORAGE**	15.4 CUBIC FEET	(0.43 m³)
WEIGHT	15.7 lbs.	(7.1 kg)

* ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS
**ASSUMES 6" (152 mm) STONE ABOVE AND BELOW END CAPS, 6" (152 mm) BETWEEN ROWS, 12" (305 mm) BEYOND END CAPS

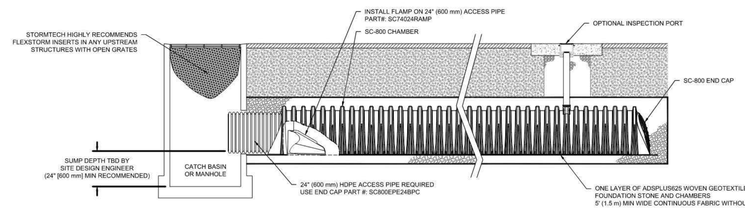
PRE-CORED HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "BPC"
PRE-CORED HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "TPC"

PART #	STUB	B	C
SC800EPE06TPC	6" (150 mm)	21.4" (544 mm)	---
SC800EPE06BPC		---	0.9" (23 mm)
SC800EPE08TPC	8" (200 mm)	19.2" (488 mm)	---
SC800EPE08BPC		---	1.0" (25 mm)
SC800EPE10TPC	10" (250 mm)	17.0" (432 mm)	---
SC800EPE10BPC		---	1.2" (30 mm)
SC800EPE12TPC	12" (300 mm)	14.4" (366 mm)	---
SC800EPE12BPC		---	1.6" (41 mm)
SC800EPE15TPC	15" (375 mm)	11.3" (287 mm)	---
SC800EPE15BPC		---	1.7" (43 mm)
SC800EPE18TPC	18" (450 mm)	8.0" (203 mm)	---
SC800EPE18BPC		---	2.0" (51 mm)
SC800EPE24BPC	24" (600 mm)	---	2.3" (58 mm)
SC800EPE	NONE	SOLID END CAP	



NOTE: ALL DIMENSIONS ARE NOMINAL

2 SC-800 TECHNICAL SPECIFICATION



SC-800 ISOLATOR ROW PLUS DETAIL
NTS

3 SC-800 ISOLATOR ROW PLUS DETAIL

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INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG.
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

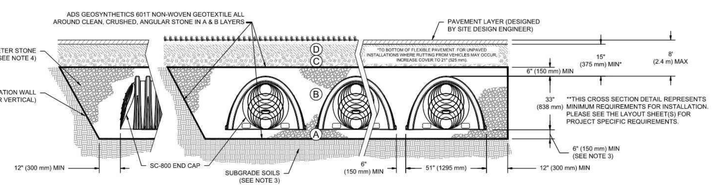
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-800 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DESITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 15" (375 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[4] A-1, A-2-4, A-3 OR AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-800 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/% AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

1 SC-800 CROSS SECTION DETAIL

RIVERVIEW JR. HIGH REBUILD
MURRAY, UT, USA

DRAWN: WA | DATE: 02/03/2025
CHECKED: N/A | PROJECT #:
REV: | NOT TO SCALE

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ADS
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HILLIARD, OH 43026
1-800-733-7473

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SHEET
1 OF 1

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

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MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
WEST BASIN DETAIL

Sheet Number
C104

BID PACKAGE 3

Blue Stakes of Utah 811 Blue Stakes, Inc.

NOTES:
1. EAST BASIN TO BE CONTECH OR APPROVED EQUIVALENT.

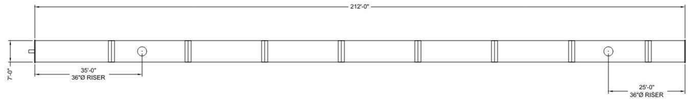
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 212 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 10,500 CF
- PIPE STORAGE VOLUME = 8,159 CF
- BACKFILL STORAGE VOLUME = 2,452 CF
- TOTAL STORAGE PROVIDED = 10,610 CF
- STONE VOID = 39%

PIPE DETAILS
- DIAMETER = 84"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = XFILTRATION
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 6"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}'' \times \frac{1}{2}''$ CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN. QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 20'

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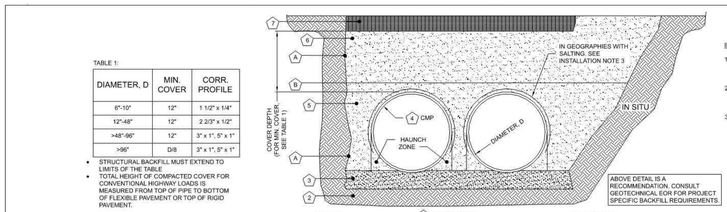
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CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

DYO67101 Riverview Jr
CMP Design - East Site
Salt Lake City, UT
DETENTION SYSTEM

PROJECT No.:	SEQ. No.:	DATE:
43796	67101	1/28/2025
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:	1	



MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.

INSTALLATION NOTES
1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2: xFiltration

XFILTRATION© JOINT STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.0D PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** - PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57**	PIPE SHOULD BE PLACED ON THE FOUNDATION BOTTOM WITH A 4"-6" MINIMUM STONE DEPTH ROUGHLY SHAPPED TO FIT THE BOTTOM OF THE PIPE. IF THE ENGINEER OF RECORD DETERMINES THAT STONE BEDDING IS NOT NEEDED, THE PIPE MAY BE PLACED ON THE TRENCH BOTTOM SEPARATED WITH A NON-WOVEN GEOTEXTILE PLACED AT THE INVERT OF A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH.	
4	CORRUGATED METAL PIPE			
5	BACKFILL	FREE-DRAINING, ANGULAR, NATURALLY OCCURRING WASHED-STONE PER **AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** OR APPROVED EQUAL *	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 6"- 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL IN BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL SHALL BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR. AREAS WITH HIGH WATER TABLE FLUCTUATIONS THAT INTERACT WITH THE PIPE ZONE, CONSIDER INSTALLING A GEOTEXTILE SEPARATION LAYER TO PREVENT SOIL MIGRATION. **"N	
6	COVER MATERIAL	UPTO MIN. COVER - **AASHTO M 145: A-1, A-2, A-3** ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROADBASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION WHEN STONE BEDDING IS USED. IF NO STONE BEDDING IS USED, THEN SIDE GEOTEXTILE IS REQUIRED.	
B	GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- * APPROVED REGIONAL EQUIVALENTS FOR SECTION 5 INCLUDE CA-7, MIDOT 6AA, 6A, OR 5Q, PROVIDED THEY MEET THE PARTICLE SIZES INDICATED.

MANUFACTURER RECOMMENDED BACKFILL
NOT TO SCALE

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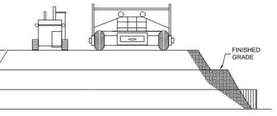
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CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

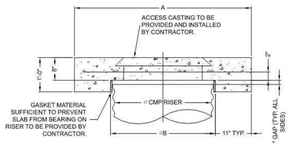
APPLICABLE COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

APPLICABLE HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSPS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

REQUIREMENTS
INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II (DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

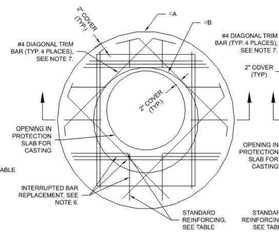
IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.



SECTION VIEW

REINFORCING TABLE				
∅ CMP RISER	A	∅ B	REINFORCING	**BEARING PRESSURE (PSF)
24"	∅ 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	∅ 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	∅ 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	∅ 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	∅ 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW

SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

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CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.



GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

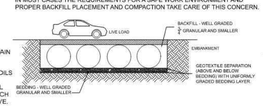
GEOMEMBRANE BARRIER

THE RESISTIVITY OF A PROJECT SITE MAY CHANGE OVER TIME DUE TO THE USE OF VARIOUS SALTING, DE-ICING, AND AGRICULTURAL AGENTS APPLIED ON OR NEAR THE AREA. TO MITIGATE THE POTENTIAL IMPACT OF THESE AGENTS, AN HDPE MEMBRANE LINER WILL BE INSTALLED ON THE CROWN OF EACH PIPE, CREATING AN IMPERMEABLE BARRIER. THIS MEASURE IS DESIGNED TO PROTECT THE SYSTEM FROM ENVIRONMENTAL CHANGES THAT COULD LEAD TO PREMATURE CORROSION AND REDUCE THE OVERALL SERVICE LIFE.

IN-SITU TRENCH WALL

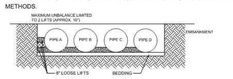
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT, PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



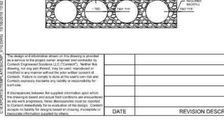
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

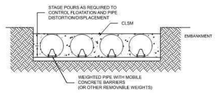


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.



CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION, POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

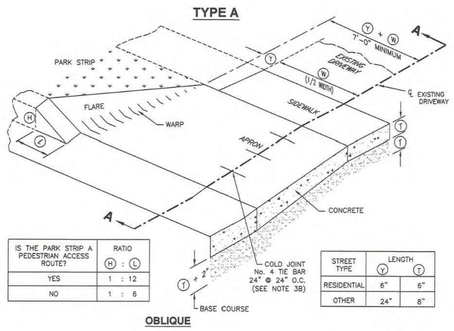
ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTINGDE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THA

Flare driveway approach

1. **GENERAL**
   - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
   - B. Field Changes to Slope Requirements:
     1) Grades may have a 6 percent change in slope over a 11 feet wheel base run for both crest or sag vertical curves.
     2) Where heavy truck use and fire truck access applies, or to improve design speed, design grades should be cut in half.
     3) Specific uses or site conditions may require profile design submittal for review and acceptance.
   - C. Additional requirements are specified in APWA Section 32 16 13..
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73..
   - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   - D. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Reinforcement: Not required if driveway apron is constructed without a cold joint.
   - C. Concrete Placement: APWA Section 03 30 10.
     1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface.
     2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Maximum length to width ratio for non-square panels is 1.5 to 1. Maximum panel length (in feet) is 1.5 times the slab thickness (in inches).
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - D. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.

221.1

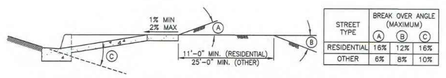
TYPE A



IS THE PARK STRIP A PEDESTRIAN ACCESS ROUTE?	RATIO (H) : (L)
YES	1 : 12
NO	1 : 6

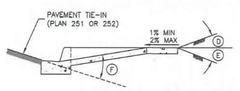
STREET TYPE	LENGTH (Y)	(T)
RESIDENTIAL	6"	6"
OTHER	24"	8"

OBLIQUE



STREET TYPE	BREAK OVER ANGLE (MAXIMUM) (A)	(B)	(C)
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

SECTION A-A - APPROACH REQUIRING SERVICE TRUCK ACCESS



STREET TYPE	BREAK OVER ANGLE (MAXIMUM) (D)	(E)	(F)
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

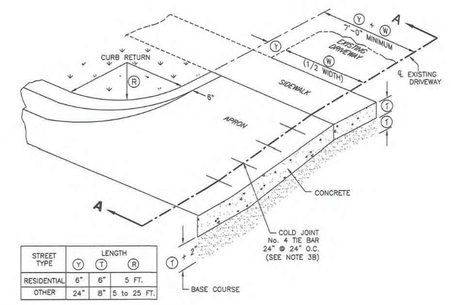
SECTION A-A - TYPICAL DRIVEWAY APPROACH

APWA Utah Chapter — *Flare driveway approach* — Plan 221.1 December 2009

Open driveway approach

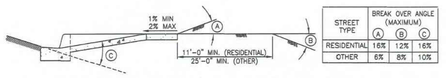
1. **GENERAL**
   - A. Variance from specified dimensions and slopes must be acceptable to the ENGINEER. System configuration may be changed at ENGINEER's discretion.
   - B. Field Changes to Slope Requirements:
     1) Grades may have a 6 percent change in slope over a 11 feet wheel base run for both crest or sag vertical curves.
     2) Where heavy truck use and fire truck access applies, or to improve design speed, design grades should be cut in half.
     3) Specific uses or site conditions may require profile design submittal for review and acceptance.
   - C. Additional requirements are specified in APWA Section 32 16 13.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73..
   - C. Concrete: Class 4000, APWA Section 03 30 04. If necessary, provide concrete that achieves design strength in less than 7 days. Use caution; however, as concrete crazing (spider cracks) may develop if air temperature exceeds 90 degrees F.
   - D. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Reinforcement: Not required if driveway apron is constructed without a cold joint.
   - C. Concrete Placement: APWA Section 03 30 10.
     1) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface.
     2) Install contraction joints vertical, 1/8-inch wide or 1/4 slab thickness if the slab is greater than 8-inches thick. Maximum length to width ratio for non-square panels is 1.5 to 1. Maximum panel length (in feet) is 1.5 times the slab thickness (in inches).
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - D. Protection and Repair: Protect concrete from deicing chemicals during cure. Repair construction that does not drain. If necessary, fill flow-line with water to verify.

225



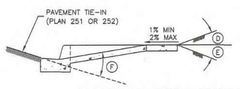
STREET TYPE	LENGTH (Y)	(T)	(R)
RESIDENTIAL	6"	6"	5 FT.
OTHER	24"	8"	5 to 25 FT.

OBLIQUE



STREET TYPE	BREAK OVER ANGLE (MAXIMUM) (A)	(B)	(C)
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

SECTION A-A - APPROACH REQUIRING SERVICE TRUCK ACCESS



STREET TYPE	BREAK OVER ANGLE (MAXIMUM) (D)	(E)	(F)
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

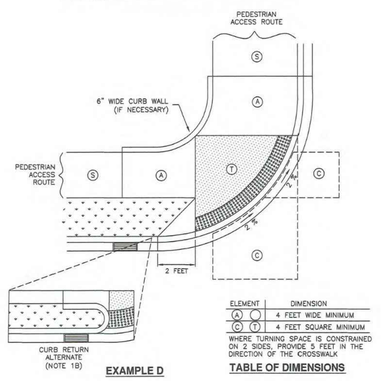
SECTION A-A - TYPICAL DRIVEWAY APPROACH

APWA Utah Chapter — *Open driveway approach* — Plan 225 December 2009

Corner curb cut assembly

1. **GENERAL**
   - A. Where existing elements or spaces are altered to receive an assembly; slopes and dimensions shall comply with slopes and dimensions shown on the drawing, or to the maximum extent feasible permitted by the ENGINEER. Final configuration of the assembly may be different than shown. Where physical constraints (e.g. utility covers, poles, vaults, etc.) prevent compliance, a single diagonal curb cut assembly may serve both pedestrian street crossings.
   - B. Installation of a curb wall, flares, or curb returns is ENGINEER's choice.
   - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73.
   - C. Detectable Warning Surface: Paver, ribbed composite panel, or tile. Provide a color that contrasts with adjacent walking surface, either light-on-dark or dark-on-light. ENGINEER to select type and color unless indicated elsewhere.
   - D. Concrete: Class 4000, APWA Section 03 30 04.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Curb Modifications:
     1) The sloped surface created to accommodate a flare or an approach area shall be perpendicular to the back of curb.
     2) No grade break shall exist between the flow-line and the turning space. Length of the curb modification abutting the turning space is 4 feet minimum for each crosswalk served.
   - C. Curb Wall: Set top of curb wall equal to elevation of extended lateral lines of sidewalk.
   - D. Concrete Placement: APWA Section 03 30 10.
     1) Maximum length to width ratio for rectangular panel joints is 1.5 to 1. Joint spacing measured in feet not to exceed twice slab thickness measured in inches or a maximum of 15 feet.
     2) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install contraction joints vertical, 1/8-inch wide, and 1/4 of the depth of the concrete flatwork.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - E. Clear Space: No hazards in the clear space.

235.3

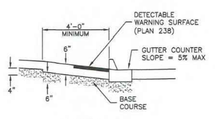


EXAMPLE D

ELEMENT	DIMENSION
(A) (B)	4 FEET WIDE MINIMUM
(C) (T)	4 FEET SQUARE MINIMUM

WHERE TURNING SPACE IS CONSTRAINED ON 2 SIDES, PROVIDE 5 FEET IN THE DIRECTION OF THE CROSSWALK

TABLE OF DIMENSIONS



MATERIALS

		RUNNING SLOPE (%) MAXIMUM	CROSS SLOPE (%) MAXIMUM
TURNING SPACE	(T)	2	2
CLEAR SPACE	(C)	5	2 (c)
SIDEWALK	(S)	STREET GRADE	2
APPROACH	(A)	8.33	2

(a) RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE OF FLARE IS PARALLEL TO BACK OF CURB
(b) CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL

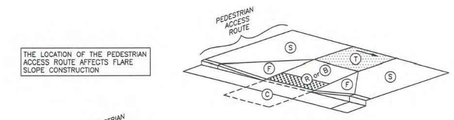
SLOPE TABLE

APWA Utah Chapter — *Corner curb cut assembly* — Plan 235.3 August 2011

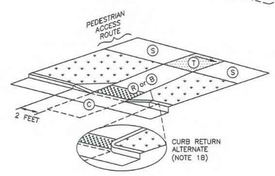
Midblock curb cut assembly

1. **GENERAL**
   - A. Where existing elements or spaces are altered to receive an assembly; slopes and dimensions shall comply with slopes and dimensions shown on the drawing, or to the maximum extent feasible permitted by the ENGINEER. Final configuration of the assembly may be different than shown.
   - B. Installation of flares or curb returns is ENGINEER's choice.
   - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73..
   - C. Detectable Warning Surface: Paver, ribbed composite panel, or tile. Provide a color that contrasts with adjacent walking surface, either light-on-dark or dark-on-light. ENGINEER to select type and color unless indicated elsewhere.
   - D. Concrete: Class 4000, APWA Section 03 30 04.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Curb Modifications:
     1) The sloped surface created to accommodate a flare area shall be perpendicular to the back of curb.
     2) No grade break shall exist between the flow-line and the foot of the curb ramp or blended transition. Length of the curb modification abutting the curb ramp or transition is 4 feet minimum.
   - C. Curb Ramp: Length not required to exceed 15 feet. Grade breaks are perpendicular to the direction of ramp run and are not permitted on the ramp or turning space surface. Sides are parallel to each other and perpendicular to the ends.
   - D. Concrete Placement: APWA Section 03 30 10.
     1) Maximum length to width ratio for rectangular panel joints is 1.5 to 1. Joint spacing measured in feet not to exceed twice slab thickness measured in inches or a maximum of 15 feet.
     2) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install contraction joints vertical, 1/8-inch wide, and 1/4 of the depth of the concrete flatwork.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - E. Clear Space: No trip hazards in the clear space.

236.1



EXAMPLE 1

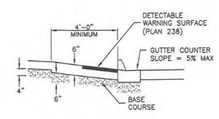


EXAMPLE 2

ELEMENT	DIMENSION
(R) (B)	4 FEET WIDE MINIMUM
(C) (T)	4 FEET SQUARE MINIMUM

WHERE TURNING SPACE IS CONSTRAINED ON 2 SIDES, PROVIDE 5 FEET IN THE DIRECTION OF THE CROSSWALK

TABLE OF DIMENSIONS



MATERIALS

		RUNNING SLOPE (%) MAXIMUM	CROSS SLOPE (%) MAXIMUM
TURNING SPACE	(T)	STREET GRADE	2
CURB RAMP	(R)	8.33	2 (a)
BLENDED TRANSITION	(B)	5	2 (a)
CLEAR SPACE	(C)	5	2 (a)
SIDEWALK	(S)	STREET GRADE	2
FLARE	(F)	10	--

(a) RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE OF FLARE IS PARALLEL TO BACK OF CURB
(b) CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL

SLOPE TABLE

APWA Utah Chapter — *Mid-block curb cut assembly* — Plan 236.1 September 2011

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

NAYLOR WENTWORTH LUND ARCHITECTS
723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.5959

MERIDIAN ENGINEERING, INC.
1628 W 1130 N, Suite 102
OGDEN, UTAH 84404
PHONE (801) 866-1316 FAX (801) 866-1319

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
APWA DETAILS

Sheet Number
C106

BID PACKAGE 3

Blue Stakes of Utah 811 Bluestakes.org

Mid-block curb cut assembly

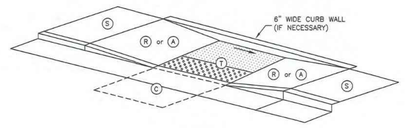
1. **GENERAL**
   - A. Where existing elements or spaces are altered to receive an assembly; slopes and dimensions shall comply with slopes and dimensions shown on the drawing, or to the maximum extent feasible permitted by the ENGINEER. Final configuration of the assembly may be different than shown.
   - B. Installation of a curb wall is ENGINEER's choice.
   - C. Definitions and supplemental requirements are specified in APWA Section 32 16 14.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Expansion Joint Filler: 1/2-inch thick type F1 full depth, APWA Section 32 13 73..
   - C. Detectable Warning Surface: Paver, ribbed composite panel, or tile. Provide a color that contrasts with adjacent walking surface, either light-on-dark or dark-on-light. ENGINEER to select type and color unless indicated elsewhere.
   - D. Concrete: Class 4000, APWA Section 03 30 04.
   - E. Concrete Curing Agent: Clear membrane forming compound with fugitive dye (Type ID Class A), APWA Section 03 39 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Curb Modifications:
     1) The sloped surface created to accommodate the ramp or approach areas shall be perpendicular to the back of curb.
     2) No grade break shall exist between the flow-line and the turning space. Length of the curb modification abutting the turning space is 4 feet minimum.
   - C. Curb Ramp: Length not required to exceed 15 feet. Grade breaks are perpendicular to the direction of ramp run and are not permitted on the ramp or turning space surface. Sides are parallel to each other and perpendicular to the ends.
   - D. Curb Wall: Set top of curb wall equal to elevation of extended lateral lines of sidewalk.
   - E. Concrete Placement: APWA Section 03 30 10.
     1) Maximum length to width ratio for rectangular panel joints is 1.5 to 1. Joint spacing measured in feet not to exceed twice slab thickness measured in inches or a maximum of 15 feet.
     2) Install expansion joints vertical, full depth, with top of filler set flush with concrete surface. Install contraction joints vertical, 1/8-inch wide, and 1/4 of the depth of the concrete flatwork.
     3) Provide 1/2-inch radius edges. Apply a broom finish. Apply a curing agent.
   - F. Clear Space: No trip hazards in the clear space.

Concrete pavement patch

1. **GENERAL**:
   - A. Reproduce existing pavement joint layout even if repairs straddle an existing joint.
   - B. Additional requirements are specified in APWA Section 32 01 19.
2. **PRODUCTS**
   - A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   - B. Bars: 60 ksi yield grade steel, ASTM A615 epoxy coated or galvanized deformed or smooth with diameter and length indicated.
   - C. Adhesive: Epoxy adhesive grout, APWA Section 03 30 10 for gluing bars in drilled holes in concrete.
   - D. Bond Breaker (Grease): Paraffin wax, lithium grease, or other semi-solid, inert lubricant.
   - E. Concrete: Class 4000, APWA Section 03 30 04.
   - F. Concrete Curing Agent: White pigmented membrane forming compound (Type II Class A or B), APWA Section 03 39 00.
   - G. Water Repellant: Penetrating compound, APWA Section 07 19 00.
3. **EXECUTION**
   - A. Base Course Placement: APWA Section 32 05 10. Match existing aggregate base thickness. Maximum lift thickness before compaction is 8-inches when using riding equipment or 6-inches when using hand held equipment. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
   - B. Joint Preparation: Use a rigid drill frame to drill holes in the vertical center of the adjacent concrete panel. Drill holes parallel to the panel surface. Provide the specified space between drill holes. For dowel bars, drill the holes parallel to the thoroughfare centerline. Limit deviation from parallel to 1/4 inch in the length of the dowel bar. Clean vertical surface of the adjacent concrete.
   - C. Reinforcement: Remove dirt, dust, and rust from bars. Do not install tie bars that interfere with dowel bars.
     1) For tie bars, place adhesive at the back of each hole so adhesive flows out, around, and fully encases each inserted bar. DO NOT coat one end of the bar and then insert the bar into the hole. Prevent loss of adhesive upon insertion.
     2) For dowel bars, place grease at the back of each hole so grease flows out, around, and fully encases each inserted bar. Grease the bar before insertion.
     3) Grease protruding dowel bar prior to concrete placement.
   - D. Bond Breaker: Place bond breaker on all pavement joints that compose existing joints, both transverse and horizontal.
   - C. Concrete Placement: Repack loose bars and dampen base course uniformly. Place concrete, consolidate along face of existing concrete panels and under reinforcement, keep vibrators away from reinforcing steel, and prevent segregation. Match adjacent surface texture.
   - D. Cure: Apply curing agent in total coverage in 2 directions after texturing. Keep cure temperature even throughout extent and depth of concrete patch.
   - F. Traffic: Not allowed on patch until concrete strength is achieved.
   - G. Surface Distortions: After cure, remove surface distortions that exceed 1/4-inch deviation in 10 feet. Apply water repellant to surfaces receiving grinding.

NOTES:
1. FOR BIDDING PURPOSES ASSUME CONCRETE PAVEMENT IN 700 W. TO BE 8" THICK. CONTRACTOR TO FIELD VERIFY ACTUAL CONCRETE THICKNESS.

TURNING SPACE AT STREET LEVEL



EXAMPLE 5

ELEMENT		DIMENSION
R A		4 FEET WIDE MINIMUM
C T		4 FEET SQUARE MINIMUM

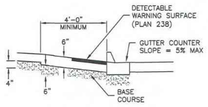
WHERE TURNING SPACE IS CONSTRAINED ON 2 SIDES, PROVIDE 5 FEET IN THE DIRECTION OF THE CROSSWALK

TABLE OF DIMENSIONS

		RUNNING SLOPE (%) MAXIMUM	CROSS SLOPE (%) MAXIMUM
TURNING SPACE	T	STREET GRADE	2
CURB RAMP	R	8.33	2
CLEAR SPACE	C	5	STREET GRADE
SIDEWALK	S	STREET GRADE	2
APPROACHE	A	8.33	2

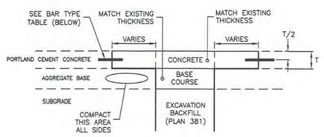
(a) RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. RUNNING SLOPE OF FLARE IS PARALLEL TO BACK OF CURB
(b) CROSS SLOPE IS PERPENDICULAR TO DIRECTION OF PEDESTRIAN TRAVEL

SLOPE TABLE

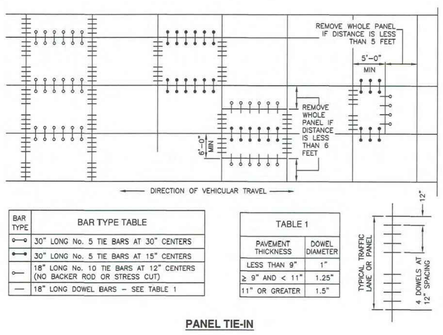


MATERIALS

BACKFILL AND PANEL TIE-IN

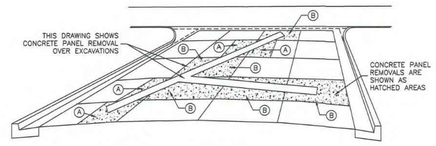


BACKFILL

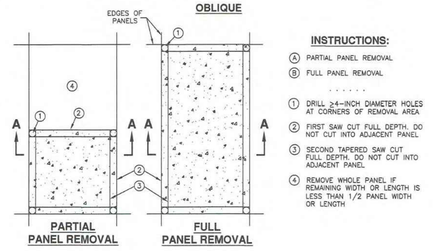


PANEL TIE-IN

TYPICAL PANEL REMOVAL



OBLIQUE

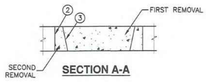


INSTRUCTIONS:

- A PARTIAL PANEL REMOVAL
- B FULL PANEL REMOVAL

. . . . . .

1. DRILL ≥4–INCH DIAMETER HOLES AT CORNERS OF REMOVAL AREA
2. FIRST SAW CUT FULL DEPTH. DO NOT CUT INTO ADJACENT PANEL.
3. SECOND TAPERED SAW CUT FULL DEPTH. DO NOT CUT INTO ADJACENT PANEL.
4. REMOVE WHOLE PANEL IF REMAINING WIDTH OR LENGTH IS LESS THAN 1/2 PANEL WIDTH OR LENGTH



SECTION A-A

NOTES:
1. FOR BIDDING PURPOSES ASSUME CONCRETE PAVEMENT IN 700 W. TO BE 8" THICK. CONTRACTOR TO FIELD VERIFY ACTUAL CONCRETE THICKNESS.

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

NAYLOR WENTWORTH LUND ARCHITECTS
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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

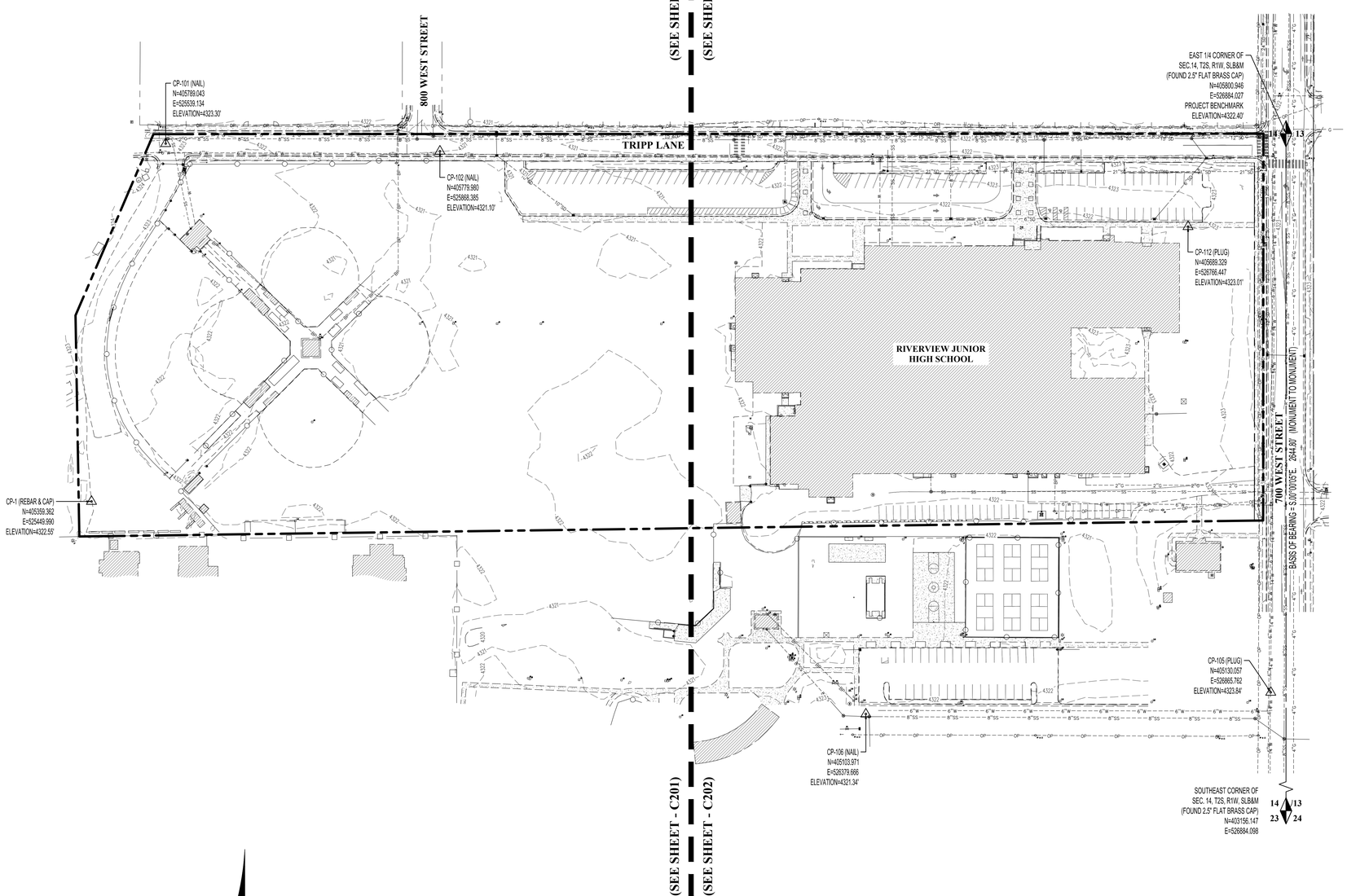
Project Issue Date
31 MARCH 2025

Sheet Title
APWA DETAILS

Sheet Number
C107

BID PACKAGE 3

Blue Stakes of Utah 811
Blue Stakes.org



SURVEYOR'S CERTIFICATE

I, TRAVIS R. WILLIAMS, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR, HOLDING LICENSE NUMBER 13941945, AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH AND STATE THAT INFORMATION SHOWN ON THIS PLAT HAS BEEN OBTAINED THROUGH SURFACE SURVEYS OF STRUCTURES, UTILITIES AND IMPROVEMENTS VISIBLE TO THE SURVEYOR AT THE TIME OF THE SURVEY. UNDERGROUND STRUCTURES, UTILITIES AND IMPROVEMENTS HAVE NOT BEEN SURVEYED. UNDERGROUND FEATURES, INCLUDING ELEVATIONS, SIZES, TYPES, CAPACITIES AND DIMENSIONS ARE SHOWN GRAPHICALLY AS OBTAINED THROUGH MUNICIPAL OR GOVERNING ENTITY RECORDS AND MAPS. INFORMATION AS REPRESENTED HEREON DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED.

LICENSED PROFESSIONAL LAND SURVEYOR
PLS NO.
13941945
09/25/2025
TRAVIS R.
WILLIAMS
STATE OF UTAH

TRAVIS R. WILLIAMS
PLS NO. 13941945

EXISTING TOPO NOTES:

1. THIS SURVEY AND CONTROL POINTS SHOWN WERE ESTABLISHED BY MERIDIAN ENGINEERING, INC. IN JUNE OF 2024. ALL CONTROL POINTS SHOULD BE VERIFIED PRIOR TO CONSTRUCTION ACTIVITIES TO ENSURE THEY ARE STILL INSIDE AN ACCEPTABLE MEASUREMENT TOLERANCE.
2. CONTROL POINT ELEVATIONS SHOWN WERE DERIVED FROM THE PROJECT BENCHMARK USING DIFFERENTIAL LEVELING.
3. THE LOCATIONS OF UNDERGROUND STRUCTURES, UTILITIES OR IMPROVEMENTS AS SHOWN HEREON ARE BASED ON ABOVE GROUND APPURTENANCES VISIBLE AT THE TIME OF THE SURVEY TO THE SURVEYOR. EXACT LOCATIONS OF UNDERGROUND STRUCTURES, UTILITIES OR IMPROVEMENTS MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL UNDERGROUND STRUCTURES, UTILITIES OR IMPROVEMENTS MAY EXIST.
4. ELEVATIONS, SIZES, TYPES AND CONDITIONS OF UNDERGROUND STRUCTURES, UTILITIES OR IMPROVEMENTS AS SHOWN ON THIS PLAT ARE APPROXIMATE ONLY AND SHOULD BE VERIFIED WITH THE APPROPRIATE AGENCY OR CONTROLLING PARTY BEFORE DESIGN OR CONSTRUCTION.
5. ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS, FACILITIES, DEPOSITS OR DISPOSALS THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.
6. UNLESS OTHERWISE SHOWN, NO ATTEMPT HAS BEEN MADE AS PART OF THIS PLAT AND THE SURVEY ON WHICH IT IS BASED TO DISCLOSE THE LOCATIONS, SIZE, TYPE OR CONDITION OF ANY TREE, HEDGE, GROUND COVER, LAWN, PLANTINGS OR ANY OTHER LANDSCAPING OR SPRINKLER HEADS. PIPES OR ANY APPURTENANT PARTS THEREOF. ADDITIONAL LANDSCAPING OR IRRIGATION FACILITIES MAY EXIST.
7. CONTRACTOR MUST OBTAIN A PERMIT BEFORE BEGINNING WORK WITHIN THIRTY FEET OF AN ESTABLISHED COUNTY SURVEY MONUMENT, PER UTAH STATE CODE 17-23-14 SUBSECTIONS 2 AND 4.

LEGEND

	PROPERTY BOUNDARY
	ADJOINER BOUNDARY
	SECTION LINE
BP BP	EXISTING BURIED POWER LINE
OP OP	EXISTING OVERHEAD POWER LINE
SD SD	EXISTING STORM DRAIN LINE
SS SS	EXISTING SEWER LINE
W W	EXISTING WATER LINE
BT BT	EXISTING BURIED TELEPHONE LINE
CTV CTV	EXISTING CABLE LINE
FO FO	EXISTING FIBER OPTIC LINE
G G	EXISTING GAS LINE
	EXISTING CHAIN LINK FENCE
	EXISTING DECORATIVE FENCE
	EXISTING CURB & GUTTER
XXXX'	EXISTING MAJOR CONTOUR LINE
XXXX'	EXISTING MINOR CONTOUR LINE
	EXISTING CONCRETE
	EXISTING BUILDING
	EXISTING BUILDING OVERHANG
EB	EXISTING ELECTRICAL BOX
IB	EXISTING IRRIGATION BOX
TP	EXISTING TELEPHONE PEDESTAL
SS	EXISTING SEWER MANHOLE
SD	EXISTING STORM DRAIN MANHOLE
W	EXISTING WATER MANHOLE
	EXISTING CLEAN OUT
	EXISTING CATCH BASIN
WM	EXISTING WATER METER
EM	EXISTING ELECTRICAL METER
LP	EXISTING LIGHT POLE
PP	EXISTING POWER POLE
PP & LS	EXISTING POWER POLE & LIGHT STAND
	EXISTING GUY WIRE
FLAG	EXISTING FLAG POLE
	EXISTING GATE POST
	EXISTING SIGN
	EXISTING BOLLARD
ET	EXISTING ELECTRICAL TRANSFORMER
AC	EXISTING AIR CONDITIONER
WV	EXISTING WATER VALVE
IRR	EXISTING IRRIGATION VALVE
	EXISTING FIRE HYDRANT
	CONTROL MONUMENT
	FOUND SECTION CORNER

Stamp

2025-02-13

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Project For

The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase

BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number

134.028

Project Issue Date

31 MARCH 2025

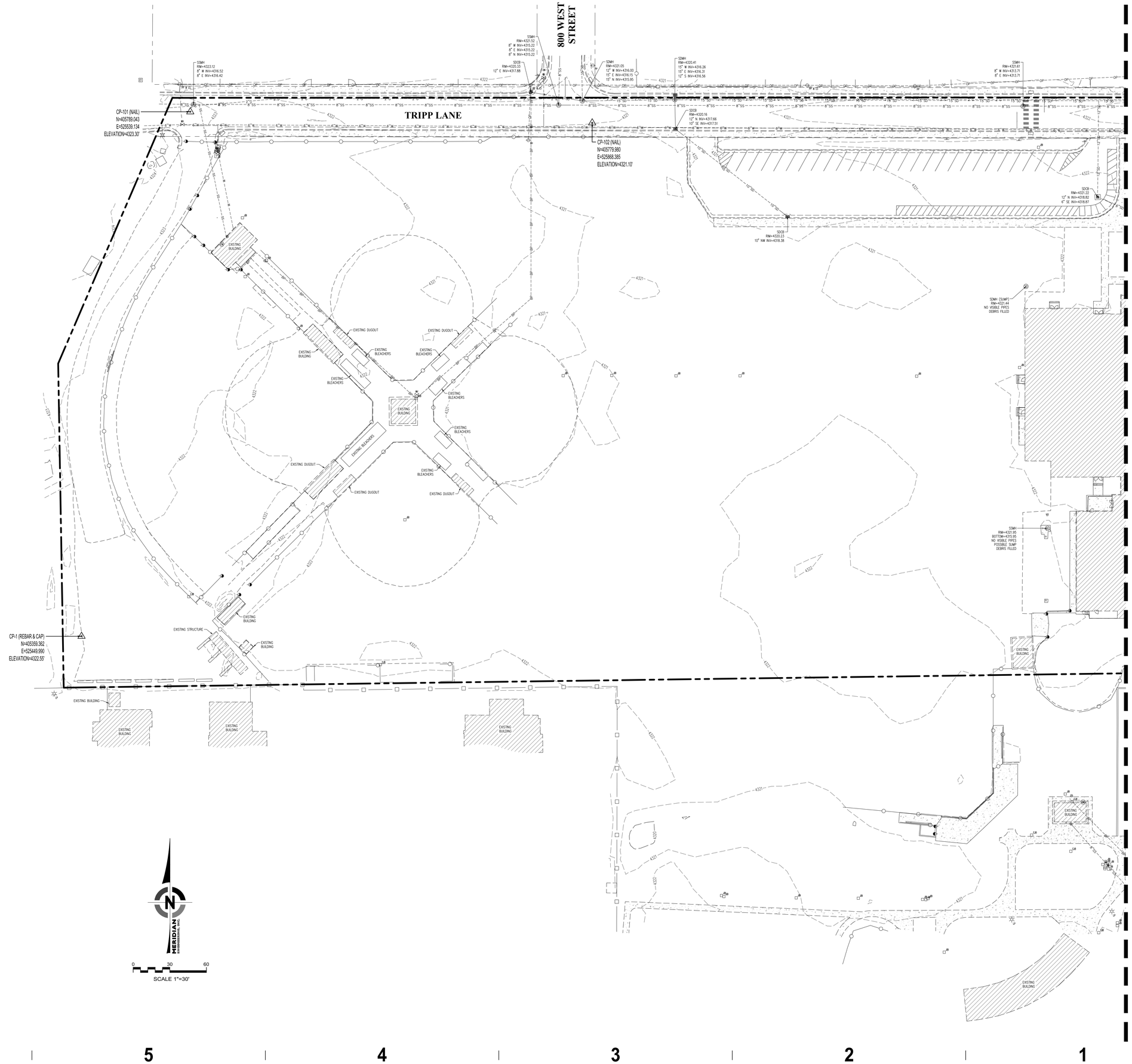
Sheet Title

EXISTING SURVEY AND TOPOGRAPHY

Sheet Number

C200

BID PACKAGE 3



Stamp

2025-02-13

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751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
EXISTING SURVEY AND TOPOGRAPHY

Sheet Number
C201

BID PACKAGE 3

Blue Stakes of Utah 811
Bluestakes.org

TRIPP LANE

700 WEST STREET

RIVERVIEW JUNIOR HIGH SCHOOL
APPROXIMATE FINISH FLOOR:4323.70

EAST 1/4 CORNER OF
SEC.14, T2S, R1W, SLB&M
(FOUND 2.5" FLAT BRASS CAP)
N=405800.946
E=526884.027
PROJECT BENCHMARK
ELEVATION=4322.40'

CP-112 (PLUG)
N=405689.329
E=526766.447
ELEVATION=4323.01'

CP-106 (NAIL)
N=405103.971
E=526376.696
ELEVATION=4321.34'

CP-105 (PLUG)
N=405130.057
E=526865.762
ELEVATION=4323.84'

(SEE SHEET - C201)

SCALE 1"=30'

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The
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of Education

Riverview Jr. High
Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
-	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
EXISTING SURVEY
AND TOPOGRAPHY

Sheet Number
C202

BID PACKAGE 3

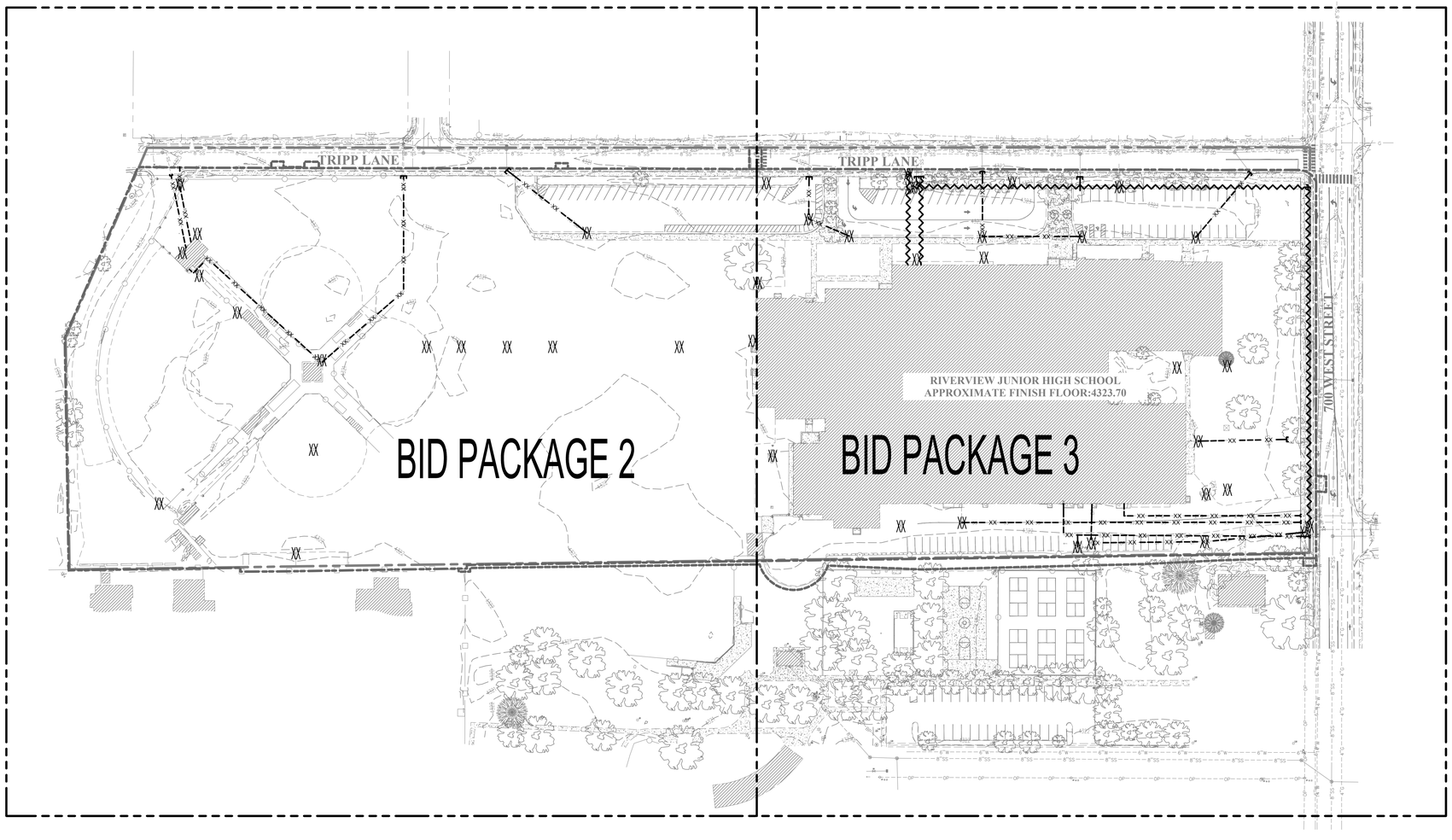
Stamp

2025-02-13

Blue Stakes of Utah 811

CS211

CS212



UTILITY DEMOLITION NOTES

1. REMOVE UTILITIES ONLY AFTER NEW TEMPORARY UTILITY LINES HAVE BEEN REROUTED AND CONNECTED.
2. TEMPORARY PUMPING OF SANITARY SEWER WILL BE REQUIRED AS PORTIONS OF THE EXISTING PIPING ARE REMOVED AND REPLACED. BACKUP PUMPS AND POWER WILL BE REQUIRED WHERE PUMPING IS NECESSARY TO MAINTAIN SERVICE TO THE BUILDING. TEMPORARY BYPASS PIPING OR PUMPING IS REQUIRED UNTIL THE NEW PIPING IS OPERATIONAL.
3. REFER TO THE ELECTRICAL OR MECHANICAL PLANS FOR SITE DEMOLITION OF EXISTING TRANSFORMERS, ELECTRICAL LINES, EXISTING LIGHTING, ELECTRICAL EQUIPMENT, HEATING VAULTS, HEATING LINES, GAS LINES, OR OTHER SITE DEMOLITION INSIDE OR OUTSIDE THE PROJECT LIMITS.
4. ALL EXISTING UTILITIES OR SURFACE IMPROVEMENTS SHALL BE RETAINED AND PROTECTED DURING CONSTRUCTION, UNLESS NOTED OTHERWISE. ANY DAMAGE TO THE UTILITIES OR SURFACE IMPROVEMENTS SHALL BE REPAIRED WITH NEW MATERIALS AT NO ADDITIONAL COST TO THE OWNER. ALL INTERRUPTIONS OF UTILITIES SERVICE WILL BE COORDINATED WITH THE OWNER AT LEAST ONE WEEK IN ADVANCE. NIGHTTIME INTERRUPTIONS OF A SERVICE MAY BE NECESSARY TO SUCCESSFULLY COMPLETE NEW UTILITY CONNECTIONS.
5. UTILITIES ABANDONED IN PLACE UNDER PAVEMENT OR CONCRETE IMPROVEMENTS SHALL HAVE SAND BLOWN INTO THE ABANDONED PIPING. ALL OPEN ENDS OF ABANDONED PIPING SHALL BE PLUGGED AND CAPPED. REPAIR EXISTING MANHOLES AND INLETS WHERE PIPING IS REMOVED AS PART OF THE DEMOLITION. PLUG AND GROUT (EPOXY GROUT) HOLES IN THE EXISTING STRUCTURES. CORE DRILL AND EPOXY GROUT ALL NEW PIPING INTO EXISTING CONCRETE STRUCTURES.
6. BACKFILL ALL EXCAVATIONS FOR UTILITY PIPING OR STRUCTURE REMOVAL (MANHOLES, INLETS, ETC.) WITH STRUCTURAL FILL TO THE ROUGH GRADE ELEVATION SHOWN ON GRADING PLANS.
7. PROVIDE TEMPORARY STORM DRAINAGE PUMPING OR OTHER APPROVED STORM DRAIN DISPOSAL METHOD TO MAINTAIN DRAINAGE TO THE SITE DURING CONSTRUCTION.
8. MAINTAIN UTILITY SERVICE TO THE EXISTING BUILDING AT ALL TIMES UNLESS OTHERWISE COORDINATED.
9. ALL WORK WITHIN STREET ROW SHALL BE PER APWA STANDARD PLANS AND SPECIFICATIONS (2017 EDITION) AND CITY STANDARDS. OBTAIN CITY PERMIT PRIOR TO ANY WORK WITHIN CITY RIGHT OF WAY.
10. DO NOT DRIVE HEAVY EQUIPMENT OR TRUCKS OVER EXCAVATED SUBGRADE. SUBGRADE SOFT AREAS CAUSED BY ROUTING HEAVY EQUIPMENT OR TRUCKS OVER SUBGRADE WILL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. REPAIRS TO BE COMPLETED AS OUTLINED IN SPEC SECTION WITH UP TO 2' OF IMPORTED STRUCTURAL GRANULAR FILL TO STABILIZE SOFT AREAS CAUSED BY ROUTING HEAVY EQUIPMENT OVER EXCAVATED SUBGRADE.
11. NEW UTILITIES SHALL BE INSTALLED AS REQUIRED TO MAINTAIN SERVICE TO EXISTING BUILDINGS. PRIOR TO REMOVAL OF EXISTING UTILITIES COORDINATE SERVICE INTERRUPTION AND REMOVAL OF UTILITIES WITH OWNER.
12. POTHOLE AND FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OF ANY NEW UTILITY OR CONNECTION TO EXISTING UTILITIES.
13. PROVIDE TEMPORARY WATER CONNECTION FOR MAINTAINING IRRIGATION OF LANDSCAPE THAT IS TO REMAIN. REFER TO LANDSCAPE PLANS.
14. RAISE/LOWER EXISTING VALVES, M.H., ELECTRICAL AND MECHANICAL VAULT HATCHES, AND UTILITY STRUCTURES WITHIN THE WORK AREA LIMITS TO NEW GRADES SHOWN ON GRADING PLAN.



DEMOLITION LEGEND

REMOVE UTILITY STRUCTURES, LIGHTS ETC.	XX
REMOVE UTILITY	xx xx xx
ABANDON UTILITY IN PLACE	
PLUG AND CAP	
PROJECT LIMIT LINE	
TEMPORARY PROJECT LIMIT LINE	

Stamp

STATE OF UTAH
2025-02-13
NICHOLE LEE LUTH
8023335

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Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

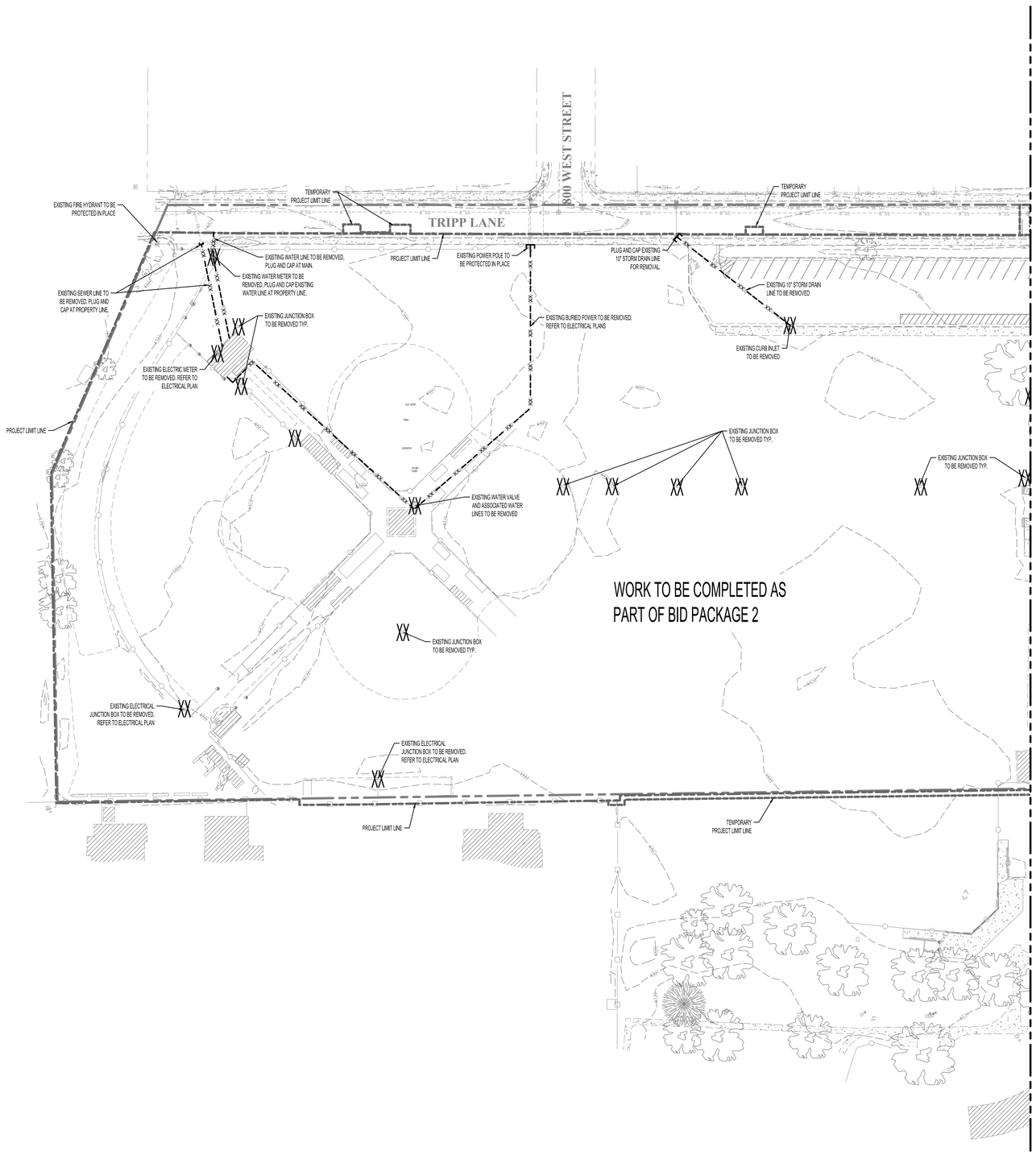
Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL UTILITY DEMOLITION PLAN

Sheet Number
CS210

BID PACKAGE 3

Blue Stakes of UTAH 811
Statewide Notification



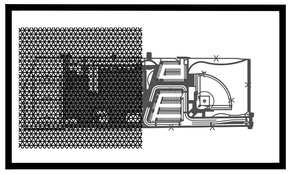
UTILITY DEMOLITION NOTES

1. FOR GENERAL UTILITY DEMOLITION NOTES REFER TO SHEET CS210.



DEMOLITION LEGEND

REMOVE UTILITY STRUCTURES, LIGHTS ETC.	XX
REMOVE UTILITY	— — xx — — xx — — xx —
ABANDON UTILITY IN PLACE	~~~~~
PLUG AND CAP	⌋
PROJECT LIMIT LINE	— — — — — — — —
TEMPORARY PROJECT LIMIT LINE	— — — — — — — —



VICINITY MAP

Stamp

STATE OF UTAH
2025-02-13
NICHOLE LEE LUTH
No. 8023335

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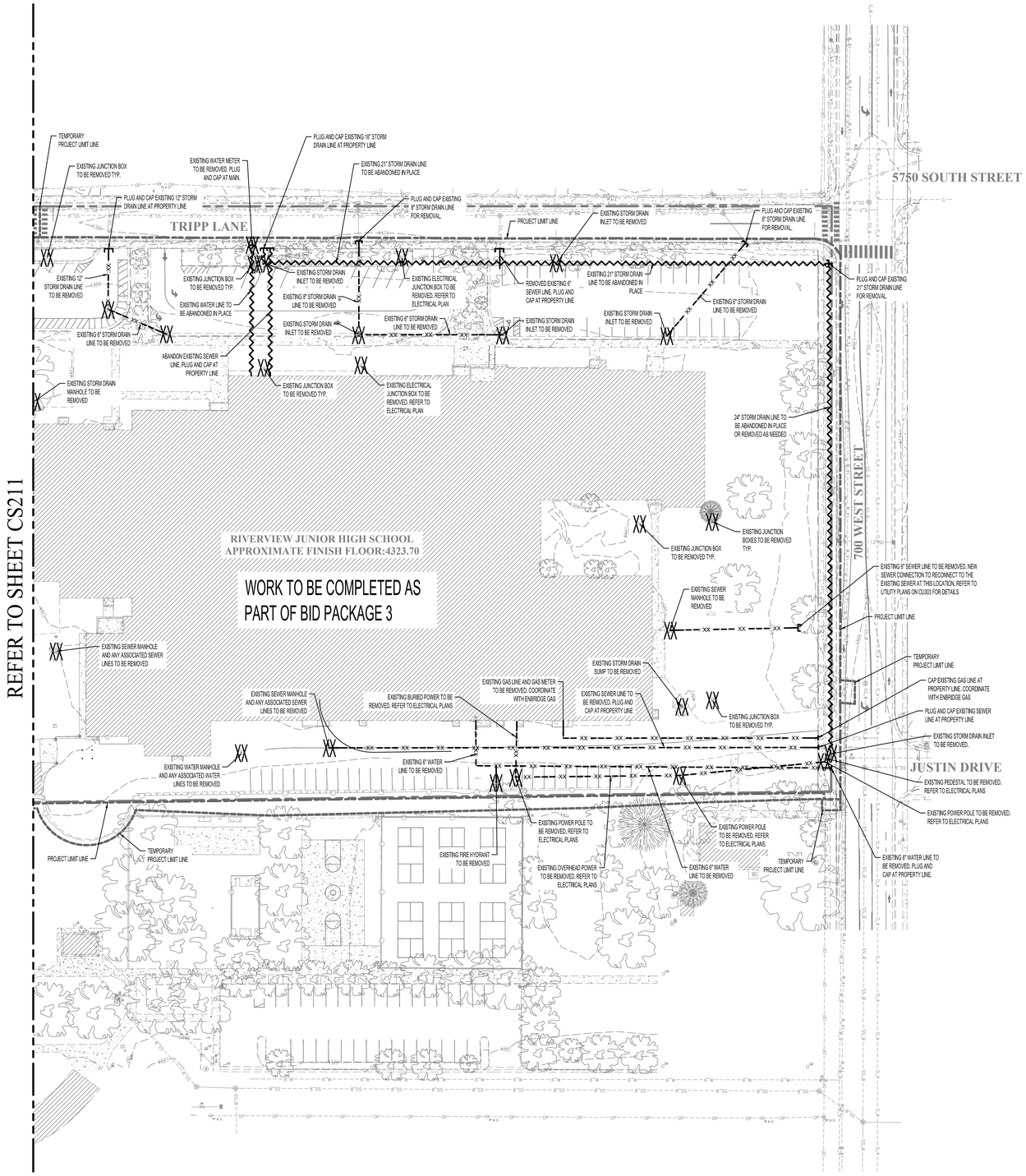
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED UTILITY DEMOLITION PLAN

Sheet Number
CS211

BID PACKAGE 3

Blue Stakes of Utah 811



UTILITY DEMOLITION NOTES

1. FOR GENERAL UTILITY DEMOLITION NOTES REFER TO SHEET CS210.

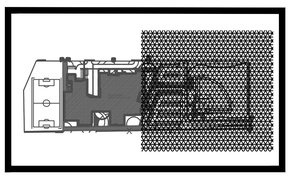


0 40 80

SCALE 1"=40'

DEMOLITION LEGEND

REMOVE UTILITY STRUCTURES, LIGHTS ETC.	XX
REMOVE UTILITY	XX XX XX
ABANDON UTILITY IN PLACE	
PLUG AND CAP	]
PROJECT LIMIT LINE	
TEMPORARY PROJECT LIMIT LINE	



VICINITY MAP

Stamp

STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

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Project Phase
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No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED UTILITY DEMOLITION PLAN

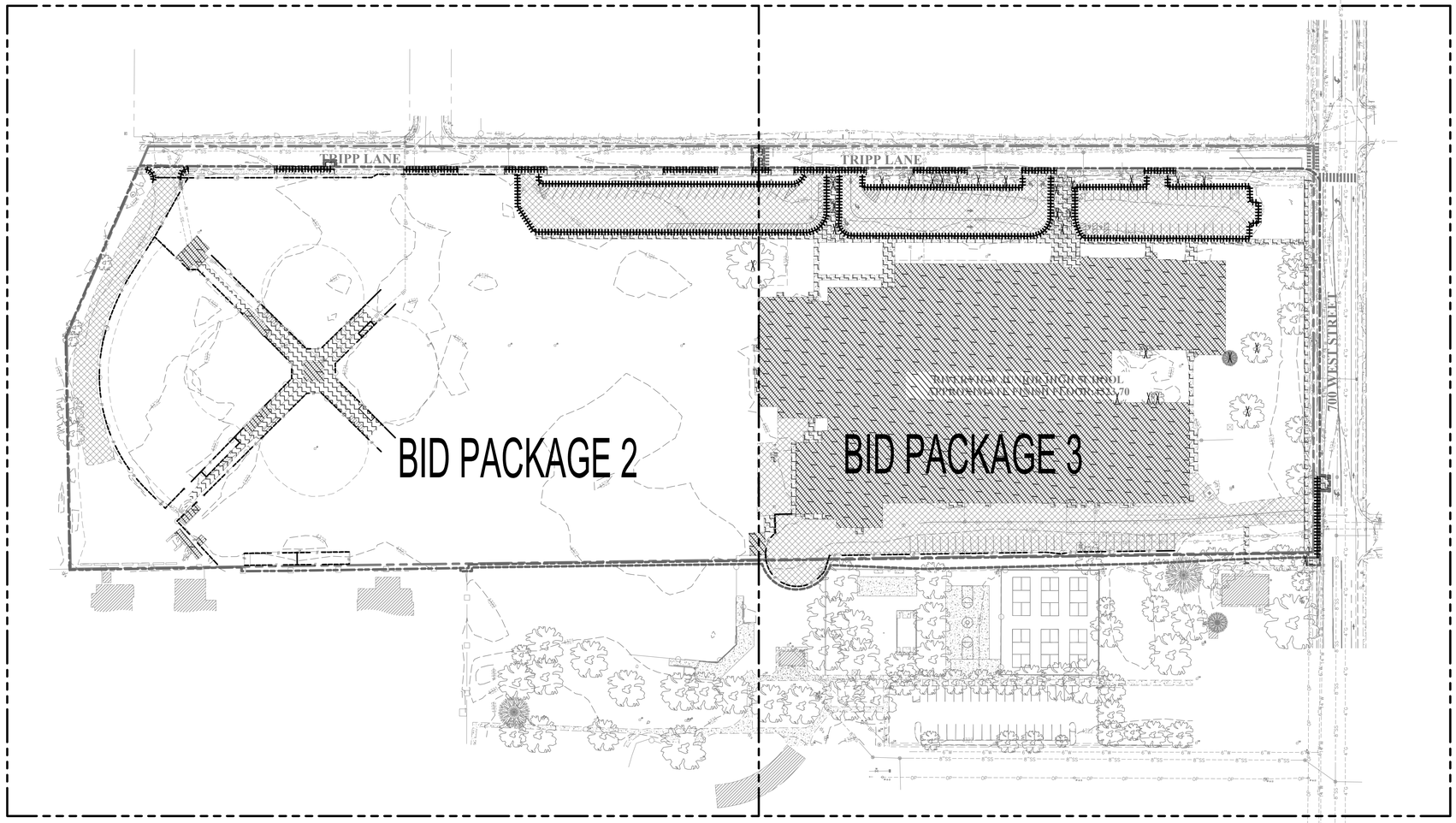
Sheet Number
CS212

BID PACKAGE 3

Blue Stakes of Utah 811

CS221

CS222

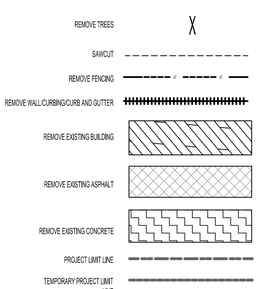


SITE DEMOLITION PLAN NOTES:

1. COORDINATE ALL UTILITY INFORMATION WITH OWNER. THE COORDINATES SHOWN ON THE PLANS ARE BASED ON SURVEY CONTROL AND TOPOGRAPHIC SURVEY COMPLETED BY MERIDIAN ENGINEERING INC. REFER TO EXISTING TOPOGRAPHIC PLAN FOR SURVEY CONTROL ON SHEET C200.
2. REFER TO SITE LAYOUT PLANS ON SHEET CS230.
3. SIDEWALK REMOVAL AND REPLACEMENT TO BE AS INDICATED ON THE SITE PLAN AND WILL MATCH EXISTING SIDEWALK WIDTHS.
4. EXCAVATION ADJACENT TO TREES SHALL BE A MINIMUM OF 8' FROM THE CENTER OF THE TREE OR THE TREE DRIP LINE AS DIRECTED BY THE OWNER'S REPRESENTATIVE. IF TREE ROOTS ARE ENCOUNTERED NEAR TREES TO REMAIN, COORDINATE TREE ROOT PRUNING WITH OWNER WHENEVER TREE ROOTS MAY BE ENCOUNTERED IN EXCAVATION. DO NOT COVER TREE ROOTS DAMAGED BY EXCAVATION NEAR TREE THAT ARE TO REMAIN. WHERE NECESSARY FOR EQUIPMENT OPERATION, TREE MAY BE TRIMMED. COORDINATE ANY TRIMMING OF TREES TO REMAIN WITHIN LANDSCAPE PLANS AND OWNER. HAND EXCAVATING FOR UTILITIES MAY BE NECESSARY TO KEEP TREES INDICATED TO BE PROTECTED IN PLACE.
5. ALL WORK WITHIN CITY ROAD ROW SHALL MEET CITY STANDARDS AND SPECIFICATIONS. OBTAIN CITY PERMIT PRIOR TO ANY WORK WITHIN CITY ROAD RIGHT OF WAY. OBTAIN ALL NECESSARY EXCAVATION PERMITS AND PROVIDE NECESSARY TRAFFIC CONTROL MEASURES PER CITY REQUIREMENTS.
6. REMOVE AND SALVAGE ALL SIGNS, BENCHES, AND EXTERIOR LIGHTS WITHIN THE PROJECT LIMITS. AFTER REMOVAL COORDINATE OWNER FOR PICKUP OF SIGNAGE OR OTHER SALVAGED ITEMS.
7. DO NOT DRIVE HEAVY EQUIPMENT OR TRUCKS OVER EXCAVATED SUBGRADE. DAMAGE TO SOFT SUBGRADE AREAS CAUSED BY ROUTING HEAVY EQUIPMENT OR TRUCKS OVER SUBGRADE WILL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. REPAIRS TO BE COMPLETED WITH UP TO 2' OF IMPORTED STRUCTURAL GRANULAR FILL TO STABILIZE SOFT AREAS.
8. PLACEMENT OF GRANULAR IMPORT MATERIALS MAY BE NECESSARY TO MAINTAIN CONSTRUCTION TRAFFIC PATHWAYS DURING WET PERIODS OF THE YEAR. CONTRACTOR IS REQUIRED TO MAINTAIN TRAFFIC PATHWAYS AT ALL TIMES DURING CONSTRUCTION AND REMOVE OR ADD TO THESE GRANULAR MATERIALS TO MEET THE GRADES NECESSARY TO OBTAIN THE GRADES SHOWN ON CG400.
9. APPROXIMATE FOUNDATION EXCAVATION LIMIT LINE MAY BE EXTENDED WITH APPROVAL FROM THE OWNER. ANY AFFECTED IMPROVEMENTS IMPACTED SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. REFER TO BUILDING PLANS FOR APPLICABLE EXCAVATION LIMIT LINE FOR THE NEW BUILDING.
10. ALL STRIPING WITHIN THE PROJECT LIMIT LINE SHALL BE BLACKED OUT AND REPLACED WITH STRIPING PER SITE LAYOUT PLAN.
11. ALL SIGNS TO REMAIN UNLESS INDICATED ON THIS SHEET OR THE SITE PLAN.



DEMOLITION LEGEND



Stamp

STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No.8023335

NAYLOR WENTWORTH LUND ARCHITECTS
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MERIDIAN ENGINEERING, INC.
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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

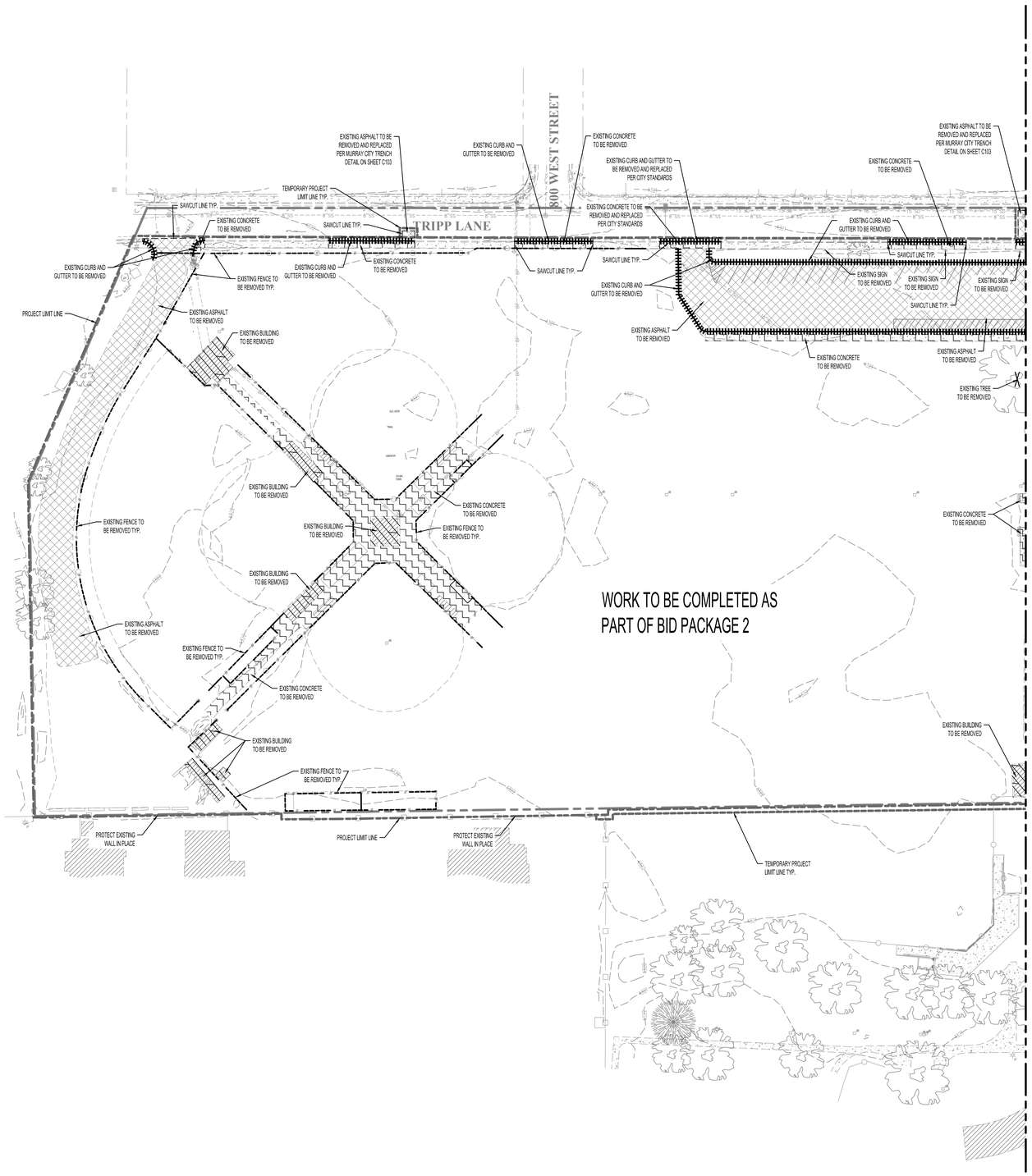
Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL SITE DEMOLITION PLAN

Sheet Number
CS220
BID PACKAGE 3

Blue Stakes of UTAH 811



SITE DEMOLITION PLAN NOTES:

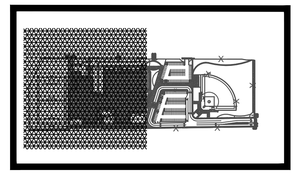
1. FOR GENERAL SITE DEMOLITION PLANS REFER TO SHEET CS220



SCALE 1"=40'

DEMOLITION LEGEND

- REMOVE TREES
- SAWCUT
- REMOVE FENCING
- REMOVE WALL/CURBING/CURB AND GUTTER
- REMOVE EXISTING BUILDING
- REMOVE EXISTING ASPHALT
- REMOVE EXISTING CONCRETE
- PROJECT LIMIT LINE
- TEMPORARY PROJECT LIMIT LINE



VICINITY MAP

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

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Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

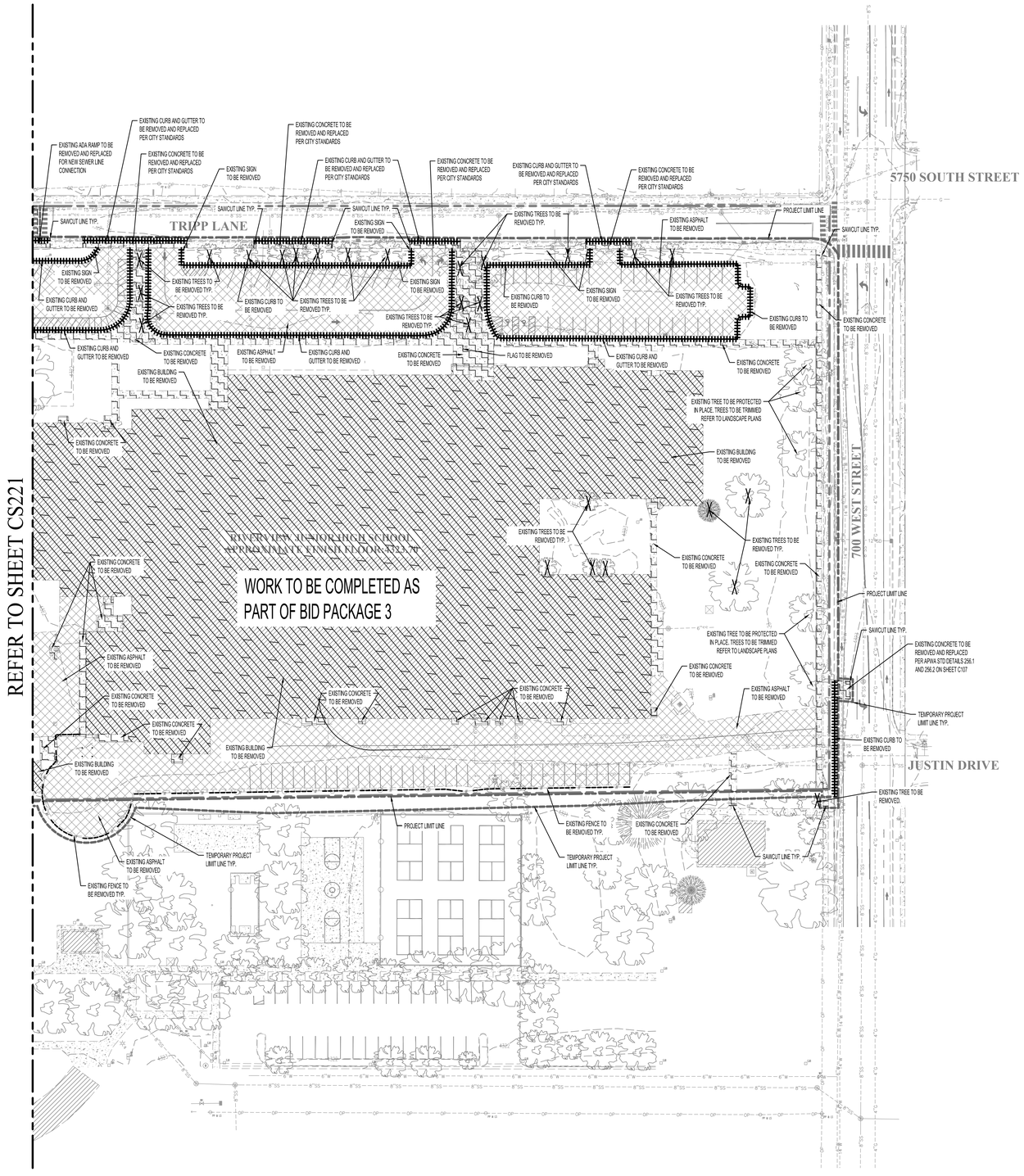
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED SITE DEMOLITION PLAN

Sheet Number
CS221

BID PACKAGE 3

Blue Stakes of Utah 811
Blue Stakes of Utah.com



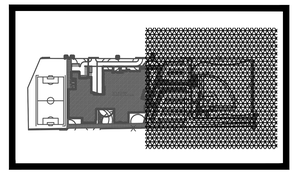
SITE DEMOLITION PLAN NOTES:

1. FOR GENERAL SITE DEMOLITION PLANS REFER TO SHEET CS220



DEMOLITION LEGEND

- REMOVE TREES
- SAWCUT
- REMOVE FENCING
- REMOVE WALL/CURBING/CURB AND GUTTER
- REMOVE EXISTING BUILDING
- REMOVE EXISTING ASPHALT
- REMOVE EXISTING CONCRETE
- PROJECT LIMIT LINE
- TEMPORARY PROJECT LIMIT LINE



VICINITY MAP

Stamp
STATE OF UTAH
2025-02-13
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Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

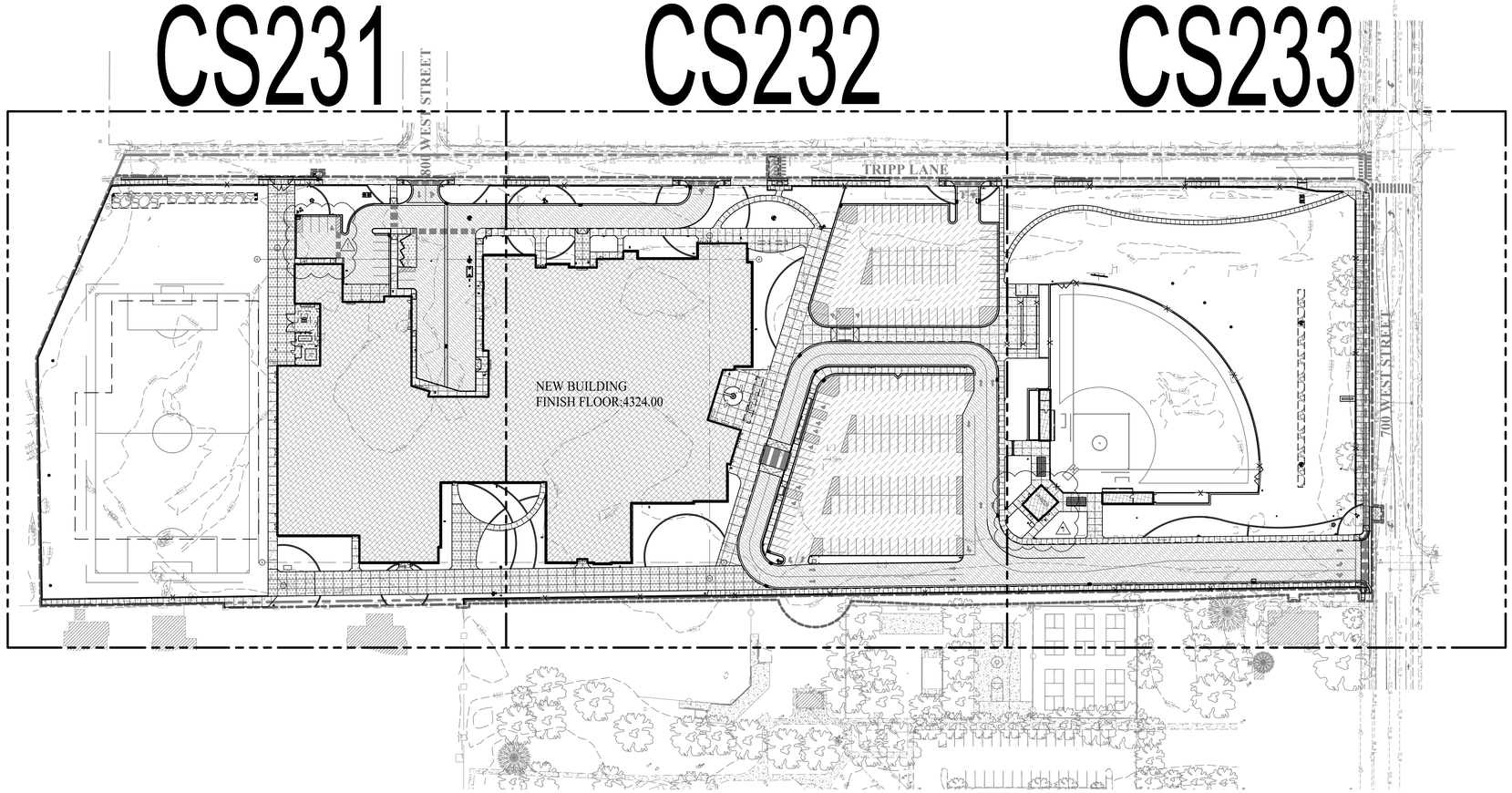
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED SITE DEMOLITION PLAN

Sheet Number
CS222

BID PACKAGE 3

Blue Stakes of Utah 811



GENERAL SITE LAYOUT NOTES:

1. REFER TO ARCHITECTURAL SITE PLAN FOR DETAIL OF DUMPSTER ENCLOSURE.
2. REFER TO ELECTRICAL PLANS FOR TRANSFORMER LOCATIONS AND LIGHTING.
3. REFER TO LANDSCAPE PLANS FOR LAYOUT OF PLANTINGS.
4. VERIFY THE GRID DISTANCES SHOWN FOR BUILDING LOCATIONS WITH ARCH PLANS.
5. ALL PAVEMENT REPAIR TO MEET REQUIREMENT STANDARD DETAILS ON C100.
6. TRANSITION CURB FROM STANDARD CURB HEIGHT TO CURB TERMINATION OVER 6' MINIMUM AT ALL LOCATIONS.
7. REPAIR/CONSTRUCT DRIVE APPROACHES PER CITY STANDARDS.
8. CURVE AND LINE DATA IS BASED ON THE TOP BACK OF CURB AND FRONT OF SIDEWALK.

HATCH LEGEND

- ASPHALT PAVEMENT SEE DETAIL B ON SHEET C100
- HEAVY DUTY ASPHALT PAVEMENT SEE DETAIL C ON SHEET C100
- SIDEWALK PER DETAIL F ON SHEET C100
- VEHICULAR CONCRETE PER DETAIL A ON SHEET C100
- DOWELED SIDEWALK AND 8" CURB PER DETAIL I ON SHEET C101 AS SPECIFIED ON PLANS.
- DOWELED SIDEWALK AND CURB AND GUTTER PER DETAIL H ON SHEET C101 AS SPECIFIED ON PLANS.
- NEW BUILDING
- BUILDING OVERHANG
- UNDERGROUND DETENTION BASIN REFER TO GRADING PLANS ON CG400
- MURRAY CITY RIGHT OF WAY ASPHALT REPAIR REFER TO MURRAY CITY DETAIL C-7 ON SHEET C103
- MURRAY CITY RIGHT OF WAY CONCRETE PAVEMENT REPAIR REFER TO MURRAY CITY DETAIL C-7 ON SHEET C103
- NEW SURFACE UTILITIES REFER TO CU300



PARKING STALL COUNT	
TOTAL STALLS:	182
STALLS:	174
HC STALLS:	8

1

TBC Line Table		
L#	L	Bearing
L1	1.46	N0° 39' 50.77"E
L2	622.70	N89° 18' 05.56"E
L3	101.97	S16° 59' 59.96"W
L4	8.10	N89° 59' 58.74"W
L5	121.51	N89° 59' 58.74"W
L6	154.30	N0° 10' 09.68"W
L7	357.13	N89° 18' 05.56"E
L8	26.00	S0° 00' 14.66"E
L9	161.93	N90° 00' 00.00"W
L10	155.33	N89° 18' 05.56"E
L11	2.67	S17° 00' 03.73"W
L12	16.50	S73° 00' 36.06"E
L13	180.79	S16° 59' 59.95"W
L14	147.37	N89° 59' 58.74"W
L15	77.71	N89° 59' 58.73"W
L16	4.95	S44° 59' 50.09"W
L17	4.95	N44° 59' 58.81"W
L18	60.15	N89° 59' 58.73"W
L19	126.50	S16° 59' 59.95"W
L20	16.29	N89° 58' 52.47"E

TBC Line Table		
L#	L	Bearing
L21	19.00	N89° 45' 36.58"E
L22	30.32	N0° 00' 00.00"E
L23	16.63	N90° 00' 00.00"W
L24	92.50	N0° 00' 00.00"W
L25	136.00	N90° 00' 00.00"E
L26	9.59	N90° 00' 00.00"E
L27	111.37	S17° 00' 00.00"W
L28	117.97	N90° 00' 00.00"W
L29	17.00	N0° 05' 10.90"W
L30	31.10	S0° 04' 53.87"E
L31	16.50	N89° 53' 03.57"W
L32	11.23	S89° 54' 30.69"E
L33	10.99	N89° 59' 35.00"E
L34	11.28	N89° 56' 06.53"W
L35	16.52	N89° 47' 21.53"W
L36	95.01	S90° 00' 00.00"W
L37	67.60	S0° 00' 00.00"E
L38	17.46	N90° 00' 00.00"E
L39	16.96	N90° 00' 00.00"W
L40	4.97	N0° 00' 00.00"E

TBC Line Table		
L#	L	Bearing
L42	44.33	N89° 59' 13.77"W
L43	46.95	N0° 00' 00.00"E
L44	51.34	N90° 00' 00.00"W
L45	17.51	S0° 00' 00.00"E
L46	16.41	N90° 00' 00.00"W
L47	6.00	N0° 00' 00.00"E
L48	6.00	N0° 00' 00.00"E
L49	14.43	S89° 55' 57.53"E
L50	9.26	N89° 55' 25.35"W
L51	36.94	N89° 44' 57.60"W
L52	17.02	S89° 50' 09.97"E
L53	49.59	S89° 19' 16.69"W
L54	9.48	N89° 57' 39.06"E
L55	14.85	S89° 04' 43.99"W
L56	238.92	S90° 00' 00.00"W
L57	16.51	S89° 49' 43.13"E
L58	11.53	N89° 49' 10.94"W
L59	24.16	N0° 00' 09.62"E
L60	17.53	S89° 59' 50.38"E
L61	48.85	S73° 00' 00.00"E

TBC Line Table		
L#	L	Bearing
L62	51.00	S0° 00' 00.00"E
L63	7.69	S0° 00' 00.00"E
L64	16.57	N90° 00' 00.00"E
L65	23.13	S0° 00' 00.00"E
L66	130.02	N0° 00' 09.62"E
L67	6.00	N89° 59' 35.00"E
L69	48.77	S89° 43' 14.56"E
L70	2.85	S79° 47' 41.98"E
L71	4.50	N89° 10' 51.77"E
L72	2.72	N84° 23' 43.19"E
L73	36.40	S89° 53' 57.68"E
L74	40.15	S89° 48' 14.46"E
L75	83.06	S89° 51' 46.54"E
L76	13.25	S60° 00' 00.00"W
L77	9.00	S30° 00' 00.00"E
L78	5.20	S60° 00' 00.00"W
L79	9.00	S30° 00' 00.00"E
L80	5.20	S60° 00' 00.00"W
L81	8.39	S30° 00' 00.00"E

TBC Curve Table					
C#	L	R	Δ	Chord Bearing	Chord L
C1	4.81	10.00	027°34'02"	N13° 41' 03"W	4.77
C2	87.47	46.50	107°46'25"	S36° 53' 13"E	75.13
C3	58.66	46.62	072°05'14"	S53° 05' 34"W	54.86
C4	53.72	34.49	089°13'45"	N45° 23' 24"W	48.45
C5	46.63	29.62	090°10'50"	S45° 30' 30"E	41.96
C6	15.62	10.00	089°30'53"	N44° 32' 36"E	14.08
C7	10.85	7.48	083°05'17"	N47° 49' 07"E	9.92
C8	5.64	3.00	107°41'58"	S36° 50' 55"E	4.84
C9	3.82	3.00	072°59'56"	S53° 30' 02"W	3.57
C10	5.50	3.50	090°00'00"	N28° 00' 36"W	4.95
C11	6.53	4.53	082°35'43"	N54° 01' 24"E	5.98
C12	34.56	19.50	101°32'19"	S33° 46' 09"E	30.21
C13	24.53	19.62	071°37'10"	S52° 51' 32"W	22.96
C14	11.28	7.49	086°13'38"	N46° 53' 14"W	10.24
C15	32.49	25.50	073°00'01"	S53° 30' 01"W	30.34
C16	4.81	10.00	027°34'16"	S13° 47' 08"W	4.77
C17	5.50	3.50	089°59'59"	S45° 00' 00"E	4.95
C18	32.20	20.50	090°00'00"	N45° 00' 00"E	28.99
C19	38.28	20.50	107°00'00"	S36° 30' 00"E	32.96
C20	9.42	3.00	180°00'02"	N89° 54' 53"E	6.00

TBC Curve Table					
C#	L	R	Δ	Chord Bearing	Chord L
C21	4.63	10.00	026°32'04"	N13° 20' 56"W	4.59
C22	4.81	10.00	027°34'43"	S13° 42' 48"W	4.77
C23	59.14	41.50	081°38'54"	N40° 45' 29"E	54.26
C24	6.09	41.50	008°24'47"	N85° 47' 19"E	6.09
C25	7.81	2.49	180°00'00"	S0° 00' 00"E	4.97
C26	7.80	2.49	179°42'18"	S89° 51' 11"E	4.97
C27	46.34	29.50	090°00'00"	S45° 00' 00"W	41.72
C28	22.44	14.51	088°37'58"	N44° 19' 30"E	20.27
C29	5.01	10.00	028°42'53"	N14° 21' 26"W	4.96
C30	4.94	10.29	027°29'35"	S14° 24' 34"W	4.89
C31	22.78	14.50	090°00'00"	S45° 00' 00"E	20.51
C32	23.61	14.50	093°16'42"	N43° 21' 39"E	21.08
C33	4.10	10.00	023°28'47"	N14° 59' 30"W	4.07
C34	5.50	3.50	090°00'00"	N45° 00' 00"W	4.95
C35	145.14	83.32	099°48'25"	S54° 29' 46"W	127.47
C36	270.79	421.50	036°48'35"	N86° 01' 10"E	266.16
C37	4.35	2.00	124°28'45"	N27° 45' 37"E	3.54
C38	116.94	60.35	111°01'53"	S89° 59' 40"W	99.49
C39	4.33	2.00	124°08'26"	S27° 55' 47"E	3.53
C40	7.77	5.00	089°05'38"	S46° 13' 37"E	7.01

TBC Curve Table					
C#	L	R	Δ	Chord Bearing	Chord L
C41	40.42	71.08	032°34'51"	S14° 36' 38"W	39.88
C42	82.22	50.62	093°04'10"	S60° 15' 26"W	73.48

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
8023335
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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
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Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-
1	BP-2 REVISIONS	03/31/2025

Project Number
134.028

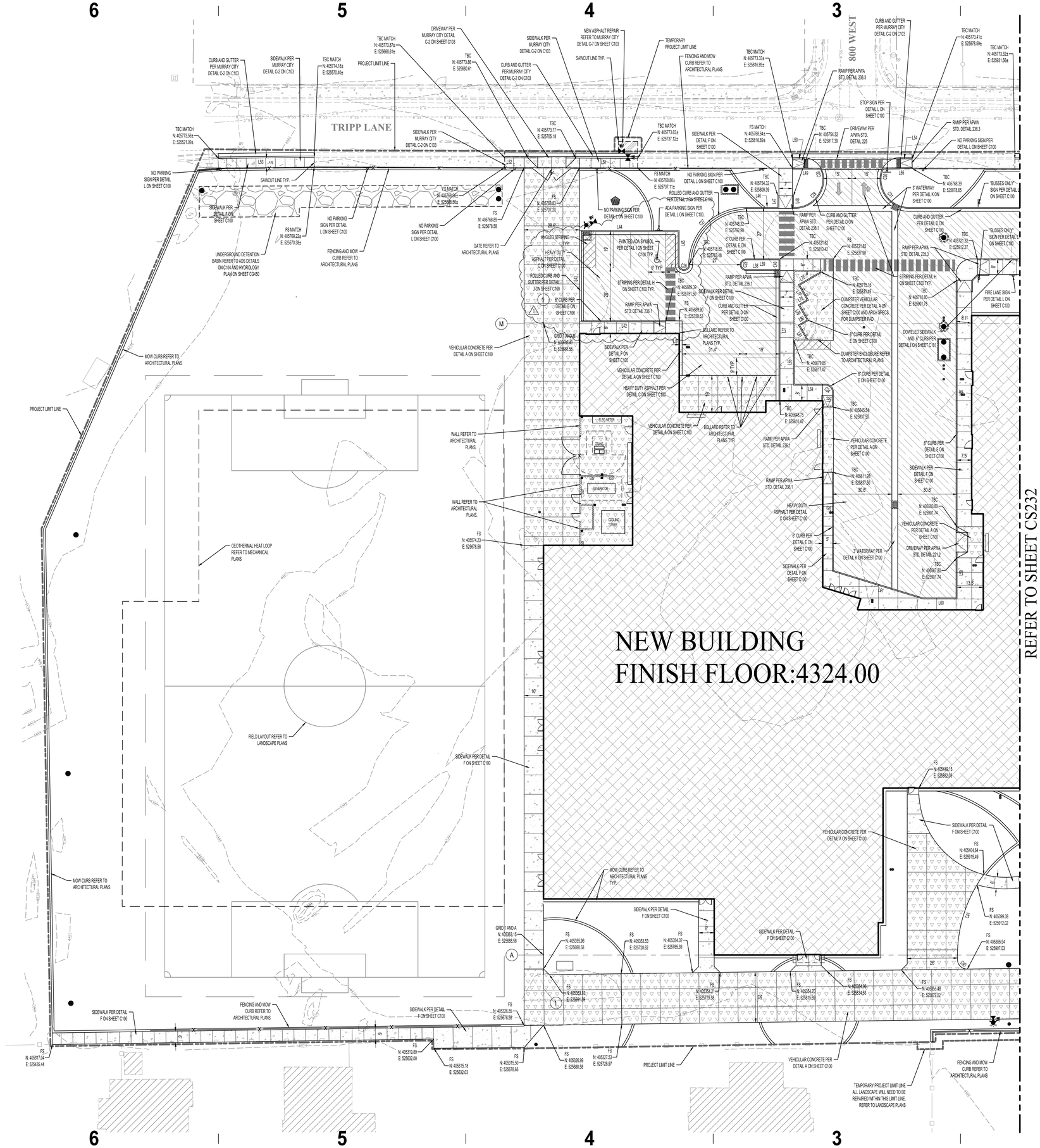
Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL SITE LAYOUT PLAN

Sheet Number
CS230

BID PACKAGE 3

Blue Stakes of Utah 811

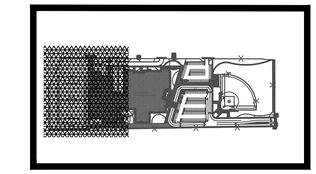


GENERAL SITE LAYOUT NOTES:

1. REFER TO SHEET CS230 FOR GENERAL SITE LAYOUT NOTES.

HATCH LEGEND

- ASPHALT PAVEMENT SEE DETAIL B ON SHEET C100
- HEAVY DUTY ASPHALT PAVEMENT SEE DETAIL C ON SHEET C100
- SIDEWALK PER DETAIL F ON SHEET C100
- VEHICULAR CONCRETE PER DETAIL A ON SHEET C100
- DOWELED SIDEWALK AND 6" CURB PER DETAIL I ON SHEET C101 AS SPECIFIED ON PLANS.
- DOWELED SIDEWALK AND CURB AND GUTTER PER DETAIL H ON SHEET C101 AS SPECIFIED ON PLANS.
- NEW BUILDING
- BUILDING OVERHANG
- UNDERGROUND RETENTION BASIN REFER TO GRADING PLANS ON CG400
- MURRAY CITY RIGHT OF WAY ASPHALT REPAIR REFER TO MURRAY CITY DETAIL C-7 ON SHEET C103
- MURRAY CITY RIGHT OF WAY CONCRETE PAVEMENT REPAIR REFER TO APWA STD DETAILS 256.1 AND 256.2 ON SHEET C107
- NEW SURFACE UTILITIES REFER TO CU300



VICINITY MAP

0 20 40

SCALE 1"=20'

Stamp

STATE OF UTAH — NICHOLE LEE LUTHI — 6023335 — 2025-02-13

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Project Phase

BID DOCUMENTS

Revision Schedule

No.	Description	Date
-	-	-
1	BP-2 REVISIONS	03/31/2025

Project Number

134.028

Project Issue Date

31 MARCH 2025

Sheet Title

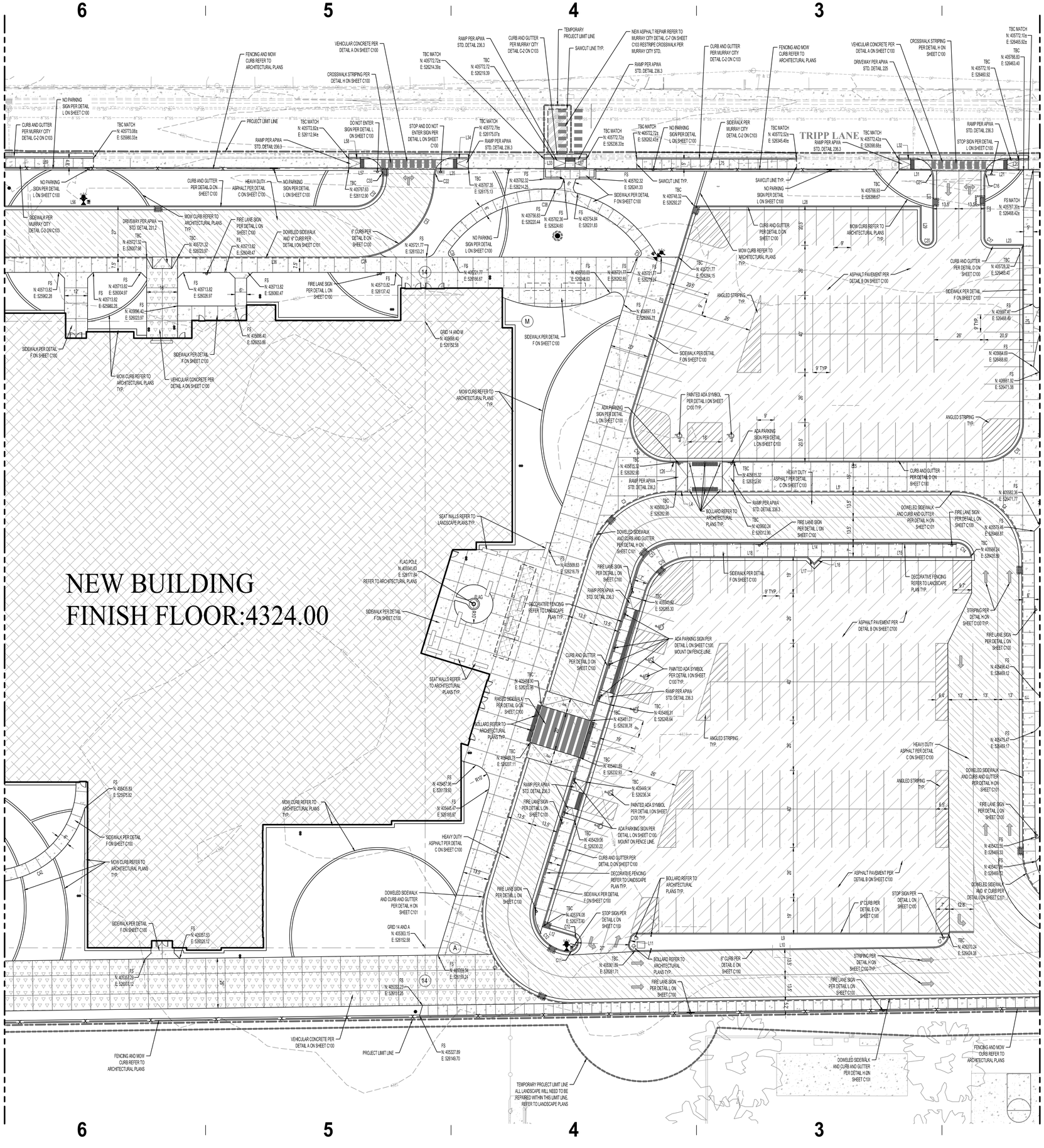
ENLARGED SITE LAYOUT PLAN

Sheet Number

CS231

BID PACKAGE 3

Blue Stakes of Utah 811 — Know what's below. Call before you dig.



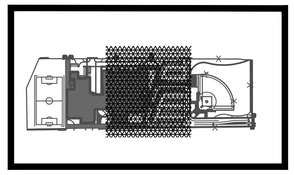
GENERAL SITE LAYOUT NOTES:

1. REFER TO SHEET CS230 FOR GENERAL SITE LAYOUT NOTES.

0 20 40
SCALE 1"=20'

HATCH LEGEND

- ASPHALT PAVEMENT SEE DETAIL B ON SHEET C100
- HEAVY DUTY ASPHALT PAVEMENT SEE DETAIL C ON SHEET C100
- SIDEWALK PER DETAIL F ON SHEET C100
- VEHICULAR CONCRETE PER DETAIL A ON SHEET C100
- DOWELED SIDEWALK AND 6" CURB PER DETAIL I ON SHEET C101 AS SPECIFIED ON PLANS.
- DOWELED SIDEWALK AND CURB AND GUTTER PER DETAIL H ON SHEET C101 AS SPECIFIED ON PLANS.
- NEW BUILDING
- BUILDING OVERHANG
- UNDERGROUND DETENTION BASIN REFER TO GRADING PLANS ON CG400
- MURRAY CITY RIGHT OF WAY ASPHALT REPAIR REFER TO MURRAY CITY DETAIL C7 ON SHEET C103
- MURRAY CITY RIGHT OF WAY CONCRETE PAVEMENT REPAIR REFER TO APWA STD DETAILS 256.1 AND 256.2 ON SHEET C107
- NEW SURFACE UTILITIES REFER TO CU300



VICINITY MAP

Stamp
STATE OF UTAH
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NICHOLE LEE LUTH
No. 8023335

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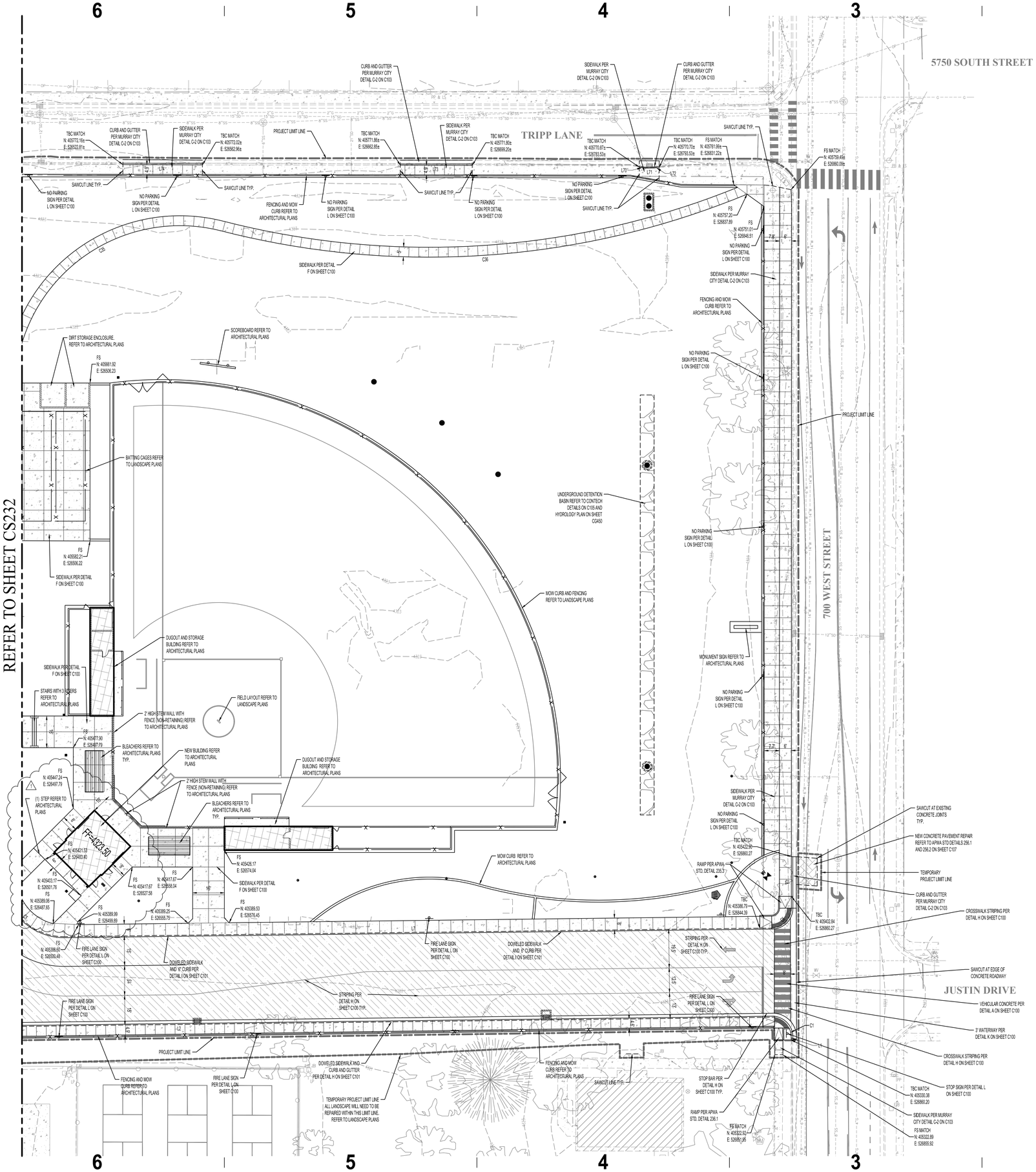
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED SITE LAYOUT PLAN

Sheet Number
CS232

BID PACKAGE 3

Blue Stakes of Utah 811



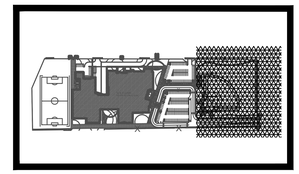
GENERAL SITE LAYOUT NOTES:

1. REFER TO SHEET CS230 FOR GENERAL SITE LAYOUT NOTES.

0 20 40
SCALE 1"=20'

HATCH LEGEND

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- HEAVY DUTY ASPHALT PAVEMENT SEE DETAIL C ON SHEET C100
- SIDEWALK PER DETAIL F ON SHEET C100
- VEHICULAR CONCRETE PER DETAIL A ON SHEET C100
- DOWELED SIDEWALK AND 9" CURB PER DETAIL I ON SHEET C101 AS SPECIFIED ON PLANS.
- DOWELED SIDEWALK AND CURB AND GUTTER PER DETAIL H ON SHEET C101 AS SPECIFIED ON PLANS.
- NEW BUILDING
- BUILDING OVERHANG
- UNDERGROUND DETENTION BASIN REFER TO GRADING PLANS ON CG400
- MURRAY CITY RIGHT OF WAY ASPHALT REPAIR REFER TO MURRAY CITY DETAIL C-7 ON SHEET C103
- MURRAY CITY RIGHT OF WAY CONCRETE PAVEMENT REPAIR REFER TO APWA STD DETAILS 256.1 AND 256.2 ON SHEET C107
- NEW SURFACE UTILITIES REFER TO CU000



VICINITY MAP

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5102 S Commerce Drive
Murray, Utah 84123

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STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

MURRAY CITY SCHOOL DISTRICT
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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	BP-2 REVISIONS	03/31/2025

Project Number
134.028

Project Issue Date
31 MARCH 2025

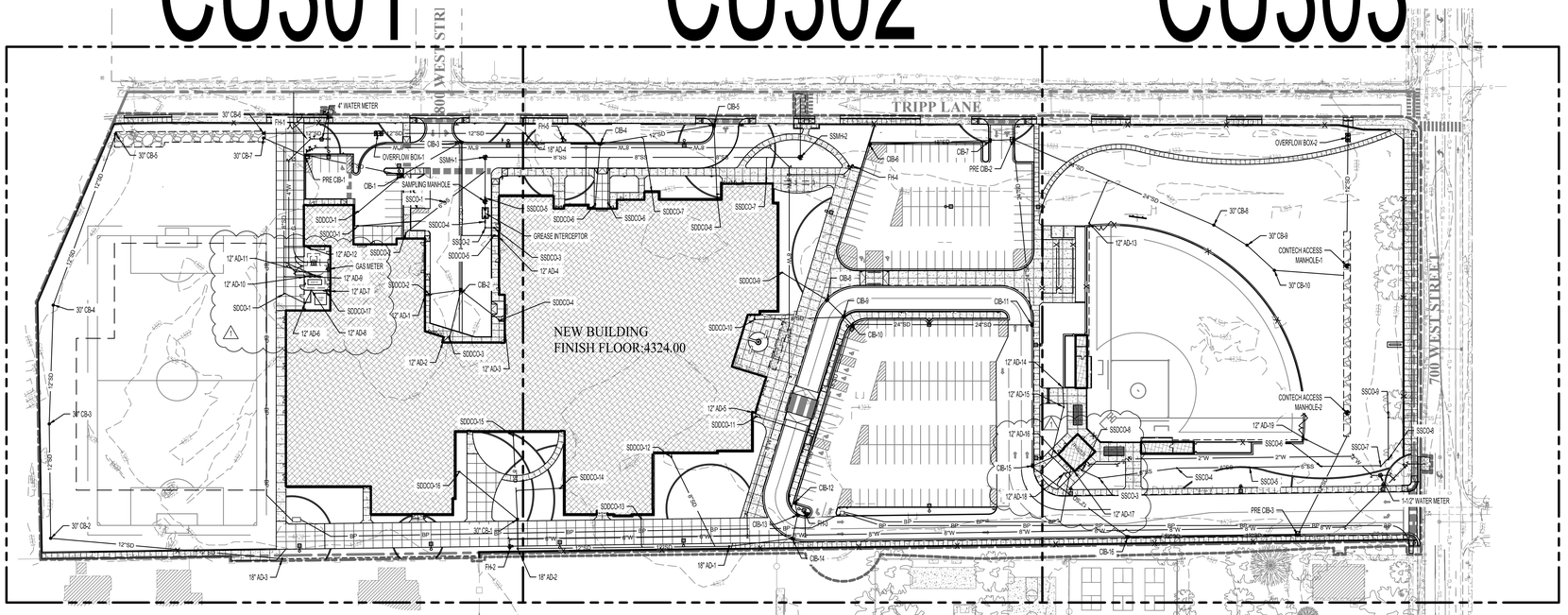
Sheet Title
ENLARGED SITE LAYOUT PLAN

Sheet Number
CS233

BID PACKAGE 3

Blue Stakes of Utah 811

CU301 CU302 CU303





STRUCTURE LABEL	DETAIL #
30" CB - 30"ID AREA DRAIN	DETAIL B SHEET C101
CONTECH ACCESS MANHOLE	CONTECH DETAIL ON SHEET C105
CIB - CURB AND GUTTER INLET	DETAIL K SHEET C101
PRE CIB - PRETREATMENT CURB AND GUTTER INLET	DETAIL E SHEET C101
18" AD - 18"ID AREA DRAIN	DETAIL D SHEET C101
12" AD - 12"ID AREA DRAIN	DETAIL C SHEET C101
OVERFLOW BOX	DETAIL F SHEET C101
SSMH - SANITARY SEWER MANHOLE	MURRAY CITY SEWER DETAIL 7 SHEET C102
FH - FIRE HYDRANT	MURRAY CITY WATER DETAIL 11 SHEET C102
4" WATER METER	MURRAY CITY WATER DETAIL 18 SHEET C102
1-1/2" WATER METER	MURRAY CITY WATER DETAIL 17 SHEET C102
SSCO - SEWER CLEANOUT	MURRAY CITY SEWER DETAIL 11 SHEET C102
SSCO - STORM DRAIN CLEANOUT	DETAIL M SHEET C100

GENERAL UTILITY NOTES:

1. PLUMBING CONTRACTOR WILL TERMINATE THEIR ROOF DRAIN LINES WITH A CLEAN OUT APPROXIMATELY 5' FROM THE BUILDING. COORDINATE WITH PLUMBING CONTRACTOR ON SCHEDULE AND PLACEMENT OF ROOF DRAIN LINES NEAR THE BUILDING.

2. ALIGN ALL INTERIOR AND EXTERIOR UTILITIES. SITE UTILITY CONTRACTOR TO COORDINATE PLACEMENT HORIZONTALLY AND VERTICALLY WITH BUILDING PLUMBING CONTRACTOR. SITE "INTERFACE LINE" BETWEEN THE BUILDING PLUMBING CONTRACTOR AND THE SITE UTILITY CONTRACTOR WILL BE AT 5' FROM THE BUILDING AND (EXCEPT FOR THE FIRE SPRINKLER LINE) A CLEAN OUT WILL BE INSTALLED BY THE PLUMBING CONTRACTOR APPROXIMATELY 5' FROM THE BUILDING FOR STORM DRAIN AND SEWER LINES. CONNECTION TO BUILDING PIPING AND ALL PIPING BEYOND THIS INTERFACE SHALL BE THE SITE UTILITY CONTRACTOR'S RESPONSIBILITY. PROVIDE REDUCERS, ADAPTERS, OR OTHER FITTINGS AS REQUIRED AT THE INTERFACE TO CONNECT TO BUILDING PIPE. COLLECT ROOF DRAIN LINES AS SHOWN AND ROUTE TO NEW CATCH BASINS OR CLEAN OUTS ON SITE. PREFERRED SLOPES, APPROXIMATE DISTANCES, AND INVERTS OF GRAVITY PIPING ARE SHOWN ON THE PLAN MAY REQUIRE ADJUSTMENT TO CONNECT TO BUILDING ROOF OR SEWER DRAIN LINES. MAINTAIN 2% SLOPE FOR 4" DIAMETER OR SMALLER PIPES, 1% FOR 6" AND 0.5% FOR 8" DIAMETER PIPES.

3. ALL PROPOSED SITE ELECTRICAL EQUIPMENT STRUCTURES AND LINES SHOWN ON CIVIL PLANS ARE SCHEMATICALLY SHOWN ONLY AS A COORDINATION BETWEEN ELECTRICAL AND CIVIL. PLEASE REFER DIRECTLY TO ELECTRICAL PLANS FOR THE LAYOUT AND DETAILS OF ALL SITE ELECTRICAL EQUIPMENT AND LINES.

4. SITE CONTRACTOR SHALL COORDINATE WITH MURRAY CITY WHEN COMPLETING THE SEWER CONNECTION.

5. SITE CONTRACTOR SHALL COORDINATE WITH MURRAY CITY INSPECTOR WHEN COMPLETING WATER CONNECTIONS IN CITY STREETS OR ON SITE WHERE REQUIRED.

6. ALL CONSTRUCTION IN THE CULINARY WATERLINE AND SANITARY SEWER LINE PIPE ZONE SHALL COMPLY WITH ALL MURRAY CITY SPECIFICATIONS AND REQUIREMENTS. SEE GENERAL NOTES ON SHEET C100. WHERE THRUST BLOCKING CANNOT BE COMPLETED DUE TO OTHER ADJACENT UTILITIES OR OTHER SITE CONSTRAINTS, RESTRAINED JOINTS WILL BE REQUIRED PER MURRAY CITY STANDARD SPECS. THRUST BLOCK ALL WATERLINE FITTINGS PER MURRAY CITY STANDARDS TYP.

7. COORDINATES FOR FIRE HYDRANTS, CURB INLETS, CATCH BASINS, OR CLEAN OUTS ARE AT THE CENTER OF THE UTILITY STRUCTURE. ALL STORM DRAIN BOXES ARE 3'X3', UNLESS OTHERWISE NOTED OR THOSE INLETS PLACES IN CURB AND GUTTER.

8. ALL VALVES, AREA CATCH BASINS (NOT IN C&G), CLEAN OUTS, OR MANHOLES SHALL HAVE CONCRETE GRADE ADJUSTMENT COLLARS PLACED PER DETAIL ON C101.

9. STORM DRAIN CLEAN OUTS TO BE SIMILAR TO DETAIL SHOWN ON PLUMBING PLANS AND SHALL BE EXTENDED TO GRADE. ALL EXTERIOR ROOF DRAIN PIPING TO BE CAST IRON SOIL PIPE AND FITTINGS IN ACCORDANCE WITH ASTM A 74.

10. ROOF DRAIN CONNECTIONS AT CATCH BASINS OR CLEAN OUT BOXES TO BE CORE DRILLED AND EPOXY GROUTED INTO PRECAST BOXES DUE TO FIELD ADJUSTMENTS WHICH MAY BE NECESSARY TO CONNECT TO BUILDING PIPING. 3" &4" INTERIOR ROOF DRAIN PIPE TO BECOME 4" OR 6" STORM DRAIN PIPE. 5" &6" INTERIOR ROOF DRAIN PIPE TO BECOME 8" STORM DRAIN PIPE.

11. THE FIRE SPRINKLER LINE SHALL BE ROUTED INTO THE FIRE SPRINKLER ROOM INSIDE THE BUILDING AND TERMINATE 12" ABOVE FINISH FLOOR WITH A 6" FLANGE. CAP WITH BLIND FLANGE FOR LINE TESTING. REFER TO PLUMBING PLANS FOR RISER LOCATION IN THE BUILDING. THE FIRE SERVICE LINE SHALL BE CEMENT LINED DUCTILE IRON PIPE (PER AWWA C151 350 PSI AND AWWA C104) WRAPPED IN POLYETHYLENE (PER AWWA C105) FROM THE BUILDING CONNECTION TO THE TEE AT THE FIRE LOOP CONNECTION PER CITY WATER STANDARD SPECIFICATIONS AND DETAILS.

12. ALL CONSTRUCTION, PIPING MATERIALS AND INSTALLATION TO BE:

WATER LINES:
- 2" COPPER PIPE CONFORM TO MURRAY CITY STANDARD PER SERVICE LINES.
- 4" - 8" WATERLINES TO BE DUCTILE IRON PIPE PER MURRAY CITY STANDARD AND APWA STANDARDS.

SEWER LINES, MANHOLES, AND CLEANOUTS:
- APWA AND SEWER DISTRICT STANDARDS WITH STANDARD FITTINGS AND CLEANOUTS.
- PVC PIPE 6" TO 8" (SDR 35), USE 6" DIAT FITTING ON SERVICE LINES TO BUILDINGS REFER TO CLEAN OUT DETAILS.
- MANHOLES AND CLEANOUTS TO MURRAY CITY STANDARDS. PVC PIPING, PRECAST MANHOLES.

STORM DRAIN:
- 6" TO 18" HDPE PIPE WITH WATER TIGHT JOINTS, WYE FITTING TO BE WATER TIGHT JOINT STANDARDS. PIPING IN CITY ROW TO BE RCP.

ROOF DRAIN PIPING:
- ROOF AND AREA DRAIN PIPING: 4"- 8" PIPING PVC (SDR 35).

DETENTION BASIN:
- REFER TO DETAILS ON SHEETS C104-C105.

GAS LINE:
- ENBRIDGE GAS. COORDINATE WITH ENBRIDGE GAS

13. PROJECT SHALL COMPLY WITH ALL UTAH DIVISION OF DRINKING WATER RULES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, THOSE PERTAINING TO BACKFLOW PROTECTION AND CROSS CONNECTION PREVENTION. ANY NEW BACKFLOW DEVICES AND THE STOP AND WASTE VALVE ARE SHOWN ON THE LANDSCAPE DRAWINGS.

14. INSPECTION AND APPROVAL FOR THE SEWER/WATER LINE CROSSINGS ON SITE SHALL BE REVIEWED AND APPROVED BY MURRAY CITY PRIOR TO CONSTRUCTION OF THE CROSSING. MURRAY CITY SHALL ALSO INSPECT THE CROSSING PRIOR TO BACKFILL.

15. REFER TO SHEET C200 FOR PROJECT BASIS OF BEARING, BASIS OF COORDINATES AND BENCHMARK.

16. ALL UTILITIES OUTSIDE OF PUBLIC R.O.W. ARE PRIVATELY OWNED AND SHALL BE MAINTAINED BY OWNER UNLESS NOTED OTHERWISE.

17. POT HOLE AND FIELD VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

18. TEMPORARY PUMPING OF SANITARY SEWER MAY BE REQUIRED AS PORTIONS OF THE SYSTEM ARE REPLACED. BACKUP PUMPS AND POWER WILL BE REQUIRED WHERE PUMPING IS NECESSARY TO MAINTAIN SERVICE TO THE EXISTING BUILDING AT ALL TIMES DURING CONSTRUCTION.

19. USE FLOWABLE FILL BETWEEN UTILITY CROSSINGS THAT ARE LESS THAN 12" SEPARATION. ALL GRAVITY LINES MUST BE INSTALLED BEFORE PRESSURIZED LINES.

20. PIPING LENGTHS ARE APPROXIMATE LENGTHS AND ARE ROUNDED TO THE NEAREST FOOT. LENGTHS ARE FROM CENTER TO CENTER OF INLETS OR CLEANOUTS. PIPE SLOPES ARE ALSO APPROXIMATE. USE INVERTS AT EACH BOX FOR CONTROL OF PIPE INSTALLATION.

21. ALL FIRE SPRINKLER LINES SHALL HAVE 60" OF COVER MINIMUM. ALL OTHER WATERLINES INCLUDING EXISTING LINES TO HAVE 48" MINIMUM COVER.

22. POTHOLE ALL EXISTING UTILITY CROSSINGS PRIOR TO ROUTING ANY NEW UTILITIES. ALL NEW SEWER, DRAINAGE, OR OTHER GRAVITY LINES SHALL BE COMPLETED PRIOR TO ROUTING ANY PRESSURE LINES. WHERE EXISTING UTILITIES CONFLICT WITH NEW GRAVITY LINES, RAISE OR LOWER EXISTING UTILITIES TO ACCOMMODATE NEW GRAVITY LINES. PROVIDE 12" MIN. CLEARANCE BETWEEN WATER AND OTHER UTILITIES. WATER LINES SHALL NOT BE PLACED UNDER SEWER LINES AND SHALL HAVE A MINIMUM OF 18" CLEARANCE OF SEWER.

23. THRUST BLOCK ALL FITTINGS OR PROVIDE RESTRAINED JOINTS PER CITY STANDARDS. THE NEW 4" AND 6" CONNECTIONS TO THE NEW BUILDING WILL REQUIRE RESTRAINED JOINTS FOR MANY FITTINGS DUE TO LIMITED SPACE BETWEEN PIPES.

24. COORDINATE WITH LANDSCAPE PLANS PRIOR TO COMPLETION OF PAVEMENT FOR INSTALLATION OF IRRIGATION SLEEVES ACROSS PAVING OR PARKING AREAS.

25. WATER VALVES, SEWER MANHOLES, STORM DRAIN INLETS OR CLEANOUT BOXES, AND OTHER SURFACE UTILITY ACCESSORIES SHALL BE RAISED AND SLOPED TO ACCURATE FINISH SURFACE BY A CONCRETE GRADE COLLAR IN PAVEMENT. COLLAR SHALL BE A 12" WIDE AROUND THE UTILITY APPARATUSES AND 8" MINIMUM THICKNESS. PLACE 2 #4 REBAR HOOPS IN COLLAR. REFER TO DETAIL A ON SHEET C101. CONCRETE COLLARS TO BE USED IN ONLY ASPHALT PAVEMENT AREAS OR PAVER AREAS.

26. WHERE UTILITY LINES CROSS OR ARE ADJACENT TO SITE WALLS, WALL FOOTINGS, SHALL STEP BELOW UTILITIES FOR WATER AND STORM DRAIN LINES THAT DO NOT HAVE 3' OF FILL BETWEEN THE BOTTOM OF THE NORMAL WALL FOOTING DEPTH (30" DEPTH) AND THE TOP OF PIPE REFER TO DETAIL ON STRUCTURAL PLANS FOR TYPICAL FOOTING STEP DETAIL. WHERE UTILITY LINES HAVE A MINIMUM OF 3' OF FILL BETWEEN THE TOP OF PIPE AND BOTTOM WALL FOOTING THE WALL FOOTING DOES NOT NEED TO STEP BELOW THE NORMAL 30" DEPTH.

27. USE HS-20 SOLID COVERS ON ALL MANHOLES. CIB, AND CBS. AD AND ADS BOXES TO HAVE PEDESTRIAN TRAFFIC GRATED COVERS EXCEPT AS NOTED. ALL CIB BOXES TO HAVE HS-20 FRAME AND GRATES.

28. REPAIR PAVEMENT, AS WELL AS CURB AND GUTTER, AND SIDEWALKS WHERE UTILITIES CROSS INTO PUBLIC R.O.W. TO MAINTAIN TRAFFIC THROUGH THESE AREAS. ALL REPAIR IN PUBLIC R.O.W. TO MEET APWA AND MURRAY CITY STANDARDS.

29. SET NEW UTILITY MANHOLE OR STRUCTURE OVER EXISTING PIPING WHERE NEW AND EXISTING PIPING CONNECT. RECONNECT ALL EXISTING PIPING TO NEW STRUCTURES. PROVIDE NEW SECTIONS OF PIPE IF NECESSARY TO RECONNECT ALL PIPING TO THE NEW UTILITY STRUCTURES.

30. GAS LINE CONSTRUCTION TO THE BUILDING METER WILL BE COMPLETED BY ENBRIDGE GAS COORDINATE GAS INSTALLATION WITH ENBRIDGE GAS.

31. 8"X6" WYE FITTINGS FOR ROOF DRAIN OR OTHER WYE CONNECTIONS TO THE 6" OR 8" PVC DRAIN LINES TO BE DI FITTINGS WRAPPED IN 10 MIL. POLYETHYLENE (PER AWWA C105). PLACE CONCRETE ON WYE FITTING SIMILAR TO THE CLEANOUT DETAIL (MURRAY CITY DETAIL 11 ON C102).

32. ALL CB TO HAVE LOCKED DOWN GRATES IN DETENTION AREAS. ALL BUBBLE UP MANHOLES TO BE BOLTED DOWN IN DETENTION AREAS.

33. CONTRACTOR RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS AND INSPECTIONS WHILE WORKING IN THE PUBLIC RIGHT OF WAY.

34. VALVES ATTACH DIRECTLY TO TEE FITTINGS. "FL" INDICATES FLANGE FITTING AND "MJ" INDICATED MECHANICAL JOINT FITTING. ALL VALVING WILL CONNECT TO MAIN LINE PIPE WITH FLANGE FITTING. MAIN LINE FITTINGS CONNECTING TO VALVES WILL ALSO BE FLANGE FITTINGS. WRAP AND GREASE ALL FITTINGS PER SPECIFICATIONS AND NOTES.

35. ALL MANHOLES (BOTH SEWER AND STORM) TO BE 4' IN DIAMETER UNLESS SPECIFIED OTHERWISE.

36. ALL WYE FITTINGS FOR STORM DRAIN PIPING TO BE FACTORY FABRICATED. WHERE MAIN PIPE IS 8" OR LARGER, USE FLOWABLE FILL 3' UPSTREAM AND DOWNSTREAM FROM ALL FITTINGS. WYE FITTINGS CONNECTING TO PIPE LARGER THAN 8" SHALL BE NEAR THE TOP OF THE MAIN STORM DRAIN PIPE. FLOWABLE FILL MAY TERMINATE 6" ABOVE THE TOP OF THE SMALLER STORM DRAIN PIPE CONNECTION TO THE MAIN PIPE. PROVIDE A MINIMUM OF 18" TOPSOIL COVER OVER TOP OF FLOWABLE FILL IN LANDSCAPE AREAS.

37. THE CONTRACTOR SHALL MAINTAIN 10 FOOT HORIZONTAL AND 18 INCH VERTICAL SEPARATION BETWEEN SANITARY SEWER AND CULINARY WATER LINES. FOLLOW MURRAY CITY STANDARDS FOR ALL WATER/SEWER CROSSINGS.

38. PRIOR TO FIRE LINE INSTALLATION, THE CONTRACTOR IS TO COORDINATE WITH MURRAY CITY FIRE DEPARTMENT FOR THE EXACT PLACEMENT OF THE FIRE HYDRANTS ONSITE.

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Riverview Jr. High Rebuild

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Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	BP-2 REVISIONS	03/31/2025

Project Number
134.028

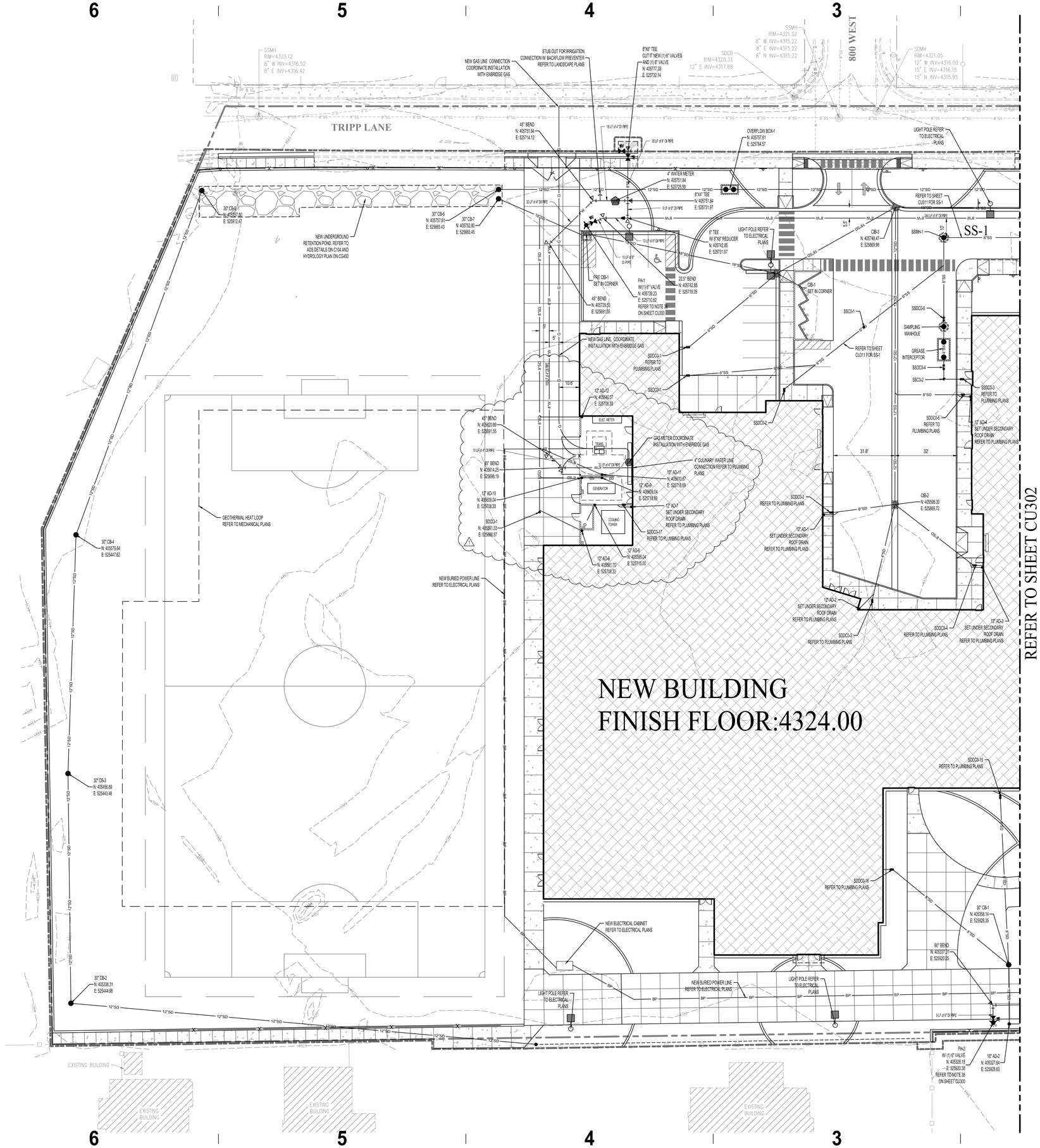
Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL UTILITY PLAN

Sheet Number
CU300

BID PACKAGE 3

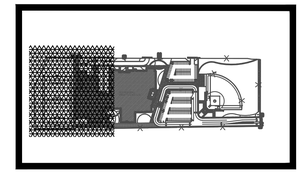
Blue Stakes of Utah 811



GENERAL UTILITY NOTES:

1. REFER TO SHEET CU000 FOR GENERAL UTILITY NOTES.

STRUCTURE LABEL	DETAIL #
30" CB - 30"Ø AREA DRAIN	DETAIL B SHEET C101
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PRE CIB - PRETREATMENT CURB AND GUTTER INLET	DETAIL E SHEET C101
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12" AD - 12"Ø AREA DRAIN	DETAIL C SHEET C101
OVERFLOW BOX	DETAIL F SHEET C101
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FH - FIRE HYDRANT	MURRAY CITY WATER DETAIL 11 SHEET C102
4" WATER METER	MURRAY CITY WATER DETAIL 18 SHEET C102
1-1/2" WATER METER	MURRAY CITY WATER DETAIL 17 SHEET C102
SSCO - SEWER CLEANOUT	MURRAY CITY SEWER DETAIL 11 SHEET C102
SDCO - STORM DRAIN CLEANOUT	DETAIL M SHEET C100



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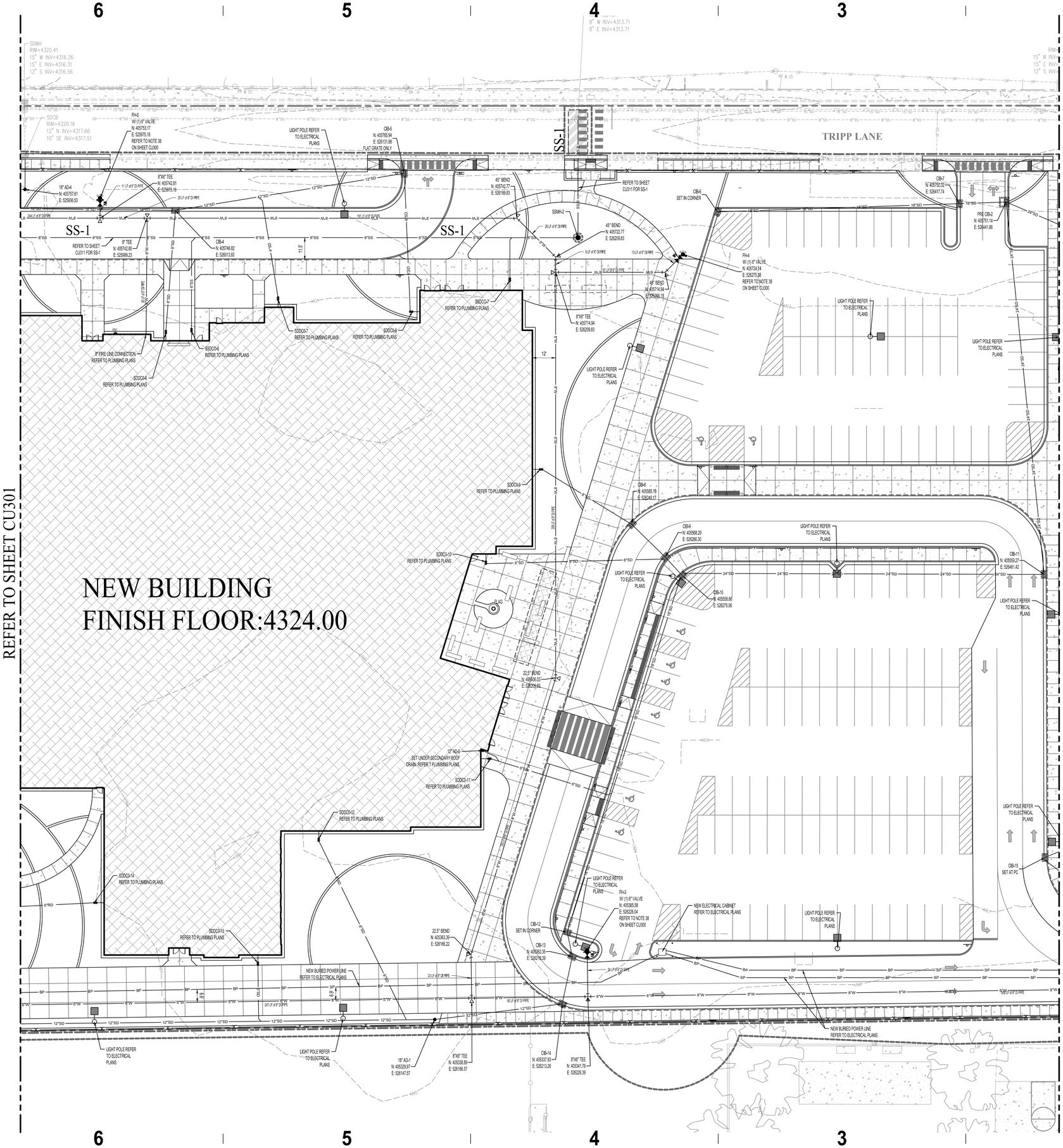
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED UTILITY PLAN

Sheet Number
CU301

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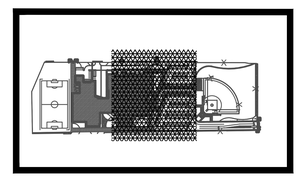


GENERAL UTILITY NOTES:

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SCALE 1"=20'

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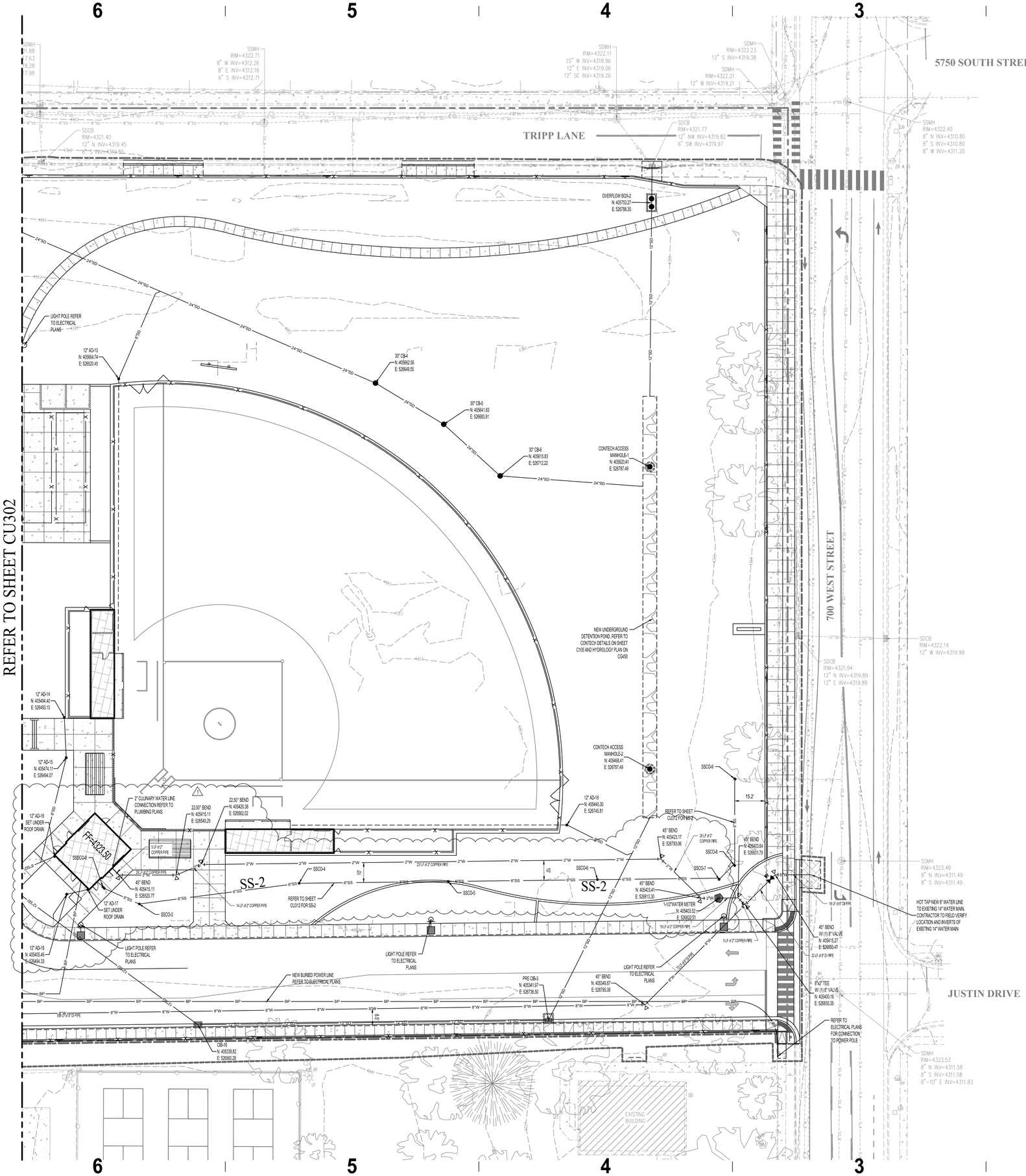
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED UTILITY PLAN

Sheet Number
CU302

BID PACKAGE 3

Blue Stakes of Utah 811

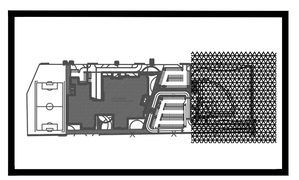


GENERAL UTILITY NOTES:

1. REFER TO SHEET CU300 FOR GENERAL UTILITY NOTES.



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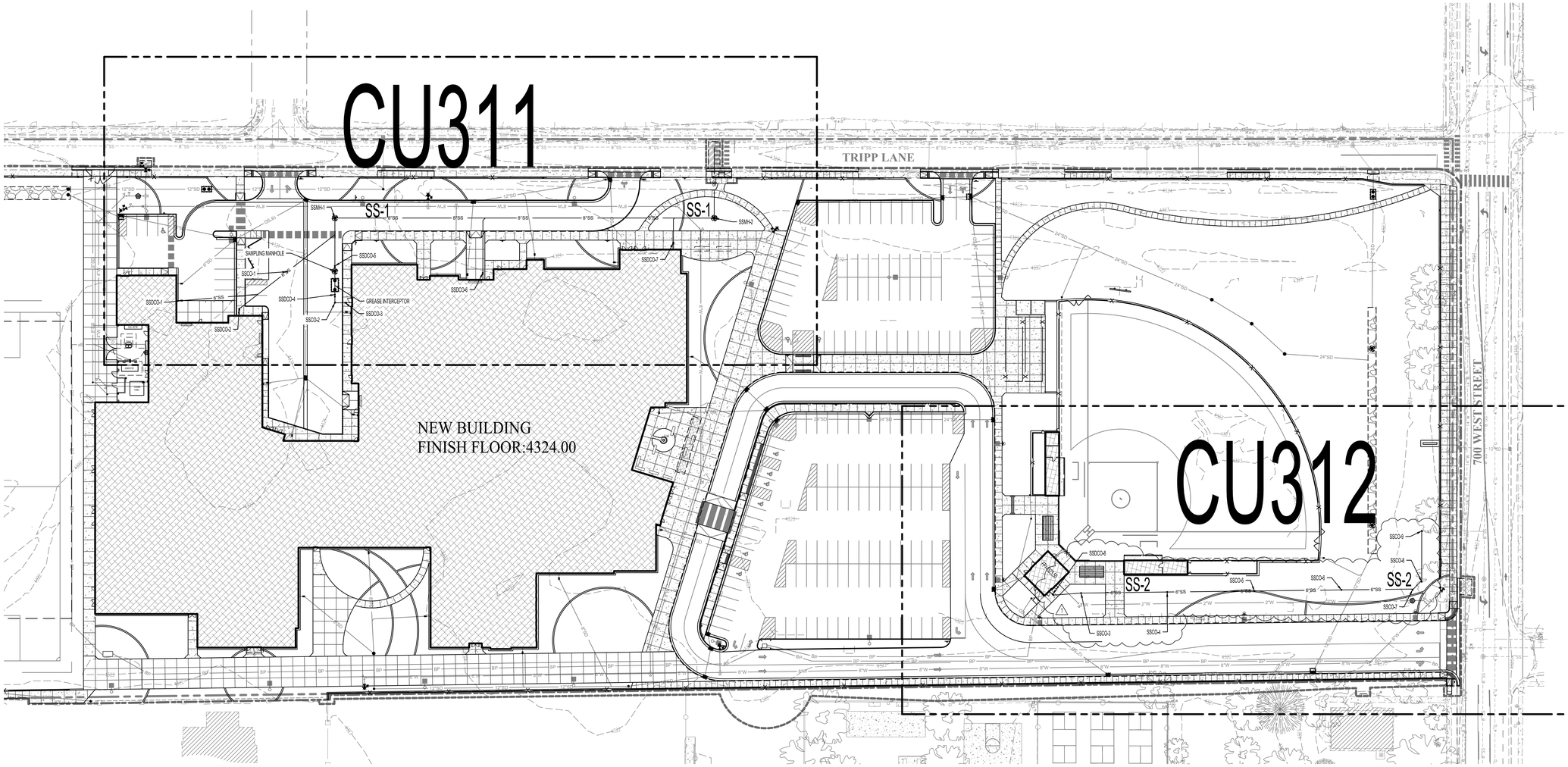
Sheet Number
CU303

BID PACKAGE 3

Blue Stakes of UTAH 811

SEWER PLAN AND PROFILE NOTES:

1. REFER TO CU300 FOR GENERAL UTILITY LAYOUT PLAN NOTES





0 40 80

SCALE 1"=40'

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-	-	-
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Project Number
134.028

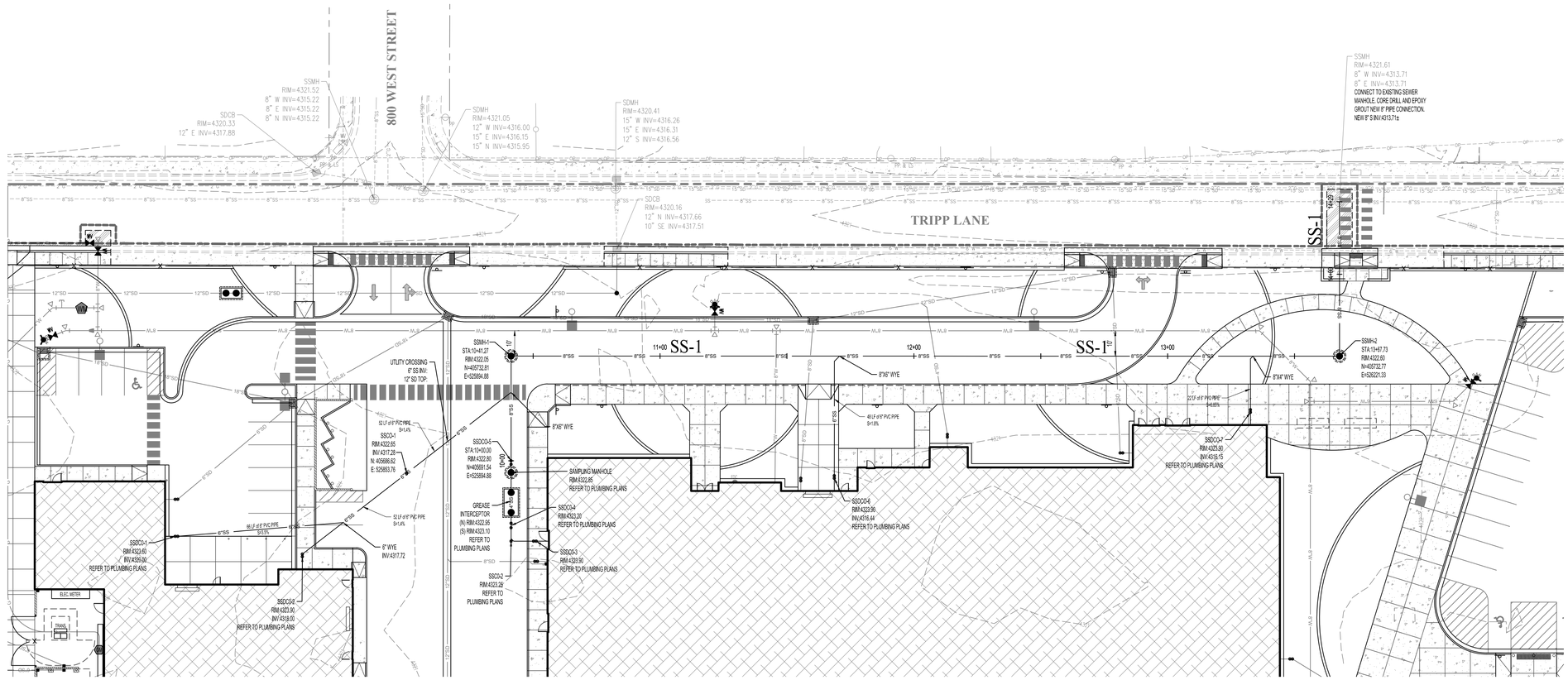
Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL SEWER PLAN AND PROFILE

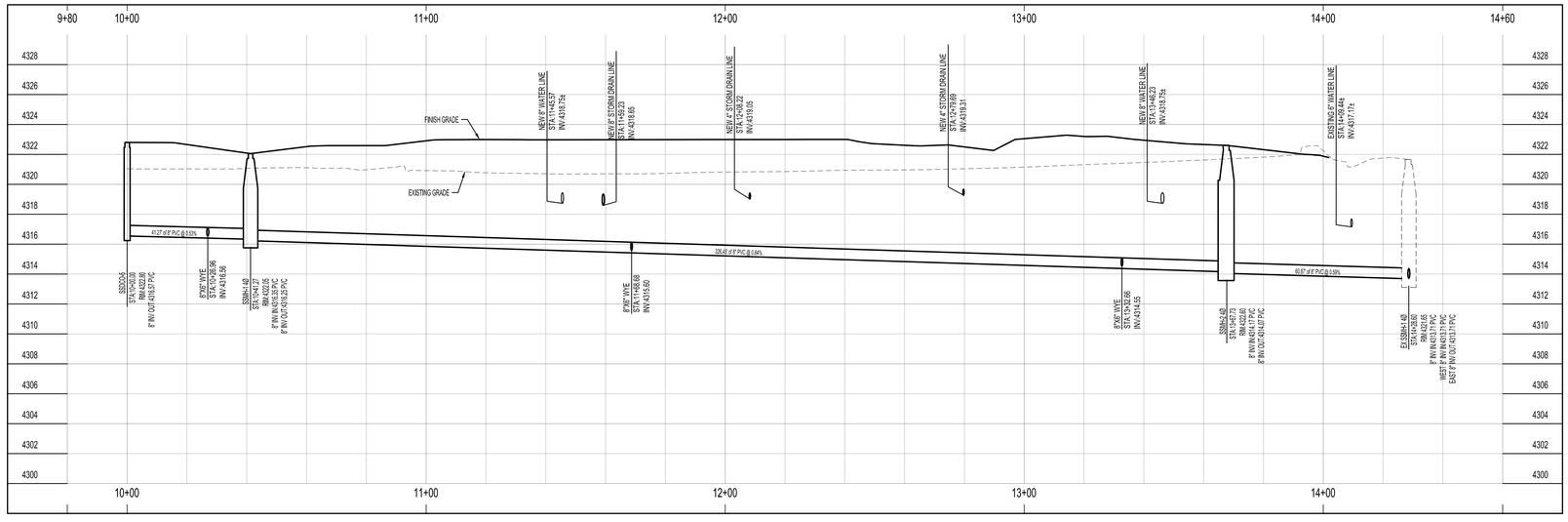
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CU310

BID PACKAGE 3

Blue Stakes of UTAH 811



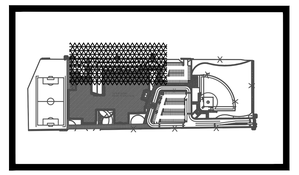
SS-1 SEWER LINE PLAN



SS-1 SEWERLINE PROFILE

HORIZONTAL SCALE
0 20 40
SCALE 1"=20'

VERTICAL SCALE
0 4 8
SCALE 1"=4'



VICINITY MAP

GENERAL UTILITY NOTES:

1. REFER TO SHEET CU000 FOR GENERAL UTILITY NOTES.



Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

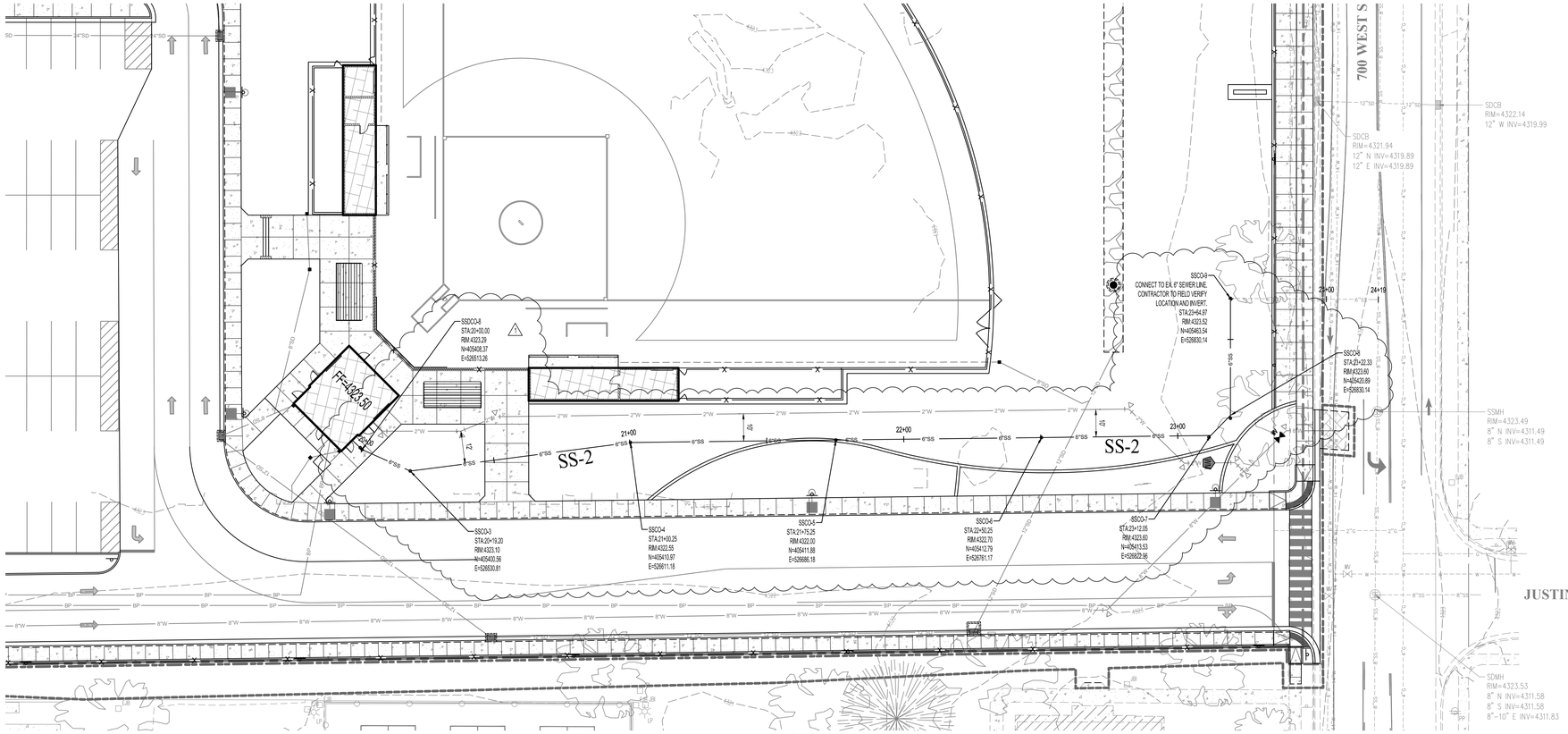
Project Issue Date
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Sheet Title
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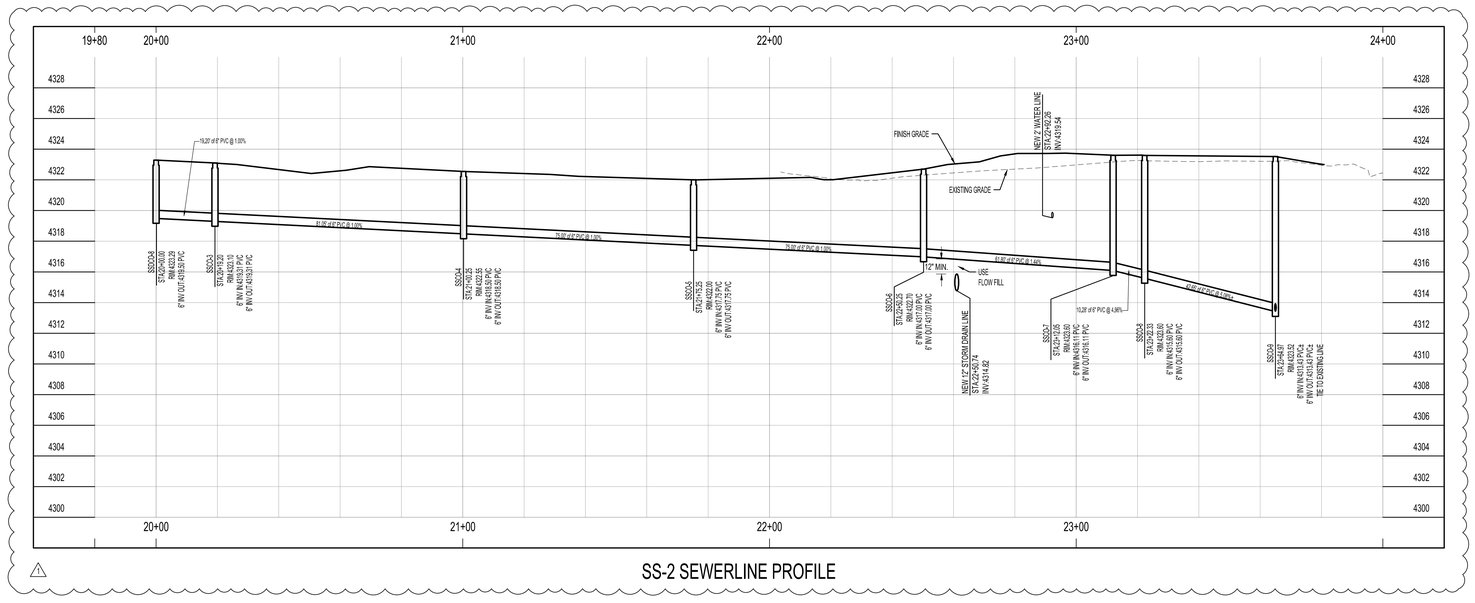
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Blue Stakes of Utah 811
Blue Stakes Inc.



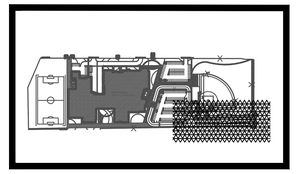
SS-2 SEWER LINE PLAN



SS-2 SEWERLINE PROFILE

HORIZONTAL SCALE
0 20 40
SCALE 1"=20'

VERTICAL SCALE
0 4 8
SCALE 1"=4'



VICINITY MAP

GENERAL UTILITY NOTES:

1. REFER TO SHEET CU300 FOR GENERAL UTILITY NOTES.



0 20 40
SCALE 1"=20'

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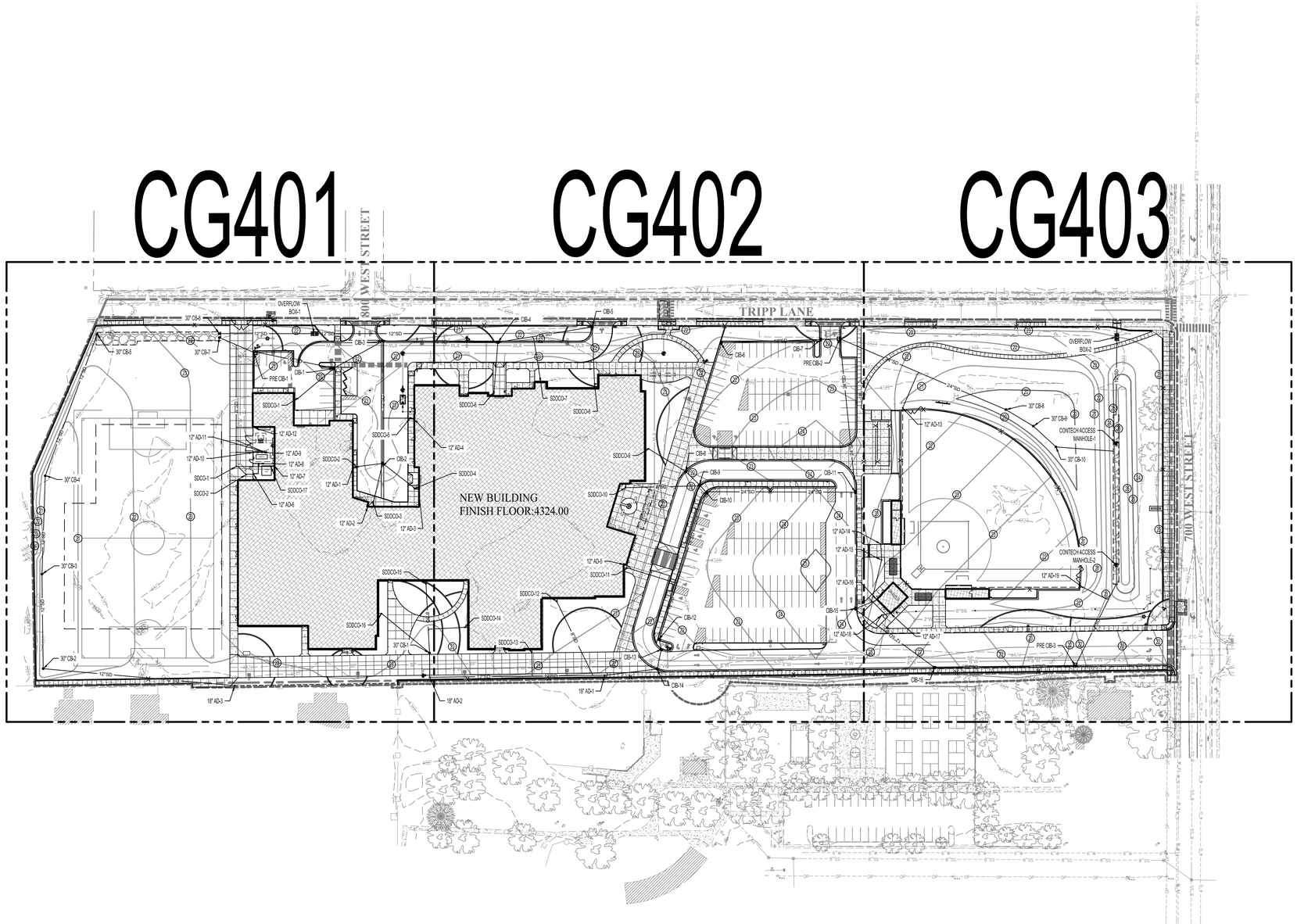
Sheet Title
SS-2 SEWER LINE PLAN AND PROFILE

Sheet Number
CU312

BID PACKAGE 3

Blue Stakes of Utah 811
Dial before you dig

6 5 4 3 2 1



GENERAL GRADING NOTES:

1. REFER TO SHEET ARCHITECTURAL SITE PLAN DETAILS FOR RAISED PLANTERS, HANDICAP RAMPS, AND SOFTBALL FIELD DETAILS.
2. CONTOURS OF THE SITE ARE BASED ON A SURVEY BY MERIDIAN ENGINEERING. REFER TO SHEET C200 FOR PROJECT BENCH MARK AND BASIS OF BEARING.
3. ALL WORK IN TRIPP LANE AND 700 WEST SHALL BE IN ACCORDANCE WITH APWA AND MURRAY CITY STANDARD PLANS AND SPECIFICATIONS. NEW CURB AND GUTTER, PAVEMENT REPAIRS, AND THE NEW DRIVEWAYS SHALL COMPLY WITH THESE APWA AND CITY STANDARDS. TRAFFIC CONTROL FOR THE PROJECT SHALL ALSO BE APPROVED BY THE CITY WHERE THE SITE ACCESSES TO PUBLIC STREETS. COORDINATE WITH CITY FOR PAVEMENT CONSTRUCTION IN RIGHT OF WAY TO THE REQUIRED PAVEMENT THICKNESS FOR ALL STREET REPAIRS.
4. PROVIDE APPROVED SILT PROTECTION FOR ALL NEW AND EXISTING CATCH BASINS UNTIL LANDSCAPING IS WELL ESTABLISHED AND PARKING IS COMPLETE. THE PIPING SYSTEM SHALL BE CLEANED OUT BEFORE FINAL APPROVAL. USE MIRAFI "DANDY BAG" OR ANOTHER APPROVED EQUIVALENT FOR EXISTING INLET PROTECTION. REFER TO SHEET C500 AND C510.
5. DIMENSIONS OR COORDINATES ARE TO THE CENTER OF CATCH BASINS FOR AREA INLETS AND AT THE CENTER OF THE CATCH BASIN AT TBC FOR INLETS IN CURB AND GUTTER.
6. HANDICAP PARKING AREA SHALL NOT EXCEED 2% IN ANY DIRECTION. THE PERPENDICULAR CROSS SLOPE TO PARKING STALL IN OTHER AREAS OF THE PARKING LOT SHALL NOT EXCEED 4% IN SLOPE AND SLOPE SHALL NOT EXCEED 6% IN ANY DIRECTION FOR DRIVEWAYS.
7. ALL WALKWAYS SHALL NOT EXCEED 5% SLOPE. THE PERPENDICULAR CROSS SLOPE TO NOT EXCEED 2% MAX. SLOPE FOR WALKWAYS 2% MAX. FROM BUILDING OR STAIR RISERS FOR 5' MINIMUM. ALSO SLOPE 2% MAX FOR 5' AT THE END OF THE 1:12 SLOPE OF ALL H.C. RAMPS.
8. PIPING LENGTHS ARE APPROXIMATE LENGTHS AND ARE ROUNDED TO THE NEAREST FOOT. LENGTHS ARE FROM CENTER TO CENTER OF INLETS OR CLEANOUTS. PIPE SLOPES ARE ALSO APPROXIMATE. USE INVERTS AT EACH BOX FOR CONTROL OF PIPE INSTALLATION.
9. "TSC" IS TOP BACK OF CURB ELEVATIONS, "FS" IS FINISH SURFACE ELEVATIONS, "TOC" IS TOP OF CONCRETE ELEVATIONS, "TOW" IS TOP OF WALL ELEVATIONS, "BOT" IS FINISH SURFACE AT BOTTOM OF WALL ELEVATIONS, "FL" IS FLOW LINE.
10. TRANSITION FACE OF CURB TO BE FLUSH TO ADJACENT FINISHED SURFACE WHERE INDICATED BY "TBCFS" TO FULL HEIGHT OVER 5' (MIN).
11. PLACE CONCRETE COLLAR AROUND ALL NEW CATCH BASINS OR CLEANOUTS (NOT IN CURB AND GUTTER). COLLAR TO BE 1' MINIMUM WIDTH AND SHALL BE 8" MINIMUM THICKNESS. PLACE 2 #4 BARS AROUND OPENING. SEE DETAIL ON SHEET C101.
12. ALL LANDSCAPE AREAS SHALL HAVE 4" MINIMUM OF TOPSOIL OR AS REQUIRED BY LANDSCAPE PLANS. LANDSCAPE AREAS TO BE GRADED TO DRAIN AND MOUND WHERE INDICATED ON LANDSCAPE PLANS.
13. REFER TO SHEET C100 AND CS230 FOR REQUIRED PAVEMENT SECTIONS.
14. ALL STORM WATER TO BE DETAINED ONSITE FOR THE 100-YEAR STORM EVENT.
15. IF MORE THAN 3 FEET OF GRADING FILL WILL BE PLACED ABOVE THE EXISTING SURFACE (TO RAISE SITE GRADES) CMT TECHNICAL SERVICES SHOULD BE NOTIFIED SO THAT THEY MAY ASSESS POTENTIAL SETTLEMENT AND MAKE ADDITIONAL RECOMMENDATIONS IF NEEDED.
16. DO NOT DRIVE HEAVY EQUIPMENT OR TRUCKS OVER EXCAVATED SUBGRADE. SOFT AREAS CAUSED BY ROUTING HEAVY EQUIPMENT OR TRUCKS OVER SUBGRADE WILL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. REPAIRS TO BE COMPLETED AS OUTLINED IN THE SPEC SECTION WITH UP TO 2' OF IMPORTED STRUCTURAL GRANULAR FILL TO STABILIZE SOFT AREAS CAUSED BY ROUTING HEAVY EQUIPMENT OR TRUCKS OVER EXCAVATED SUBGRADE.
17. SITE SOILS MAY NOT SUPPORT CONSTRUCTION TRAFFIC DURING WET PERIODS OF THE YEAR. CONTRACTOR WILL BE RESPONSIBLE TO PLACE GRANULAR FILL AND/OR COBBLE MATERIALS AS NECESSARY TO MAINTAIN ACCESS TO THE SITE OR BUILDING THROUGHOUT THE CONSTRUCTION SITE AT ALL TIMES. EXCESS MATERIAL SHALL BE REMOVED AS REQUIRED TO COMPLETE THE SITE TO THE GRADES SHOWN ON GRADING PLANS. ALSO REFER TO GEOTECHNICAL INVESTIGATION SHEETS FOR SITE SOIL PREPARATION REQUIREMENTS.
18. PROVIDE TEMPORARY STORM DRAIN PUMPING, PONDING, BERMING, PIPING AND INLETS OR OTHER MEASURES TO RETAIN CONSTRUCTION STORM DRAIN RUNOFF ON SITE DURING CONSTRUCTION UNTIL THE NEW SYSTEM IS OPERATIONAL. ALL CONSTRUCTION SITE RUNOFF TO HAVE HEAVY SEDIMENT REMOVED PRIOR TO RELEASING TO EXISTING SITE DRAIN SYSTEM. PROTECT ADJACENT BUILDING FROM CONSTRUCTION RUNOFF AT ALL TIMES.
19. THERE SHOULD BE NO STANDING WATER ONSITE. ALL STORM WATER SHALL DRAIN TO AN INLET OR AREA DRAIN. CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD IF ANY LOW SPOTS THAT DO NOT DRAIN ARE ENCOUNTERED. A WATER TEST WILL BE PERFORMED BY THE CONTRACTOR WITH THE ENGINEER OF RECORD IN ATTENDANCE OR A SURVEY OF THE NEW IMPROVEMENTS PROVIDED TO THE ENGINEER AT COMPLETION OF THE PROJECT TO VERIFY THAT ALL STORM DRAIN WATER DRAINS AS DESIGNED.
20. ALL "MATCH" LOCATIONS INDICATE THAT THE CONTRACTOR IS TO MATCH THE EXISTING GRADE. AN APPROXIMATE ESTIMATE IS PROVIDED BY THE ENGINEER BASED ON AN INTERPOLATION OF NEAREST SPOT ELEVATIONS PROVIDED BY THE SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE ELEVATIONS. IF THE ELEVATION PROVIDED BY THE ENGINEER VARIES GREATLY FROM THE ACTUAL ELEVATION FOUND BY THE CONTRACTOR THE CONTRACTOR IS TO NOTIFY THE ENGINEER SO THAT THE ENGINEER CAN PROVIDE FURTHER DIRECTION.
21. GRADE UNIFORMLY BETWEEN SPOT ELEVATIONS AND CONTOURS UNLESS NOTED OTHERWISE. IF ANY QUESTIONS ARISE ABOUT THE PROPOSED GRADING SHOWN ON PLANS CONTACT THE ENGINEER OF RECORD BEFORE FIELD GRADING.
22. MAINTAIN DRAINAGE FROM ALL EXISTING ROOF DRAINS DURING CONSTRUCTION OF ALL PHASES. PROVIDE TEMPORARY MEASURES OF NEW PIPING, PUMPING, OR OTHER METHODS TO MAINTAIN DRAINAGE FROM ALL EXISTING ROOF DRAIN WHILE NEW PIPING SYSTEMS OUTFALLS ARE COMPLETED.
23. REMOVE ALL CLAY MATERIALS FROM UNDER BUILDINGS AS OUTLINED IN THE SPECIFICATIONS. UNDER NEW PAVEMENT REMOVE A MINIMUM OF 12" OF CLAY LAYER AND REPLACE WITH GRANULAR FILL AS OUTLINED IN THE PAVEMENT DETAILS ON C100 AND THE EARTHWORKS SPECIFICATION. ALL UTILITIES TRENCHES TO BE BACKFILLED WITH GRANULAR BACKFILL PER TRENCH DETAIL ON C100. AT PLAYGROUND AREAS TO RECEIVE BARK OR MULCH ALL SURFACE CLAY LAYERS TO BE REMOVED FROM BENEATH THESE AREAS. BACKFILL WHERE NECESSARY WITH GRANULAR BACKFILL MATERIAL IF CLAY EXCAVATION EXTENDS BELOW REQUIRED ROUGH GRADE ELEVATION BELOW PLAYGROUND AREAS.
24. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL STUDY REFERENCED IN PLAN SET. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED SOILS ENGINEER, REGISTERED WITHIN THE STATE WHERE THE WORK IS BEING PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE SOIL REPORT.
25. ADS INJECTION MOLDED 45° REDUCER WYE (OR APP EQUIVALENT) FLOWABLE FILL TO BE PLACED AROUND EACH WYE CONNECTION. TYP.
26. NO STORM WATER TO ENTER THE RETENTION BASIN UNTIL THE PIPING SYSTEM AND PRE-TREATMENT INLET HAS BEEN INSTALLED. CONTRACTOR TO CLEAN ENTIRE SYSTEM BEFORE IT IS ATTACHED TO THE RETENTION BASIN.
27. NOTIFY ENGINEER OF RECORD IF THERE ARE ANY CONFLICTS WITH UTILITY LINES OR IF ASSUMED INVERTS VARY, FOR FURTHER COORDINATION. SEWER AND WATERLINES TO HAVE 18" SEPARATION WITH WATER OVER SEWER. ALL OTHER UTILITIES TO HAVE 12" SEPARATION MIN.IF 12" SEPARATION CANNOT BE ACHIEVED UTILITIES TO HAVE FLOWABLE FILL BETWEEN THE UTILITY LINES 5' EACH WAY.
28. CONTRACTOR IS RESPONSIBLE TO INFORM THE ENGINEER OF RECORD IF THE GRADES SHOWN ON THE SURVEY DO NOT MEET THE ACTUAL GRADES IN THE FIELD.
29. ALL STRUCTURE LIDS WITHIN THE PROJECT LIMITS WILL NEED TO HAVE THEIR GRADE ADJUSTED. WATER VALVES, SEWER MANHOLES, STORM DRAIN INLETS OR CLEANOUT BOXES, AND OTHER SURFACE UTILITY ACCESSORIES SHALL BE RAISED AND SLOPED TO ACCURATE FINISH SURFACE BY A CONCRETE GRADE COLLAR IN PAVEMENT. COLLAR SHALL BE 12" WIDE AROUND THE UTILITY APPARATUSES AND 8" MINIMUM THICKNESS. PLACE 2 #4 REBAR HOOPS IN COLLAR. CONCRETE COLLARS TO BE USED ONLY IN ASPHALT CONCRETE AND GRASS PAVER AREAS.
30. REFER TO LANDSCAPE PLANS FOR ALL INFORMATION ABOUT EXISTING AND PROPOSED TREES.
31. REMOVE AND REPLACE ANY DAMAGED CURB, GUTTER, OR SIDEWALK ALONG FRONTAGE BEFORE FINAL INSPECTION.
32. ALL GUTTERS TO SLOPE 0.5% MINIMUM TOWARDS CURB INLET BOX. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IF THE PROPOSED GRADE DOES NOT MEET 0.5% SLOPE IN GUTTER.
33. SPOT ELEVATION PREFIX OF 43 HAS BEEN DROPPED FROM THE ELEVATIONS IE: ELEVATION 23.00=4323.00

GRADING LEGEND

- 25 — MAJOR CONTOUR
- 24 — MINOR CONTOUR

THE CONTRACTOR TO SCHEDULE THE ENGINEER OF RECORD IN WRITING 3 DAYS MINIMUM BEFORE PLACEMENT OF CONCRETE CURBING, FLATWORK, OR ASPHALT PAVING. ALL AREAS MUST BE FORMED AND HAVE COMPACTED BASE COURSE IN PLACE FOR THE ENGINEER TO COMPLETE A RANDOM SPOT GRADE CHECK BEFORE ASPHALT AND CONCRETE CONSTRUCTION. THE RANDOM GRADE CHECKS ARE FOR GENERAL CONFORMANCE TO SLOPES AND GRADING SHOWN ON PLANS USING A SMART LEVEL. RANDOM CHECKS DO NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GRADING IS IN CONFORMANCE WITH PLANS AND SPECIFICATIONS AND SATISFY PERFORMANCE OF HIS WORK. WITHIN 2 DAYS OF THE RANDOM SPOT CHECK, RESULTS OF THE SPOT CHECKS AND AREAS OF NON COMPLIANCE WILL BE PROVIDED TO THE CONTRACTOR AND ARCHITECT.

N

MERIDIAN ENGINEERING, INC.

0 60 120
SCALE 1"=60'

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
No. 8023335

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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

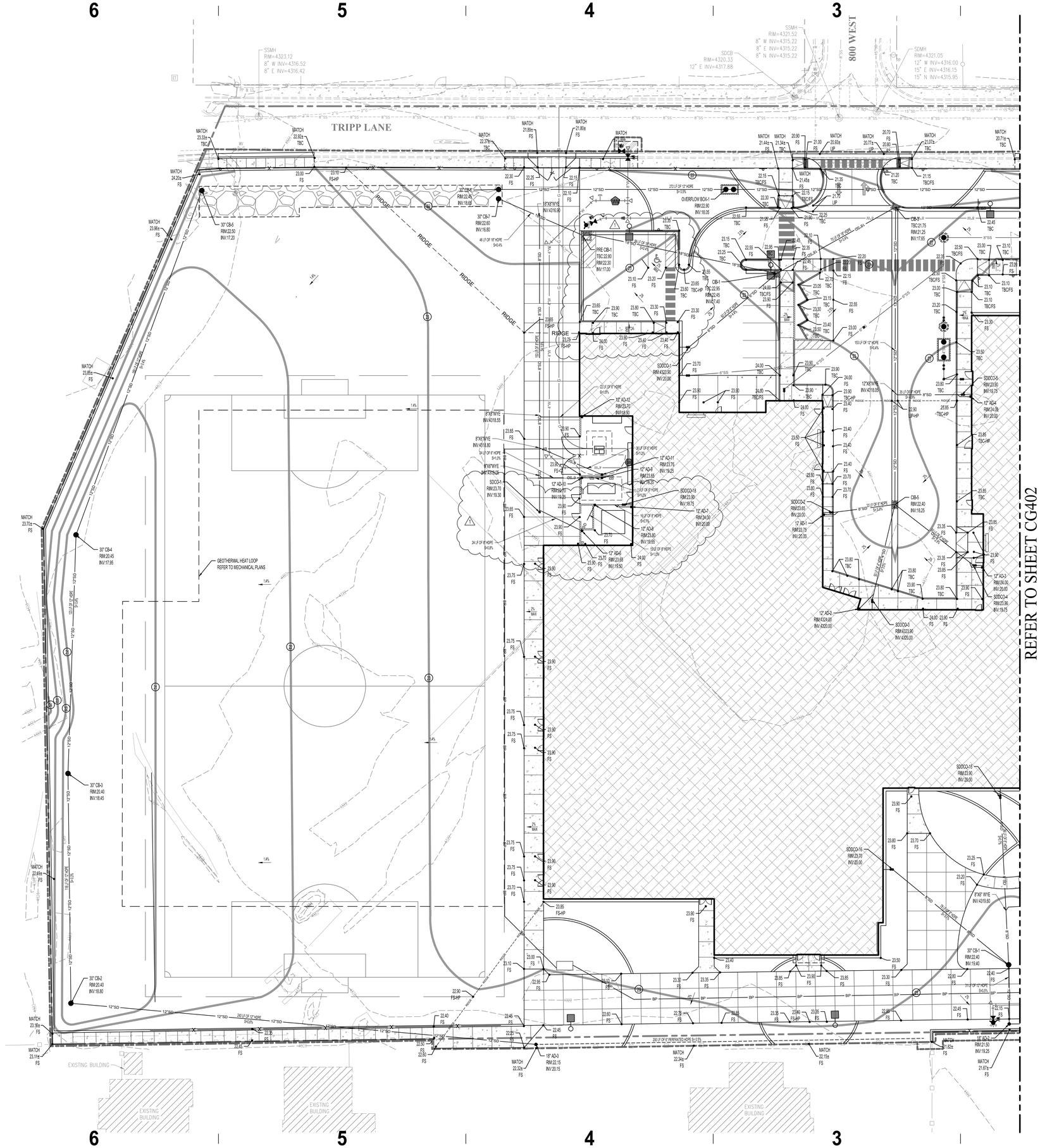
Project Issue Date
31 MARCH 2025

Sheet Title
OVERALL GRADING PLAN

Sheet Number
CG400

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Blue Stakes of Utah 811



GENERAL GRADING NOTES:

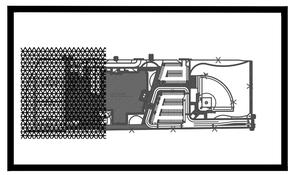
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GRADING LEGEND

- 100 — MAJOR CONTOUR
- 99 — MINOR CONTOUR
- ..... HIGH WATER LINE



VICINITY MAP

Stamp

STATE OF UTAH
2025-02-13
NICHOLE LEE LUTHI
8023335

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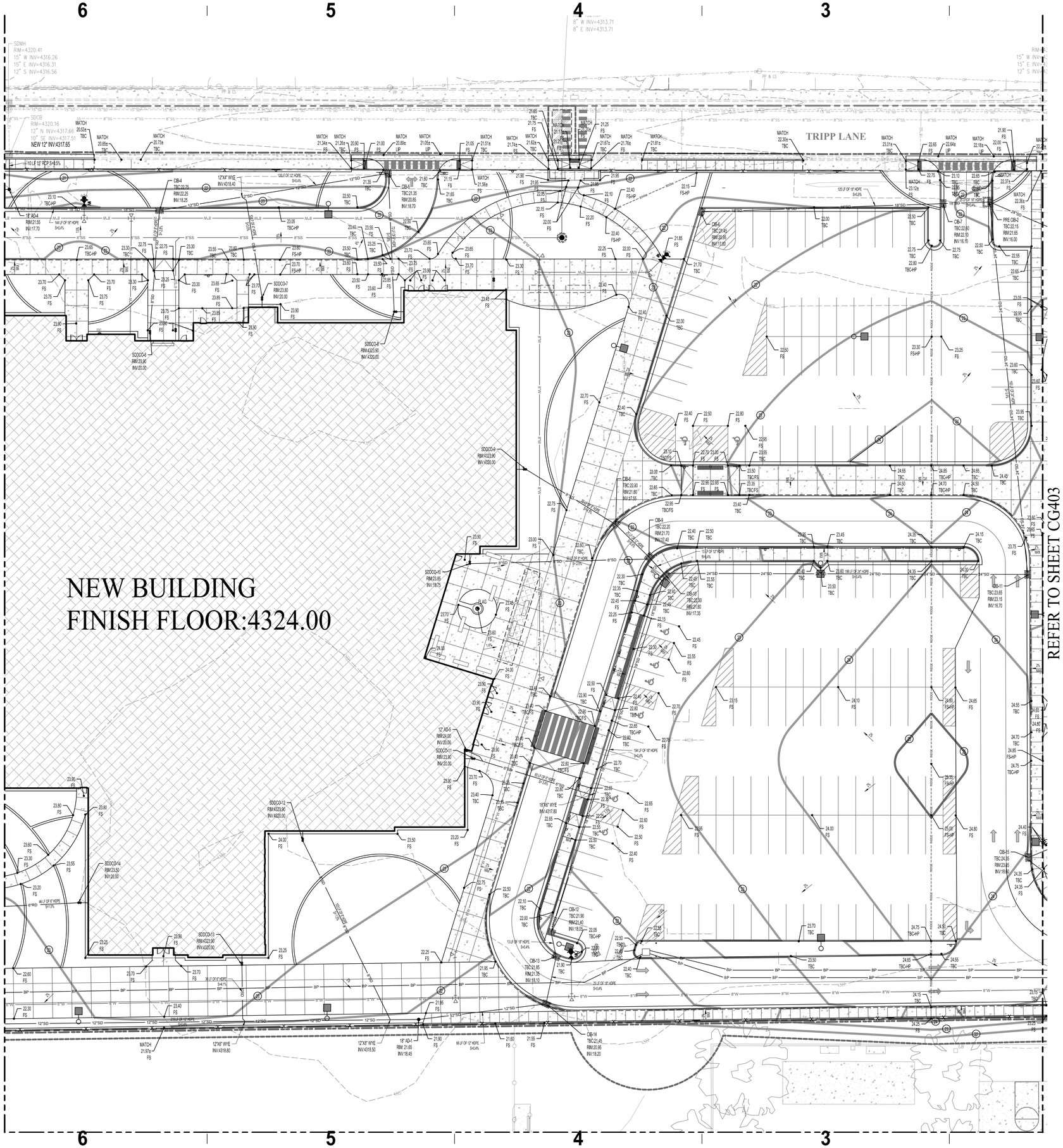
Project Issue Date
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Sheet Title
ENLARGED GRADING PLAN

Sheet Number
CG401

BID PACKAGE 3

Blue Stakes of Utah 811



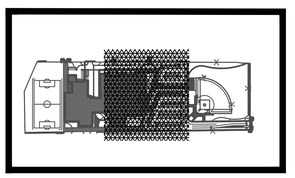
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GRADING LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR



VICINITY MAP

0 20 40

SCALE 1"=20'

Stamp

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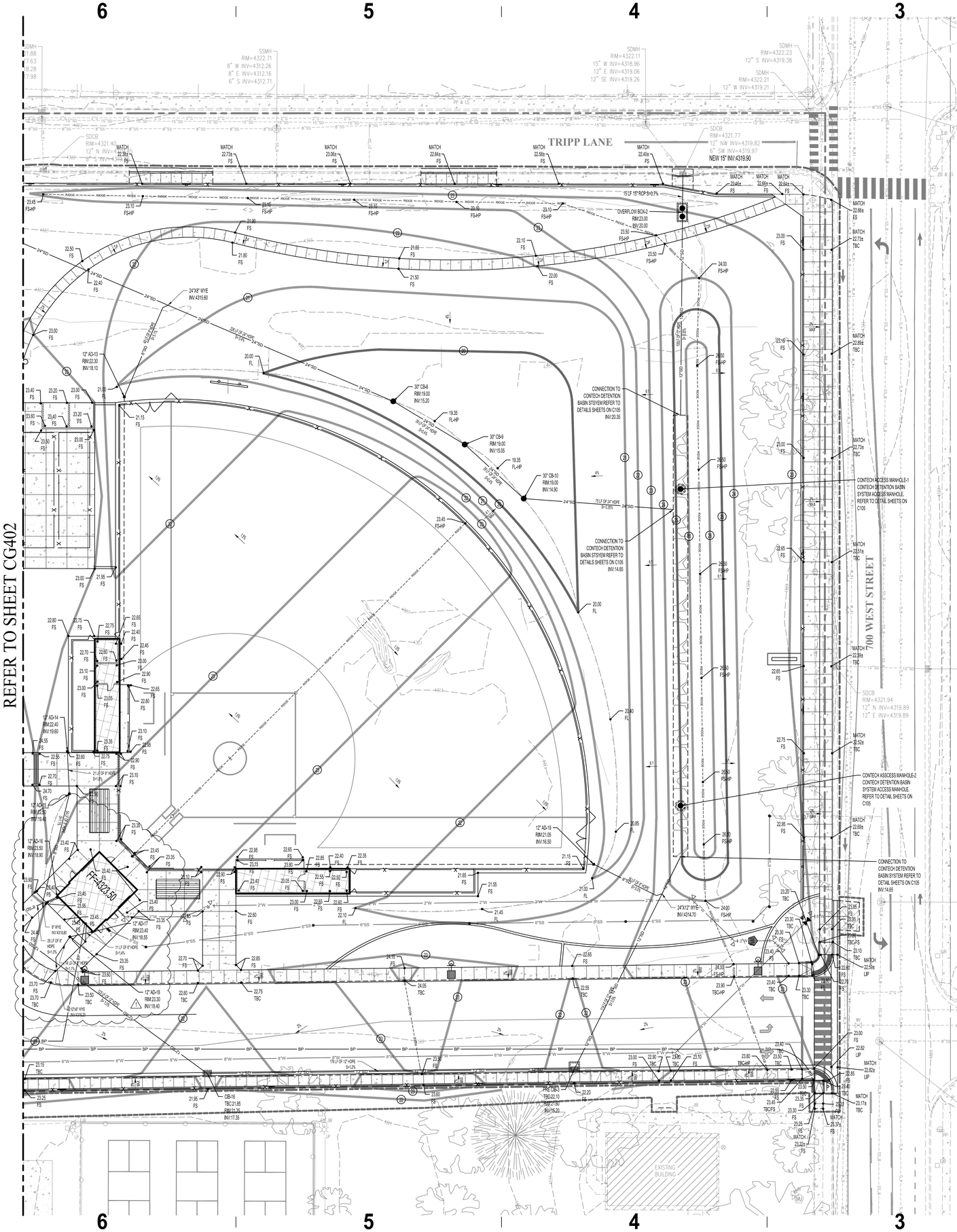
Project Issue Date
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Sheet Title
ENLARGED GRADING PLAN

Sheet Number
CG402

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VICINITY MAP

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2025-02-13
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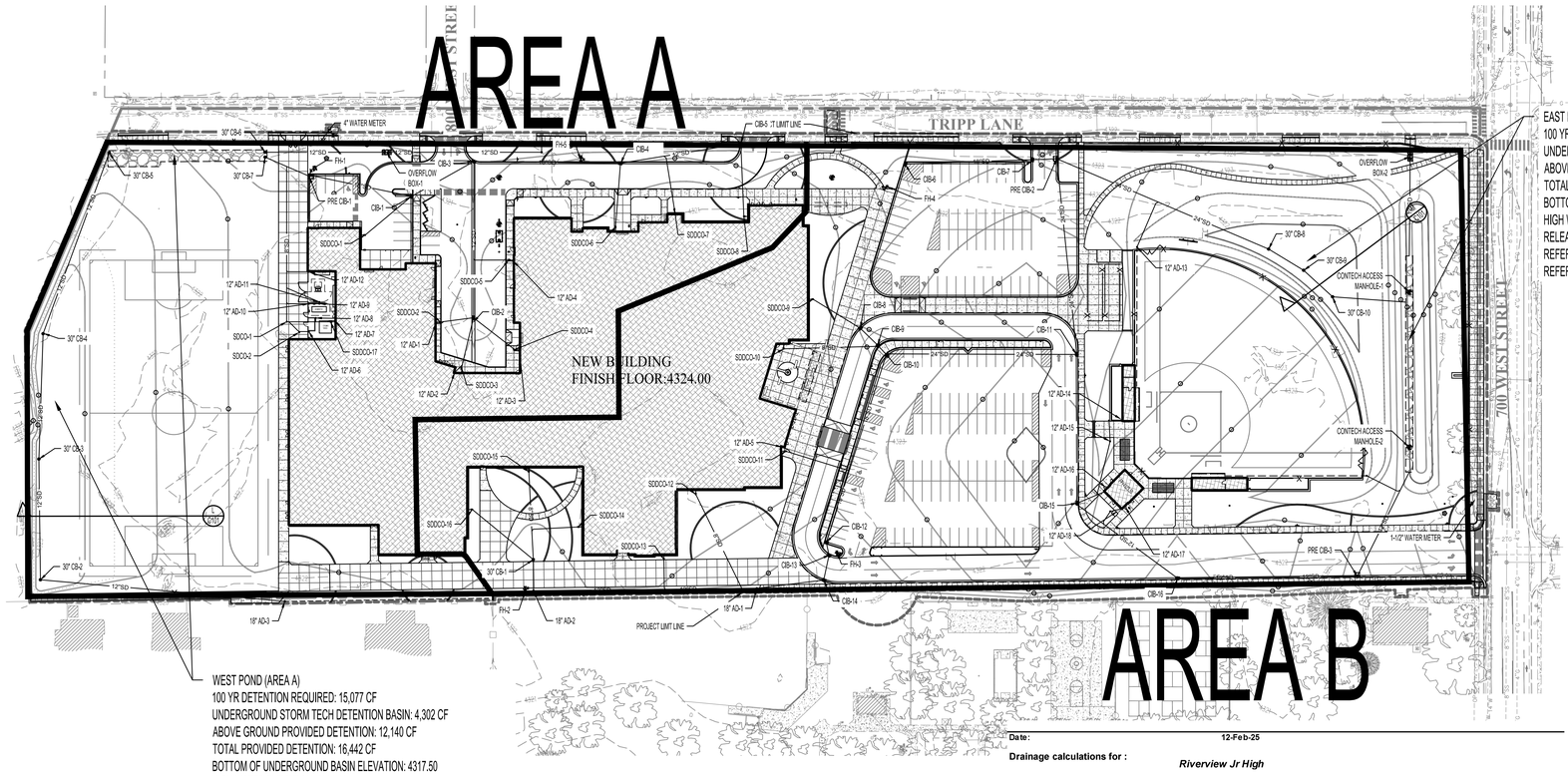
Project Issue Date
31 MARCH 2025

Sheet Title
ENLARGED GRADING PLAN

Sheet Number
CG403

BID PACKAGE 3

Blue Stakes of Utah 811



WEST POND (AREA A)
100 YR DETENTION REQUIRED: 15,077 CF
UNDERGROUND STORM TECH DETENTION BASIN: 4,302 CF
ABOVE GROUND PROVIDED DETENTION: 12,140 CF
TOTAL PROVIDED DETENTION: 16,442 CF
BOTTOM OF UNDERGROUND BASIN ELEVATION: 4317.50
HIGH WATER ELEVATION: 4321.40
RELEASE RATE: 1.12 CFS
REFER TO SECTION DETAIL L ON SHEET C101 FOR ABOVE GROUND BASIN
REFER TO DETAIL ON SHEET C104 FOR UNDERGROUND BASIN

EAST POND (AREA B)
100 YR DETENTION REQUIRED: 27,555 CF
UNDERGROUND CONTECH DETENTION BASIN: 10,610 CF
ABOVE GROUND PROVIDED DETENTION: 17,028 CF
TOTAL PROVIDED DETENTION: 27,638 CF
BOTTOM OF UNDERGROUND BASIN ELEVATION: 4314.65
HIGH WATER ELEVATION: 4321.00
RELEASE RATE: 1.72 CFS
REFER TO SECTION DETAIL M ON SHEET C101 FOR ABOVE GROUND BASIN
REFER TO DETAIL ON SHEET C105 FOR UNDERGROUND BASIN

0 60 120
SCALE 1"=60'

NOTES:

1. SEDIMENT WILL NOT BE ALLOWED INTO DETENTION BASIN DURING CONSTRUCTION AND DURING LANDSCAPE STABILIZATION OF SOILS. CONTRACTOR WILL BE REQUIRED TO CLEAN OR REPLACE DETENTION BASINS THAT ARE NOT MAINTAINED FREE OF SEDIMENT DURING CONSTRUCTION AND DURING ESTABLISHMENT OF ALL LANDSCAPED AREAS.
2. APPROXIMATED A 100 YEAR STORM EVENT IS TO BE DETAINED IN TWO HYBRID UNDERGROUND BASIN/ABOVE GROUND PONDS IN AREAS A AND B. BOTH UNDERGROUND BASINS WILL CONTAIN CONNECTIONS TO THE CITY SYSTEM THAT WILL RELEASE AT A RATE OF 0.2 CFS/ACRE
3. THE LID RETENTION REQUIREMENT WILL BE RETAINED IN THE UNDERGROUND BASINS AND WILL INFILTRATE INTO THE GROUND.

HYDROLOGY LEGEND
HIGH WATER LINE

Redevelopment

Existing Project Impervious Area (ac): 5.91

Proposed Project Impervious Area (ac): 7.79

Change in Impervious Area (%): 13%

If change in impervious area > 10%:

Existing Project Conditions

Imperviousness (%): 38.63%

Volumetric Runoff Coefficient, R_V: 0.137

80th Percentile Volume, V_1 (cf): 3487

Proposed Project Conditions

Imperviousness (%): 51.14%

Volumetric Runoff Coefficient, $R_{V'}$: 0.165

80th Percentile Volume, V_2 (cf): 4199

$V_{goal} = V_2 - V_1 =$ 712

Contributing Drainage Area	Area (ac)	Impervious Area (ac)	Imperviousness (%)	Volumetric Runoff Coefficient, R_v	Water Quality Volume, WQV (cf)
CDA 1	5.58	2.72	48.77	0.160	1491
CDA 2	8.61	5.07	58.89	0.300	4314
CDA 3					
CDA 4					
				Total WQV (cf)	5805

Date: 12-Feb-25

Drainage calculations for : *Riverview Jr High*

West Pond (AREA A)

Location: Murray, Ut

Allowable Release Rate

School Area	5.58 Ac.	243,000 SF
City Release Rate	1.12 cfs	.2 cfs/acre
Total Onsite Allowable Release Rate	**1.12 CFS**	

Runoff Coefficients

Paved Area:	54,500 SF	C= 0.9
Landscape Area:	124,500 SF	C= 0.2
Roof Area:	64,000 SF	C= 0.85
TOTAL AREA	243,000 SF	Weighted C 0.53

Lapsed Time Minutes	Accum. Rainfall Inches (100 yr)	"CA" Acre	Total Runoff Vol. CF	Discharge CF	Req'd Storage CF
5	0.57	2.95	6046	335	5712
10	0.87	2.95	9228	669	8559
15	1.08	2.95	11456	1004	10452
30	1.45	2.95	15381	2008	13373
60	1.80	2.95	19093	4017	15077
120	1.93	2.95	20472	8033	12439
180	1.96	2.95	20791	12050	8741
360	2.15	2.95	22806	24099	0
720	2.59	2.95	27473	48198	0
1440	2.79	2.95	29595	96397	0

REQUIRED RETENSION STORAGE: 15,077 CF 100 yr Event

Lapsed Time Minutes	Accum. Rainfall Inches (10 yr)	"CA" Acre	Total Runoff Vol. CF	Discharge CF	Req'd Storage CF
5	0.21	2.95	2228	335	1893
10	0.37	2.95	3925	669	3255
15	0.50	2.95	5304	1004	4300
30	0.57	2.95	6046	2008	4038
60	0.70	2.95	7425	4017	3409
120	0.84	2.95	8910	8033	877
180	1.02	2.95	10820	12050	0
360	1.20	2.95	12729	24099	0
720	1.50	2.95	15911	48198	0
1440	2.04	2.95	21639	96397	0

4,300 CF 10 yr Event

Below Ground Pond Volume: ADS Total Storage 4302 CF

Above Ground Pond Volume: * Volume=(Area1+Area2)/2*(Elev1-Elev2)

		Area (SF)	Volume (CF)*
TOP	4,321.40	24,180	
			12,140
BOTTOM	4,320.40	100	

TOTAL REQUIRED DETENTION STORAGE:	**Total:**	**15,077 CF**
TOTAL PROVIDED DETENTION STORAGE:	**Total:**	**16,442 CF**
TOTAL REQUIRED LID RETENTION STORAGE:	**Total:**	**1,491 CF**
TOTAL PROVIDED LID RETENTION STORAGE:	**Total:**	**2,089 CF**

Orifice Calculation

Area:	5.58 Acre
Discharge Rate	1.12 cfs
Qp =	1.12 cfs
H =	2.75 ft
A =	0.1397 Sq Ft
	20.1 Sq In
D =	**5 1/8 In**
SQUARE=	**4.49 In**

USE A 4.4" x 4.4" SQUARE ORIFICE

Date: 12-Feb-25

Drainage calculations for : *Riverview Jr High*

East Pond (AREA B)

Location: Murray, Ut

Allowable Release Rate

School Area	8.61 Ac.	375,000 SF
City Release Rate	1.72 cfs	.2 cfs/acre
Total Onsite Allowable Release Rate	**1.72 CFS**	

Runoff Coefficients

Paved Area:	165,000 SF	C= 0.9
Landscape Area:	154,000 SF	C= 0.2
Roof Area:	56,000 SF	C= 0.85
TOTAL AREA	375,000 SF	Weighted C 0.61

Lapsed Time Minutes	Accum. Rainfall Inches (100 yr)	"CA" Acre	Total Runoff Vol. CF	Discharge CF	Req'd Storage CF
5	0.57	5.21	10689	517	10172
10	0.87	5.21	16314	1033	15281
15	1.08	5.21	20252	1550	18703
30	1.45	5.21	27190	3099	24091
60	1.80	5.21	33754	6198	27555
120	1.93	5.21	36191	12397	23795
180	1.96	5.21	36754	18595	18159
360	2.15	5.21	40317	37190	3127
720	2.59	5.21	48568	74380	0
1440	2.79	5.21	52318	148760	0

REQUIRED RETENSION STORAGE: 27,555 CF 100 yr Event

Lapsed Time Minutes	Accum. Rainfall Inches (10 yr)	"CA" Acre	Total Runoff Vol. CF	Discharge CF	Req'd Storage CF
5	0.21	5.21	3938	517	3421
10	0.37	5.21	6938	1033	5905
15	0.50	5.21	9376	1550	7826
30	0.57	5.21	10689	3099	7590
60	0.70	5.21	13126	6198	6928
120	0.84	5.21	15752	12397	3355
180	1.02	5.21	19127	18595	532
360	1.20	5.21	22502	37190	0
720	1.50	5.21	28128	74380	0
1440	2.04	5.21	38254	148760	0

7,826 CF 10 yr Event

Below Ground Pond Volume: CONTECH Basin 10610 CF

Above Ground Pond Volume: * Volume=(Area1+Area2)/2*(Elev1-Elev2)

		Area (SF)	Volume (CF)*
TOP	4,321.00	19,825	
			13,420
	4,320.00	7,015	
			3,608
BOTTOM	4,319.00	200	
TOTAL			17,028

TOTAL REQUIRED DETENTION STORAGE:	**Total:**	**27,555 CF**
TOTAL PROVIDED DETENTION STORAGE:	**Total:**	**27,638 CF**
TOTAL REQUIRED LID RETENTION STORAGE:	**Total:**	**4,314 CF**
TOTAL PROVIDED LID RETENTION STORAGE:	**Total:**	**8,459 CF**

Orifice Calculation

Area:	8.61 Acre
Discharge Rate	1.72 cfs
Qp =	1.72 cfs
H =	1 ft
A =	0.3576 Sq Ft
	51.5 Sq In
D =	**8 1/8 In**
SQUARE=	**7.18 In**

USE AN 8" DIA. PIPE

Stamp
STATE OF UTAH
2025-02-13
NICHOLE LEE LUTH
No. 8023335

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Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

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Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

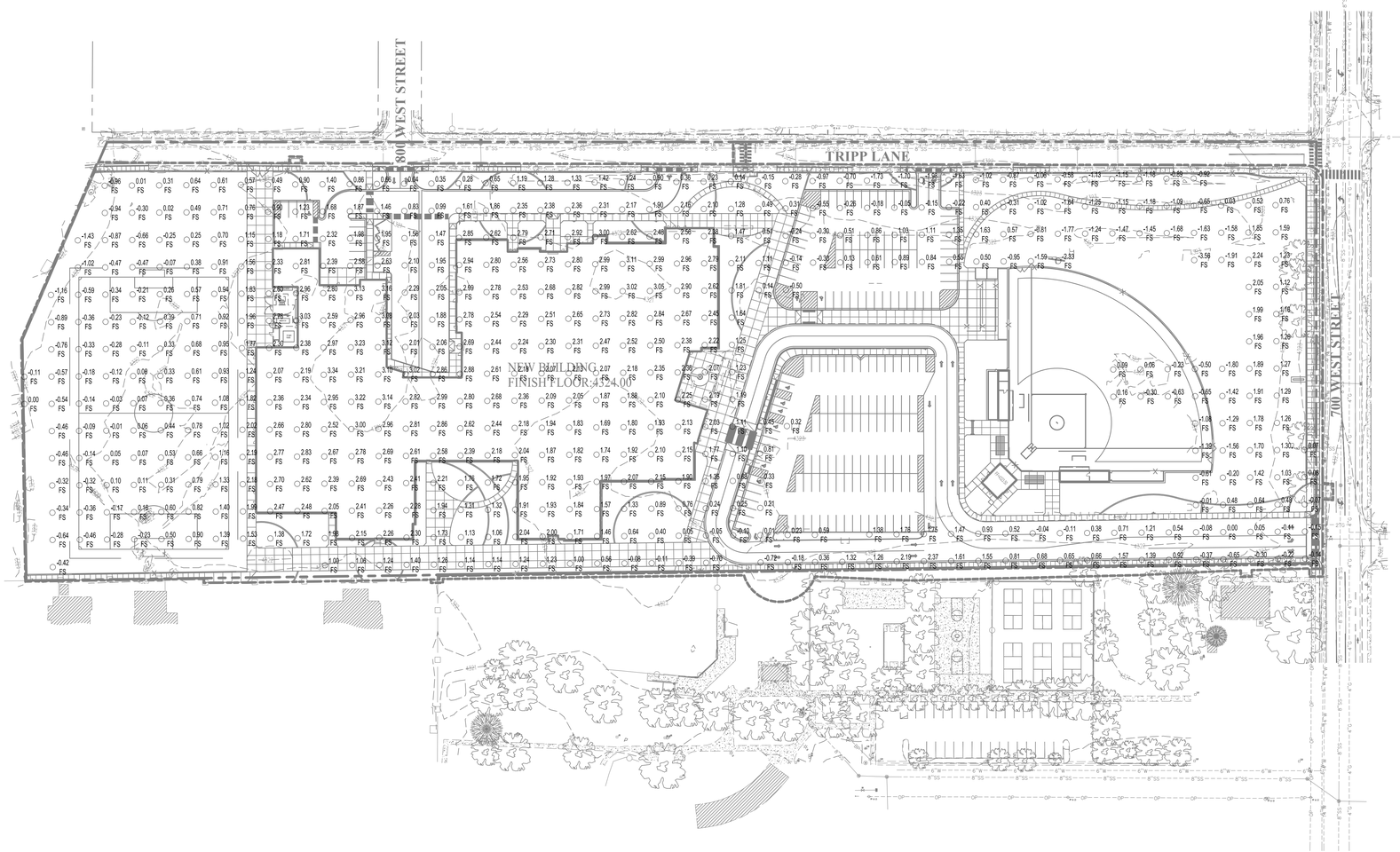
Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
HYDROLOGY PLAN

Sheet Number
CG450
BID PACKAGE 3

Blue Stakes of Utah 811



NOTES:

1. SITE EXCAVATION MATERIALS ARE NOT ALLOWED FOR USE BELOW FOOTING, BUILDING SLAB, OR OTHER STRUCTURAL ITEMS ON SITE (REFER TO SPECIFICATIONS.) SITE EXCAVATION MATERIALS CAN BE USED UNDER PAVEMENTS IF THEY MEET THE PROJECT SPECIFICATIONS AND REQUIREMENTS FROM THE GEOTECHNICAL REPORT. THE FILL MATERIAL SHOWN ON THE CALCULATIONS INCLUDED ALL NECESSARY FILL (INCLUSIVE OF PAVEMENT, CONCRETE, BASE COURSE, AND IMPORTED STRUCTURAL FILL.) TO BRING THE SITE TO THE FINISH SURFACE SHOWN ON THE GRADING PLANS. ADDITIONAL EXCAVATION IS REQUIRED IN CUT AREAS TO EXCAVATE TO THE NECESSARY SUBGRADE ELEVATIONS FOR THE NEW PAVEMENT.
2. ANY TOP SOIL ON THE SITE IS ASSUMED TO BE REMOVED AND REUSED AT THE TOP OF THE GRASS PLAY FIELD, AND OTHER LANDSCAPE AREAS AS INDICATED ON THE LANDSCAPE PLANS. CONTRACTOR SHALL STRIP THE TOP OF MATERIAL AS OUTLINED IN THE SPECIFICATIONS AND LANDSCAPE PLAN PRIOR TO ANY EXCAVATIONS OR BACKFILLING. SCREEN ALL TOPSOIL IN ACCORDANCE WITH LANDSCAPING SPECIFICATIONS PRIOR TO FINAL PLACEMENT OF THE MATERIAL.
3. THE MASS GRADING QUANTITIES ARE CALCULATED TO THE FINISH FLOOR OF THE BUILDING. ALL OTHER AREAS ARE ALSO CALCULATED TO THE FINISH SURFACE SHOWN ON THE GRADING PLAN INCLUDING PAVEMENT AND TOPSOIL.
4. EXCAVATION FOR BUILDING FOOTINGS, UTILITY TRENCHES, SITE RETAINING WALLS, AND PAVEMENT/SIDEWALK SECTIONS OR OTHER MISCELLANEOUS STRUCTURES ARE NOT INCLUDED IN THE APPROXIMATED MASS GRADING QUANTITIES UNDER ALL SITE PAVEMENT.
5. SEE ATHLETIC ELEMENTS, LANDSCAPE, SPRINKLING AND FENCING PLANS FOR FURTHER INFORMATION AND LOCATIONS OF CONCRETE WORK INCLUDING LARGE SITE SIGNS (MONUMENT, AND VICTORY BELL), VARIOUS MOW STRIPS, COLLARS AND SLABS, ETC.
6. SEE THE FENCING PLANS FOR FURTHER INFORMATION ON BLOCK WALLS, FENCING TYPES, LOCATIONS, GATES, ETC.

LEGEND

1.6	APPROXIMATE FILL TO GRADE (SEE NOTE 3)
-1.6	APPROXIMATE CUT TO GRADE (SEE NOTE 3)

CONTRACTOR BID NOTE:

THESE QUANTITIES ARE PREPARED TO HELP IN THE PREPARATION OF THE GRADING PLAN TO MINIMIZE THE REMOVAL OF MATERIAL FROM THE SITE AND TO APPROXIMATE THE AMOUNT OF MASS GRADING THAT WILL BE NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR WILL NEED TO COMPLETE THEIR OWN EARTHWORK TAKE OFF BASED ON THE GRADING PLANS. THE ACTUAL QUANTITIES OF EARTHWORK MAY VARY FROM THE AMOUNTS SHOWN ON THIS SHEET. THE CONTRACTOR'S BID WILL INCLUDE ALL NECESSARY EARTHWORK TO COMPLETE THE PROJECT TO THE FINISH GRADES SHOWN ON THE GRADING PLANS.



Stamp
STATE OF UTAH
2025-02-13
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Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
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Project Number
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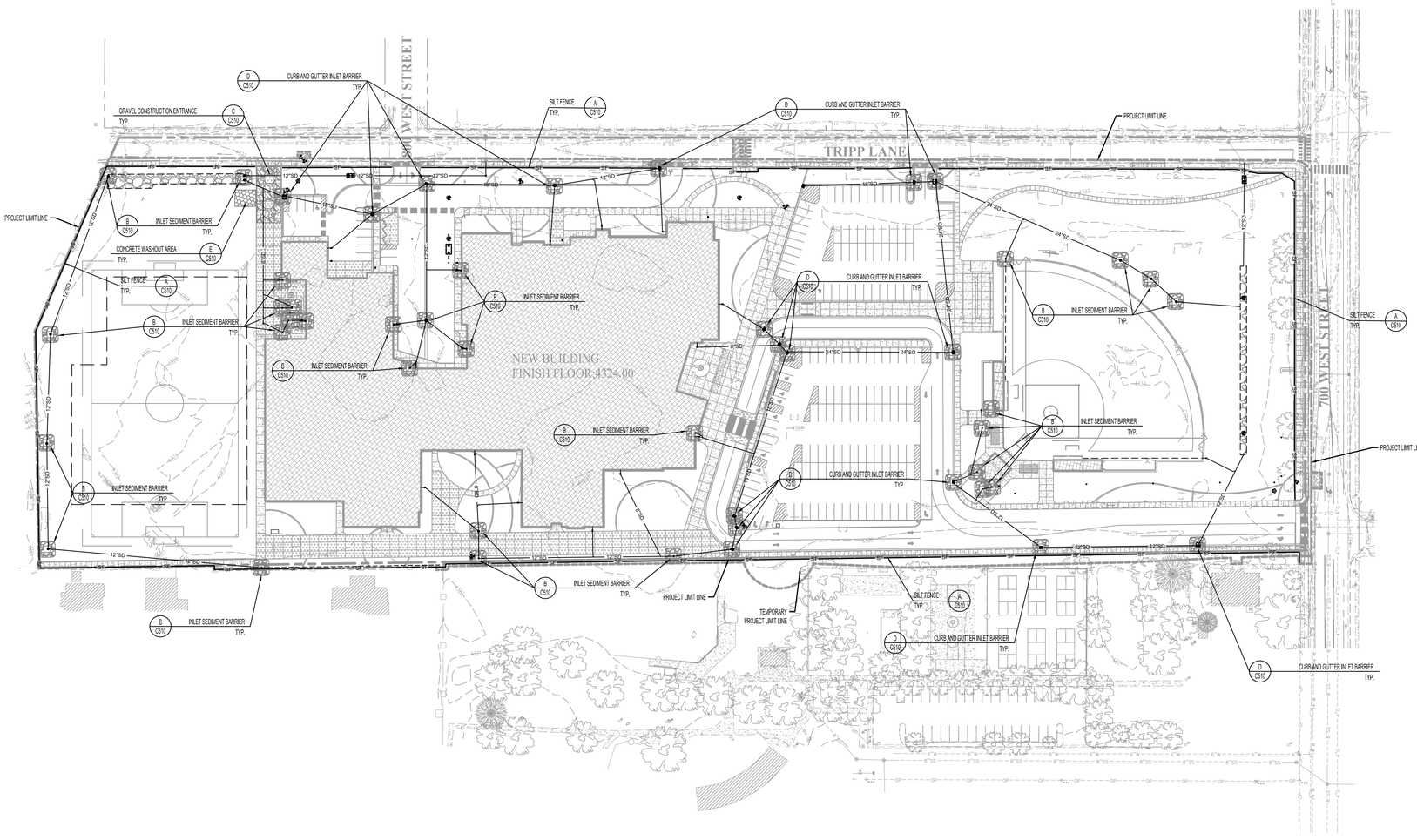
Project Issue Date
31 MARCH 2025

Sheet Title
CUTFILL PLAN

Sheet Number
CG460

BID PACKAGE 3

Blue Stakes of Utah 811



NOTES:

1) THERE ARE ABOUT 14.65 ACRES WITHIN THE PROJECT BOUNDARY THAT WILL BE DISTURBED WITH NEW CONSTRUCTION OR CONTRACTOR STORAGE ACTIVITIES.

SEQUENCE OF CONSTRUCTION ACTIVITIES:

1) FIELD MARK LIMIT OF DISTURBANCE FOR APPROVAL BY MURRAY CITY AND OBTAIN A STORM WATER MANAGEMENT PERMIT AS NEEDED BY MURRAY CITY.

2) INSTALL SILT FENCE AND/OR ENVIRONMENTAL FENCE AROUND PERIMETER OF PROJECT AS INDICATED ON THIS PLAN SHEET.

3) INSTALL SEDIMENT CONTROL MEASURES INDICATED IN ALL EXISTING STORM DRAIN INLETS ADJACENT TO THE CONSTRUCTION SITE.

4) CONTRACTOR WILL BEGIN DEMOLITION, GRADING, EXCAVATION, AND CONSTRUCTING UTILITY SITE IMPROVEMENTS. AS NEW DRAINAGE ELEMENTS ARE COMPLETED, CONSTRUCT SEDIMENT PROTECTION AT ALL NEW INLETS.

5) AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WILL BE STABILIZED WITH SOD IN LANDSCAPED AREAS AND PAVEMENT IN PARKING AND DRIVEWAY AREAS. SITE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION ACTIVATES TO BE COMPLETED WITHIN 21 DAYS OF FINISHING AN AREA TO THE FINAL LINES AND GRADES INDICATED ON THE GRADING PLAN.

6) UPON LANDSCAPE ESTABLISHMENT, REMOVE TEMPORARY MEASURE & CLEAN STORM DRAIN SYSTEM PRIOR TO RELEASE OF SYSTEM TO THE OWNER.

RUNOFF COEFFICIENTS AND DISCHARGE:

1) THE EXISTING RUNOFF COEFFICIENT FOR THE PROJECT AREA IS ESTIMATED TO BE 0.51. THE NEW RUNOFF COEFFICIENT WILL BE APPROXIMATELY 0.60 FOR THE NEW IMPROVEMENTS.

2) RUNOFF WILL BE COLLECTED ON SITE AND DETAINED IN UNDERGROUND AND ABOVE GROUND DETENTION PONDS.

POST CONSTRUCTION STORM WATER MANAGEMENT PRACTICES:

1) THE OWNER WILL SUBMIT POST CONSTRUCTION BEST MANAGEMENT PRACTICES TO MURRAY CITY.

GENERAL STORM WATER POLLUTION CONTROL NOTES:

1) SEE C510 FOR STORM WATER POLLUTION CONTROL NOTES AND GENERAL PRACTICES.

2) ALL CONSTRUCTION PERIOD BEST MANAGEMENT PRACTICES ARE TO BE INSPECTED AND MAINTAINED AT LEAST WEEKLY, ALSO BEFORE AND AFTER EACH STORM EVENT.

3) CONTRACTOR SHALL BE REQUIRED TO KEEP RECORD OF ALL INSPECTIONS AND MAINTENANCE ON SITE WITH THE STORM WATER POLLUTION PREVENTION PLAN.



SCALE 1"=60'

Stamp

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No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title

EROSION CONTROL PLAN

Sheet Number

C500

BID PACKAGE 3

Blue Stakes of Utah 811

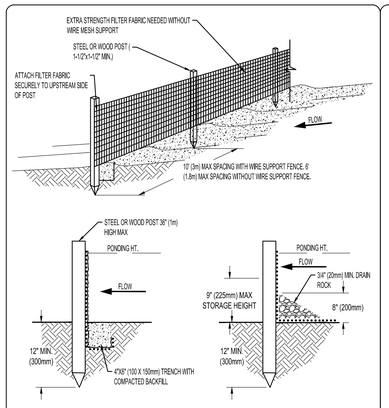
CONSTRUCTION PERIOD BEST MANAGEMENT PRACTICES

SILT FENCES, INSTALLATION OF SILT FENCES NOTE:

1. DIG OR TRENCH A FOUR INCH WIDE BY SIX INCH DEEP TRENCH. THE LENGTH OF THE SILT FENCE
2. ROLL OUT SILT FENCE MATERIAL ALONG THE FRONT OF THE TRENCH SUCH THAT THE STAKES WILL BE ON THE DOWNSTREAM SIDE AND THE BOTTOM FLAP LAY IN THE TRENCH.
3. STARTING AT ONE END, DRIVE THE FIRST STAKE AT LEAST 10 INCHES INTO THE GROUND. NOTE THAT THE STAKE MUST BE DRIVEN FAR ENOUGH INTO THE GROUND SO THAT 8 - 12 INCHES OF MATERIAL REMAINS IN THE GROUND.
4. AT THE NEXT STAKE, PULL THE MATERIAL TAUT BEFORE DRIVING THE SECOND STAKE INTO THE GROUND. NOTE THAT THE STAKE MUST BE DRIVEN FAR ENOUGH INTO THE GROUND SO THAT 8 - 12 INCHES OF MATERIAL REMAINS IN THE GROUND.
5. REPEAT STEP 4 UNTIL THE STAKES ARE DRIVEN INTO THE GROUND.
6. WHEN ATTACHING TWO LENGTHS OF FENCE TOGETHER, DO THE FOLLOWING:
   - 6.1 PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
   - 6.2 ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION, TO CREATE A TIGHT SEAL WITH THE FENCE MATERIAL.
   - 6.3 DRIVE BOTH POST INTO THE GROUND SO THAT 8 - 12 INCHES OF MATERIAL REMAINS IN THE GROUND.

EROSION CONTROL GENERAL NOTES:

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL FACILITIES SHOWN.
2. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A REPRESENTATIVE OF THE CITY PUBLIC WORKS DEPARTMENT MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
3. ALL BEST MANAGEMENT PRACTICES AND EROSION CONTROL MEASURES ARE TO CONFORM TO THE CITY LAND DISTURBANCE DESIGN AND CONSTRUCTION STANDARDS.
4. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE STREETS CLEAN AND FREE FROM DEBRIS DEPOSITED BY TRAFFIC FROM THE SITE.
5. ALL STORM DRAIN FACILITIES ON SITE AND ADJACENT TO THE SITE NEED TO BE PROTECTED FROM SITE RUNOFF. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY AS INDIVIDUAL INLETS ARE INSTALLED.
6. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
7. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING ARE IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVEMENT AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES SHALL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS. MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
10. BLOWING DUST MUST BE CONTROLLED AT ALL TIMES. SITE WATERING SHALL BE USED TO CONTROL DUST. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION IS ABSOLUTELY PROHIBITED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, GRAVEL BAGS, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
12. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF BITUMINOUS PAVING FOR ROAD CONSTRUCTION.
13. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT. ANY NEEDED CLEANING AND REPAIRS SHALL BE DONE IMMEDIATELY UPON DISCOVERY.
14. ALL UTILITY LINES SHALL BE CLEANED OF DIRT AND DEBRIS PRIOR TO BEING PUT INTO SERVICE. DOWN-GRADE LINES MUST BE PROTECTED FROM WASH-WATER DURING THE CLEANING TO AVOID CONTAMINATION AND COMPROMISING OUTFALL CLEANLINESS.

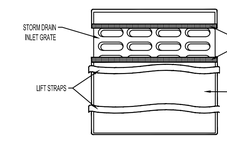


TRENCH DETAIL — **INSTALLATION WITHOUT TRENCHING**

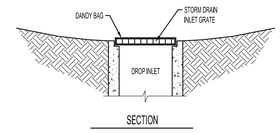
NOTES:

1. SILT FENCE SHALL BE PLACED ON THE SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY, 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

SILT FENCE — N.T.S. — A



PLAN VIEW

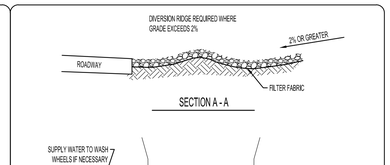


SECTION

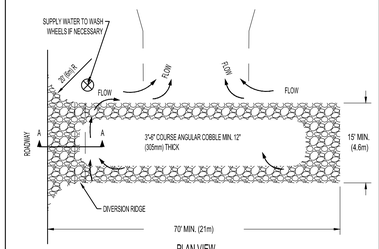
NOTES:

1. "DANDY CURB BAG" BY DANDY PRODUCTS OR OTHER APPROVED EQUIVALENT.

INLET SEDIMENT BARRIER — B



SECTION A - A

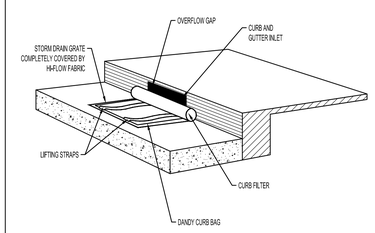


PLAN VIEW

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO THE APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

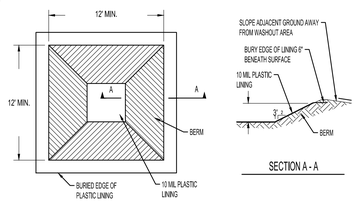
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT — C



NOTES:

1. "DANDY CURB BAG" BY DANDY PRODUCTS OR OTHER APPROVED EQUIVALENT.

CURB AND GUTTER INLET SEDIMENT BARRIER — D



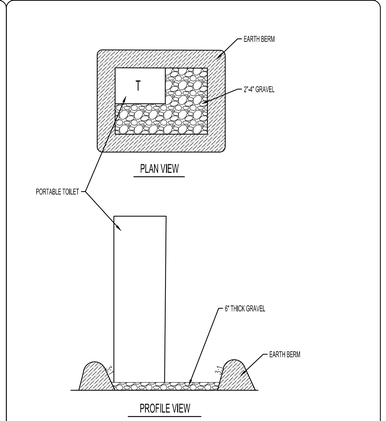
PLAN VIEW

SECTION A - A

NOTES:

1. CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. PLASTIC LINING MATERIAL SHALL BE OF 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
3. A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS REQUIRED IF ACCESS TO CONCRETE WASHOUT AREA IS OFF PAVEMENT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
6. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN ACCEPTED WASTE SITE.
7. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCEPTED BY THE CITY.

CONCRETE WASHOUT AREA — E



NOTES:

1. CONTRACTOR TO LOCATE ON SITE BASED ON TRAILER LOCATION.

PORTABLE TOILET BARRIER — F

LIMIT OF DISTURBANCE NOTES:

1. THE LIMITS OF DISTURBANCE (L.O.D.) TO BE FIELD MARKED.
2. FIELD VERIFICATION OF AN L.O.D. BY CITY ENGINEERING.
3. PRECONSTRUCTION EROSION AND SEDIMENT CONTROL MEETING REQUIRED PRIOR TO ANY DISTURBANCE. THE REQUIRED ATTENDEES WILL BE DEVELOPER'S PROJECT MANAGER, CONSTRUCTION COMPANY'S ON SITE MANAGER.
4. MODIFICATION OF L.O.D. AS REQUIRED BY RESULTS OF PRECONSTRUCTION MEETING.
5. THE CONTRACTOR TO OBTAIN WRITTEN APPROVAL FROM THE CITY CERTIFYING THE L.O.D., DUST CONTROL, AND TREE PROTECTION HAS BEEN REVIEWED AND APPROVED PRIOR TO WORK BEGINNING

CONSTRUCTION PERIOD BEST MANAGEMENT PRACTICES NOTES:

1. CONTRACTOR WILL PERFORM EARTHWORK IN ACCORDANCE WITH THE CITY STANDARD SPECIFICATIONS, CITY EROSION, SEDIMENT, REVEGETATION REQUIREMENTS AND THE DUST CONTROL PLAN AS REQUIRED BY THE STATE OF UTAH DEPARTMENT OF ENVIRONMENTAL DIVISION OF AIR QUALITY.
2. THE CONTRACTOR WILL PERFORM EARTHWORK IN ACCORDANCE WITH THE PROJECT EARTHWORK SPECIFICATIONS AND THE EARTHWORK RECOMMENDATIONS FOUND IN THE GEOTECHNICAL INVESTIGATION REPORT PREPARED FOR THIS PROJECT. IN THE EVENT THAT THERE IS A CONFLICT BETWEEN THE DOCUMENTS MENTIONED (NOTE 2) AND THE CITY'S EROSION AND SEDIMENT CONTROL REQUIREMENTS OR THE DUST CONTROL PLAN AS REQUIRED BY THE STATE OF UTAH DEPARTMENT OF ENVIRONMENTAL DIVISION OF AIR QUALITY , THE CITY'S REQUIREMENTS AND THE STATE REQUIREMENTS WILL CONTROL.
3. L.O.D. BARRIERS WILL BE PROPERLY INSTALLED PRIOR TO ANY DISTURBANCE. L.O.D. BARRIERS ARE DEFINED AS SILT FENCE AND ENVIRONMENTAL FENCE.
4. INSTALL SILT FENCE ON ALL DOWNHILL SIDE OF L.O.D.. SEE DETAIL AND SILT FENCE NOTES FOR CORRECT INSTALLATION PROCEDURE.
5. ENVIRONMENTAL FENCES ARE TO BE INSTALLED ON ALL UPHILL SIDE OF L.O.D.
6. THE L.O.D. SILT FENCE BARRIERS DO NOT REPLACE OR FUNCTION AS SEDIMENTATION B.M.P.S., ADDITIONAL SEDIMENT (BEST MANAGEMENT PRACTICES) BMPS WILL BE REQUIRED AS SHOWN ON THE PLANS OR AS REQUIRED BY THE CITY THROUGHOUT THE PROJECT AS UNFORESEEN SITUATIONS OCCUR.
7. WITHIN THE SAME WORKING DAY SOIL IS DISTURBED ALL SEDIMENT CONTROL B.M.P.S. WILL BE INSTALLED. AN EXAMPLE OF SEDIMENT CONTROL BMP IS A SILT FENCE OR A TEMPORARY SEDIMENTATION BASIN. EXISTING VEGETATION WILL NOT BE BURIED. THE METHOD OF DISPOSAL WILL BE SUBMITTED AND APPROVED BY THE CITY.
8. INSTALL ALL SEDIMENTATION BMPS AS SHOWN ON PLANS AND AS DIRECTED BY THE CITY
9. DUST CONTROL MEASURES WILL BE ON SITE AND IN WORKING ORDER WHEN SOIL IS DISTURBED. DUST CONTROL WILL BE USED 24 HOURS SEVEN DAYS PER WEEK UNTIL SOIL IS RESEEDED AND PROTECTED. WATER USED TO CONTROL DUST WILL CONTAIN CALCIUM CHLORIDE OR SIMILAR ADDITIVE. THE DUST CONTROL PLAN AS REQUIRED BY THE STATE OF UTAH DEPARTMENT OF ENVIRONMENTAL DIVISION OF AIR QUALITY DOES NOT REPLACE THE CALCIUM CHLORIDE REQUIREMENT.
10. INSTALL IMPROVEMENTS AS SHOWN ON THE APPROVED CONSTRUCTION PLANS.
11. ALL DISTURBED SOIL WILL BE MADE STABLE AS WITHIN 21 DAYS OF DISTURBANCE.
12. TEMPORARY AND PERMANENT SEDIMENT BEST MANAGEMENT PRACTICES WILL REMAIN FUNCTIONAL AT ALL TIMES THROUGH THE ENTIRE PROJECT AND UNTIL ALL DISTURBED SOIL HAS BEEN STABILIZED TO PREVENT EROSION. WRITTEN APPROVAL MUST BE OBTAINED FROM THE CITY CERTIFYING ALL DISTURBED SOIL IS STABLE BEFORE ABANDONING SEDIMENTATION BEST MANAGEMENT PRACTICES.
13. IF THE EXISTING GRADES ARE DIFFERENT THAN WHAT IS SHOWN ON THE GRADING PLAN, STOP WORK AND NOTIFY THE CITY.
14. IF THE PROJECT REQUIRES EXPORT OR IMPORT MATERIAL TO ACHIEVE A BALANCED SITE. THE CONTRACTOR IS TO KEEP OFFSITE ROADS CLEAN AT ALL TIMES. FAILURE TO KEEP STREETS CLEAN WILL RESULT IN A MANDATORY WORK STOP ORDER BEING ISSUED ON THE IMPORT/ EXPORT OPERATION.
15. THE PROJECT CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL PAVED STREETS ADJACENT TO OR ABUTTING THE GRADING PROJECT CLEAN AND FREE OF DIRT, MUD, AND DEBRIS AT ALL TIMES. WHEREAS THIS IS A PUBLIC HEALTH AND SAFETY ISSUE. FAILURE TO COMPLY WILL RESULT IN A MANDATORY WORK STOP ORDER BEING ISSUED OVER THE ENTIRE PROJECT, INCLUDING COMMERCIAL AND RESIDENTIAL CONSTRUCTION PROJECTS.
16. THE CONTRACTOR WILL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL PLANS, AND PERMITS AS REQUIRED BY THE CITY, THE COUNTY AND THE STATE OF UTAH AS REQUIRED THROUGHOUT THE DURATION OF THE PROJECT.
17. FAILURE TO FOLLOW THE SEQUENCE OF CONSTRUCTION SHALL RESULT IN THE ISSUANCE OF A WORK STOP ORDER BEING ISSUED.
18. CONCRETE TRUCKS TO USE PRE-ASSIGNED WASH OUT AREA. CONCRETE TRUCKS ARE NOT TO BE CLEANED OUT OR WASHED DOWN IN THE PUBLIC RIGHT-OF-WAY.
19. PORTABLE TOILETS TO BE LOCATED ADJACENT TO CONTRACTOR TRAILER. TOILETS SHALL BE MAINTAINED BY CONTRACTOR.
20. CONSTRUCTION WASTE BIN TO BE LOCATED NEAR CONTRACTOR TRAILER. ALL CONSTRUCTION WASTE TO BE PLACED IN WASTE BIN.
21. ALL CONSTRUCTION PERIOD BEST MANAGEMENT PRACTICES (BMPS) ARE TO BE INSPECTED AND MAINTAINED AT LEAST WEEKLY, ALSO BEFORE AND AFTER EACH STORM EVENT.
22. CONTRACTOR SHALL BE REQUIRED TO KEEP A RECORD OF ALL INSPECTIONS AND MAINTENANCE ON SITE WITH THE STORM WATER POLLUTION PREVENTION PLAN.

Stamp

STATE OF UTAH — NICHOLE LEE LUTHI — 2025-02-13 — No. 8022335

NAYLOR WENTWORTH LUND ARCHITECTS

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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT *We Are Murray!*

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
BID DOCUMENTS

Revision Schedule

No.	Description	Date
1	-	-

Project Number
134.028

Project Issue Date
31 MARCH 2025

Sheet Title
EROSION CONTROL DETAILS

Sheet Number
C510

BID PACKAGE 3

Blue Stakes of Utah 811 — Dial before you dig

PLANTING NOTES

1. The Contractor shall be familiar with the planting and irrigation technical specifications -- failure to do so will not relieve the contractor of his responsibility to fulfill all requirements in said specifications.

2. Prior to any planting operations, the irrigation system shall be fully operational and all planting areas shall be thoroughly moistened.

3. The planting plan is diagrammatic, and all plant locations are approximate. Plant symbols and mulch hatches on the plans take precedence over quantities shown in the Plant Material Schedule. The Contractor shall verify all quantities and notify the Landscape Architect of any discrepancies between the quantities listed and the symbols shown. The Plant Material Schedule is for the Contractor's convenience only.

4. No substitution of size, grade, variety or any species shall be permitted except by written permission of the Landscape Architect. Upon receiving Notice to Proceed, the Contractor shall provide written proof that the specified plant material is available and has been secured or reserved specifically for this project. Obtain nursery stock and other plant materials from reliable and stable sources prior to order and delivery.

5. Final Grade Preparation
   A. The subgrade Material Shall be rough graded to plus or minus one tenth (+0.1) foot of the final rough grade, which will allow the Contractor to achieve final finished grade through the placement of the topsoil.
   B. Protect existing trees, shrubs, lawns, existing structures, fences, roads, sidewalks, paving, curb and gutter and other features during Construction.
   C. Protect above or below grade utilities. Contact utility companies to repair damage to utilities. Contractor shall pay all cost of repairs which he causes.
   D. Maintain all benchmarks, control monuments and stakes, whether newly established by surveyor or previously existing. Protect from damage and dislocation.
   E. Grading Intent: Spot elevations and contours indicated are based on the best available data. The intent is to maintain constant slopes between spot elevations.
   F. Conduct work in an orderly manner. Do not create a nuisance. Do not permit soil accumulation on streets or sidewalks. Do not allow soil to be washed into sewers and storm drains.
   G. Grade slopes to provide adequate drainage after compaction. Do not create water pockets or ridges. Use all means necessary to prevent erosion of freshly graded areas during construction until surfaces have been constructed and landscaping areas have taken hold.
   H. Grades shall be smooth, even, and maintain a consistent uniform slope. Grades with undulating surfaces will be rejected and require re-grading.
   I. The Contractor shall maintain a minimum of two (2) percent drainage away from all buildings, structures, and walls. Finished grades shall be smoothed to eliminate puddling or standing water.
   J. All finished grades shall be approved by the Landscape Architect prior to installation of any plant materials.

6. All planting areas shall receive a minimum of four (4) inches of imported topsoil in turf areas and twelve (12) inches in planting beds, unless otherwise noted on the plans. All topsoil used on this project shall meet the following criteria:
   A. pH:.....5.5 - 8.0
   B. EC (electrical conductivity):.....<2.0 mmhos per centimeter
   C. SAR (sodium absorption ratio):.....<3.0
   D. % OM (percent organic matter):.....2%
   E. Texture (particle size per USDA classification):
   I. Sand:..... <70%
   II. Silt:..... <70%
   III. Clay:..... <30%
   IV. Stone Fragments (gravels or any soil particle Greater than two (2) mm in size):..... <5% (by volume)
   V. Rocks > 1.5".....None
   In addition, the topsoil shall be fertile, friable, natural loam and shall be capable of sustaining vigorous plant growth. It shall be free of stones, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. The topsoil shall contain neither noxious weeds nor their seeds. It shall not be used for planting operations while in a frozen or muddy condition. An appropriate fertilizer and mycorrhizae inoculant may be used to provide needed nutrients for healthy and vigorous plant growth. Follow recommendation of topsoil report.

7. The following procedure shall be followed in placing all topsoil:
   A. All areas to receive topsoil which have a slope of less than ten (10) percent shall be cross-ripped to a depth of four (4) to six (6) inches.
   B. The surface of the subgrade shall be scarified to a depth of two (2) inches to provide a transition zone between the subgrade and the topsoil. Place the topsoil on the subgrade and fine grade to the final finished grade and topsoil depths as indicated on the drawings and in these notes.
   C. Any required soil amendments (i.e. organic matter, fertilizer, gypsum, etc.) shall be thoroughly blended with imported or screened topsoil prior to placement. (Do not place amendments on top of topsoil and then blend.) Where only a dry, granular fertilizer is to be added, it may be applied to the surface and raked in during the fine grading process.

8. The Contractor shall obtain a soil analysis from any authorized soil testing agency of any existing stockpiled or imported topsoil to be used on the project to verify that it conforms to the topsoil specifications. Test results shall include horticultural nutrient recommendations. The soil samples shall be obtained per the testing agency directions. Allow ten (10) working days to obtain test results. The costs for such testing shall be the responsibility of the Contractor. Prior to delivery of the imported topsoil to the site, the Contractor shall provide to the Landscape Architect the name and location of the topsoil source, along with the certified soil analysis of the topsoil to be used. The analysis shall verify that the proposed topsoil meets the topsoil specifications, and is capable of supporting healthy plant growth.

9. After imported top soil has been delivered to the site, a second soils test may be required to verify that it is indeed the same soil as previously tested and designated for use in this project. No substitution of top soil shall be allowed without prior written authorization from the Landscape Architect.

10. All plants used for this project shall conform to the following:
    A. Any inspection certificates required by law shall accompany each delivery of plants and such certificate shall be filed with the Landscape Architect. All plants shall be subject to inspection and approval at the place of growth or upon delivery to the site for their quality, size, species, and variety. Such approval shall not impair the right of inspection and rejection at the site or during progress of work for size and condition of the plants, latent defects, or injuries. Any and all rejected plants shall be removed immediately from the premises by the Contractor. The Contractor shall make all replacements at his expense should he fail to comply in full with any of the specifications. Necessary replacements will be made as soon as weather conditions permit and all such plants replaced shall conform to all specifications herein.
    B. Plants shall be fresh and vigorous, of normal habit and growth, and free of disease, insects and insect eggs and insect larvae, weeds and weed seed. No heeled-in plants from cold storage shall be accepted except on approval by the Landscape Architect prior to installation.

11. All plants shall be installed using the following procedures:
    A. Plants shall be generally located as indicated by the drawing. The Contractor shall stake out the location of all plants and planting areas, and no excavation or installation shall commence until such locations have been approved by the Landscape Architect.
    B. All trees and shrubs shall be planted in pits as detailed in the planting details contained herein or as noted on the drawings. Tree and shrub pits shall be circular in outline, with 45° angled sides and the base diameter of the plant pit at least two (2) times the diameter of the rootball of each plant to be installed. They shall be one to two and one half (1 - 2 ½) inches shallower than the rootball depth. When the plant is properly placed in the plant pit, the root collar shall be at or approximately one (1) inch above finished grade. The sides of the plant pit shall be roughened, and not smooth or sculpted.
    C. All plant and tree pits shall be backfilled with imported topsoil mix and required amendments. See Notes 6 and 7.
    D. For container grown plants, remove the container and place the plant vertically in the plant pit, directly on undisturbed soil. The root crown or collar shall be at or approximately one (1) inch above the finished grade. Perennial plants and ornamental grasses shall be planted with root collar at finished grade.
    E. For balled and burlapped plants, place the plant vertically in the center of the pit, with the rootball resting on undisturbed soil. Cut and remove the wire basket and burlap or other wrapping material from the rootball. This may be done with the rootball in the pit. Any burlap or wire pieces underneath the rootball may be left in place if they cannot be removed. Do not fold the burlap over, but cut away as much as possible without disturbing the rootball. No burlap shall be pulled from under the rootball. Backfill the bottom one third (1/3) of the pit as the wire and burlap are removed. In all cases, maintain the integrity of the rootball.
    F. Specified backfill material shall be carefully and firmly worked and tamped under and around the rootball to fill all voids. When backfilled and compacted to two thirds (2/3) the depth of the pit, thoroughly water with a hose to completely soak the roots and remove any air pockets.
    G. The plant pit shall then be completely backfilled with the specified backfill mix and tamped well. A shallow watering basin or rain cup shall be formed around each plant. This basin will be equal in diameter to that of the original planting pit.
    H. After planting, the following operations shall be performed:
    I. Stake and mulch all trees per installation details.
    II. Remove all nursery stakes ties, and tags from all plants. Prune and remove any dead, damaged, or broken branches. Maintain side growth on all trees.

12. Staking shall be performed as follows:
    A. Tree staking is only required if necessitated by consistent high winds on site to prevent trees from blowing/tipping over. For bidding purposes, include staking for all trees. During construction the owner, landscape architect, and contractor shall determine if tree staking should be provided. Should staking not be required, contractor shall provide a credit to the owner equal to associated materials and labor costs.
    B. Two (2) 2"x 2" square or 2" diameter round wood stakes, minimum ten (10) feet in length, shall be used to support each tree planted under this contract unless otherwise indicated. Metal t-posts shall not be used.
    C. Tree ties shall conform to the staking detail shown on the planting detail sheet. Wire and vinyl hose shall not be used.
    D. Each stake shall be located adjacent to the rootball, on opposing sides, to provide maximum support to the trunk. Do not penetrate the rootball with the stake.
    E. The stakes shall be driven into the pit bottom after the tree has been placed in the pit, but before backfilling begins so as to avoid damage to the roots.
    F. Stakes and ties shall be removed after one (1) full growing season from the time the tree was installed.

13. All plants shall be thoroughly watered immediately after planting. This shall mean full and thorough saturation of all backfill in the pits and beds during the same day of planting. Water shall be applied only by open end hose at very low pressure to avoid air pockets, injury to the plant, or washing away of backfill. When installed, watered, and fully settled, the plants shall be vertical. Subsequent watering shall be provided by the site's irrigation system. The Contractor shall ensure that all plants, especially trees, receive sufficient water to maintain healthy growth and vigor. Over-watering shall be avoided, and prolonged saturation of the soil around the trees shall be eliminated by appropriately controlling the irrigation circuit which provides water to that area.

14. A weed barrier fabric shall be placed in all planting beds to receive stone mulch to prevent the growth and spread of unwanted vegetation. The fabric shall be Typar #3301B or approved equal. Do not install weed barrier fabric under bark mulch.

15. Mulch (see plant materials schedule and specifications for size requirements) shall be placed to a depth of three (3) inches on top of the topsoil in all planting beds and over tree planting pits, unless otherwise noted on the plans. The finished grade of the mulch shall be as follows:
    A. One (1) inches below the surface or finished grade of any paving, mowstrips, or walks adjacent to the planting area.
    B. One-half to One (0.5-1) inch below top of metal edging.
    C. At adjacent finished grade of the turf surrounding tree planting pits.
    D. In tree pits, the mulch shall be kept six (6) inches away from the base of the tree.
    E. Just prior to placement of the mulch, the Contractor shall treat the mulched areas with a pre-emergent herbicide according to the manufacturer's recommendations.

16. For projects with turf grass sod, all sod used for this project shall be free of grassy and broad-leaf weeds, contain no bare or burned spots, and be clean and strongly rooted. It shall be of the varieties noted in the plans and Plant Material Schedule. The sod shall be cut using approved methods and equipment. It shall be cut in pieces not exceeding one (1) square yard, with a uniform thickness on all pieces. Sod thickness may vary between a minimum of one (1) inch and maximum one and one half (1 ½) inches, but must be consistent throughout this project. The Contractor shall notify the Landscape Architect of the source of the sod prior to placement. The sod shall be stripped and delivered to the site not more than twenty four (24) hours prior to laying. It shall be maintained in a moist and healthy condition to encourage immediate growth.

17. The following procedure shall be followed when installing the sod:
    A. Lay the sod on smooth, moist topsoil, working off planks if required.
    B. Rake the topsoil to loosen and level prior to placing each course of sod.
    C. Lay strips perpendicular to the direction of the slope. Strips shall be parallel to each other, with their end seams staggered. The sod shall be neither stretched nor overlapped, and all joints shall be butted tightly together.
    D. Roll the sod immediately after placing and thoroughly water with a fine spray to a depth sufficient that the underside of the new sod and the soil immediately below the sod are thoroughly wet.
    E. On slopes two (2) horizontal to one (1) vertical or steeper, lay the sod perpendicular to the slope and secure every row with wooden pegs at two (2) feet maximum on center. Drive the pegs flush with the soil portion of the sod.
    F. Sod pieces shall be laid tightly together. Sod areas with gaps caused by pieces not being laid tightly enough together or areas with ridges from overlapping pieces shall not be accepted and the Contractor will be required to re-lay the sod.

18. Throughout the course of planting, excess and waste materials as well as excavated subsoil shall be continuously and promptly removed. All areas shall be kept clear and all reasonable precautions taken to avoid damage to existing structures, plants, and grass. When planting has been completed in an area, it shall be thoroughly cleaned of all debris, rubbish, subsoil, and waste materials. These shall be removed from the property and disposed of legally. All planting tools shall also be put away.

19. Substantial Completion shall be defined as the complete installation of all plant materials, staking, mulching, and other work on the project in its entirety. Substantial completion shall not be given on designated portions of a project.
    A. At substantial completion of all planting work outlined in these plans, the Contractor shall contact the Landscape Architect to arrange for a walk through to verify that all aspects of the work have been completed. Work must be fully completed (except for final clean-up) according to all plans, notes, and specifications and exhibit professional workmanship.
    B. Notice by the Contractor shall be given, in writing, at least three (3) days in advance to the Owner's Representative and Landscape Architect so that proper scheduling can be made for those who are to attend.
    C. At the appointed time, an inspection of all plant materials, including staking and mulching, shall be made.
    D. A list of uncompleted items (punch list) shall be generated by the Landscape Architect and distributed to the Contractor and other involved parties within three (3) days of the substantial completion inspection. Each item on the punch list shall be corrected before the project will be approved and accepted by the Owner's representative. The Contractor will be back charged for time spent by the Owner and any consultants who have been brought to the site for a final inspection when the project is not ready for said inspection.

20. The maintenance/establishment period shall begin one (1) day after the substantial completion inspection. The Contractor shall complete all punch list items during this period, as well as maintain and operate the entire irrigation system. The Contractor shall maintain all plantings until the turf is fully established. The turf shall be considered fully established when turf grass stands come in uniform and thick, with no bare or thin spots, and roots have begun to spread and knit together. No weeds shall be allowed in the grass areas. The maintenance and establishment shall be a minimum period of sixty (60) days (or greater if so identified in the technical specifications), and shall take place during the growing season defined as April 15th through October 15th. Should the maintenance and establishment period not be fully complete prior to October 15th, the balance of the time shall be carried over and start up again on April 15th. Should mild winter weather allow the continuance of work beyond October 15th, the contractor, owner, and landscape architect may mutually agree if these dates can be adjusted along with specific requirements to do so. The maintenance work required shall include but not be limited to the following:
    A. Appropriate watering of all plant materials.
    B. Weeding and removal of all weeds from groundcover and planting areas.
    C. Replacement of any dead, dying, or damaged trees, shrubs, perennials, or groundcover.
    D. Filling and replanting of any low areas which may cause standing water.
    E. Adjusting of sprinkler head heights and watering patterns.
    F. Filling and re-compaction of eroded areas, along with any required re-seeding and/or replanting.
    G. The turf grass shall be mowed when the blades reach three (3) inches tall and maintained to a minimum height of two (2) inches. No more than one third (1/3) of the blade shall be removed per cutting. The cutting frequency shall be once every five (5) to seven (7) days depending upon turf grass height and growth rate.
    H. Weekly removal of all trash, litter, clippings, and all foreign debris.
    I. At thirty (30) days after planting, a balanced fertilizer (16-16-16) shall be applied to the turf grass areas at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet.
    J. At intervals of thirty (30) days after the first application of fertilizer to the turf grass, apply a balanced fertilizer (16-16-16) at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet until the turf grass is established.

21. A final inspection shall be held prior to the end of the maintenance period to ensure that all punch list items have been completed and the entire project is ready for acceptance by the Owner. Upon satisfaction that the Contractor has completed all punch list items, the irrigation system is fully and completely functional, and the required As-Built drawings and maintenance manuals have been submitted, the Owner shall accept the project. An official letter of final acceptance shall be prepared and issued to the Contractor, Landscape Architect, and the Owner's representative. Upon final acceptance of the project by the Owner's representative, the Owner shall assume full responsibility for the project, and the guarantee period shall begin.

22. Upon final acceptance of the project as being properly installed, the Contractor shall guarantee the plant materials as follows:
    A. All shrubs and groundcovers shall be guaranteed by the Contractor as to growth and health for a period of sixty (60) days after completion of the maintenance period and final acceptance.
    B. All trees shall be guaranteed by the Contractor to live and grow in an acceptable upright position for a period of one (1) year after completion of the maintenance period and final acceptance.
    C. Any tree with 30% dead or missing canopy, shall be replaced as part of this plant guarantee.

23. The Contractor shall, within fifteen (15) days after receiving written notification by Owner's representative, remove and replace all guaranteed plant materials which die or become unhealthy or appear to be in a badly impaired condition at any time during the guarantee period. Any plants that settle below or rise above the desired finished grade shall also be reset to the proper grade.
    A. All replacements shall be plants of the same kind, size, and quality as originally specified in the "plant list" and they shall be furnished, planted, staked, and maintained as specified herein at no additional cost to the owner.
    B. The Contractor will not be responsible for plants destroyed or lost due to occupancy of the project, vandalism on the part of others, or improper maintenance or lack thereof.

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LICENSED LANDSCAPE ARCHITECT

NAYLOR WENTWORTH LUND ARCHITECTS

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Murray, Utah 84123

Project Phase

Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

Project Number

143.005

Project Issue Date

31 March 2025

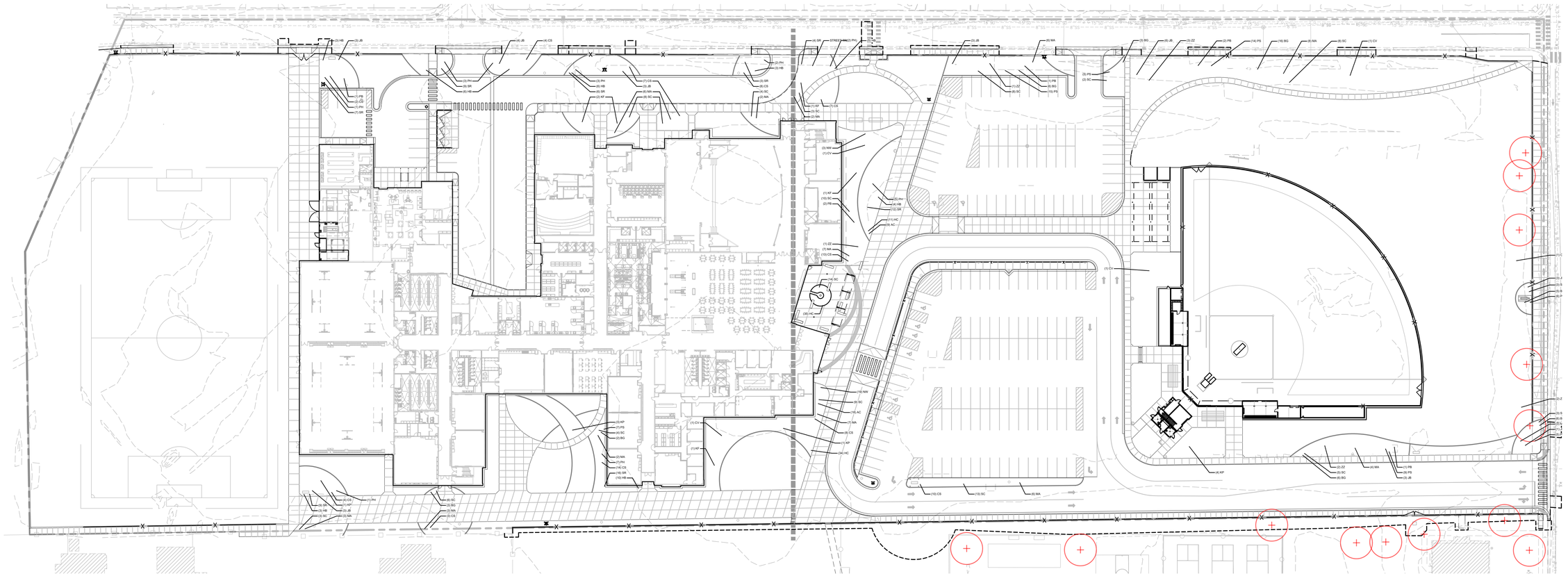
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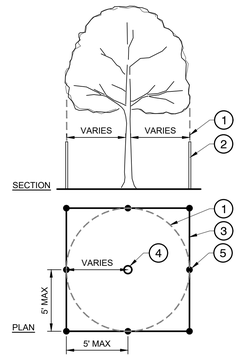
PLANTING NOTES

Sheet Number

LP-001

Bid Package 3





1. DRIPLINE OF TREE CANOPY
2. ORANGE CONSTRUCTION FENCE STAKED 5'-0" O.C. MAX. W/METAL T-POSTS (SEE SPECS)
3. TREE PROTECTION FENCE OUTSIDE OF DRIPLINE OF TREE. SEE SPECS.
4. TREE TRUNK
5. METAL T-POST 5' O.C.

NOTES:
1. DO NOT STORE OR OPERATE ANY MATERIALS, EQUIPMENT, DEBRIS, ETC. INSIDE FENCE.
2. IF REQUIRED BY CONSTRUCTION, ONLY HAND EXCAVATION IS ALLOWED WITHIN THIS AREA.
3. REMOVE ONLY UPON APPROVAL OF LANDSCAPE ARCHITECT.
4. SEE TREE PROTECTION AND PRESERVATION NOTES AND TECHNICAL SPECIFICATIONS.

1 TREE PROTECTION ZONE

NTS

1. TREE PROTECTION PRACTICES INCLUDE ESTABLISHING THE TREE PROTECTION ZONE (TPZ) PER DETAIL.
2. THERE WILL BE NO DIGGING, TRENCHING, GRADING, OR STORING OF MATERIALS OR EQUIPMENT IN THE TPZ.
3. NO EQUIPMENT (EXCEPT FOR A SOD CUTTER) SHALL BE ALLOWED INSIDE THE TPZ. IF SPECIAL PROVISION FOR EXCAVATION IS APPROVED BY OWNER, IT SHALL BE DONE BY HAND OR A SOIL VACUUM.
4. USE TUNNELING OR BORING FOR IRRIGATION AND UTILITIES INSIDE THE TPZ. NO ROOTS LARGER THAN 4" IN DIAMETER WILL BE CUT. ALL ROOTS WILL BE CUT CLEANLY WITH A SAW. IN SITUATIONS WHERE A ROOT HAS BEEN DAMAGED, A CLEAN CUT SHALL BE MADE ON THE ROOT AT THE EDGE OF THE TRENCH CLOSEST TO THE TREE TRUNK.
5. TREES SHALL NOT BE USED TO SUPPORT ANY SCAFFOLDING, SIGNS, TEMPORARY UTILITY, OR ANY OTHER DEVICE. IF DAMAGE OCCURS TO A PROTECTED TREE, IMMEDIATE CONTACT SHALL BE MADE WITH THE OWNER.
6. DO NOT CHANGE THE SOIL GRADE BY CUTTING OR FILLING IN THE TPZ.
7. CONTRACTOR SHALL SUBMIT A SCHEDULE FOR WEEKLY WATERING AND INDICATE THE INDIVIDUAL WHO IS RESPONSIBLE TO ENFORCE TREE PROTECTION REQUIREMENTS AS SET FORTH IN THE DRAWINGS, NOTES, DETAILS, AND SPECS. TREE PROTECTION IN ADDITION TO WHAT IS SHOWN ON THE PLAN MAY BE REQUIRED.
8. CONTRACTOR IS RESPONSIBLE TO ENSURE TREES ARE PROPERLY PROTECTED AND MAINTAINED THROUGHOUT CONSTRUCTION. DAMAGED OR DEAD TREES WILL BE REPLACED IN KIND (SIZE, SPECIES, ETC) OR AS INDICATED IN THE SPECS.
9. SEE SPECIFICATION SECTION 005639 TREE PROTECTION & PRESERVATION

2 TREE PROTECTION & PRESERVATION NOTES

NTS

LEGEND

EXISTING TREE TO PRESERVE AND PROTECT IN PLACE (SEE TREE PROTECTION NOTES, DETAILS, AND TECHNICAL SPECIFICATIONS.)

0 40 80

SCALE IN FEET

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
REGISTERED LANDSCAPE ARCHITECT
03/27/2025

NAYLOR WENTWORTH LUND ARCHITECTS

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Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
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Project For

The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase

Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

Project Number

143.005

Project Issue Date

31 March 2025

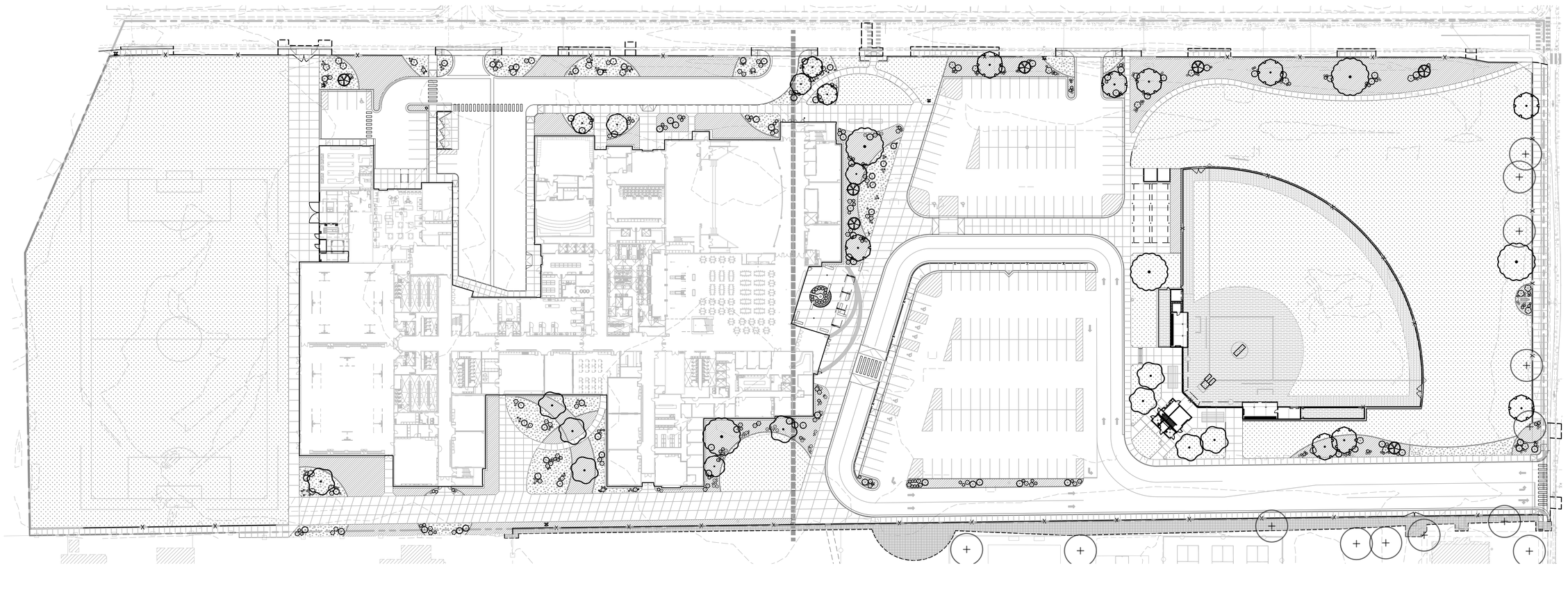
Sheet Title

TREE PROTECTION PLAN

Sheet Number

LP-002

Bid Package 3



PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
TREES				
	CV	5	Crataegus v. 'Winter King' Winter King Hawthorn	2" CAL
	EE	13	Existing Tree To Remain	Existing
	KF	5	Koelreuteria p. 'Fastigiata' Columnar Goldenrain Tree	2" CAL
	KP	9	Koelreuteria paniculata Golden Rain Tree	2" CAL
	ZZ	9	Zelkova serrata 'JFS KW4ZS' Zileration® Japanese Zelkova	2.5" CAL
EVERGREEN TREES				
	PB	7	Pinus aristata Bristlecone Pine	6` Height

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
SHRUBS				
	CS	80	Cytisus scoparius `SMNCSAB` Sister Redhead® Scotch Broom	5 gal
	HB	40	Hesperaloe parviflora 'Perpa' Brakelights® Red Yucca	1 gal
	JB	29	Juniperus h. 'Bar Harbor' Bar Harbor Creeping Juniper	5 gal
	MA	59	Mahonia repens Oregon Grape	1 gal
	PH	24	Pinus s. 'Hillside Creeper' Hillside Creeper Scotch Pine	5 gal
	SC	103	Symphoricarpos x d. 'Kolmcan' Candy™ Snowberry	5 gal
GRASSES				
	BG	47	Bouteloua gracilis Blue Grama Grass	1 gal
	PS	61	Panicum virgatum 'Shenandoah' Shenandoah Switch Grass	1 gal
	SR	66	Schizachyrium s. 'Blue Paradise' Blue Paradise® Little Bluestem	1 gal
PERENNIALS				
	AC	27	Agastache aurantiaca 'Pstessene' Coronado® Red Giant Hyssop	1 gal
	HC	80	Heuchera x 'Cherry Cola' Cherry Cola Coral Bells	1 gal
	NW	22	Nepeta x faassenii 'Walker's Low' Walker's Low Catmint	1 gal

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
GROUND COVERS				
	DE	12,142 sf	Duraedge Classic Infield Mix (72% sand, 2% silt, 16% clay) 4" Depth profile, w/ 3/16" PlayBall Calcined Clay top dressing. Provide 30 bags of PlayBall Calcined Clay attic stock	N/A
	DP	126 sf	Duraedge DuraPitch Premium Mound Clay Provide 30 bags of attic stock	N/A
	WT	6,182 sf	Duraedge DuraTrax Lava Warning Track - 3/16" Minus 3" Depth over 4" limestone sub-base.	N/A
	RM1	16,844 sf	Staker Parson - Nephi Cobble 2-4" 4" Depth	Mulch
	RM2	39,250 sf	Staker Parson - Perma Bark 2" 3" Depth	Mulch
SOD				
	SOD	9,690 sf	Kentucky Bluegrass Blend Patch & repair lawn & irrigation system.	SOD
	SOD2	203,710 sf	Raft River Bluegrass Sod - HD Sports 2.0 blend Contact Dan Farnes, 801-884-2000	SOD
MATERIALS				
	MC		6'X6' Concrete Mow Curb per detail	

N

0 40 80

SCALE IN FEET

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
REGISTERED LANDSCAPE ARCHITECT

NAYLOR WENTWORTH LUND ARCHITECTS

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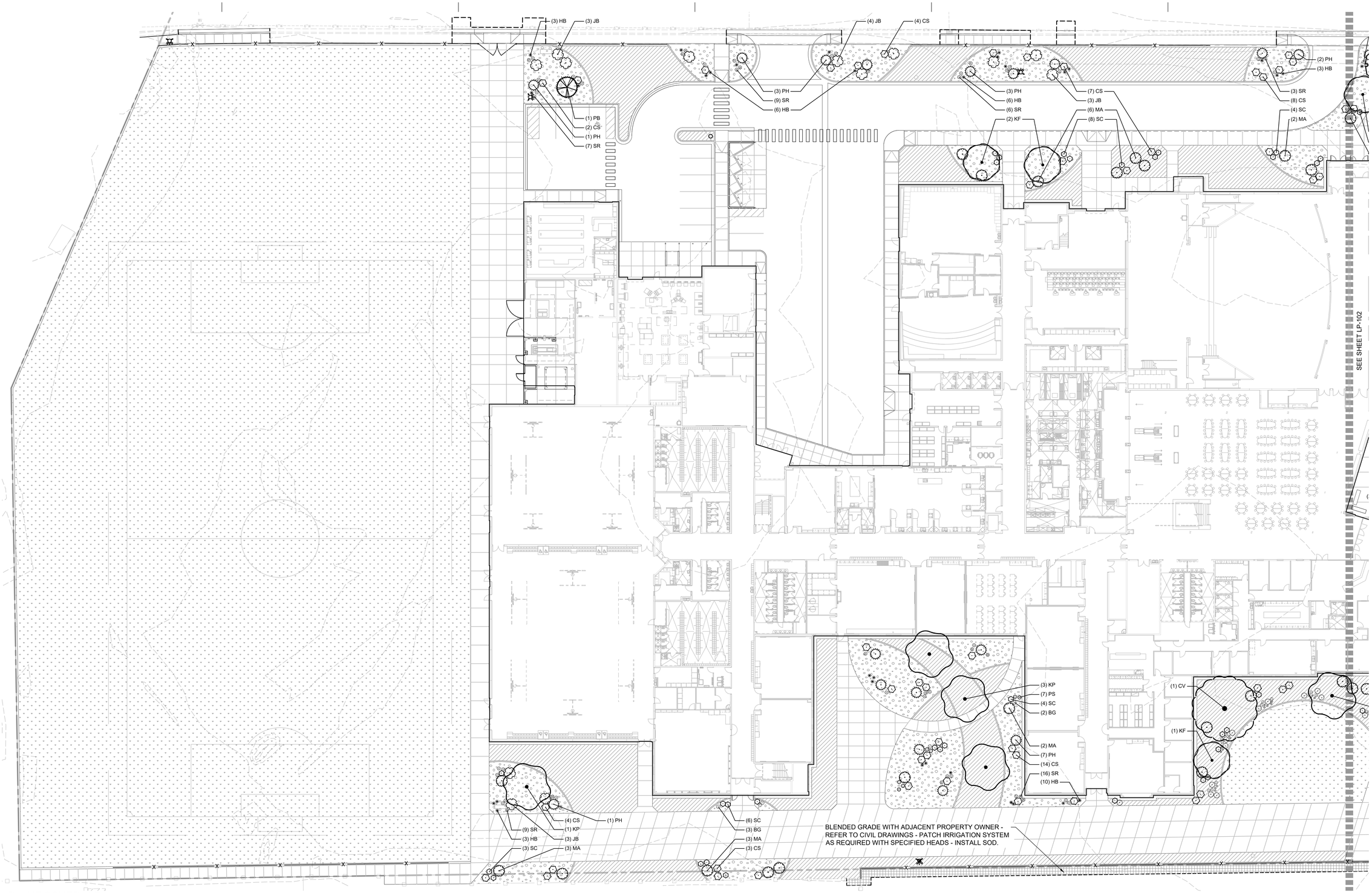
Sheet Title

OVERALL PLANTING PLAN

Sheet Number

LP-100

Bid Package 3



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	CV	Crataegus v. 'Winter King' Winter King Hawthorn
	EE	Existing Tree To Remain
	KF	Koelreuteria p. 'Fastigiata' Columnar Goldenrain Tree
	KP	Koelreuteria paniculata Golden Rain Tree
	ZZ	Zelkova serrata 'JFS KW4ZS' Zileration® Japanese Zelkova
EVERGREEN TREES		
	PB	Pinus aristata Bristlecone Pine
SHRUBS		
	CS	Cytisus scoparius `SMNCSAB` Sister Redhead® Scotch Broom
	HB	Hesperaloe parviflora 'Perpa' Brakelights® Red Yucca
	JB	Juniperus h. 'Bar Harbor' Bar Harbor Creeping Juniper
	MA	Mahonia repens Oregon Grape
	PH	Pinus s. 'Hillside Creeper' Hillside Creeper Scotch Pine
	SC	Symphoricarpos x d. 'Kolmcan' Candy™ Snowberry
GRASSES		
	BG	Bouteloua gracilis Blue Grama Grass
	PS	Panicum virgatum 'Shenandoah' Shenandoah Switch Grass
	SR	Schizachyrium s. 'Blue Paradise' Blue Paradise® Little Bluestem
PERENNIALS		
	AC	Agastache aurantiaca 'Pstessene' Coronado® Red Giant Hyssop
	HC	Heuchera x 'Cherry Cola' Cherry Cola Coral Bells
	NW	Nepeta x faassenii 'Walker's Low' Walker's Low Catmint

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
GROUND COVERS			
	DE	12,142 sf	Duraedge Classic Infield Mix (72% sand, 2% silt, 16% clay) 4" Depth profile, w/ 3/16" PlayBall Calcined Clay top dressing. Provide 30 bags of PlayBall Calcined Clay attic stock
	DP	126 sf	Duraedge DuraPitch Premium Mound Clay Provide 30 bags of attic stock
	WT	6,182 sf	Duraedge DuraTrax Lava Warning Track - 3/16" Minus 3" Depth over 4" limestone sub-base.
	RM1	16,844 sf	Staker Parson - Nephi Cobble 2-4" 4" Depth
	RM2	39,250 sf	Staker Parson - Perma Bark 2" 3" Depth

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
SOD			
	SOD	9,690 sf	Kentucky Bluegrass Blend Patch & repair lawn & irrigation system. Raft River Bluegrass Sod - HD Sports 2. Contact Dan Farnes, 801-884-2000
	SOD2	203,710 sf	
MATERIALS			
	MC		6'X6' Concrete Mow Curb per detail

N

0 20 40
SCALE IN FEET

NOTES:

1. IN LANDSCAPE BEDS, TOPSOIL IS ONLY REQUIRED OUT TO THE ANTICIPATED MATURE DRIP ZONE OF TREES AND SHRUBS.
2. TOPSOIL IS REQUIRED IN ALL LAWN AREAS (SEE PLANTING NOTES AND SPECIFICATIONS.)
3. SEE LP-100 FOR COMPLETE PLANT SCHEDULE
4. MOWCURB CIRCLES SHALL BE INSTALLED AS NEAR-PERFECT CIRCLES AS SHOWN. NO STRAIGHT SECTIONS, KINKS, WAVES, ETC.

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LANDSCAPE ARCHITECT
08/31/2026

NAYLOR WENTWORTH LUND ARCHITECTS

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Project Phase

Bid Documents

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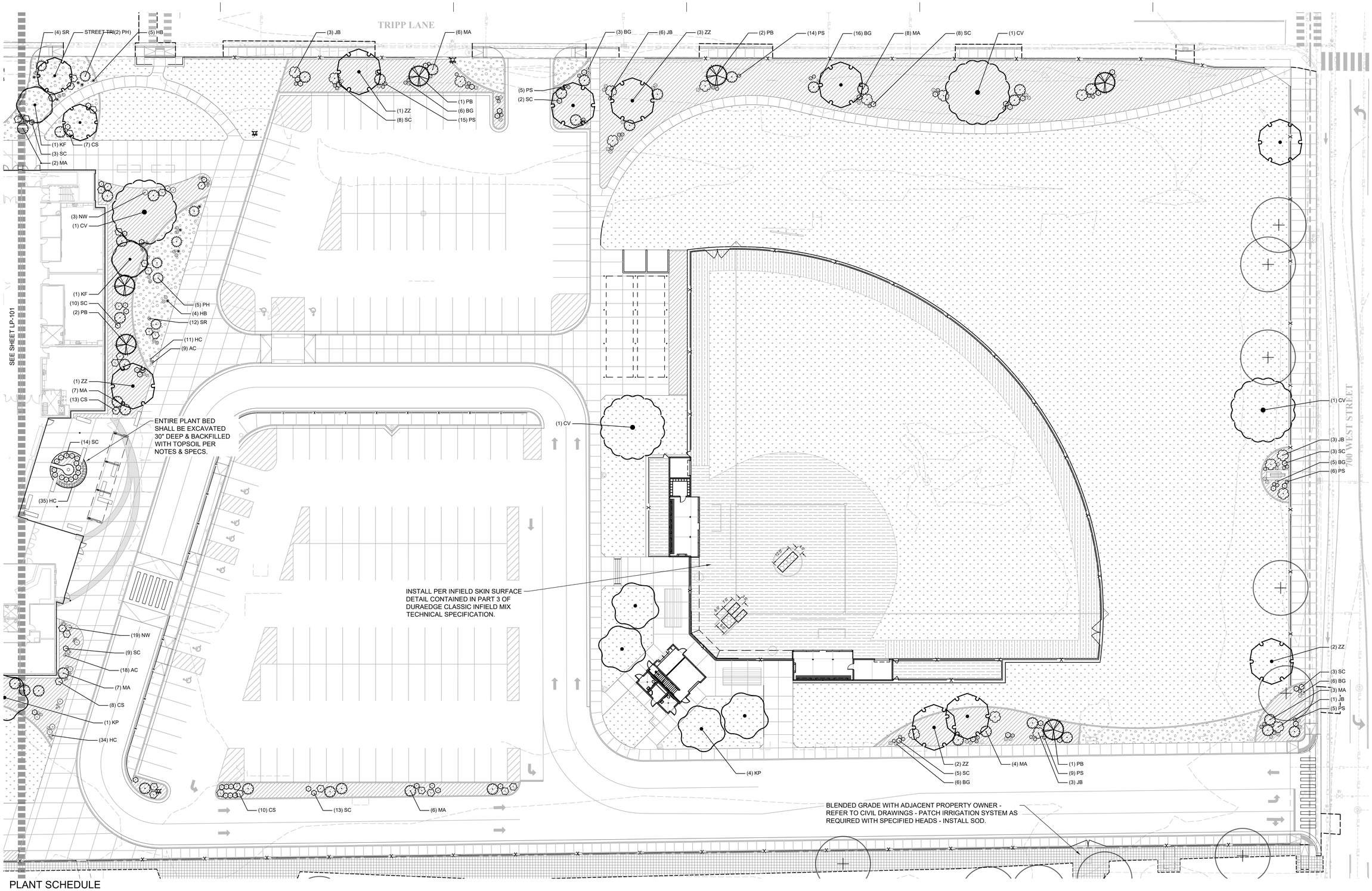
Sheet Title

PLANTING PLAN

Sheet Number

LP-101

Bid Package 3



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	CV	Crataegus v. 'Winter King' Winter King Hawthorn
	EE	Existing Tree To Remain
	KF	Koelreuteria p. 'Fastigiata' Columnar Goldenrain Tree
	KP	Koelreuteria paniculata Golden Rain Tree
	ZZ	Zelkova serrata 'JFS KW4ZS' Zileration® Japanese Zelkova
EVERGREEN TREES		
	PB	Pinus aristata Bristlecone Pine
SHRUBS		
	CS	Cytisus scoparius `SMNCSAB` Sister Redhead® Scotch Broom
	HB	Hesperaloe parviflora 'Perpa' Brakelights® Red Yucca
	JB	Juniperus h. 'Bar Harbor' Bar Harbor Creeping Juniper
	MA	Mahonia repens Oregon Grape
	PH	Pinus s. 'Hillside Creeper' Hillside Creeper Scotch Pine
	SC	Symphoricarpos x d. 'Kolmcan' Candy™ Snowberry
GRASSES		
	BG	Bouteloua gracilis Blue Grama Grass
	PS	Panicum virgatum 'Shenandoah' Shenandoah Switch Grass
	SR	Schizachyrium s. 'Blue Paradise' Blue Paradise® Little Bluestem
PERENNIALS		
	AC	Agastache aurantiaca 'Pstessene' Coronado® Red Giant Hyssop
	HC	Heuchera x 'Cherry Cola' Cherry Cola Coral Bells
	NW	Nepeta x faassenii 'Walker's Low' Walker's Low Catmint

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
GROUND COVERS			
	DE	12,142 sf	Duraedge Classic Infield Mix (72% sand, 2% silt, 16% clay) 4" Depth profile, w/ 3/16" PlayBall Calcined Clay top dressing. Provide 30 bags of PlayBall Calcined Clay attic stock
	DP	126 sf	Duraedge DuraPitch Premium Mound Clay Provide 30 bags of attic stock
	WT	6,182 sf	Duraedge DuraTrax Lava Warning Track - 3/16" Minus 3" Depth over 4" limestone sub-base.
	RM1	16,844 sf	Staker Parson - Nephi Cobble 2-4" 4" Depth
	RM2	39,250 sf	Staker Parson - Perma Bark 2" 3" Depth

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME
SOD			
	SOD	9,690 sf	Kentucky Bluegrass Blend Patch & repair lawn & irrigation system. Raft River Bluegrass Sod - HD Sports 2. Contact Dan Farnes, 801-884-2000
	SOD2	203,710 sf	
MATERIALS			
	MC		6'X6' Concrete Mow Curb per detail

0 20 40
SCALE IN FEET

NOTES:

1. IN LANDSCAPE BEDS, TOPSOIL IS ONLY REQUIRED OUT TO THE ANTICIPATED MATURE DRIP ZONE OF TREES AND SHRUBS.
2. TOPSOIL IS REQUIRED IN ALL LAWN AREAS (SEE PLANTING NOTES AND SPECIFICATIONS.)
3. SEE LP-100 FOR COMPLETE PLANT SCHEDULE
4. MOWCURB CIRCLES SHALL BE INSTALLED AS NEAR-PERFECT CIRCLES AS SHOWN. NO STRAIGHT SECTIONS, KINKS, WAVES, ETC.

Stamp
STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LANDSCAPE ARCHITECT
08/31/2025

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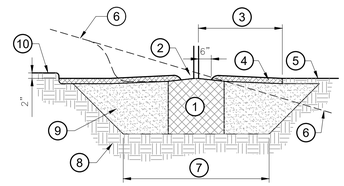
Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
PLANTING PLAN

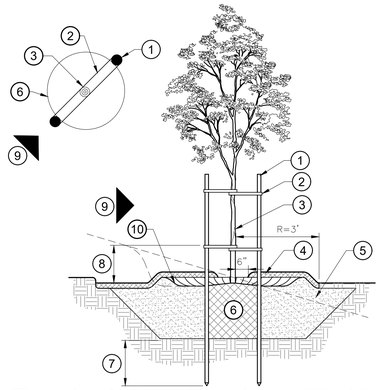
Sheet Number
LP-102

Bid Package 3



1. ROOTBALL
2. CROWN - APPROXIMATELY 1" ABOVE FINISH GRADE
3. 3' RADIUS CIRCLE OF SHREDDED BARK MULCH WHEN TREE IS LOCATED IN TURF
4. 3" LAYER OF MULCH
5. FINISHED GRADE
6. FINISHED GRADE AT SLOPE (WHERE SLOPE OCCURS)
7. 2X ROOTBALL DIA. MIN. W/ 45 DEGREE SIDES
8. UNDISTURBED SOIL
9. BACKFILL MIX (SEE PLANTING NOTES)
10. TOP OF PAVING (WHERE APPLICABLE)

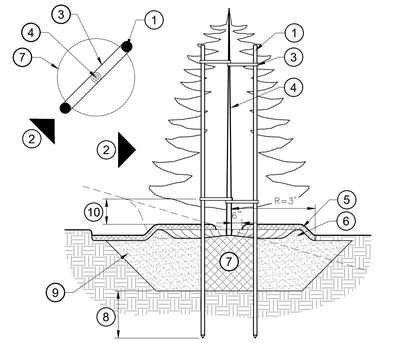
1 TREE/SHRUB PLANTING
NTS



1. 2" DIA. OR 2" x 2" SQ. x 10' STRAIGHT WOODEN STAKE (2 REQUIRED)
2. V.I.T. CINCH-TIE VINYL TREE TIE (2 PER STAKE, LENGTH AS REQUIRED). SECURE TO STAKE W/ GALV. NAIL. 1 PER TIE
3. TREE TRUNK
4. 3" LAYER MULCH AROUND EACH TREE (3' RADIUS CIRCLE WHEN IN TURF)
5. SEE TREE/SHRUB PLANTING DETAIL
6. ROOT BALL
7. 24" MIN.
8. 6" MAX.
9. PREVAILING WIND DIRECTION
10. WATERING BASIN - SEE TREE/SHRUB PLANTING DETAIL

NOTE: STAKES SHALL BE REMOVED AFTER COMPLETE GROWING SEASON.

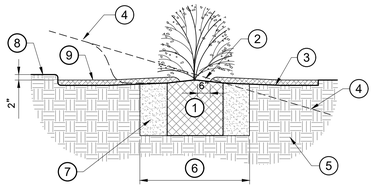
2 DECIDUOUS TREE STAKING W/ WATERING BASIN
NTS



1. 2" DIA. OR 2"X2" SQ. X 10' STRAIGHT WOODEN STAKE (2 REQUIRED)
2. PREVAILING WIND DIRECTION
3. V.I.T. CINCH-TIE VINYL TREE TIE (2 PER STAKE, LENGTH AS REQUIRED). SECURE TO STAKE W/ GALV. NAIL. 1 PER TIE
4. TREE TRUNK
5. 3" LAYER SHREDDED BARK MULCH AROUND EACH TREE (3' RADIUS CIRCLE WHEN IN TURF)
6. WATERING BASIN - SEE TREE/SHRUB PLANTING DETAIL
7. ROOTBALL
8. 24" MIN
9. SEE TREE/SHRUB PLANTING DETAIL
10. 18" MAX.

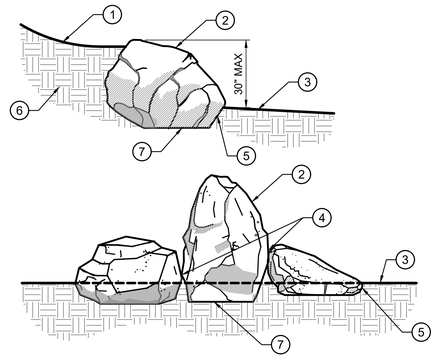
NOTE: STAKES SHALL BE REMOVED AFTER ONE COMPLETE GROWING SEASON.

3 EVERGREEN TREE STAKING W/ WATERING BASIN
NTS



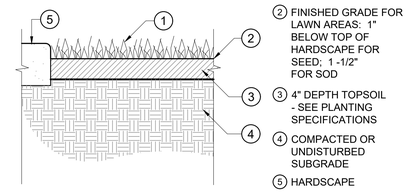
1. ROOT BALL
2. CROWN - AT FINISHED GRADE
3. FINISHED GRADE
4. FINISHED GRADE AT SLOPE (WHERE OCCURS)
5. UNDISTURBED SOIL
6. 2X ROOTBALL DIA. MIN.
7. BACKFILL MIX (SEE PLANTING NOTES)
8. TOP OF PAVING (WHERE APPLICABLE)
9. 3" LAYER OF MULCH

4 PERENNIAL PLANTING
NTS



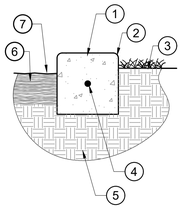
1. FINISH GRADE WHERE BOULDER RETAINS GRADE
2. BOULDER
3. FINISH GRADE
4. FINISH GRADE BOULDERS SHOWN IN A GROUP ARE TO BE PLACED TOUCHING EACH OTHER IN A NATURAL CONFIGURATION
5. PLACE ALL BOULDERS SUCH THAT 1/4 OF THE TOTAL MASS OF EACH BOULDER IS BELOW FINISH GRADE,TYP.
6. TOPSOIL PER SPEC
7. PLACE BOULDERS ON UNDISTURBED SOIL OR COMPACT FILL SOILS TO 95% DENSITY, TYP.

5 BOULDER PLACEMENT DETAIL
NTS



1. TURF GRASS - SEED OR SOD
2. FINISHED GRADE FOR LAWN AREAS: 1" BELOW TOP OF HARDSCAPE FOR SEED; 1 -1/2" FOR SOD
3. 4" DEPTH TOPSOIL - SEE PLANTING SPECIFICATIONS
4. COMPACTED OR UNDISTURBED SUBGRADE
5. HARDSCAPE

6 TURF GRASS; SOD/SEED
NTS

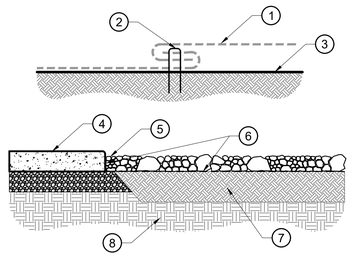


1. 6" x 6" CONCRETE MOW STRIP (MIN. 2000 PSI AT 28 DAYS)
2. 1/2" RADIUS TROWLED EDGES (TYP.)
3. FINISH GRADE FOR LAWN AREAS: 1" BELOW TOP OF CONCRETE FOR SEED; 1-1/2" FOR SOD
4. #3 REBAR CONT. (LAP 12" AT SPLICES)
5. UNDISTURBED OR COMPACTED SUBGRADE AT 90% RELATIVE DENSITY
6. 3" LAYER MULCH IN PLANTER BEDS
7. FINISH GRADE AT 2" BELOW TOP OF CONCRETE FOR PLANTING BED AREAS

NOTE: PROVIDE CONSTRUCTION OR CONTROL JOINTS AT 5' O.C. MAX. AND EXPANSION JOINTS WHERE MOWSTRIP ABUTS ANY MASONRY TYPE IMPROVEMENT.

7 6" CONCRETE MOWSTRIP
NTS

WEED FABRIC STAPLE NOTE:
INSTALL 6" SOIL STAPLE IN WEED BARRIER FABRIC AT 5' O.C. TRIANGULAR SPACING. INSTALL 6" SOIL STAPLES ALONG ALL EDGES 3' O.C. INSTALL 6" SOIL STAPLE AT 12" O.C. ALONG ALL WEED BARRIER FABRIC SEAMS. OVERLAP FABRIC MIN. OF 6" AT ALL SEAMS AS SHOWN.



1. WEED BARRIER FABRIC, FOLD FABRIC OVER AS SHOWN TO HELP KEEP FROM PULLING APART
2. SOIL STAPLES PLACED 12" O.C. ALONG SEAM
3. FINISH GRADE OF SOIL
4. FINISHED GRADE OF CURB OR SIDEWALK PER PLAN.
5. FINISHED GRADE OF ROCK MULCH TO BE 1" LOWER THAN ADJACENT HARDSCAPE SURFACE, TYP. ROCK MULCH TYPE, SIZE AND DEPTH PER PLANS
6. WEED BARRIER FABRIC TO ROLL UP EDGE OF ADJACENT HARDSCAPE BUT KEPT JUST BELOW TOP OF ROCK
7. AMENDED TOPSOIL, DESIGN MIX AND DEPTH PER PLANS OR SPEC.
8. NATIVE SOIL PREPPED PER GEOTECH OR PER PLANS OR SPEC.

8 ROCK MULCH AND FABRIC DETAIL
NTS

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
REGISTERED LANDSCAPE ARCHITECT
09/17/2009

NAYLOR WENTWORTH LUND ARCHITECTS

723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.5959

J-U-B ENGINEERS, INC.

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
PLANTING DETAILS

Sheet Number
LP-500

Bid Package 3

IRRIGATION NOTES

1. The Contractor shall be familiar with the irrigation technical specifications for this project. Failure to do so shall not relieve him of meeting all of the requirements contained therein.

2. The irrigation plan is diagrammatic in nature, and some drafting liberties have been taken to maintain the graphic clarity of the drawings. All irrigation equipment shall be located in planting areas only, unless noted otherwise. The Contractor shall install piping to minimize changes in direction, avoid placement under large trees or large shrubs, and avoid placement under hardscape features. Refer to the irrigation equipment schedule, installation details, and specifications for equipment and its proper installation.

3. The Contractor shall use only the equipment and products specified in the construction drawings. No substitution of materials will be allowed on the irrigation system without prior authorization from the Landscape Architect and the Owner.

4. The Contractor shall visit and inspect the project site. He shall take into consideration known and reasonably inferable conditions affecting the proposed work. Failure to visit the site shall not relieve the Contractor of furnishing materials and performing the work required. Any discrepancies between existing site conditions and those indicated on the plans shall be called to the attention of the Landscape Architect prior to continuance of the project.

5. **The irrigation design is based on 64 PSI at the point of connection (as indicated in The Water Supply Analysis provided by NWL Architects and Murray School District.)** If the water point of connection is located other than as shown on the drawings, or if the water pressure, or connection size is different than indicated on the plans, or appears to be unusually high or low, the Contractor shall immediately notify the Landscape Architect and owner prior to proceeding with any irrigation work.

6. Design spacing for each sprinkler head is typically spaced at 90% of the manufacturers published throw based on design pressure to accommodate head to head coverage. Contractor shall lay out the heads as shown in the plans. While doing so, Contractor shall note that the spacing matches both the plans and the intended design spacing as published by the manufacturer. If any discrepancies are discovered, the Contractor shall immediately contact the Landscape Architect to resolve the spacing prior to proceeding with the installation.

7. The Contractor shall keep the premises clean and free of excess equipment, materials, and rubbish incidental to work of this project. Work areas shall be swept clean and trash and debris picked up daily. Open trenches or hazards shall be protected with yellow caution tape. The Contractor is responsible for removal and legal disposal (offsite) of trash and debris generated by his work on this project.

8. Pipe fittings shall conform to the following standards unless otherwise noted:
   A. All main line fittings four (4) inches or larger shall be either M.J. or deep bell push-on, gasketed, and constructed of ductile iron material.
   B. All main line fittings three (3) inches and smaller shall be solvent weld Schedule 80 PVC.
   C. M.J. tees, Schedule 80 tees with SxT Schedule 80 bushings, or Harco ductile iron service tees are approved on PVC main lines for automatic control valve installation. M.J. fittings shall be greased and wrapped.
   D. All lateral line fittings shall be solvent weld Schedule 40 PVC.
   E. All risers and exposed fittings shall be solvent weld Schedule 80 PVC, including conversions to metal pipe and fixtures, unless otherwise noted on the plans.
   F. All main line fittings four (4) inches and larger, whether ductile iron or solvent weld, shall be thrust blocked.

8. Backflow prevention devices shall be a reduced pressure principle backflow preventer. Installation shall comply with local, state, and national codes and regulations, and per manufacturer's recommendations (whichever is most restrictive). Included in the installation shall be the specified enclosure.

9. Irrigation wire shall conform to the following:
   A. All irrigation control wire shall bear approval as U.L. listed type of underground feeder (direct burial) and each conductor shall be of electrical conductivity grade solid copper in accordance with ASTM 30.
   B. No aluminum wire shall be used on this project.
   C. Wire size shall be #14 gauge minimum.
   D. Two spare wires shall be run from each controller to the farthest valve under its control in all directions and any valve which is on a dead-end line.
   E. All wire crossing water, attached to bridges, going under paving, or where conditions require protection, shall be housed in conduit or sleeves. All out-of-ground conduits shall be rigid metal. All buried conduit may be PVC.
   F. All splices shall be water-tight. All connections made inside the box to connect wires to the valve shall be made using a 3M DBR/Y dry-splice connector or pre-approved equal. Each connector shall be completely sealed and water-proofed.
   G. All other splices in control wire shall be housed in a separate valve box.
   H. The pigment or color of the wires shall be integrated into the covering, rather than painted on. All common or ground wires shall be white in color. Where more than one controller is required, a different colored hot wire shall be used for each controller. A separate color shall be used for all spare wires.

10. Run a single fourteen (14) gauge wire along the top of the main line to be used for tracking the location of the main line. The color of the tracing wire shall be different than any other wire color used.

11. All pressure main lines shall have between twenty-four (24) and thirty (30) inches of cover, while all lateral lines shall have between twelve (12) and fourteen (14) inches of cover. Trench bedding and backfill material shall consist of existing site soil free of rocks larger than one (1) inch in diameter and any other debris. Wasted pipe and other excess project materials or rubbish (tape, wire, trash, wrappers, boxes, plastic or glass bottles, etc.) shall not be backfilled into the trenches. All trenches shall be backfilled, and then watered sufficiently to insure no settling of the surface. In the event of any backfill settlement prior to the end of the guarantee period, the Contractor shall perform all required repairs at his own expense.

12. Manual drain valves shall be required at all low points in the main lines. All trenches shall be sloped so the pipes will gravity-drain back to the main connection point or to the nearest manual drain.

13. Check valves shall be used where indicated and where necessary to prevent water flow from lower elevation heads when the irrigation system is turned off.

14. All control valves shall be located within shrub areas where possible and installed per the details shown on the plans. Each control valve shall have its own separate shut-off valve, and only one (1) control valve and gate valve per valve box. No valve manifolds shall be allowed. The bottom of the remote control valve shall be a minimum of four (4) inches above the gravel. Isolation gate valves on the main line shall be located in separate valve boxes.

15. All main lines and lateral lines shall be sleeved where they pass under any paved areas. The size of the sleeve shall be twice the size of the pipe being sleeved, unless otherwise specified on the drawings.

16. The automatic controller shall be of the type and manufacturer specified, and located as shown on the plans. The Contractor shall be responsible for providing 120 volt electrical service to the controller. Coordinate this work with other trades on this project.

17. Prior to backfilling any trenches or irrigation lines:
   A. All main lines shall be capped and pressure tested at 120 psi for a period of 4 hours. Any leaks found shall be corrected by removing the leaking pipe or fittings and installing new material in its place. Repeat the pressure test to insure the absence of leaks.
   B. The Contractor shall not allow nor cause any of his work to be covered until it has been inspected, tested, and approved by the Landscape Architect.
   C. Where a main line has been allowed to sit in the trench uncovered for any length of time prior to testing, the line may be shaded with a thin layer of soil to minimize weather related expansion or contraction of the pipe.

18. The Contractor shall adjust all irrigation heads to provide a uniform coverage and to keep spray off of buildings, walkways, and paved surfaces.

19. When the sprinkler system has been completed, the Contractor shall, in the presence of the Landscape Architect or an Owner's representative, conduct a coverage test of the water afforded to the planting areas to insure that it is consistent and uniform. The Contractor shall provide, at his own expense, all materials and labor necessary to correct any deficiencies or inadequacies discovered during the coverage test.

20. The Contractor shall keep on site a current and accurate as-built record of his work. It shall include exact dimensioned locations, grades, elevations, and the size of all exterior and interior underground piping, valves, and drains. Dimensions shall indicate distances from columns, buildings, curbs, and similar permanent features on the site. This information shall be documented as the work progresses and permanently recorded in a digital format (PDF or AutoCAD) which shall be given to the Owner and Landscape Architect before the project is accepted.

21. The irrigation contractor shall maintain the system for the duration of the contract period, including the maintenance period.

22. Upon final acceptance of the sprinkler irrigation system as being operational and properly installed, the Contractor shall guarantee the workmanship, materials, fixtures, and equipment to be free from defects for a period of one (1) year after that date.

23. Inline Drippers
   A. Inline drip tubing shall be spaced approximately equal to the inline emitter spacing. Inline drip tubing spacing may be adjusted to be slightly less than the emitter spacing in order to achieve uniform spacing. For slope applications, place drip tubing laterals parallel to the slope contour. When slopes exceed thirty (30) percent, increase the recommended lateral spacing by twenty five (25) percent on the lower one third (1/3) of the slope.
   B. Weed barrier fabric shall be installed directly on top of finished grade soil, with Inline dripper tubing on top of fabric. Inline dripper tubing shall be secured with soil staples and covered with three (3) inches of specified mulch. Supply and exhaust headers shall be installed at normal lateral line depths.
   C. All drip tubing shall be held in place by soil staples and shall conform to the following:
   I. Sandy Soil - One staple per every three (3) feet and two (2) staples on each change of direction (tee, elbow, or cross)
   II. Loam Soil - One staple every four (4) feet and two (2) staples on each change of direction (tee, elbow, or cross)
   III. Clay Soil - One staple every five (5) feet and two (2) staples on each change of direction (tee, elbow, or cross)
   D. Installation of inline drip circuits shall generally conform to the following steps:
   I. Assemble and install ball valve, filter, remote control valve, and inline pressure regulator assembly in accordance with installation details.
   II. Assemble and install supply header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
   III. Install lateral drip lines in accordance with details and relevant specifications and manufacturer's recommendations. Tape or plug all open ends while installing to prevent debris contamination.
   IV. Assemble and install exhaust header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
   V. Install air/vacuum relief valve(s) at the zone's highest point(s) in accordance with installation details.
   VI. Thoroughly flush supply header(s) and connect drip lateral lines while flushing.
   VII. Thoroughly flush drip lateral lines and connect to exhaust header(s) and any interconnecting lateral lines while flushing.
   VIII. Thoroughly flush exhaust header(s) and install line flushing valves in accordance with details.

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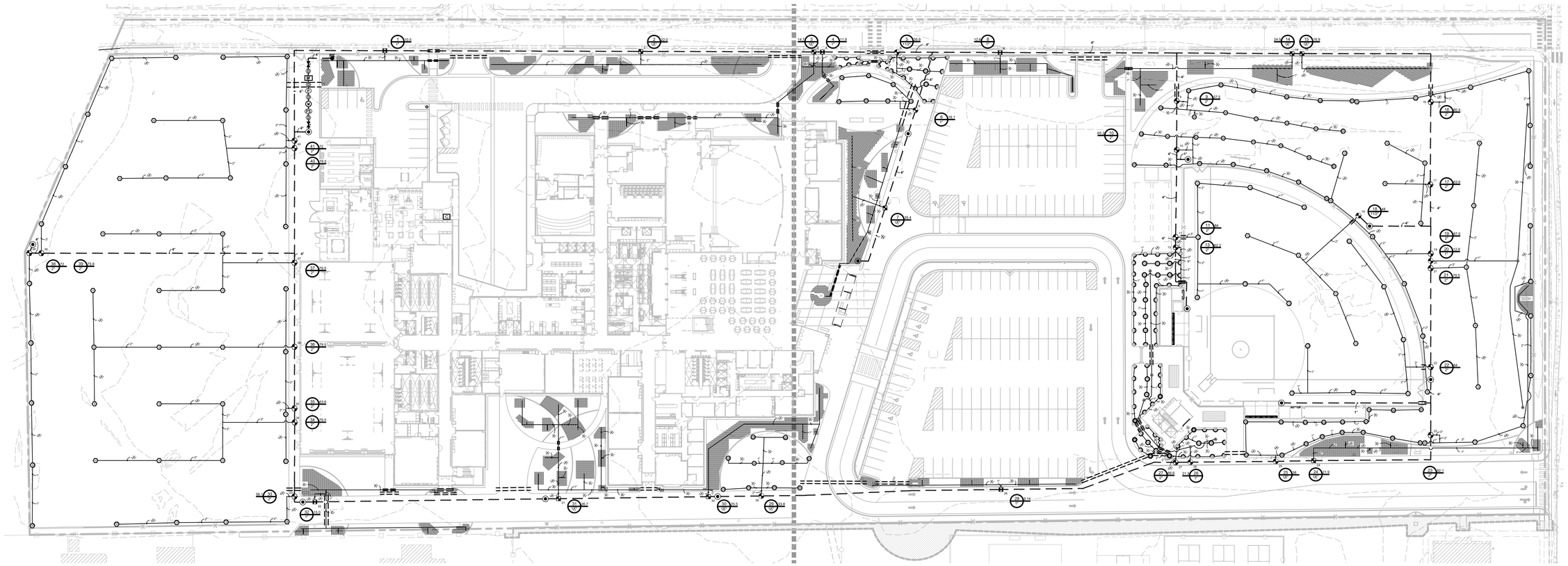
Sheet Title

IRRIGATION NOTES

Sheet Number

LI-001

Bid Package 3



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
Q T H F	Rain Bird RD-04-S-P30-U U8 Series Turf Spray, 4in. Pop-Up, with 30 psi in-stem pressure regulation, and Seal-A-Matic check valve. 1/2in. NPT female threaded inlet.
Q T H F	Rain Bird RD-04-S-P30-U U10 Series Turf Spray, 4in. Pop-Up, with 30 psi in-stem pressure regulation, and Seal-A-Matic check valve. 1/2in. NPT female threaded inlet.
Q T H F	Rain Bird RD-04-S-P30-U U12 Series Turf Spray, 4in. Pop-Up, with 30 psi in-stem pressure regulation, and Seal-A-Matic check valve. 1/2in. NPT female threaded inlet.
Q T H F	Rain Bird RD-04-S-P30-U U15 Series Turf Spray, 4in. Pop-Up, with 30 psi in-stem pressure regulation, and Seal-A-Matic check valve. 1/2in. NPT female threaded inlet.
08HE-VAN 10HE-VAN 12HE-VAN 15HE-VAN	Rain Bird RD-04-S-P30-U HE-VAN Series Turf Spray, 4in. Pop-Up, with 30 psi in-stem pressure regulation, and Seal-A-Matic check valve. 1/2in. NPT female threaded inlet.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
25	Rain Bird 5004-PL-PC-SAM-R-MPR 25 Turf Rotor, 4in. Pop-Up, Plastic Riser, with Flow Shut-Off Device. Matched Precipitation Rotor (MPR Nozzle), Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal-A-Matic Check Valve, and In-Stem Pressure Regulator.
30	Rain Bird 5004-PL-PC-SAM-R-MPR 30 Turf Rotor, 4in. Pop-Up, Plastic Riser, with Flow Shut-Off Device. Matched Precipitation Rotor (MPR Nozzle), Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal-A-Matic Check Valve, and In-Stem Pressure Regulator.
35	Rain Bird 5004-PL-PC-SAM-R-MPR 35 Turf Rotor, 4in. Pop-Up, Plastic Riser, with Flow Shut-Off Device. Matched Precipitation Rotor (MPR Nozzle), Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Seal-A-Matic Check Valve, and In-Stem Pressure Regulator.
08	Rain Bird 8005 08 Turf Rotor, 5.0in. Pop-Up, Plastic Riser, Standard Nozzle. With Seal-A-Matic Check Valve, Adjustable 50-330 arc, and 360 Non-Reversing Full-Circle. 1in. (26/34) NPT Female Threaded Inlet. Extended Radius is Ideal for Large Turf Applications.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
12	Rain Bird 8005 12 Turf Rotor, 5.0in. Pop-Up, Plastic Riser, Standard Nozzle. With Seal-A-Matic Check Valve, Adjustable 50-330 arc, and 360 Non-Reversing Full-Circle. 1in. (26/34) NPT Female Threaded Inlet. Extended Radius is Ideal for Large Turf Applications.
16	Rain Bird 8005 16 Turf Rotor, 5.0in. Pop-Up, Plastic Riser, Standard Nozzle. With Seal-A-Matic Check Valve, Adjustable 50-330 arc, and 360 Non-Reversing Full-Circle. 1in. (26/34) NPT Female Threaded Inlet. Extended Radius is Ideal for Large Turf Applications.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Rain Bird XCZ-100-PRB-COM Wide Flow Drip Control Kit for Commercial Applications. 1in Ball Valve with 1in. PESB Valve and 1in. Pressure Regulating 40psi Quick-Check Basket Filter. 5 GPM-20 GPM.
	Rain Bird XCZ-150-LCDR High Flow Control Zone Kit, for Large Commercial Drip Zones. 1-1/2in. PESB-R Scrubber Globe Valve with high-capacity filter and Pressure Regulating system (PRS) fixed at 40psi. Flow range: 20 - 62 GPM.
	Tree Supplemental Water - Spray Irrigation system used for watering trees in grass for establishment and drought conditions. See irrigation detail sheets. Assembly includes all fittings, materials, and parts shown in the detail. Install (3) Rainbird RD1804 SAM PRS with 12' quarter nozzle and (1) 1300 AF Bubbler per detail.
	Area to Receive Dripline Rain Bird XFS-06-12 XFS Sub-Surface Pressure Compensating Dripline w/Copper Shield Technology. 0.6 GPH emitters at 12" O.C. Laterals spaced at 12" apart, with emitters offset for triangular pattern. UV Resistant. Install with XF insert fittings.
	Rain Bird PEB 1in., 1-1/2in., 2in., 3in., 3in. Plastic Industrial Remote Control Valve. Low Flow Operating Capability, Globe Configuration. Do not install PRS-D on 8005 rotor zones.
	Rain Bird PEB-PRS-D 1in., 1-1/2in., 2in., 3in. Plastic Industrial Remote Control Valve. Low Flow Operating Capability, Globe Configuratior With Pressure Regulator Module.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Rain Bird 33-DRC 3/4in. Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, Double Track Key Lug, and 2-Piece Body.
	Isolation Valve Leemco LMV gate valve with 2" square operating nut. Line Size.
M	Netafim LV6IMELNO4IF-HP 4" Cast Iron Electric Master Valve, with Globe Flanged Connection. Normally Open. 4"
D	Manual Drain Valve Assembly Apollo Bronze ball valve with weld top 3/4" (place as needed in low points on main line)
BF	Zurn 375AST 2-1/2" Reduced Pressure Backflow Preventer.
C	Rain Bird LXME2 PRO 48 Station, Traditionally-Wired , PRO Smart, Commercial Controller. Coordinate exact location with Architect and Electrical plans. See electrical plans for power and ethernet connections. Controller Commissioning to be provided by Sprinkler Supply Company - contact Brady Pitcher, 801.566.8102, bpitcher@sprinklersupplyco.com.
FS	Flomec QS200-40 (QS200 in a 4" PVC Tee.) Install manufacturer recommended straight pipe lengths before and after flow sensor. Install tee at angle per manufacturer recommendations.
P	Booster Pump -Rainbird CLP10KAC8, Quote #CLP005345 Install on concrete slab per details. Hard wire connect to Rainbird Controller. Commissioning to be provided by Sprinkler Supply Company. Contact Brady Pitcher, 801.566.8102, bpitcher@sprinklersupplyco.com
POC	Point of Connection 4" See civil plans
	Irrigation Lateral Line: PVC Schedule 40
	Irrigation Mainline: PVC Class 200 SDR 21 - 4"
	Pipe Sleeve: PVC Class 200 Lateral Line - Minimum 4" or twice the size of line inside

Valve Callout
#• Valve Number
#• Valve Flow
#" • Valve Size

IRRIGATION PATCH & REPAIR

SYMBOL	
	Patch irrigation system as required using specified equipment below. Contractor shall field verify existing equipment types (rotors, rotary, spray) installed adjacent to the patch and repair areas, and then install new equipment to match the existing type. Layout of all new irrigation shall meet the following head-to-head coverage standards: • Spray heads: 90% of manufacturers listed radius • Rotor heads: 85% of manufacturers listed radius
ROTOR HEADS	MANUFACTURER/MODEL Rain Bird 6504 Falcon PC/FC Hunter I-20-06
ROTARY HEADS	MANUFACTURER/MODEL Rain Bird R-VAN Rotary Nozzles on Rain Bird 1806 Spray Body
SPRAY HEADS	MANUFACTURER/MODEL Rain Bird 1806 w/ U-Series Nozzles
VALVES	MANUFACTURER/MODEL Rain Bird 100PEB/200PEB

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SCALE IN FEET

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STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LANDSCAPE ARCHITECT

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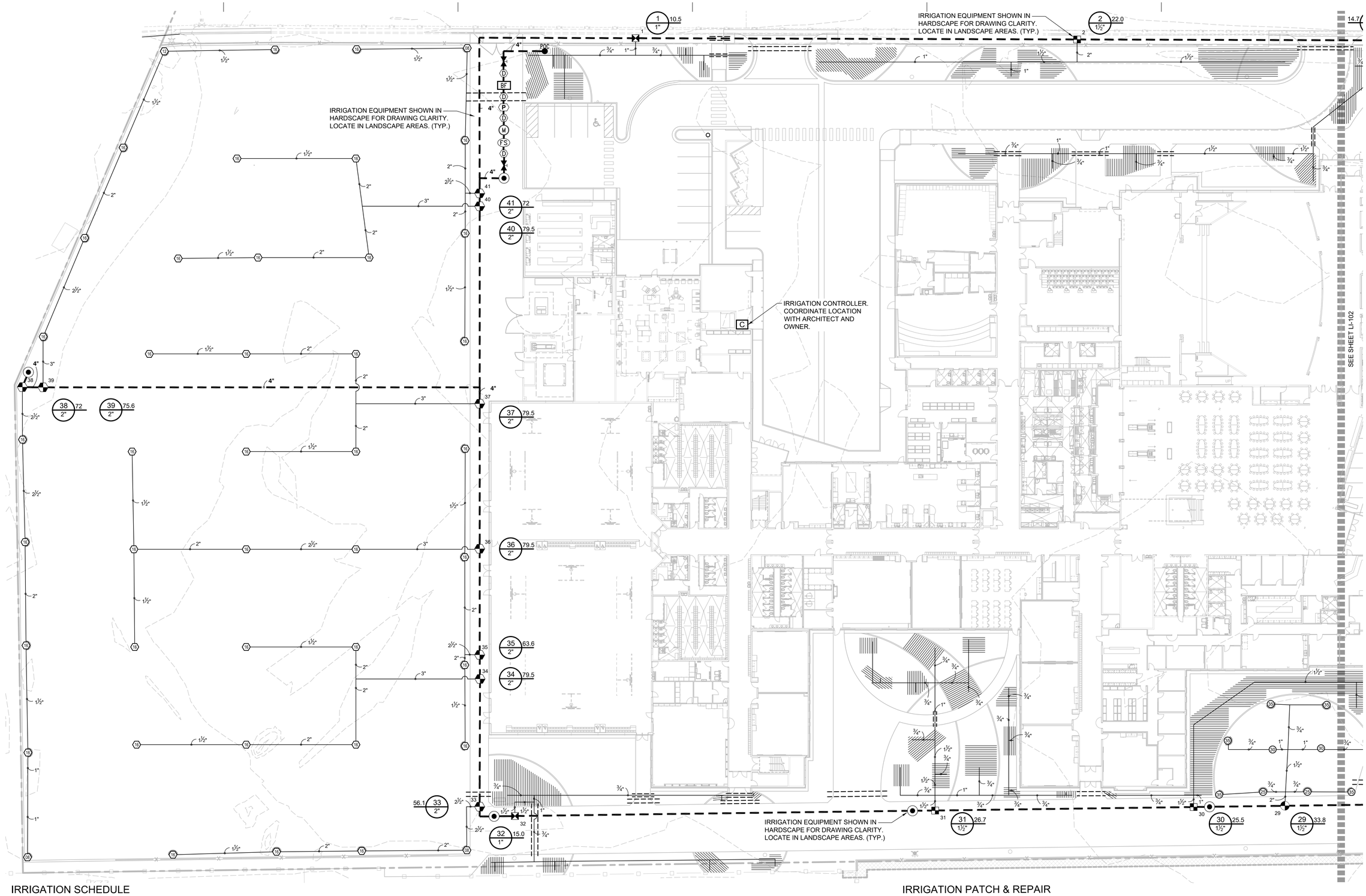
Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
OVERALL IRRIGATION PLAN

Sheet Number
LI-100

Bid Package 3



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
8 Q T H P	Rain Bird RD-04-S-P30-U U8 Series
10 Q T H P	Rain Bird RD-04-S-P30-U U10 Series
12 Q T H P H2	Rain Bird RD-04-S-P30-U U12 Series
15 Q T H P H2	Rain Bird RD-04-S-P30-U U15 Series
08HE-VAN 10HE-VAN	12HE-VAN 15HE-VAN — Rain Bird RD-04-S-P30-U HE-VAN Series

SYMBOL	MANUFACTURER/MODEL
25	Rain Bird 5004-PL-PC-SAM-R-MPR 25
30	Rain Bird 5004-PL-PC-SAM-R-MPR 30

SYMBOL	MANUFACTURER/MODEL
35	Rain Bird 5004-PL-PC-SAM-R-MPR 35
08	Rain Bird 8005 08
12	Rain Bird 8005 12
16	Rain Bird 8005 16
	Rain Bird XCZ-100-PRB-COM
	Rain Bird XCZ-150-LCDR
	Tree Supplemental Water - Spray
	Area to Receive Dripline — Rain Bird XFS-06-12
	Rain Bird PEB

SYMBOL	MANUFACTURER/MODEL
	Rain Bird PEB-PRS-D
	Rain Bird 33-DRC
	Isolation Valve
M	Netafim LV6IMELNO4IF-HP 4"
D	Manual Drain Valve Assembly
BF	Zurn 375AST 2-1/2"
C	Rain Bird LXME2 PRO
FS	Flomec QS200-40 (QS200 in a 4" PVC Tee.)
P	Booster Pump -Rainbird CLP10KAC8, Quote #CLP005345
POC	Point of Connection 4"

SYMBOL	MANUFACTURER/MODEL
	Irrigation Lateral Line: PVC Schedule 40
	Irrigation Mainline: PVC Class 200 SDR 21 - 4"
	Pipe Sleeve: PVC Class 200

Valve Callout: # (Valve Number) • # (Valve Flow) • #" (Valve Size)

IRRIGATION PATCH & REPAIR

SYMBOL

Patch irrigation system as required using specified equipment below. Contractor shall field verify existing equipment types (rotors, rotary, spray) installed adjacent to the patch and repair areas, and then install new equipment to match the existing type. Layout of all new irrigation shall meet the following head-to-head coverage standards:

- Spray heads: 90% of manufacturers listed radius
- Rotor heads: 85% of manufacturers listed radius

	MANUFACTURER/MODEL
ROTOR HEADS	Rain Bird 6504 Falcon PC/FC Hunter I-20-06
ROTARY HEADS	Rain Bird R-VAN Rotary Nozzles on Rain Bird 1806 Spray Body
SPRAY HEADS	Rain Bird 1806 w/ U-Series Nozzles
VALVES	Rain Bird 100PEB/200PEB

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SCALE IN FEET

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LICENSED LANDSCAPE ARCHITECT
09/03/2009

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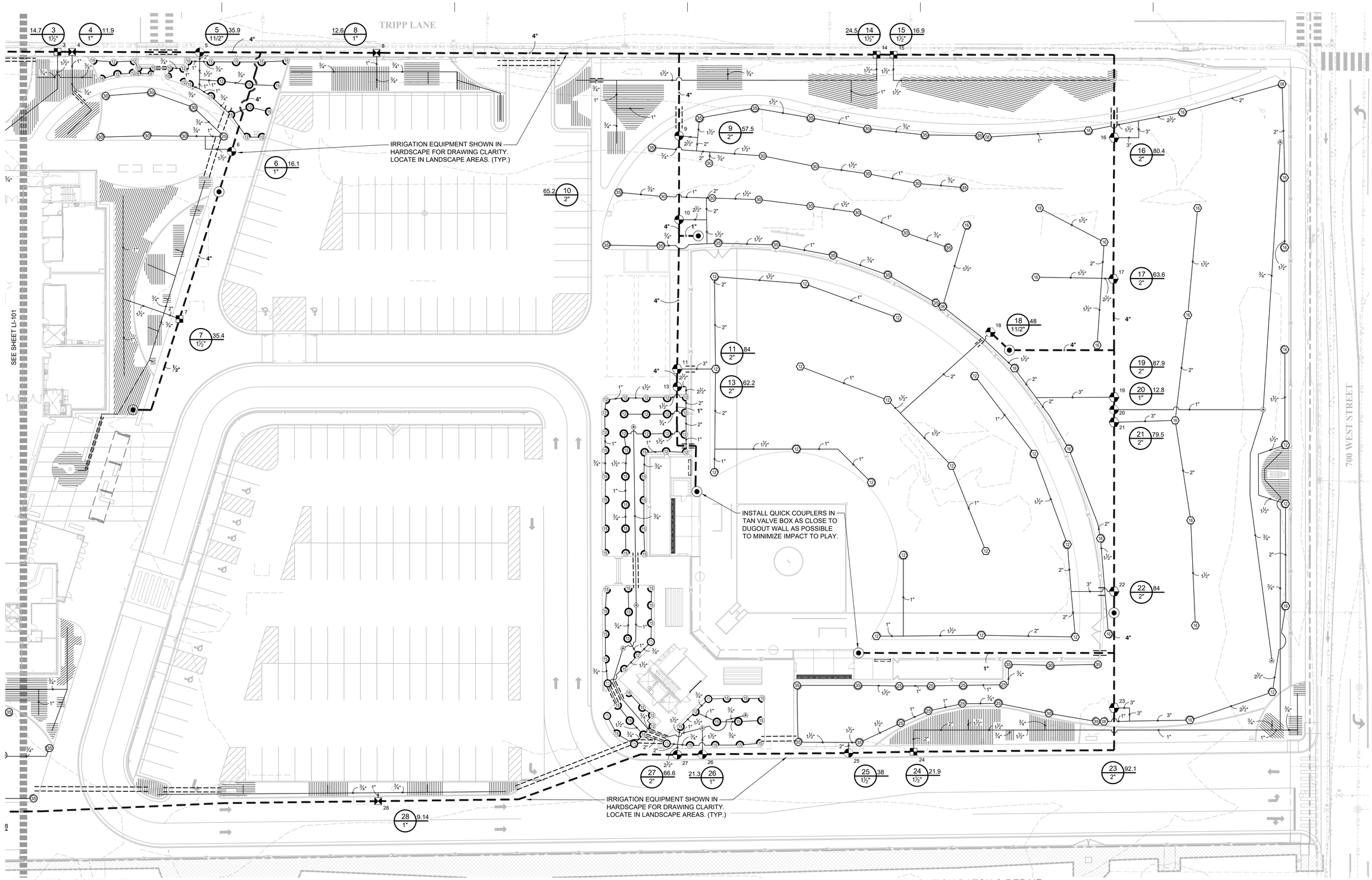
Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
IRRIGATION PLAN

Sheet Number
LI-101

Bid Package 3



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
Q T H F	Rain Bird RD-04-S-P30-U U8 Series
Q T H F	Rain Bird RD-04-S-P30-U U10 Series
Q T H F	Rain Bird RD-04-S-P30-U U12 Series
Q T H F	Rain Bird RD-04-S-P30-U U15 Series
08HE-VAN 10HE-VAN 12HE-VAN 15HE-VAN	Rain Bird RD-04-S-P30-U HE-VAN Series

SYMBOL	MANUFACTURER/MODEL
25	Rain Bird 5004-PL-PC-SAM-R-MPR 25
30	Rain Bird 5004-PL-PC-SAM-R-MPR 30

SYMBOL	MANUFACTURER/MODEL
35	Rain Bird 5004-PL-PC-SAM-R-MPR 35
08	Rain Bird 8005 08
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16	Rain Bird 8005 16
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	Rain Bird XCZ-150-LCDR
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	Area to Receive Dripline
	Rain Bird XFS-06-12
	Rain Bird PEB

SYMBOL	MANUFACTURER/MODEL
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	Rain Bird 33-DRC
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P	Booster Pump -Rainbird CLP10KAC8, Quote #CLP005345
POC	Point of Connection 4"

SYMBOL	MANUFACTURER/MODEL
	Irrigation Lateral Line: PVC Schedule 40
	Irrigation Mainline: PVC Class 200 SDR 21 - 4"
	Pipe Sleeve: PVC Class 200

Valve Callout
#" Valve Number
Valve Flow
#" Valve Size

IRRIGATION PATCH & REPAIR

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- Rotor heads: 85% of manufacturers listed radius

ROTOR HEADS
MANUFACTURER/MODEL
Rain Bird 6504 Falcon PC/FC
Hunter I-20-06

ROTARY HEADS
MANUFACTURER/MODEL
Rain Bird R-VAN Rotary Nozzles on Rain Bird 1806 Spray Body

SPRAY HEADS
MANUFACTURER/MODEL
Rain Bird 1806 w/ U-Series Nozzles

VALVES
MANUFACTURER/MODEL
Rain Bird 100PEB/200PEB

N

0 20 40
SCALE IN FEET

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06/27/2025

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No.	Description	Date
1	-	-

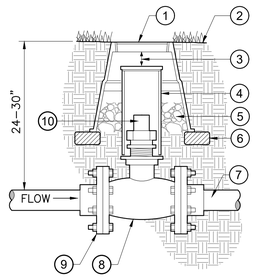
Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
IRRIGATION PLAN

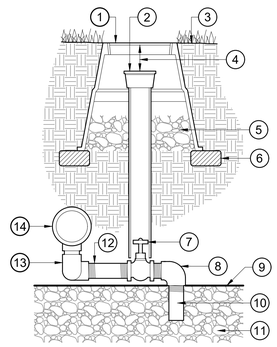
Sheet Number
LI-102

Bid Package 3



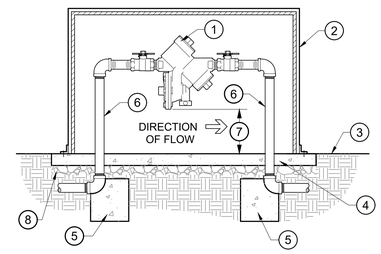
1. 10" ROUND PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL, MARKED "G.V." IN 2" WHITE LETTERS)
2. FINISHED GRADE
3. 3" MIN. CLEARANCE
4. 4" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT PIPE), CAPPED BY GREEN CAM LOCK SNUG CAP
5. 3"-4" DEPTH CLEAN PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. PVC MAIN LINE
8. FLANGED GATE VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
9. PVC FLANGE ADAPTOR (TYP.)
10. 2" SQUARE OPERATING NUT

1 ISOLATION GATE VALVE (FLANGED; 3" AND LARGER)
NTS



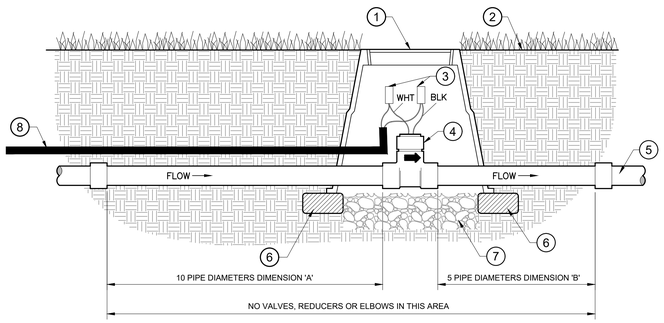
1. 10" ROUND GREEN PLASTIC VALVE BOX WITH BOLT LOCK (CARSON OR APPROVED EQUAL)
2. 2" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT), CAPPED BY YELLOW CAM LOCK SNUG CAP
3. FINISHED GRADE
4. 3" MIN. 6" MAX. CLEARANCE
5. 4" MIN. PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. 3/4" VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
8. 3/4" 90 DEGREE STREET ELL
9. FILTER FABRIC COVERING SUMP
10. 3/4" X 6" PVC SCHEDULE 80 TOE NIPPLE
11. 3/4" GRAVEL SUMP - 6 C.F. MIN. SIZE
12. 3/4" X 12" PVC SCHEDULE 80 NIPPLE
13. (2) FIPT X FIPT 90 DEGREE ELL, (2) 3/4" X CLOSE PVC NIPPLE
14. PVC MAIN LINE AND SERVICE TEE

2 MANUAL DRAIN VALVE ASSEMBLY
NTS



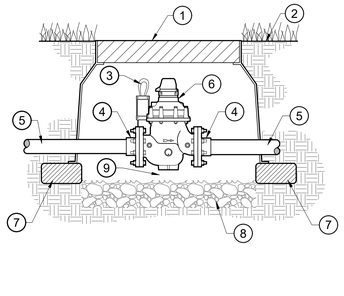
1. REDUCED PRESSURE BACKFLOW PREVENTION DEVICE WITH TWO (2) GATE VALVES - SEE IRRIGATION EQUIPMENT SCHEDULE FOR TYPE AND SIZE
2. BACKFLOW ENCLOSURE - SEE IRRIGATION EQUIPMENT SCHEDULE (INSTALL PER MANUFACTURER'S SPECIFICATIONS)
3. FINISHED GRADE
4. 4" THICK CONCRETE PAD (SIZE AS REQUIRED, EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE)
5. CONCRETE THRUST BLOCK
6. THREADED GALVANIZED SPOOL (TYP.) - SIZE AND LENGTH AS REQUIRED
7. 12" MIN. 30" MAX.
8. 4" MIN. DEPTH ROAD BASE COMPACTED TO 95% MDD

3 REDUCED PRESSURE BACKFLOW ASSEMBLY
NTS



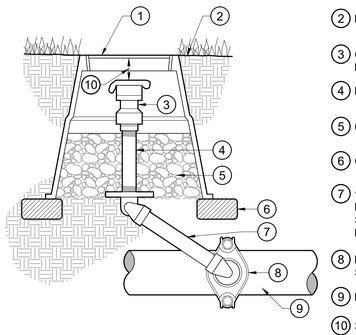
1. 10" ROUND GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL, MARKED "F.S." IN 2" WHITE LETTERS)
2. FINISHED GRADE
3. (2) 3 M DBR/Y WATER TIGHT WIRE CONNECTORS
4. FLOW SENSOR - SEE IRRIGATION EQUIPMENT SCHEDULE
5. PVC MAIN LINE
6. CONCRETE PAVERS ONLY
7. 4" MIN. PEA GRAVEL
8. SENSOR CABLE TO CONTROLLER

4 FLOW SENSOR ASSEMBLY
NTS



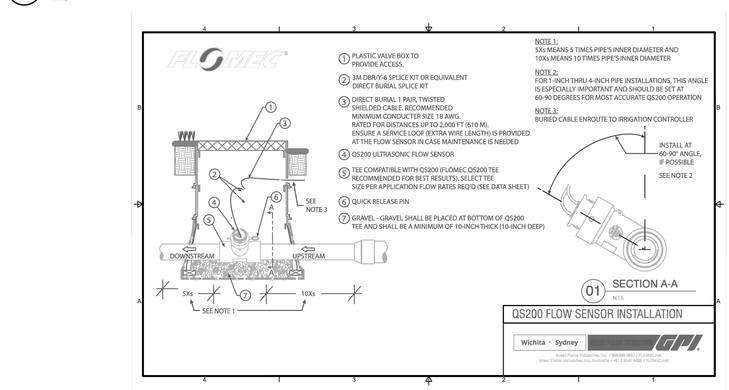
1. 18" GREEN JUMBO 1220 VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL). USE BOX EXTENSIONS AS NEEDED.
2. FINISHED GRADE
3. WIRES TO CONTROLLER INTERFACE - 18 GAUGE MIN. WIRE SIZE
4. FLANGE ADAPTER (TYP.)
5. PVC MAIN LINE
6. MASTER VALVE - SEE PLANS
7. CONCRETE PAVERS ONLY
8. 4" MIN. PEA GRAVEL
9. 2" MIN. CLEARANCE

5 MASTER VALVE ASSEMBLY
NTS



1. 10" ROUND GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
2. FLUSH WITH FINISHED GRADE
3. QUICK COUPLING VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
4. BRASS NIPPLE - LENGTH AS REQUIRED
5. 6" MIN. DEPTH CLEAN PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. 12" LASCO UNITIZED SWING JOINT W/ BRASS INSERT STABILIZER ELBOW OR 12" SPEARS SWING JOINT RISER ASSEMBLY W/ BRASS FEMALE THREAD 90 DEGREE ELL OUTLET
8. DUCTILE IRON SERVICE SADDLE W/ S.S. STRAP (SIDE MOUNTED, SIZE AS REQUIRED)
9. PVC MAIN LINE
10. 3" MIN. 6" MAX CLEARANCE

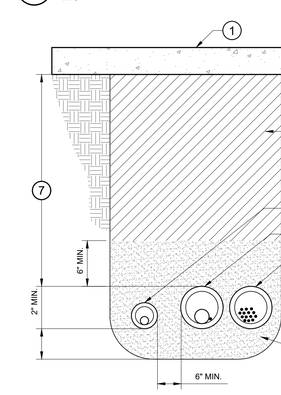
6 QUICK COUPLING VALVE ASSEMBLY (3" AND LARGER)
NTS



1. PLASTIC VALVE BOX TO PROVIDE ACCESS.
2. 3M DBR/Y-6 SPLICE KIT OR EQUIVALENT DIRECT BURIAL SPLICE KIT
3. DIRECT BURIAL 1 PAIR, TWISTED SHIELDED CABLE. RECOMMENDED MINIMUM CONDUCTOR SIZE 18 AWG. RATED FOR DISTANCES UP TO 2,000 FT (610 M). ENSURE A SERVICE LOOP (EXTRA WIRE LENGTH) IS PROVIDED AT THE FLOW SENSOR IN CASE MAINTENANCE IS NEEDED
4. QS200 ULTRASONIC FLOW SENSOR
5. TEE COMPATIBLE WITH QS200 (FLOMEC QS200 TEE RECOMMENDED FOR BEST RESULTS). SELECT TEE SIZE PER APPLICATION FLOW RATES REQ'D (SEE DATA SHEET)
6. QUICK RELEASE PIN
7. GRAVEL - GRAVEL SHALL BE PLACED AT BOTTOM OF QS200 TEE AND SHALL BE A MINIMUM OF 10-INCH THICK (10-INCH DEEP)

7 FLOMEC FLOW SENSOR INSTALLATION
NTS

MUN-RJHS-27

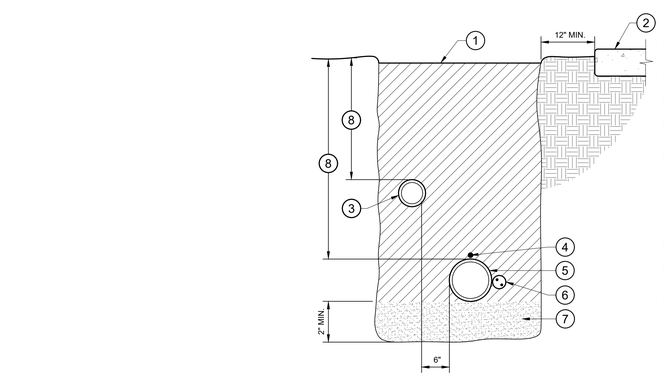


1. 10" ROUND PLASTIC VALVE BOX WITH BOLT LOCK (CARSON OR APPROVED EQUAL)
2. 2" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT), CAPPED BY YELLOW CAM LOCK SNUG CAP
3. FINISHED GRADE
4. 3" MIN. 6" MAX. CLEARANCE
5. 4" MIN. PEA GRAVEL
6. CONCRETE PAVERS ONLY
7. 3/4" VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
8. 3/4" 90 DEGREE STREET ELL
9. FILTER FABRIC COVERING SUMP
10. 3/4" X 6" PVC SCHEDULE 80 TOE NIPPLE
11. 3/4" GRAVEL SUMP - 6 C.F. MIN. SIZE
12. 3/4" X 12" PVC SCHEDULE 80 NIPPLE
13. (2) FIPT X FIPT 90 DEGREE ELL, (2) 3/4" X CLOSE PVC NIPPLE
14. PVC MAIN LINE AND SERVICE TEE

NOTES:
1) SLEEVES 4" AND SMALLER USE PVC SCHEDULE 40 PIPE.
2) SLEEVES LARGER THAN 4" USE PVC CLASS 200.
3) ALL SLEEVES SHALL BE TWO (2) TIMES LARGER THAN THE DIAMETER OF THE PIPE BEING SLEEVED, UNLESS NOTED OTHERWISE ON THE PLANS.
4) INSTALL SLEEVES AT A DEPTH SUFFICIENT TO AVOID CONFLICT WITH OTHER UTILITIES AND MAINS.

8 SLEEVE DETAIL
NTS

MUN-RJHS-19

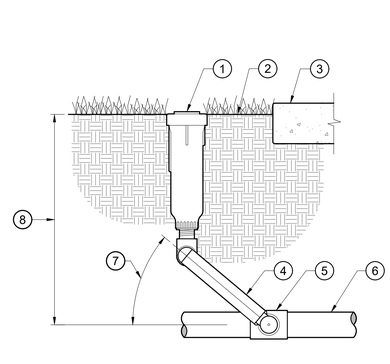


1. BACKFILL MATERIAL - SEE NOTES, COMPACT TO 90% MDD
2. ADJACENT HARD SURFACE
3. NON-PRESSURE LATERAL LINE
4. MAIN LINE LOCATOR WIRE; BURIED WITH ALL MAIN LINES
5. PVC MAIN LINE
6. DIRECT BURIAL, LOW VOLTAGE CONTROL WIRES; TO BE BURIED AND TAPED AT 10' INCREMENTS. LOCATE DIRECTLY ADJACENT TO MAIN LINE.
7. BEDDING MATERIAL - SEE NOTES
8. PIPE DEPTHS - SEE NOTES

NOTE: SEE SLEEVING DETAIL FOR TRENCHING IN PAVED AREAS.

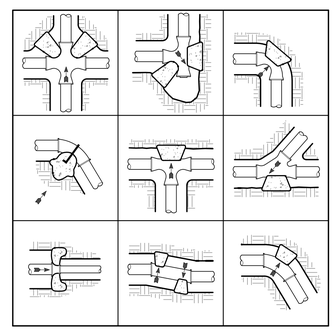
9 TRENCH DETAIL
NTS

MUN-RJHS-18



1. POP-UP ROTOR SPRINKLER - SEE IRRIGATION EQUIPMENT SCHEDULE
2. TOP OF SPRINKLER WILL BE FLUSH WITH FINISHED GRADE
3. NOTE: ALL SPRAY HEADS ADJACENT TO HARDSCAPE SHALL BE LOCATED 2" CLEAR OF ALL HARDSCAPE EDGES
4. LASCO UNITIZED SWING JOINT OR SPEARS SWING JOINT RISER ASSEMBLY; 12" MIN. LENGTH - SIZE AS REQUIRED
5. PVC SCHEDULE 40 S X S X T TEE OR (ELL)
6. PVC LATERAL LINE, SIZE AS NOTED ON PLAN
7. SWING JOINT ARM INSTALLED AT ANGLE BETWEEN 20 AND 45 DEG. OF LATERAL PIPE
8. DEPTH - SEE NOTES AND TRENCH DETAIL

10 POP-UP GEAR DRIVE ROTOR SPRINKLER
NTS



DETAIL NOTES:
1. FIGURE (100%) AT THRUST BLOCK INDICATES PERCENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA OF 2,000 P.S.F.
2. ARROW ( ) INDICATES THRUST DIRECTION.
3. CONCRETE FOR THRUST BLOCKS TO BE 2,000 P.S.I.
4. ALL MJ AND FLANGED FITTINGS TO BE WRAPPED WITH POLYETHYLENE WRAP PRIOR TO POURING THRUST BLOCK.
5. CONTROL WIRE SHALL BE KEPT OUT OF THE CONCRETE THRUST BLOCKS.
6. ALL MAIN LINE FITTINGS THREE (3) INCHES AND LARGER, WHETHER DUCTILE IRON OR SOLVENT WELD, SHALL BE THRUST BLOCKED.

SIDE THRUST PER 1 PSI				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22 ½° ELBOW
4	19	27	15	7
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61

TABLE NOTES:
1. IN USING THE TABLE BELOW, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUTOFF, ETC.). UNLESS DIRECTED OTHERWISE, ASSUME A WATER PRESSURE OF 200 PSI FOR YOUR CALCULATIONS.
2. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.F.

EXAMPLE:
FITTING: 8" 90° ELBOW
PRESSURE: 200 PSI
FROM TABLE: THRUST = 94 X 200 = 18,800 LB.
BEARING STRENGTH OF SOIL: 2,000 LB./SF.

18,000 / 2,000 = 9.4 SQ. FT. = AREA OF BEARING REQUIRED FOR THRUST BLOCK.

11 THRUST BLOCK DETAIL
NTS

Stamp
STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LANDSCAPE ARCHITECT
REGISTERED

NAYLOR WENTWORTH LUND ARCHITECTS
723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.5959

J-U-B ENGINEERS, INC.

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

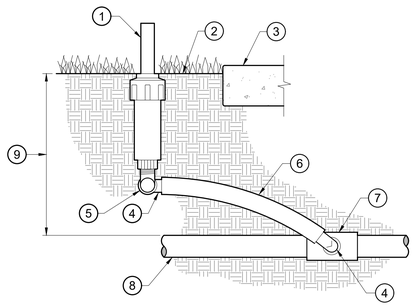
Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
IRRIGATION DETAILS

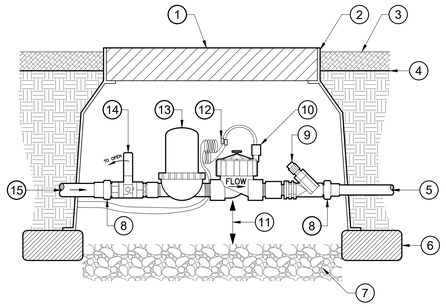
Sheet Number
LI-500

Bid Package 3



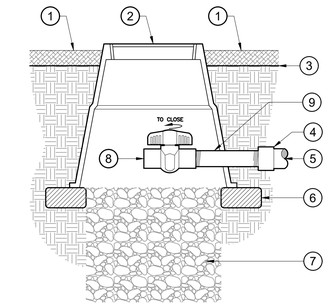
1. POP-UP SPRAY HEAD - SEE IRRIGATION EQUIPMENT SCHEDULE
2. TOP OF SPRINKLER WILL BE FLUSH WITH FINISHED GRADE
3. NOTE: ALL SPRAY HEADS ADJACENT TO HARDSCAPE SHALL BE LOCATED 2" CLEAR OF ALL HARDSCAPE EDGES
4. SWING PIPE ELL WITH SPIRAL BARB FITTING (TYP.)
5. MARLEX STREET ELL
6. FLEXIBLE SWING PIPE, 12" MIN., 36" MAX. LENGTH
7. PVC SCHEDULE 40 S X S X T TEE (OR ELL)
8. PVC LATERAL LINE, SIZE AS NOTED ON PLAN
9. DEPTH - SEE NOTES AND TRENCH DETAIL

1 POP-UP SPRAY/ROTARY SPRINKLER
NTS



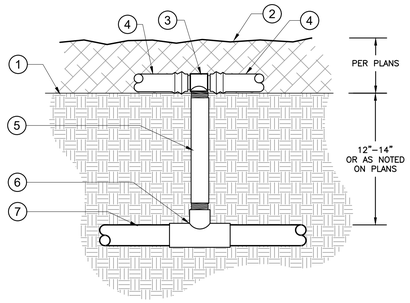
1. 18" JUMBO GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
2. 1" MAX. CLEARANCE
3. PLANTING BED MULCH - SEE PLANTING NOTES FOR DEPTH
4. FINISHED GRADE
5. PVC SUPPLY HEADER
6. CONCRETE PAVERS ONLY
7. 4" MIN. PEA GRAVEL
8. ACTION UNION - PART 18010-XX, PART 18011-XX, PART 18012
9. INLINE PRESSURE REGULATOR
10. ELECTRIC CONTROL VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
11. 2" MIN. CLEARANCE
12. (2) 3M DBR/Y WATER TIGHT WIRE CONNECTORS
13. INLINE 1" FILTER
14. APOLLO FULL PORT BRASS VALVE
15. FLOW FROM PVC MAIN LINE

2 DRIP ZONE REMOTE CONTROL VALVE ASSEMBLY
NTS



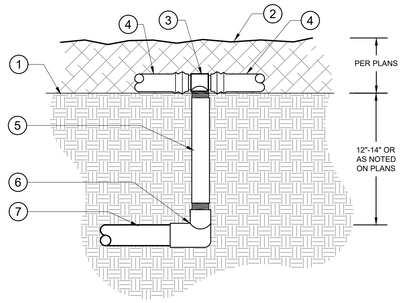
1. PLANTING BED MULCH - SEE PLANTING NOTES FOR DEPTH
2. 8" ROUND GREEN PLASTIC VALVE BOX (CARSON OR APPROVED EQUAL) FLUSH WITH MULCH GRADE
3. FINISHED GRADE
4. PVC REDUCER BUSHING (SP X 1/2") FIPT - SIZE AS REQUIRED
5. PVC EXHAUST HEADER
6. CONCRETE PAVERS ONLY
7. 1 C.F. WASHED PEA GRAVEL
8. ½" PLASTIC PVC BALL VALVE
9. ½" X 6" (SCH. 80 PVC) NIPPLE TBE

3 DRIP FLUSH VALVE (PLUMBED TO PVC EXHAUST HEADER)
NTS



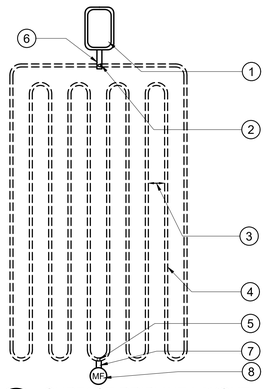
1. FINISHED GRADE
2. MULCH, SEE PLANTING PLAN FOR TYPE AND DEPTH
3. COMBINATION TEE INS X INS X 3/4" FPT MODEL: TL075FTEE
4. DRIPLINE (SEE PLANS FOR TYPE, BRAND, EMMITER SIZE AND SPACING)
5. 3/4" PVC MPT THREADDED TOE NIPPLE RISER
6. PVC TEE (SXSXT) SIZED AS NEEDED
7. PVC LATERAL LINE (SEE PLANS FOR SIZE AND TYPE)

4 DRIP TEE CONNECTION TO PVC RISER AND INSERT TEE
NTS



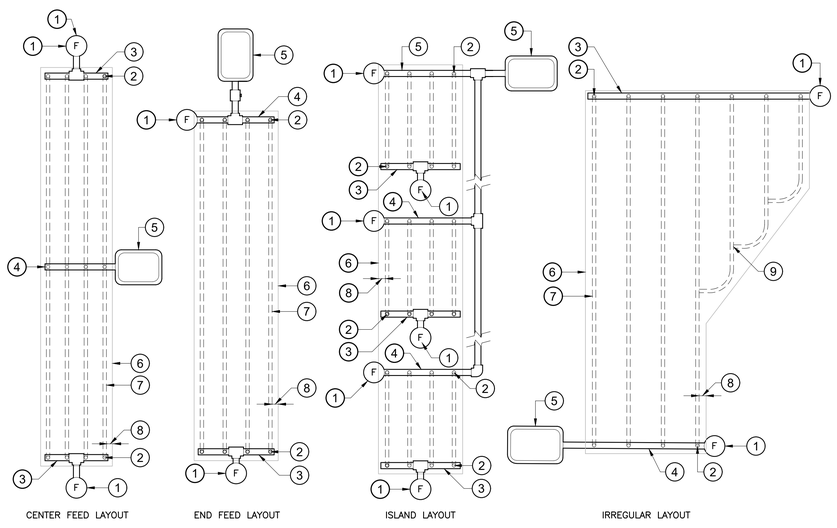
1. FINISHED GRADE
2. MULCH, SEE PLANTING PLAN FOR TYPE AND DEPTH
3. COMBINATION TEE INS X INS X 3/4" FPT MODEL: TL075FTEE
4. DRIPLINE (SEE PLANS FOR TYPE, BRAND, EMMITER SIZE AND SPACING)
5. 3/4" PVC MPT THREADDED TOE NIPPLE RISER
6. PVC TEE (SXSXT) SIZED AS NEEDED
7. PVC LATERAL LINE (SEE PLANS FOR SIZE AND TYPE)

5 DRIP ELL CONNECTION TO PVC RISER AND INSERT TEE
NTS



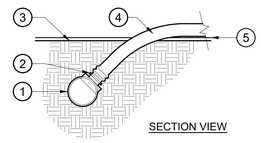
1. REMOTE CONTROL VALVE PER PLANS
2. COMBINATION TEE INS x INS x 3/4" FPT
3. ROW SPACING PER EQUIPMENT SCHEDULE
4. DRIPLINE (SEE PLANS FOR TYPE, BRAND, EMMITER SIZE AND SPACING)
5. INSERT TEE (TYP)
6. 3/4" PVC THREADED TOE NIPPLE RISER
7. BLANK TECHLINE CV TUBING
8. MANUAL FLUSH VALVE PLUMBED TO END OF DRIPLINE

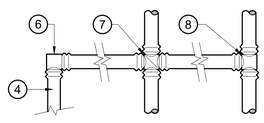
6 SURFACE DRIPLINE LAYOUT
NTS



1. MANUAL FLUSH VALVE PLUMBED TO PVC IN LOWEST POINT
2. PVC TO DRIPLINE CONNECTOR
3. 1 1/2" PVC EXHAUST HEADER
4. 1 1/2" PVC SUPPLY HEADER
5. REMOTE CONTROL VALVE ASSEMBLY
6. AREA PERIMETER
7. DRIPLINE TUBING LATERAL
8. PERIMETER DRIPLINE TUBING LATERALS 2" T0 4" FROM EDGE
9. DRIPLINE TEE

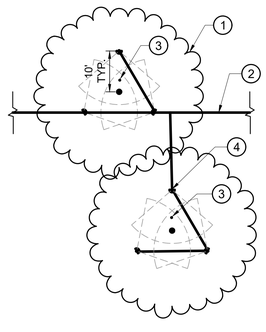
9 INLINE DRIP LAYOUTS (TYP.)
NTS





1. 1 1/2" PVC HEADER
2. PVC TO DRIPLINE CONNECTION
3. PLANTING BED FINISHED GRADE
4. DRIPLINE / BLANK TUBING
5. WEED BARRIER FABRIC
6. ELBOW
7. CROSS
8. TEE

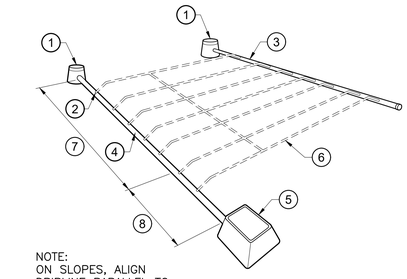
7 DRIPLINE CONNECTIONS
NTS



1. TREE - SEE PLANTING PLAN FOR LOCATION AND DETAILS
2. LATERAL IRRIGATION LINE - SEE IRRIGATION PLANS FOR LOCATION, SIZE, AND DETAILS
3. TREE WATERING ADJUSTABLE BUBBLER - PLACE WHERE ROOTBALL MEETS THE AMENDED BACKFILL
4. ADJUSTABLE SPRINKLER HEAD - SEE IRRIGATION PLANS FOR PRODUCT AND INSTALLATION DETAILS, INSTALL OR ADJUST ARC OF EACH NOZZLE TO SPRAY APPROXIMATELY 90 DEGREES AS SHOWN BY DASHED LINES, TYP.

NOTE: THE PURPOSE OF THE SEPARATE TREE IRRIGATION SYSTEM IS TO PROVIDE EXTRA WATER FOR DEEP WATERING DURING TREE ESTABLISHMENT, AND SUPPLEMENTAL WATER DURING A DECLARED DROUGHT EMERGENCY.

10 TREE SUPPLEMENTAL WATER - SPRAY
NTS



NOTE:
ON SLOPES, ALIGN DRIPLINE PARALLEL TO THE CONTOURS OF THE SLOPE.

1. MANUAL FLUSH VALVE PLUMBED TO PVC IN LOWEST POINT
2. PVC TO DRIPLINE CONNECTOR
3. 1 1/2" PVC EXHAUST HEADER (SEE NOTES FOR DEPTH)
4. 1 1/2" PVC SUPPLY HEADER (SEE NOTES FOR DEPTH)
5. REMOTE CONTROL VALVE ASSEMBLY
6. DRIPLINE TUBING LATERAL - INSTALL AT GRADE UNDER MULCH AND ON TOP OF FABRIC (IF FABRIC IS USED)
7. ON SLOPES, USE THE SPECIFIED DRIPLINE SPACING ON THE TOP 2/3 OF THE SLOPE
8. ON SLOPES, USE THE SPECIFIED DRIPLINE SPACING PLUS 25% ON THE BOTTOM 1/3 OF SLOPE

8 DRIPLINE CIRCUIT LAYOUT
NTS

Stamp

STATE OF UTAH
ANDREW J. NOORLANDER
10486769
REGISTERED LANDSCAPE ARCHITECT
09/17/2009

NAYLOR WENTWORTH LUND ARCHITECTS

723 W Pacific Avenue, Suite 101
Salt Lake City, UT 84104
Main Office 801.355.5959

J-U-B ENGINEERS, INC.

Murray City School District
5102 S Commerce Drive
Murray, Utah 84123

MURRAY CITY SCHOOL DISTRICT
We Are Murray!

Project For
The Murray City School District Board of Education

Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
IRRIGATION DETAILS

Sheet Number
LI-501

Bid Package 3

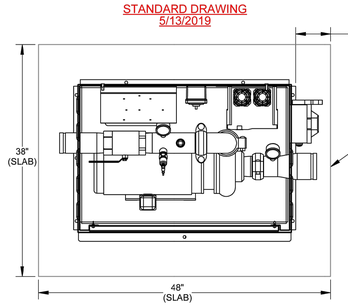
POWER REQUIREMENTS MUST BE SPECIFIED:

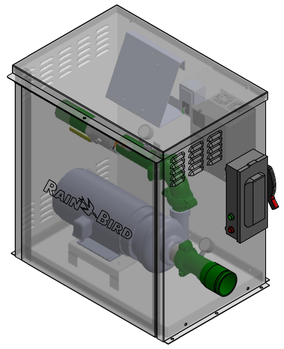
AVAILABLE STANDARD	
208	SINGLE PHASE
208	THREE PHASE
230	SINGLE PHASE
230	THREE PHASE
480	THREE PHASE

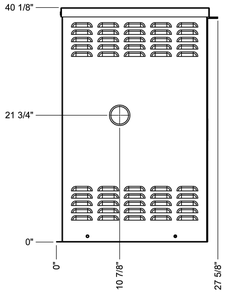
REFER TO PERFORMANCE FLOW CHART OR PUMP CURVE TO DETERMINE YOUR OPERATING FLOW AND PRESSURE COMBINATION

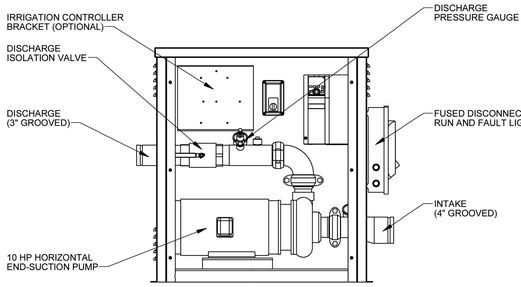
OPTIONS PURCHASED SEPARATELY	
6V DC (CLPPSR06DC)	PUMP START RELAY
12V DC (CLPPSR12DC)	
1Ø (CLPSES1P)	SURGE SUPPRESION KIT
3Ø (CLPSES3P)	
CLPBSTSW	FLOW START KIT (BOOST PUMPS ONLY)
CLPFTVLV4VF	INTAKE SCREEN W/FOOT VALVE

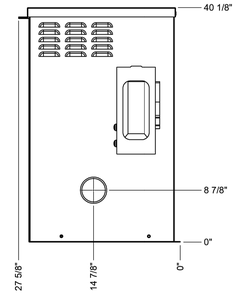
STANDARD DRAWING
5/13/2019











NOTES:
1. SLAB DETAIL IS PROVIDED FOR ILLUSTRATION ONLY. THE ARCHITECT OR PROJECT ENGINEER SHOULD BE CONSULTED FOR CONSTRUCTION DETAIL.
2. DIMENSIONS ARE FOR REFERENCE ONLY. EXTERNAL PLUMBING TO BE FIELD FIT.
3. STATION WEIGHS ~ 250 LBS.

STANDARD DRAWING

NOTICE:
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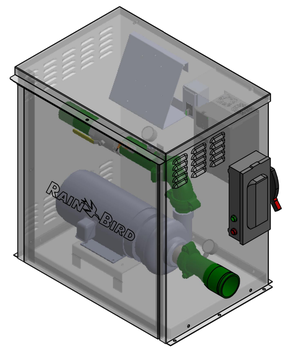
UNLESS OTHERWISE SPECIFIED: FRACTIONAL TOLERANCE ± 1/32" | DRILLED HOLE Ø ± 0.010" | ANGULAR ± 0.5° | DECIMAL TOLERANCE X = ± .02" (0.x = ± .01") | DRAWN B 03/07/2019 | DESIGNED B 03/07/2019 | SCALE 1:8 | DO NOT SCALE DRAWING | DATE/REVISION B 03/07/2019 - Initial Release, Dan 2017 | DWG SYMBOLS PER ANSI

RAIN BIRD SYSTEMS MFG. DIV. TUCSON, ARIZONA

TITLE: CLP, 10HP

CLP10KAC

PROJ. NAME: N/A | PROJ. NO.: N/A | DRAWING NUMBER: STANDARD - A | PART NO.: | REV: | SHEET 1 OF 3



1. CLOSE-COUPLED, HORIZONTAL END-SUCTION PUMP WITH BRONZE IMPELLER AND TYPE 21 BUNA-N MECHANICAL SEAL FOR LONG PUMP LIFE.
2. NEMA-STANDARD FRAME, PREMIUM EFFICIENCY MOTOR WITH TOTALLY-ENCLOSED, FAN-COOLED CASE FOR SUPERIOR ENVIRONMENTAL PROTECTION.
3. ENERGY SAVING VARIABLE FREQUENCY DRIVE FEATURING INNOVATIVE RAIN BIRD PROGRAMMING; STATION WILL BE CONTROLLED VIA RELAY START INCLUDED STANDARD OR OPTIONAL FLOW START KIT.
4. 0-250 PSI STAINLESS STEEL PRESSURE TRANSDUCER REGULATES PRESSURE AT A USER-DEFINED SETPOINT WHILE IRRIGATING. 2 1/2" LIQUID GLYCERIN-FILLED SUCTION AND DISCHARGE PRESSURE GAUGES ARE STANDARD.
5. INCLUDES JUNCTION BOX WITH AUTO-OFF-MANUAL SWITCH AND 24 VAC PUMP START RELAY STANDARD; 12 OR 6 VDC PUMP START RELAY OPTIONS ARE AVAILABLE.
6. FUSED ELECTRICAL DISCONNECT INCLUDES EXTERNAL RUN AND FAULT INDICATOR LIGHTS AND DISCONNECT HANDLE FOR ISOLATING POWER TO THE STATION.
7. STATION IS BUILT USING ROBUST SCHEDULE 40 PIPING WITH HIGHLY DURABLE POLYESTER POWDER-COATING INSIDE AND OUT, AND GROOVED CONNECTIONS FOR EASY MAINTENANCE AND SERVICEABILITY.
8. FULL-PORT STAINLESS STEEL DISCHARGE ISOLATION VALVE STANDARD.
9. PUMP STATION IS CONTAINED IN A MARINE-GRADE ALUMINUM DECK AND ENCLOSURE WITH LOCKABLE HINGED LID, AND REMOVABLE FRONT PANEL FOR EASE OF MAINTENANCE.
10. EACH PUMP STATION IS FACTORY TESTED UNDER DYNAMIC CONDITIONS BEFORE SHIPPING.

Quote Number: CLP005345
Quote Date: 3/26/2025

RAIN BIRD

Revision: C
Quote Valid Thru: 4/25/2025

Project: Riverview Jr High - Murray UT

Technical Specifications — CLP

Spec	Value	Units	Description
Site Voltage	480	Volts	Voltage that will be available on-site to run the pump
Site Power Phase	3-Phase	N/A	Power phase that will be available on-site to run the pump
Dyn Inlet Pressure	64	PSI	Pressure shown on the water supply while plumbing fixture is drawing water
Boost	45 PSI	N/A	Pressure the pump station is required to add to system.
Discharge Pressure	109	PSI	Total pressure at pump station discharge
Max Flow Rate	160	GPM	Flow Rate the station is designed to achieve
Min Flow Rate	80	GPM	Minimum flow rate the station is required to produce
Estimated FLA	22	AMPS	Full load amperage the station will draw at any point during operation
Horsepower	10	HP	Rated horse power of the pump
Quantity	1	N/A	Number of stations purchased
Pump Model Number	*CLP10KAC8*		

Included Options

Environmental Enclosure	Marine Grade Aluminum Enclosure
Start Method	Flow Start
Bladder Tank	None
PLC	VFD Only
Pump Start Relay	24VAC Pump Start Relay
Surge Arrestor	Included
Flow Meter	Flow Switch
Display	LCD Display
MCA	Not included

Mechanical Features

1	SCH 40 steel pipe fusion bonded polyester powder coated	6	4 Inch Grooved Suction
2	Liquid filled suction and discharge pressure gauge	7	4 Inch Grooved Discharge
3	Stainless steel pressure transducer	8	Horizontal Single Stage Pump
4	Pump isolation valves	9	
5	VFD started motor	10	None
Zee Pipes/Adapters	4 Inch Inlet Grooved-Flange Adapter; 3 Inch Discharge Grooved-Flange Adapter;		
Filter	None		

Electrical Features

1	Alarm indicator light, externally mounted red light	6	Low/High pressure alarm
2	NEMA 3R Auto-Off-Manual switch	7	Pipe break alarm
3	Variable frequency drive	8	Pressure transducer alarm
4	Deadhead fault alarm	9	VFD fault alarm with restart
5	Electrical overlead shutdown & reset	10	

Start-Up Options

One day of start-up and training assistance by a Rain Bird Authorized Service Provider

1 RAINBIRD CLP05EAC BOOSTER PUMP
NTS

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RAIN BIRD SYSTEMS MFG. DIV. TUCSON, ARIZONA

TITLE: CLP, 10HP

CLP10KAC

PROJ. NAME: N/A | PROJ. NO.: N/A | DRAWING NUMBER: STANDARD - | PART NO.: | REV: | SHEET 3 OF 3

Stamp
STATE OF UTAH
ANDREW J. NOORLANDER
10486769
LICENSED LANDSCAPE ARCHITECT

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Riverview Jr. High Rebuild

751 W Tripp Ln
Murray, Utah 84123

Project Phase
Bid Documents

Revision Schedule

No.	Description	Date
1	-	-

Project Number
143.005

Project Issue Date
31 March 2025

Sheet Title
IRRIGATION DETAILS

Sheet Number
LI-502
Bid Package 3