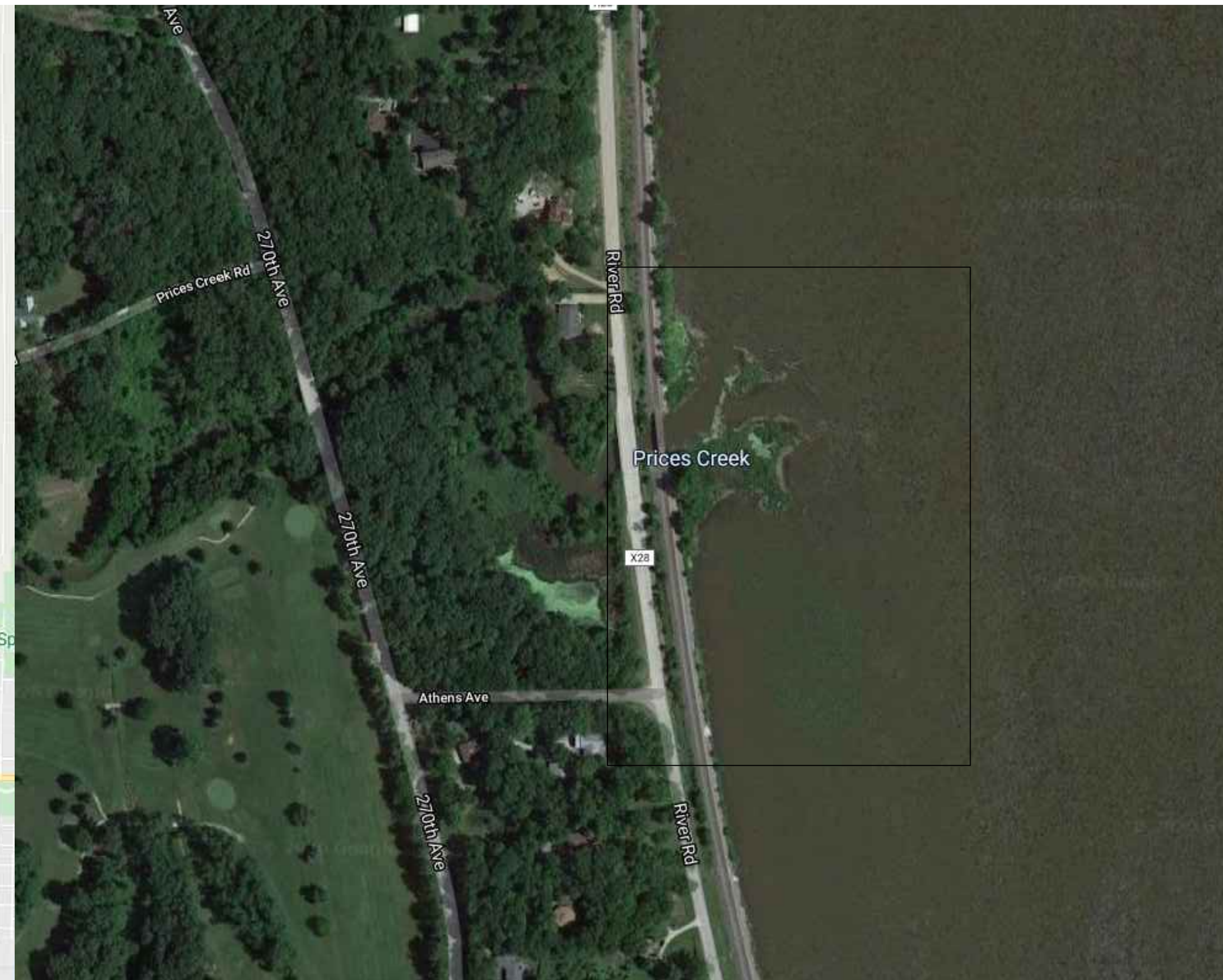
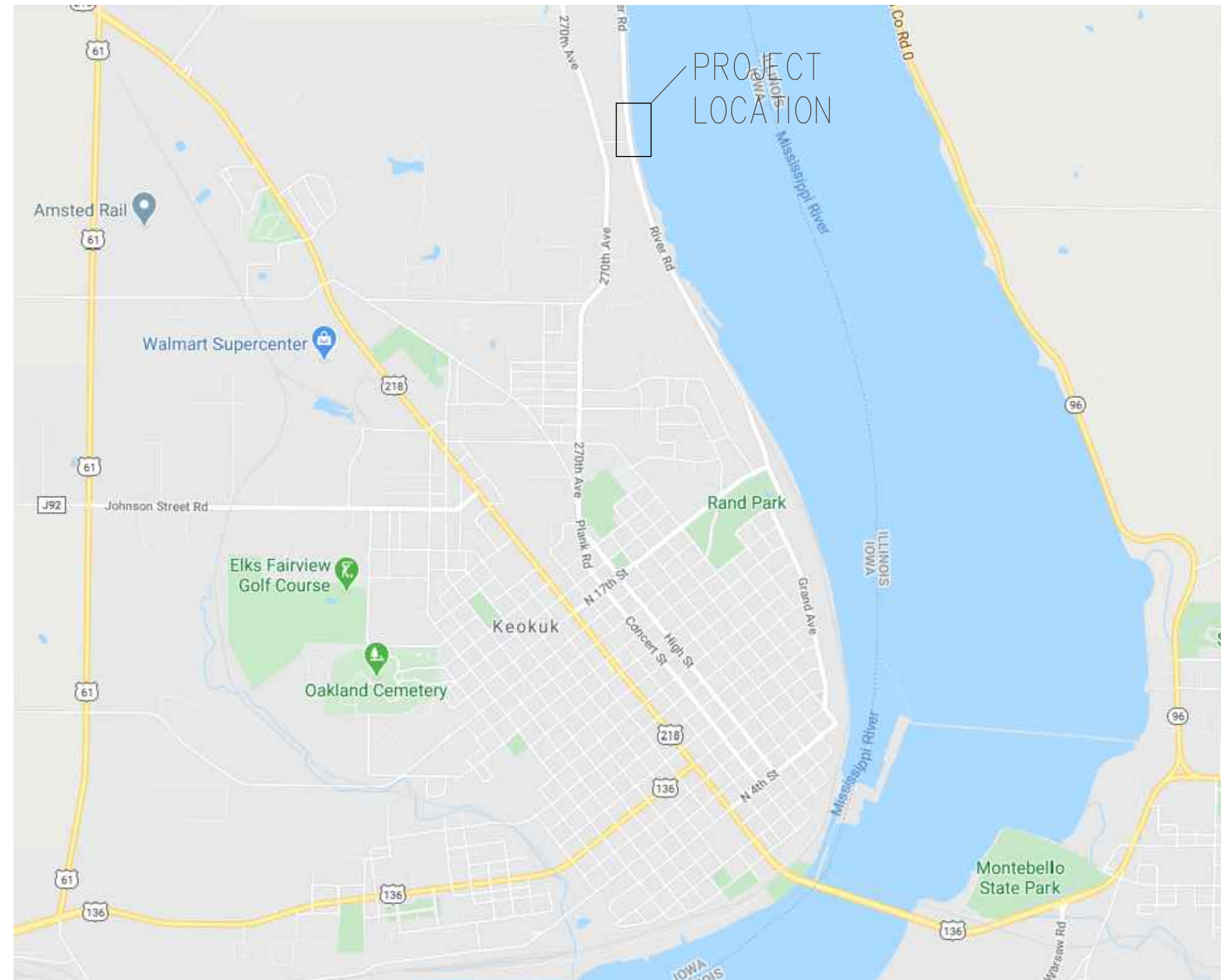


RECREATIONAL RIVER ACCESS

KEOKUK, IOWA
JNP ENGINEERING



PROJECT:	CEE: 4850
DATE :	05/08/2020
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SHEET NAME
TITLE

SHEET NO.
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- G1: GENERAL NOTES
- P1: PROPOSED SITE PLAN
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- P6: GRADING PLAN
- P7: MARINA PLAN
- P8: BOAT LAUNCH PLAN
- P9: LAUNCH DETAILS / DOCK DETAILS
- S1: SHEET PILE DETAIL
- B1: BATHROOM DETAILS
- B2: BATHROOM ELEVATION / SEPTIC VAULT DETAIL

LEGEND

	TRAFFIC DIRECTIONAL ARROWS
	HANDICAP MARKER
	LIGHT POLE
	COMPASS DIRECTIONAL ARROW

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GENERAL NOTES

General Construction Items

1. Section 1D-3, Chapter 1 of the IDOT Design Manual requires specific surveys to be conducted before the design process ensues.
2. Permit requests for construction are required by state law.

Waterway and Marine Construction Items

1. In order to accommodate the barge mounted draglines/clamshells, two medium sized floating piers that are made from concrete will be required for the duration of the project.
2. Estimated amount to be dredged is 180,566B.C.Y.
3. The project will require roughly 321 linear feet of concrete seawall and 2020 linear feet of steel sheet piling seawall.

Earthwork Construction

1. It was determined a total of 540 days would be required for both supervision of earthwork and quality control of earthwork.
2. Section 3.09, Division 2 of the IDOT SUDAS Standard Specifications Manual that the nuclear method (ASTM D2922) would be required for soil density tests.
3. A total of 124 soil density tests will be needed throughout the duration of the project.
4. Approximately 7662 square yards will be graded and subgrade for the parking lot.
5. 778 square yards and 3512 square yards of additional grading for sidewalks and steep slopes respectively will be needed for the project.
6. Section 3.04, Division 3 of the IDOT SUDAS Manual requires multiple drainage trenches to be installed throughout the site along with the pumping of water.
7. Medium size trench that is two feet wide by two feet deep will be excavated for dewatering on the site with 10,000 CY removed.
8. A minimum of two pumps will have to be operated at one time and will be roughly 540 days per pump totaling 1080 days in total.
9. Estimated that 424 linear feet of rock removal will be required.
10. The small foundation plan will require 126 bank cubic yards of excavation.
11. Excavation of utility trenches for water and electric utilities will require roughly 700 linear feet of excavation will be required.
12. Required amount of loose CY material to be hauled will be 90,000 loose cubic yards.
13. 7,700 embankment CY to be backfilled.
14. Dozer material transportation of 9,625 loose CY.
15. Type III fill for majority of site 47,515 CY.
16. Type I fill used for first 5 feet of subgrade 28,468 CY.
17. Type IV fill will require 43,110 CY.
18. Roughly 77,580 embankment cubic yards of compaction.

Roadway & Parking Lot

1. Concrete testing as described under ASTM C 131 will be required 1,266 times throughout the project.
2. Masonry testing for the bathroom facility walls will need to be performed every five bricks per ASTM C 67 equally a total of 73 tests.
3. Two pieces of rebar exist in each concrete/masonry block which will require 728 tests.
4. The required for the design of the bathroom facility is decorative, split faced block that is six inches in height, sixteen inches in length, and four inches in thickness.
5. A total of 364 square feet of masonry block will be required for the bathroom facility.
6. The slab on grade will have to be pumped onto the project site.
7. 6,998 square feet of concrete will be required for the sidewalks.
8. The structural slab on grade concrete was estimated at roughly 34,478 cubic yards.
9. 240 linear feet of curb and gutter will be required.

Boat Docks

1. The floating docks were chosen and designed in accordance with the Class 4 Commercial Dock section of the Iowa DNR.
2. 4,044 square feet of docks will be required.
3. Each dock will also require a minimum of two bumpers at the end of the dock equaling 30 total bumpers.

Bathroom Facility

1. Structural items include wood framing for the roofs, the truss for the roof, and steel roofing panels which were quantified at 100 linear feet, six units, and 211 square feet respectively.
2. Louvers vinyl gable vent, fascia, one roof vent, and two entrance doors have been quantified at two units, twenty-three square feet, one unit, and two units respectively.
3. One bathroom fixture is included separately from the utilities section.
4. Two fans will be required in the bathroom facilities.
5. A handrail, grab bars, hat & coat strip, mirror, mop holder strip, soap dispenser, soap tank, toilet tissue dispenser, towel dispenser, and waste receptacle each require 2 per item.
6. WT-2016 waterless toilet for each stall required.

Exterior Improvements

1. The number of park benches will be two units, the number of picnic tables to be seven units, and the number of trash receptacles to be six units.

Utilities

1. The bathroom facility includes one exterior wall mounted lighted, two interior vents, two timed switch devices, two heat lamps, and two fans.
2. Two hydrants to be installed in the site.
3. A 1500 gallon tank is required for the bathroom septic.
4. The total plumbing installation area to be 202 square feet.
5. A four inch branch of water main connection into an existing 8 inch water main along the existing roadway of River Road
6. 350 linear feet of ductile piping will be required.

Landscaping

1. Green space will require about 1 acre of mechanical seeding which will also require 43,467 square feet of installation for the sprinkler irrigation system.
2. Quality control of the seeding, quantified per test seed test, has been estimated to require a minimal 200 tests.

Erosion Control

1. Rolled erosion control mats will be required for the mechanical seeding. Based on mechanical seeding quantities that 4,830 square yards will be required.
2. A geotechnical nylon fabric for parking lot and that 7,662 square yards will be required.
3. A three foot high polypropylene silt fence will require a minimal of 2000 linear feet.
4. Rip rap, which will consist of a minimal eighteen inch thickness, has been estimated at roughly 658 square feet.

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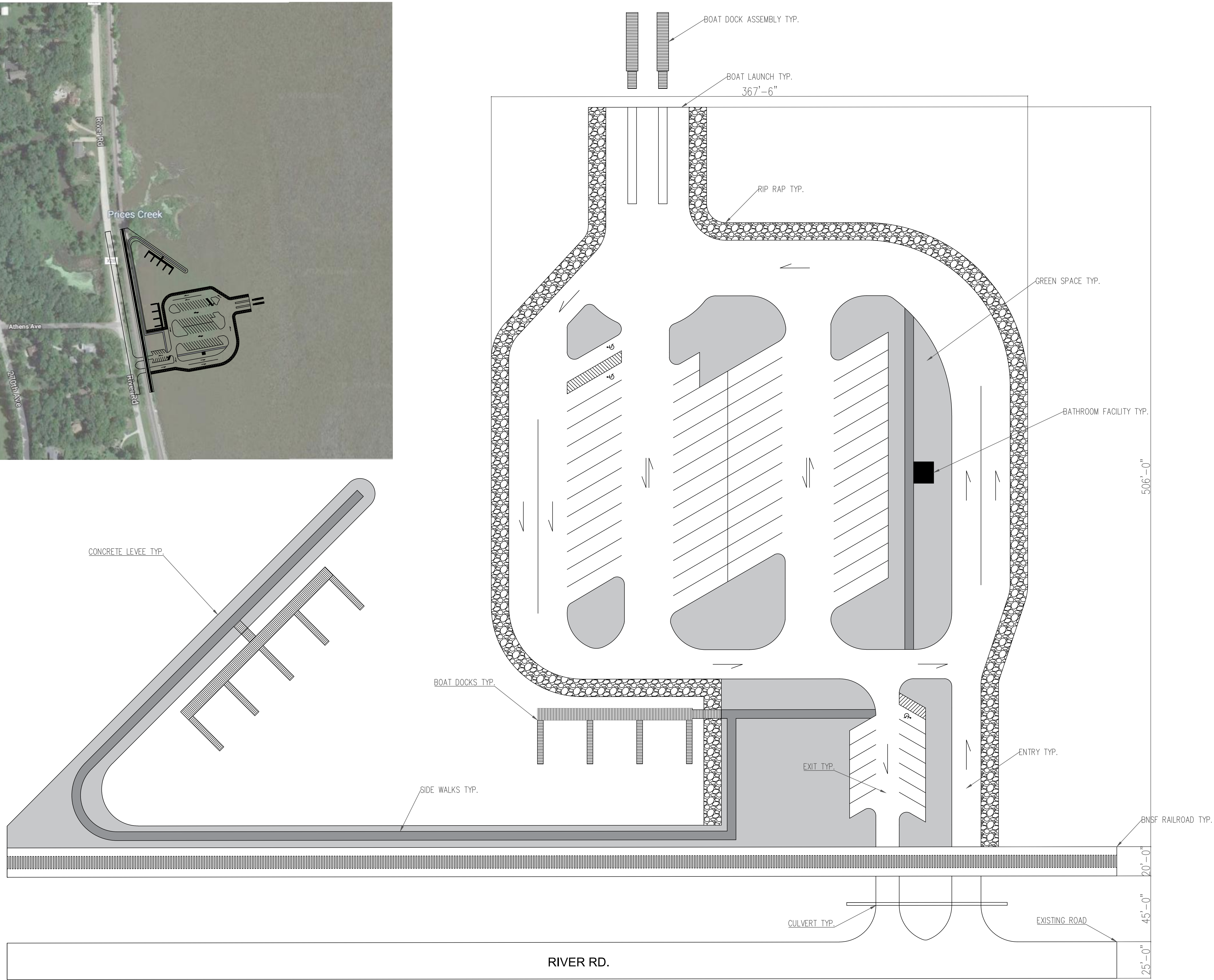
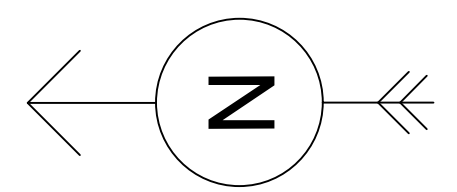
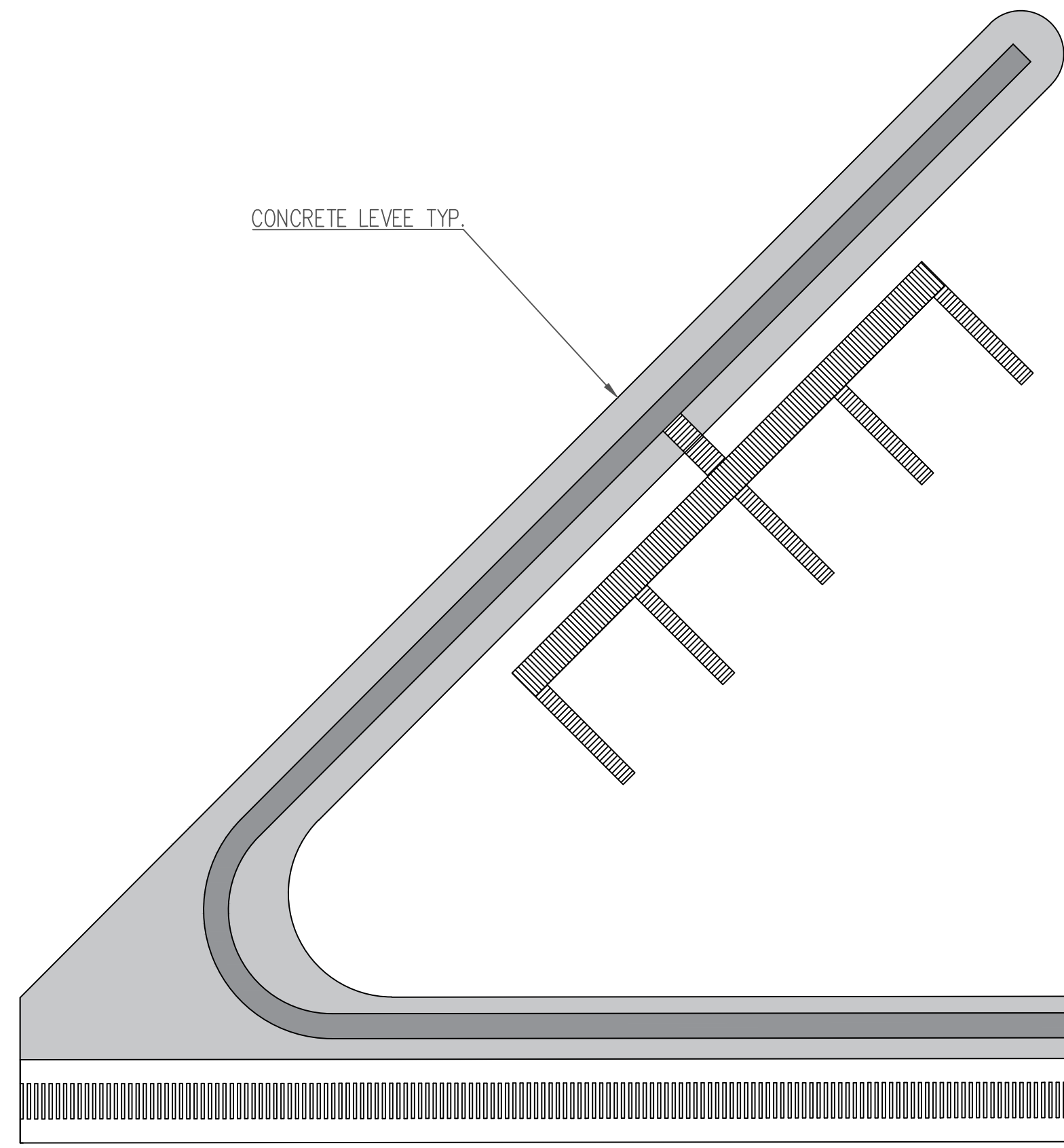
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GENERAL NOTES

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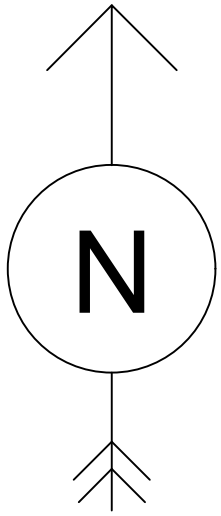
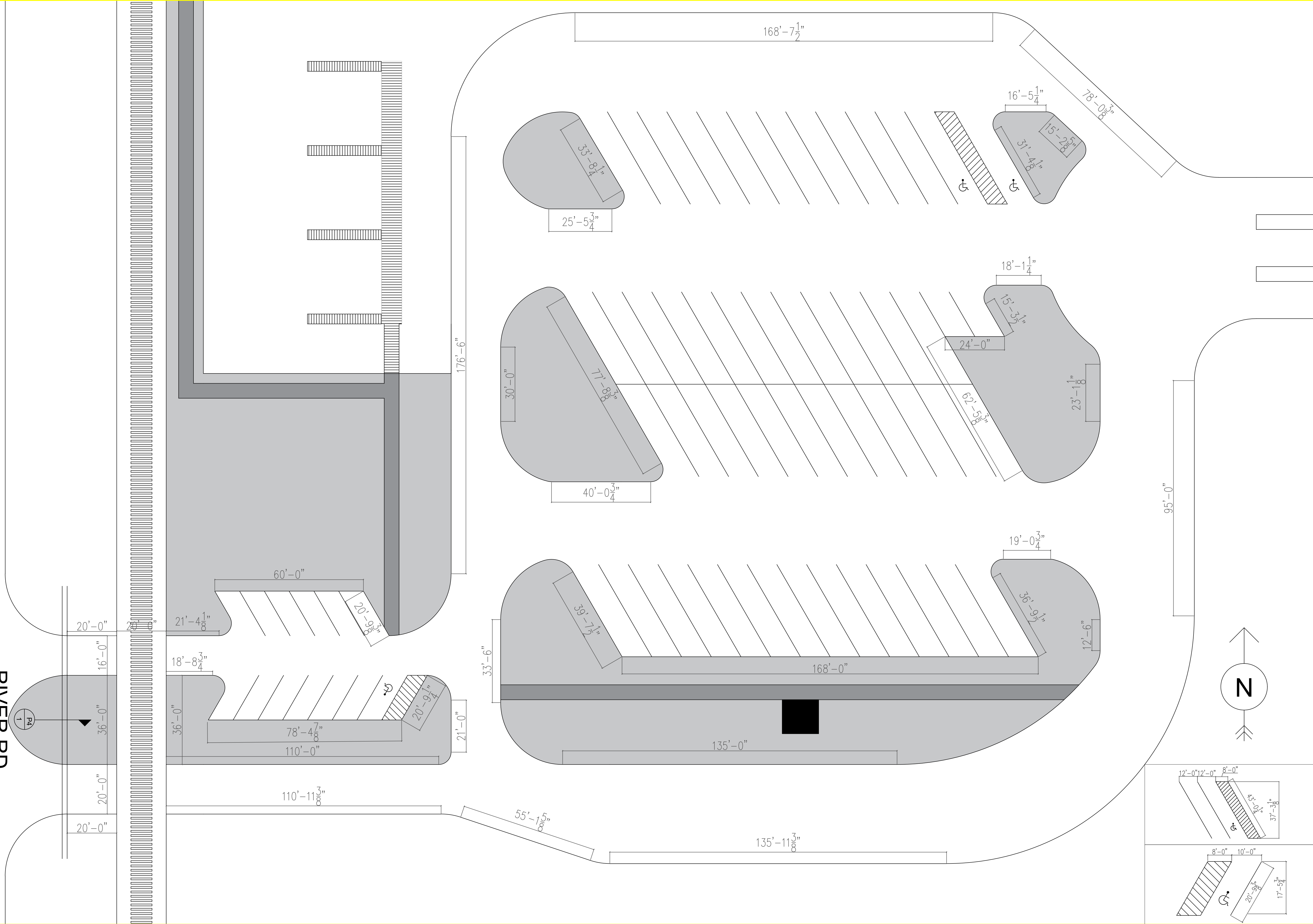
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SHEET NAME
 PROPOSED SITE PLAN

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P1

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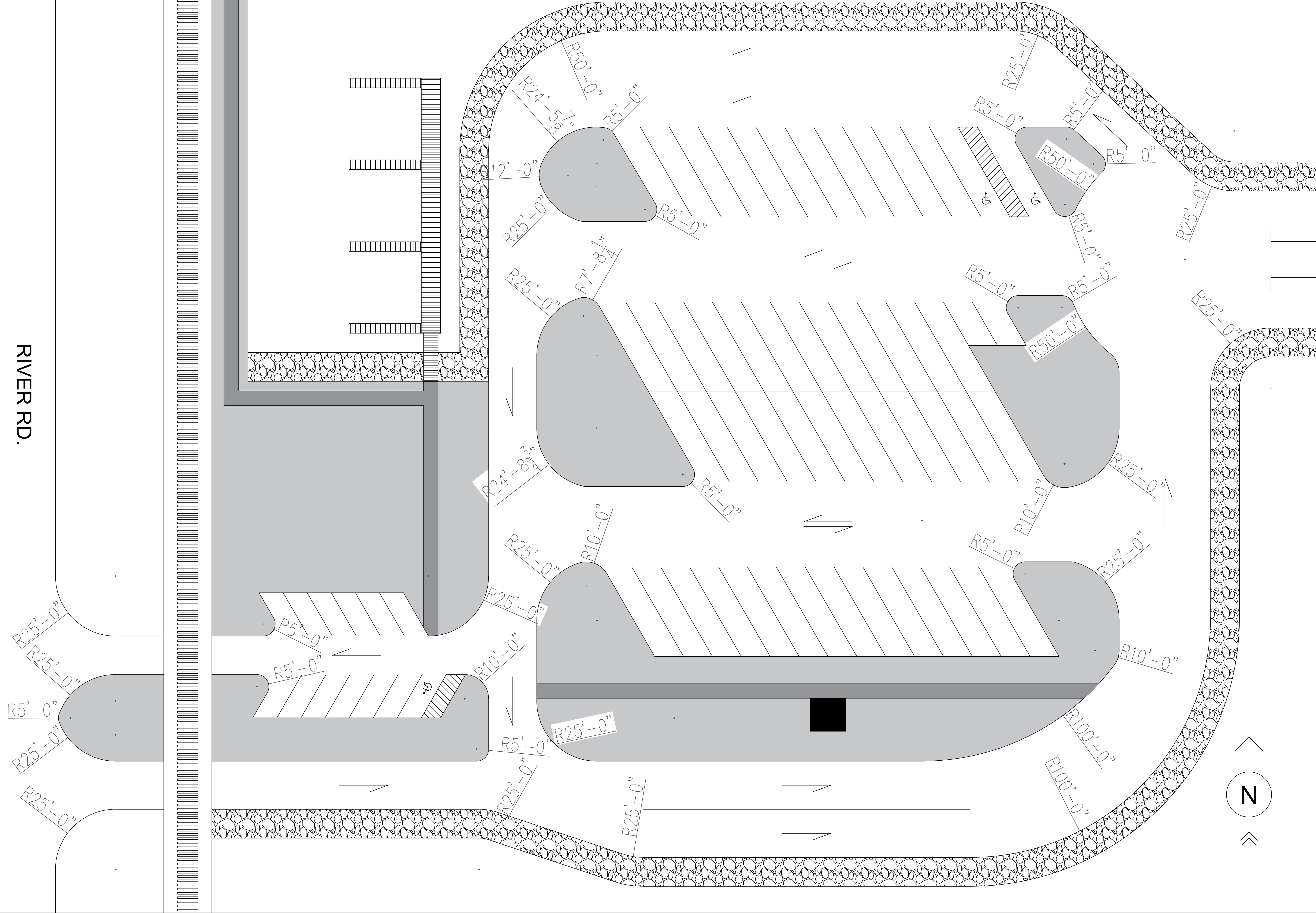
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SHEET NAME
LOT DIMENSIONS

SHEET NO.
P2

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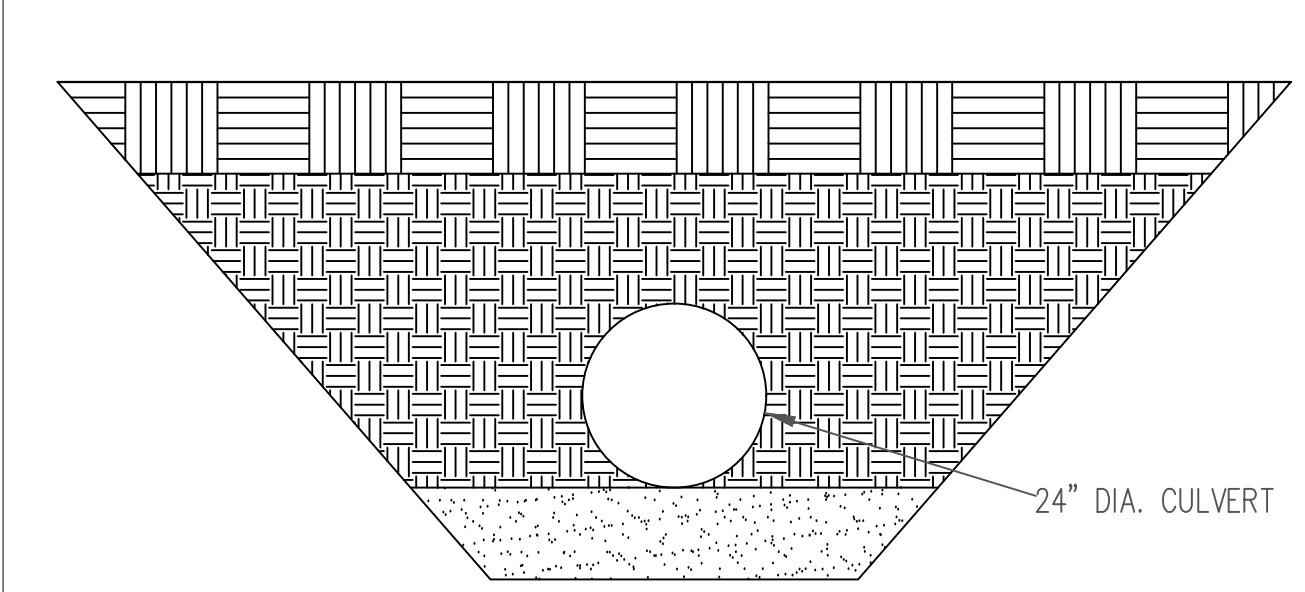
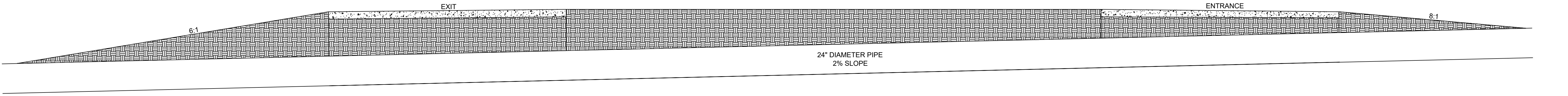
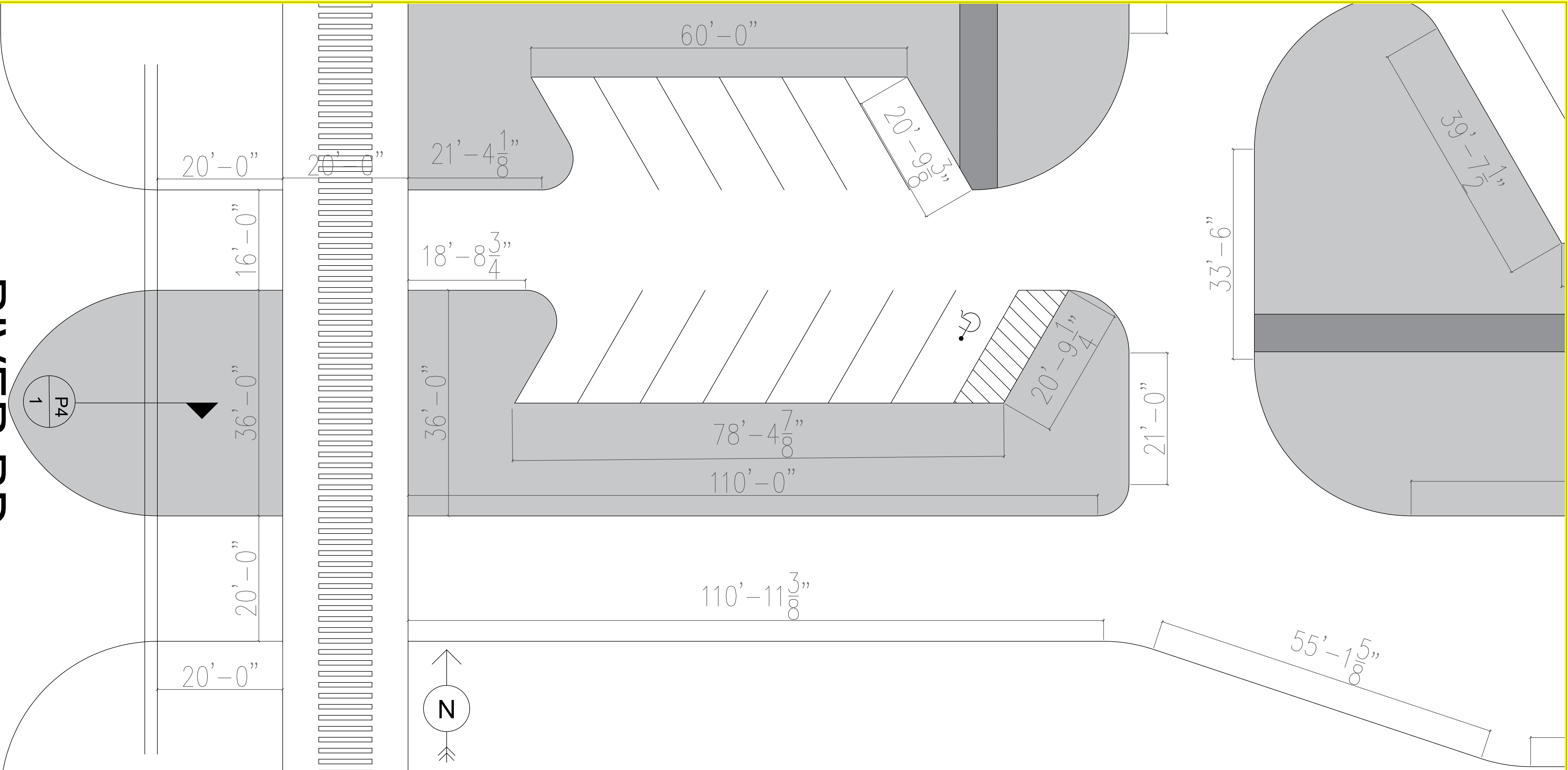
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SHEET NAME
 LOT RADIUSES

SHEET NO.
P3

RIVER RD.



(1)CULVERT DETAIL

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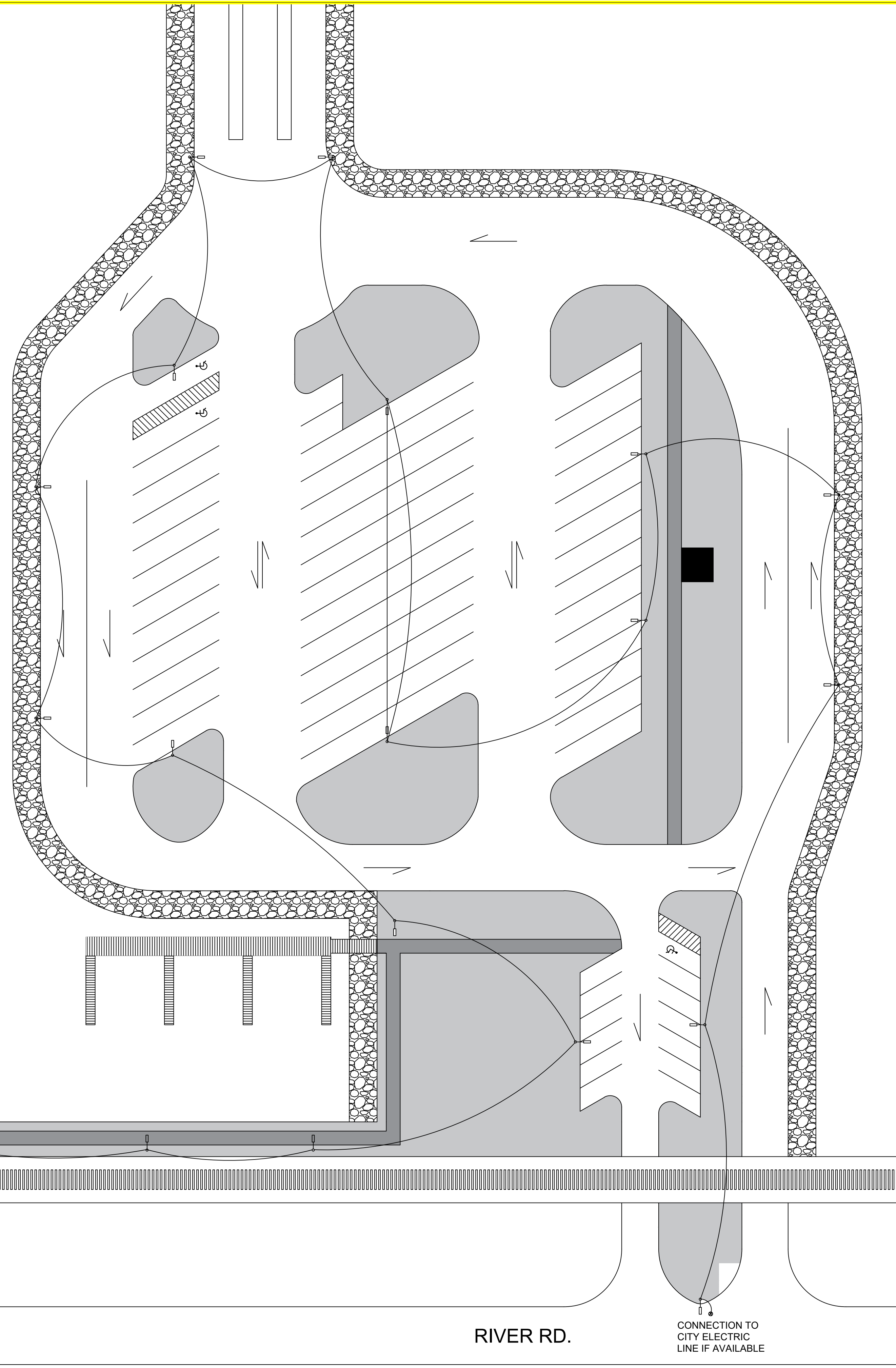
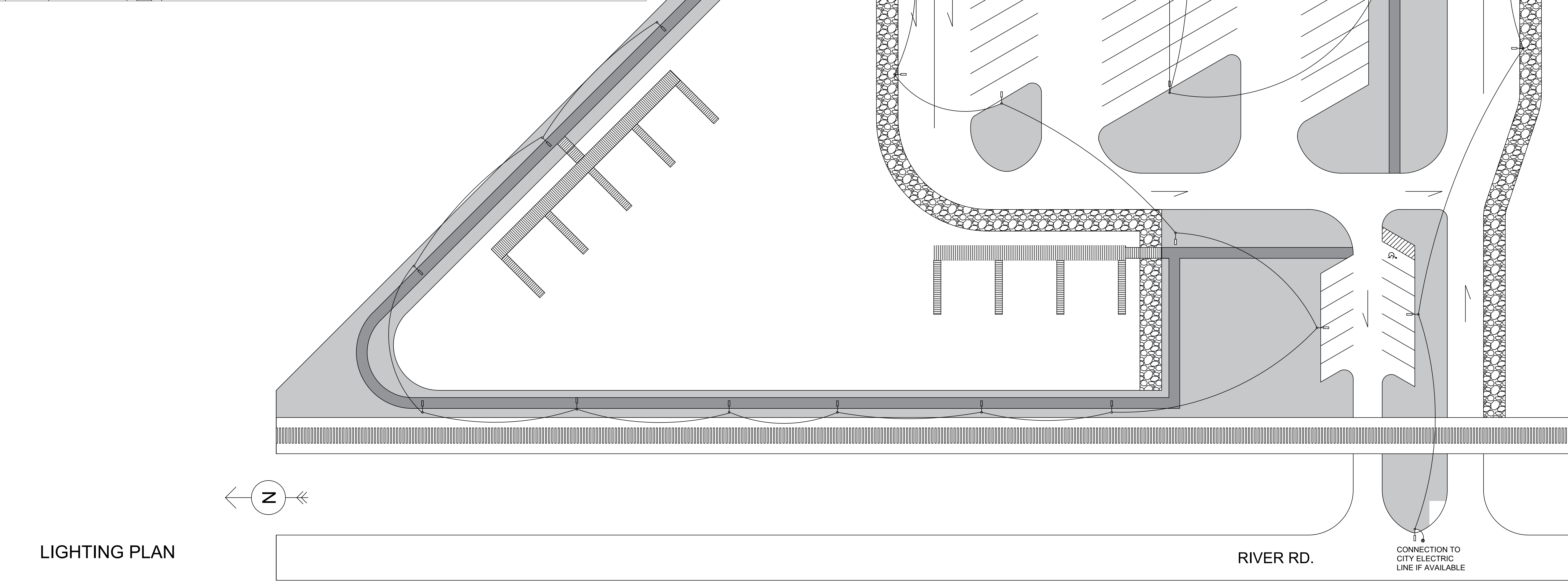
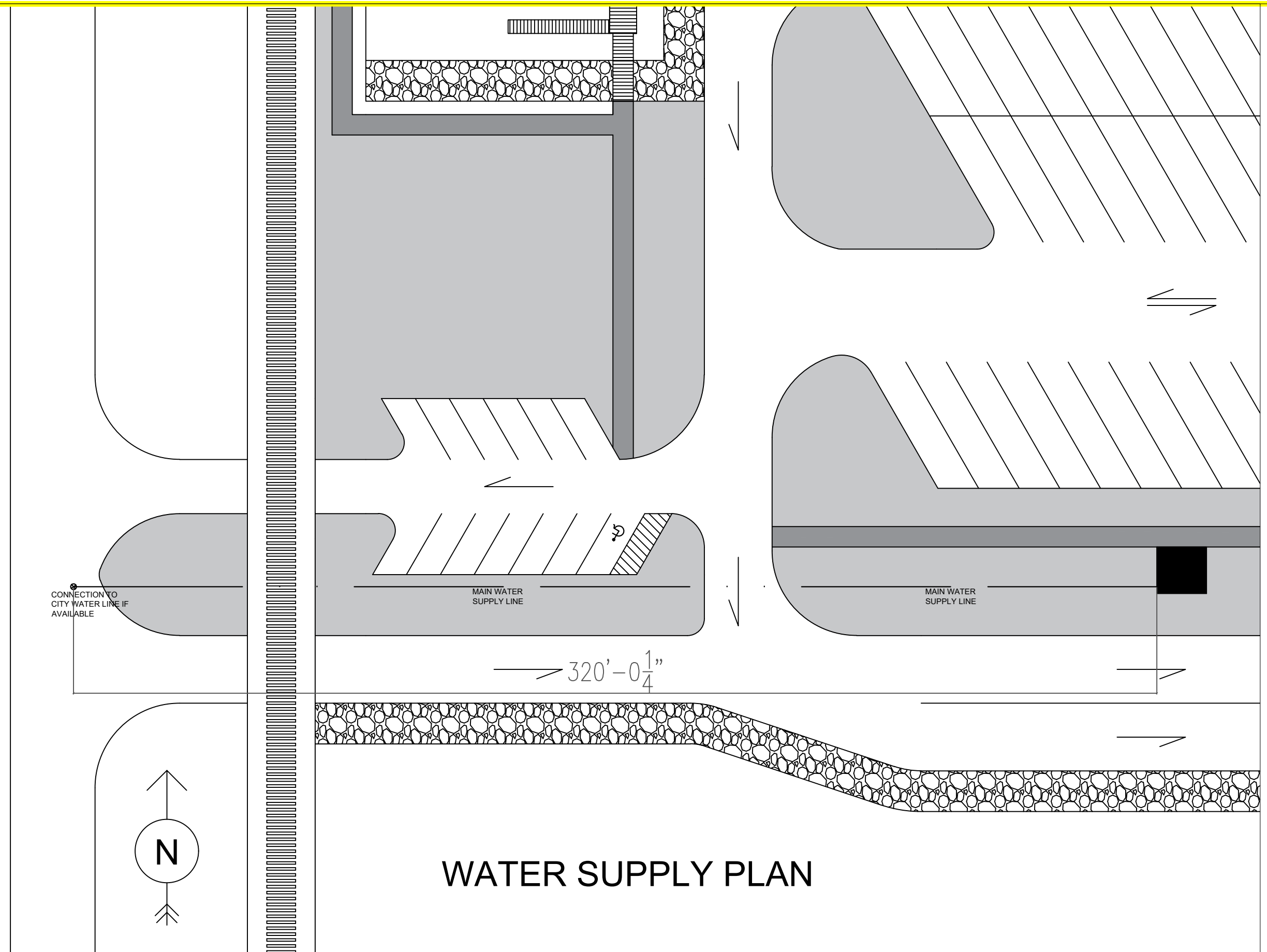
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SHEET NAME
 ACCESS ROAD PLAN
 CULVERT DETAIL

SHEET NO.
P4



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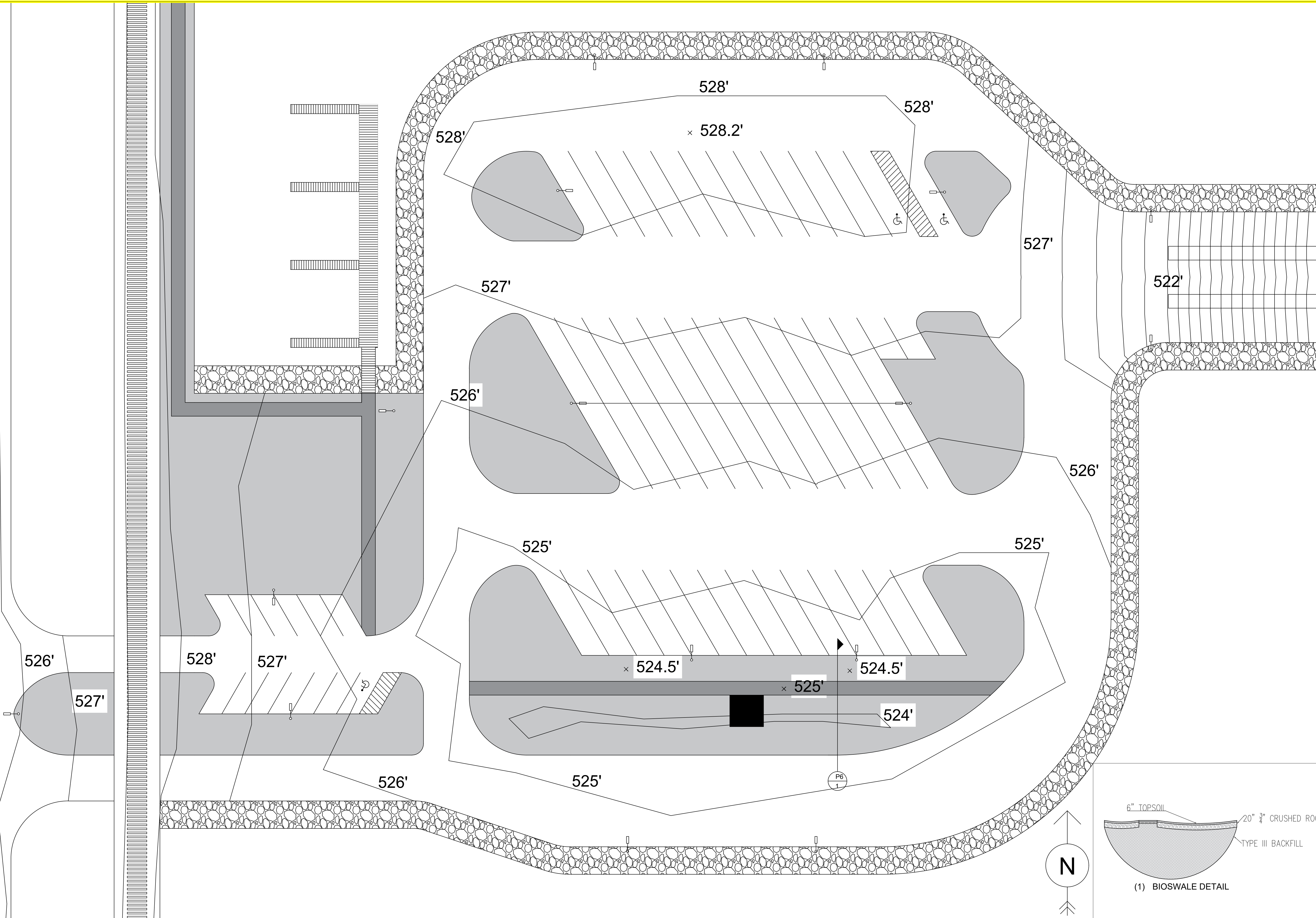
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SHEET NAME
 UTILITIES PLAN

SHEET NO.
P5



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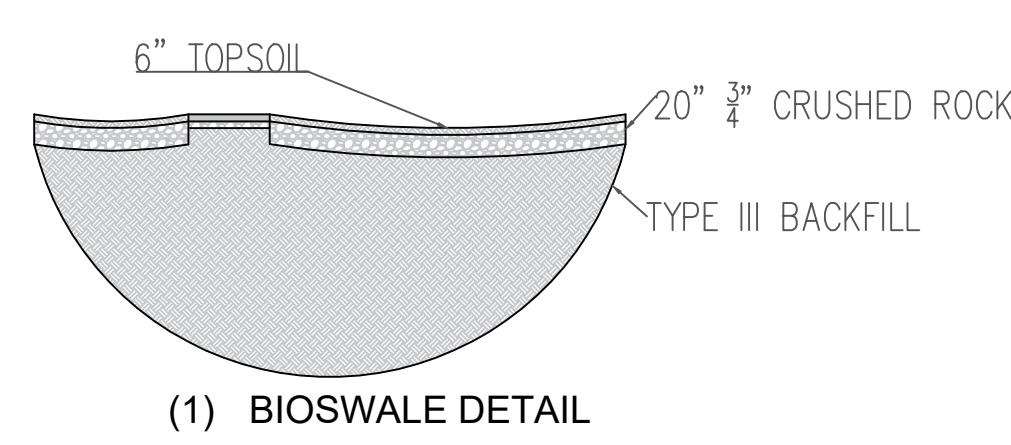
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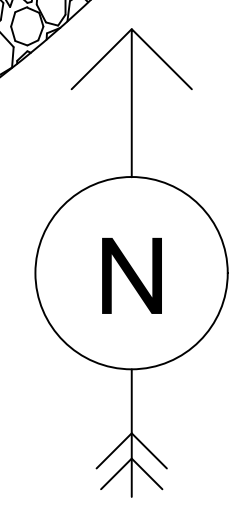
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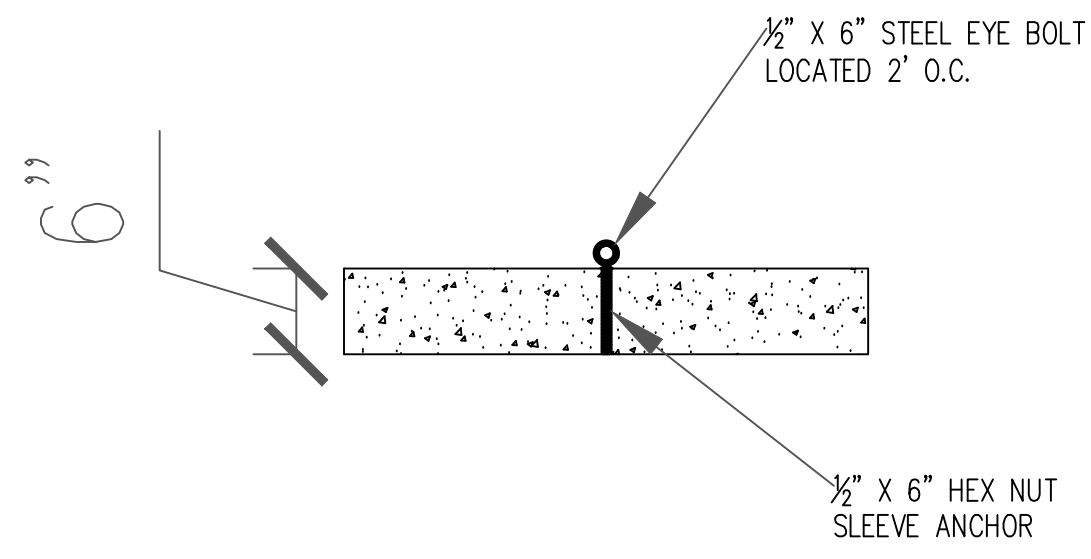
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GRADING PLAN

SHEET NO.
P6

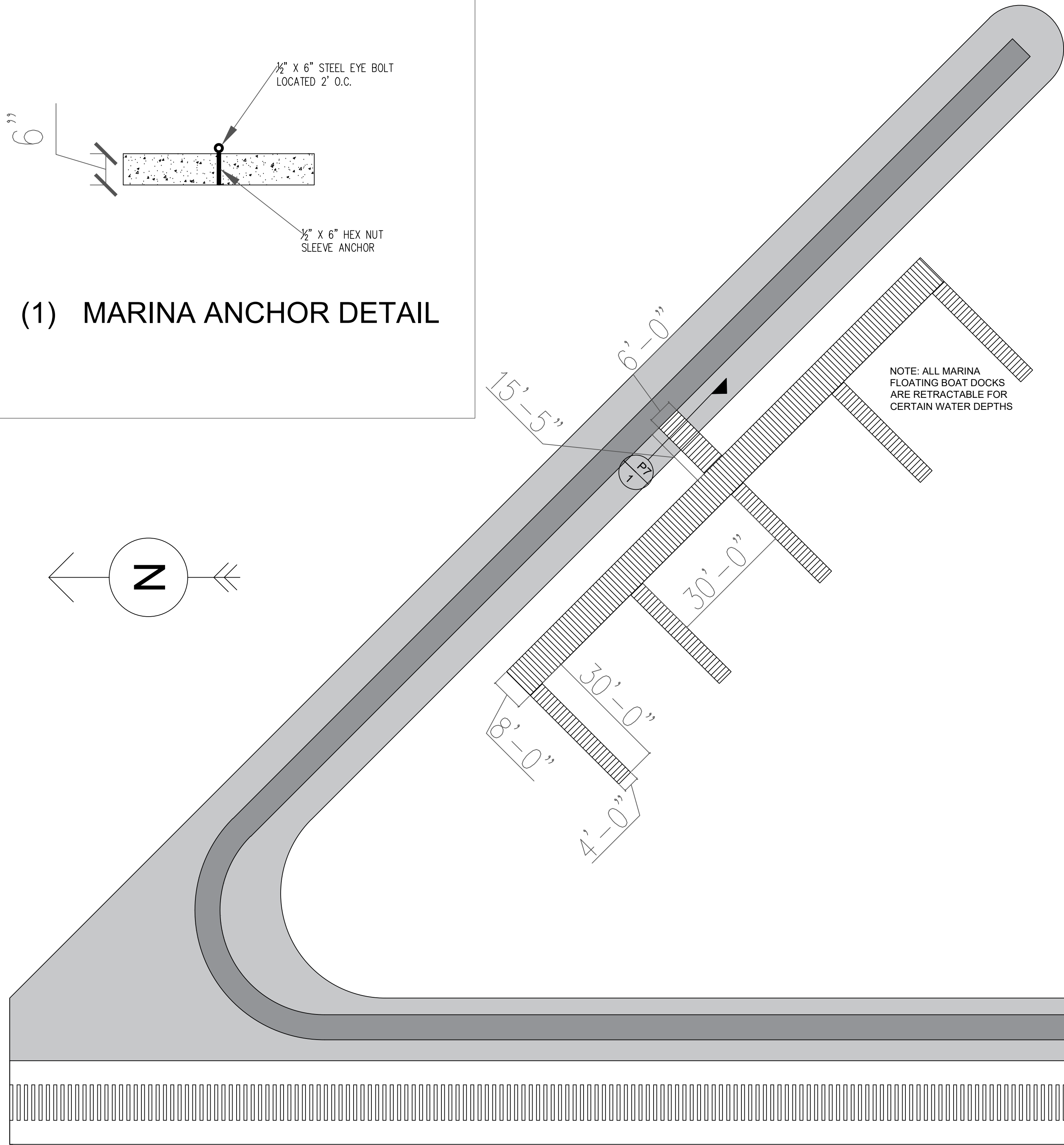
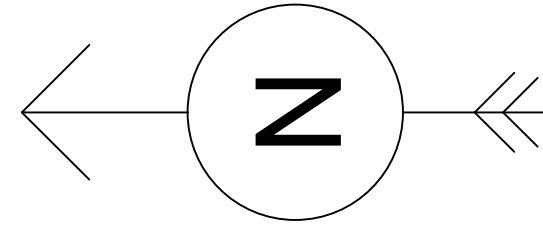


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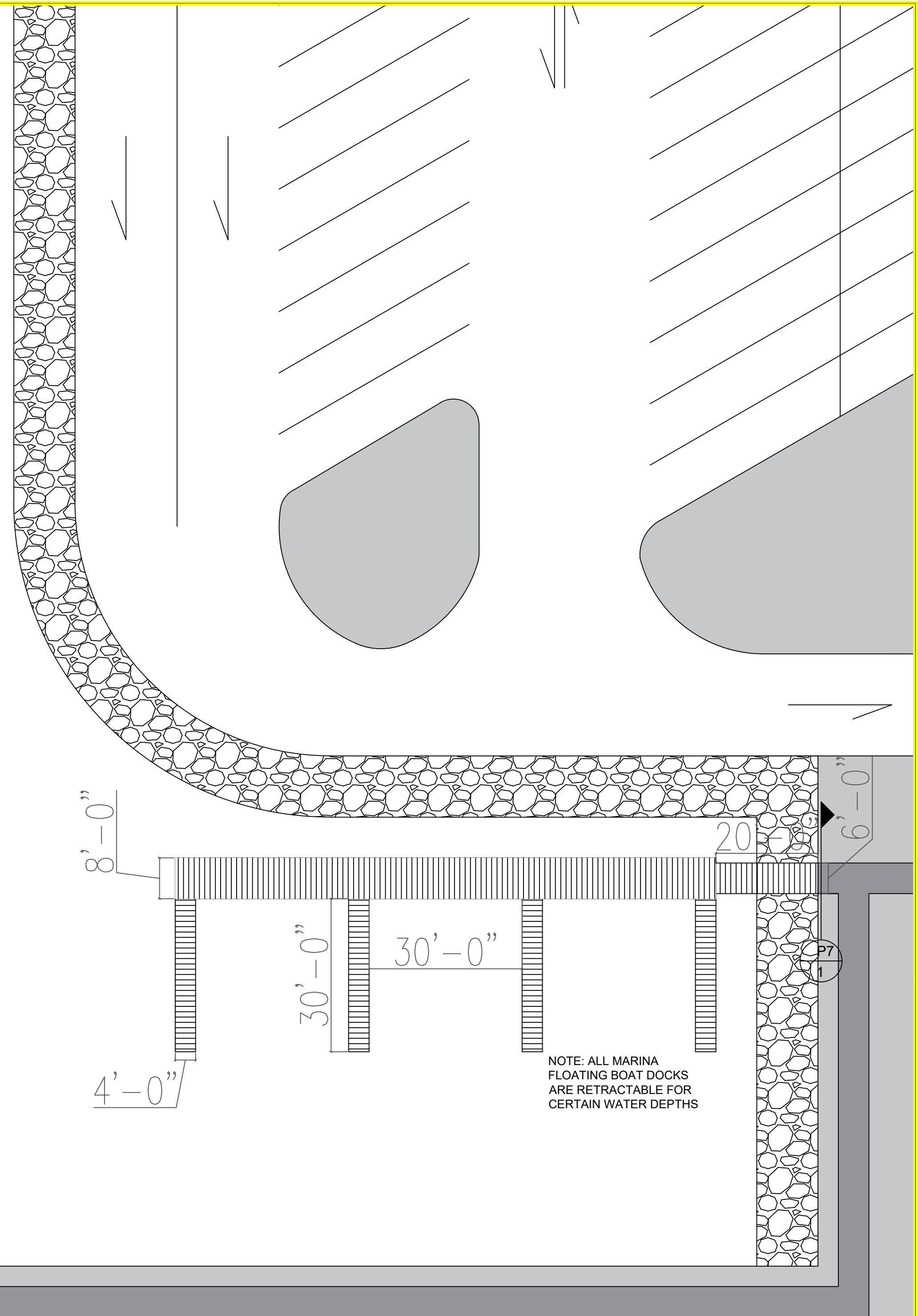




(1) MARINA ANCHOR DETAIL



NOTE: ALL MARINA FLOATING BOAT DOCKS ARE RETRACTABLE FOR CERTAIN WATER DEPTHS



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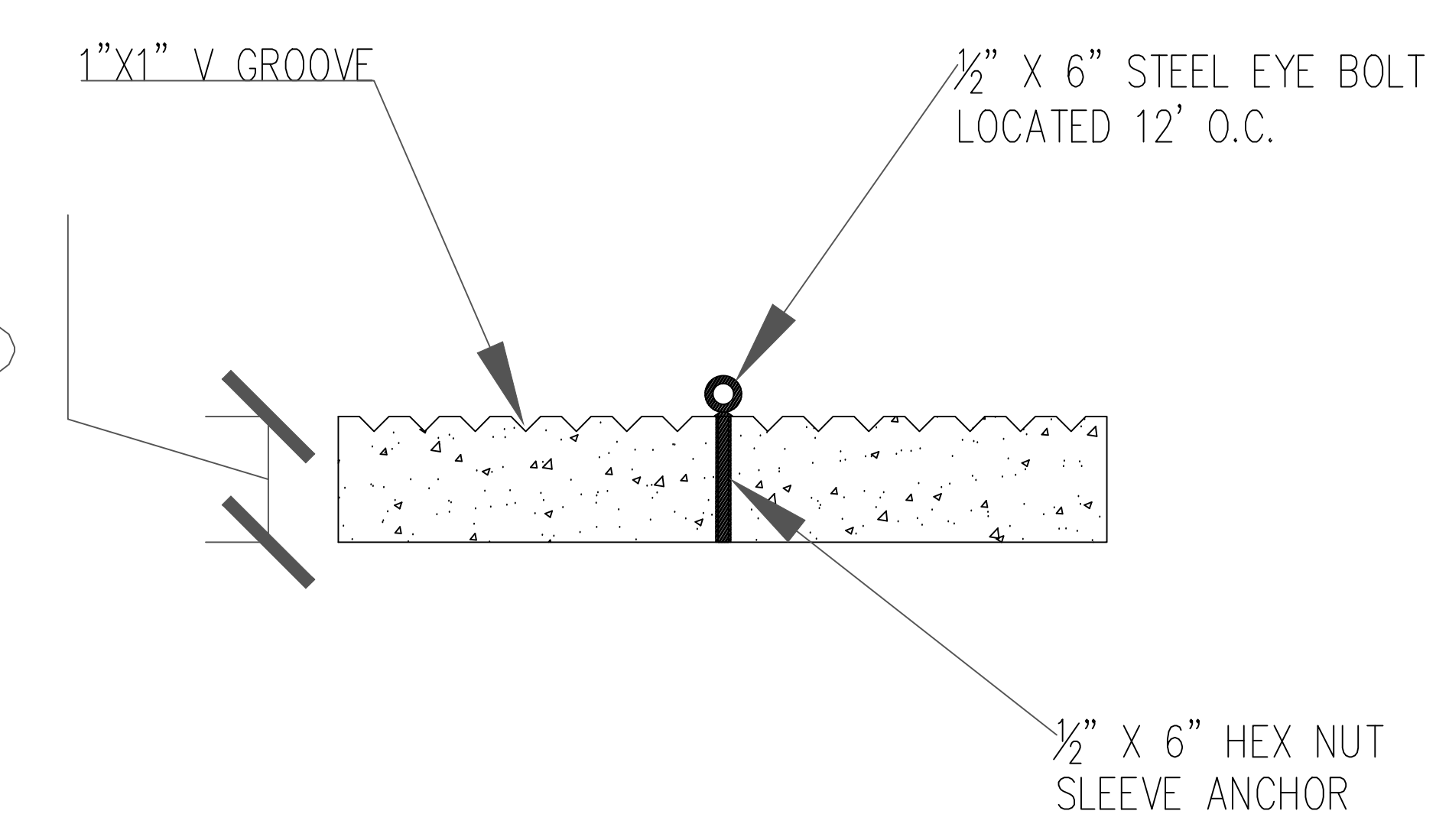
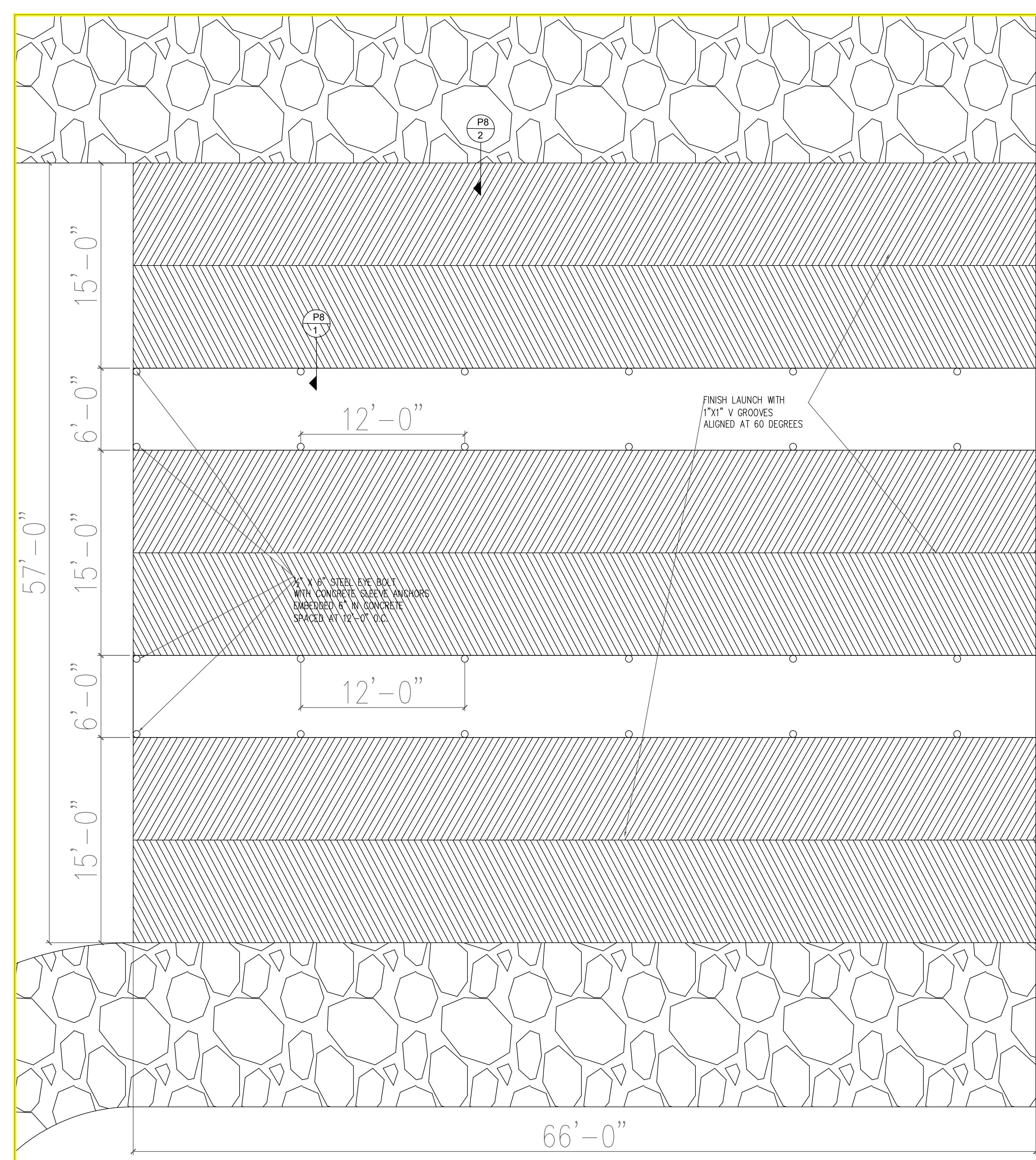
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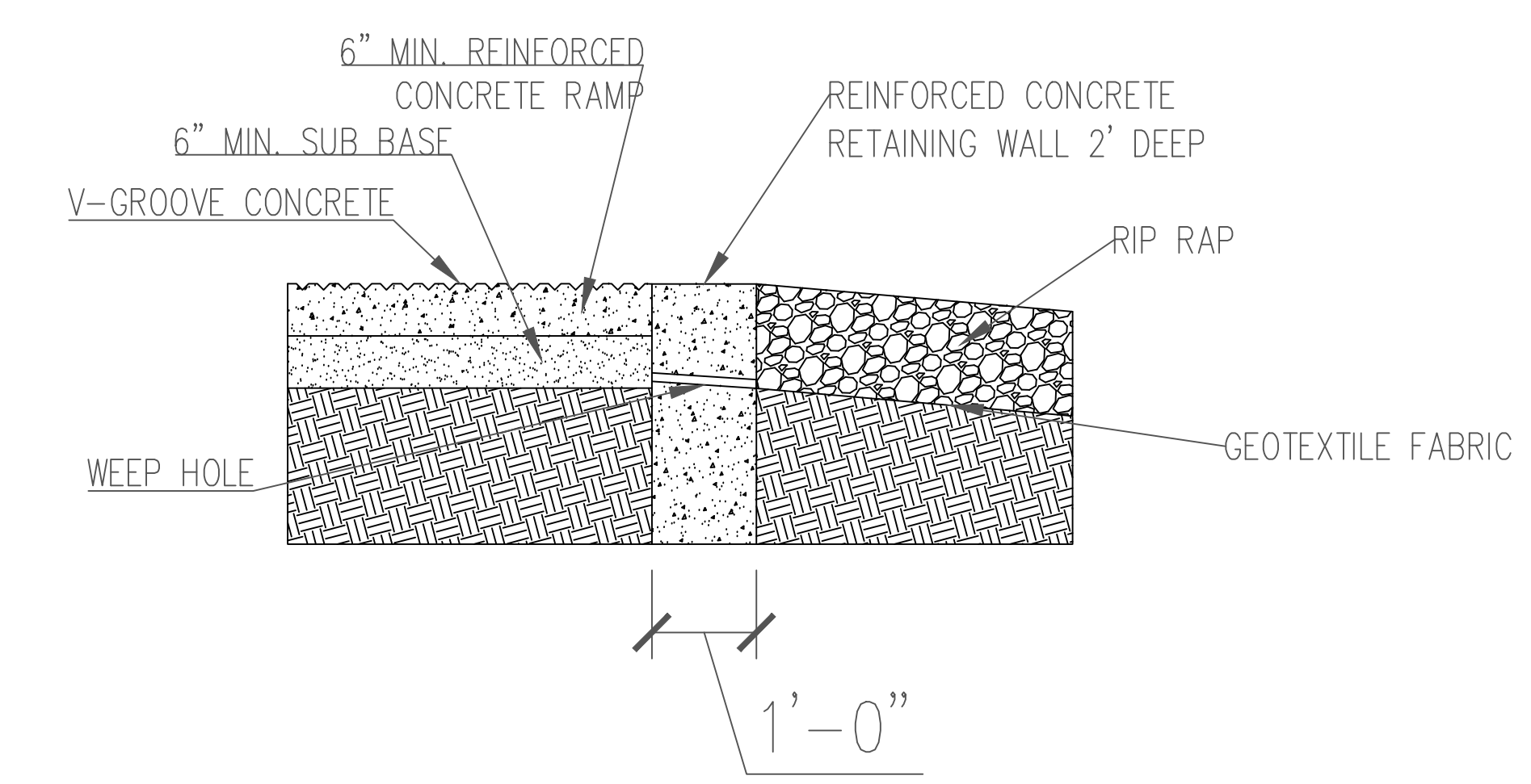
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SHEET NAME
 MARINA PLAN

SHEET NO.
P7

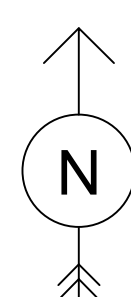


(1) DOCK ANCHOR DETAIL



(2) LAUNCH RAMP RETAINING WALL

BOAT LAUNCH PLAN



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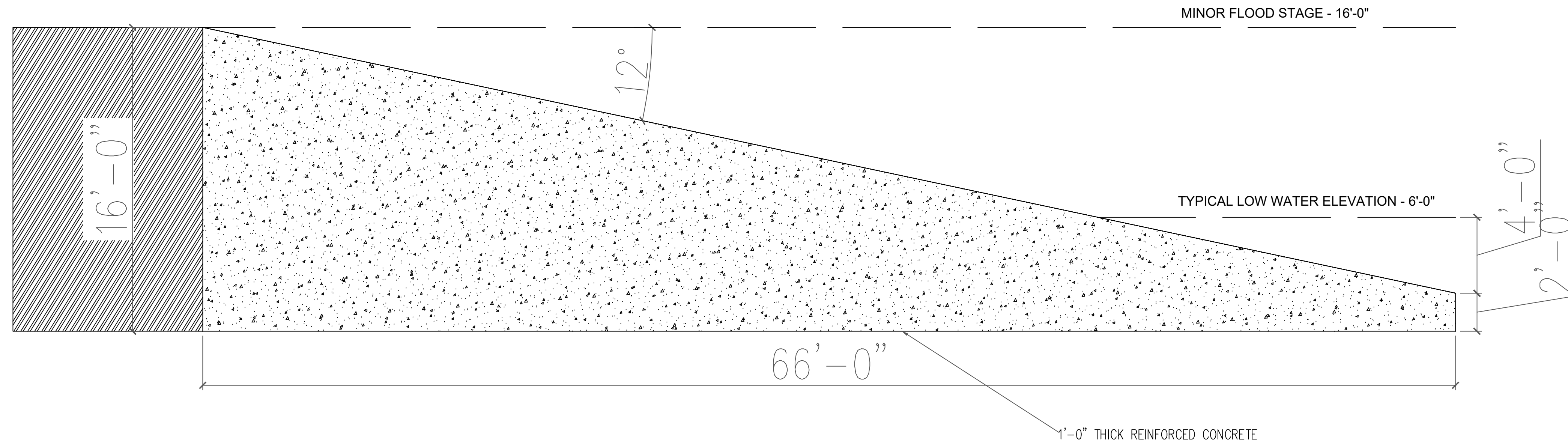
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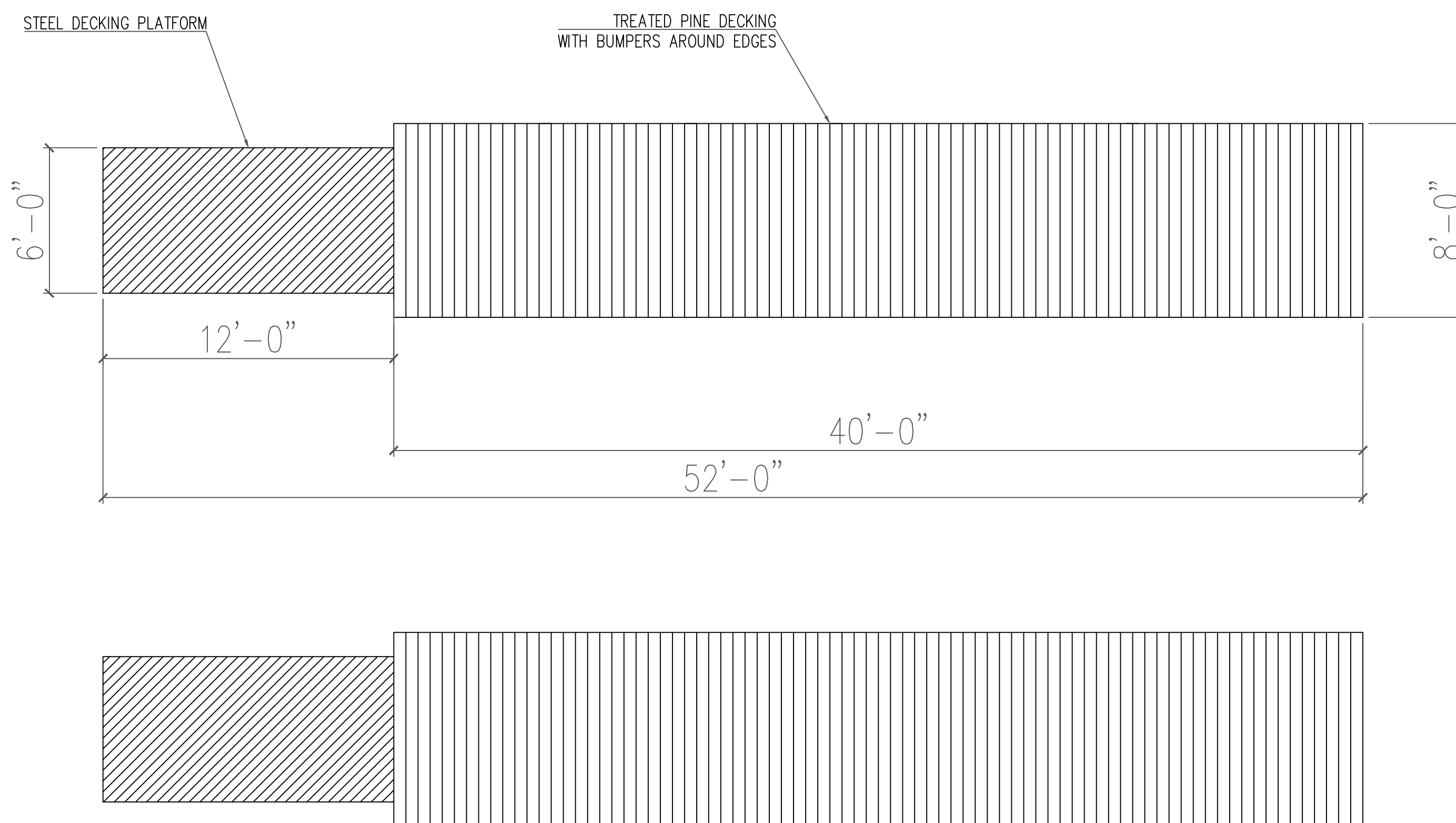
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 BOAT LAUNCH PLAN

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P8



BOAT LAUNCH ELEVATION PLAN



TYPICAL RETRACTABLE FLOATING BOAT DOCK DETAIL

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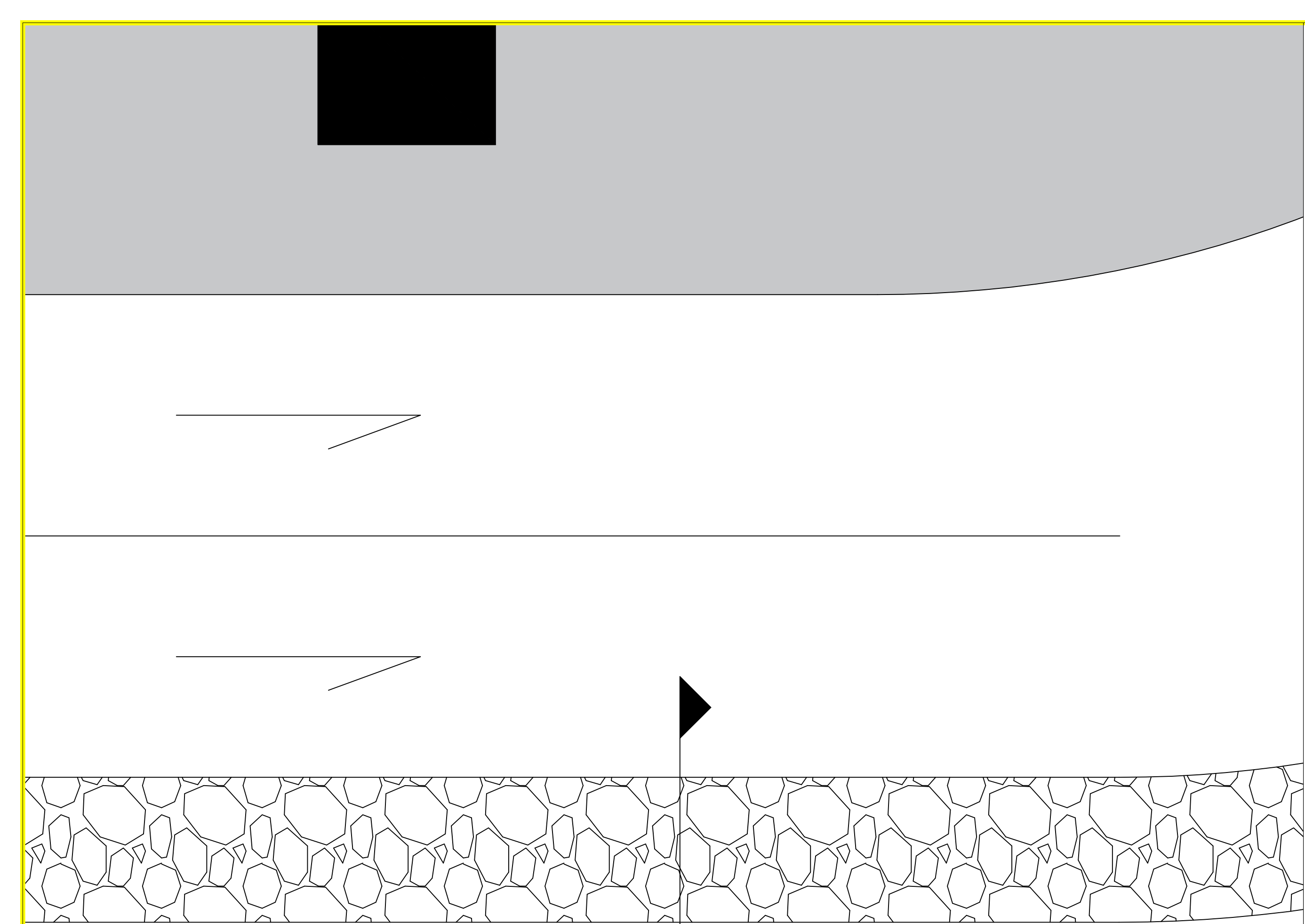
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SHEET NAME
 LAUNCH DETAILS
 DOCK DETAILS

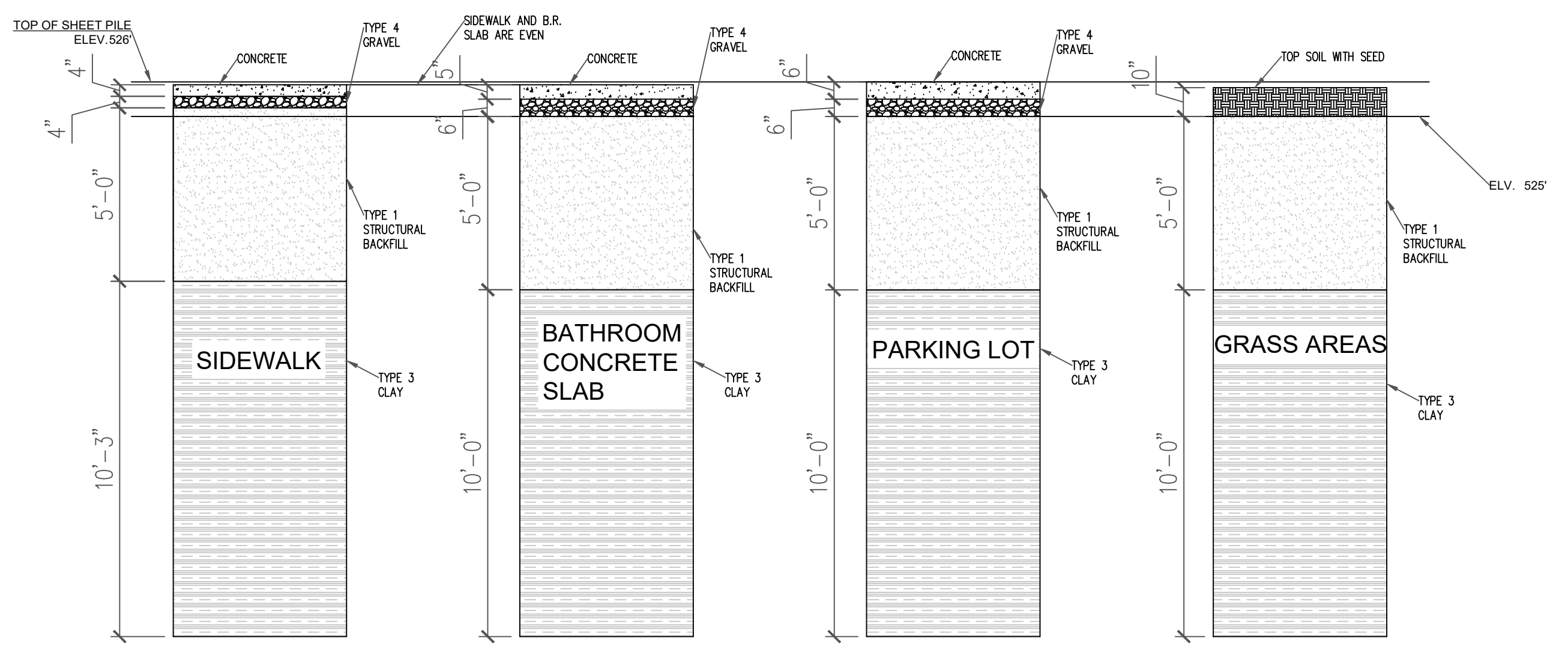
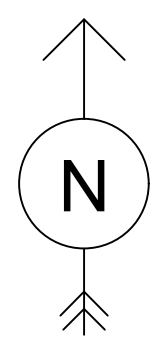
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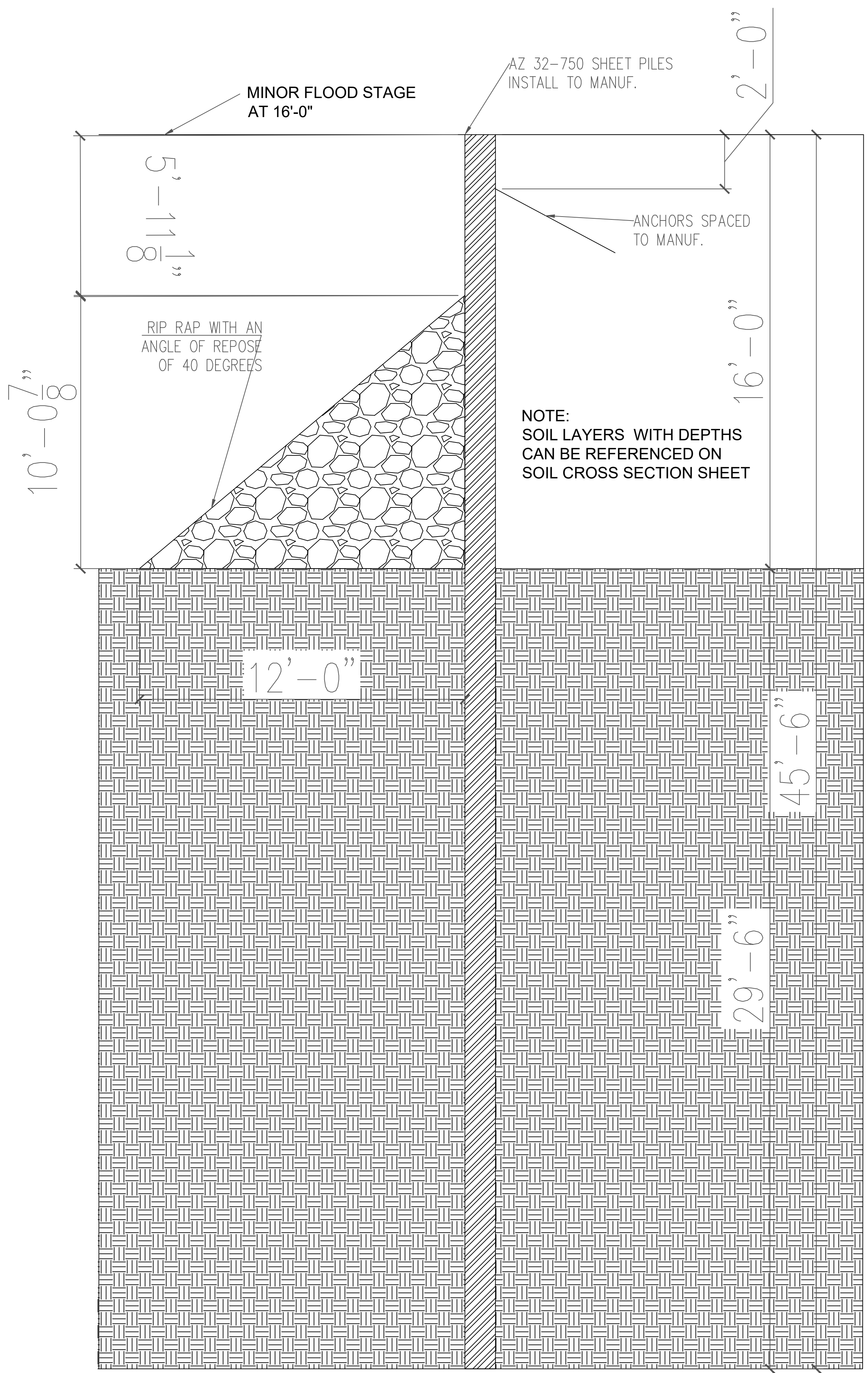
NOTE:
SHEET PILES OUTLINE THE ENTIRE
SITE PLAN CREATING A COFFER DAM

S1
1

SHEET PILE WALL LOCATION DETAIL



TYPICAL SOIL CROSS SECTION



(1) TYPICAL SHEET PILE WALL DETAIL

NOTE:
ANCHORS ARE DESIGNED
FOR 6.010 PLF AND ARE AT
AN ANGLE OF 57.5 DEGREES
WITH THE LINEAR PLAIN

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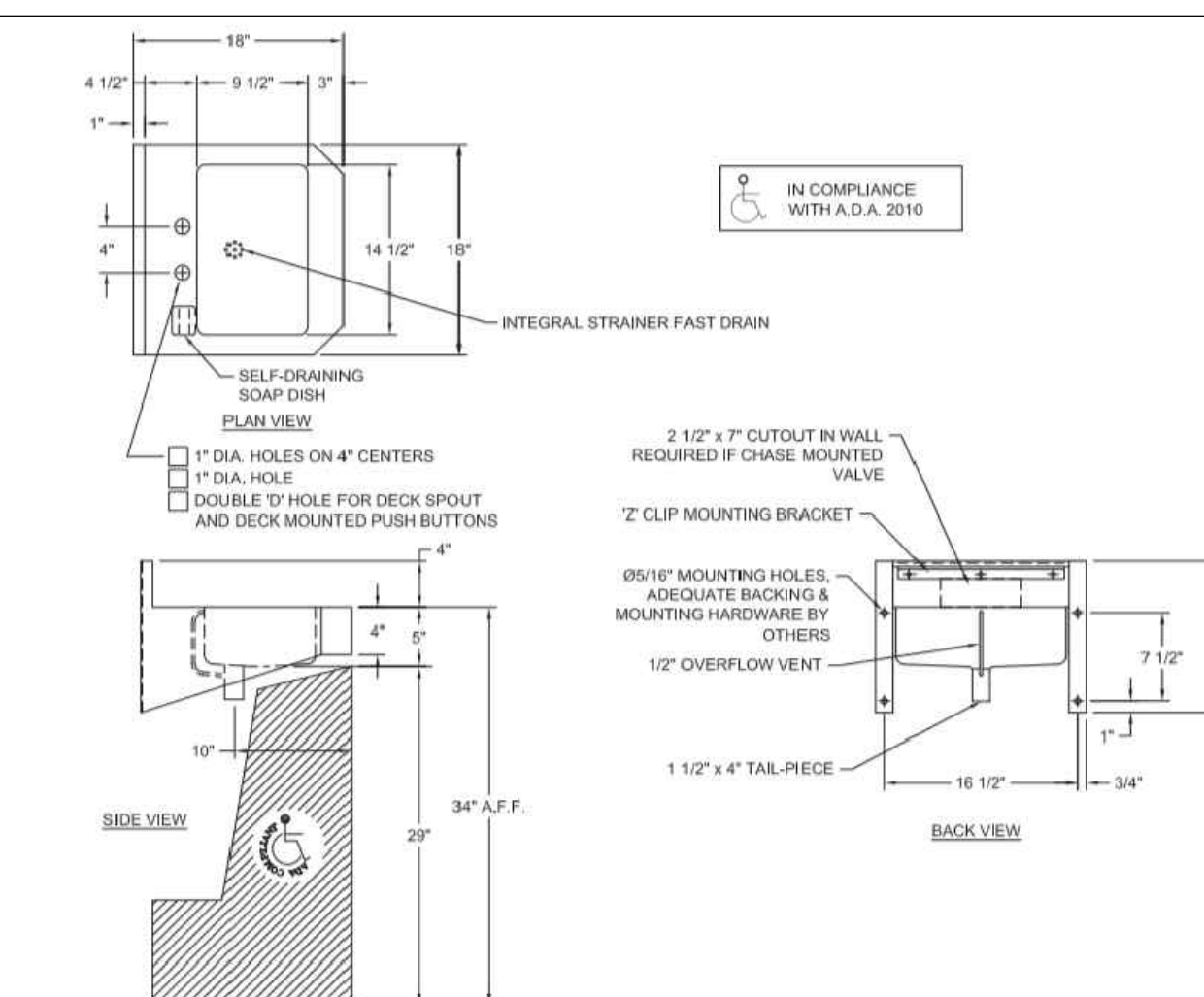
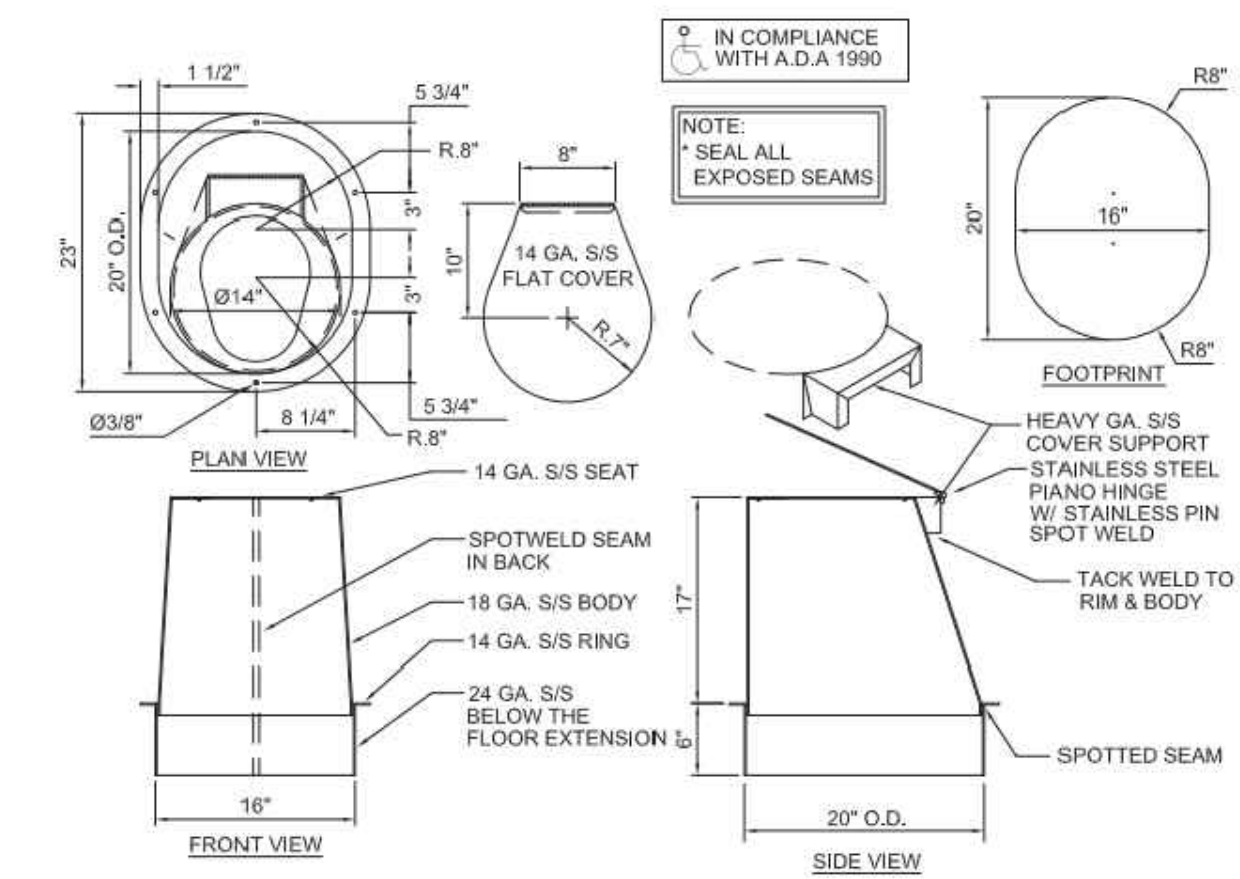
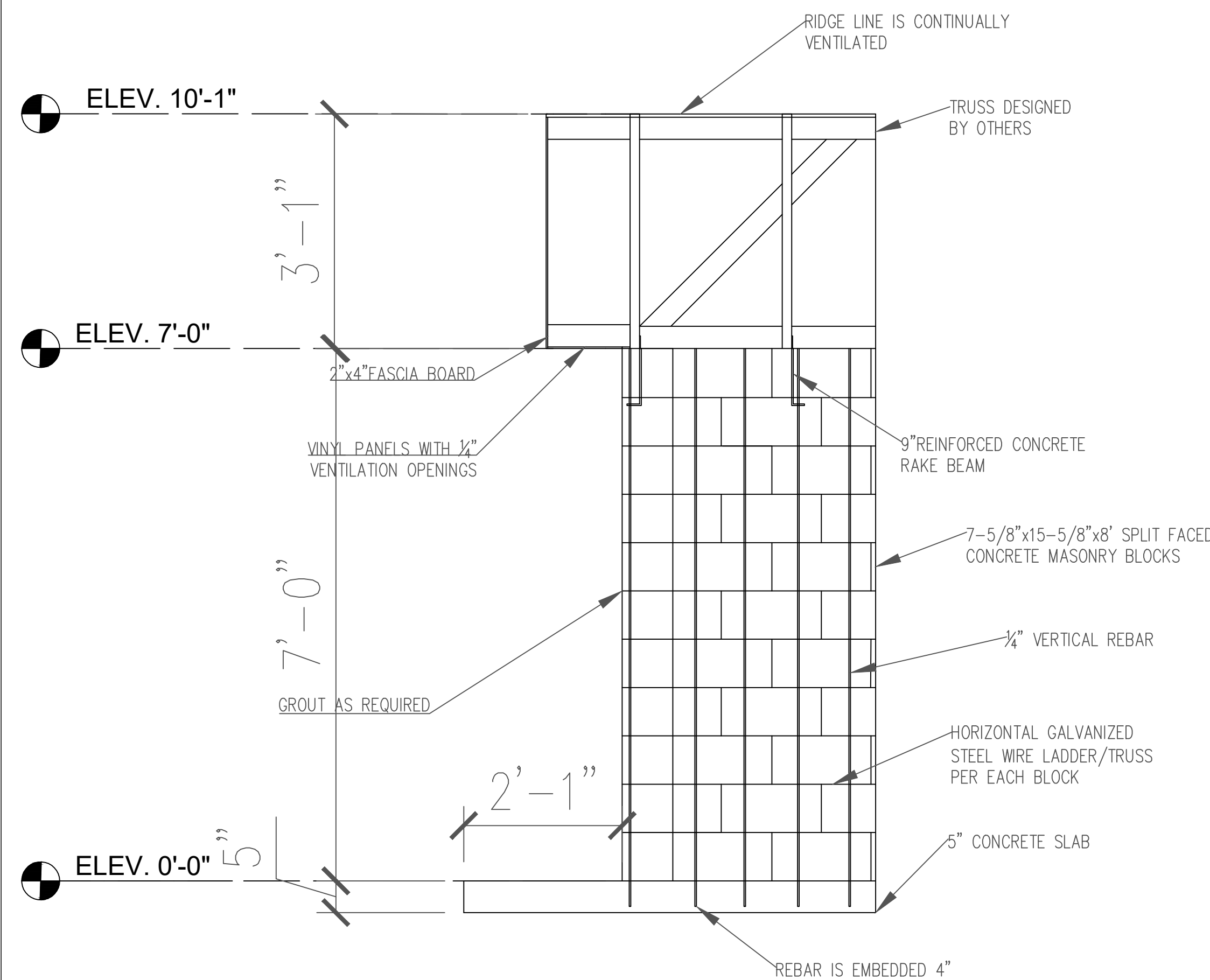
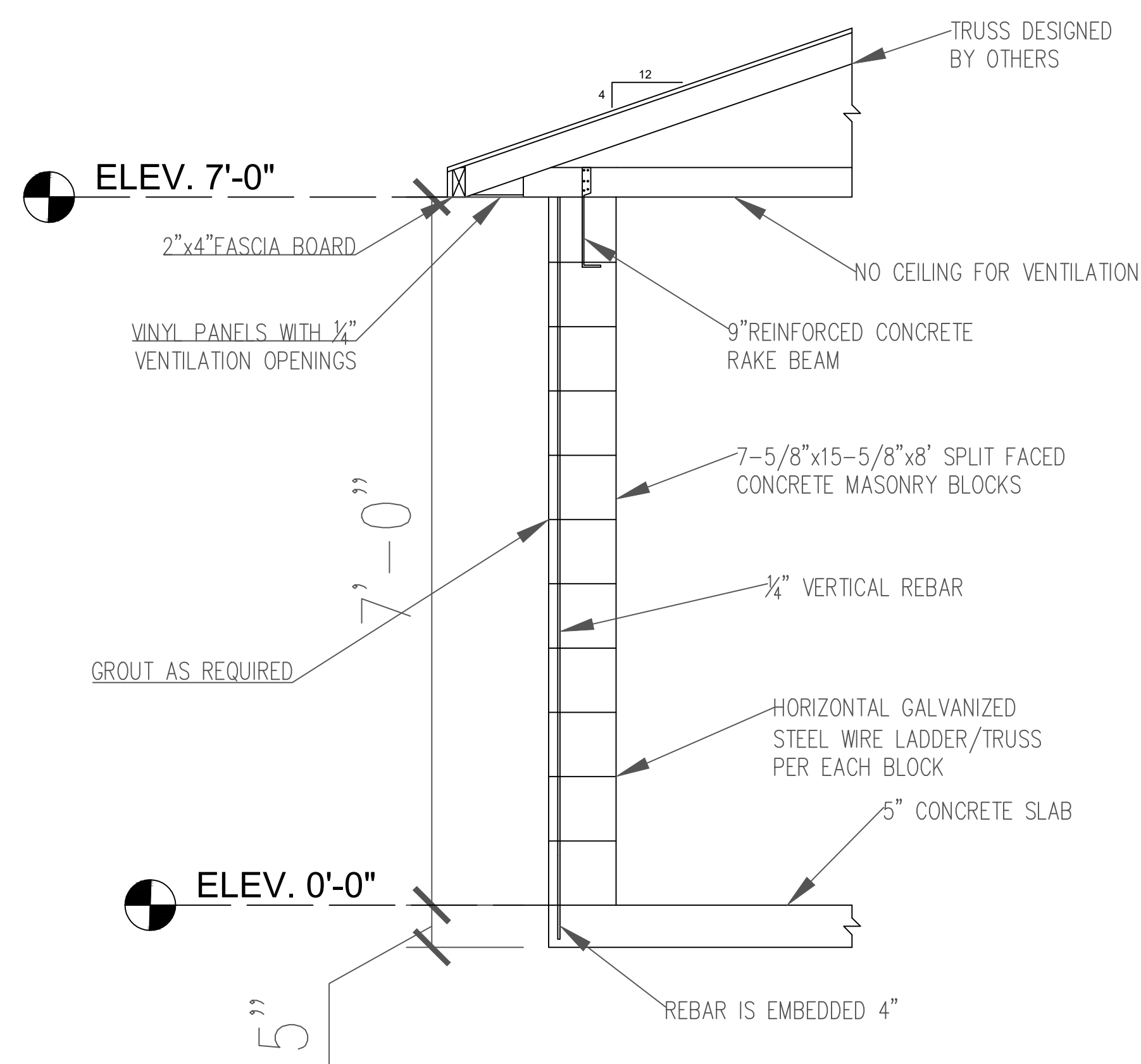
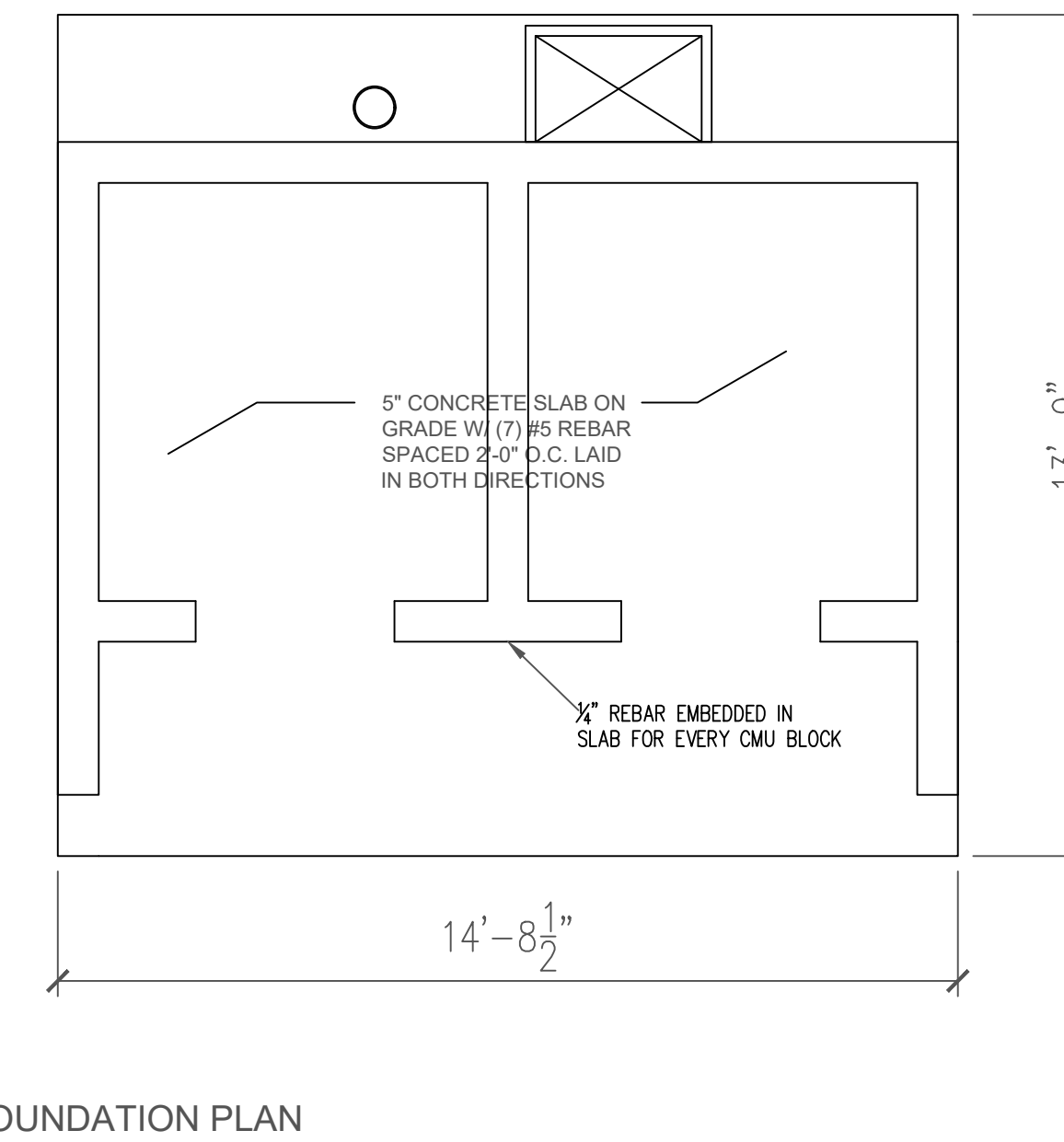
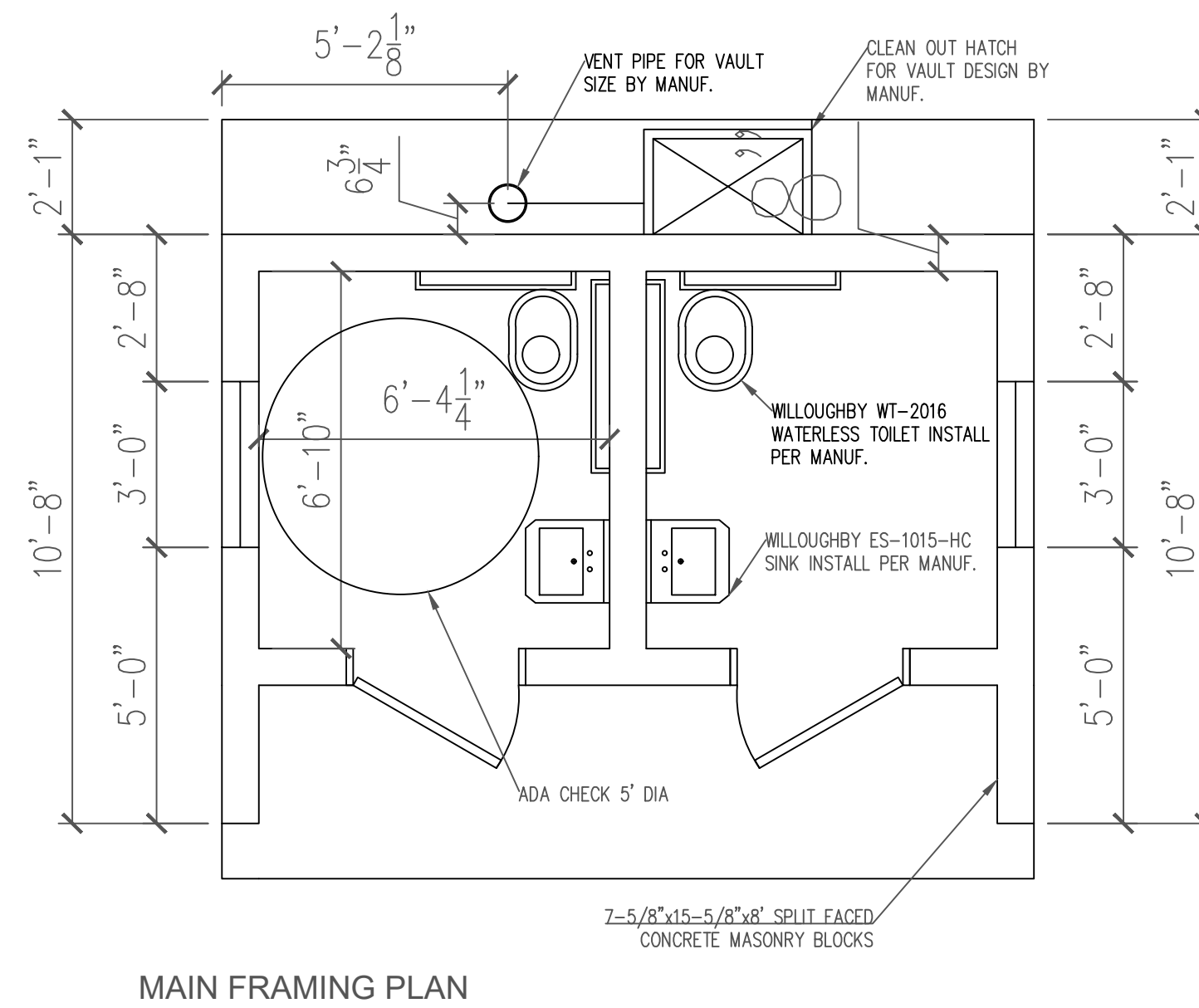
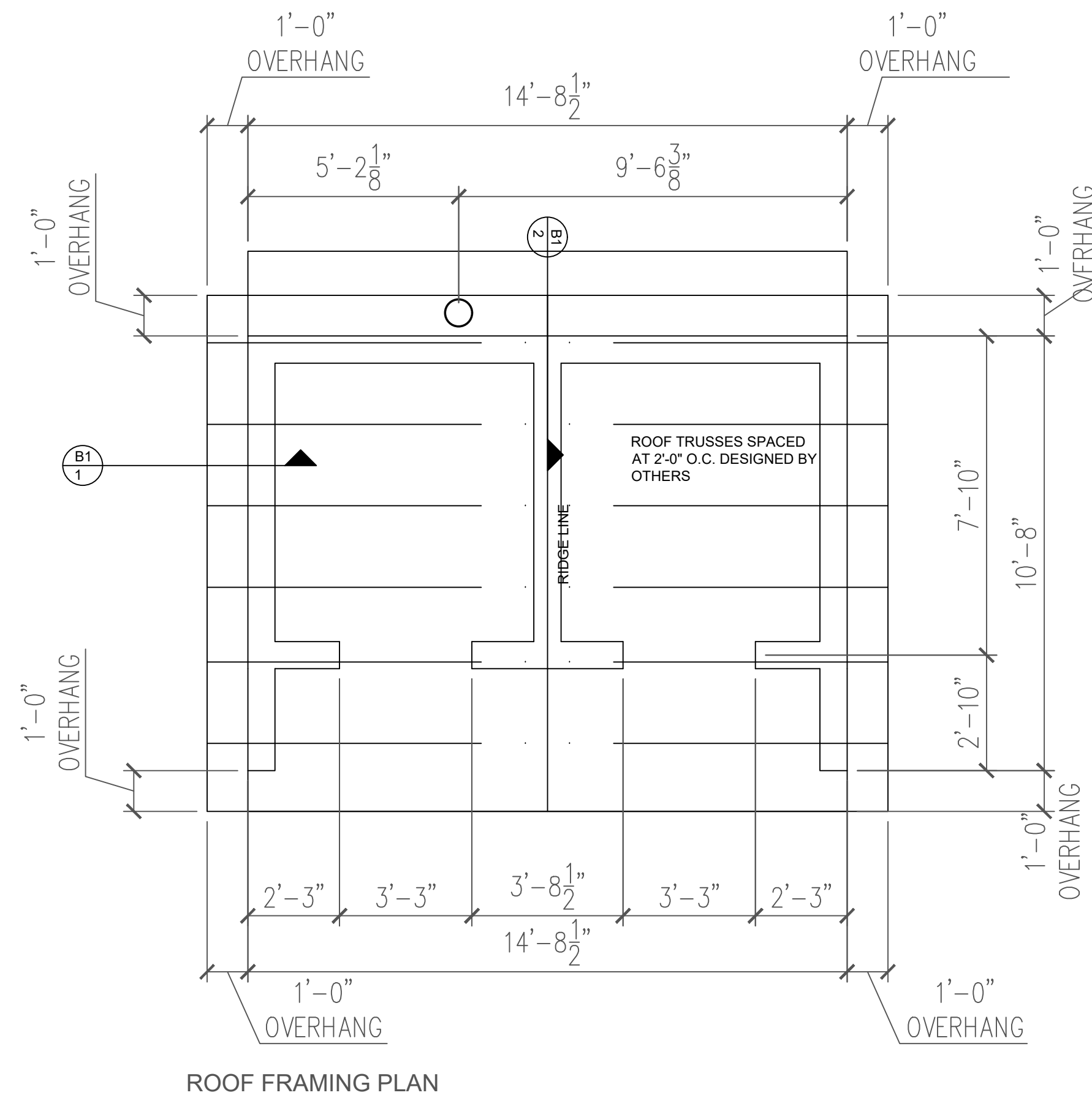
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KEOKUK, IOWA

SHEET NAME
SHEET PILE DETAIL

SHEET NO.
S1



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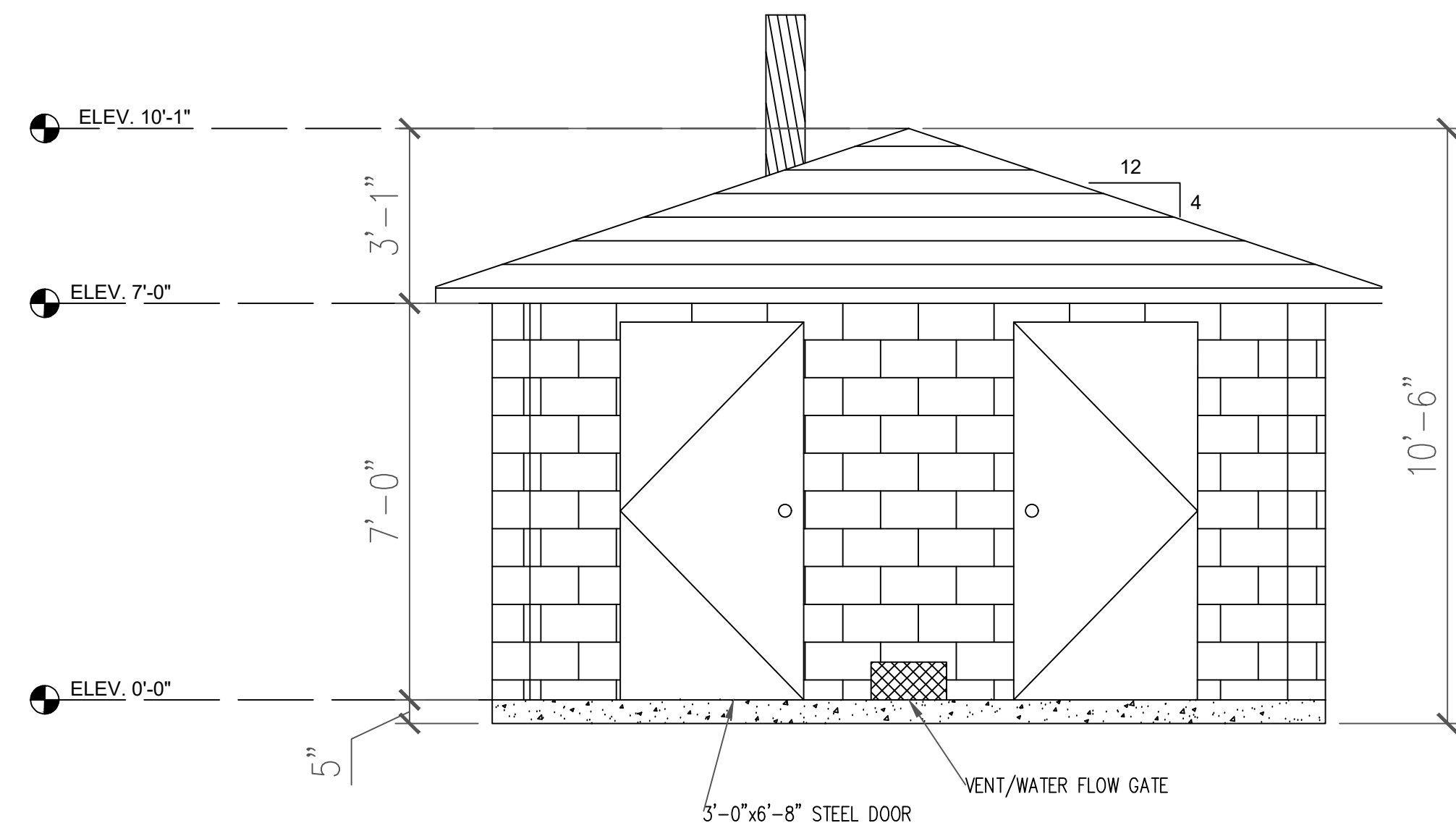
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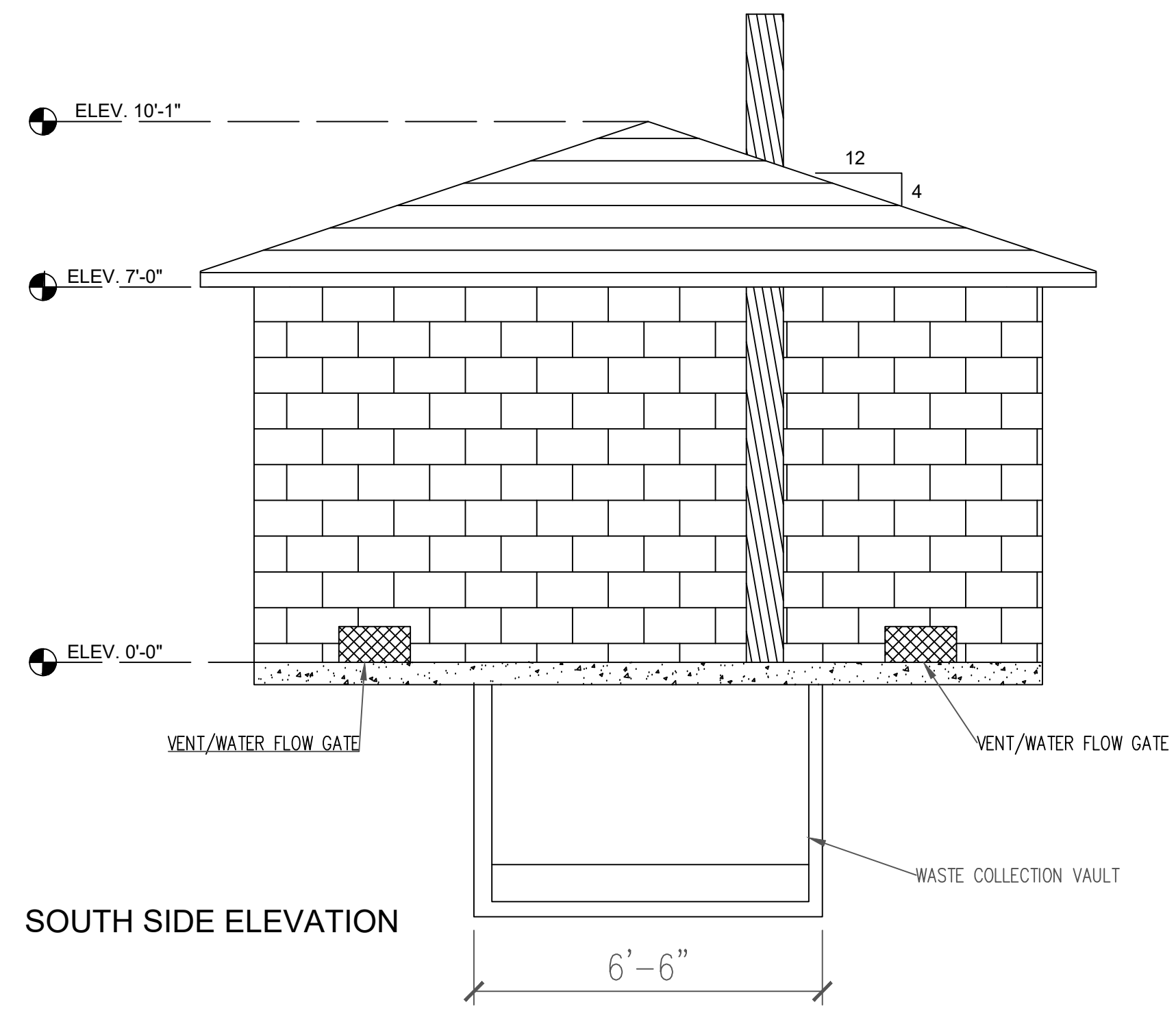
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 BATHROOM DETAILS
 SHEET NO.

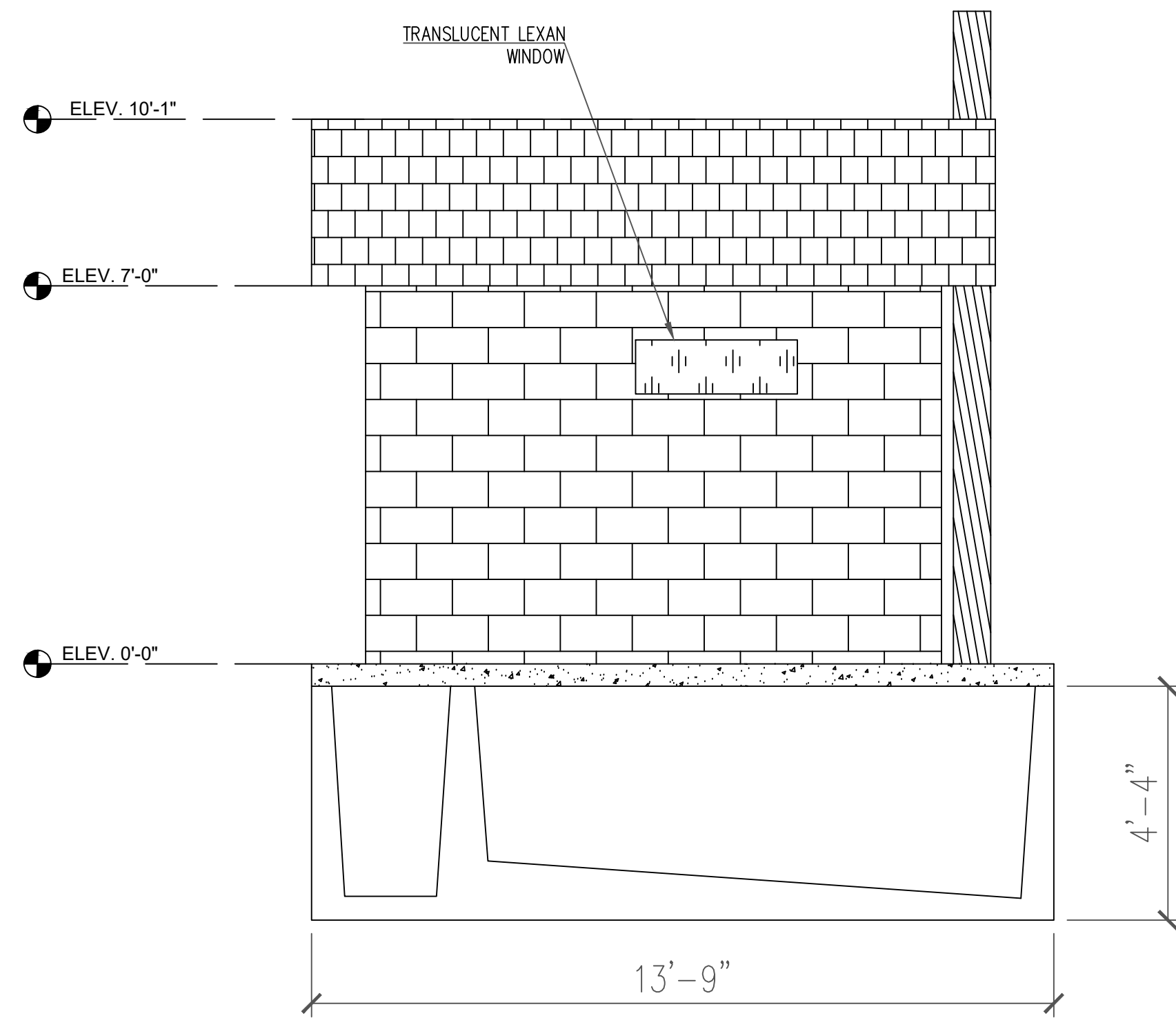
B1



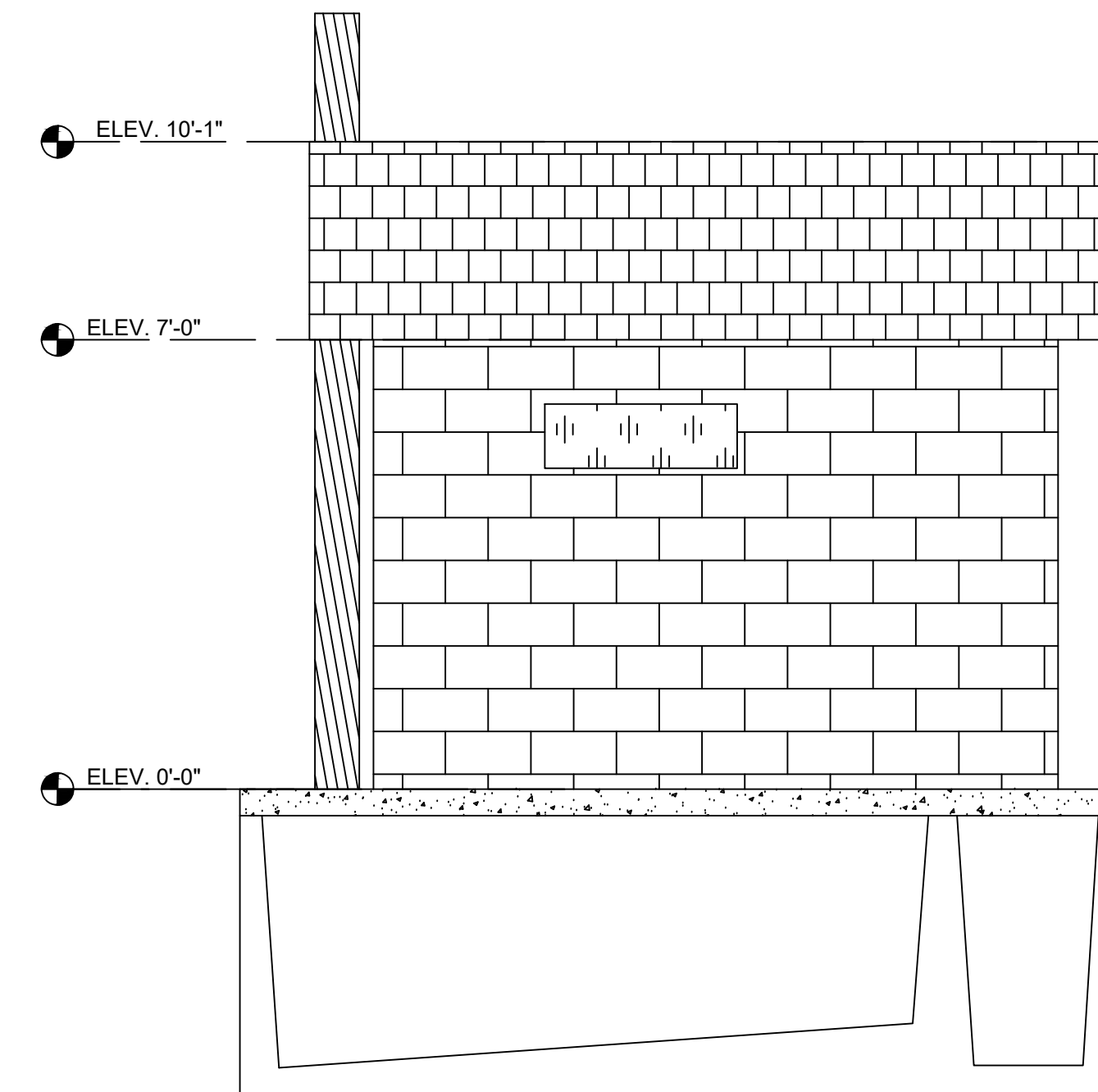
NORTH SIDE ELEVATION



SOUTH SIDE ELEVATION



WEST SIDE ELEVATION



EAST SIDE ELEVATION

PROJECT:	CEE: 4850
DATE :	05/08/2020
DRAWN BY:	JNP
REVISION:	

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CEE logo BW - no text.tif

EDUCATIONAL - NOT FOR CONSTRUCTION

RECREATIONAL RIVER ACCESS

KEOKUK, IOWA

SHEET NAME

BATHROOM ELEVATION
 SEPTIC VAULT DETAIL

SHEET NO.

B2