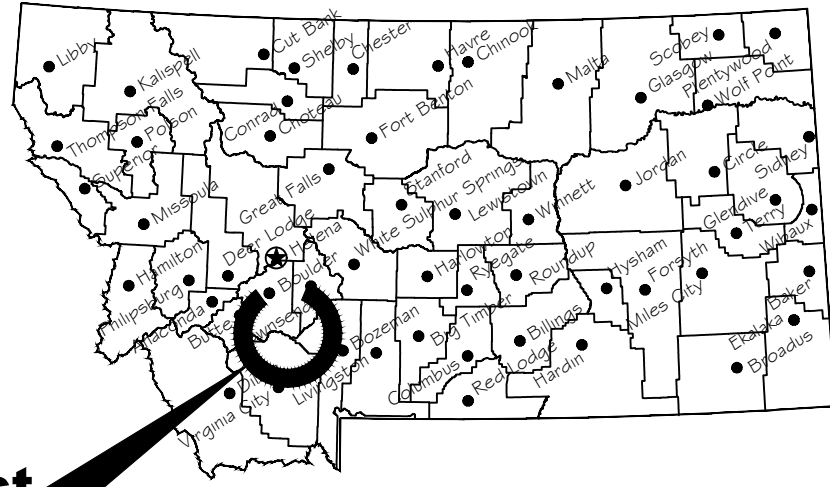


PROPOSED BIKE-HIKE CAMPSITE DEVELOPMENT AT LEWIS AND CLARK CAVERNS STATE PARK CAMPGROUND

NEAR CARDWELL, MT

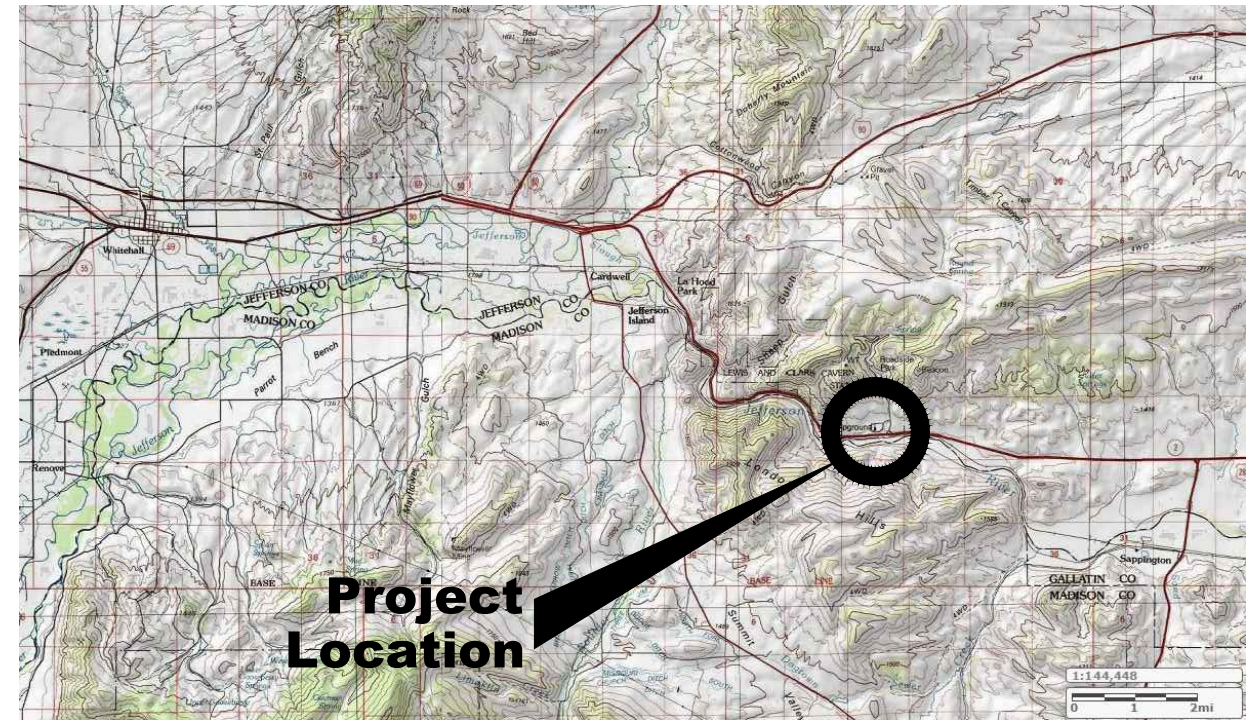
FWP PROJECT #21-06



Project Location

Location Map

No Scale



Project Location

Vicinity Map

No Scale



MONTANA FISH, WILDLIFE AND PARKS
DESIGN AND CONSTRUCTION

MAILING ADDRESS:

PO BOX 200701
HELENA, MT 59620-0701

TEL 406.841.4000
FAX 406.841.4004

fwp.mt.gov/Doing_Business/Design#Construction

PHYSICAL ADDRESS:

1522 9th AVENUE
HELENA, MT 59601

DRAWING INDEX

- | | |
|--------------------------------------|--|
| 1 COVER SHEET | S1 of 6 BIKE SHELTER ELEVATIONS |
| 2 SITE PLAN | S2 of 6 TYPICAL SHELTER CROSS SECTION |
| 3 TYPICAL SITE DETAILS | S3 of 6 FOUNDATION PLAN AND TYPICAL SECTIONS |
| 4 TYPICAL SITE DETAILS | S4 of 6 SHELTER FRAMING PLAN |
| 5 SITE DETAILS ADDITIVE ALTERNATE #1 | S5 of 6 BRACING TRUSS AND TYPICAL SECTIONS |
| | S6 of 6 GABLE END AND TABLE/BENCH DETAILS |



B. Mangum 3/4/2021

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**MONTANA FISH,
WILDLIFE & PARKS**

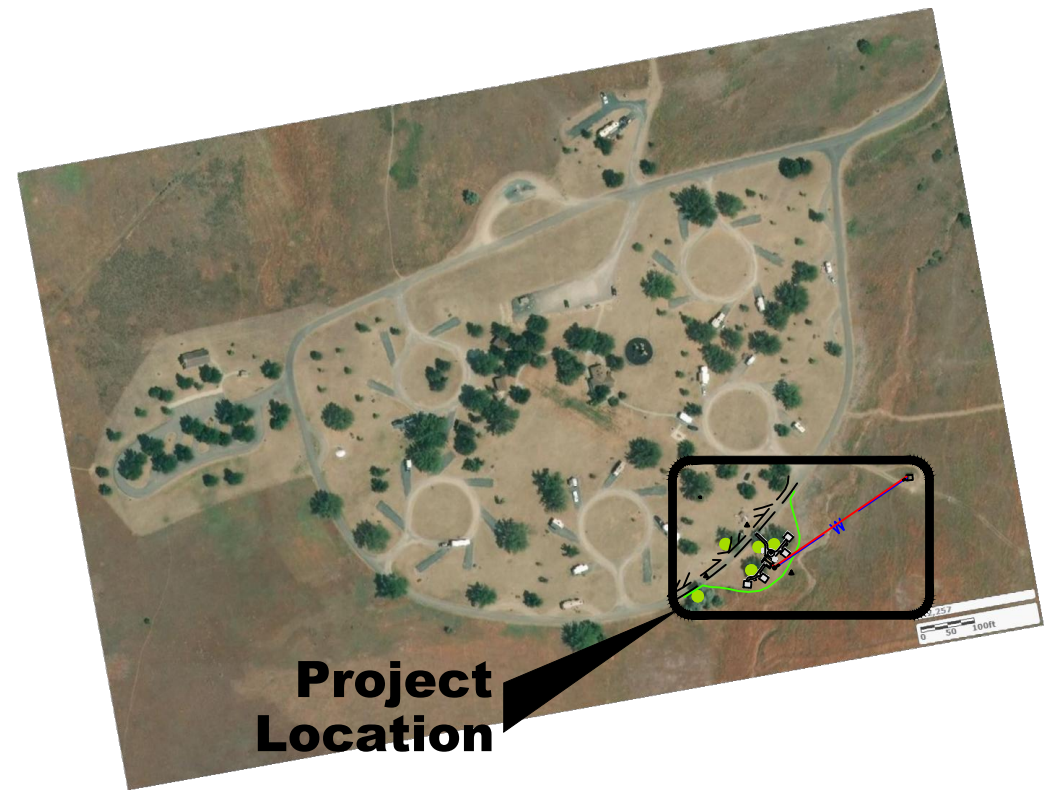
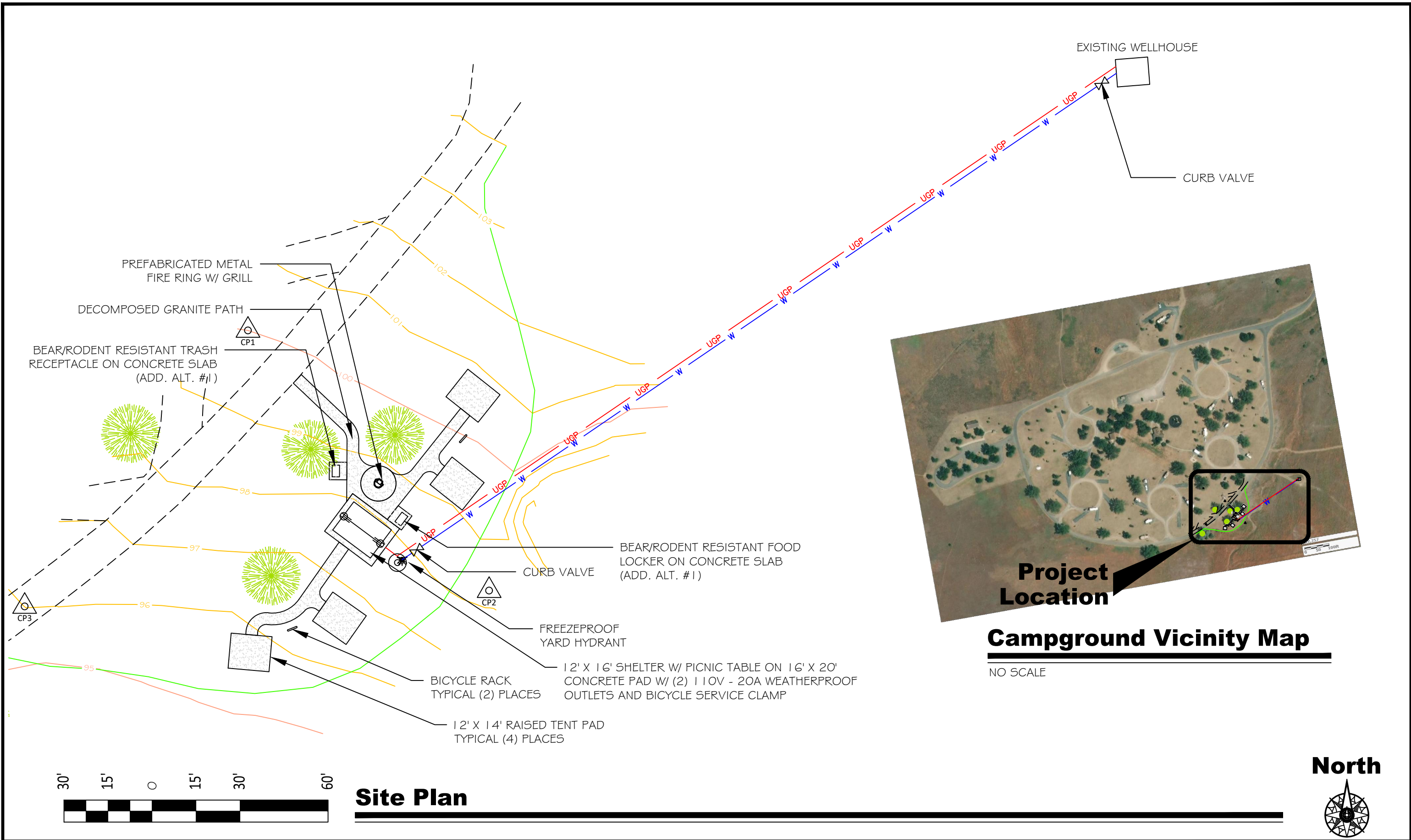
151

Cover Sheet

Lewis and Clark Caverns State Park



SHEET: 1 of 5



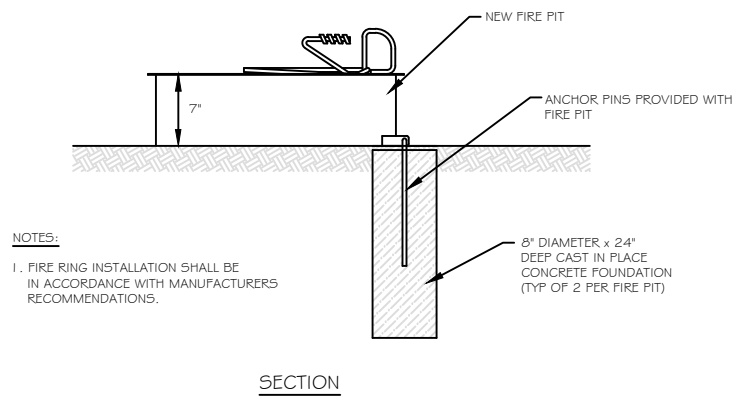
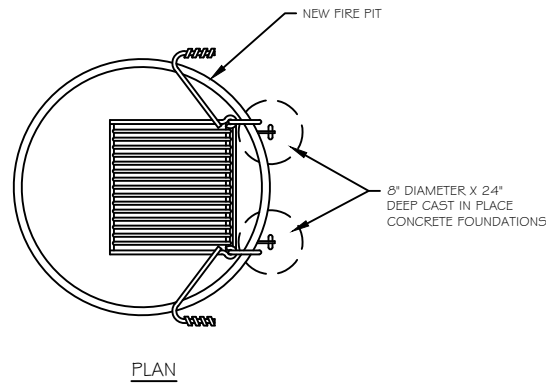
Project Location
Campground Vicinity Map
 NO SCALE

Site Plan

B. Mangum	8/17/2020				
DRAWN BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:
CHECKED BY:	DATE:	APPROVED BY:	DATE:	APPROVED BY:	DATE:



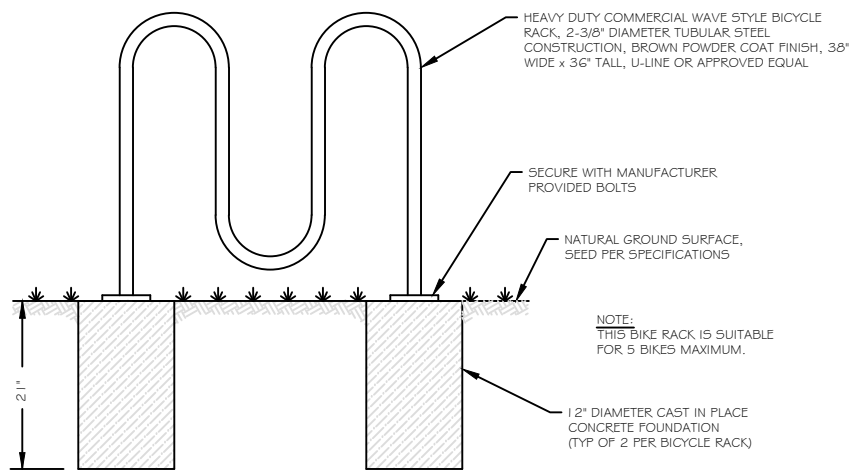
Site Plan
 Lewis and Clark Caverns State Park



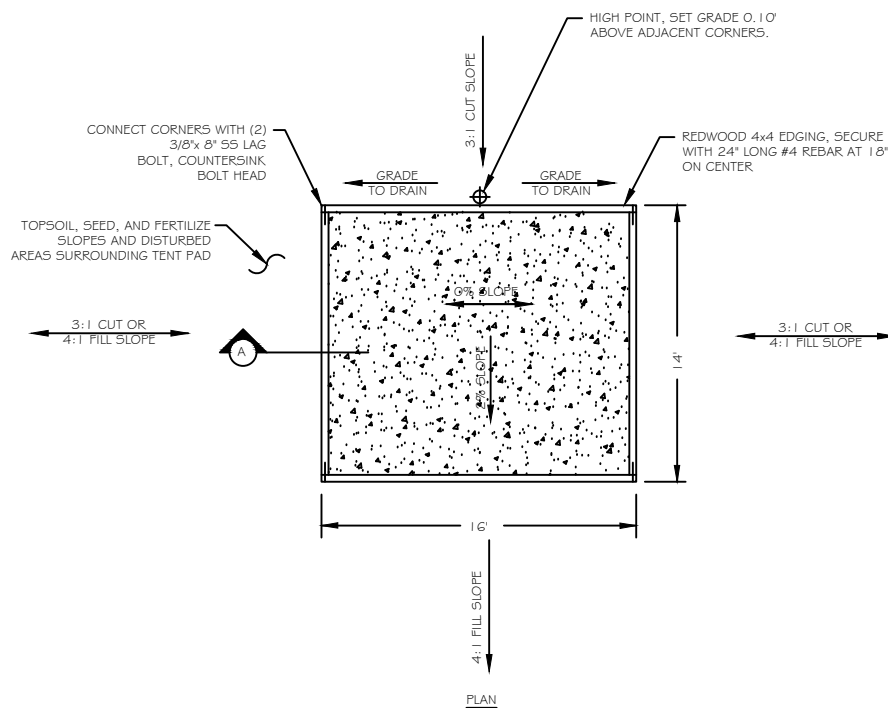
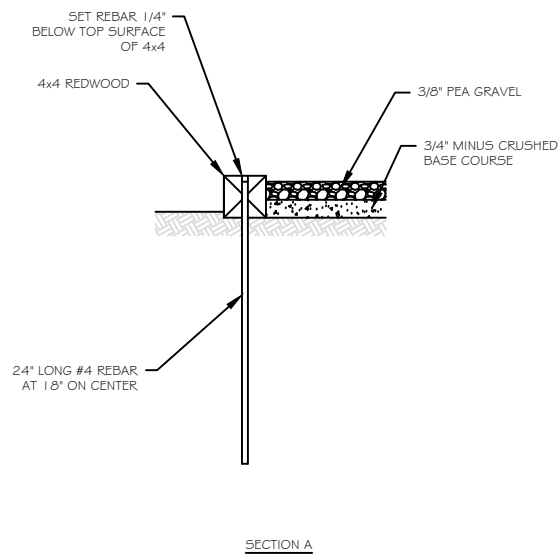
NOTES:

1. FIRE RING INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

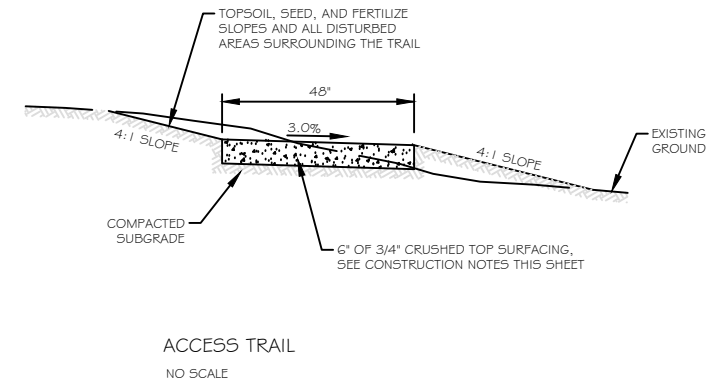
FIRE RING DETAIL
NO SCALE



WAVE STYLE BICYCLE RACK
NO SCALE



TENT PAD DETAIL
NO SCALE



CONSTRUCTION NOTES:

- ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH 'MONTANA PUBLIC WORKS SPECIFICATIONS', SIXTH EDITION (MPW).
- BEFORE DIGGING, CALL 811 FOR LOCATION OF EXISTING UTILITIES. THE LOCATION OF UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND WERE DERIVED PRIMARILY FROM AS-BUILT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF PRIVATE UTILITIES WITHIN THE PROJECT AREA, NOT LOCATED BY UTILITY COMPANIES.
- ALL DISTURBED AREAS AND AREAS DESIGNATED IN THE PLANS FOR SEEDING SHALL BE TOPSOILED, SEEDED, MULCHED, AND FERTILIZED (SEE MPW SEEDING SPECIFICATIONS). SALVAGED TOPSOIL SHALL BE SPREAD EVENLY OVER DISTURBED AREAS. SEED MIX SHALL BE NATIVE DRYLAND MIX AS FOLLOWS:

PLANT SPECIES	LBS/ACRE
WESTERN WHEATGRASS	4 LBS
BLUEBUNCH WHEATGRASS	10 LBS
MOUNTAIN BROME	11 LBS
ROUGH FESCUE	3 LBS
TOTALS	28 LBS

- ALL EXCAVATION AND EMBANKMENT ON THIS PROJECT, SHALL MEET THE REQUIREMENTS OF MPW SPECIFICATION 02/230 STREET EXCAVATION, BACKFILL AND COMPACTION.
- CONCRETE SHALL BE M-4000 AS DEFINED BY MPW SPECIFICATION 03/310 STRUCTURAL CONCRETE. REINFORCING STEEL SHALL BE ASTM 615, GRADE 60.
- CONCRETE SLABS AND SUPPORT PADS SHALL BE CROSS SLOPED AT A MAXIMUM 1.8% OR AS INDICATED.
- ALL TESTING OF CONCRETE REQUIRED BY MPW SHALL BE PROVIDED BY AN INDEPENDENT TESTING FIRM AT THE EXPENSE OF THE CONTRACTOR.
- WATER PIPING SHALL BE 1" DR 9 HDPE PIPE INSTALLED WITH A MINIMUM OF 6-FOOT COVER, AND BEDDED PER MPW SPECIFICATIONS.
- CRUSHED TOP SURFACING FOR GRAVEL SURFACING SHALL MEET THE FOLLOWING SPECIFICATIONS INCLUDING BINDER OR BLENDING MATERIAL:

SIEVE SIZE	% PASSING
3/4" SIEVE	100%
No. 4 SIEVE	40-80%
No. 10 SIEVE	25-60%
No. 200 SIEVE	8-20%

IN ADDITION, THE PORTION PASSING THE NO. 200 SIEVE CANNOT EXCEED 2/3 OF THE PORTION PASSING THE #40 SIEVE; THE MAXIMUM LIQUID LIMIT FOR THE MATERIAL PASSING THE NO. 40 SIEVE SHALL NOT EXCEED 35, WHILE THE PLASTICITY INDEX CAN VARY BETWEEN 3 AND 10; THE WEAR FACTOR SHALL NOT EXCEED 50% AT 500 REVOLUTIONS; AND AT LEAST 20% OF THE AGGREGATE RETAINED ON NO. 4 SIEVE SHALL HAVE A FRACTURED FACE.

- IMPORT MATERIAL REQUIRED TO COMPLETE EARTHWORK SHALL BE IMPORTED FROM OFF-SITE AND SHALL BE CLEAN MATERIAL SUITABLE FOR FILL MATERIAL. EXCESS EXCAVATION MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LOCATION APPROVED BY THE OWNER.
- WHERE SHALLOW FILL INTERSECTS EXISTING TREES, CARE WILL BE TAKEN NOT TO DAMAGE THE TREE, USE HAND WORK AS NEEDED TO PROTECT THE TREE FROM DAMAGE.

B. Mangum 8/17/2020
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CHECKED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



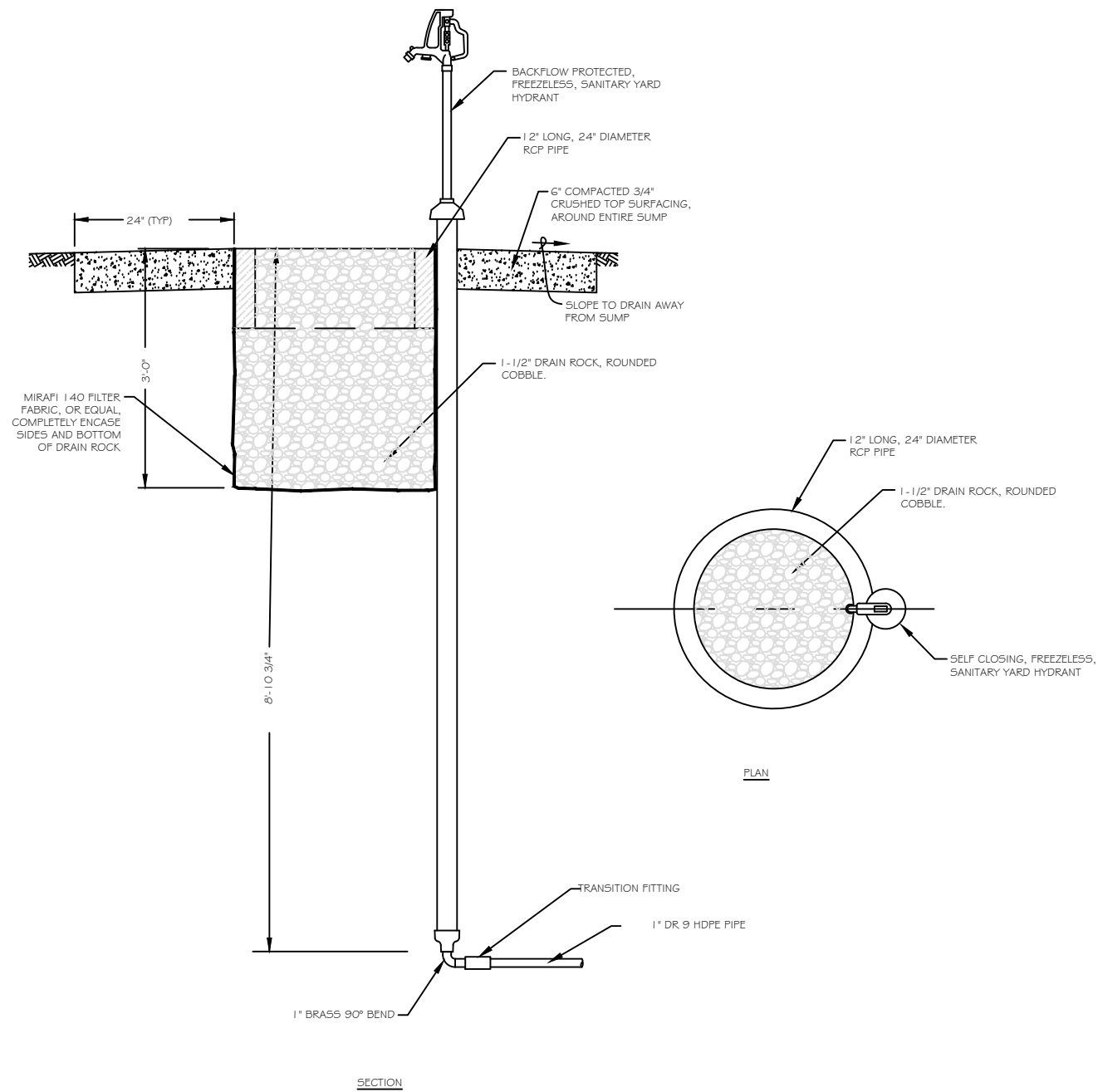
MONTANA FISH,
WILDLIFE & PARKS

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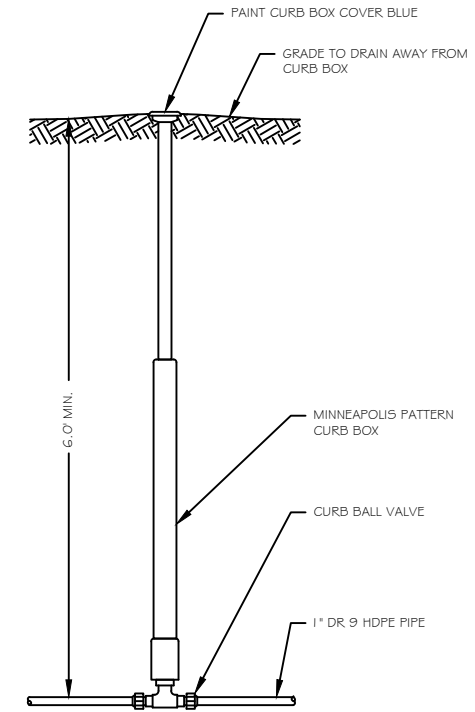
Typical Site Details
Lewis and Clark Caverns State Park



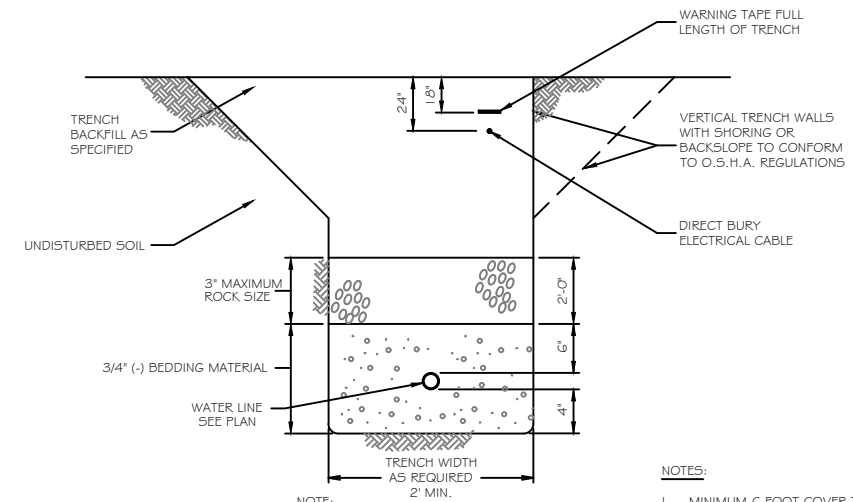
SHEET:
3 of 5



CAMPGROUND WATER SPIGOT
NO SCALE



CURB VALVE DETAIL
NO SCALE



TYPICAL UTILITY TRENCH DETAIL
NO SCALE

NOTE: EMBEDMENT MATERIAL SHALL BE COMPACTED BY SLICING WITH A SHOVEL OR HAND TAMPING TO AN ELEVATION 6" ABOVE THE PIPE.

NOTES:
1. MINIMUM 6 FOOT COVER TO BE MAINTAINED ALONG THE ENTIRE WATER LINE. WHERE AT LEAST 6 FOOT COVER CANNOT BE MAINTAINED, INSTALL RIGID BOARD INSULATION AS DIRECTED BY OWNER. ACTUAL DEPTH OF BURY MAY EXCEED 6 FEET DUE TO TOPOGRAPHY.

B. Mangum 8/17/2020
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CHECKED BY: DATE:

APPROVED BY: DATE:
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APPROVED BY: DATE:



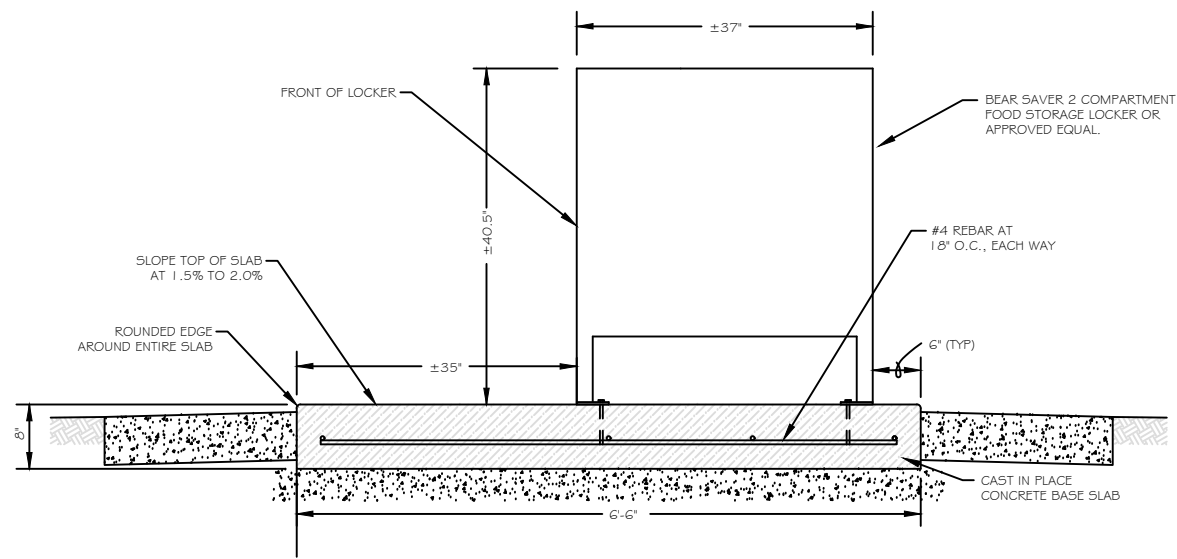
**MONTANA FISH,
WILDLIFE & PARKS**

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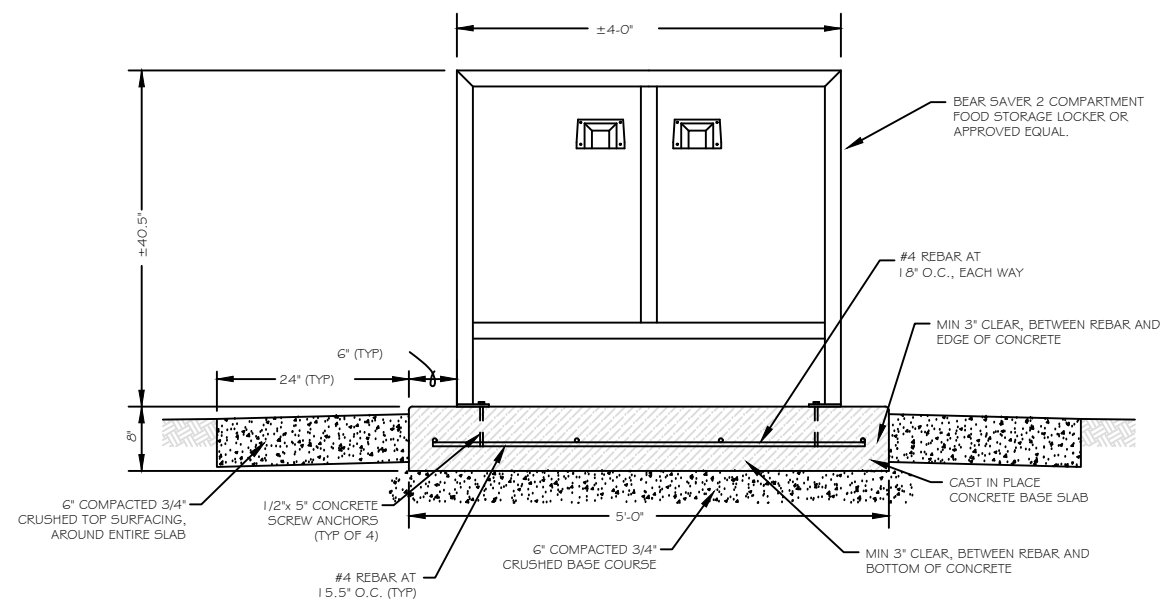
Typical Site Details
Lewis and Clark Caverns State Park



SHEET: 4
of 5

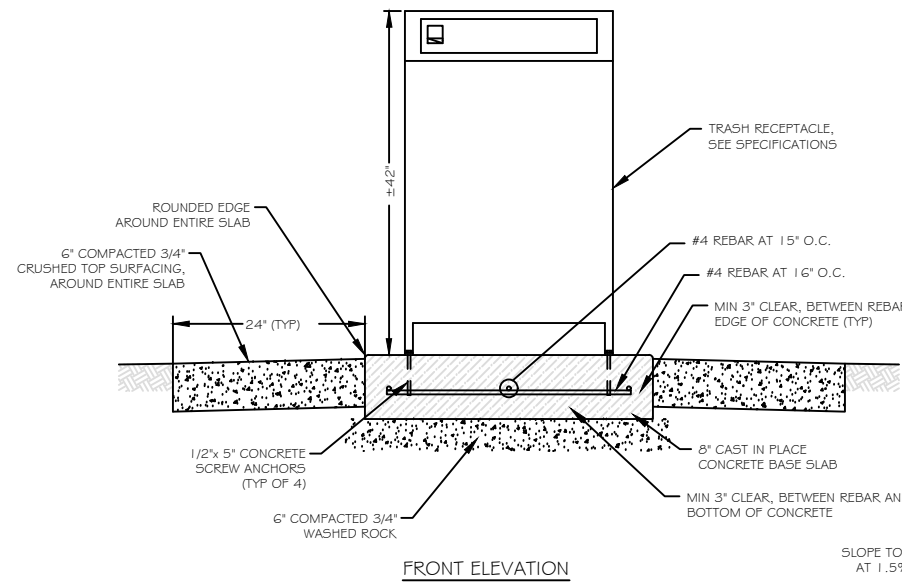


SIDE ELEVATION



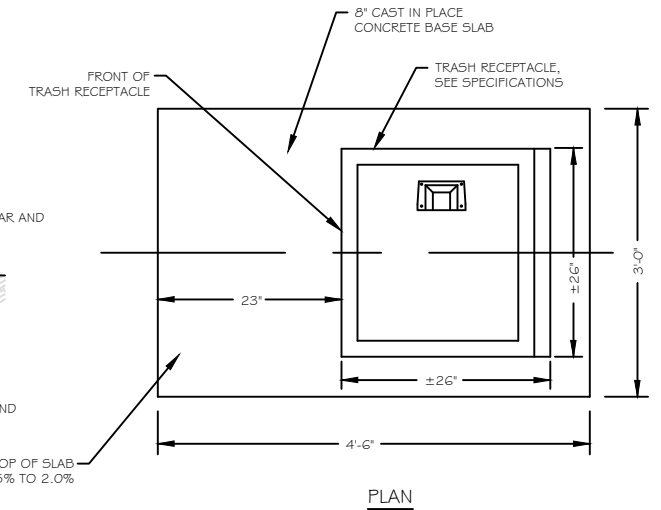
FRONT ELEVATION

2 COMPARTMENT FOOD STORAGE LOCKER
NO SCALE



FRONT ELEVATION

TRASH RECEPTACLE
NO SCALE



PLAN

B. Mangum 8/17/2020
DRAWN BY: DATE:
CHECKED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:

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APPROVED BY: DATE:



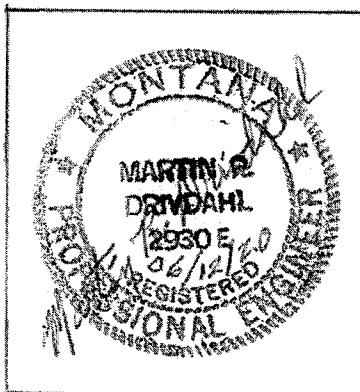
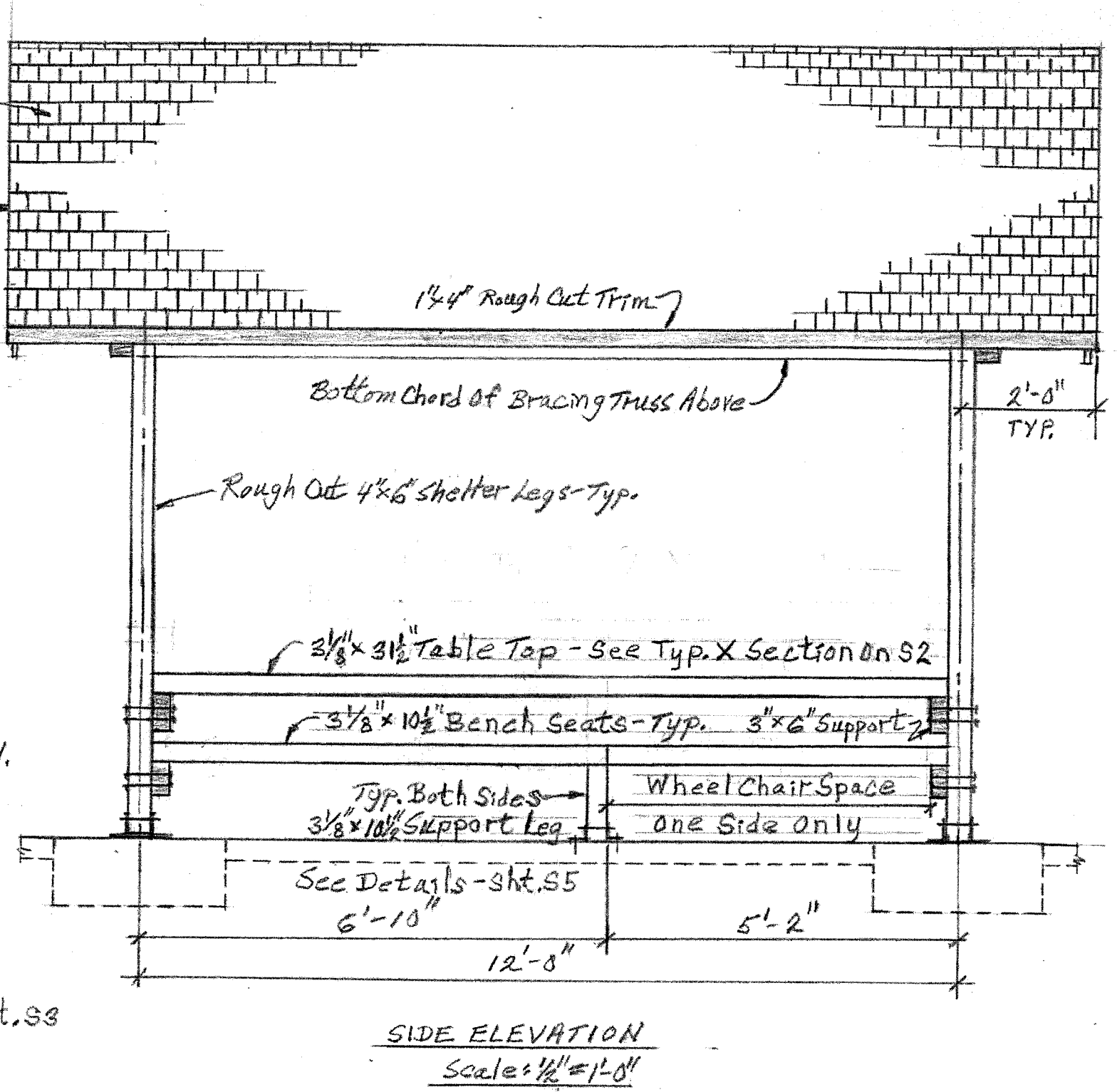
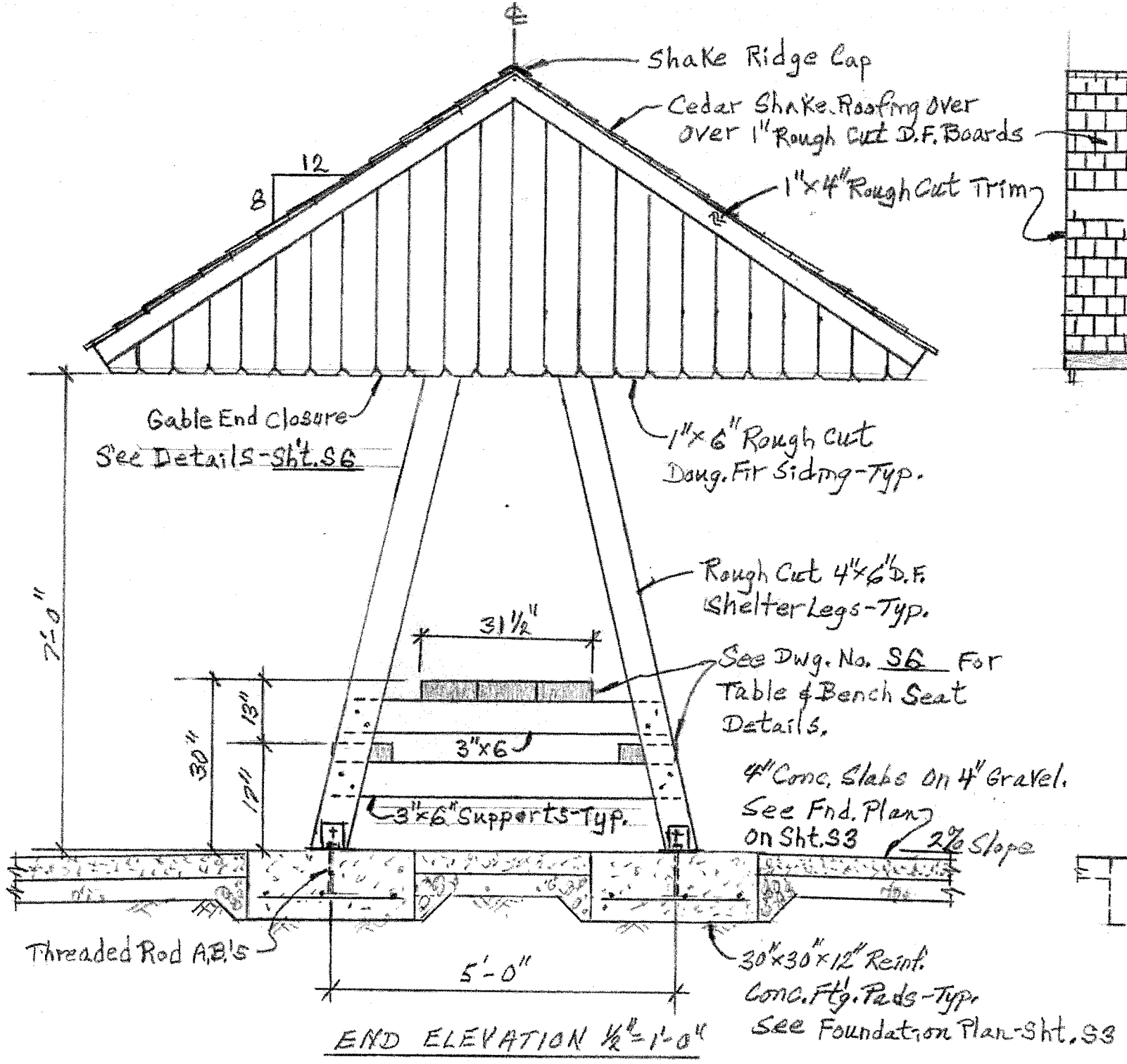
**MONTANA FISH,
WILDLIFE & PARKS**

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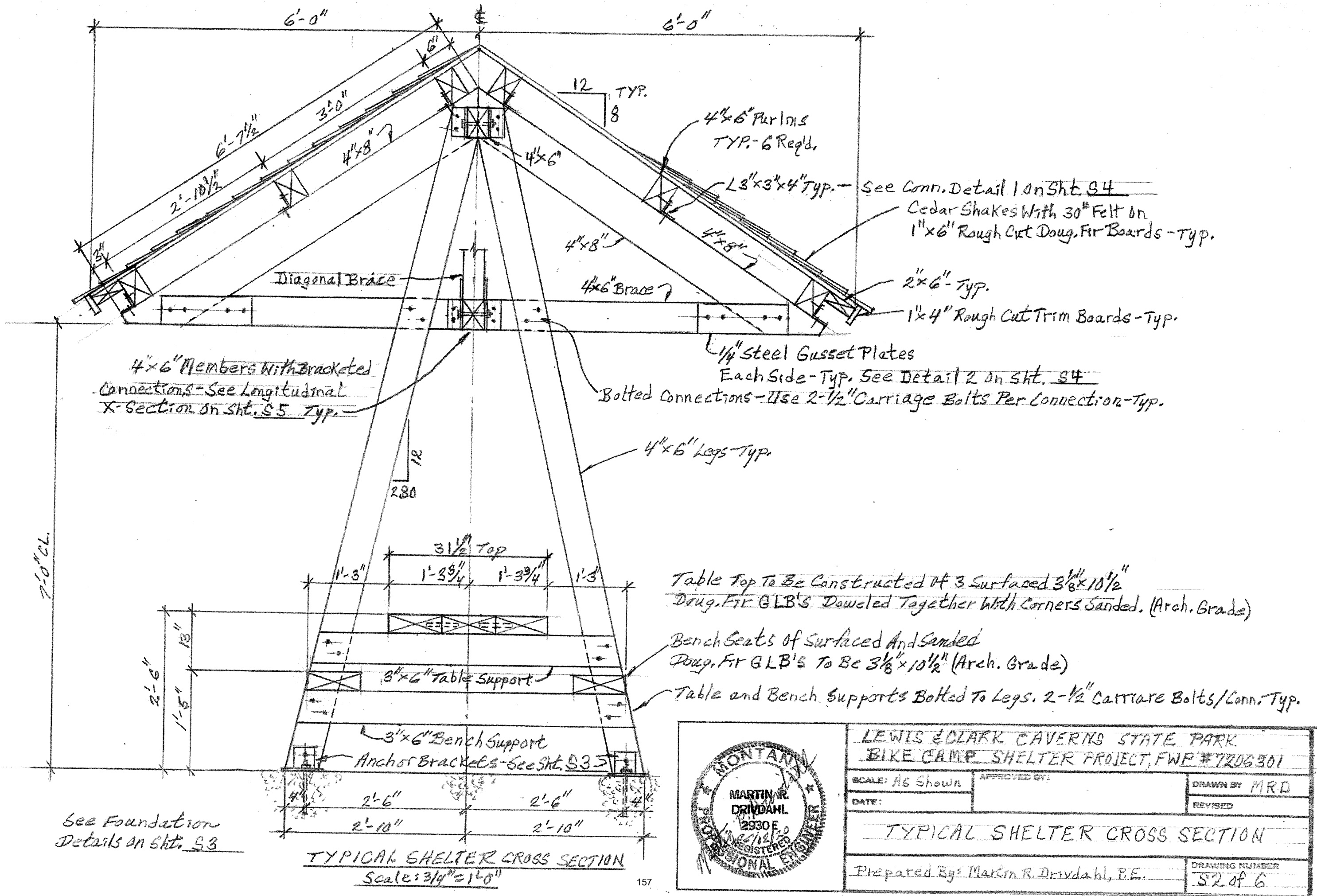
Site Details - Additive Alternate #1
Lewis and Clark Caverns State Park



SHEET: 5 of 5



LEWIS & CLARK CAVERNS STATE PARK		
BIKE CAMP SHELTER PROJECT, FWP #7206301		
SCALE: As Shown	APPROVED BY:	DRAWN BY MRD
DATE:		REVISED
BIKE SHELTER ELEVATIONS		
Prepared By: Martin R. Drivdahl, P.E.		DRAWING NUMBER SI of 6



4"x6" Members with Bracketed Connections - See Longitudinal X-Section on Sht. S5 Typ.

1/4" Steel Gusset Plates Each Side - Typ. See Detail 2 on Sht. S4
 Bolted Connections - Use 2-1/2" Carriage Bolts Per Connection - Typ.

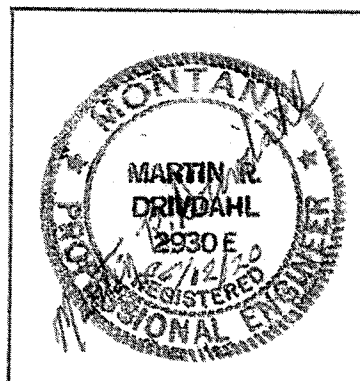
Table Top To Be Constructed of 3 Surfaced 3 1/8" x 10 1/2" Doug. Fir GLB's Doweled Together with Corners Sanded. (Arch. Grade)

Bench Seats of Surfaced and Sanded Doug. Fir GLB's To Be 3 1/8" x 10 1/2" (Arch. Grade)

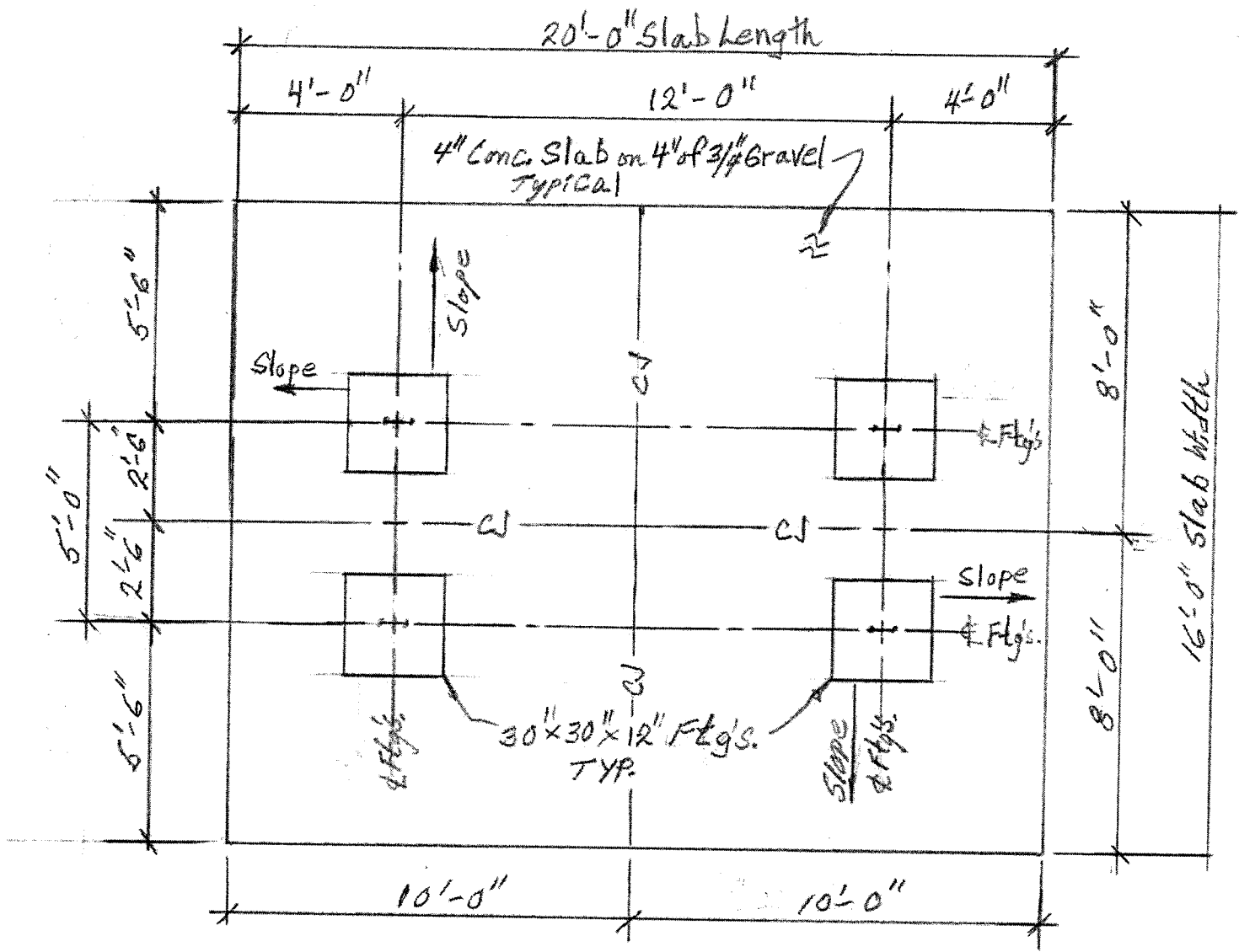
Table and Bench Supports Bolted to Legs. 2-1/2" Carriage Bolts/Conn. Typ.

See Foundation Details on Sht. S3

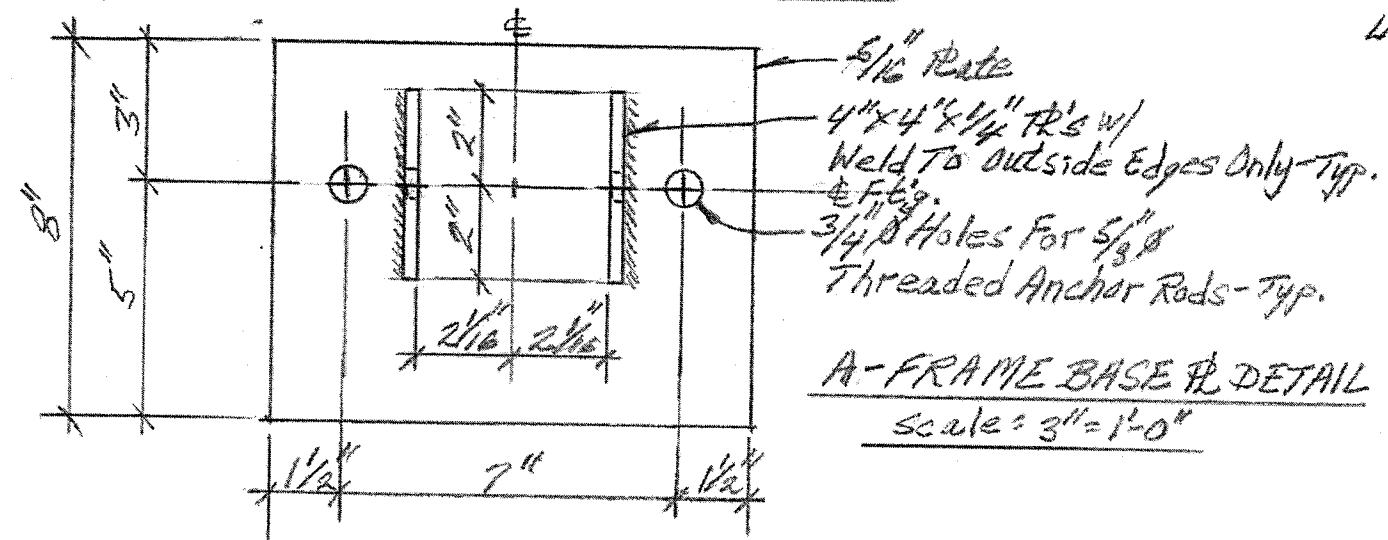
TYPICAL SHELTER CROSS SECTION
 Scale: 3/4" = 1'-0"



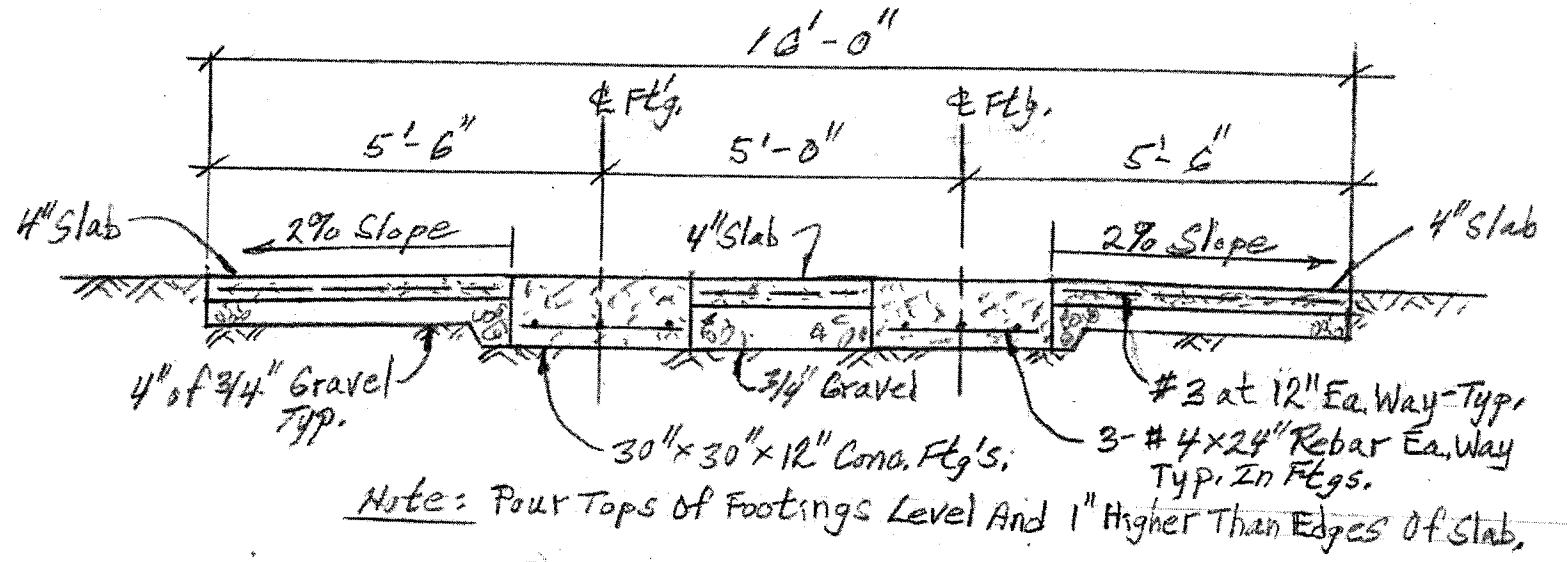
LEWIS & CLARK CAVERNS STATE PARK		APPROVED BY:	
BIKE CAMP SHELTER PROJECT, FWP #7206301		DRAWN BY MRD	
SCALE: AS SHOWN	DATE:	REVISED	
TYPICAL SHELTER CROSS SECTION			
Prepared By: Martin R. Drivdahl, P.E.			DRAWING NUMBER S2 of 6



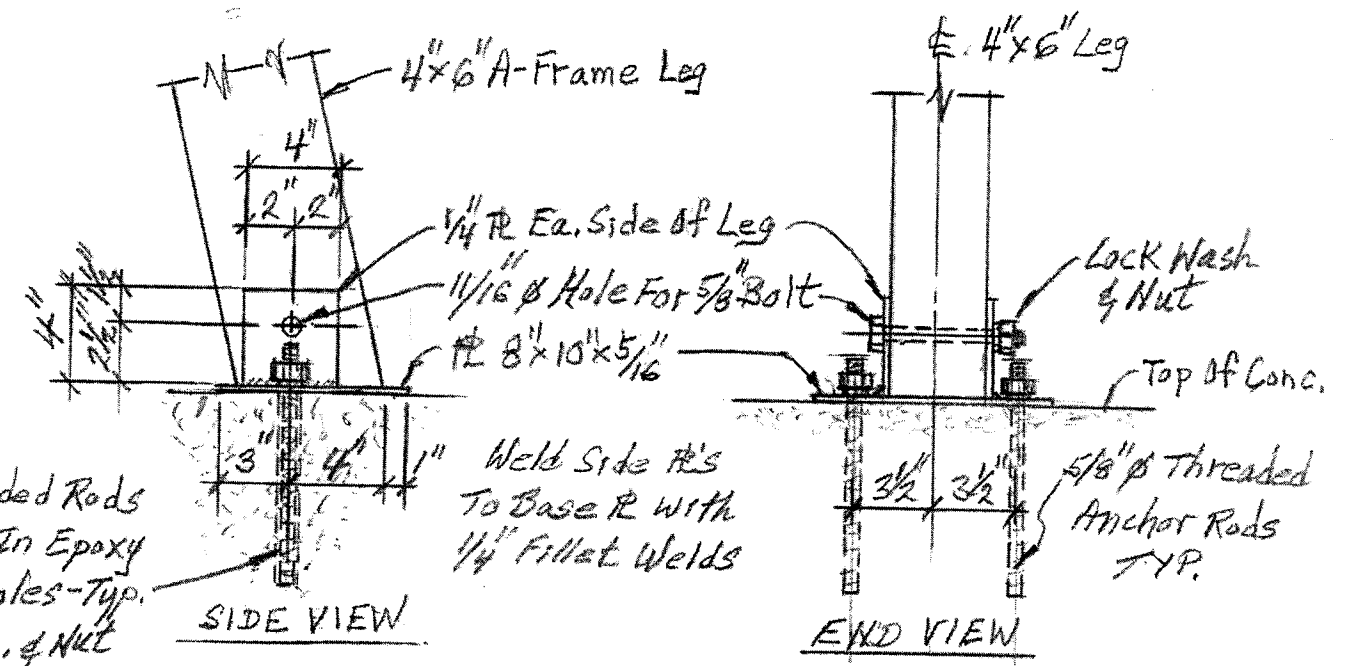
Key: — CJ — Construction Joint
CONCRETE SLAB & FOUNDATION PLAN
 Scale: 1/4" = 1'-0"



A-FRAME BASE PL DETAIL
 Scale: 3" = 1'-0"



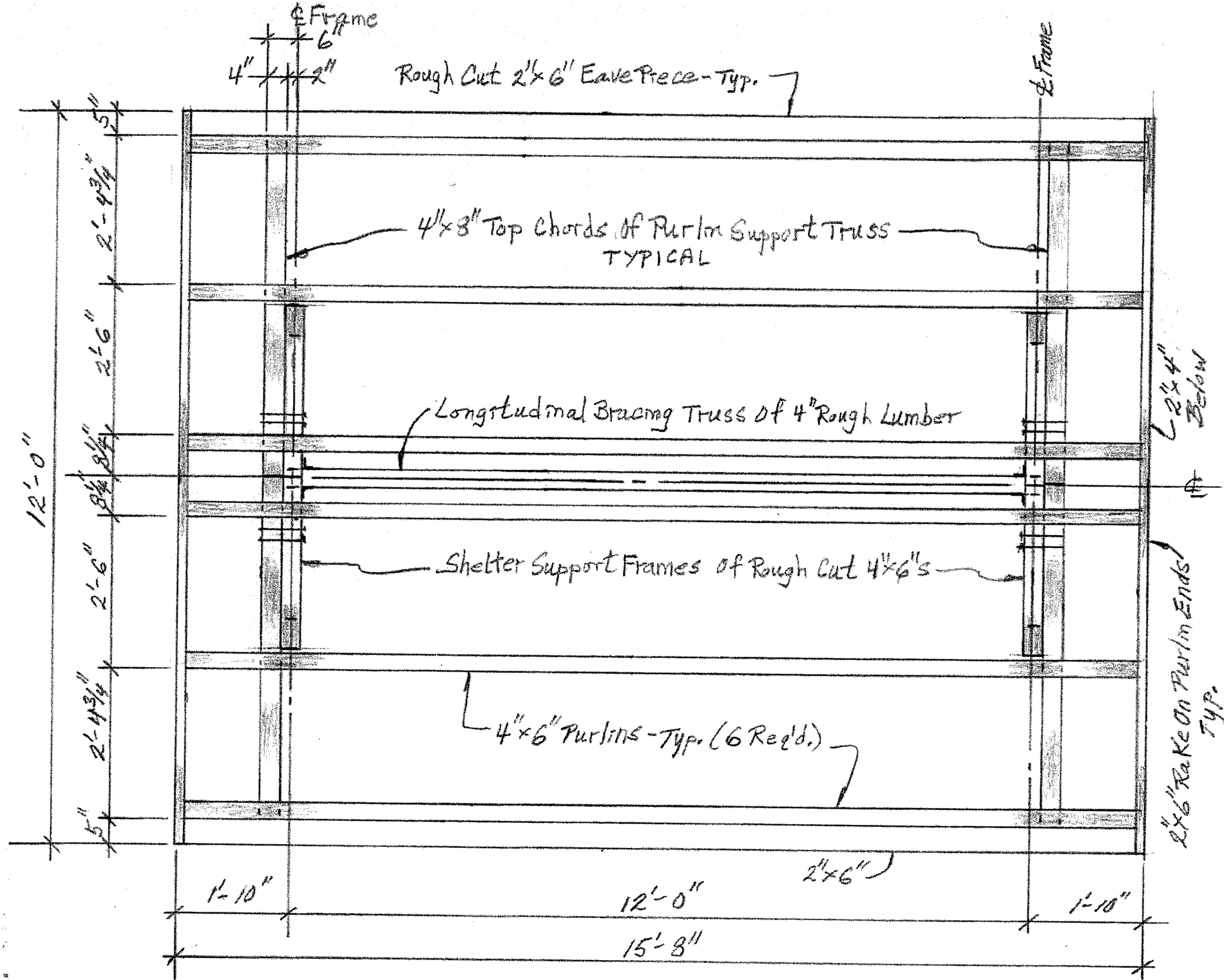
Note: Pour Tops of Footings Level And 1" Higher Than Edges of Slab.
TYPICAL TRANSVERSE SECTION
 Scale: 3/8" = 1'-0"



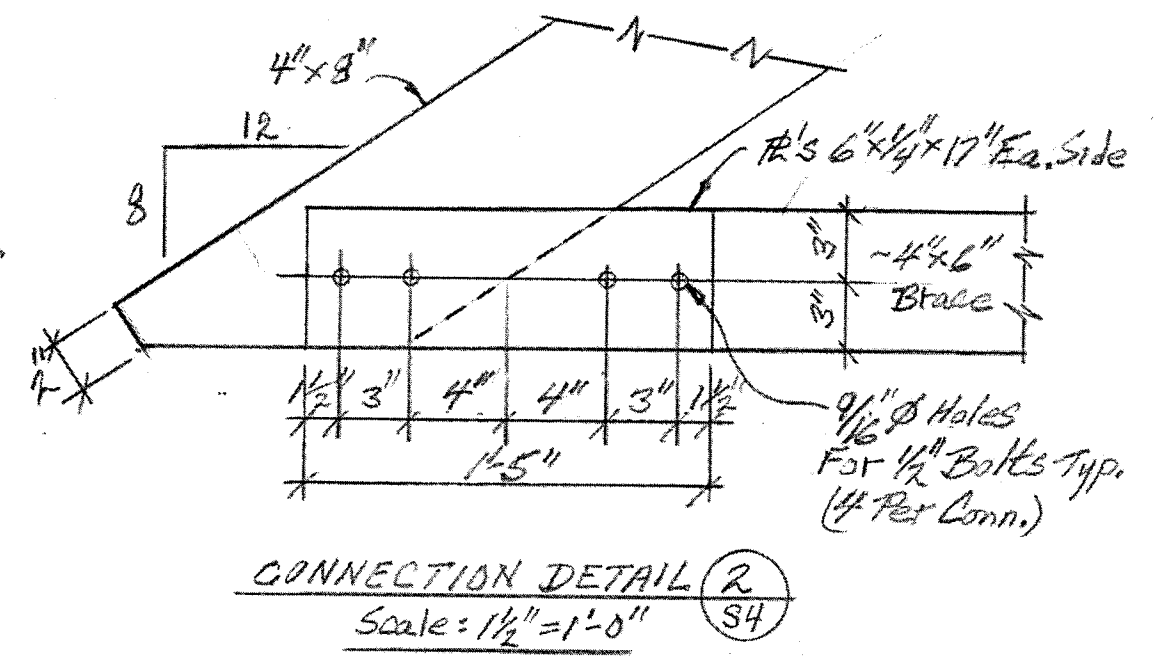
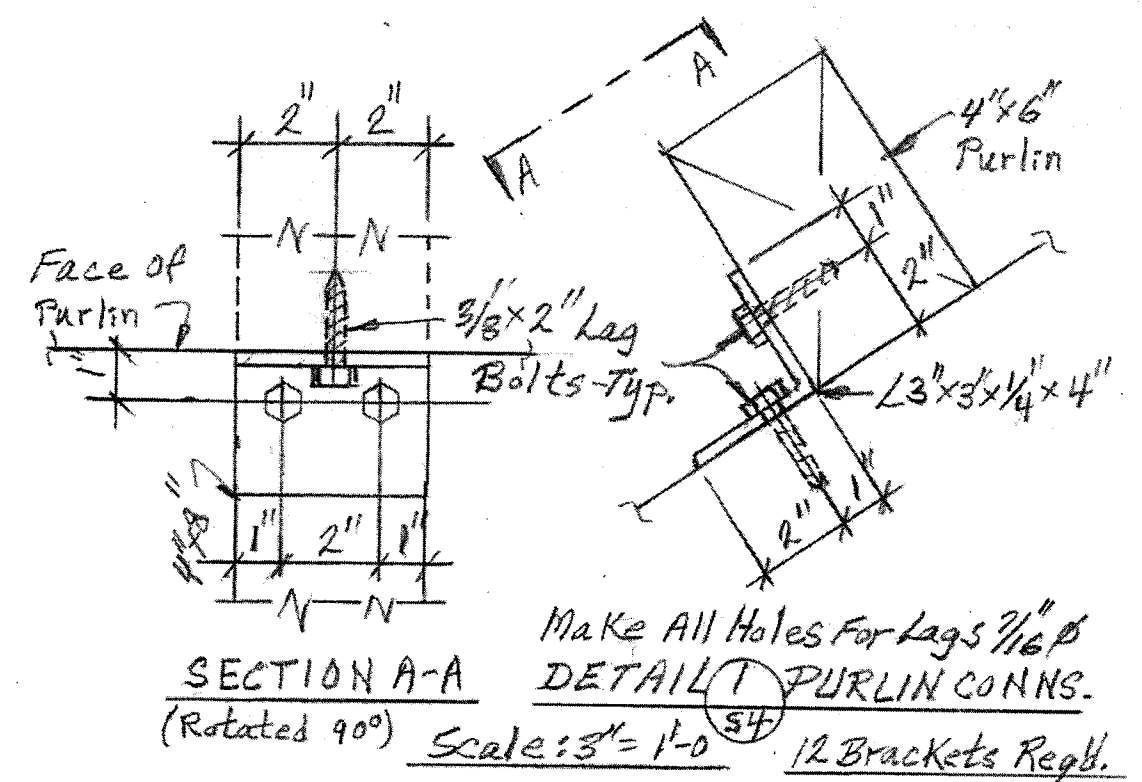
5/8" x 10" Threaded Rods
 Set To 8" Depth In Epoxy
 Grouted Drill Holes - TYP.
 Use Lock Wash. & Nut

A-FRAME BASE ANCHOR DETAILS - TYP.
 Scale: 1/2" = 1'-0"

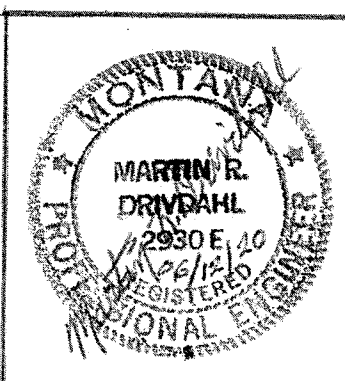
	LEWIS & CLARK CAVERNS STATE PARK	
	BIKE CAMP SHELTER PROJECT, FWP #7206301	
SCALE: As Shown	APPROVED BY:	DRAWN BY MRD
DATE:		REVISED
FOUNDATION PLAN & TYPICAL SECTIONS		
Prepared By: Martin R. Drivdahl, P.E.		DRAWING NUMBER S3 OF 6



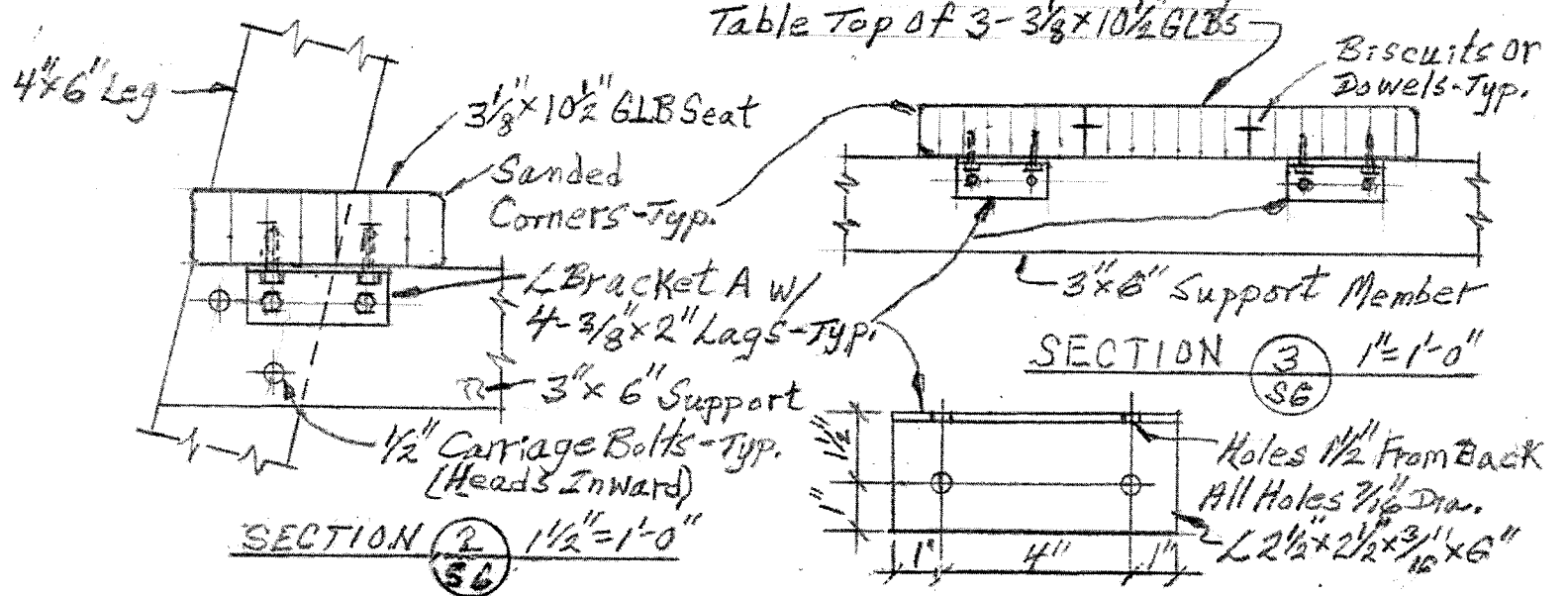
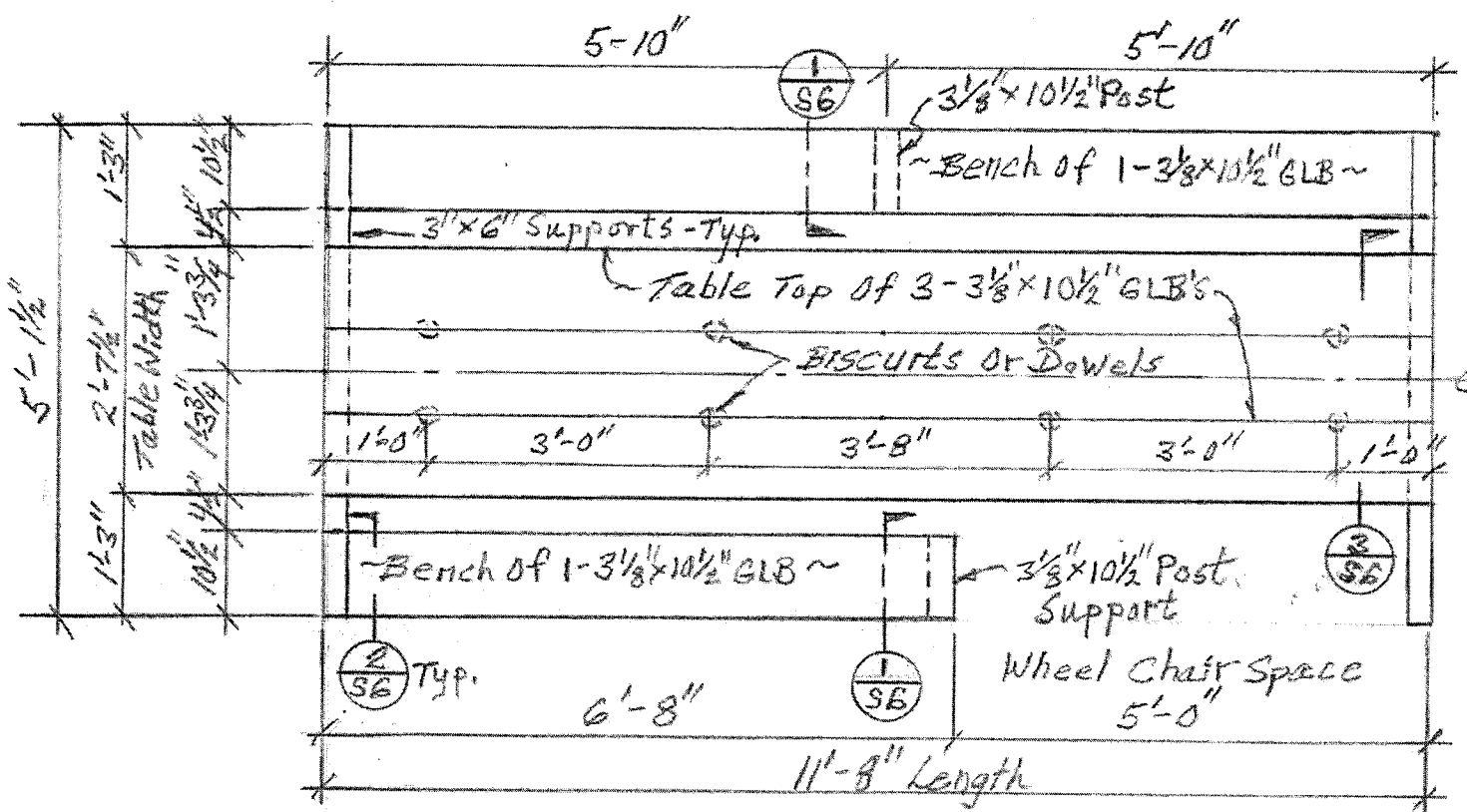
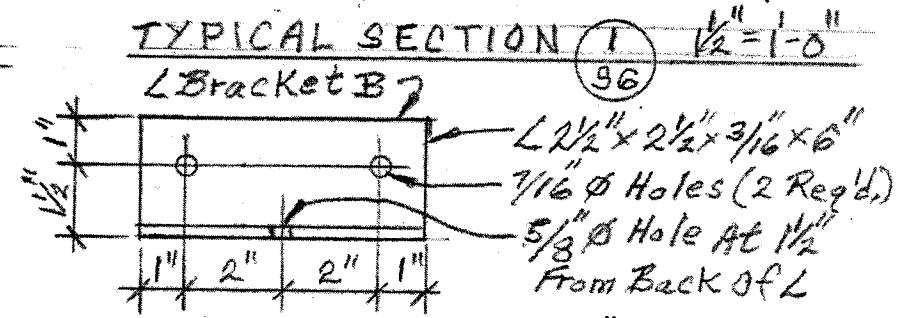
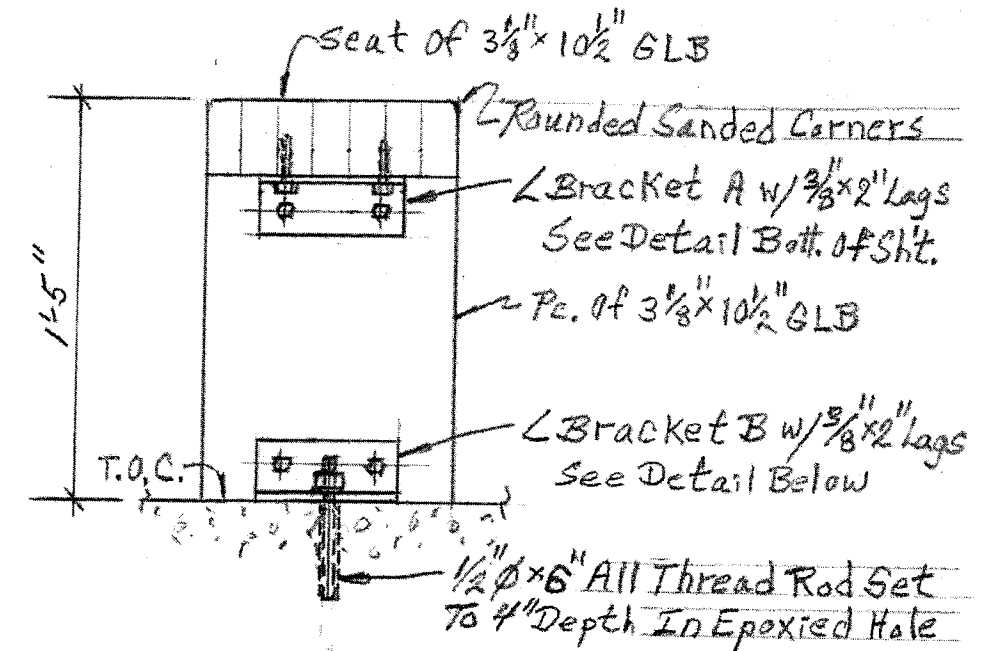
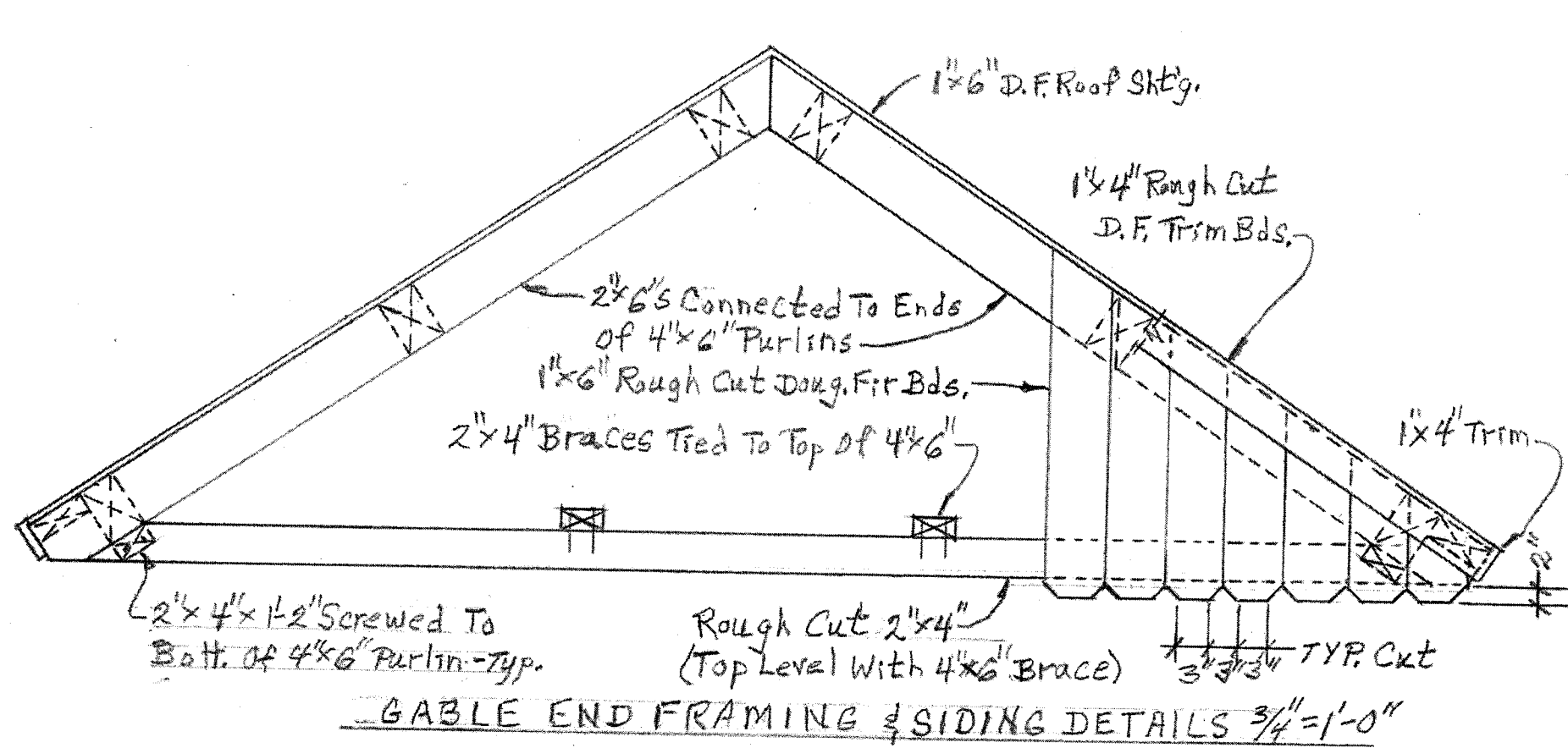
SHELTER FRAMING PLAN
 Scale: 1/2" = 1'-0"



CONNECTION DETAIL 2
 Scale: 1/2" = 1'-0"



LEWIS & CLARK CAVERNS STATE PARK		
BIKE CAMP SHELTER PROJECT, FWP #7206301		
SCALE: As Shown	APPROVED BY:	DRAWN BY MRD
DATE:		REVISED
SHELTER FRAMING PLAN		
Prepared By: Martin R. Drivdahl, P.E.		DRAWING NUMBER S4 of 6



Note: Table Top GLB's To Be Lamed Using Size M Biscuits or 1/2 x 6 Dowels
 TABLE TOP AND BENCH SEATS PLAN
 Scale: 1/2" = 1'-0"

LEWIS & CLARK CAVERNS STATE PARK
 BIKE CAMP SHELTER PROJECT, FWP #7206301

SCALE: As Shown	APPROVED BY:	DRAWN BY MRD
DATE:		REVISED
GABLE END & TABLE/BENCH DETAILS		
Prepared By: Martin R. Drivdahl, P.E.		DRAWING NUMBER 56 of 6