
Appendix C
Engineering
Appendix

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C ENGINEERING APPENDIX

The engineering appendix of the Validation Report (VR) is a comprehensive record of the technical support given by the U. S. Army Corps of Engineers Jacksonville District (USACE SAJ) Engineering Division to the Indian River Lagoon-South (IRL-S) Recreation Validation Report. The engineering consists of identifying standard drawings and design in order to provide information for an adequate cost estimate. This appendix presents specific component features and engineering requirements, focusing primarily on standard designs. The recreational features are based on commonly constructed items with standard designs requiring minimal analysis at this stage of development. Maps of the recreational areas for each project site are included as Annex C-1. SFWMD standard drawings for some items such as signs, shelters, boardwalks, lookouts, and boat ramps are included as Annex C-2. An example of a recreational features design is included as Annex C-3. This appendix serves as documentation of the features as estimated by the Engineering Cost Branch.

C.1 Indian River Lagoon South Recreational Features

This engineering appendix includes an overview of the features of the IRL-S Recreation Validation Report. The Indian River Lagoon-South project consists of Phase 1 and Phase 2. The recreational items described below are presented for each phase.

The Indian River Lagoon-South (IRL-S) Project is designed to provide restoration of the southern Indian River Lagoon and the St. Lucie Estuary ecosystem in Martin, St. Lucie, and Okeechobee Counties, Florida. The project includes reservoirs, stormwater treatment areas (STAs), natural water storage and treatment areas and North Fork floodplain restoration, diversion of existing flows via an interconnect canal, and muck removal.

Phase 1 includes the following features. Please note that the local sponsor has completed the 408 permitting process to add and construct recreational features on the C-44 Reservoir and STA. The recreational features associated with C-44 Reservoir and STA are not included in this report. Recreational features are not planned for the C-23 to C-44 Interconnect (SFMWD project renamed C-23 Estuary Discharge Diversion). Each of the following features in Phase 1 is either constructed, under construction, or has advanced to at least the Intermediate level of design. Most features are split or have been split into two or more contracts. This means that all Survey and Geotechnical exploration has been completed for Phase 1. Hydrology and Hydraulics are not applicable to recreational features except for the minor work necessary to grade proposed parking lots. Parking areas will require an Environmental Resource Permit from the South Florida Water Management District. This permit will require the design of stormwater treatment retention or detention areas.

- C-44 Reservoir and Stormwater Treatment Area.
- C-23/24 North Reservoir.
- C-23/24 Stormwater Treatment Area.
- C-23/24 South Reservoir.
- C-25 Reservoir and Stormwater Treatment Area.
- C-23 to C-44 Interconnect.

Phase 2 includes the following features. Survey and Geotechnical exploration have not been performed for Phase 2 features. Since these are large natural areas, any issues arising from a lack of information can be refined at little to no cost during Pre-Construction Engineering and Design (PED) by making minor shifts to the specific locations of project elements such as parking areas or observation towers. There is no Hydrology and Hydraulics design or analysis associated with the recreational features in phase 2. Parking areas will require an Environmental Resource Permit from the South Florida Water Management District. This permit will require the design of stormwater treatment retention or detention areas. Trails will be cleared approximately 6 feet in width depending on location. Primitive campsites will have some minor clearing but will generally be field placed in areas of less underbrush.

- Cypress Creek/Trail Ride Complexes Natural Storage and Water Quality Areas.
- Allapattah Complexes Natural Storage and Water Quality Areas.
- Palmar Complexes (includes South Fork Complex) Natural Storage and Water Quality Areas.
- North Fork Natural Floodplain Restoration.
- Muck Removal and Artificial Habitat.

There are no recreational features associated with the Muck Removal and Artificial Habitat.

C.2 Conceptual Design Data

Following is the design data used for the project.

C.2.1 Aerial and Map Atlases

Google Earth aerial mapping was used for the preliminary layout of facilities.

C.2.2 Light Detection and Ranging (LiDAR) Survey Data

Survey data has been generated using airborne light detection and ranging (LiDAR) for Phase 1 areas. Detailed descriptions of the data collection can be found in the Design Documentation Reports for each construction project in Phase 1. No LiDAR was used to develop Phase 2 Recreational Features.

C.2.3 Land and Hydro Survey Data

Land and hydrosurvey data has been generated for Phase 1 areas. Detailed descriptions of the data collection can be found in the Design Documentation Reports for each construction project in Phase 1. No land or hydrosurvey data was used to develop Phase 2 Recreational Features.

C.2.4 Survey Datums

The project will be designed and built using NAVD88. While plates and other references to future project elements are related in NAVD88, references to current conditions are related in NGVD29.

C.3 Recommended Plan

The recommended plan is presented below and is separated by phase and project element.

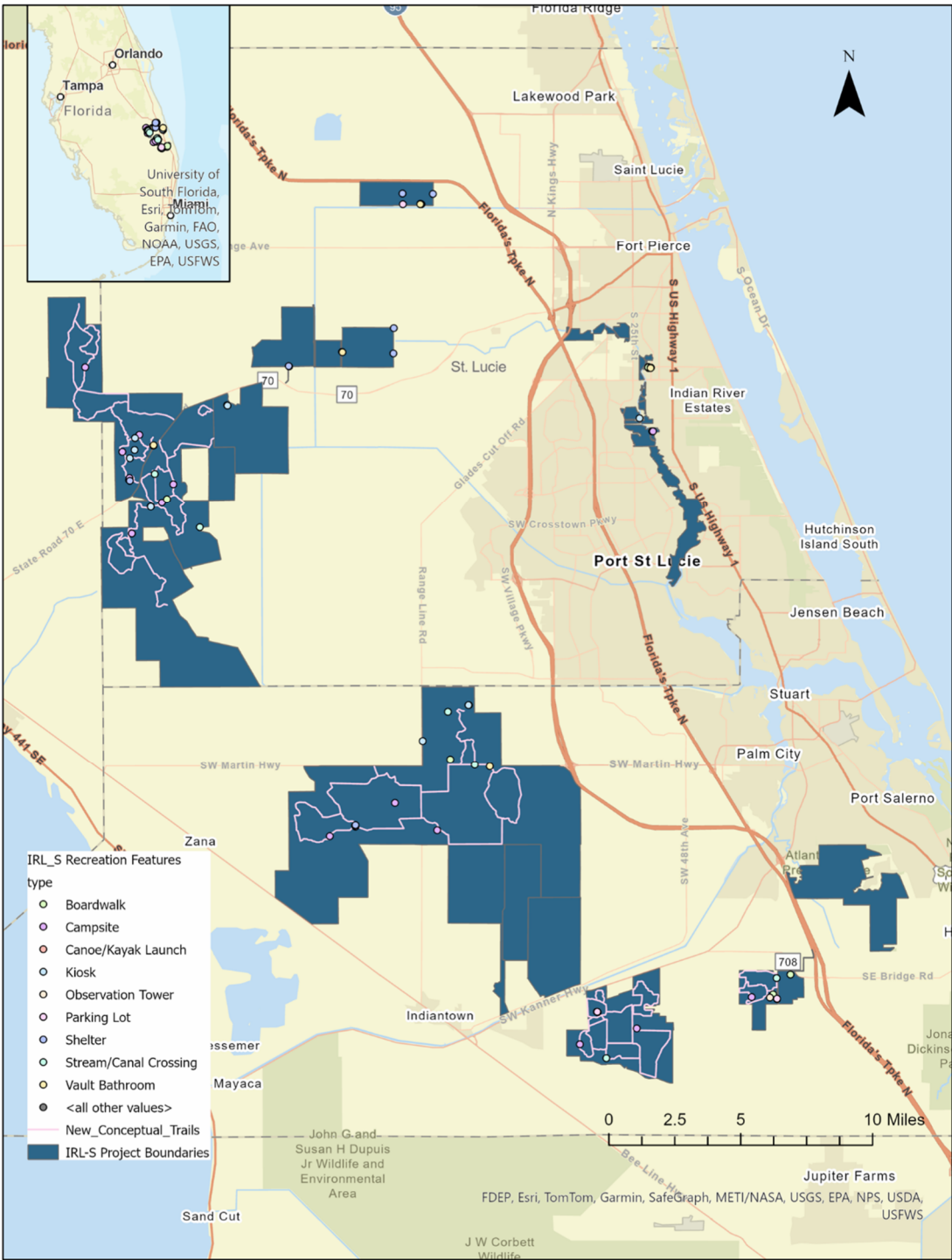


Figure C-1. IRL-S Recreational Features Overview Map

73

74 **C.3.1 Phase 1**

75 The following features are in Phase 1.

76 **C.3.1.1 C-23/24 North Reservoir**

77 The main recreational features on the C-23/24 North Reservoir are signage, parking, fencing, a
 78 bathroom, and a shelter.

79 **Table C-1. List of C-23/24 North Reservoir Recommended Plan Features.**

Recreation Feature	Number	Details
Main Entrance sign	1	3 ft. x 6 ft. aluminum
Directional Signs	6	1.5 ft. x 2 ft. aluminum
Closed Gate sign	3	8 in. x 12 in. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Trailer parking spaces	28	12 ft. x 57 ft. w/ striping paint
Vehicle spaces	16	10 ft. x 20 ft. w/ striping paint
ADA spaces	6	14.5 ft. x 20 ft. w/ striping paint (5 ft. x 20 ft.)
Wheel stops	22	6 ft. concrete wheel stop
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Large shelter	1	18 ft. x 30 ft. x 8 ft. tall wood frame shelter with ribbed metal roof over concrete slab
Stand-alone interpretive kiosk	1	6 ft. 6 in. W x 9 ft. 4 in. high pressure-treated wooden kiosk with ribbed metal roof (5 ft. x 6 ft. 6 in.); information area 4 ft. x 4 ft. corkboard with 3/4 in. marine grade plywood backing with lockable plexiglass door
Picnic tables	4	plastic lumber with round galvanized steel legs (two 6 ft. tables and two 8 ft. tables with ADA accessible overhang)
Parking area entrance sign	1	18 in. x 24 in. aluminum
Closed Gate sign	2	8 in. x 12 in. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Handicap sign	6	1 ft. x 2 ft. aluminum

80 **C.3.1.2 C-23/24 Stormwater Treatment Area**

81 The main recreational features on the C-23/24 Stormwater Treatment Area are signage, parking, fencing,
 82 a bathroom, and shelters.

83 **Table C-2. List of C-23/24 Stormwater Treatment Area Recommended Plan Features.**

Recreation Feature	Number	Details
Public use parking area	1	130 ft. x 280 ft. (36,400 ft ²) asphalt
Vehicle spaces	10	10 ft. x 20 ft. w/ striping paint
Wheel stops	12	6 ft. concrete wheel stop
ADA vehicle spaces	2	14.5 ft. x 20 ft. w/ striping paint (5 ft. x 20 ft.) concrete
Post-and-rail fencing	800	Feet of fence; 6 in. x 6 in. pressure-treated wooden posts with 8 ft. x 1 ft. x 2 in. pressure-treated boards with galvanized steel 3/8 in. fasteners
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Shelters on concrete pads	2	16 ft. x 20 ft. x 8 ft. tall wood frame shelter with ribbed metal roof over concrete slab; plastic lumber with round galvanized steel legs (one park bench 12 feet long)
Main Entrance sign off Sneed Road	1	3 ft. x 6 ft. aluminum
Directional signs	6	1.5 ft. x 2 ft. aluminum
Closed Gate sign	2	8 in. x 12 in. aluminum
Handicap sign	2	1 ft. x 2 ft. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Post-and-rail fencing at internal shelters	120	Feet of fence; 60 ft. at each of two shelters; 6 in. x 6 in. pressure-treated wooden posts with 8 ft. x 1 ft. x 2 in. pressure-treated boards with galvanized steel 3/8 in. fasteners.
Endangered Species Observer	5	Months

84 **C.3.1.3 C-23/24 South Reservoir**

85 The main recreational features on the C-23/24 South Reservoir are signage, parking, fencing, a
86 bathroom, and a shelter.

87 **Table C-3. List of C-23/24 South Reservoir Recommended Plan Features.**

Recreation Feature	Number	Details
Main Entrance sign off Hwy 70	1	3 ft. x 6 ft. aluminum
Directional Signs	6	1.5 ft. x 2 ft. aluminum
Closed Gate sign	3	8 in. x 12 in. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
At grade parking area	1	106 ft. x 378 ft. (40,068 ft ²) asphalt
Trailer parking spaces	28	12 ft. x 57 ft. w/ striping paint
Vehicle spaces	16	10 ft. x 20 ft. w/ striping paint
ADA vehicle spaces	6	14.5 ft. x 20 ft. w/ striping paint (5 ft. x 20 ft.)
Wheel stops	22	6 ft. concrete wheel stop

Recreation Feature	Number	Details
Post-and-rail fencing	1,000	Feet of fence; 6 in. x 6 in. pressure-treated wooden posts with 8 ft. x 1 ft. x 2 in. pressure-treated boards with galvanized steel 3/8 in. fasteners
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Large shelter	1	18 ft. x 30 ft. x 8 ft. tall wood frame shelter with ribbed metal roof over concrete slab
Stand-alone interpretive kiosk	1	6 ft. 6 in. W x 9 ft. 4 in. high pressure-treated wooden kiosk with ribbed metal roof (5 ft. x 6 ft. 6 in.); information area 4 ft. x 4 ft. corkboard with 3/4 in. marine grade plywood backing with lockable plexiglass door
Picnic tables	4	Plastic lumber with round galvanized steel legs (two 6 ft. tables and two 8 ft. tables with ADA accessible overhang)
Parking area entrance sign	1	18 in. x 24 in. aluminum
Closed Gate sign	2	8 in. x 12 in. aluminum
Handicap sign	6	1 ft. x 2 ft. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Guard rail	1200	LF

88 C.3.1.4 C-25 Reservoir and Stormwater Treatment Area

89 The main recreational features on the C-23/24 South Reservoir are signage, parking, fencing, a
 90 bathroom, and shelters.

91 Table C-4. List of C-25 Reservoir and STA Recommended Plan Features.

Recreation Feature	Number	Details
Reservoir		
Main Entrance sign at bridge	1	3 ft. x 6 ft. aluminum
Directional Signs	6	1.5 ft. x 2 ft. aluminum
Closed Gate sign	3	8 in. x 12 in. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
At grade parking area	1	150 ft. x 350 ft. (52,500 ft ²) limerock
ADA trailer parking spaces	2	17 ft. x 45 ft. w/ striping paint
Trailer parking spaces	6	17 ft. x 45 ft. w/ striping paint
Post-and-rail fencing	1,000	Feet of fence; 6 in. x 6 in. pressure-treated wooden posts with 8 ft. x 1 ft. x 2 in. pressure-treated boards with galvanized steel 3/8 in. fasteners
Parking area entrance sign	1	18 in. x 24 in. aluminum
Closed Gate sign	2	8 in. x 12 in. aluminum
Handicap sign	6	1 ft. x 2 ft. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Guardrail	1350	LF

Recreation Feature	Number	Details
Stormwater Treatment Area		
Public use parking area	1	150 ft. x 300 ft. (45,000 ft ²) limerock
Hybrid Electric/manual vehicle gate at main entrance	1	Hybrid 12 ft. electric chain-link slide gate with 12 ft. -16 ft. District standard vehicle gate
Vehicle spaces	18	10 ft. x 18 ft.
Paved ADA parking spaces	2	12 ft. x 18 ft. w/ striping paint (5 ft. x 20 ft.) concrete
Wheel stops	2	6 ft. concrete wheel stop
Post-and-rail fencing	1,240	Feet of fence; 6 in. x 6 in. pressure-treated wooden posts with 8 ft. x 1 ft. x 2 in. pressure-treated boards with galvanized steel 3/8 in. fasteners
Shelters on concrete pads	2	16 ft. x 20 ft. x 8 ft. tall wood frame shelter with ribbed metal roof over concrete slab; plastic lumber with round galvanized steel legs (one park bench 12 feet long and kiosk)
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Stand-alone interpretive kiosk	1	6 ft. 6 in. W x 9 ft. 4 in. high pressure-treated wooden kiosk with ribbed metal roof (5 ft. x 6 ft. 6 in.); information area 4 ft. x 4 ft. corkboard with 3/4 in. marine grade plywood backing with lockable plexiglass door
Directional signs	3	1.5 ft. x 2 ft. aluminum
Closed Gate sign	2	8 in. x 12 in. aluminum
Handicap sign	2	1 ft. x 2 ft. aluminum
Stop sign	1	2 ft. 6 in. aluminum octagon on 7 ft. post
Directional Signs	3	1.5 ft. x 2 ft. aluminum

92 **C.3.2 Phase 2**

93 The following features are in Phase 2.

94 **C.3.2.1 Cypress Creek/Trail Ride Complexes Natural Storage and Water Quality Areas**

95 The main recreational features on the Cypress Creek/Trail Ride Complexes are trails, observation towers,
 96 parking, stream crossings, signage, boardwalks, and primitive camp sites.

97 **Table C-5. List of Cypress Creek Recommended Plan Features.**

Recreation Feature	Number	Details
Multi-Use Trails	53 miles	Approximately 53 miles of multi-use trails will provide adequate access to wide array of natural plant communities in this region of St Lucie County. Recreation trail to blaze will use existing trails, where appropriate, to reduce costs and impacts to native vegetation. Trails surface will be natural ground unless on boardwalk or crossing.

Recreation Feature	Number	Details
Observation Tower	1	Observation decks, platforms, piers, etc. will provide vistas for rec users. Typical observation tower is approximately 16 ft. x 16 ft. x 16 ft. with two flights of stairs, treated wood materials. For installation, 16 bags of concrete to set corner posts.
Information Kiosks	6	8 ft. x 8 ft. Standard kiosks with roof, treated wood structure with metal roof, to include 8 bags of concrete for installation.
Parking Areas	3	Parking areas to be shellrock, 80 ft. x 60 ft. with 8 in. thickness. Guardrails and a 100 ft. entrance (8 in. thick shellrock) will be required in addition to parking surface.
Interpretive Signage	30	Small 8 in. x 8 in. metal signs to indicate highlights of the trails.
USACE/SFWMD Entry Signs	3	One entrance sign, standard Department of Transportation (DOT), for each access/parking area.
USACE/SFWMD direction signs	3	DOT standard metal road signage to direct rec users to parking areas from main roads.
Boardwalk	1,000	Feet of boardwalk. Estimated boardwalk (6 ft. average width) required to provide dry hiking through saturated and inundated ground. Consists of treated wood with recycled plastic lumber where rising waters may inundate the structure.
Primitive Camp Sites	6	Camping sites, to include a standard metal fire ring including attached grilling grate and a small picnic table composed of treated lumber, will be created along the new and existing trails.
Dual Vault Bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Large Campsite	1	Includes 6 camping areas with picnic tables for Equestrian, water well, large shelter. and 1 dual vault toilet

98 C.3.2.2 Allapattah Complexes Natural Storage and Water Quality Areas

99 The main recreational features on the Allapattah Complexes are trails, an observation tower, parking,
 100 stream crossings, signage, boardwalks, and primitive camp sites.

101 Table C-6. List of Allapattah Recommended Plan Features.

Recreation Feature	Number	Details
Multi-use Trails	35	Miles of trail systems are needed to provide more complete access to the available natural areas and to provide hike-thru access from C-44 to Cypress Creek Complex. Recreation trail to be blazed will use existing trails, where appropriate, to reduce costs and impacts to native vegetation. Trails surface will be natural ground unless on boardwalk or crossing.
Parking Areas	1	Parking area to be shellrock, 80 ft. x 120 ft. with 8 in. thickness. Guardrails and a 100 ft. entrance (8 in. thick shellrock) will be required in addition to parking surface.

Recreation Feature	Number	Details
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Observation Platform/Tower	1	Viewing platforms, observation decks, piers, etc. will provide vistas for rec users. Typical observation towers are approximately 16 ft. x 16 ft. x 16 ft. with two flights of stairs, treated wood materials. For installation, 16 bags of concrete to set corner posts.
Interpretive Signs	30	Metal signs (8 in. x 8 in.) for plant identification, historical facts, etc.
Boardwalk	200	Feet of boardwalk. Estimated boardwalk (6 ft. width ave.) required to provide dry hiking through saturated and inundated ground. Treated wood with recycled plastic lumber where rising waters may inundate the structure.
Access/Parking Area Signs	2	One entrance sign, standard DOT, for each access/parking area.
Stream/Canal crossings	2	Culverts or light duty foot bridges are required for rec users to transverse the trail system safely. Average culvert 24 in. diameter and 24 ft. length.
Large Campsite	1	Includes 6 camping areas with picnic tables for Equestrian, water well, large shelter, and 1 dual vault toilet.
Primitive Camp Sites	3	Camping sites, to include a standard metal fire ring including attached grilling grate and a small picnic table composed of treated lumber, will be created along the new and existing trails.
Kiosk	2	8 x 8 ft standard kiosk.

102 C.3.2.3 Palmar Complexes (includes South Fork Complex) Natural Storage and Water Quality Areas

103 The main recreational features on the Palmar Complexes are trails, an observation tower, parking,
 104 stream crossings, signage, boardwalks, and primitive camp sites.

105 Table C-7. List of Palmar Recommended Plan Features.

Recreation Feature	Number	Details
Multi-use Trails	32 miles	Approximately 32 miles of multi-use trails will provide adequate access to wide array of natural plant communities in this region of St Lucie County. Using the high-end estimate to ensure connections to other recreation areas can be made. Recreation trail to be blazed will use existing trails, where appropriate, to reduce costs and impacts to native vegetation. Trails surface will be natural ground unless on boardwalk or crossing.
Parking Areas	2	Parking areas to be shellrock, 80 ft. x 120 ft. with 8 in. thickness. Guardrails and a 100 ft. entrance (8 in. thick shellrock) will be required in addition to parking surface.

Recreation Feature	Number	Details
Observation Towers/Platform	1	Observation decks, platforms, piers, etc. will provide vistas for rec users. Typical observation towers are approximately 16 ft. x 16 ft. x 16 ft. with two flights of stairs, treated wood materials. For installation, 16 bags of concrete to set corner posts.
Information Kiosks	2	8 ft. x 8 ft. Standard kiosks with roof, treated wood structure with metal roof, to include 8 bags of concrete for installation.
Stream/canal crossings	2	Culverts or light duty foot bridges are likely required for rec users to transverse the trail system safely. Average culvert 24 in. diameter and 24 ft. length.
Interpretive Signage	30	Small 8 in. x 8 in. metal signs to indicate highlights of the trails.
USACE/SFWMD Entry Signs	2	Small metal signs, 8 in. x 8 in. that provide the rec user with names and pictures of interesting and rare plants and other key facts along the trails.
USACE/SFWMD direction signs	2	DOT standard metal road signage to direct rec users to parking areas from main roads.
Boardwalk	1,000	Linear feet of boardwalk (6 ft. width ave.) required to provide dry hiking through saturated and inundated ground. Treated wood with recycled plastic lumber where rising waters may inundate the structure.
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only)
Primitive Camp Sites	3	Camping sites, to include a standard metal fire ring including attached grilling grate and a small picnic table composed of treated lumber, will be created along the new and existing trails.
Large Campsite	1	Includes 6 camping areas with picnic tables for Equestrian, water well, large shelter. and 1 dual vault toilet.

106 C.3.2.4 North Fork Natural Floodplain Restoration

107 The main recreational features on the North Fork Floodplain Restoration are a canoe launch, fishing
 108 platform, parking, signage, an observation tower, boardwalks, and primitive camp sites.

109 Table C-8. List of North Fork Recommended Plan Features.

Recreation Feature	Number	Details
Canoe/Kayak Launch	1	Launches provide access for recreation users to the Northfork of the SLR. Launches constructed of recycled plastic materials, adapted to site with floating mechanism to adjust to tide to enable safe launching of vessels.
Fishing platform	1	A wooden platform with railings attached allowing appropriate space for casting lines without impacting the boat launch. Pressured treated or recycle plastic lumber, subject to tides.
Parking Areas	1	The launch area will need a small shellrock parking area. Shellrock surface, 8 in. thick, 60 ft. x 80 ft. lot.
Entrance Signs	1	Each parking area needs 1, standard metal.

Recreation Feature	Number	Details
Direction to site signs	1	Each parking area needs 1, standard metal.
Observation Tower/Platform	1	Observation Towers would greatly increase birdwatching opportunities, treated wood 16 ft. x 16 ft. x 16 ft. For installation, 16 bags of concrete to set corner posts.
Interpretive Signage	30	Small 8 in. x 8 in. metal signs to indicate highlights of the trails.
Boardwalk	500	Linear feet of boardwalks (6 ft. width ave.) may be necessary to provide overwater/saturated soil passage from parking areas to recreation structures. Treated wood/ recycled plastic where exposed to rising waters.
Primitive Camp Sites	2	Primitive camp sites will provide resting and overnighting locations for paddlers traveling the North Fork and other sections of the St. Lucie River. Sites include standard fire ring and small picnic table. Some or all of these campsites may only be accessible from the SLR to ensure paddlers have refuge for resting and overnight paddling trips; these camping sites will require a small canoe/kayak dock for mooring.
Information Kiosks	2	8 ft. x 8 ft. Standard kiosks with roof, treated wood structure with metal roof, to include 8 bags of concrete for installation.
Dual-vault bathroom	1	CXT, Inc. Pre-fab concrete dual-vault bathroom, 11 ft. 11 in. x 16 ft. 10 in., Tioga model with solar vent fans (brand names for cost basis only).

110 C.4 Cost Estimates

111 Refer to the Cost Engineering Appendix for cost development and methods including the IRL-S
112 Recreation Recommended Plan cost.

113 C.5 Recreational Area Maps

114 Annex C-1 provides Recreational Area Maps for each project element.

115 C.6 SFWMD Standard Designs

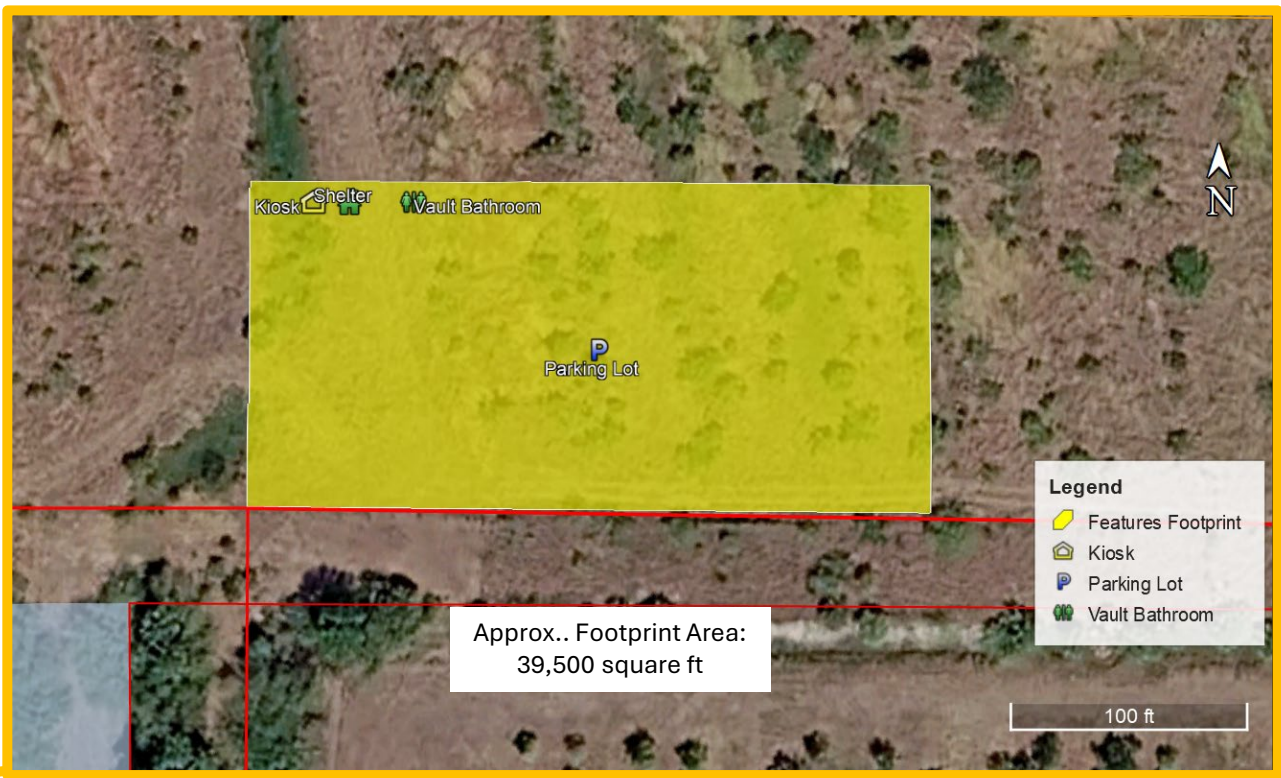
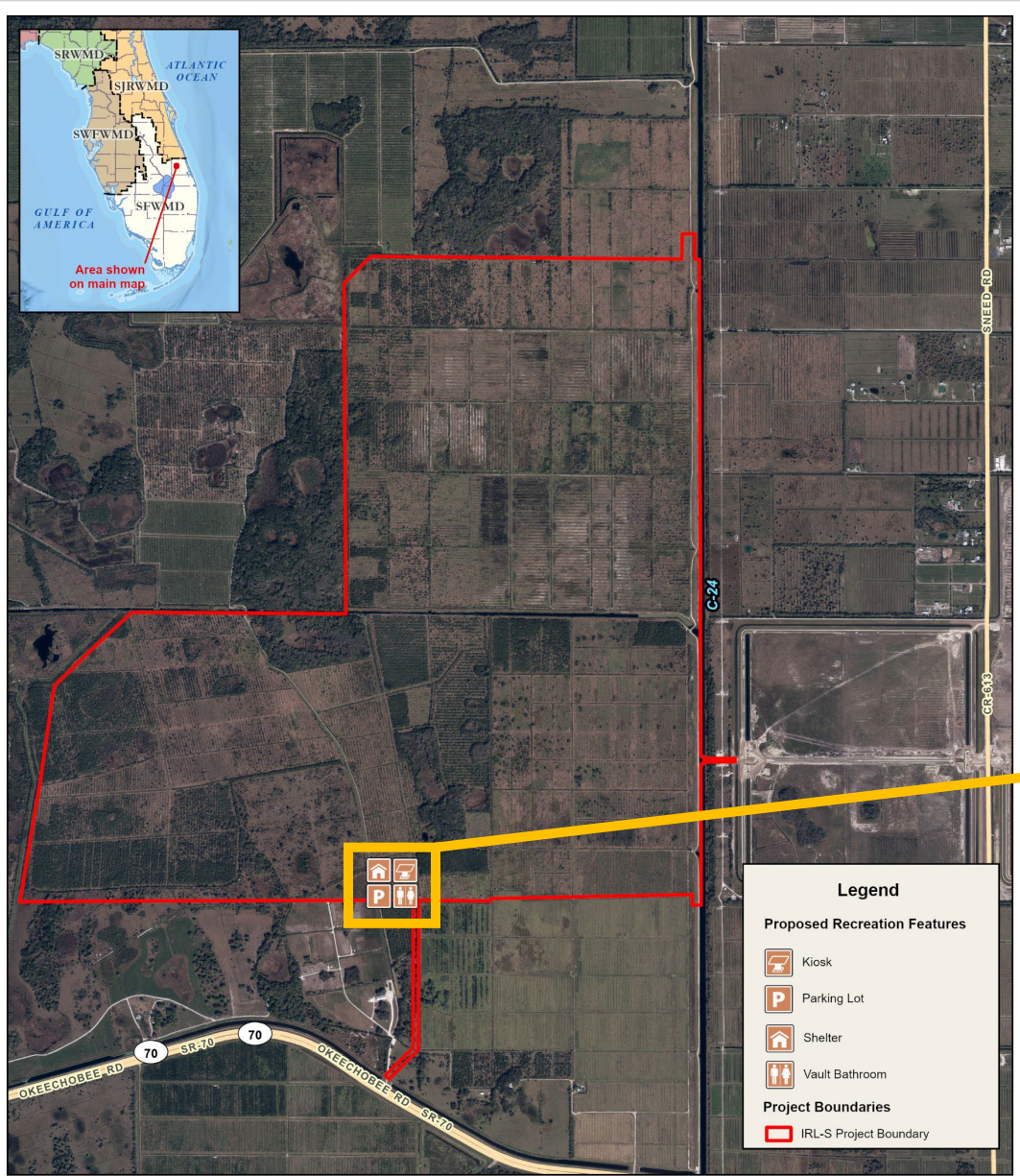
116 Annex C-2 provides SFWMD standard design engineering plates for various features described above.
117 These were used as a basis for cost.

118 C.7 SFWMD C-44 Recreational Feature Design

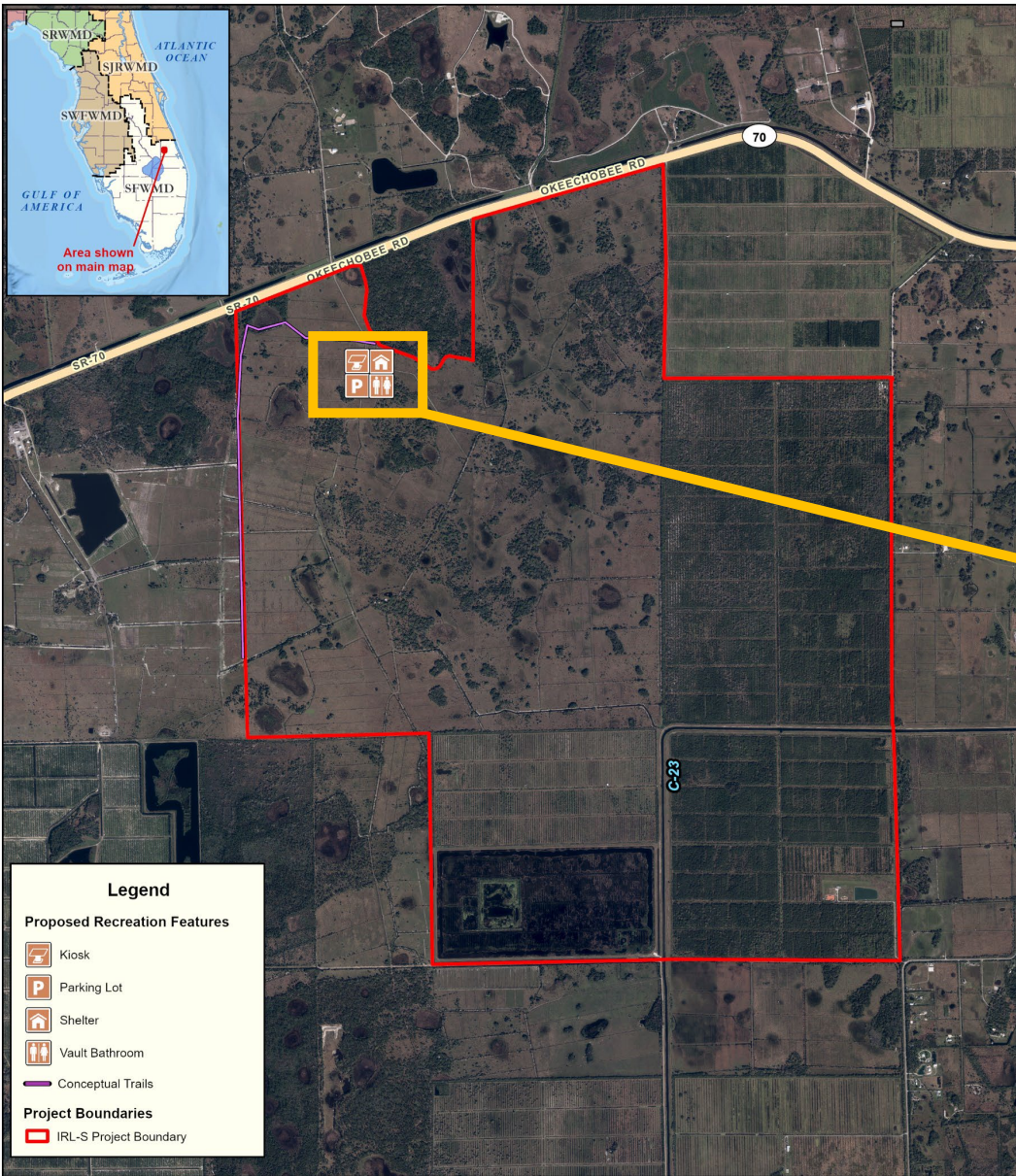
119 Annex C-3 provides some of the design plan sheets from the C-44 Recreational Features submitted for
120 Section 408 approval. These are provided as an example of typical recreational features which will be
121 constructed as part of this IRL-S Recreational Features project.

ANNEX C-1

RECREATIONAL AREA MAPS



Proposed Recreation Features Footprint IRL-S - C-23/24 North Reservoir Site



Proposed Recreation Features Footprint

IRL-S - C-23/24 South Reservoir Site





Legend

Proposed Recreation Features

P

 Parking Lot

🏠

 Shelter

🚻

 Vault Bathroom

Project Boundaries

🔴

 IRL-S Project Boundary

Approx. Footprint Area
43,000 square ft

📍

 Parking Lot

🚻

 Vault Bathroom

Legend

🟡

 Features Footprint

📍

 Parking Lot

🚻

 Vault Bathroom

500 ft

Approx. Footprint Area
540 square ft

📍

 Shelter

Legend

🟡

 Shelter

🟡

 Shelter Footprint

90 ft

Proposed Recreation Features Footprint IRL-S - C-23/24 STA Site

Approx. Footprint Area
540 square ft

📍

 Shelter

Legend

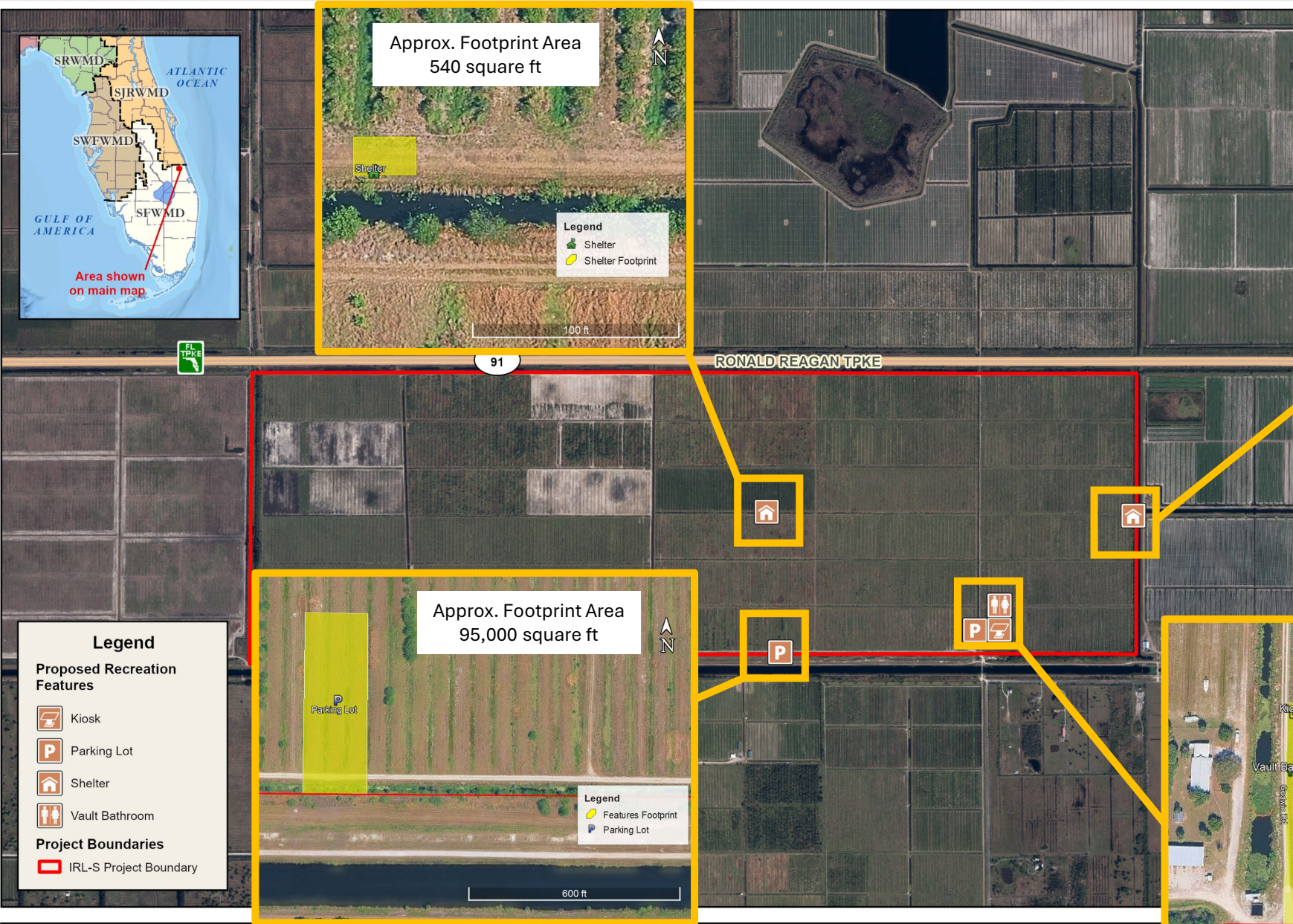
🟡

 Shelter

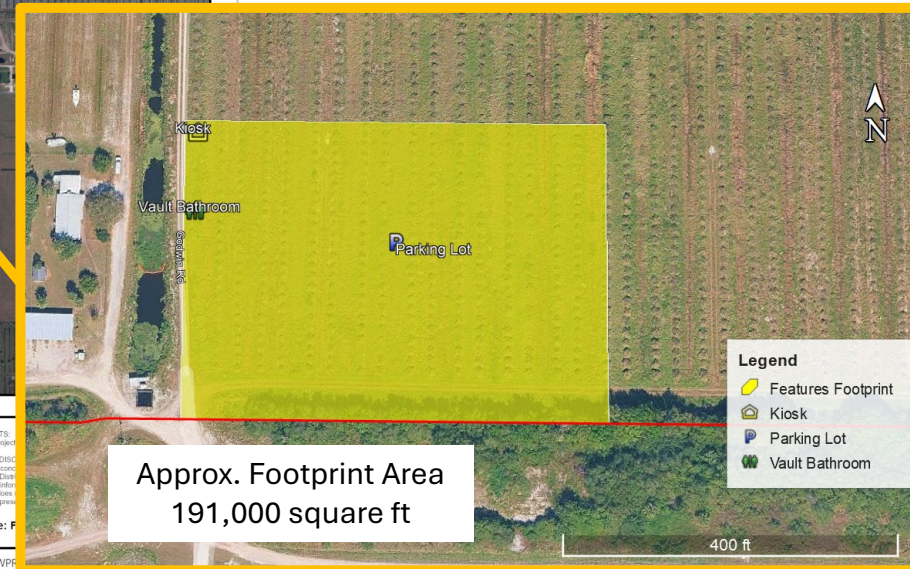
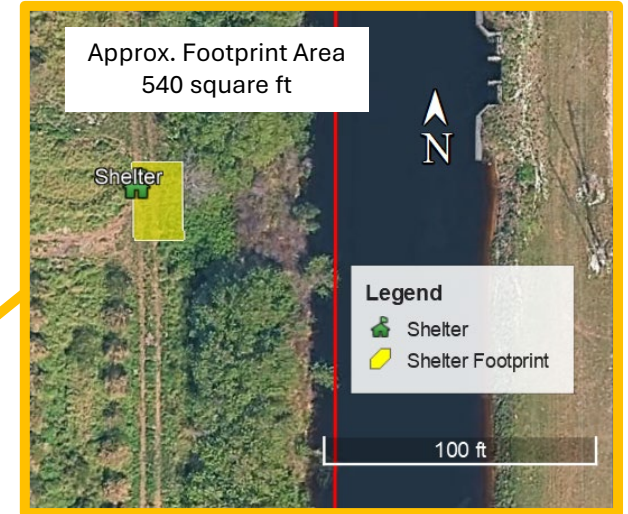
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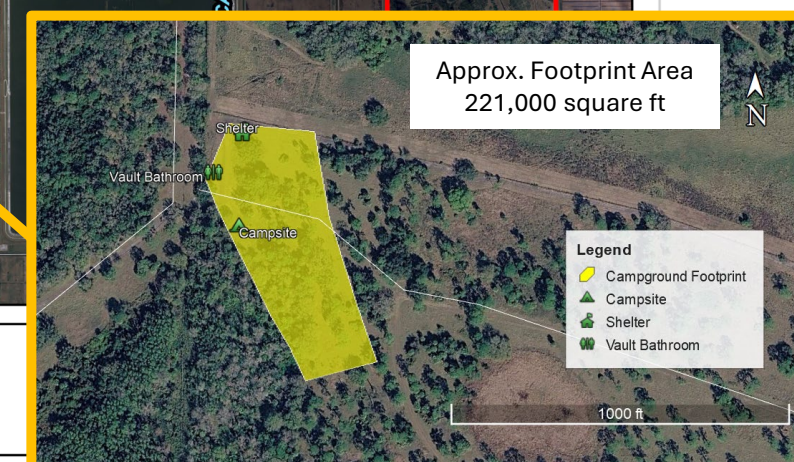
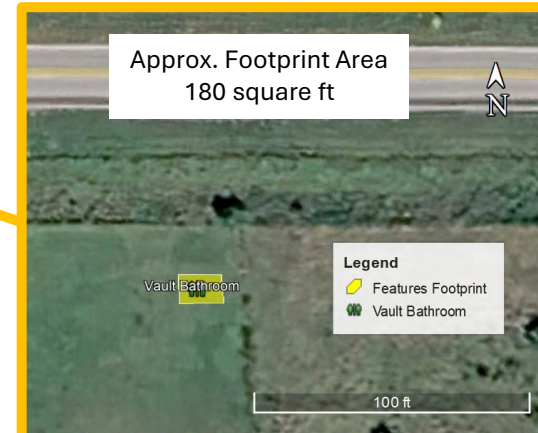
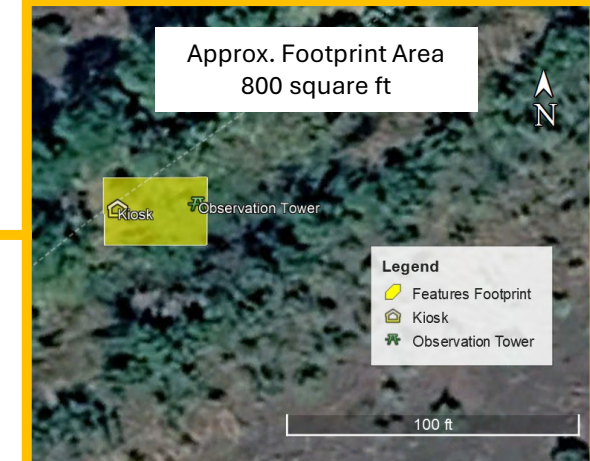
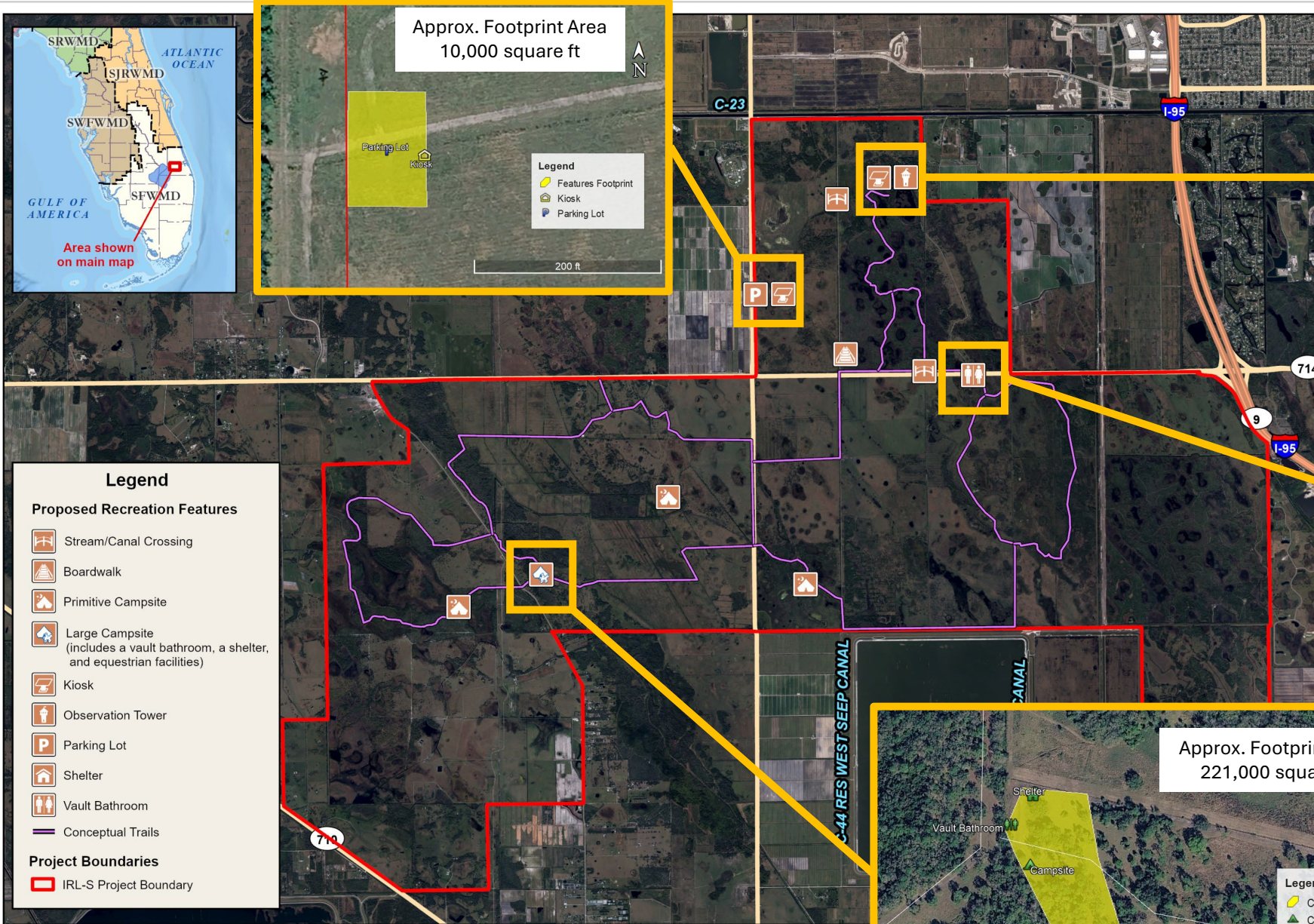
 Shelter Footprint

90 ft

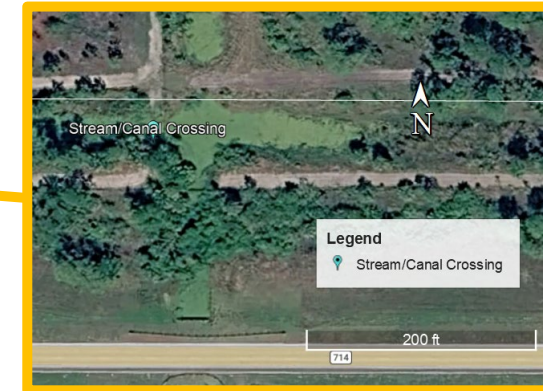
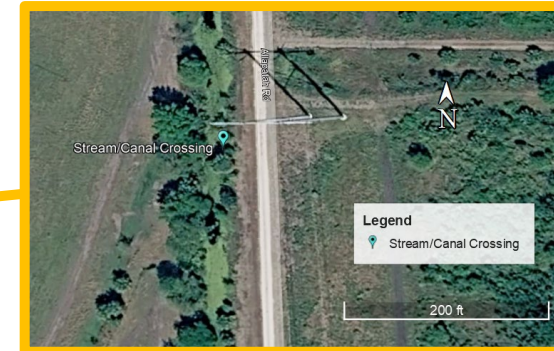
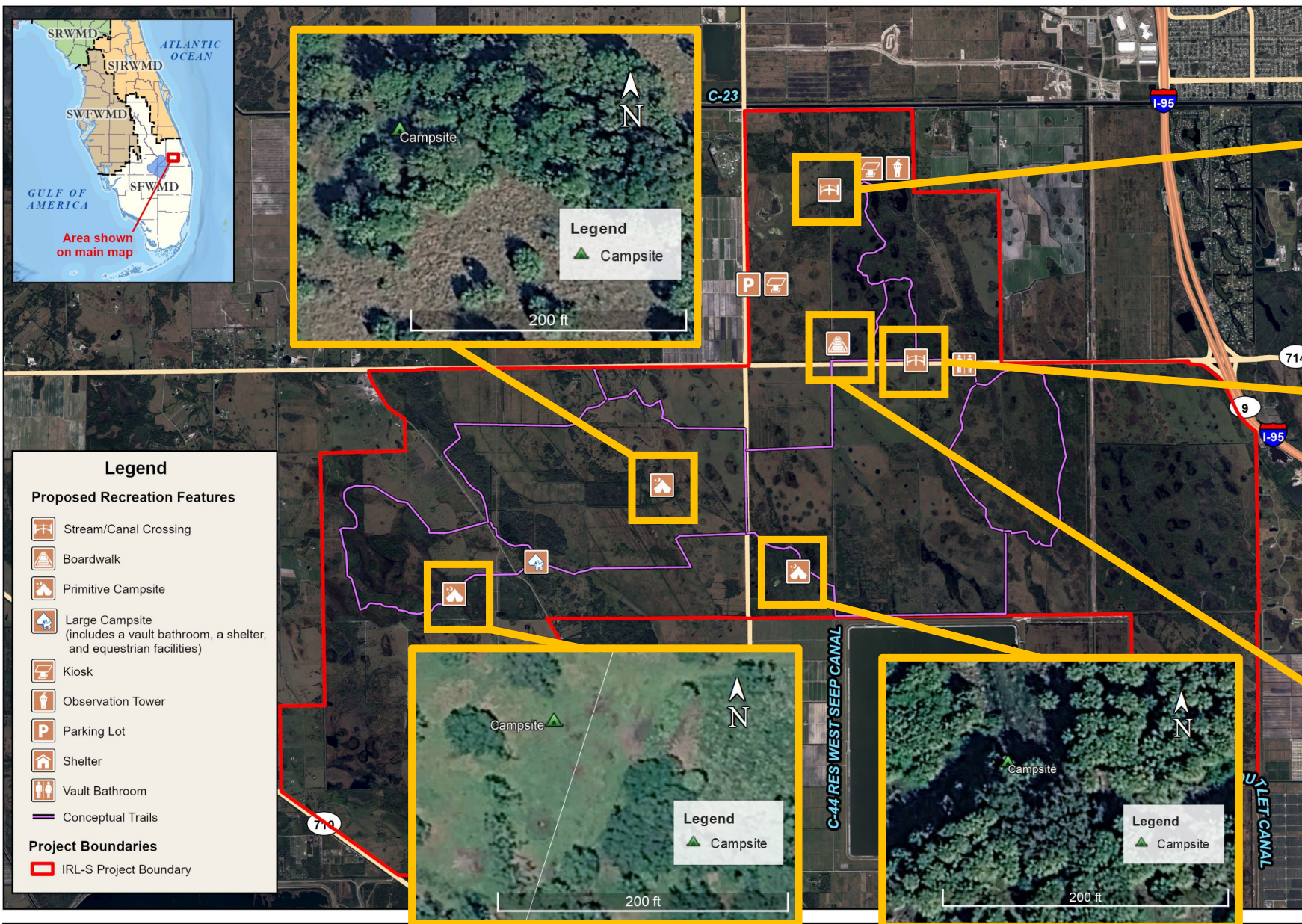


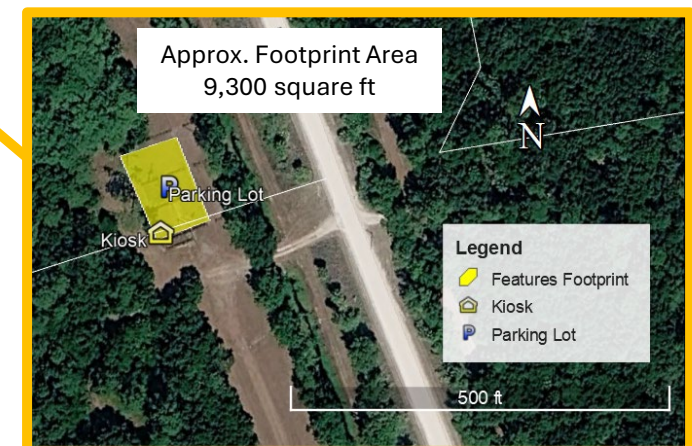
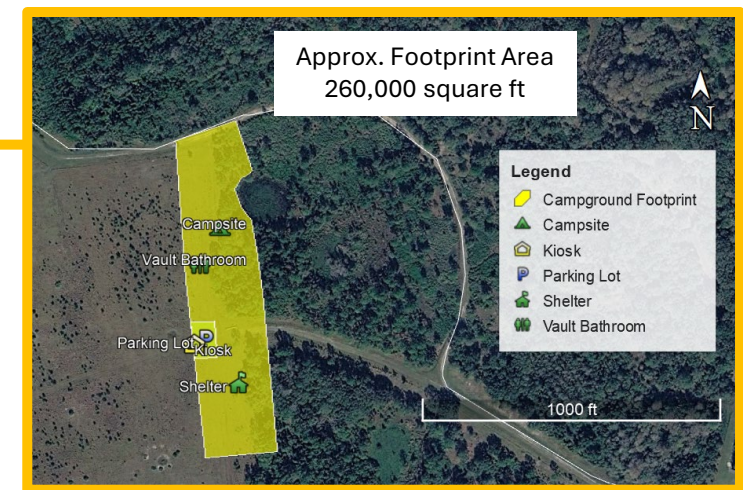
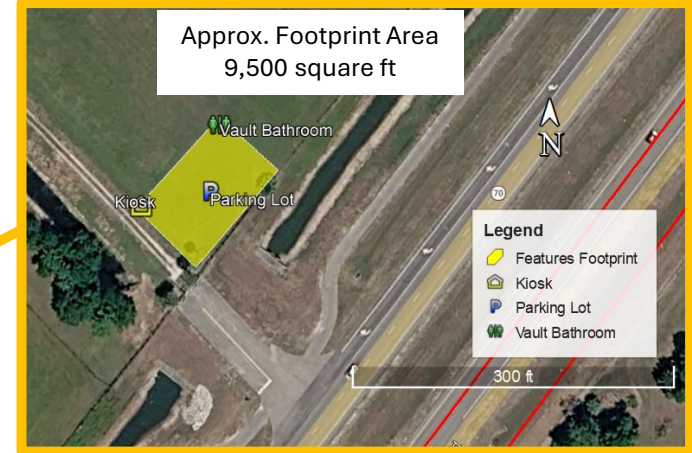
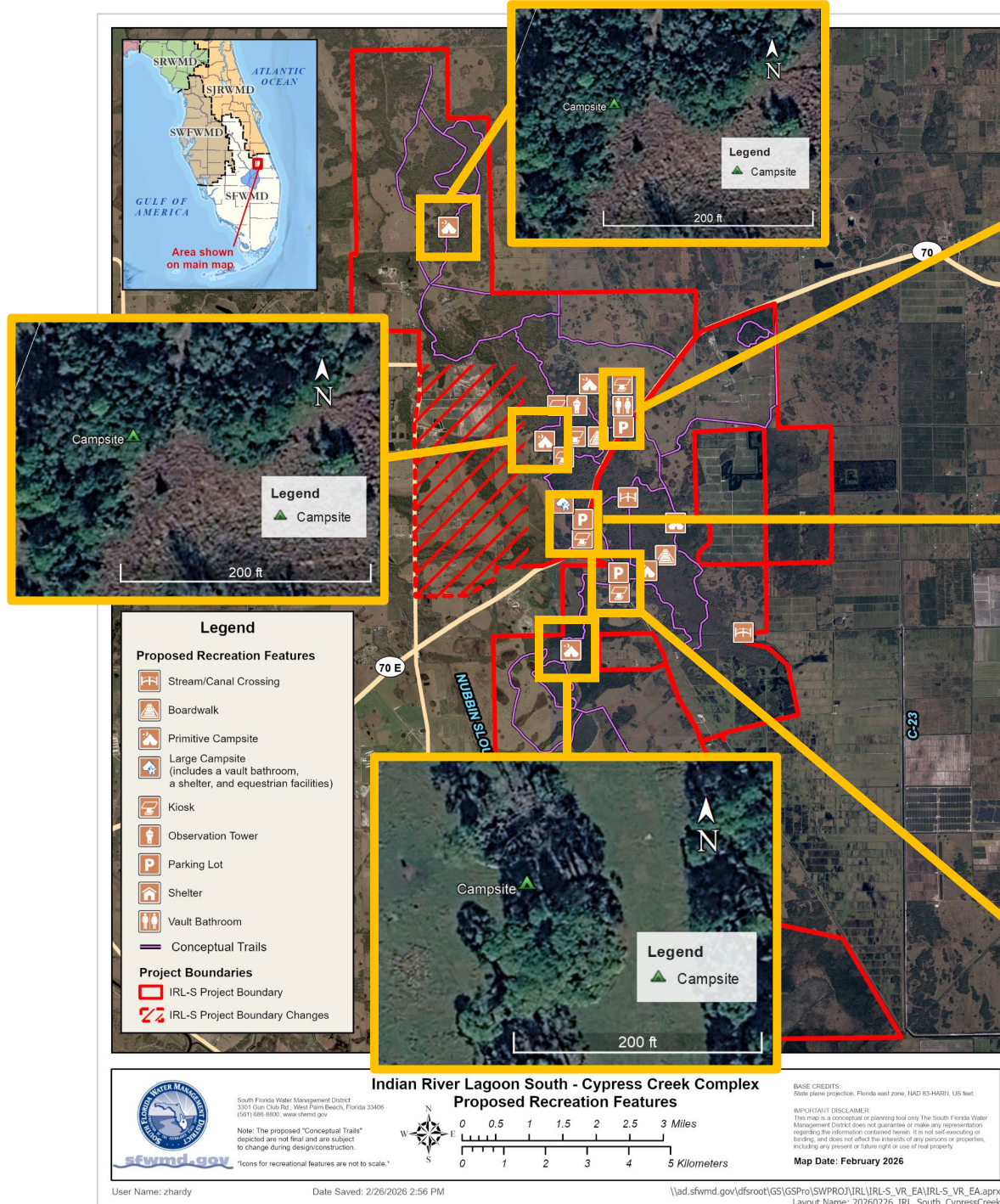
Proposed Recreation Features Footprint IRL-S - C-25 Reservoir and STA Site



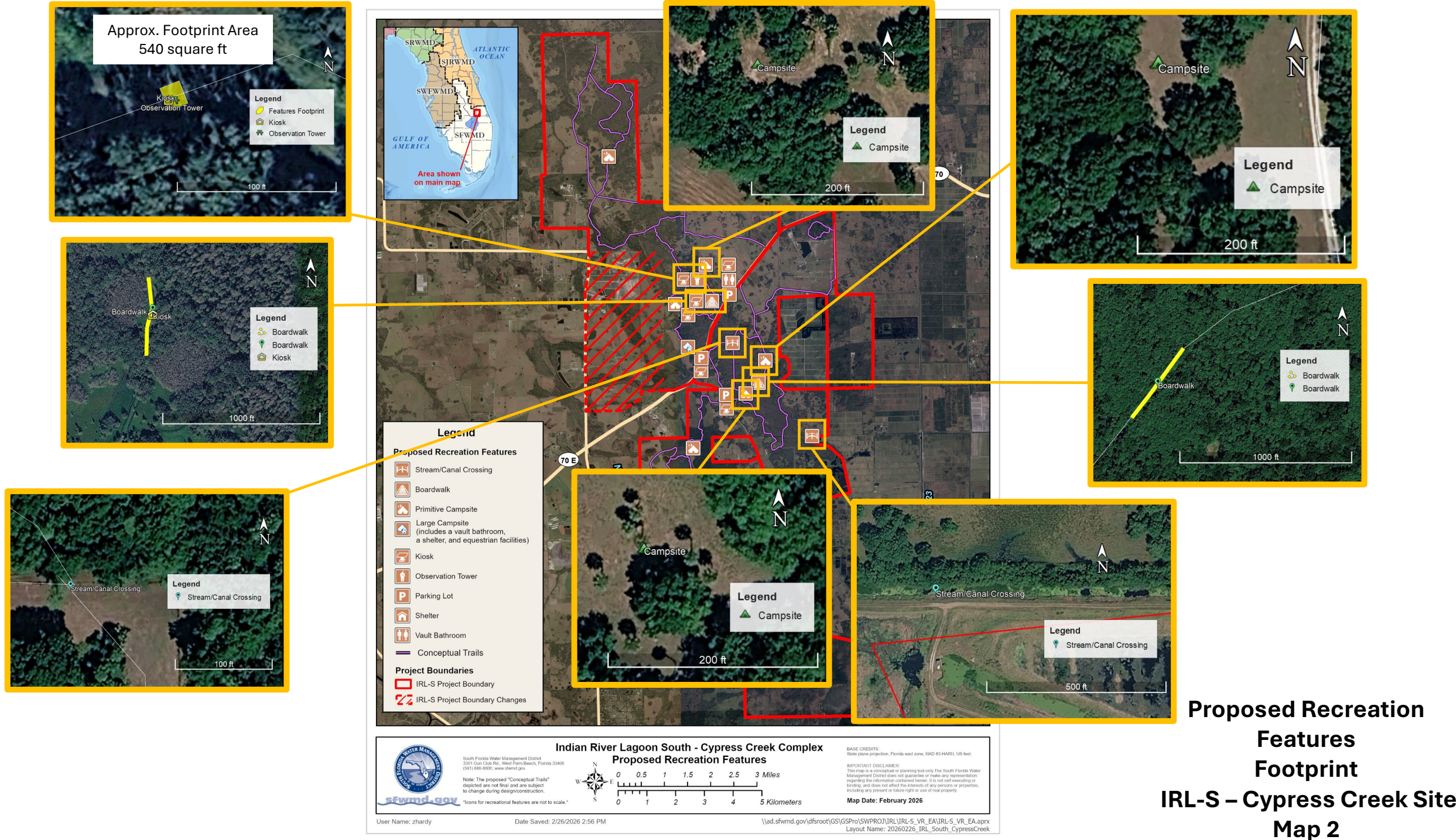


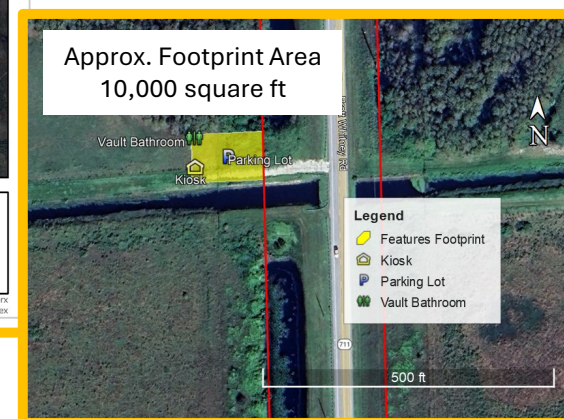
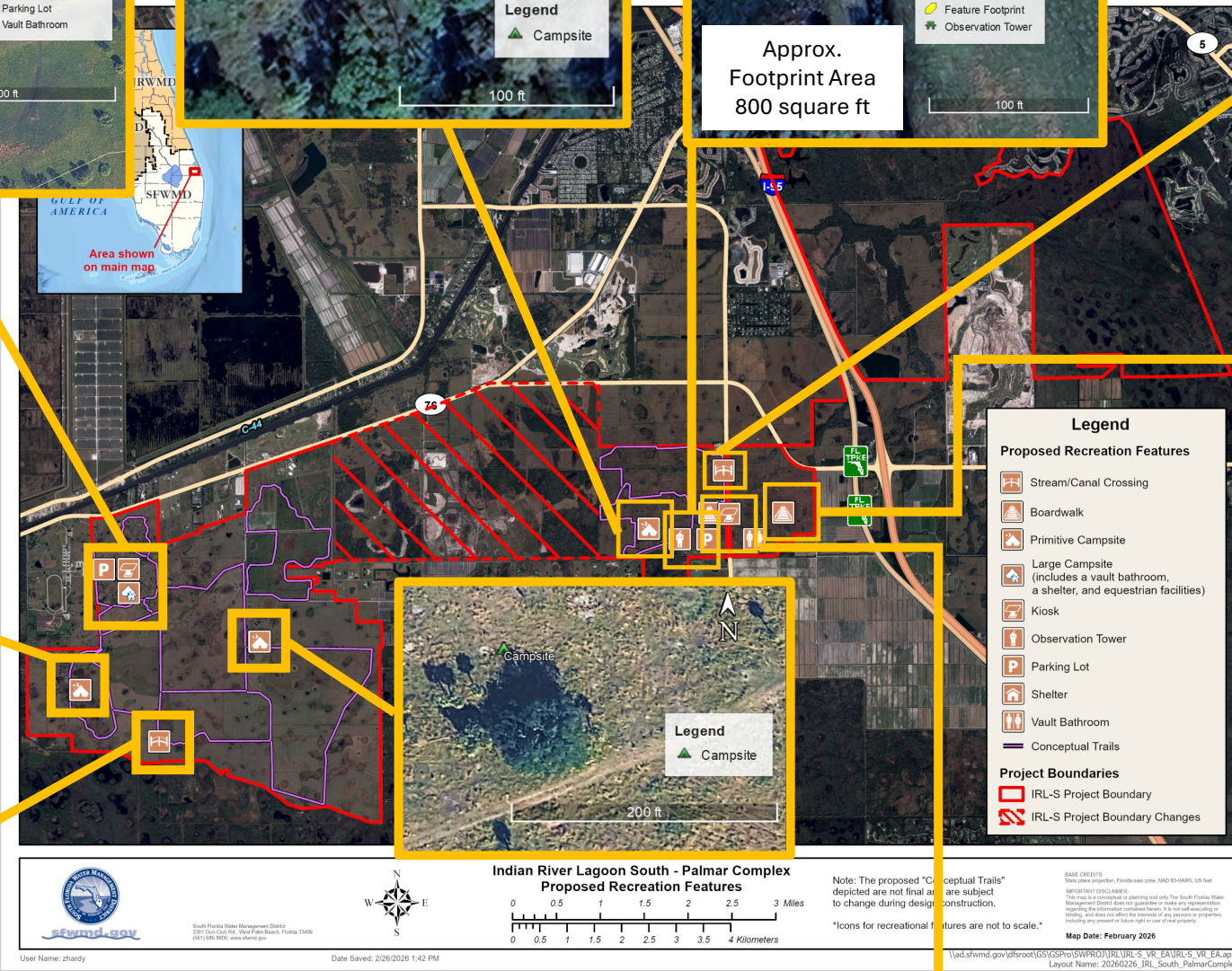
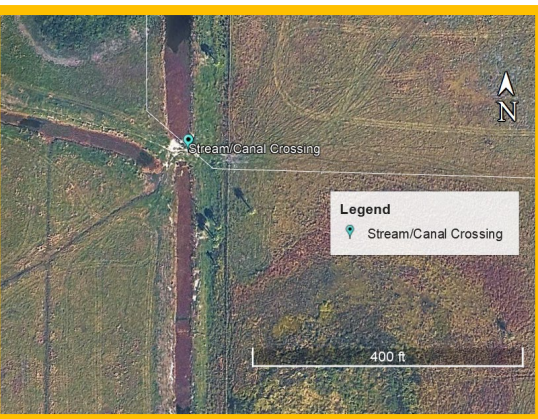
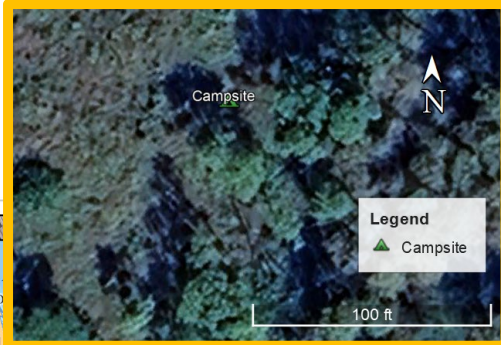
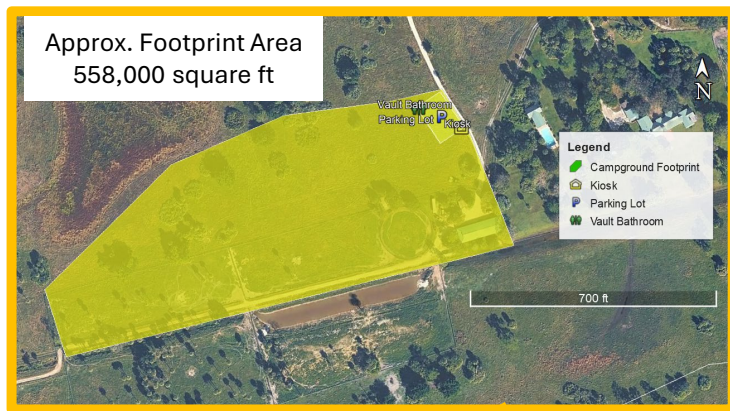
Proposed Recreation Features Footprint IRL-S - Allapattah Site Map 1



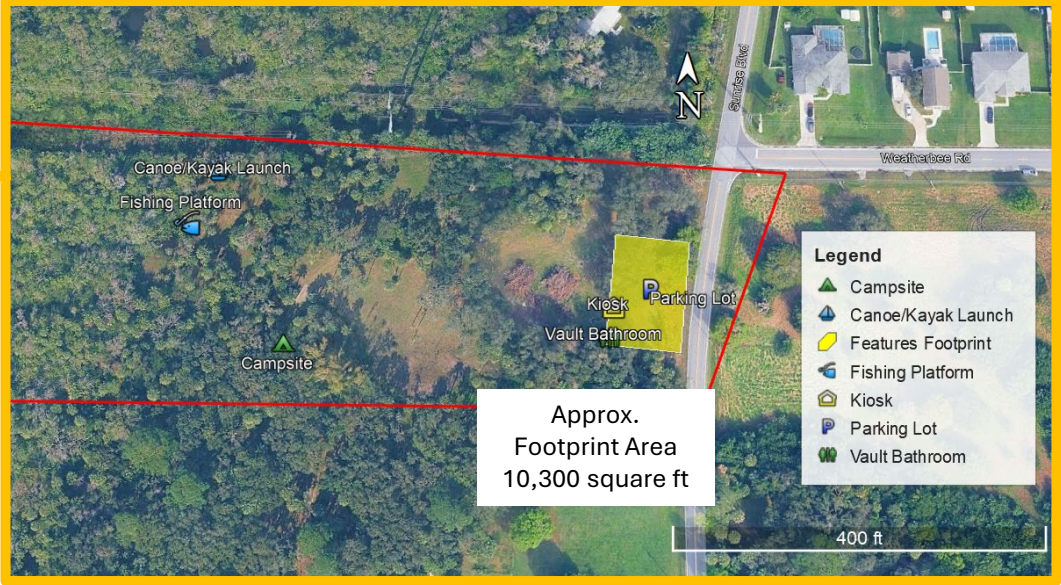
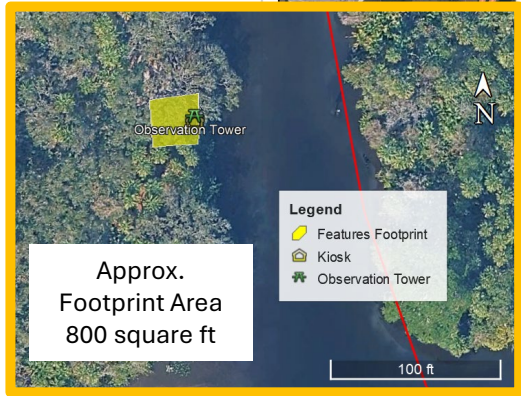
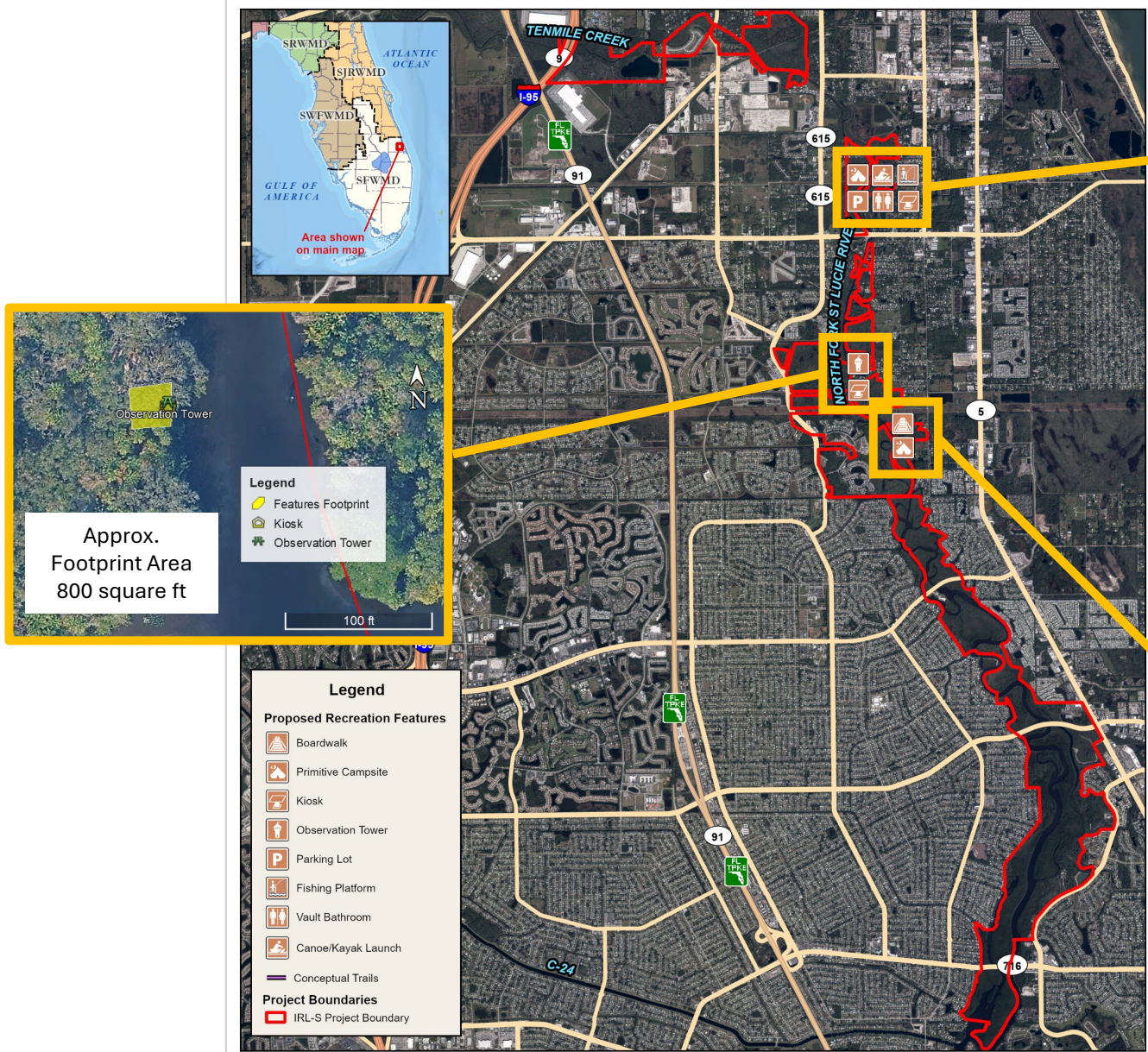


Proposed Recreation Features Footprint IRL-S – Cypress Creek Site Map 1





Proposed Recreation Features Footprint IRL-S – Palmar Complex Site



Proposed Recreation Features Footprint IRL-S – North Fork Site

ANNEX C-2

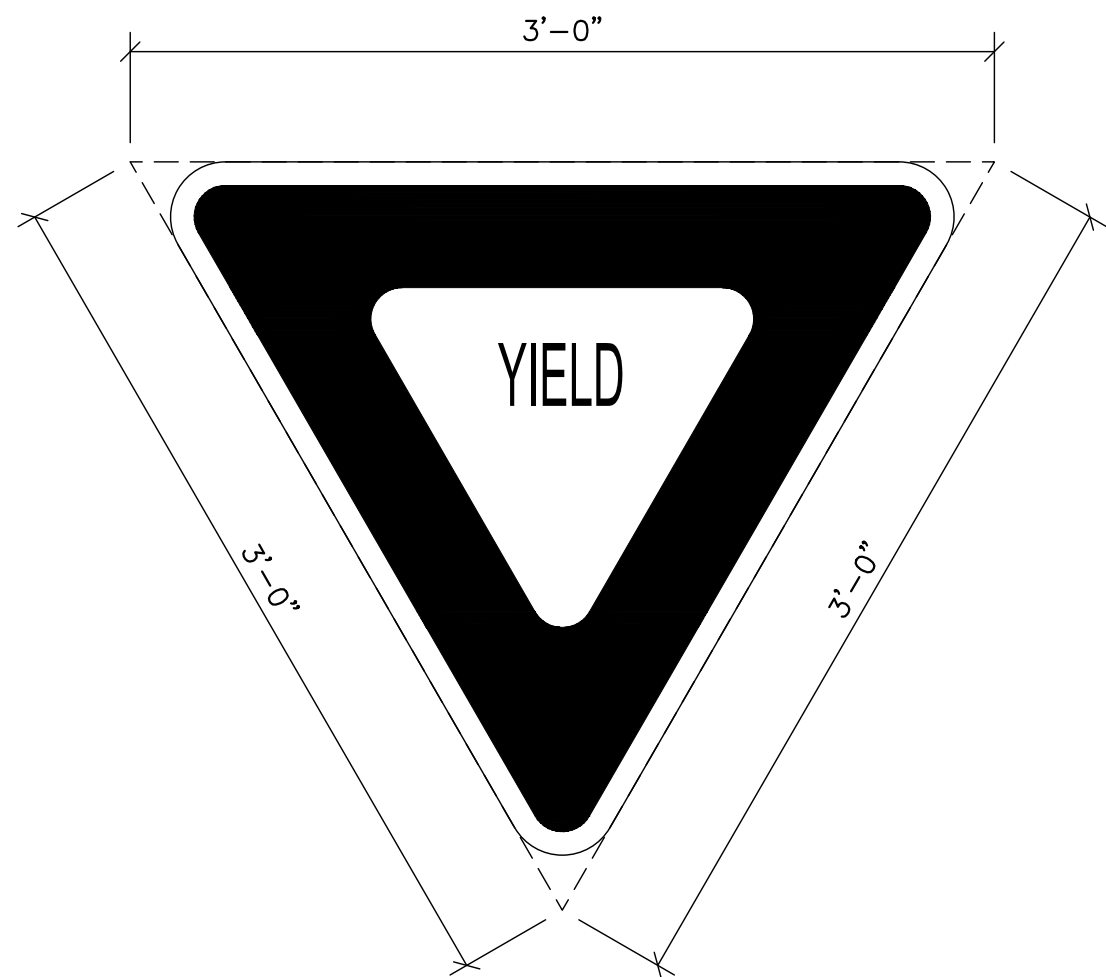
SFWMD STANDARD DESIGN PLATES

A
B
C
D
E
F
G
H
K



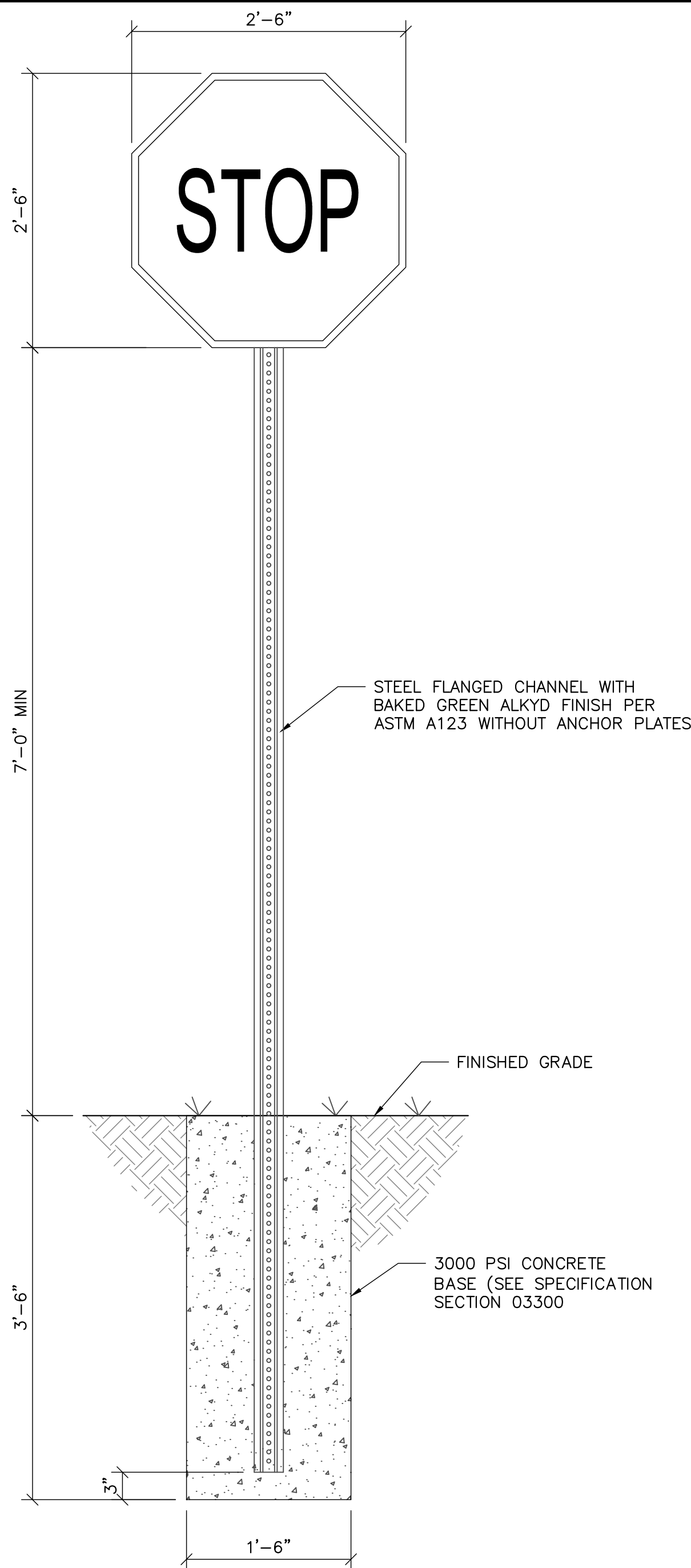
FTP-22-06

ACCESSIBLE SIGN DETAILS
(MOUNTED AS PER STOP SIGN DETAIL)
SCALE: 3" = 1'-0"



R1-2 YIELD SIGN DETAIL
(MOUNTED AS PER STOP SIGN DETAIL)
SCALE: 1½" = 1'-0"

DESIGN CRITERIA [NTS: DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH DISTRICT DESIGN GUIDELINE G-G1]	
ULTIMATE DESIGN WIND SPEED, V _{ULT}	[MPH]
NOMINAL DESIGN WIND SPEED, V _{ASD}	[MPH]
RISK CATEGORY	II
WIND EXPOSURE	[C OR D]
ULTIMATE WIND PRESSURE	[PSF]
DESIGN LOADS ARE IN ACCORDANCE WITH [20XX] FLORIDA BUILDING CODE	

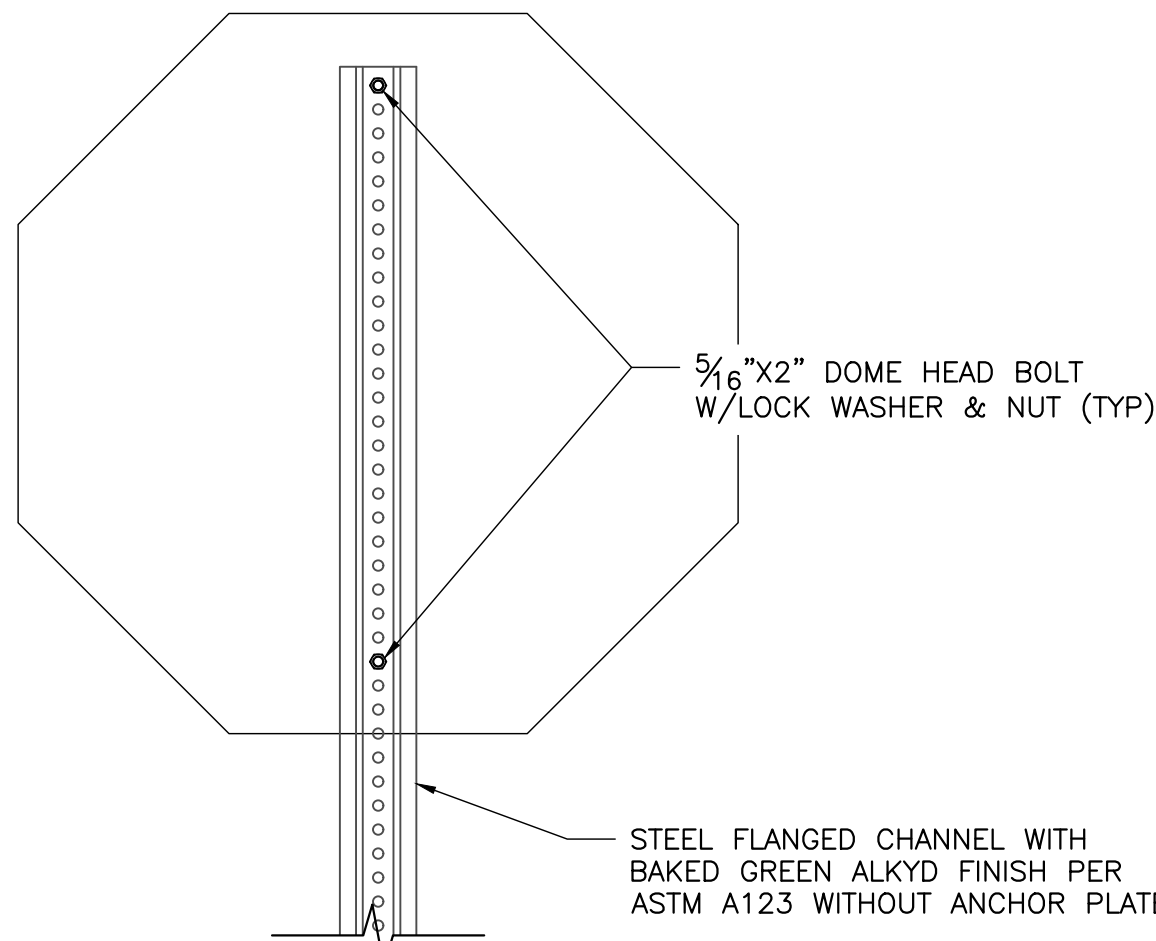


R1-1 STOP SIGN AND SIGN POST DETAIL
SCALE: 1" = 1'-0"

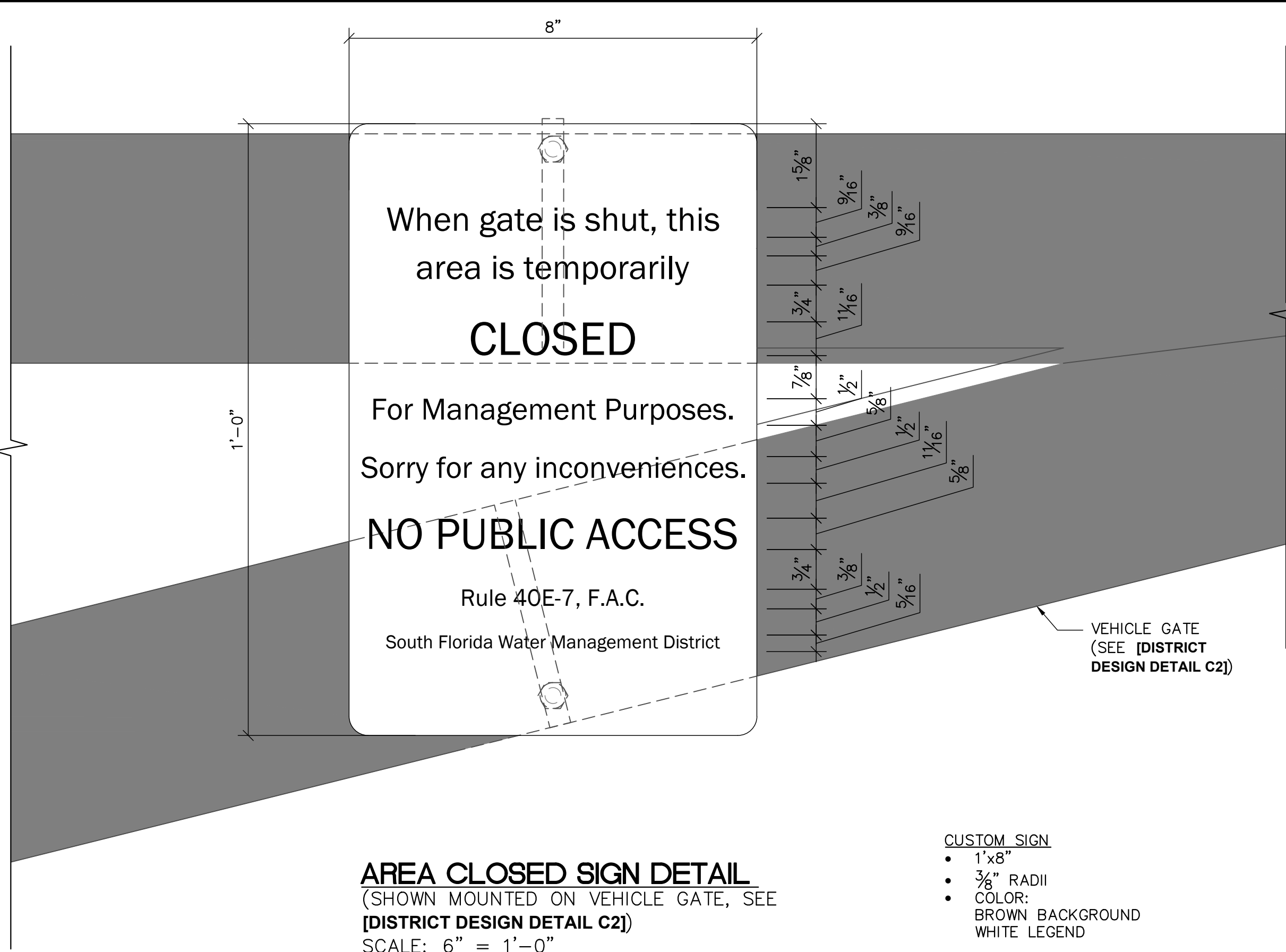
TOP VIEW

STEEL FLANGED CHANNEL WITH
BAKED GREEN ALKYD FINISH PER
ASTM A123 WITHOUT ANCHOR PLATES

5/16"x2" DOME HEAD BOLT
W/LOCK WASHER & NUT (TYP)



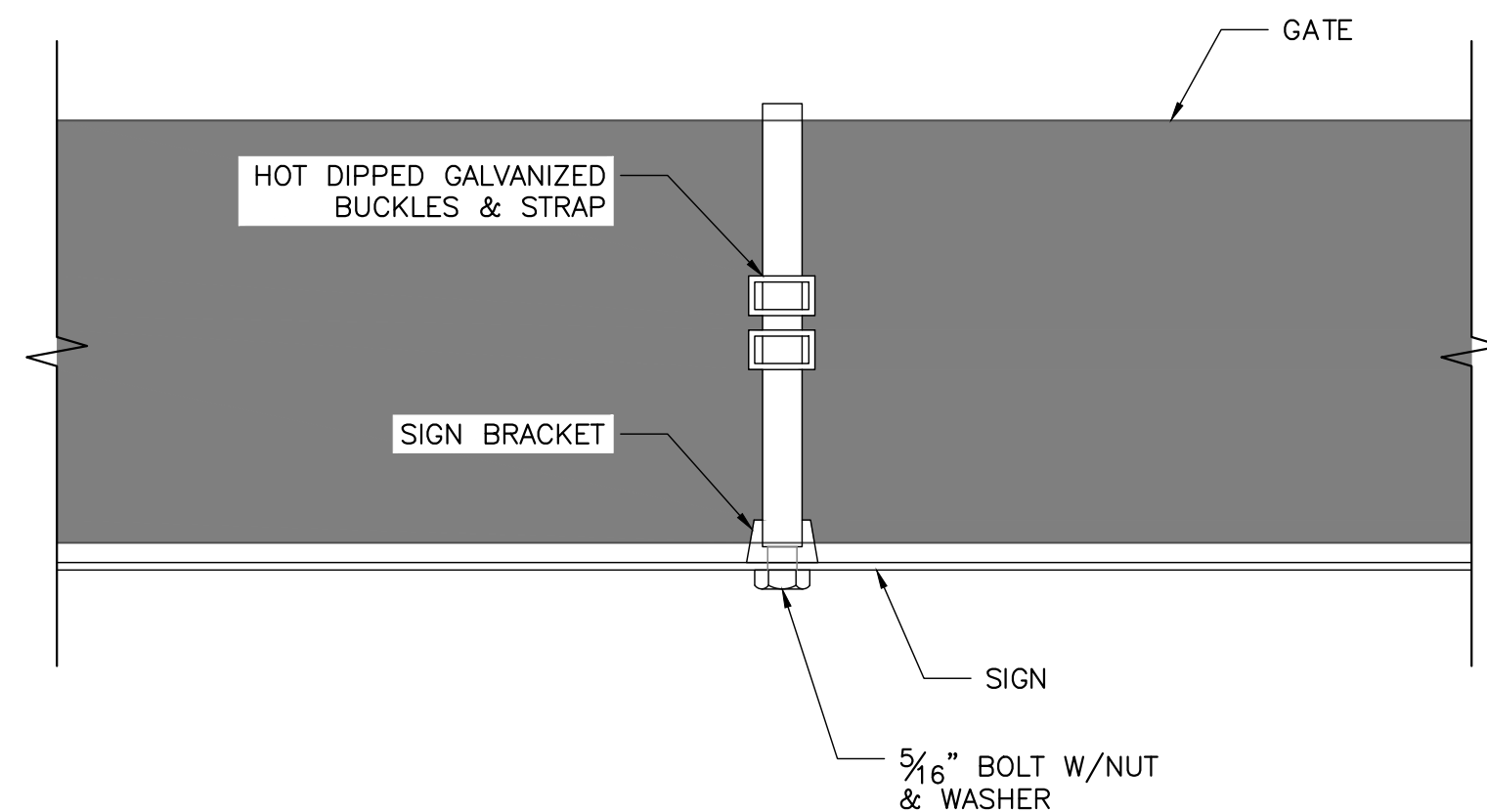
SIGN CONNECTION DETAIL (POST)
SCALE: 1-1/2" = 1'-0"



AREA CLOSED SIGN DETAIL
(SHOWN MOUNTED ON VEHICLE GATE, SEE
[DISTRICT DESIGN DETAIL C2])
SCALE: 6" = 1'-0"

CUSTOM SIGN

- 1'x8"
- 3/8" RADII
- COLOR:
BROWN BACKGROUND
WHITE LEGEND



SIGN CONNECTION DETAIL (GATE)
SCALE: 6" = 1'-0"

GENERAL NOTES:

- STOP AND YIELD SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ACCESSIBLE PARKING SIGN SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) INDEX 700-102.
- ALL SIGNS SHOWN ARE ALUMINUM.
- THE NUMBER OF SIGNS REQUIRED TO BE INSTALLED UNDER THIS CONTRACT IS LISTED IN TABLE, THIS DRAWING.
- ONE ACCESSIBLE SIGN REQUIRED FOR EACH ACCESSIBLE PARKING SPACE.
- THE CONTRACTOR SHALL SUBMIT LETTERING DESIGN FOR AREA CLOSED SIGN TO THE DISTRICT FOR APPROVAL IN ACCORDANCE WITH SPECIFICATION SECTION 01300.
- INSTALL POST-MOUNT SIGNS USING GALVANIZED SIGN MOUNTING HARDWARE, STRAP AND BUCKLE, OR SUITABLE TIEWRAP.
- INSTALL GATE-MOUNT SIGNS USING GALVANIZED SIGN MOUNTING HARDWARE, STRAP AND BUCKLE, OR SUITABLE TIEWRAP.

NOTE TO SPECIFIER:

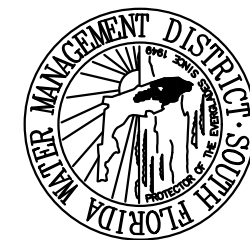
- SIGNAGE TO INCLUDE DETAILS TO MOUNT ON POST OR GATE AS APPROPRIATE FOR THE SITE.
- POST MOUNTED SIGN HEIGHT SHOWN PER MUTCD.
- DESIGNER TO INDICATE SIGN TYPE AND LOCATION ON SITE PLAN.
- ONLY INCLUDE APPLICABLE SIGNS IN THE REQUIRED SIGNS TABLE.
- DESIGNER SHALL FILL IN THE DESIGN CRITERIA VALUES. SIGN POST INSTALLATIONS SHALL BE RATED FOR THE WIND LOADING AS DEFINED IN DISTRICT DESIGN GUIDELINE G-G1. THE DEFAULT VALUES INDICATED IN THIS STANDARD ARE THE MINIMUM VALUES ACCEPTABLE TO THE DISTRICT FOR A 180 MPH BASIC (ULTIMATE) WIND SPEED, RISK CATEGORY II, AND EXPOSURE CATEGORY C AS DESIGNED IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE AND ASCE 7-16. LESS CONSERVATIVE VALUES ARE NOT TO BE USED FOR THE INDICATED CRITERIA UNLESS JUSTIFICATION IS ACCEPTED BY THE DISTRICT.

REQUIRED SIGNS	
SIGN TYPE	NUMBER REQUIRED
STOP SIGN (POST-MOUNT)	
YIELD SIGN (POST-MOUNT)	
ACCESSIBLE PARKING SIGN (POST-MOUNT)	
AREA CLOSED SIGN (GATE-MOUNT)	

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APPROVED
REVISION NO. V1.2
EFFECTIVE DATE MAR 2022
CHANGE NO. EGC0827

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



**STANDARD RECREATION DETAILS
PUBLIC USE FACILITIES
SIGN DETAILS**

R1

- GENERAL NOTES:**
- LUMBER:**
 - UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL LUMBER SHALL BE SOUTHERN YELLOW PINE, GRADE #2, KD 19% OR BETTER (FB FOR LUMBER SIZES NOTED TO BE IN CONFORMANCE WITH VALUES LISTED IN THE AMERICAN WOOD ASSOCIATION STANDARDS), AND SHALL CONFORM TO THE NATIONAL GRADING RULE FOR DIMENSION LUMBER, THE SOUTHERN PINE INSPECTION BUREAU AND THE SOUTHERN FOREST PRODUCTS ASSOCIATION.
 - DO NOT LOCATE ANY HOLES CLOSER THAN FIVE (5) BOLT DIAMETERS FROM THE END OF ANY WOOD FRAMING MEMBER.
 - ALL WOOD MEMBERS SHALL BE PRESSURE TREATED, UNLESS SPECIFIED ELSEWHERE ON THE DRAWING.
 - ALL NAILS SHALL BE HOT DIPPED GALVANIZED.
 - BOLT, NUTS, WASHERS AND LAG SCREW CONNECTIONS, PLATES, CONNECTORS AND SIMPSON STRONG-TIE PRODUCTS, SHALL BE HOT DIPPED GALVANIZED, UNLESS SPECIFIED ELSEWHERE ON THE DRAWING.
 - ALL LUMBER SIZES ARE ROUGH SAWN.
 - STRUCTURAL STEEL:**
 - ALL STRUCTURAL STEEL SHAPES AND PLATE SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 05550.
 - ALL SHOP CONNECTIONS TO BE WELDED (UTILIZING E70XX LOW HYDROGEN ELECTRODES) AND FIELD CONNECTIONS TO BE BOLTED UNLESS OTHERWISE SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY (AWS) STANDARDS.
 - ALL STEEL TO BE HOT DIP GALVANIZED.
 - ALL BOLTED CONNECTIONS SHALL CONFORM TO ASTM A325 AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 05070.
 - LOCATE FINISH HOLES PRECISELY TO ENSURE PASSAGE THROUGH ASSEMBLED MATERIALS WITHOUT DRIFTING. ENLARGE HOLES BY REAMING IF NECESSARY. POOR MATCHING OF HOLES IS SUFFICIENT CAUSE FOR REJECTION.

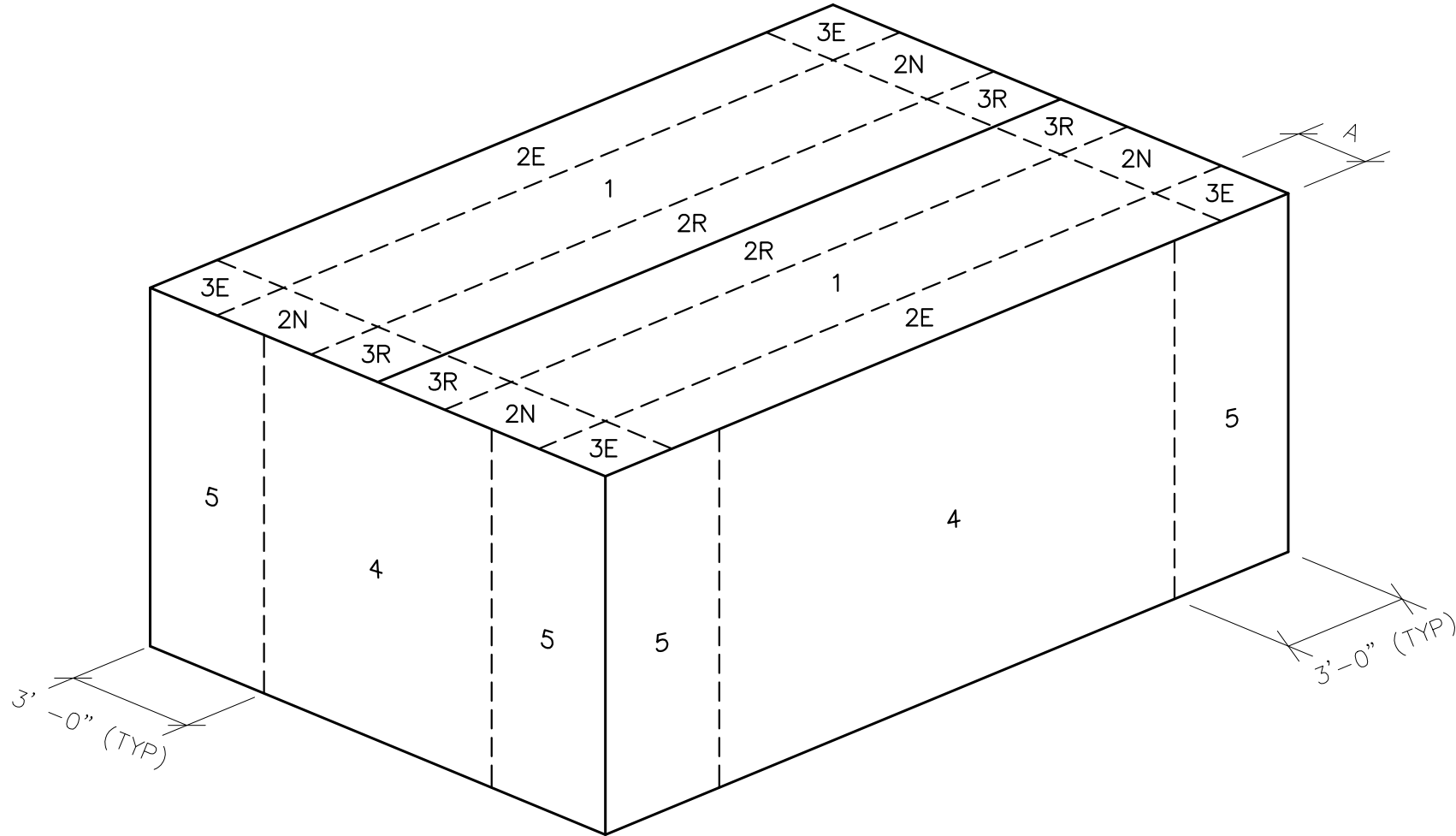
- HANDICAP ACCESSIBILITY:**
 - A MINIMUM CLEARANCE OF 36" SHALL BE PROVIDED ALL AROUND THE INTERIOR INFORMATION SIGNS FOR WHEELCHAIR MANEUVERABILITY.
- CONCRETE:**
 - STRUCTURAL CONCRETE, INCLUDING FOOTINGS, SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS OF 4500 PSI IN ACCORDANCE WITH SPECIFICATION SECTION 03300, UNLESS OTHERWISE NOTED.
 - ALL REINFORCING SHALL CONFORM TO ASTM A615 FOR GRADE 60 STEEL; WELDED WIRE MESH TO ASTM A1064.
 - CHECK ALL DRAWINGS AND APPLICABLE MANUFACTURER'S SHOP DRAWINGS FOR LOCATION OF ALL EMBEDDED ITEMS SUCH AS PIPE SLEEVES, ANCHOR BOLTS, ETC., PRIOR TO PLACING CONCRETE.

- #5 REINFORCEMENT FOR CONTINUOUS FOOTINGS SHALL BE CONTINUOUS AND SPLICED WITH A FULL 30-INCH LAP.**
 - PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. START INITIAL CURING AS SOON AS FREE WATER HAS DISAPPEARED FROM THE CONCRETE SURFACE AFTER PLACING AND FINISHING. KEEP CONTINUOUSLY MOIST FOR NOT LESS THAN 7 DAYS IN ACCORDANCE WITH ACI 301 PROCEDURES. PERFORM CURING OF THE CONCRETE BY CURING AND SEALING COMPOUND, BY MOIST CURING, BY MOISTURE RETAINING COVER CURING OR BY COMBINATION THEREOF.**
 - MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR THE REINFORCEMENT AND SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 03200.**
- ROOF:**
 - CONTRACTOR SHALL SUBMIT 5-V CRIMP EXPOSED FASTENER ROOFING SYSTEM MIAMI-DADE NOTICE OF ACCEPTANCE OR FLORIDA PRODUCT APPROVAL FOR REVIEW BY THE DISTRICT. ROOF SYSTEM SHALL BE APPROVED FOR USE IN THE HIGH VELOCITY HURRICANE ZONE. ACCEPTABLE PRODUCT AND MANUFACTURER SUCH AS ULTRA MAX SERIES 2000 STEEL PANEL MANUFACTURED BY EXTREME METAL FABRICATORS OR APPROVED EQUAL METAL ROOFING SYSTEM APPROVED FOR USE IN THE HVHZ. ALUMINUM ROOFS ARE NOT PERMITTED.

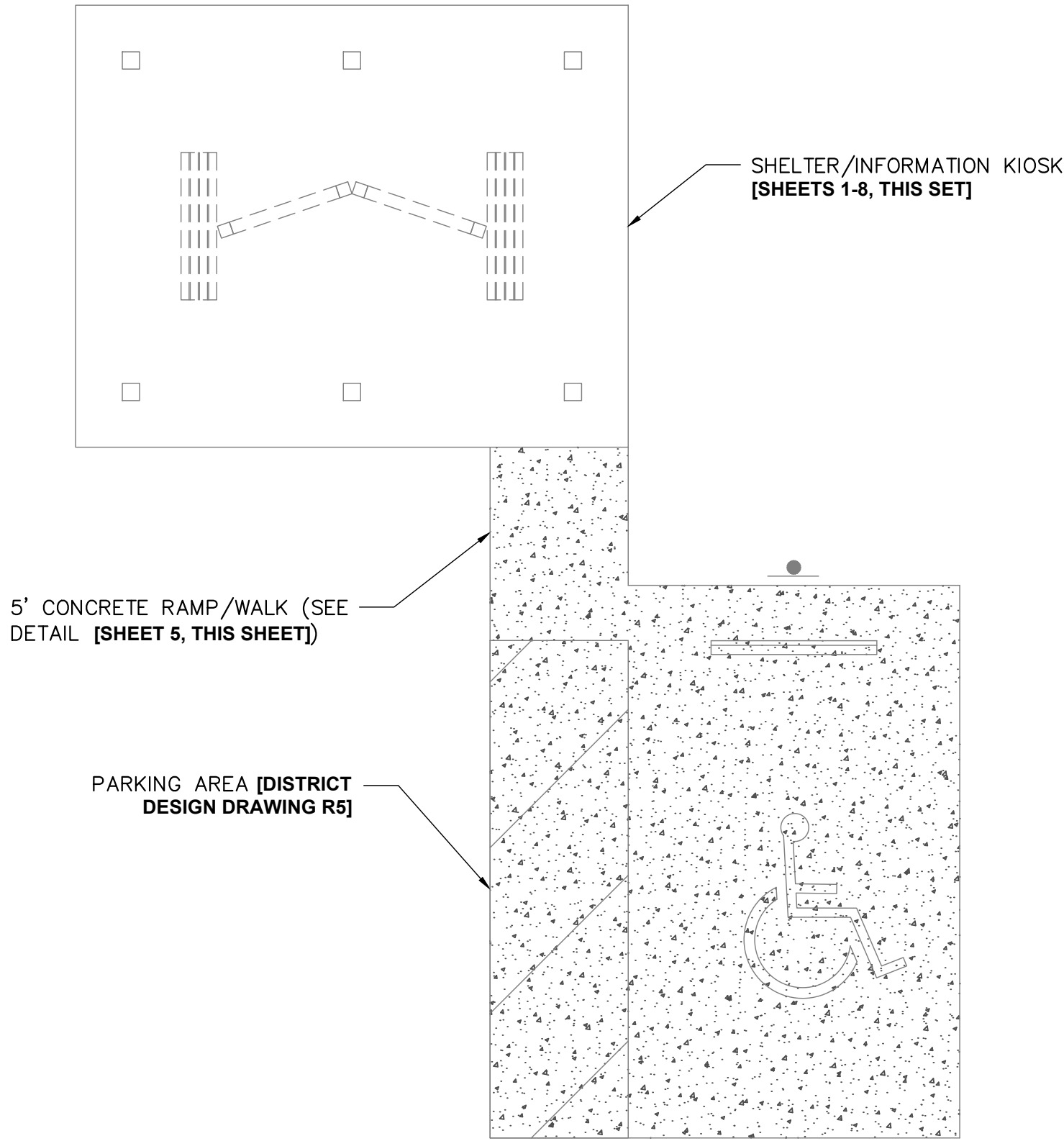
NOTE TO SPECIFIER

- REVISE THE PLAN VIEW AS NECESSARY TO REFLECT SPECIFIC SITE CONDITIONS, I.E. NUMBER OF PARKING SPACES, TYPE OF KIOSK AND /OR SHELTER. UPDATE STRUCTURES AND SITE LAYOUT FOR THE PROJECT.**
- PAVED WALKWAYS SHALL BE DESIGNED TO LEAD TO THE INFORMATION KIOSK, RESTROOMS, AND TO PROVIDE HANDICAP ACCESS.**
- DESIGNER SHALL FILL IN THE DESIGN CRITERIA VALUES. SITE FEATURES SHALL BE RATED FOR THE WIND LOADING AS DEFINED IN DISTRICT DESIGN GUIDELINE G-G1. THE DEFAULT VALUES INDICATED IN THIS STANDARD ARE THE MINIMUM VALUES ACCEPTABLE TO THE DISTRICT FOR A 180 MPH BASIC (ULTIMATE) WIND SPEED, RISK CATEGORY II, AND EXPOSURE CATEGORY C AS DESIGNED IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE AND ASCE 7-16. LESS CONSERVATIVE VALUES ARE NOT TO BE USED FOR THE INDICATED CRITERIA UNLESS JUSTIFICATION IS ACCEPTED BY THE DISTRICT.**

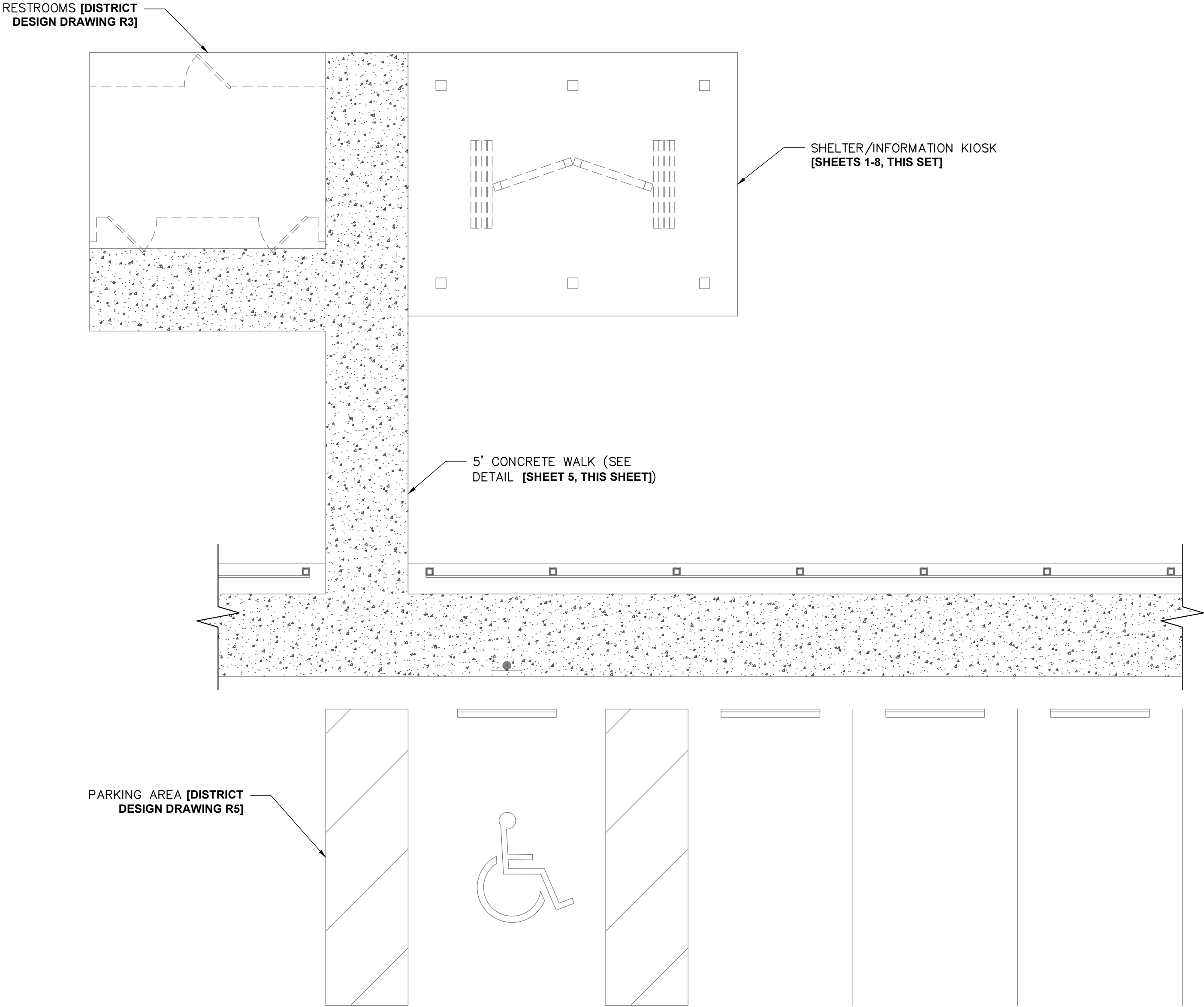
DESIGN CRITERIA [NTS: DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH DISTRICT DESIGN GUIDELINE G-G1]	
ULTIMATE DESIGN WIND SPEED, V_{ULT}	[MPH]
NOMINAL DESIGN WIND SPEED, V_{ASD}	[MPH]
RISK CATEGORY	II
WIND EXPOSURE	[C OR D]
ULTIMATE WIND PRESSURE	[PSF]
DESIGN LOADS ARE IN ACCORDANCE WITH [20XX] FLORIDA BUILDING CODE	



COMPONENT AND CLADDING PRESSURE ZONES
NOT TO SCALE



RECREATION AREA (ISOLATED SHELTER) SITE PLAN
SCALE: 1" = 5'



RECREATION AREA (WITH RESTROOM) SITE PLAN
SCALE: 1" = 5'

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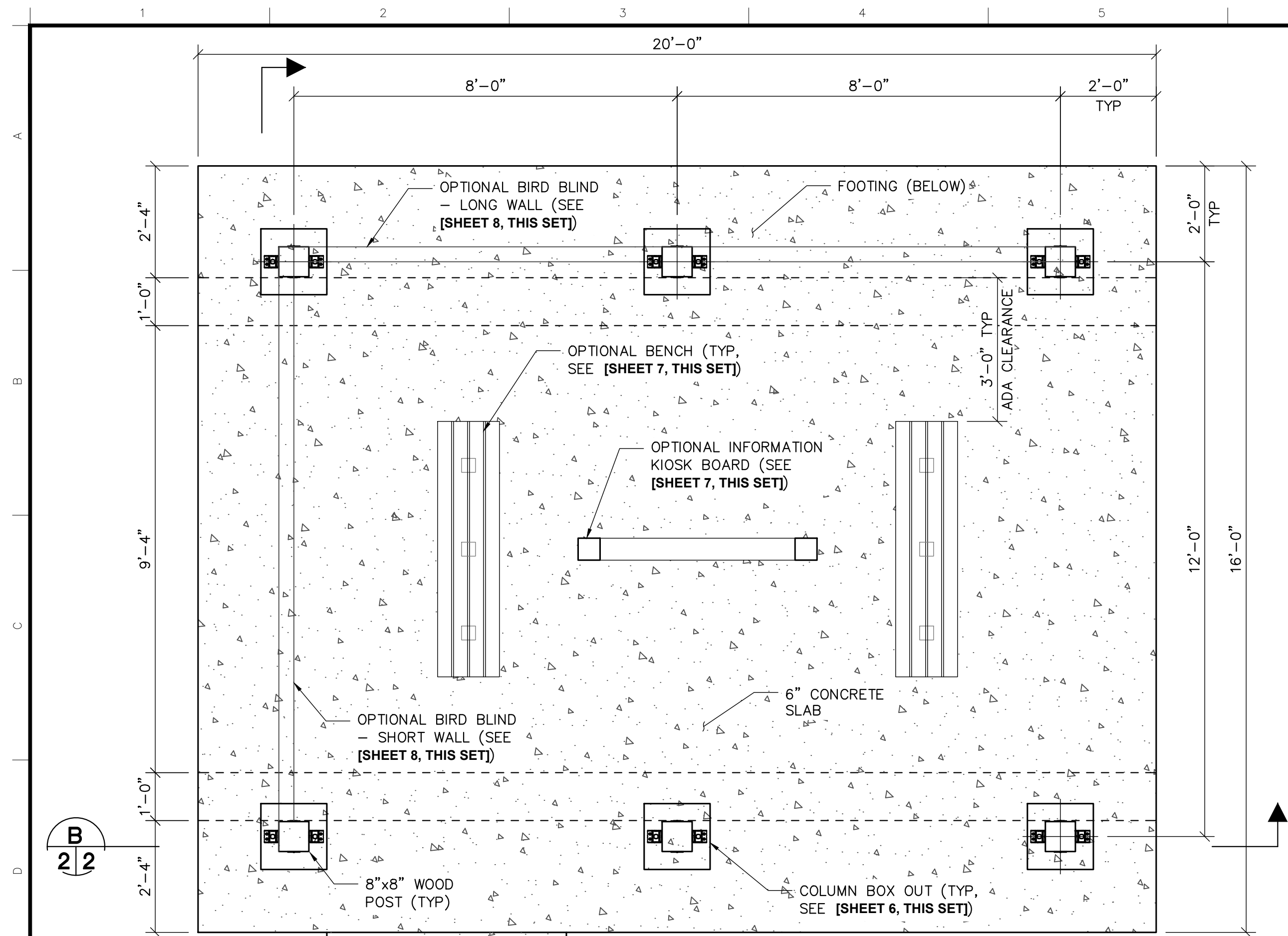
APPROVED _____
REVISION NO. V2.0
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR07099

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



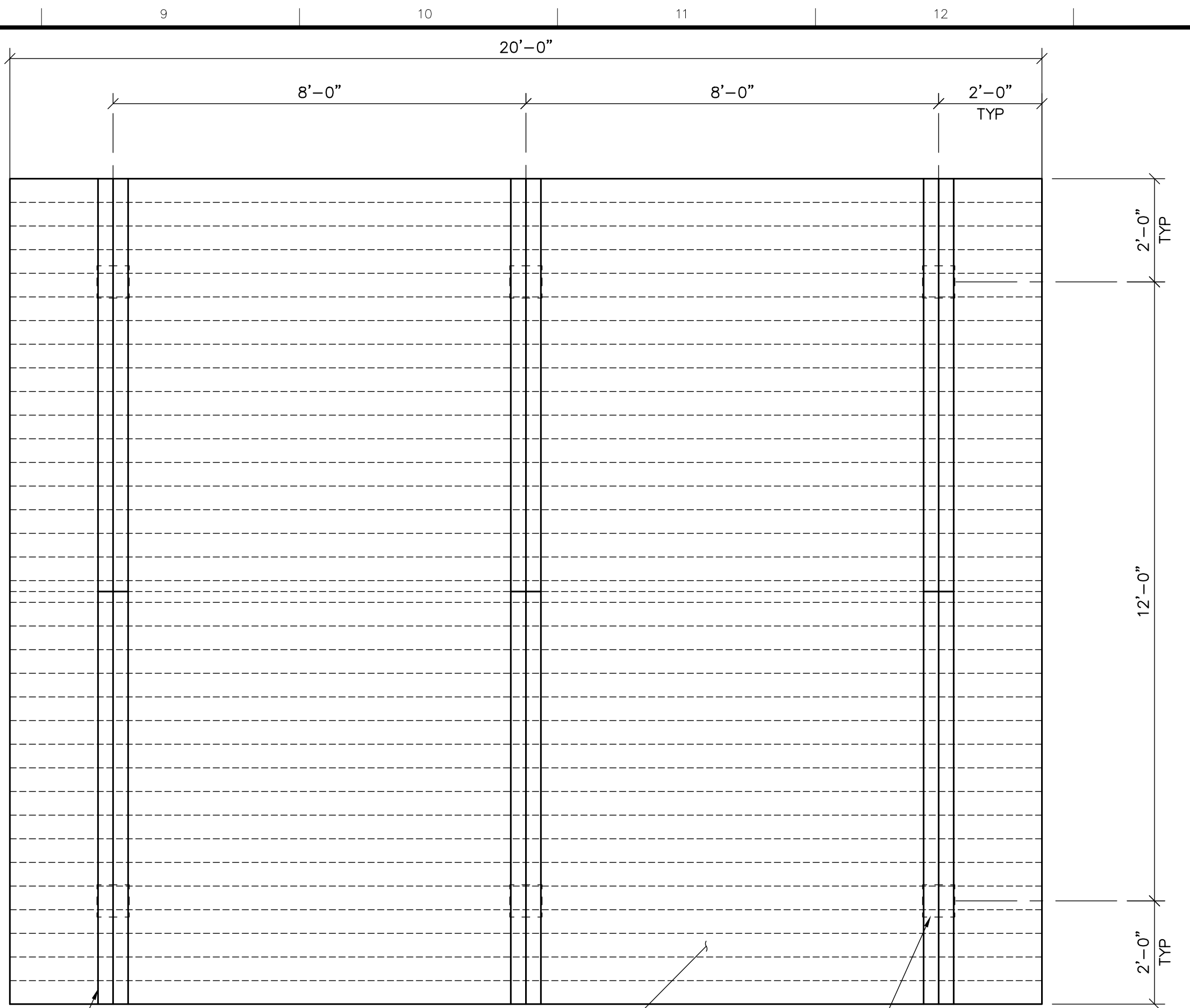
**STANDARD RECREATION DETAILS
PUBLIC USE FACILITIES
SHELTERS AND KIOSKS
SITE PLAN AND NOTES**

R2



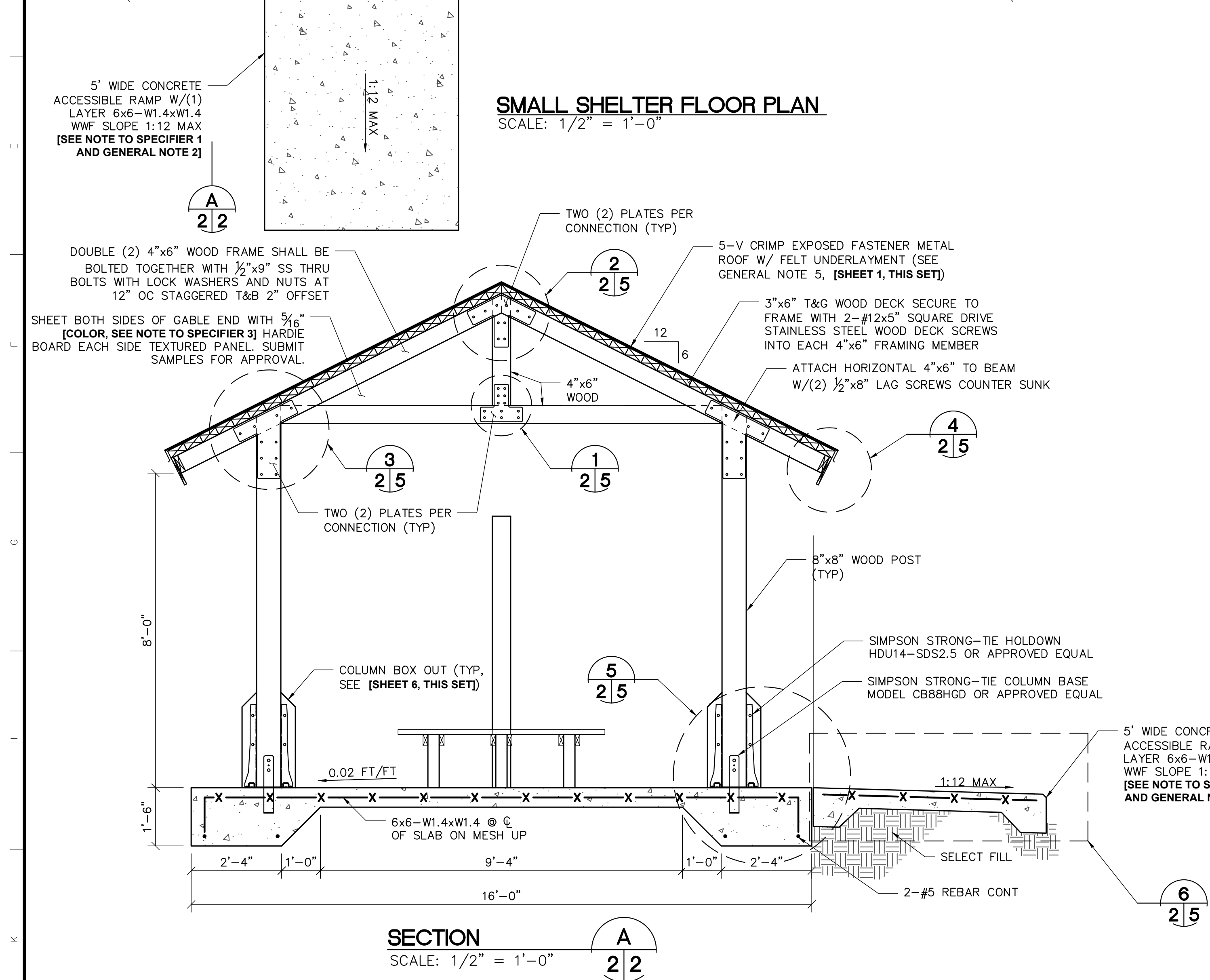
- GENERAL NOTES:
- INSTALLATION:
 - FOR ALL $\frac{1}{4}$ " PLATE CONNECTORS: ROUTER ALL PLACEMENT CONNECTIONS ON TIMBER $\frac{1}{2}$ " DEEP TO ALLOW FOR THICKNESS OF PLATE AND LAG SCREWS AT GABLE ENDS.
 - FOR LOCATIONS WHERE HARDIE BOARD COVERS PLATE CONNECTOR, DRILL PLATE CONNECTOR TO ATTACH HARDIE BOARD FASTENER.
 - DESIGNER TO INCLUDE THE FOLLOWING IF ACCESSIBLE RAMP IS REQUIRED:
 - RAMP:
 - THE RAMP SHALL BE CONSTRUCTED WITH 3,000 PSI CONCRETE WITH ONE (1) LAYER 6x6-W1.4xW1.4 WWF AND REINFORCED MONOLITHIC FOOTING. PROVIDE 3" MINIMUM CONCRETE COVER ON ALL REINFORCING STEEL AND WWF.
 - RAMP SHALL BE 5' W WITH MAXIMUM SLOPE OF 1:12.
 - TOP OF RAMP SHALL BE FLUSH WITH TOP OF SHELTER SLAB]
 - DESIGNER TO INCLUDE THE FOLLOWING IF PICNIC TABLES ARE REQUIRED:
 - PICNIC TABLES:
 - AT A MINIMUM, PROVIDE TWO (2) STANDARD 6' TABLES (PRODUCT NO. SPT6) AND TWO (2) STANDARD 8' TABLES WITH OVERHANG (PRODUCT NO. SPT8-H1) BY PERENNIAL PARK PRODUCTS OR APPROVED EQUAL.]

- NOTES TO SPECIFIER:
- DESIGNER TO PROVIDE ACCESSIBLE RAMP FOR STAND ALONE SHELTERS NOT CONNECTED TO CONCRETE WALKWAY FROM PARKING LOT. IF NOT REQUIRED, DELETE GENERAL NOTE 2 AND RAMP.
 - LARGE SHELTER MAY BE USED AS PICNIC SHELTER. DESIGNER TO REVISE PLAN VIEW TO REMOVE INFORMATION KIOSK AND BENCHES. INCLUDE GENERAL LAYOUT OF PICNIC TABLES AND GENERAL NOTE 3.
 - DESIGNER TO COORDINATE WITH THE DISTRICT PM AND THE PUBLIC USE AND WILDLIFE UNIT OF THE LAND STEWARDSHIP DIVISION TO SELECT THE EXTERIOR AND INTERIOR COLOR(S) FOR THE BIRD BLIND WALL(S). SELECT FROM THE FOLLOWING ACCEPTABLE STANDARD COLOR OPTIONS:
 - TIMBER BARK,
 - KHAKI BROWN, OR
 - MONTEREY TAUPE

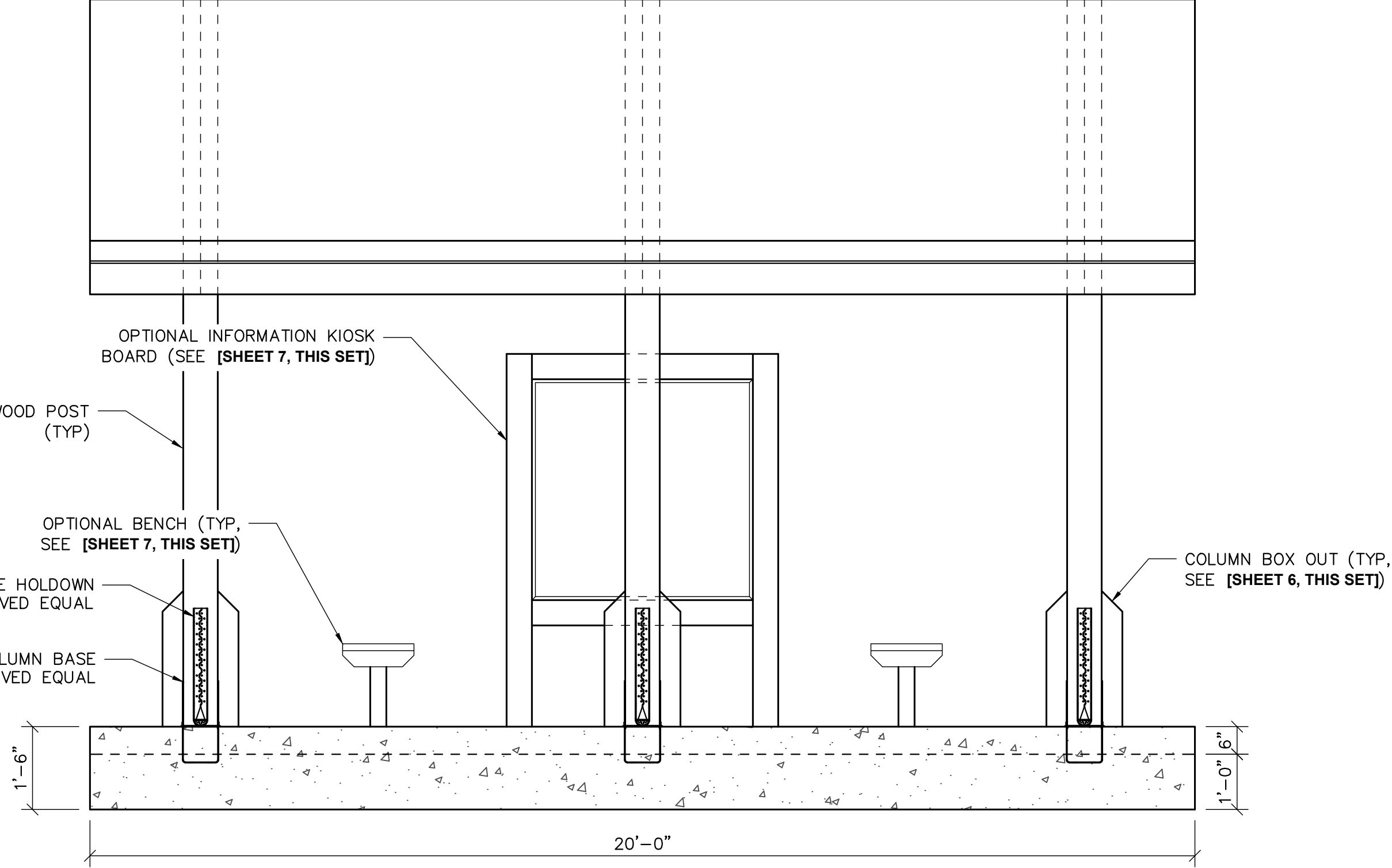


DOUBLE (2) 4"x6" WOOD FRAME SHALL BE BOLTED TOGETHER WITH $\frac{1}{2}$ "x9" SS THRU BOLTS WITH LOCK WASHERS AND NUTS AT 12" OC STAGGERED T&B 2" OFFSET

SMALL SHELTER ROOF FRAMING
SCALE: $\frac{1}{2}$ " = 1'-0"



5-V CRIMP EXPOSED FASTENER METAL ROOF W/ FELT UNDERLAYMENT (SEE GENERAL NOTE 5, [SHEET 1, THIS SET])



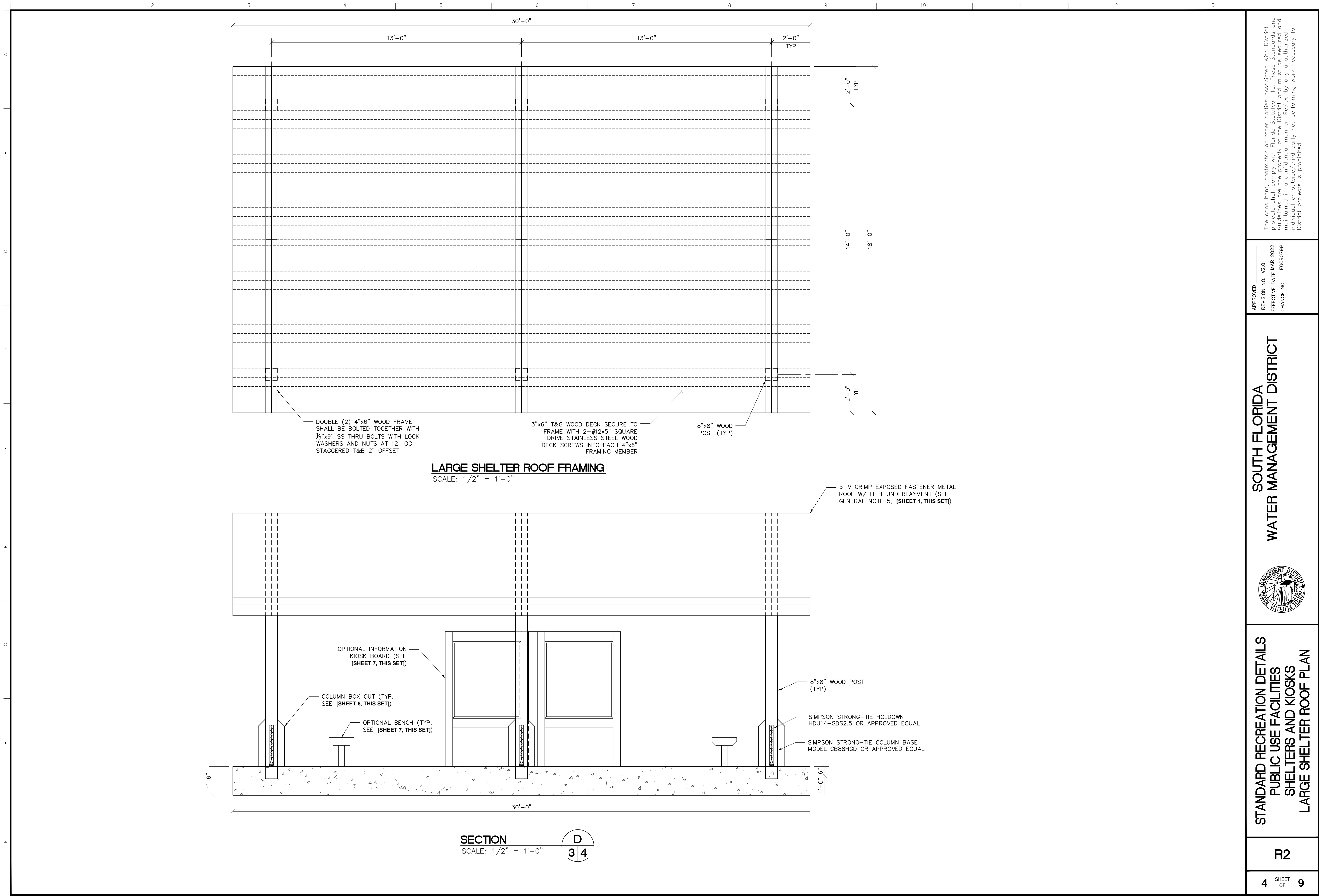
SECTION
SCALE: $\frac{1}{2}$ " = 1'-0"

5' WIDE CONCRETE
ACCESSIBLE RAMP W/(1)
LAYER 6x6-W1.4xW1.4
WWF SLOPE 1:12 MAX
[SEE NOTE TO SPECIFIER 1
AND GENERAL NOTE 2]

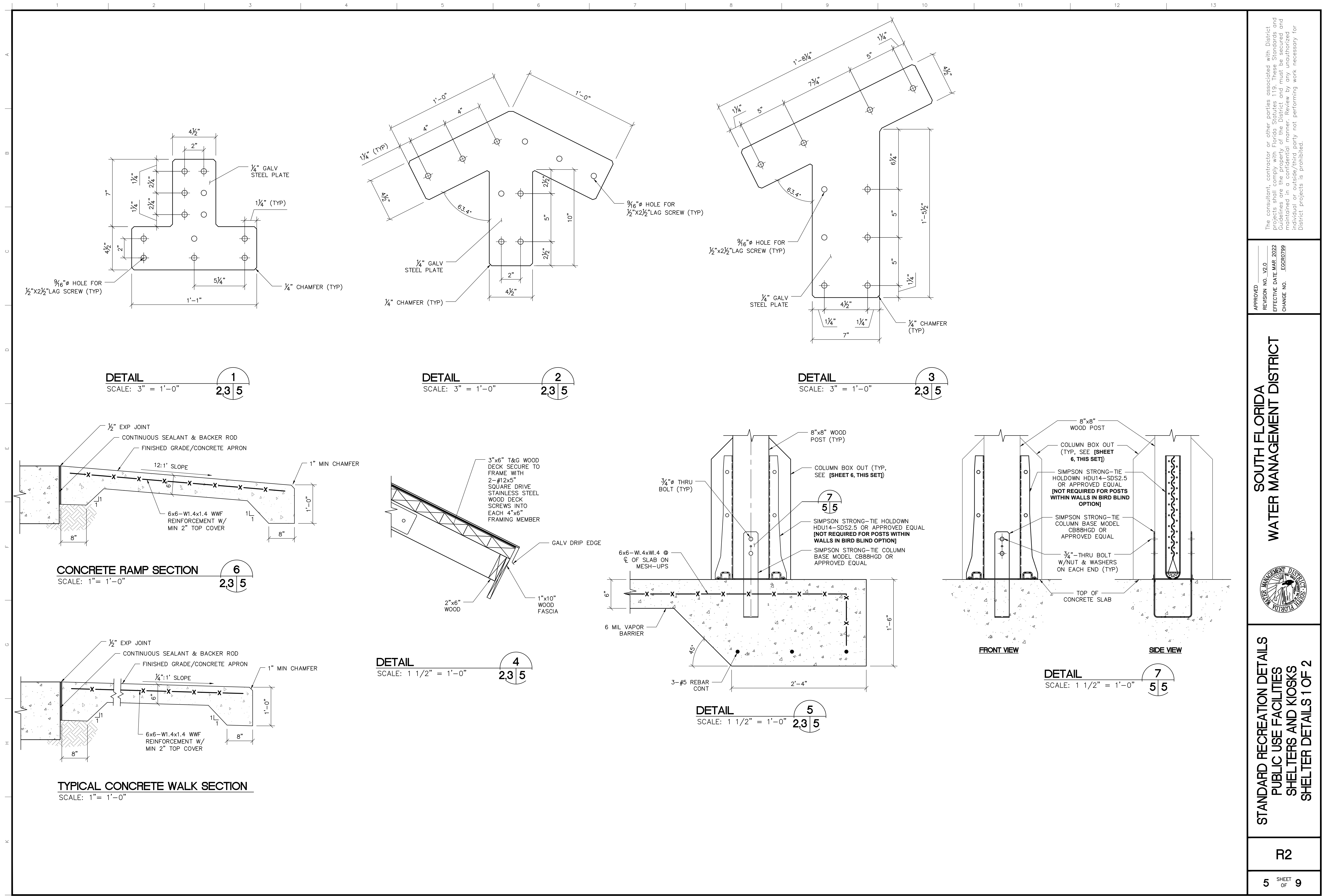


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APPROVED _____
 REVISION NO. V2.0
 EFFECTIVE DATE MAR 2022
 CHANGE NO. EGR0799



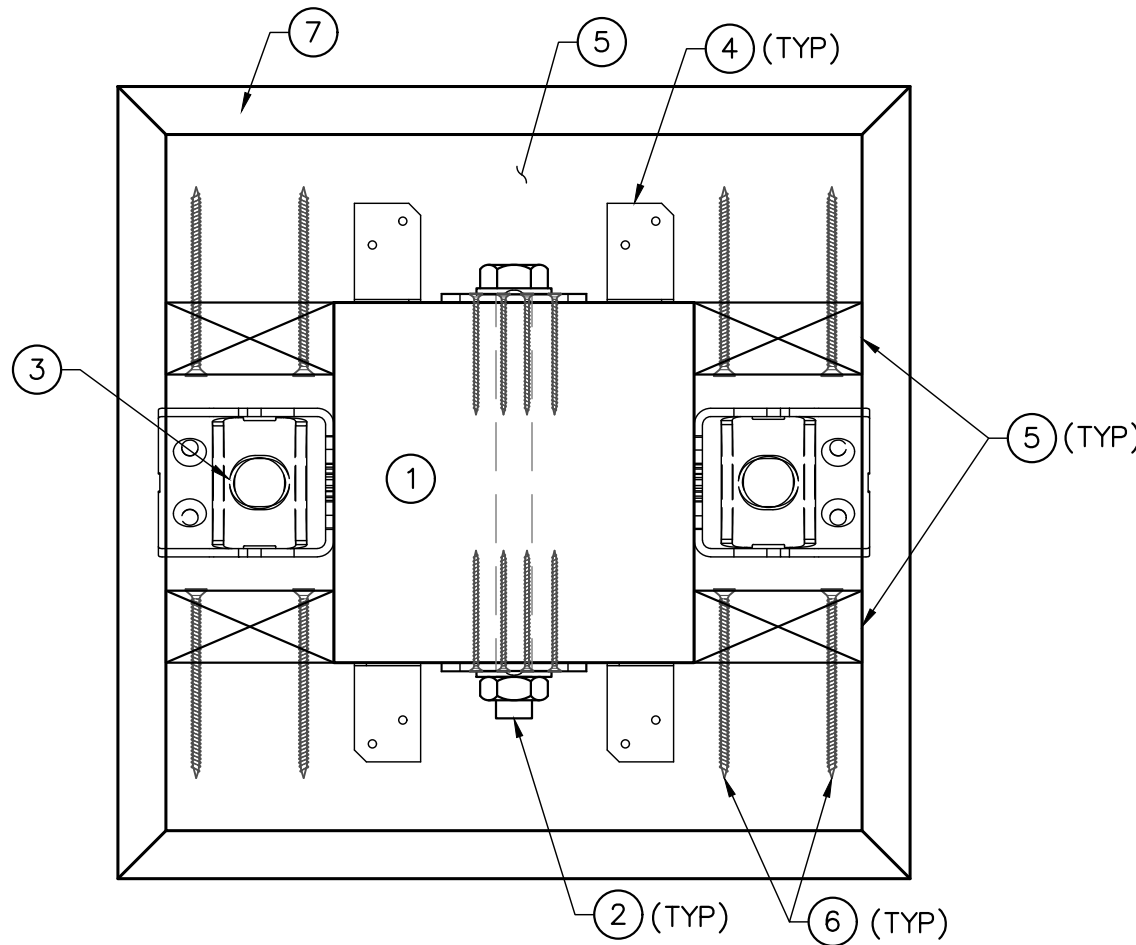
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APPROVED REVISION NO. V2.0 EFFECTIVE DATE MAR 2022 CHANGE NO. ECR0799	
SOUTH FLORIDA WATER MANAGEMENT DISTRICT	
	
STANDARD RECREATION DETAILS PUBLIC USE FACILITIES SHELTERS AND KIOSKS LARGE SHELTER ROOF PLAN	
R2	
4 SHEET OF	9



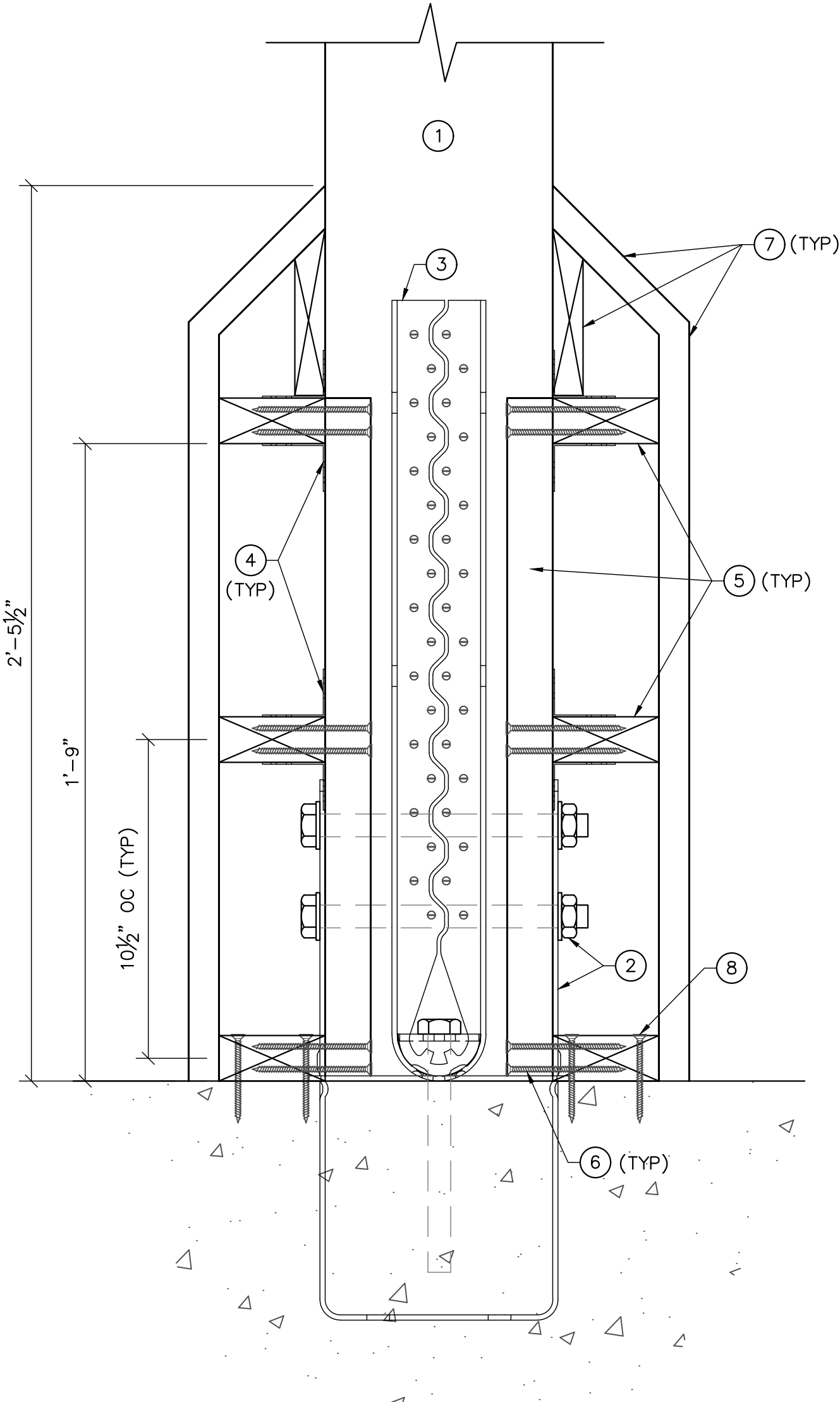


COLUMN LAYOUT SCHEMATIC - PLAN VIEW
NOT TO SCALE
[BIRD BLIND OPTION ONLY]

- NOTE TO SPECIFIER:
1. WHEN BIRD BLIND OPTION IS USED, REMOVE SIMPSON STRONG-TIE HOLDOWN HDU14-SDS2.5 FROM COLUMNS 1-4.



8'x8' COLUMN BOX OUT - PLAN VIEW
SCALE: 3" = 1'-0"



8'x8' COLUMN BOX OUT - SECTION VIEW
SCALE: 3" = 1'-0"

MATERIALS SCHEDULE	
KEY NOTE	MATERIAL
①	8"x8" COLUMN (ROUGH SAWN)
②	SIMPSON STRONG-TIE COLUMN BASE MODEL CB88HGD WITH (2) 3/4" THRU BOLTS OR APPROVED EQUAL
③	SIMPSON STRONG-TIE HOLDOWN HDU14-SDS2.5 OR APPROVED EQUAL
④	SIMPSON STRONG-TIE A21 ANGLE (2) T&B EACH BOARD WITH (4) 10d NAILS
⑤	COMPOSITE 2"x4" LUMBER (TANGENT MATERIAL) OR APPROVED EQUAL. TYPICAL @ 10 1/2" OC VERTICAL. (NOTCH AROUND CB88)
⑥	#10x4" WOOD SCREWS TYP
⑦	COMPOSITE 1"x (TANGENT MATERIAL) OR APPROVED EQUAL TRIM MATERIAL
⑧	TAPCON BOTTOM BOARD WITH (4) 1/4"x3" TAPCONS

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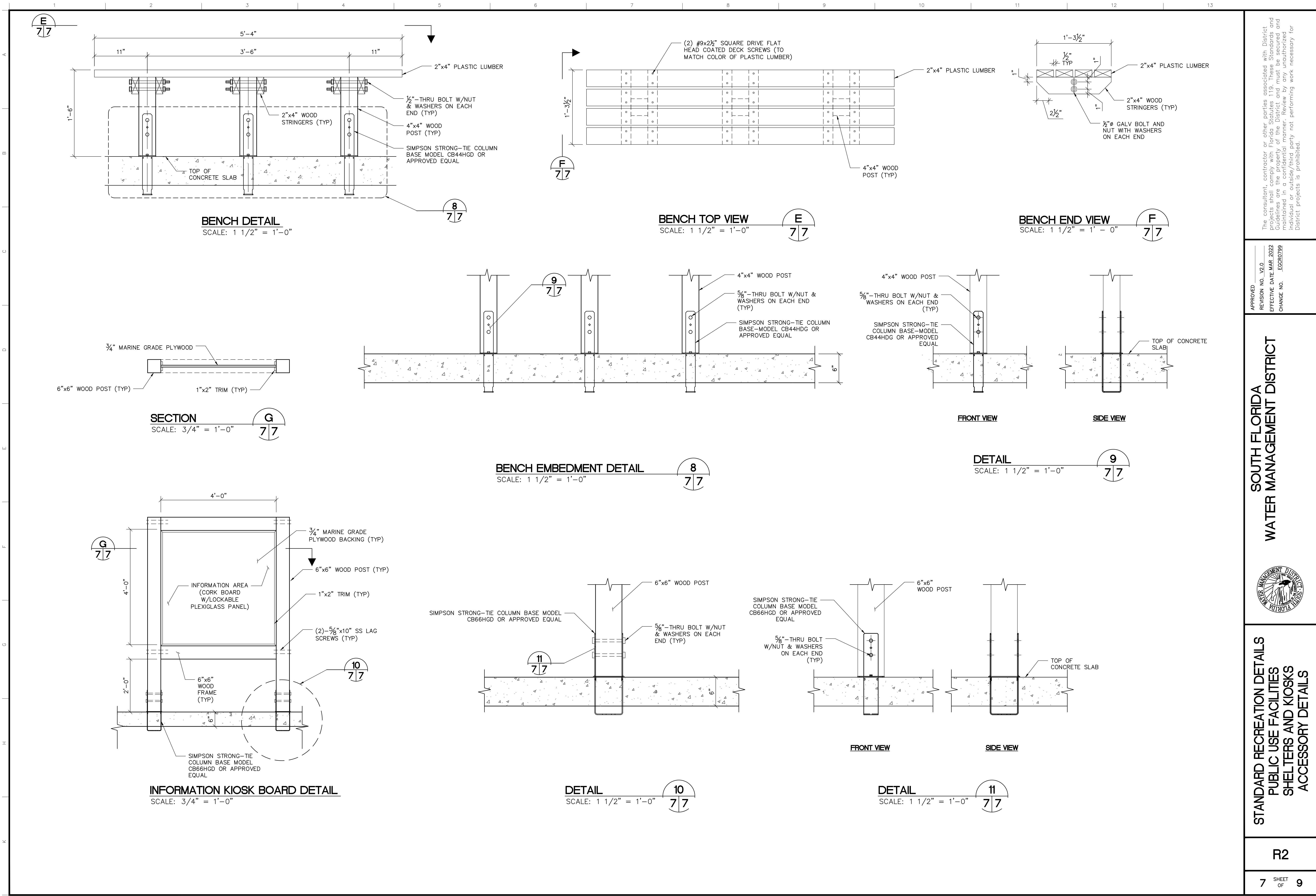
APPROVED _____
REVISION NO. V2.0
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR0799

SOUTH FLORIDA
WATER MANAGEMENT DISTRICT



STANDARD RECREATION DETAILS
PUBLIC USE FACILITIES
SHELTERS AND KIOSKS
SHELTER DETAILS 2 OF 2

R2



The consultant, contractor or other parties associated with District projects shall adhere to the Standard Recreation Details and Guidelines are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for District projects is prohibited.

APPROVED
REVISION NO. V2.0
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR0799

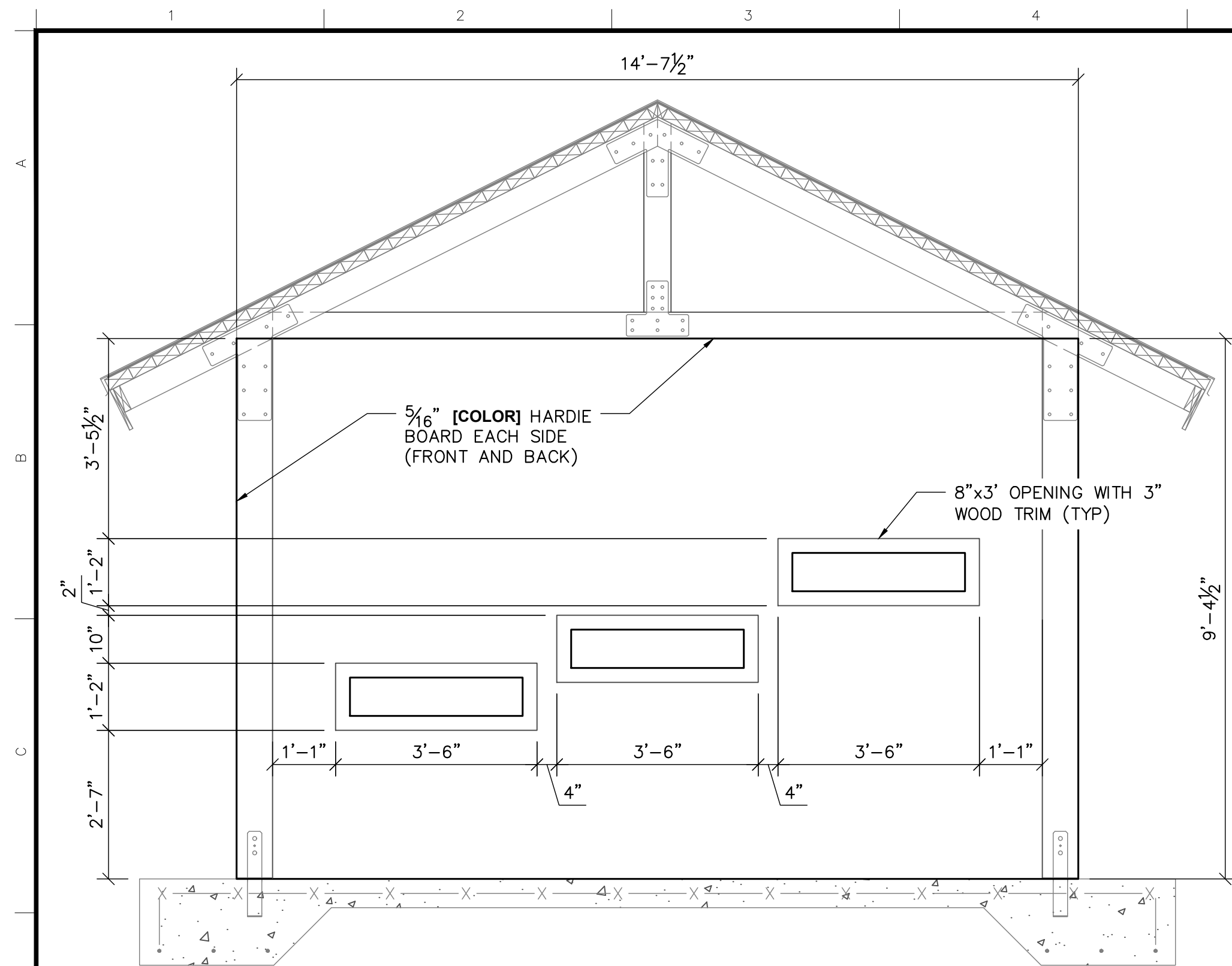
SOUTH FLORIDA
WATER MANAGEMENT DISTRICT



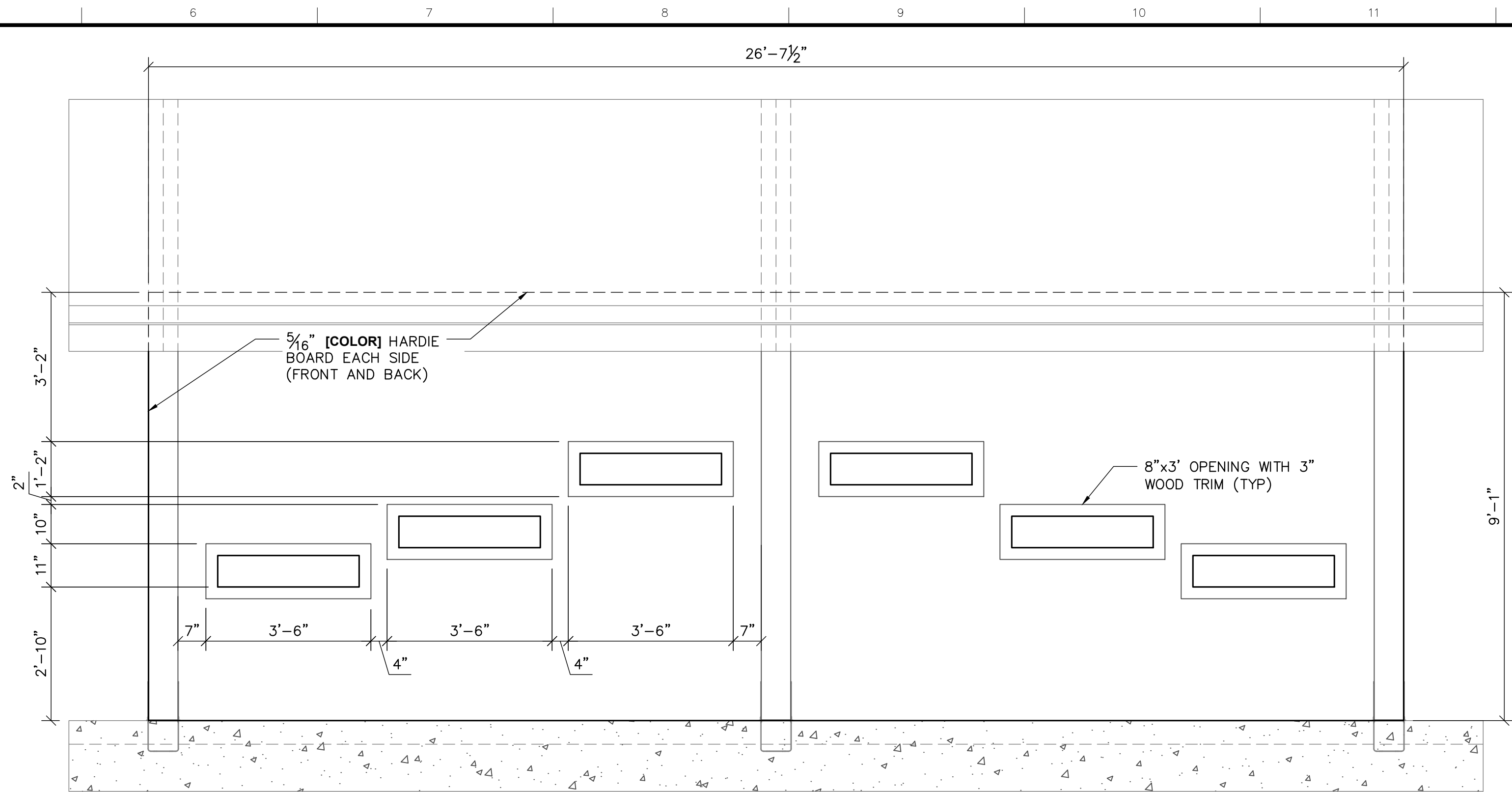
STANDARD RECREATION DETAILS
PUBLIC USE FACILITIES
SHELTERS AND KIOSKS
ACCESSORY DETAILS

R2

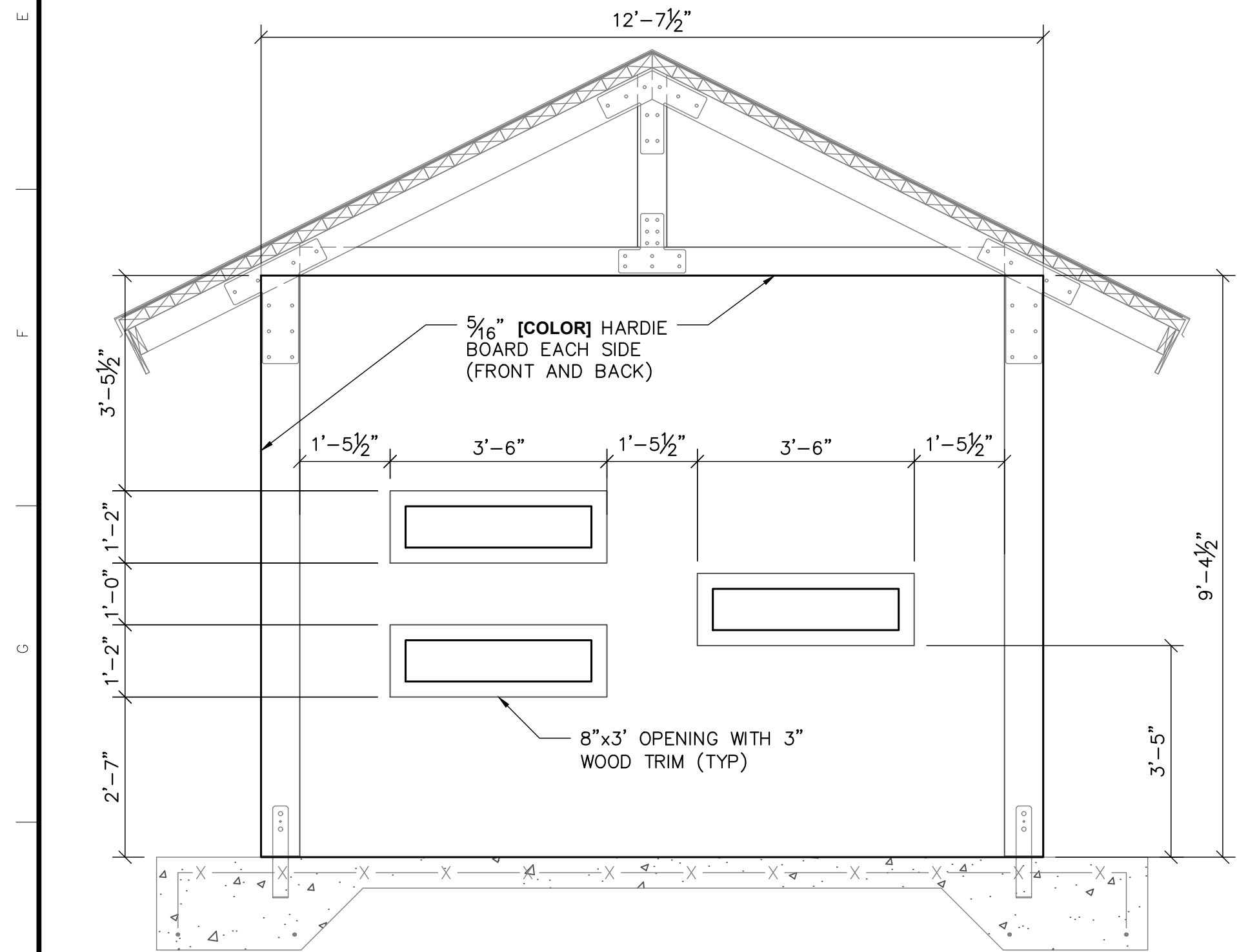
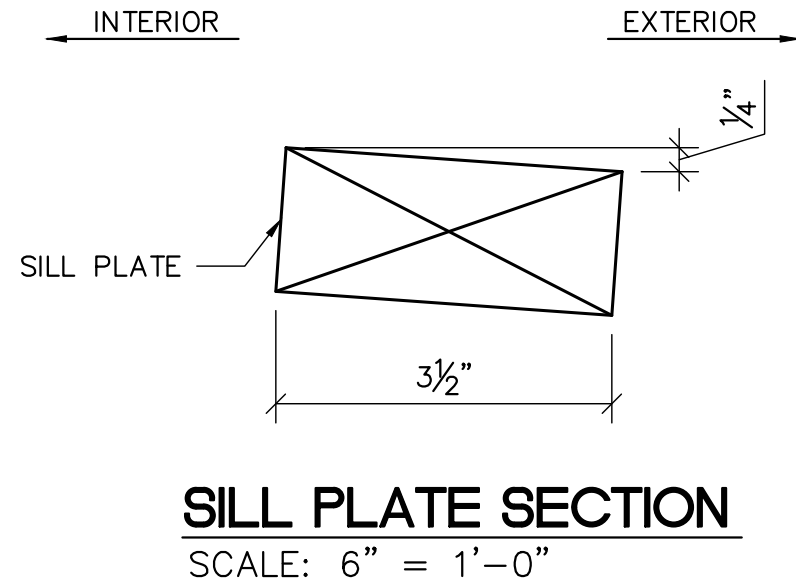
7 SHEET OF 9



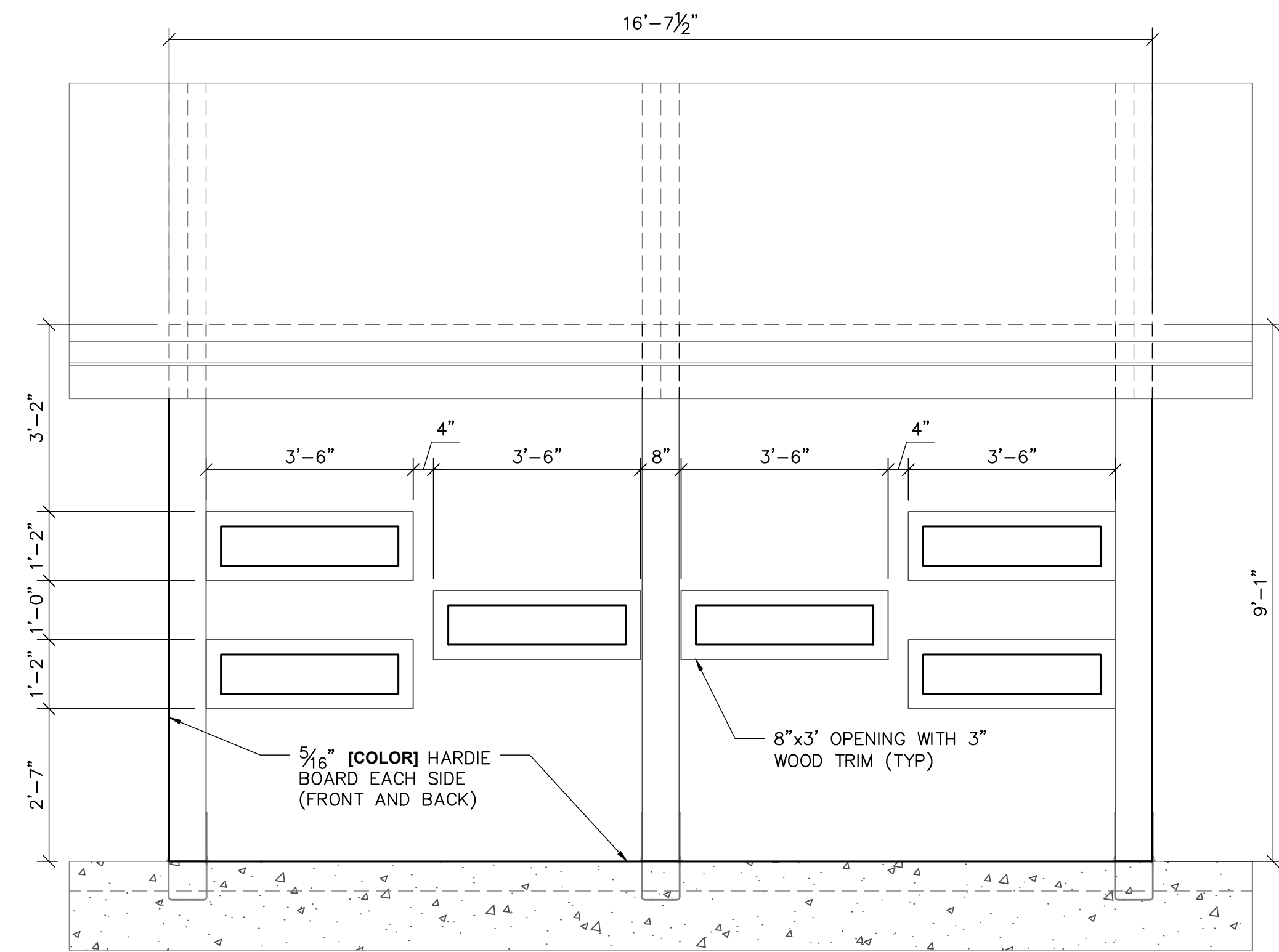
**BIRD BLIND ELEVATION - SHORT WALL
(LARGE SHELTER)**
SCALE: 1/2" = 1'-0"



**BIRD BLIND ELEVATION - LONG WALL
(LARGE SHELTER)**
SCALE: 1/2" = 1'-0"



**BIRD BLIND ELEVATION - SHORT WALL
(SMALL SHELTER)**
SCALE: 1/2" = 1'-0"



**BIRD BLIND ELEVATION - LONG WALL
(SMALL SHELTER)**
SCALE: 1/2" = 1'-0"

NOTE TO SPECIFIER:

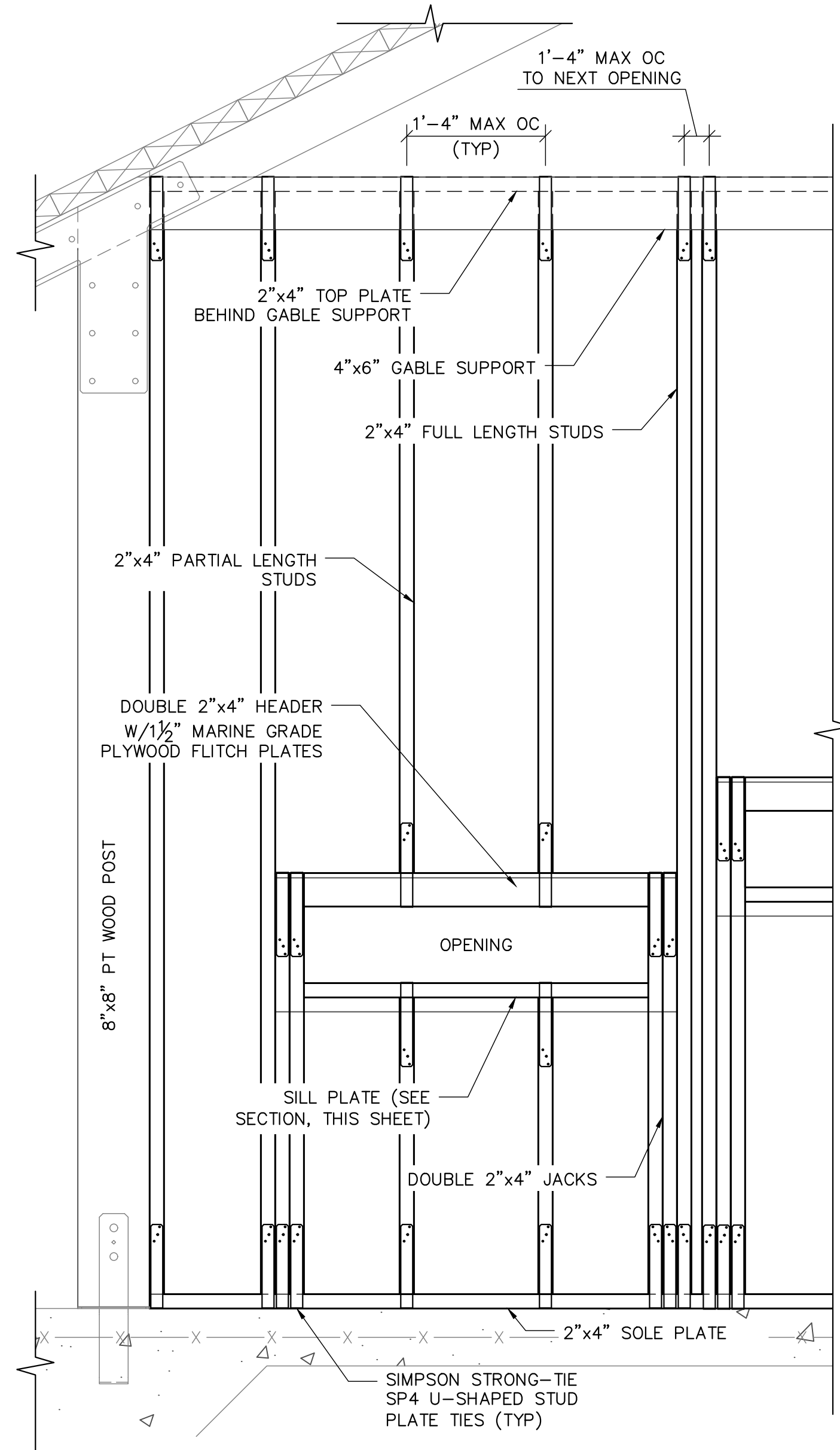
1. DESIGNER TO COORDINATE WITH THE DISTRICT PM AND THE PUBLIC USE AND WILDLIFE UNIT OF THE LAND STEWARDSHIP DIVISION TO SELECT THE EXTERIOR AND INTERIOR COLOR(S) FOR THE BIRD BLIND WALL(S). SELECT FROM THE FOLLOWING ACCEPTABLE STANDARD COLOR OPTIONS:

- A. TIMBER BARK,
B. KHAKI BROWN, OR
C. MONTEREY TAUPE

GENERAL NOTES:

1. ALL WALL FRAMING LUMBER TO BE PRESSURE TREATED SOUTHERN YELLOW PINE UNLESS OTHERWISE NOTED.
2. NAIL STUDS AND JACKS WITH 16d HOT DIPPED GALVANIZED NAILS.
3. TERMINAL STUD TO BE NAILED INTO THE 8"x8" POST WITH 16d @ 8" OC
4. ATTACH SOLE PLATE TO FOOTER W/ 5/8"x6" WEDGE ANCHOR BOLT W/ 4" MIN EMBEDMENT AND 3/2"x3/2"x1/4" HDG PLATE WASHER AT 6" OC FROM EACH END AND 2' OC INTERIOR.

5. ATTACH TOP PLATE TO GABLE END FRAMING W/ 5/8"x6" LAG SCREW W/ 3/2"x3/2"x1/4" HDG PLATE WASHER AT 6" OC FROM EACH END AND 2' OC INTERIOR.
6. ALL SEAMS TO BE CAULKED WITH LIKE COLOR CAULK.
7. HARDIE BOARD IS INSTALLED TO BOTH SIDES OF WALL AND GABLE. SHIM AS REQUIRED TO MAINTAIN FLUSH WITH GABLE FRAMING.



TYPICAL FRAMING DETAIL
SCALE: 1" = 1'-0"

The consultant, contractor or other parties associated with this project shall adhere to the South Florida Water Management District Standard and Guidelines for the protection of confidential information. All confidential information shall be maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for District projects is prohibited.

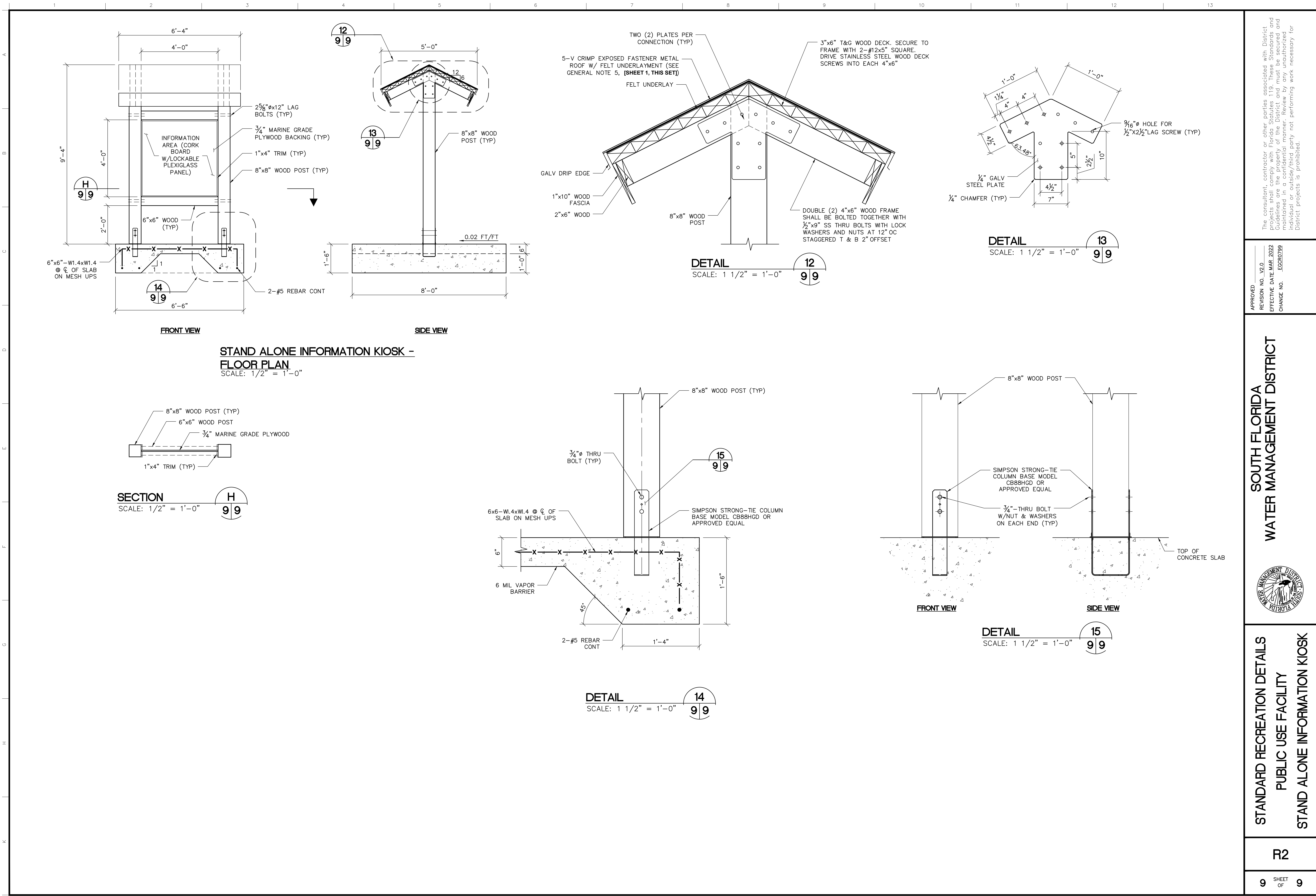
APPROVED
REVISION NO. V2.0
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR0799

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



**STANDARD RECREATION DETAILS
PUBLIC USE FACILITIES
SHELTERS AND KIOSKS
BIRD BLIND OPTION**

R2



The consultant, contractor or other parties associated with District projects shall adhere to the South Florida Water Management District Standard Recreation Details. These details are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for District projects is prohibited.

APPROVED
REVISION NO. V2.0
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR0799

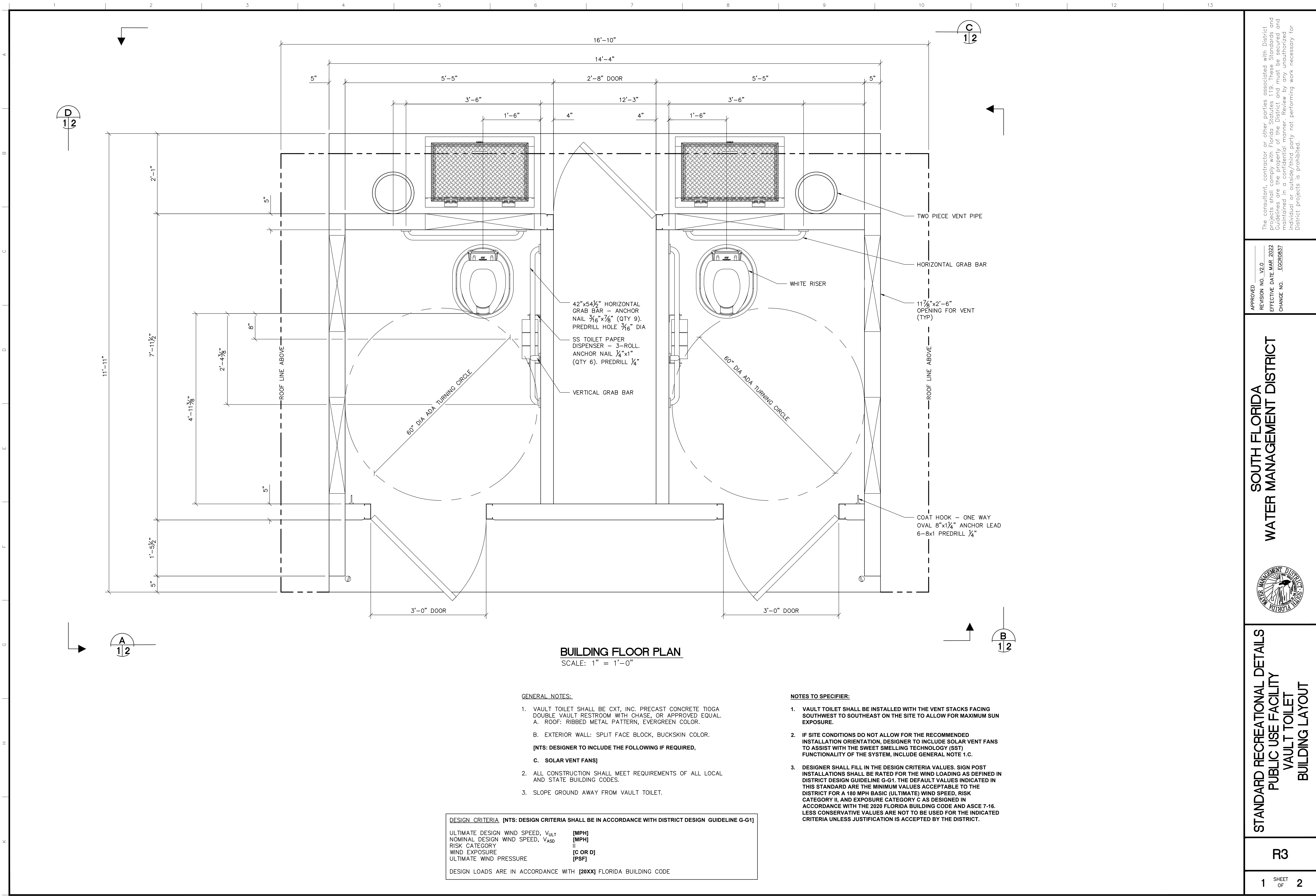
SOUTH FLORIDA
WATER MANAGEMENT DISTRICT



STANDARD RECREATION DETAILS
PUBLIC USE FACILITY
STAND ALONE INFORMATION KIOSK

R2

9 SHEET OF 9



BUILDING FLOOR PLAN
SCALE: 1" = 1'-0"

GENERAL NOTES:

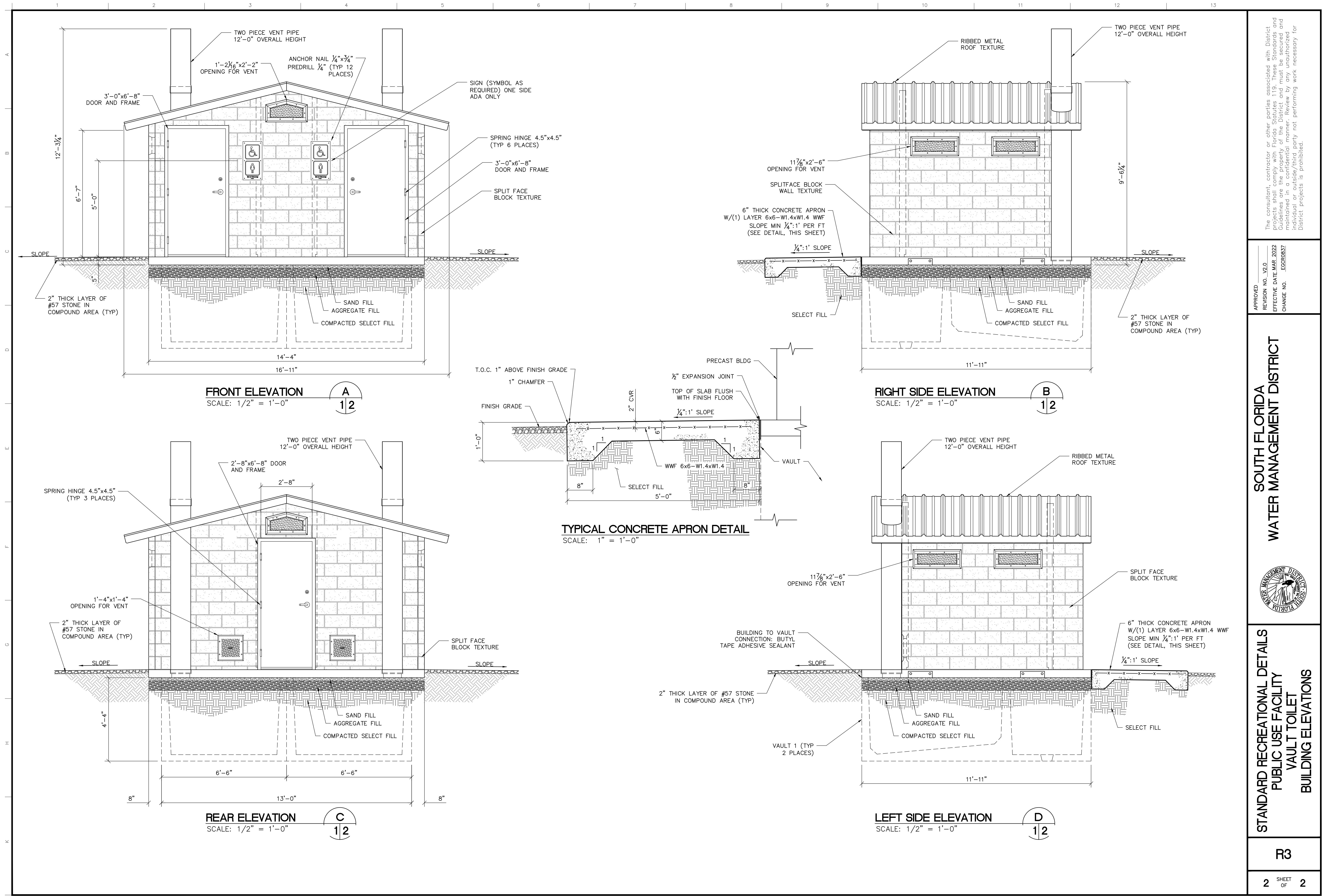
- VAULT TOILET SHALL BE CXT, INC. PRECAST CONCRETE TIIGA DOUBLE VAULT RESTROOM WITH CHASE, OR APPROVED EQUAL.
A. ROOF: RIBBED METAL PATTERN, EVERGREEN COLOR.
B. EXTERIOR WALL: SPLIT FACE BLOCK, BUCKSKIN COLOR.
[NTS: DESIGNER TO INCLUDE THE FOLLOWING IF REQUIRED,
C. SOLAR VENT FANS]
- ALL CONSTRUCTION SHALL MEET REQUIREMENTS OF ALL LOCAL AND STATE BUILDING CODES.
- SLOPE GROUND AWAY FROM VAULT TOILET.

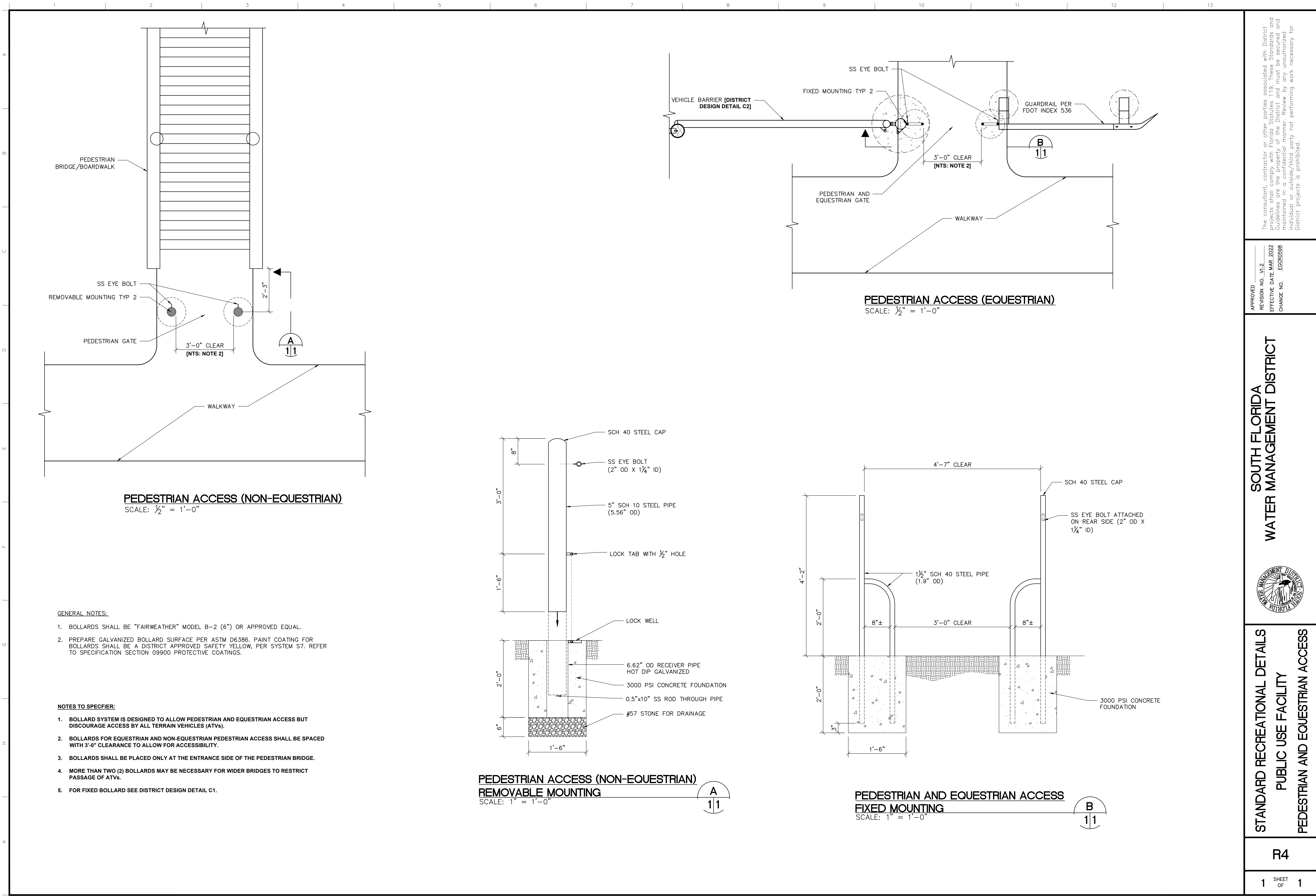
DESIGN CRITERIA	[NTS: DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH DISTRICT DESIGN GUIDELINE G-G1]
ULTIMATE DESIGN WIND SPEED, V_{ULT}	[MPH]
NOMINAL DESIGN WIND SPEED, V_{ASD}	[MPH]
RISK CATEGORY	II
WIND EXPOSURE	[C OR D]
ULTIMATE WIND PRESSURE	[PSF]
DESIGN LOADS ARE IN ACCORDANCE WITH [20XX] FLORIDA BUILDING CODE	

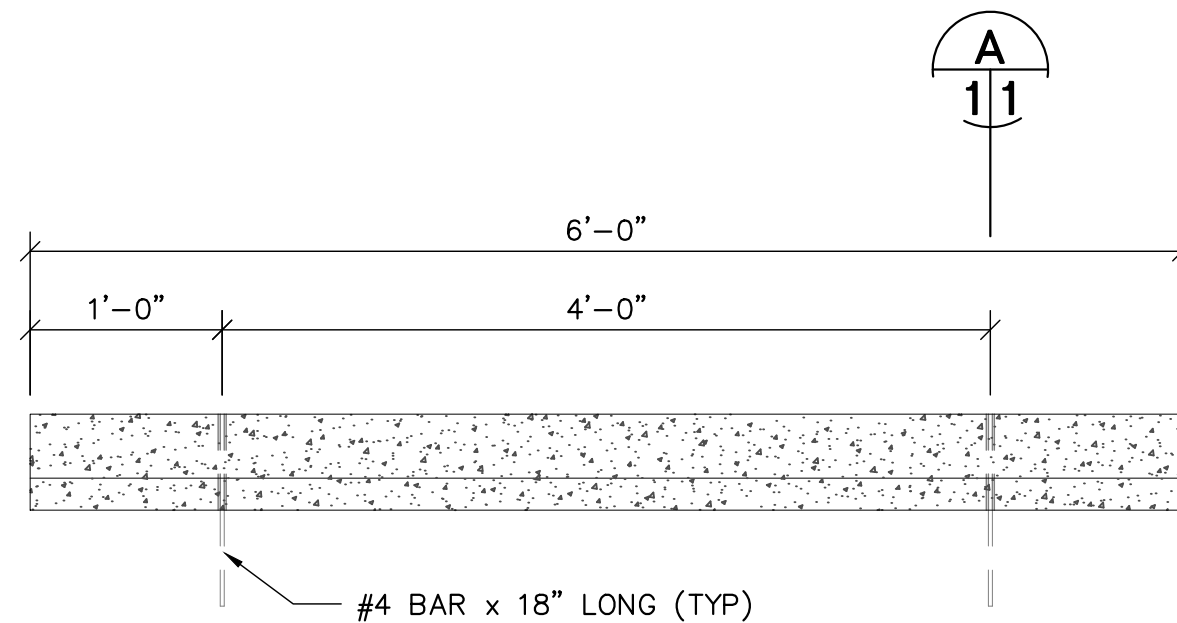
NOTES TO SPECIFIER:

- VAULT TOILET SHALL BE INSTALLED WITH THE VENT STACKS FACING SOUTHWEST TO SOUTHEAST ON THE SITE TO ALLOW FOR MAXIMUM SUN EXPOSURE.
- IF SITE CONDITIONS DO NOT ALLOW FOR THE RECOMMENDED INSTALLATION ORIENTATION, DESIGNER TO INCLUDE SOLAR VENT FANS TO ASSIST WITH THE SWEET SMELLING TECHNOLOGY (SST) FUNCTIONALITY OF THE SYSTEM, INCLUDE GENERAL NOTE 1.C.
- DESIGNER SHALL FILL IN THE DESIGN CRITERIA VALUES. SIGN POST INSTALLATIONS SHALL BE RATED FOR THE WIND LOADING AS DEFINED IN DISTRICT DESIGN GUIDELINE G-G1. THE DEFAULT VALUES INDICATED IN THIS STANDARD ARE THE MINIMUM VALUES ACCEPTABLE TO THE DISTRICT FOR A 180 MPH BASIC (ULTIMATE) WIND SPEED, RISK CATEGORY II, AND EXPOSURE CATEGORY C AS DESIGNED IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE AND ASCE 7-16. LESS CONSERVATIVE VALUES ARE NOT TO BE USED FOR THE INDICATED CRITERIA UNLESS JUSTIFICATION IS ACCEPTED BY THE DISTRICT.

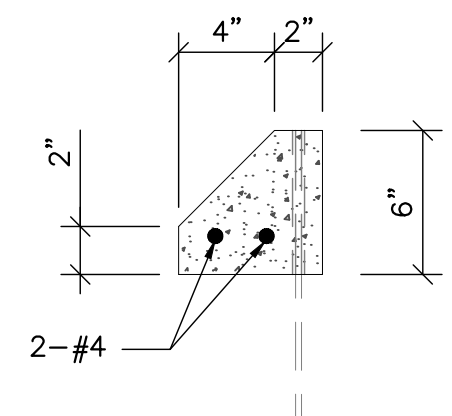




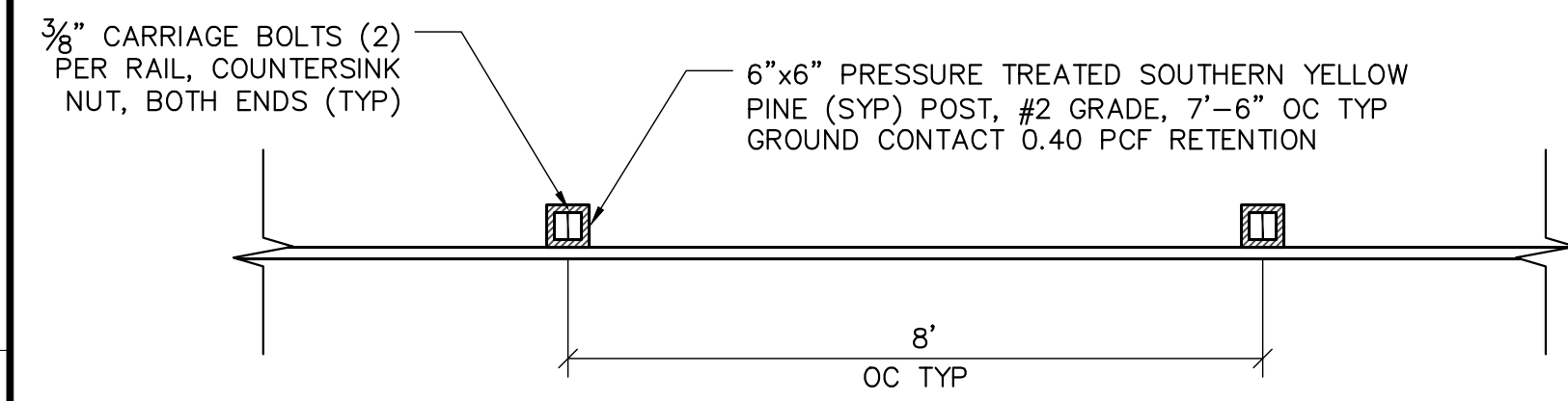




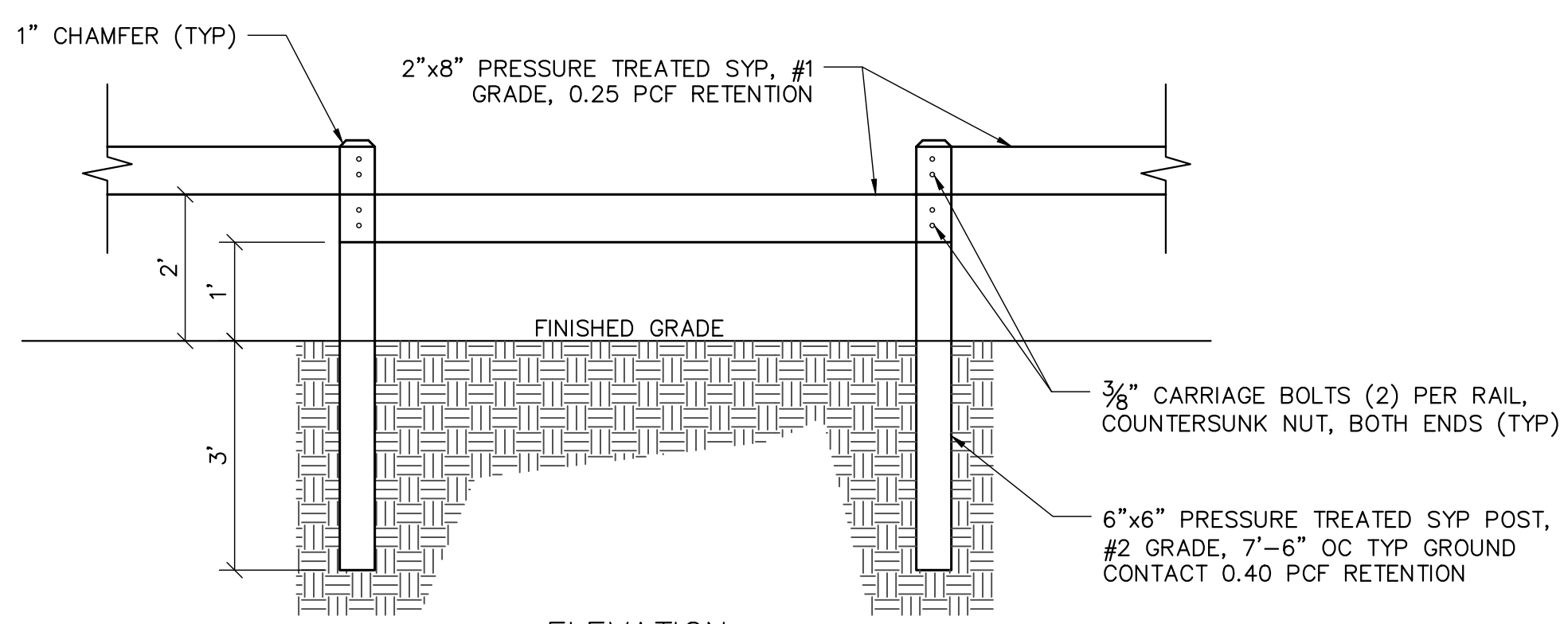
CONCRETE WHEEL STOP DETAIL
(ELEVATION VIEW)
(ONE PER PARKING SPACE)
SCALE: 1" = 1'-0"



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

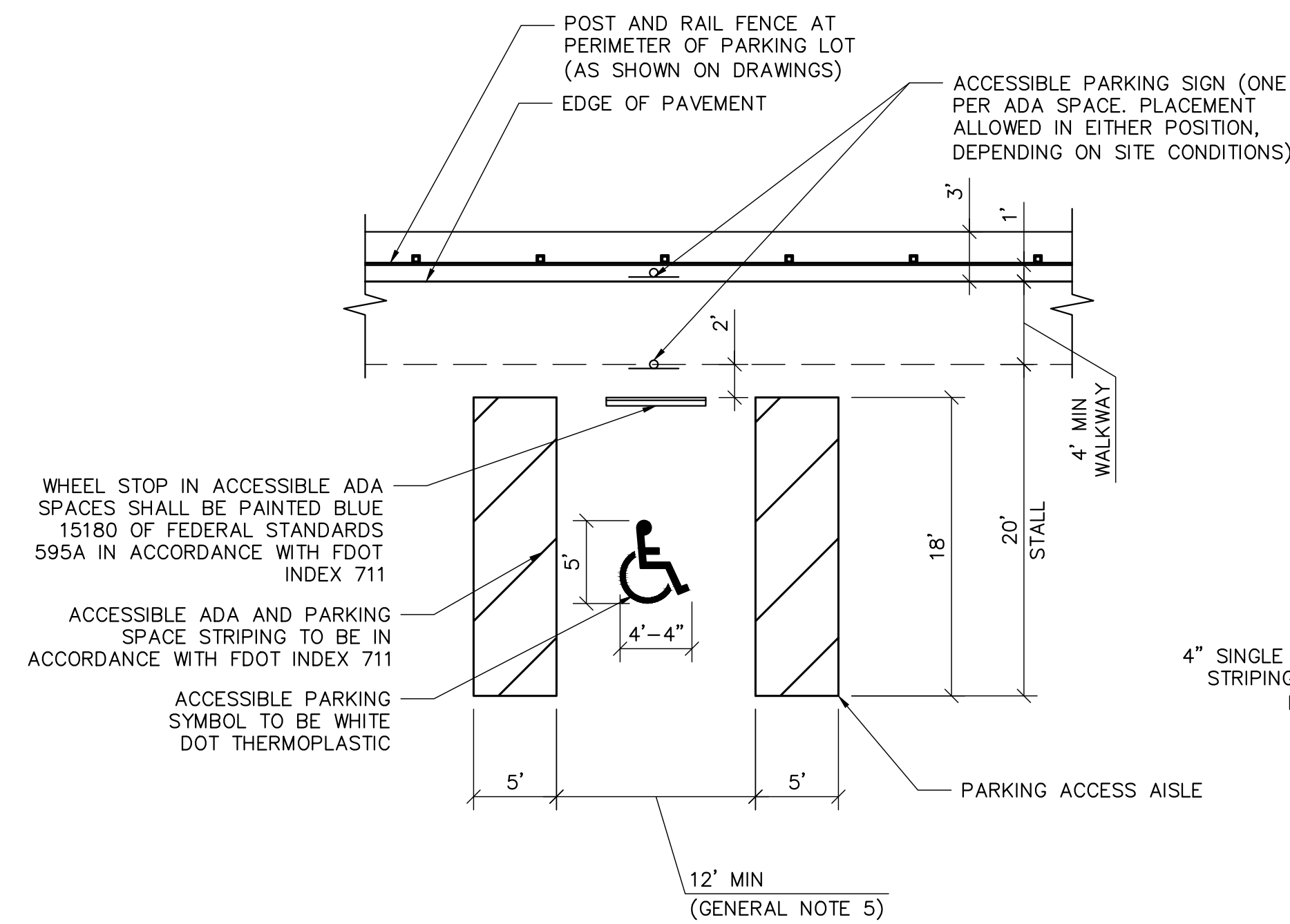


PLAN

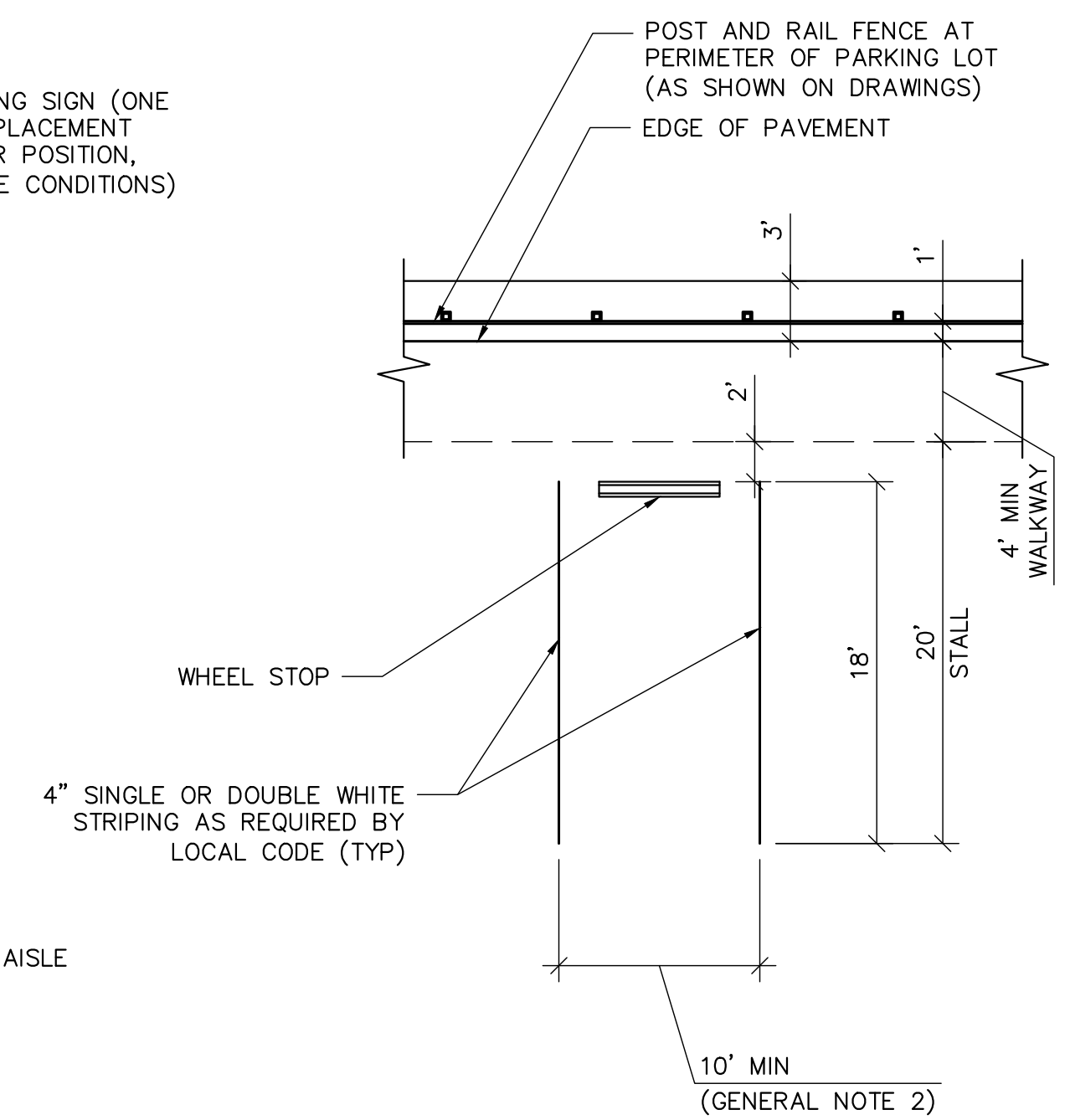


ELEVATION

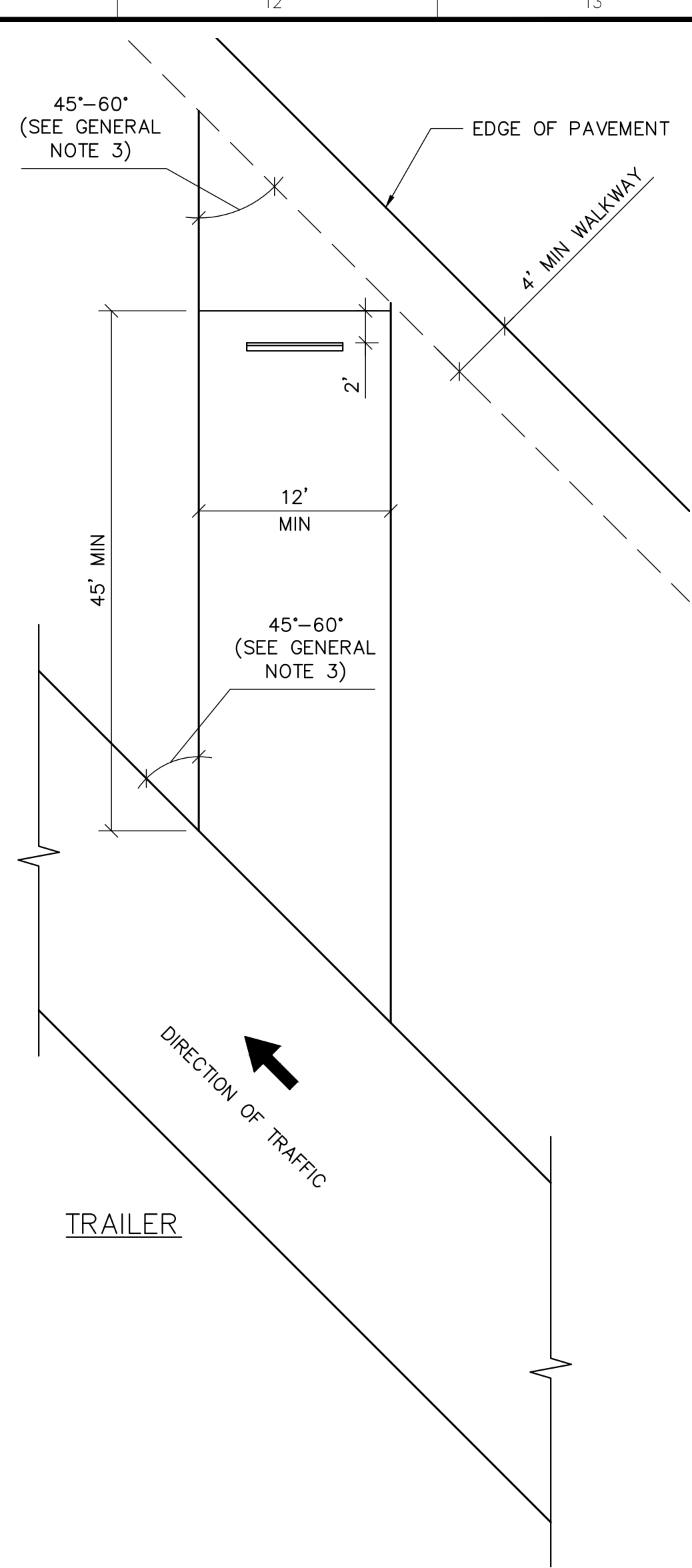
POST AND RAIL FENCE DETAIL
SCALE: 1/2" = 1'-0"



ACCESSIBLE

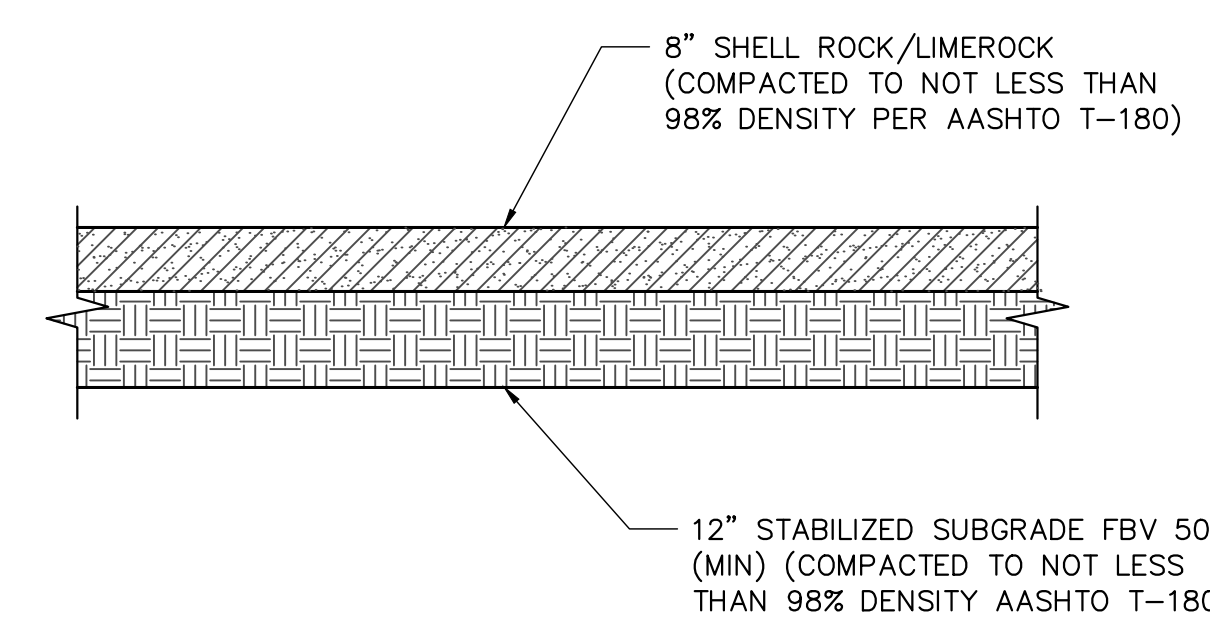


STANDARD (90°)

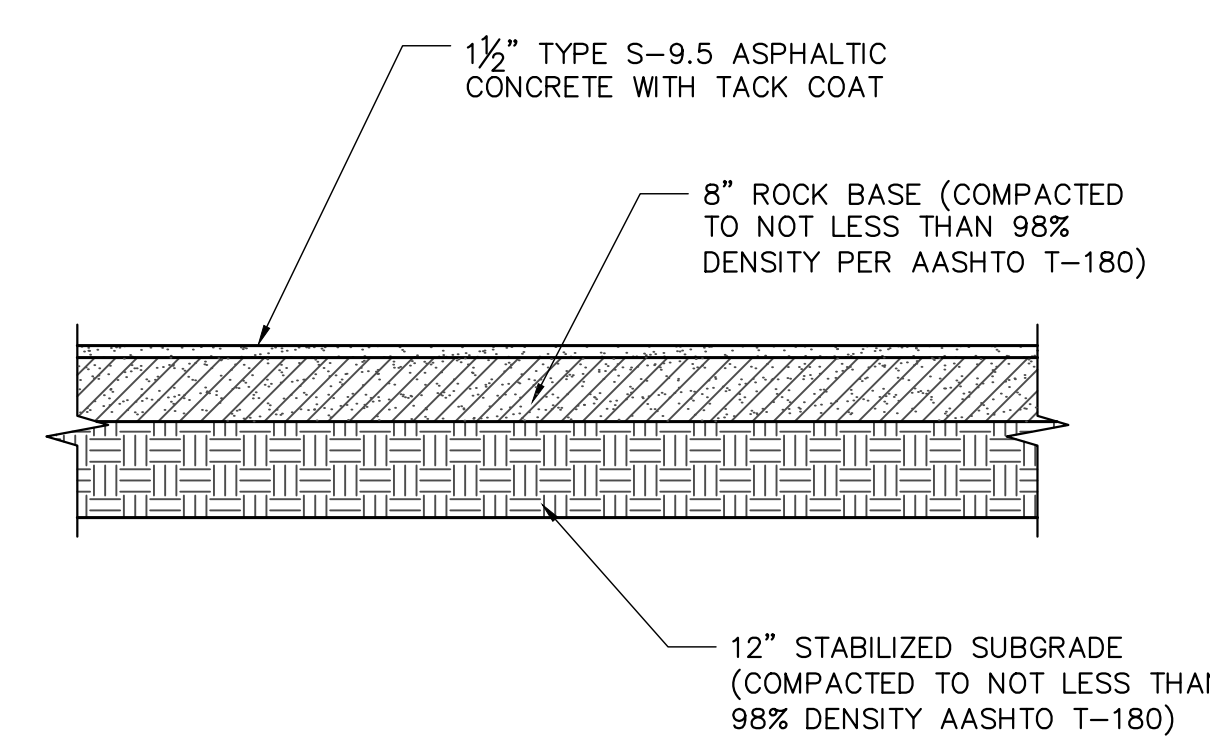


TRAILER

PARKING SPACE DETAILS
SCALE: 1" = 8'



TYPICAL SHELL ROCK/LIMEROCK PAVEMENT SECTION
SCALE: 1/2" = 1'-0"



TYPICAL ASPHALT PAVEMENT SECTION
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

- VEHICLE PARKING SPACES SHALL BE A MINIMUM OF 10' WIDE BY 20' LONG OR COMPLY WITH LOCAL CODES FOR PARKING DIMENSION CRITERIA.
- PARKING SPACES FOR VEHICLES WITH TRAILERS SHALL BE ANGLED AT 45° OR 60°.
- ACCESSIBLE SPACES SHALL BE A MINIMUM OF 12' WIDE BY 20' LONG. PARKING ACCESS AISLES SHALL BE AT LEAST 5' WIDE AND STRIPED DIAGONALLY TO DESIGNATE IT AS A NO-PARKING ZONE.
- POST AND RAIL FENCE SHALL BE INSTALLED A MINIMUM OF 1' AWAY FROM THE PARKING AREA LIMITS.
- [SOD OR SEED AND MULCH]** ALL UNPAVED DISTURBED AREAS IN ACCORDANCE WITH SPECIFICATION SECTIONS **[02920 OR 02486]**.
- POST AND RAIL FENCE:
 - ALL LUMBER SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE. USE GRADE #1 FOR RAILS AND GRADE #2 FOR POSTS.
 - CONSTRUCT OPENINGS IN POST AND RAIL FENCE WHERE SHOWN ON DRAWINGS.

NOTE TO SPECIFIER:

- PAVEMENT SECTIONS TO BE VERIFIED BY GEOTECHNICAL ENGINEER BASED ON SITE SPECIFIC CONDITIONS.
- STANDARD (90°) PARKING AREAS: FOR ONE WAY AND TWO WAY TRAFFIC THE ROADWAY WITHIN THE PARKING AREA SHALL HAVE A MINIMUM LANE WIDTH OF 24'.**
- A MINIMUM OF ONE (1) ACCESSIBLE SPACE IS REQUIRED FOR EVERY TEN (10) PARKING SPACES OR MEET LOCAL CODES.**
- ASPHALT PAVED PARKING AREAS SHALL BE PROVIDED FOR ACCESSIBLE PARKING.**
- POST AND RAIL FENCE SHALL BE USED TO DEFINE THE LIMITS OF THE PARKING AREA.**
- PARKING AREA SHALL BE LAID OUT TO SUIT SITE SPECIFIC CONDITIONS. FOR FACILITIES WITH BOATING, TRAILER PARKING SHALL BE DESIGNED WITH PULL-THRU STALLS IF POSSIBLE.**
- IN AREAS WHERE POST AND RAIL FENCE IS INSTALLED, A VEHICULAR BARRIER GATE SHALL BE PROVIDED TO ALLOW AUTHORIZED VEHICLES TO ACCESS THE LEVEES. FOR VEHICLE BARRIER GATE DETAILS SEE [DISTRICT DESIGN DETAIL C2].**

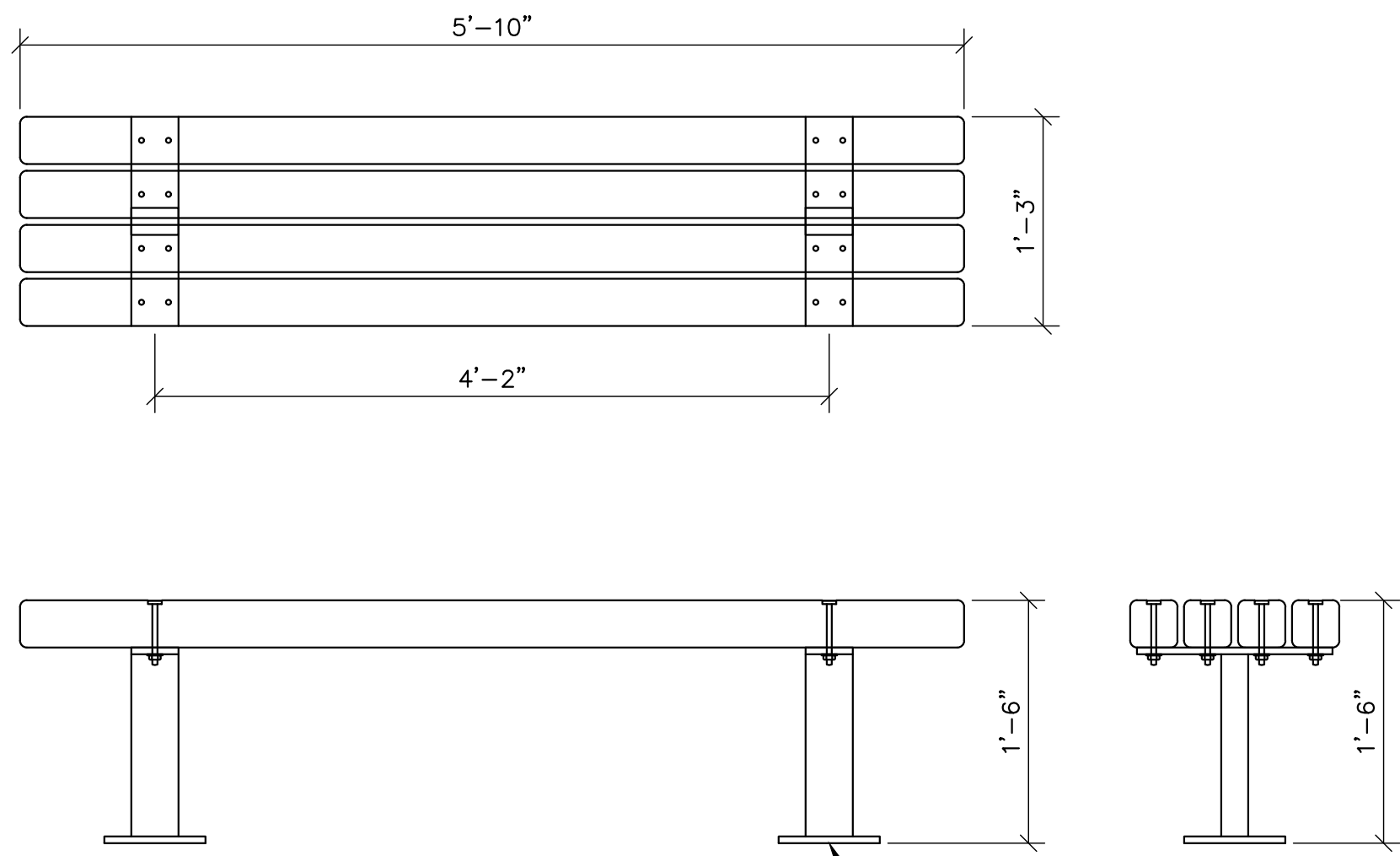
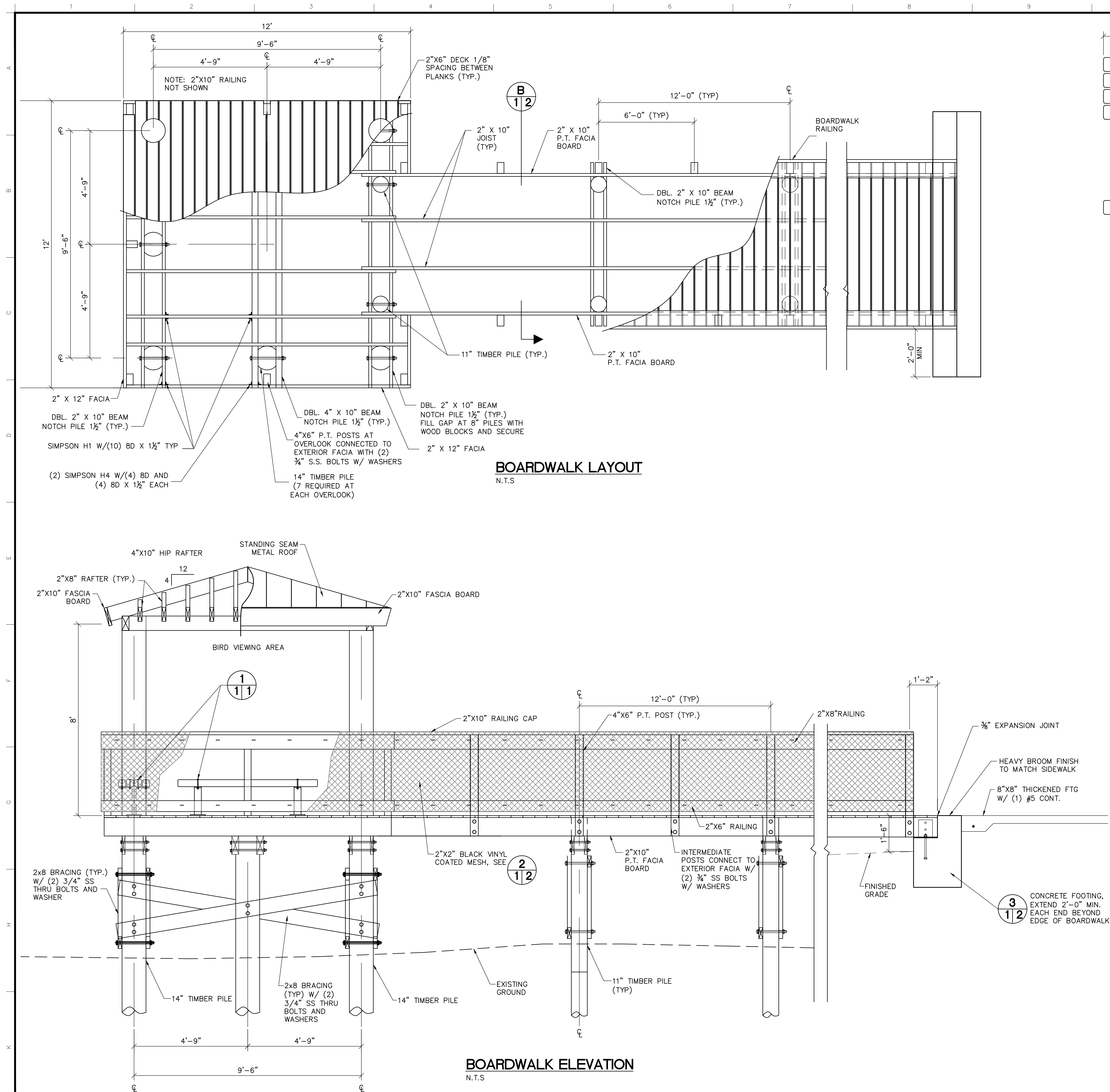
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APPROVED _____
REVISION NO. VI.2
EFFECTIVE DATE MAR 2022
CHANGE NO. ECR0801

SOUTH FLORIDA
WATER MANAGEMENT DISTRICT

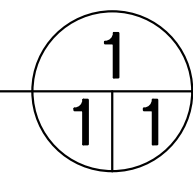


STANDARD RECREATIONAL DETAILS
PUBLIC USE FACILITY
PARKING AND FENCING DETAILS



BENCH DETAIL

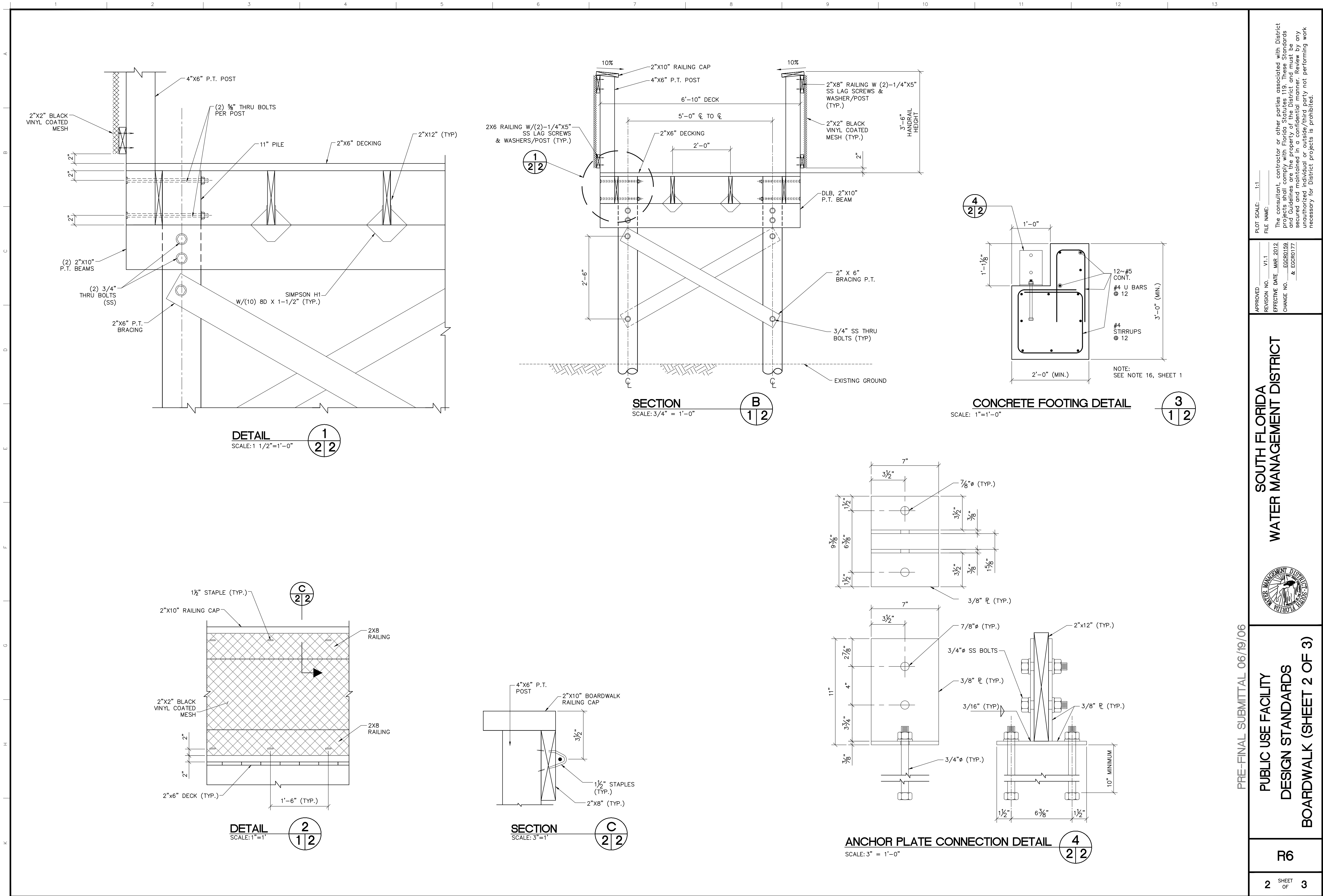
N.T.S



SECURE BENCH WITH WELDED STEEL PLATE BOLTED TO DECKING USING 8" SS THRU BOLTS, WASHER AND NUT

GENERAL NOTES:

- BIRD VIEWING AREA SHALL HAVE A FOREST GREEN COLORED STANDING SEAM METAL ROOF.
- STANDING SEAM METAL ROOF SHALL BE 24 GAUGE STEEL WITH KYNAR 500 FINISH. IN ADDITION TO THE DEAD AND LIVE LOAD REQUIREMENTS OF THE ROOF SYSTEM THE NEGATIVE WIND UPLIFT PRESSURE, AS DEFINED IN THE FLORIDA BUILDING CODE CHAPTER 16 AND FIGURE 1609, SHALL BE COMPLIED WITH.
- ALL LUMBER SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE, GRADE #2, KD 19% OR BETTER (FB FOR LUMBER SIZES NOTED TO BE IN CONFORMANCE WITH VALUES LISTED IN THE NATIONAL FOREST PRODUCTS ASSOCIATION NATIONAL DESIGN STANDARD SUPPLEMENT), AND SHALL CONFORM TO THE NATIONAL GRADING RULE FOR DIMENSION LUMBER, THE SOUTHERN PINE INSPECTION BUREAU AND THE SOUTHERN FOREST PRODUCTS ASSOCIATION.
- DO NOT LOCATE ANY HOLES CLOSER THAN FIVE (5) BOLT DIAMETERS FROM THE END OF ANY WOOD FRAMING MEMBER UNLESS SHOWN OTHERWISE.
- ALL WOOD MEMBERS IN CONTACT WITH CONCRETE AND/OR MASONRY, EXPOSED TO THE WEATHER OR IN CONTACT WITH THE GROUND TO BE PRESSURE TREATED.
- ALL NAILS, BOLTS, NUTS, WASHERS AND LAG SCREW CONNECTIONS SHALL BE STAINLESS STEEL.
- CLEAN AND PREP WOOD HANDRAILS TO PROVIDE A SMOOTH FINISH.
- DECKING SHALL HAVE AN 8" SPACING FOR DRAINAGE.
- STRUCTURAL STEEL
- ALL STRUCTURAL STEEL SHAPES AND PLATE SHALL CONFORM TO ASTM A-36 AND THE "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ALL TUBE STEEL SHALL CONFORM TO ASTM A-500, GRADE B (FY = 46 KSI).
- ALL SHOP CONNECTIONS TO BE WELDED (UTILIZING E70XX LOW HYDROGEN ELECTRODES) AND FIELD CONNECTIONS TO BE BOLTED UNLESS OTHERWISE SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF "THE STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.
- ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
- ALL BOLTED CONNECTIONS SHALL CONSIST OF ASTM 304 SS HIGH STRENGTH BOLTS AND HARDENED WASHERS AS SHOWN ON THE STRUCTURAL DRAWINGS. ALL BOLTED CONNECTIONS SHALL CONFORM TO THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
- FRAME TO BE PLUMB, SQUARE AND TRUE TO LINE AND LEVEL, CHECKED BY SURVEYING INSTRUMENTS.
- LOCATE FINISH HOLES PRECISELY TO INSURE PASSAGE THROUGH ASSEMBLED MATERIALS WITHOUT DRIFTING. ENLARGE HOLES BY REAMING IF NECESSARY. POOR MATCHING OF HOLES IS SUFFICIENT CAUSE FOR REJECTION.
- CONCRETE HEADER
- CONCRETE HEADER DIMENSIONS SHALL BE ADAPTED TO SITE CONDITIONS. BEARING CAPACITY SHALL BE VERIFIED BY GEOTECHNICAL INVESTIGATIONS. THE ENGINEER OF RECORD SHALL CONFIRM STABILITY OF HEADER.
- PILES
- REQUIRED TIP ELEVATION OF 11" AND 14" TIMBER PILES SHALL BE DETERMINED BY GEOTECHNICAL INVESTIGATION CARRIED OUT AT THE PROPOSED SITE OF THE BOARDWALK. PILES SHALL BE DRIVEN TO A DEPTH NECESSARY TO SUPPORT STRUCTURE DEAD LOAD PLUS 100 PSF LIVELOAD ON THE BOARDWALK.
- TIMBER PILES
- ROUND TIMBER PILES SHALL BE MARINE GRADE PRESSURE TREATED LUMBER. LUMBER SHALL BE SOUTHERN PINE, FB=2,400 PSI, FV=110 PSI, E=1,500,000 PSI WITH WOLMAN CLA TREATMENT (OR EQUAL) OF A MINIMUM 2.5 POUNDS PER CUBIC FOOT.
- THE 11" AND 14" DIAMETER PILES SIZES SHALL BE MEASURED AT 3' FROM BUTT. PILE TAPER AND GRADING SHALL MEET THE REQUIREMENTS OF ASTM D25 TABLE X1.3.
- BENCHES
- EITHER 2 OR 3 BENCHES SHALL BE INSTALLED AT EACH BIRD VIEWING AREA. THE NUMBER OF BENCHES AND PLACEMENT SHALL BE SHOWN ON THE PLANS.



PLOT SCALE: 1:1
FILE NAME: _____
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APPROVED _____
REVISION NO. _____
EFFECTIVE DATE MAR 2012
CHANGE NO. _____
EGCR0159
& EGCR0177

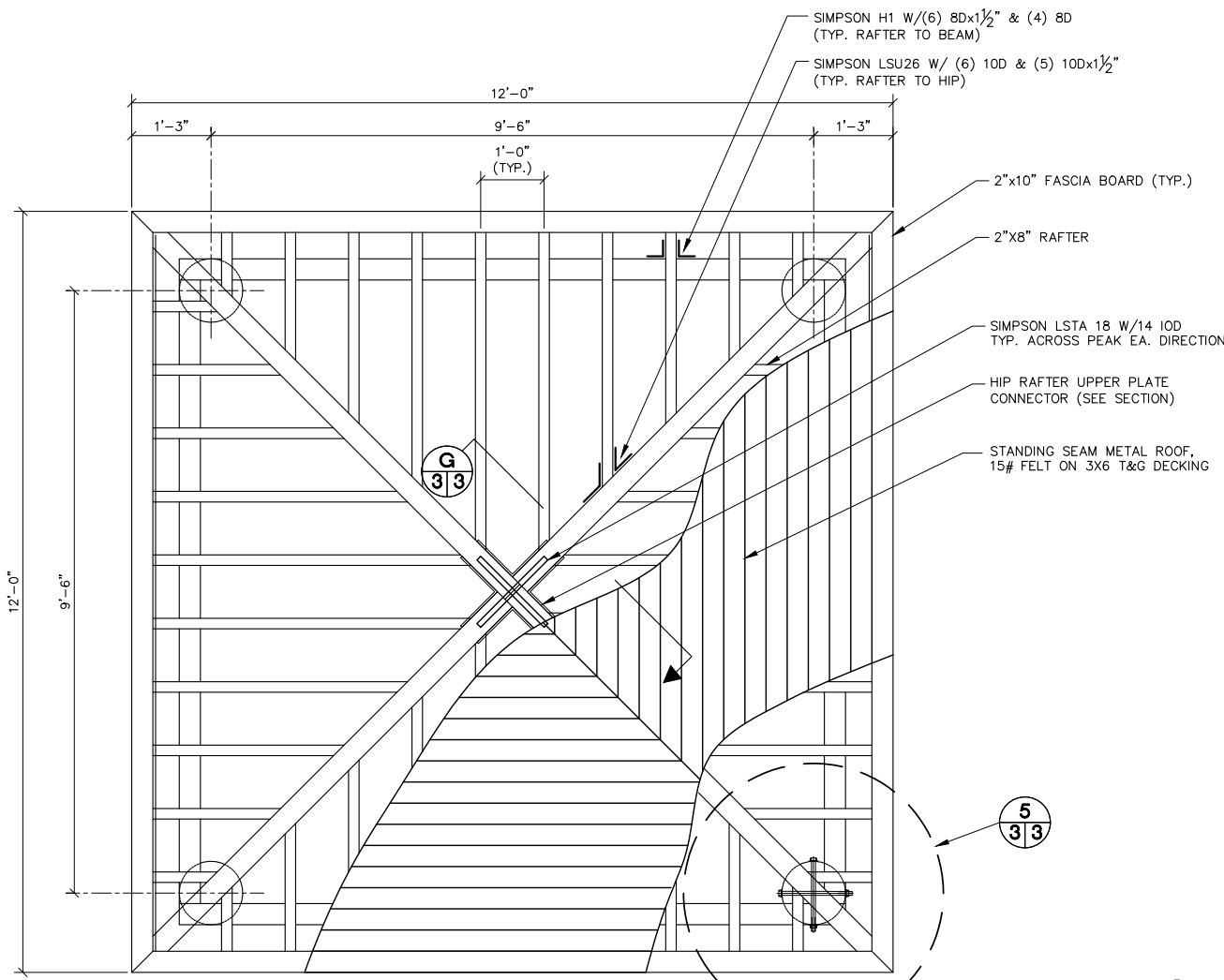
**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



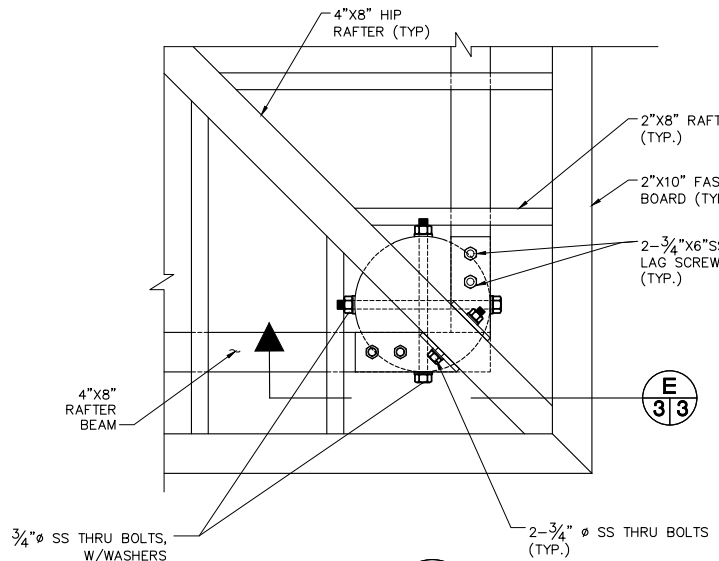
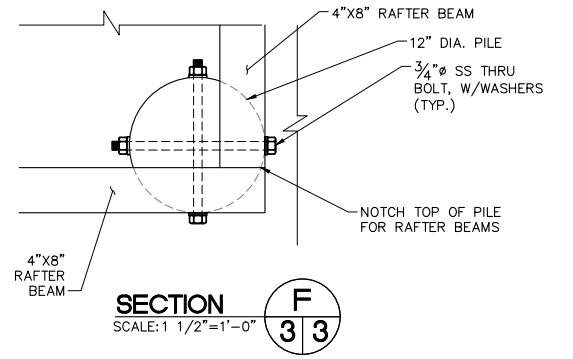
PRE-FINAL SUBMITTAL 06/19/06
**PUBLIC USE FACILITY
DESIGN STANDARDS
BOARDWALK (SHEET 2 OF 3)**

R6

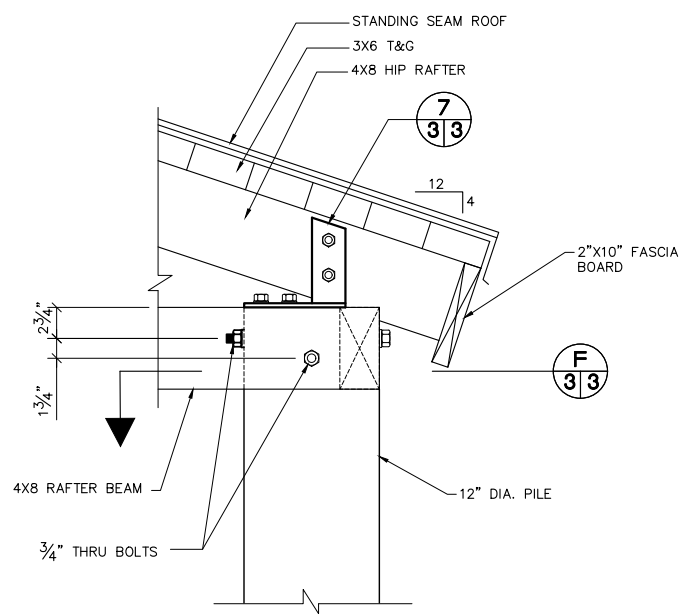
A
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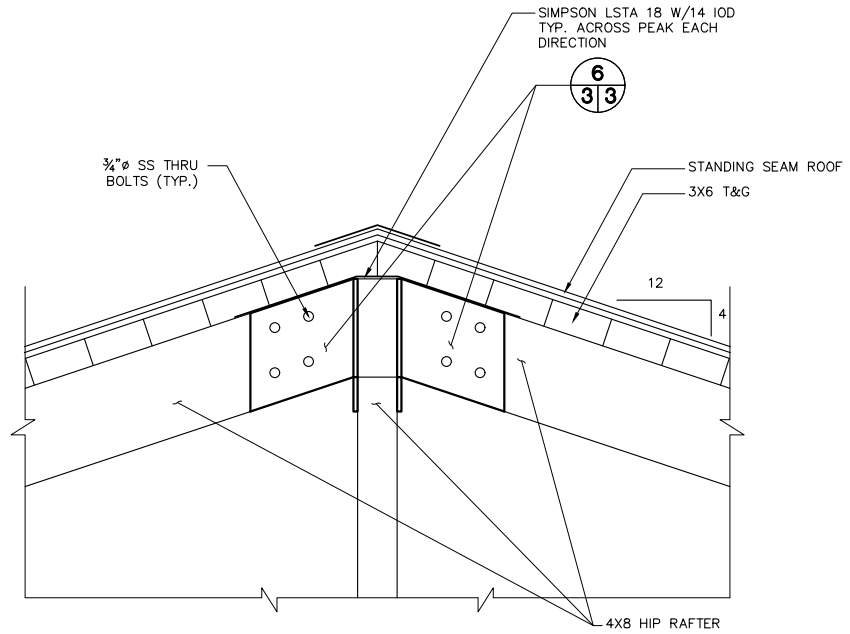
ROOF PLAN
SCALE: 3/4"=1'



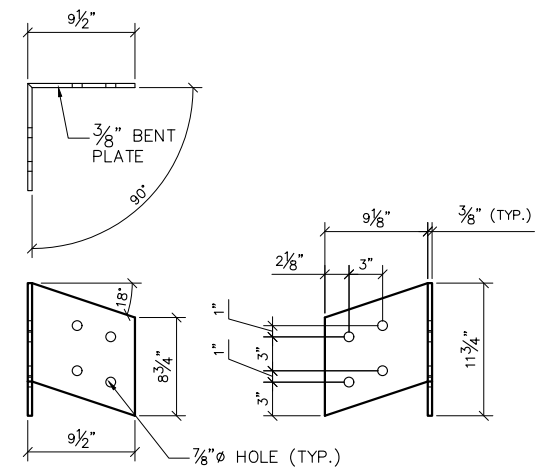
DETAIL 5
SCALE: 1 1/2"=1'-0"



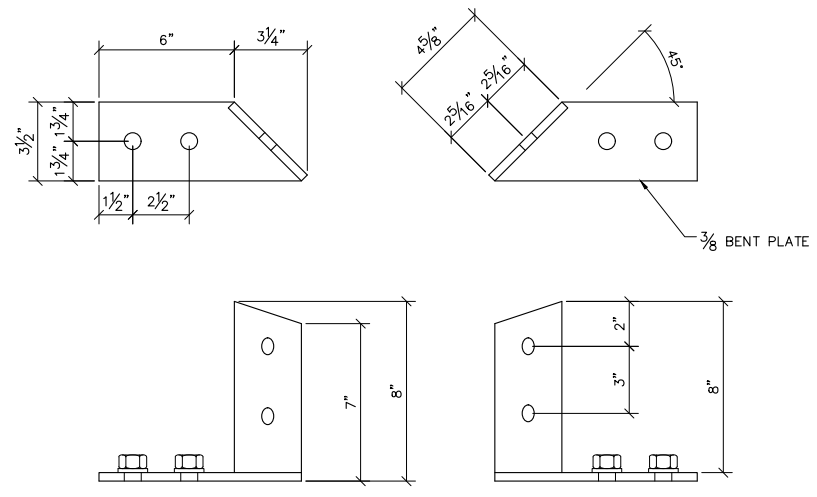
SECTION E
SCALE: 1-1/2"=1'-0"



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



HIP RAFTER UPPER PLATE CONNECTOR DETAIL
SCALE: 1-1/2"=1'-0"



HIP RAFTER LOWER PLATE CONNECTOR (PAIR) DETAIL
SCALE: 3"=1'-0"

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



**PUBLIC USE FACILITY
DESIGN STANDARDS
BOARDWALK (SHEET 3 OF 3)**

R6

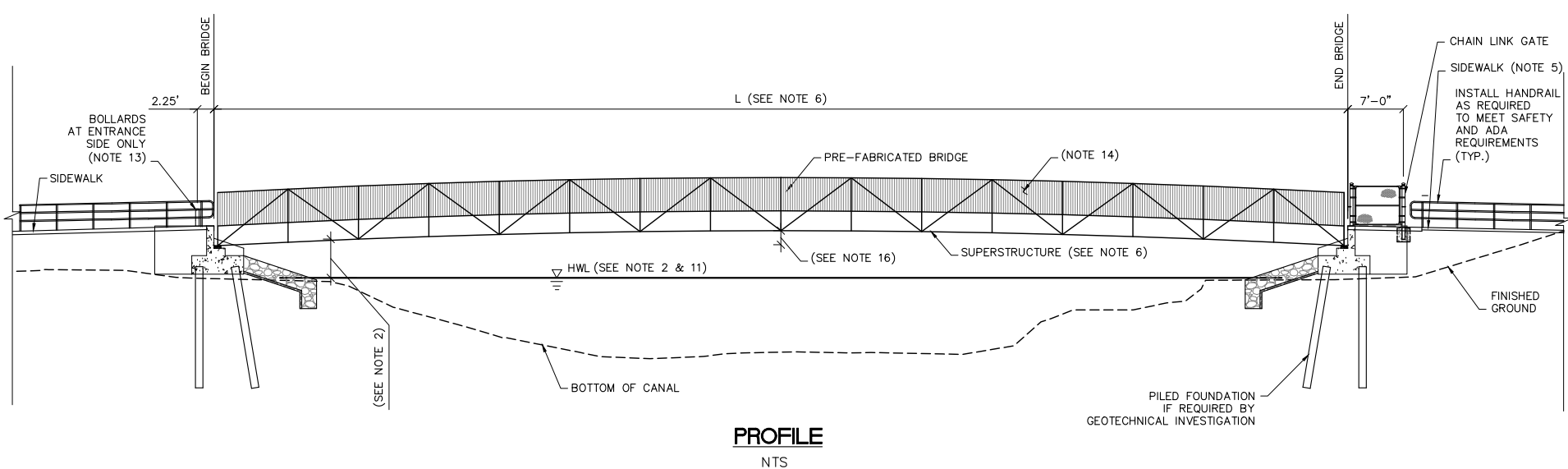
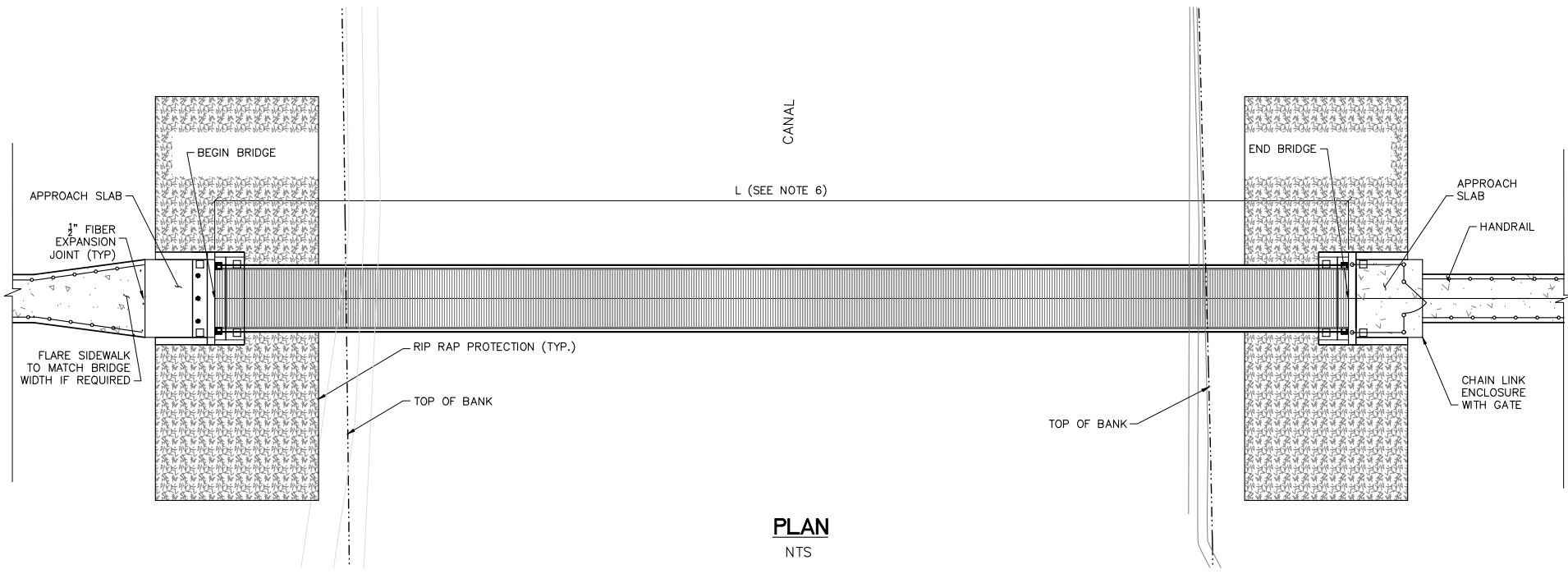
3 SHEET **3**

PLOT SCALE: 1:1
FILE NAME: R6_03.DWG

APPROVED
REVISION NO.
EFFECTIVE DATE June 2006

The consultant, contractor or other parties associated with District projects shall comply with Florida Statutes 119. These Standards and Guidelines are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for District projects is prohibited.

A
B
C
D
E
F
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K



- GENERAL NOTES:**
- BRIDGE SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO, GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES.
 - THE MINIMUM VERTICAL CLEARANCE BETWEEN THE BRIDGE LOW MEMBER AND THE HIGH WATER LEVEL (HWL) SHALL BE 5 FEET FOR NON-MOTORIZED BOATS AND 8 FEET WHERE MOTORIZED BOATS ARE ALLOWED. BOAT USE OF THE CANAL SHALL BE PROVIDED BY SFWMD.
 - DESIGN LOADS
LIVE LOAD = 100 PSF
1000 LB POINT LOAD
 - STRUCTURES SHALL BE DESIGNED FOR A 3 SECOND WIND GUST VELOCITY OF 145 MPH, EXP. B, I=1.0, IN ACCORDANCE WITH THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT.
 - BRIDGE APPROACH SLOPES SHALL MEET ADA REQUIREMENTS.
 - A TIMBER SUPERSTRUCTURE IS PREFERRED BY THE SFWMD FOR THE PEDESTRIAN BRIDGE BUT LARGE SPAN LENGTHS MAY BE DESIGNED WITH A STEEL OR CONCRETE SUPERSTRUCTURE.
 - TIMBER DECKING SHALL BE USED FOR THE PEDESTRIAN BRIDGE.
 - PEDESTRIAN BRIDGES SHALL BE DESIGNED TO ACCOMMODATE EQUESTRIAN TRAFFIC.
 - ABUTMENTS SHALL BE REINFORCED CONCRETE.
 - SUBSTRUCTURE SHALL BE DESIGNED WITH INFORMATION PROVIDED BY GEOTECHNICAL BORINGS TAKEN AT THE SITE.
 - HIGH WATER LEVEL SHALL BE PROVIDED BY THE SFWMD.
 - PRE-FABRICATED BRIDGE BY STEADFAST BRIDGES OR EQUIVALENT.
 - BOLLARDS SHALL BE PLACED ON ENTRANCE SIDE OF PEDESTRIAN BRIDGES TO PREVENT USE BY ALL TERRAIN VEHICLES.
 - BRIDGE RAILINGS SHALL BE VERTICAL.
 - WINGWALLS SHALL BE DESIGNED TO PREVENT SOIL WASHOUT AROUND FOOTINGS.
 - BRIDGE SHALL BE DESIGNED WITH ARCHITECTURAL CAMBER WITHIN ADA LIMITATIONS AND AS DIRECTED BY THE DISTRICT.
 - PROVIDE LIGHTNING PROTECTION SYSTEM FOR THE STEEL SUPERSTRUCTURE. PLANS FOR THE LIGHTNING PROTECTION SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.

**SOUTH FLORIDA
WATER MANAGEMENT DISTRICT**



**PUBLIC USE FACILITY
DESIGN STANDARDS
PEDESTRIAN BRIDGE**

R7

1 SHEET OF 1

PLOT SCALE: 1:1
FILE NAME: R7_01.DWG

APPROVED _____
REVISION NO. _____
EFFECTIVE DATE: June 2006

The consultant, contractor or other parties associated with District projects shall comply with Florida Statutes 119. These Standards and Guidelines are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside third party not performing work necessary for District projects is prohibited.

- ALL LANDSCAPING ACTIVITIES AND MATERIALS SHALL ADHERE TO SOUTH FLORIDA WATER MANAGEMENT DISTRICT SPECIFICATIONS SECTION 02930, AND EXOTICS REMOVAL SECTION 02950. EXOTIC PLANTS INCLUDE ALL THOSE LISTED IN CATEGORY 1 BY THE FLORIDA EXOTIC PEST PLANT COUNCIL.
- ALL RECOMMENDED TREES AND PLANT MATERIALS WILL BE GRADED AS NURSERY GRADE NO. 1 OR BETTER AS OUTLINED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DIVISION OF PLANT INDUSTRY "GRADES AND STANDARDS FOR NURSERY PLANTS", 7TH EDITION, 1998.
- ALL PLANTING SHALL BE DONE IN ACCORDANCE WITH FLORIDA NURSERY GROWERS AND LANDSCAPE ASSOCIATION APPROVED PRACTICES.
- ALL PLANTS SHALL BE FERTILIZED WITH AGRIFORM 20-10-5 TABLETS AS PER THE MANUFACTURERS SPECIFICATIONS IN CONJUNCTION WITH NOTE #5.
- THE PLANTING SOIL SHALL BE THE APPROXIMATE PROPORTIONS AS FOLLOWS: 50% SAND AND 50% ORGANIC MATERIAL CONSISTING OF NATIVE PEAT, WELL-DECOMPOSED SAWDUST, LEAF MOLD AND TOP SOIL. IT SHALL PROVIDE A GOOD PLIABLE AND THOROUGHLY MIXED MEDIUM WITH ADEQUATE AERATION, DRAINAGE AND WATER-HOLDING CAPACITY. IT SHALL ALSO BE FREE OF ALL EXTRANEOUS DEBRIS, SUCH AS ROOTS, STONES, WEEDS, ETC.
- ALL PLANTING AREAS SHALL RECEIVE A 3" LAYER OF RECYCLED HARDWOOD LOG MULCH, WHICH IS TO BE WATERED-IN AFTER INSTALLATION.
- PLANTS SHALL MEET SIZE, CONTAINER, AND SPACING SPECIFICATIONS. ANY MATERIAL NOT MEETING SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- ALL TREE AND SHRUB LOCATIONS ARE SUBJECT TO CHANGE. ALL LOCATIONS SHALL BE APPROVED BY THE SFWMD PROJECT MANAGER PRIOR TO PLANTING.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY APPLICABLE PERMITS AND LICENSES TO PERFORM THE WORK SET FORTH IN THIS PLAN SET AND THE SPECIFICATIONS.
- THERE SHALL BE NO ADDITIONS, DELETIONS OR SUBSTITUTIONS WITHOUT THE WRITTEN APPROVAL OF THE SFWMD PROJECT MANAGER.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE, IN WRITING, PLANT SURVIVABILITY FOR A PERIOD OF TWELVE (12) MONTHS FROM FINAL ACCEPTANCE BY SFWMD.
- ALL DIMENSIONS TO BE FIELD-CHECKED BY THE LANDSCAPE CONTRACTOR PRIOR TO LANDSCAPE MATERIAL INSTALLATION. DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO SFWMD.
- EXISTING SOD SHALL BE REMOVED AS NECESSARY TO ACCOMMODATE NEW PLANTINGS.
- ANY EXISTING SOD AREAS THAT ARE UNNECESSARILY DISTURBED DURING THE LANDSCAPE INSTALLATION SHALL BE RESODDED TO MATCH EXISTING.
- THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR THE COLLECTION, REMOVAL, AND PROPER DISPOSAL OF ANY AND ALL DEBRIS GENERATED DURING THE INSTALLATION OF THIS PROJECT.
- FOR LANDSCAPE INSTALLATION REFER TO FDOT INDEX 544.
- SOIL SEPARATOR FABRIC SHALL BE A NON-WOVEN MULTIPURPOSE FABRIC OF 100% POLYPROPYLENE STAPLE FILAMENTS, NEEDLE-PUNCHED AND HEATSET. THE FABRIC SHALL BE FX-35HS AS MANUFACTURED BY CARTHAGE MILLS, OR EQUIVALENT. INSTALL FABRIC AS SHOWN ON DETAILS.
- IN THE SFWMD LANDSCAPING SPECIFICATIONS, ALL LANDSCAPE ELEMENTS AND PLANT MATERIAL, EXCEPT SOD, SHALL BE GUARANTEED FOR A MINIMUM OF ONE CALENDAR YEAR FROM THE TIME OF FINAL ACCEPTANCE. THEREFORE, THE CONTRACTOR MUST KEEP PLANTS WATERED AND HEALTHY, OR WILL BE RESPONSIBLE FOR THEIR REPLACEMENT.
- ALL PLANT HOLES TO BE EXCAVATED TO THREE TIMES THE DEPTH AND WIDTH OF ROOTBALL, AND LINED WITH SOIL SEPARATOR FABRIC.



(FOR TREES LARGER THAN 2 INCH CALIPER)

TREE STAKING AND PLANTING DETAIL

UPLAND PLANT PALETTE		
NAME	COMMON NAME	SIZE
	GRASSES	
TRIPSACUM DACTYLOIDES	FAKAHATCHEE GRASS	3 GALLON
TRIPSACUM FLORIDANUM	DWARF FAKAHATCHEE	1 GALLON
	SHRUBS	
CHRYSOBALANUS ICACO	COCOPLUM	3 GALLON
ILEX VOMITORIA SCHILLING'S DWARF	DWARF YAUPON HOLLY	3 GALLON
MYRCIANTHES FRAGRANS	SIMPSON'S STOPPER	7 GALLON
MYRICA CERIFERA	WAX MYRTLE	7 GALLON
	PALMS	
SABAL PALMETTO	CABBAGE PALM	BOOTED, MAXIMUM 12' CLEAR TRUNK
SERENOA REPENS	SAW PALMETTO	3, 7 GALLON
	TREES	
COCCOLOBA DIVERSIFOLIA	PIGEON PLUM	15 GALLON
QUERCUS VIRGINIANA	LIVE OAK	25 GALLON

WETLAND PLANT PALETTE		
NAME	COMMON NAME	SIZE
	HERBACEOUS	
ACROSTICHUM DANAEIFOLIUM	LEATHER FERN	3 GALLON
JUNCUS EFFUSUS	SOFT RUSH	BARE ROOT
SAGITTARIA LANCIFOLIA	DUCK POTATO	BARE ROOT
	TREES	
TAXODIUM DISTICHUM	BALD CYPRESS	7, 15 GALLON



*EXCAVATE PLANTING HOLE TO 3 TIMES THE DEPTH AND WIDTH OF ROOTBALL

APPROVED _____
 REVISION NO. V1.1
 EFFECTIVE DATE MAR 2012
 CHANGE NO. EGCRO158

**PUBLIC USE FACILITY
DESIGN STANDARDS
LANDSCAPING DETAILS**

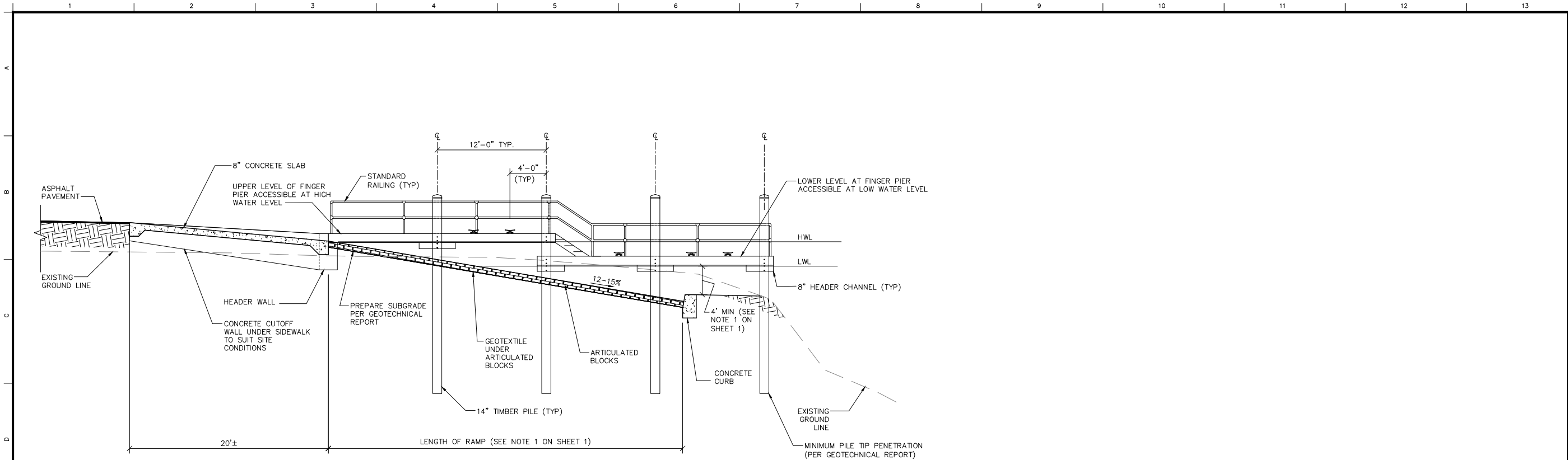
R8



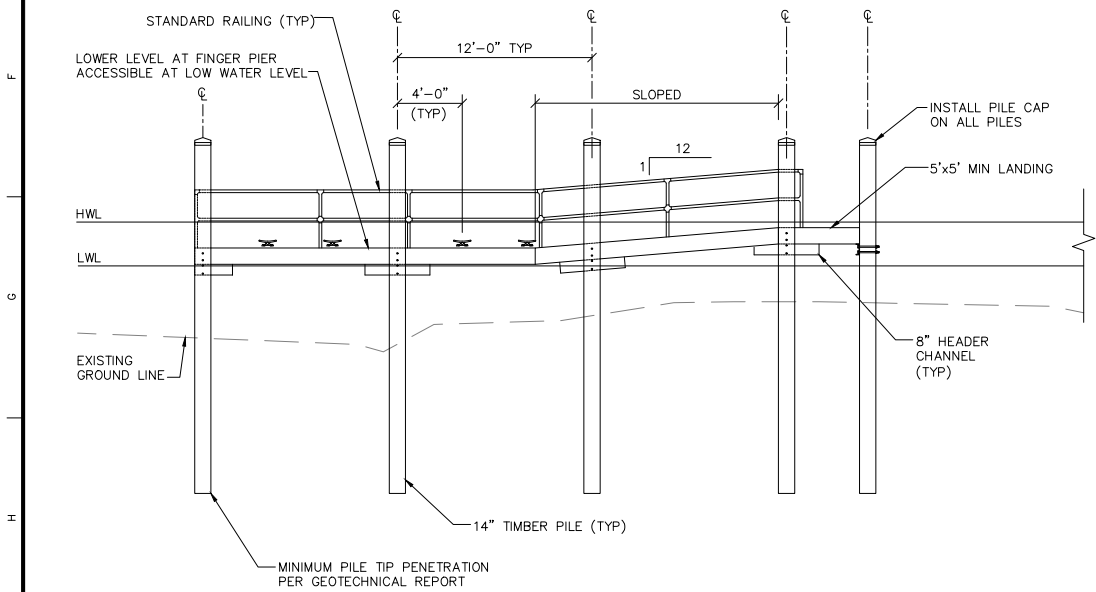
DESIGNER SHALL PROVIDE A HANDRAIL ON ONE SIDE OF CLOSED STAIR WAYS, PREFERABLY ON THE RIGHT SIDE DESCENDING, OR ON BOTH SIDES, BASED ON SITE SPECIFIC REQUIREMENTS. TOP OF HANDRAIL SHALL BE 34" ABOVE TOP OF STAIR TREAD.

DESIGNER SHALL DESIGN STAIR RISE IN ACCORDANCE WITH OSHA 29 CFR 1910.24(C) AND TO MEET GENERAL REQUIREMENT 28 ABOVE.

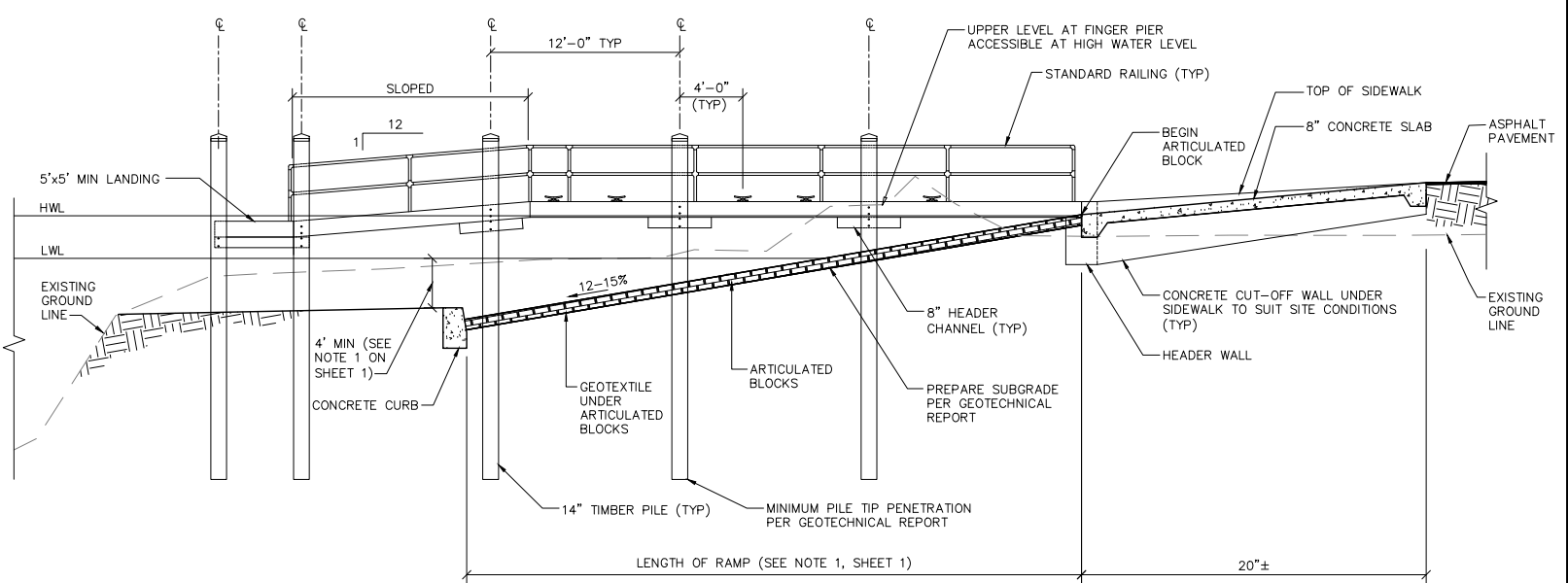
R9



BOAT RAMP ELEVATION (FINGER PIER WITH STAIRS)
NTS



ADA COMPLIANT FINGER PIER LOOKING TOWARD LAND
NTS



BOAT RAMP ELEVATION (WITH ADA COMPLIANT FINGER PIER)
NTS

1:1
PLOT SCALE: 1:1
FILE NAME: R9_02.DWG

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APPROVED
REVISION NO. V1.1
EFFECTIVE DATE JUL 2013
CHANGE NO. E660213

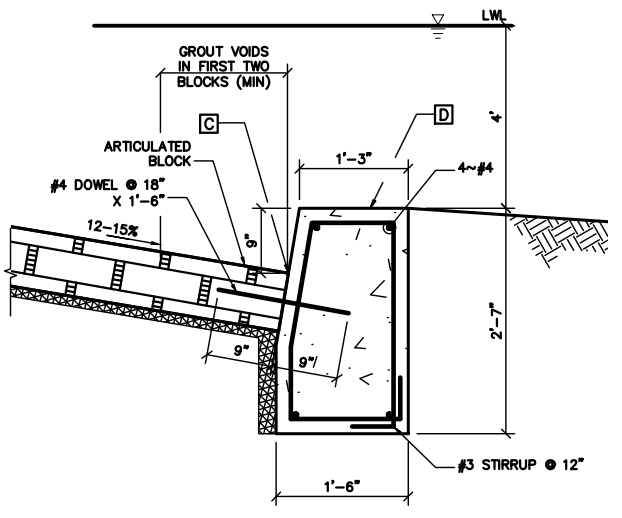
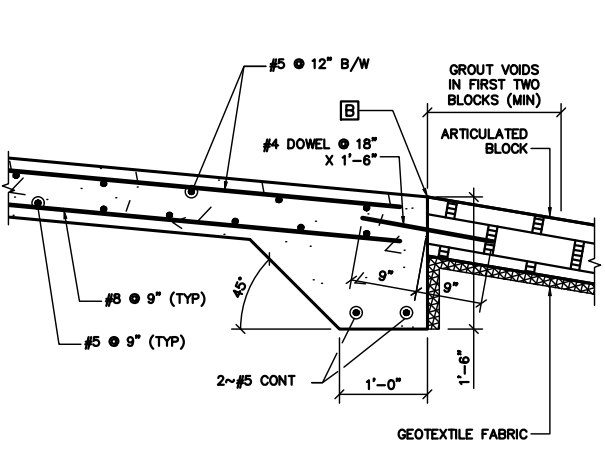
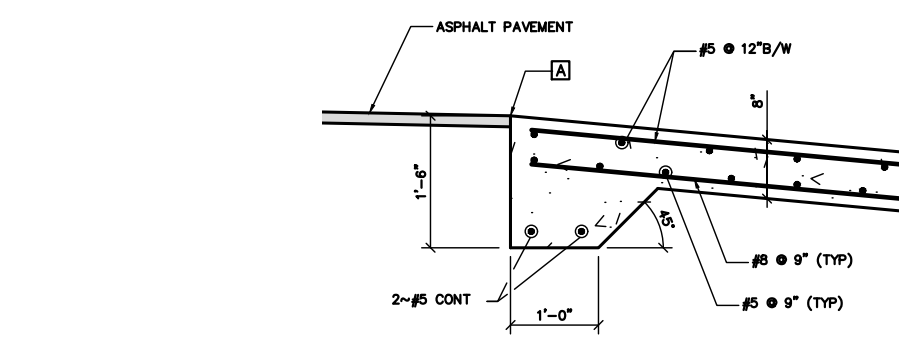
SOUTH FLORIDA
WATER MANAGEMENT DISTRICT



PUBLIC USE FACILITY
DESIGN STANDARDS
BOAT RAMP AND FINGER PIERS

R9

2 OF 3

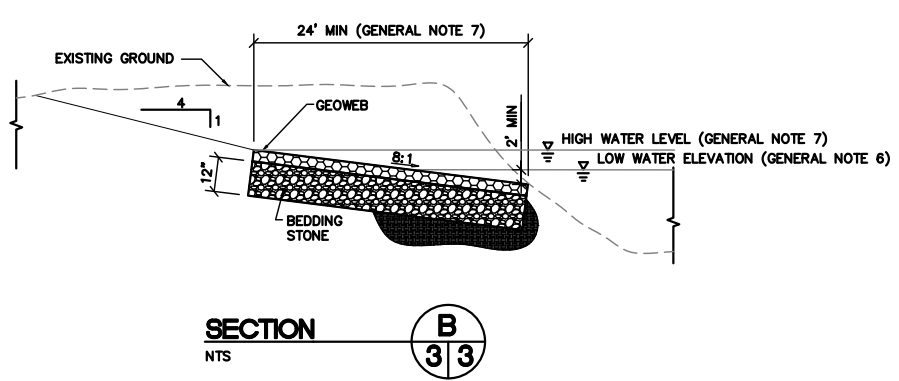
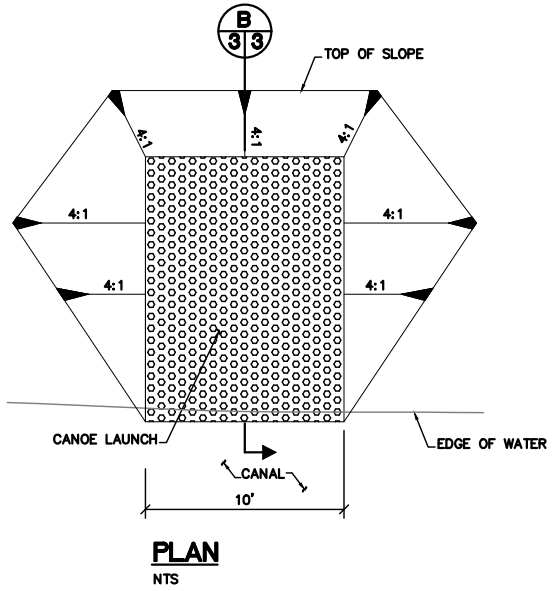


BOAT RAMP SECTION

NTS

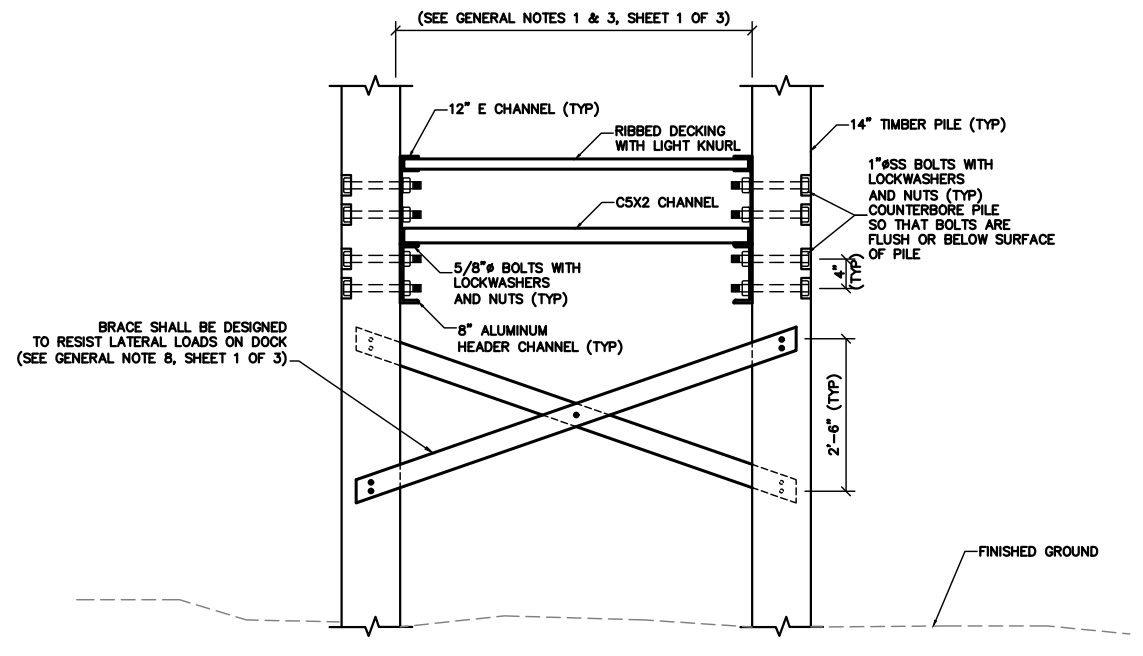
A

1/3



CANOE LAUNCH

- GENERAL NOTES:**
- CANOE LAUNCH**
- GEOWEB SHALL HAVE MINIMUM DIMENSIONS OF 10' WIDE BY 16' LONG BY 6" THICK.
 - GEOWEB SHALL BE FILLED WITH #67 PEA GRAVEL, NATURALLY ROUND WITH NO SHARP EDGES.
 - GEOWEB SHALL BE PLACED ON A 12" LAYER OF #57 BEDDING STONE.
 - CANOE LAUNCH SHALL HAVE A SLOPE OF 1 V : 8 H.
 - GEOWEB MATERIAL BY PRESTO PRODUCTS COMPANY OR DISTRICT APPROVED EQUAL.
 - EXTEND CANOE LAUNCH 2 FOOT BELOW LOW WATER ELEVATION. THE LOW WATER ELEVATION SHALL BE PROVIDED BY THE DISTRICT.
 - DIMENSION CANOE LAUNCH SUCH THAT TOP OF RAMP IS NOT SUBMERGED AT HIGH WATER LEVEL. HIGH WATER LEVEL SHALL BE PROVIDED BY THE DISTRICT.



BOAT RAMP ELEVATION SCHEDULE

MARK	DESCRIPTION	REMARKS	
A	TOP OF ASPHALT PAVEMENT (DOWNSTREAM)		
B	TOP OF ARTICULATED BLOCK (UPSTREAM)		
C	TOP OF ARTICULATED BLOCK (DOWNSTREAM)		
D	TOP OF CONCRETE CURB		

SOUTH FLORIDA

WATER MANAGEMENT DISTRICT



PUBLIC USE FACILITY

DESIGN STANDARDS

BOAT RAMP/CANOE LAUNCH DETAILS

RD

3 SHEET **3**

PLOT SCALE: 1:1

FILE NAME: RD_03.DWG

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APPROVED

REVISION NO. V1.1

EFFECTIVE DATE JUL 2013

CHANGE NO. EDCR0473

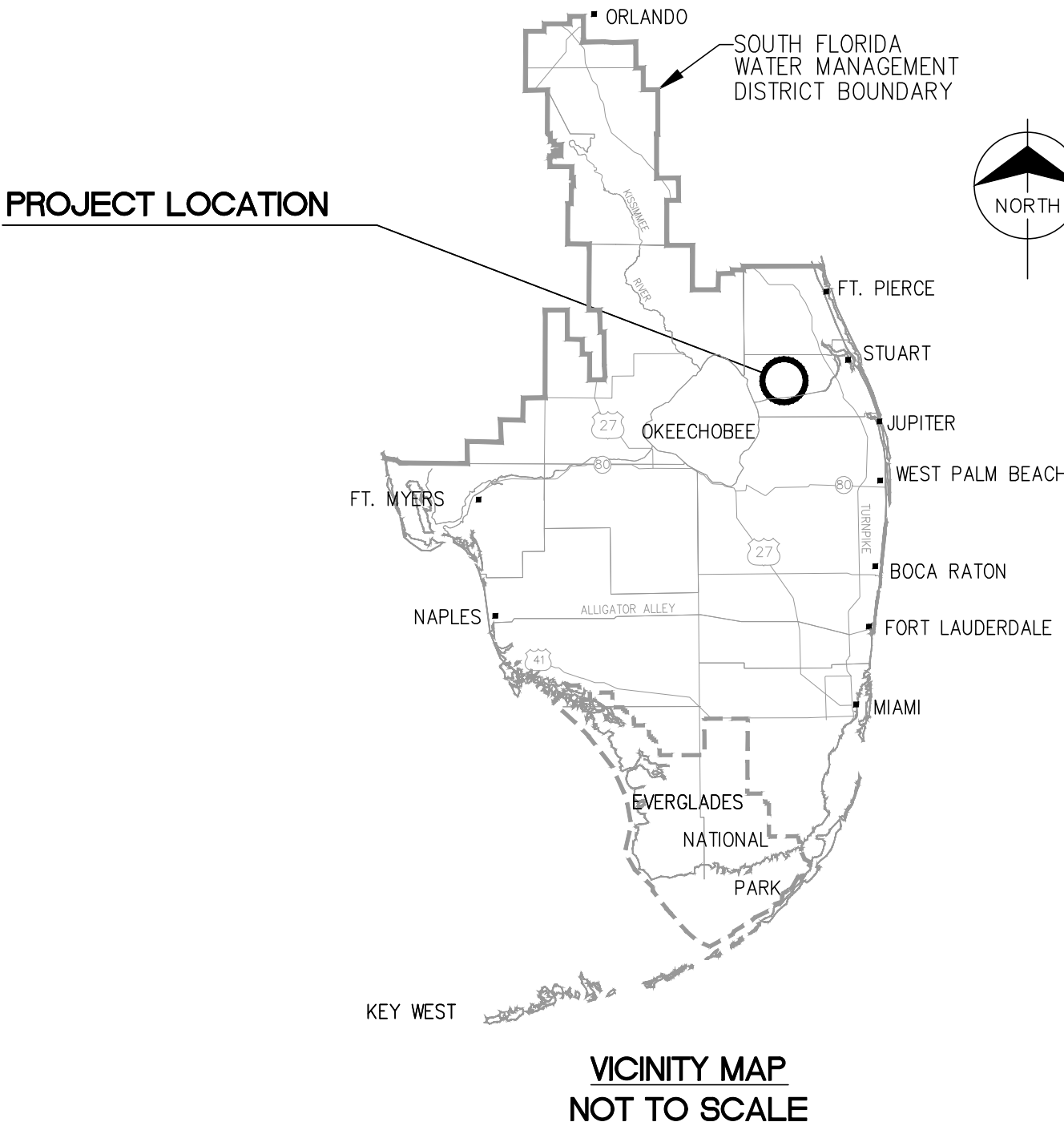
ANNEX C-3

C-44 RECREATIONAL AREAS DESIGN SHEETS



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

RFB 6000000XXX C-44 RESERVOIR/STA PROJECT RECREATION FEATURES MARTIN COUNTY, FLORIDA



GOVERNING BOARD

CHAUNCEY GOSS
CHAIRPERSON

SCOTT WAGNER
VICE-CHAIRPERSON

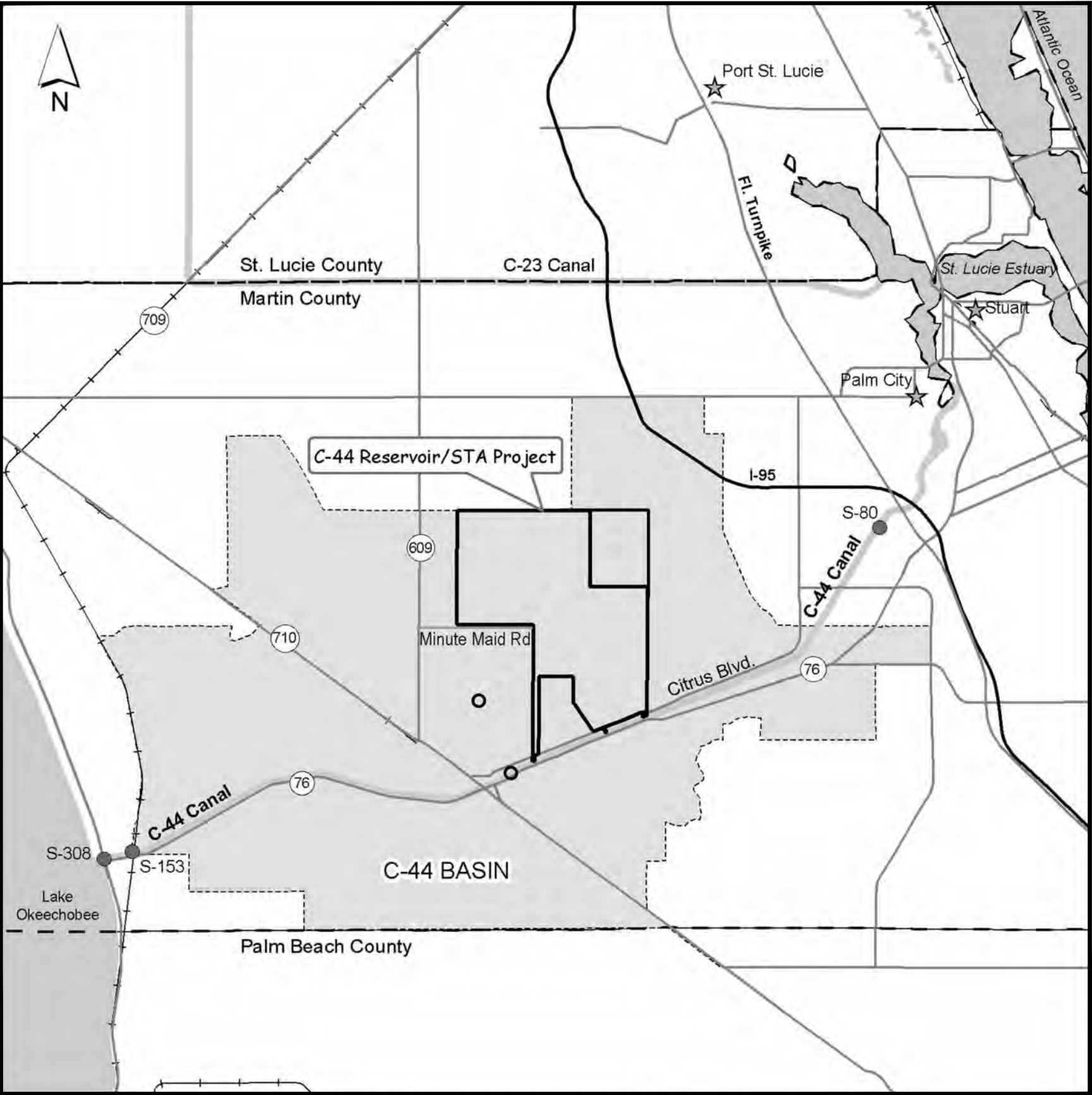
RON BERGERON SR.
BENJAMIN BUTLER
CARLOS "CHARLIE" E. MARTINEZ
CHERYL MEADS
CHARLETTE ROMAN
JAY STEINLE
JACQUI THURLOW-LIPPISCH
BOARD MEMBERS

EXECUTIVE OFFICE

DREW BARTLETT
EXECUTIVE DIRECTOR

APPROVED BY:

ALAN SHIRKEY, P.E.
BUREAU CHIEF,
ENGINEERING & CONSTRUCTION BUREAU
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION



PROJECT LOCATION MAP

CORRECTED FINAL/READY TO ADVERTISE (RTA)
AUGUST 2022
PROJECT I.D. NO. 100548

INDEX OF SHEETS

DISCIPLINE	DRAWING NUMBER	SHEET NUMBER	SHEET TITLE
GENERAL	G7001	1	COVER AND SHEET INDEX
	G7002	2	ABBREVIATIONS AND GENERAL NOTES
	G7003	3	SURVEY BENCHMARKS AND CONTRACTOR ACCESS ROUTES
	G7004	4	SHELTER AND SIGNAGE KEY SHEET
CIVIL	C7001	5	RESERVOIR VISITORS' ENTRANCE AT CREST AND AT GRADE EXISTING CONDITIONS
	C7002	6	RESERVOIR VISITORS' ENTRANCE AT GRADE LAYOUT
	C7003	7	RESERVOIR VISITORS' ENTRANCE AT GRADE SHELTER AREA LAYOUT AND SECTIONS
	C7004	8	RESERVOIR VISITORS' ENTRANCE AT CREST AREA LAYOUT AND SECTIONS
	C7005	9	STA VISITORS' ENTRANCE EXISTING CONDITIONS
	C7006	10	STA VISITORS' ENTRANCE LAYOUT
	C7007	11	CELLS 4 AND 5 VISITORS' SHELTERS EXISTING CONDITIONS
	C7008	12	CELLS 4 AND 5 VISITORS' SHELTERS LAYOUT
	C7009	13	GENERAL CIVIL DETAILS
	C7010	14	VEHICLE BARRIER GATE DETAILS 1 OF 2
	C7011	15	VEHICLE BARRIER GATE DETAILS 2 OF 2
	C7012	16	VAULT TOILET BUILDING DETAILS
STRUCTURAL	C7013	17	EXISTING RTU AND OBSERVATION WELLS SITE ADDITIONS
	C7014	18	SECURITY FENCING DETAILS
	S7001	19	SHELTER TYPE 1 DETAILS
	S7002	20	SHELTER TYPE 2 DETAILS
	S7003	21	SHELTER TYPE 3 DETAILS
	S7004	22	SHELTER TYPES 1, 2 AND 3 DETAILS
	S7005	23	INTERPRETIVE SIGN DETAILS
	S7006	24	CONCRETE DETAILS

CONFIDENTIAL INFORMATION ENCLOSED

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

This item has been electronically signed and sealed by Zaine Arth, P.E. and Jeff LaVoie, P.E. on the date adjacent to the seals, using SHA-1 authentication codes. Printed copies of this document are not considered signed and sealed and the SHA-1 authentication codes must be verified on any electronic copies.



HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

CIVIL		STRUCTURAL	
ENGINEER OF RECORD: ZANE J. ARTH, P.E.		ENGINEER OF RECORD: JEFFERY LAVOIE, P.E.	
FLORIDA P.E. LICENSE NO.: 93274		FLORIDA P.E. LICENSE NO.: 81555	
DATE:		DATE:	

CORRECTED FINAL / RTA
C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES
GENERAL
COVER AND SHEET INDEX



PROJECT ID NO.
100548
DRAWING NUMBER
G7001

SHEET
1 OF 24

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLCHADO
DATE: 08/26/2022
SCALE: AS SHOWN

REVISION DESCRIPTION
DATE
DRAWN
REV.#

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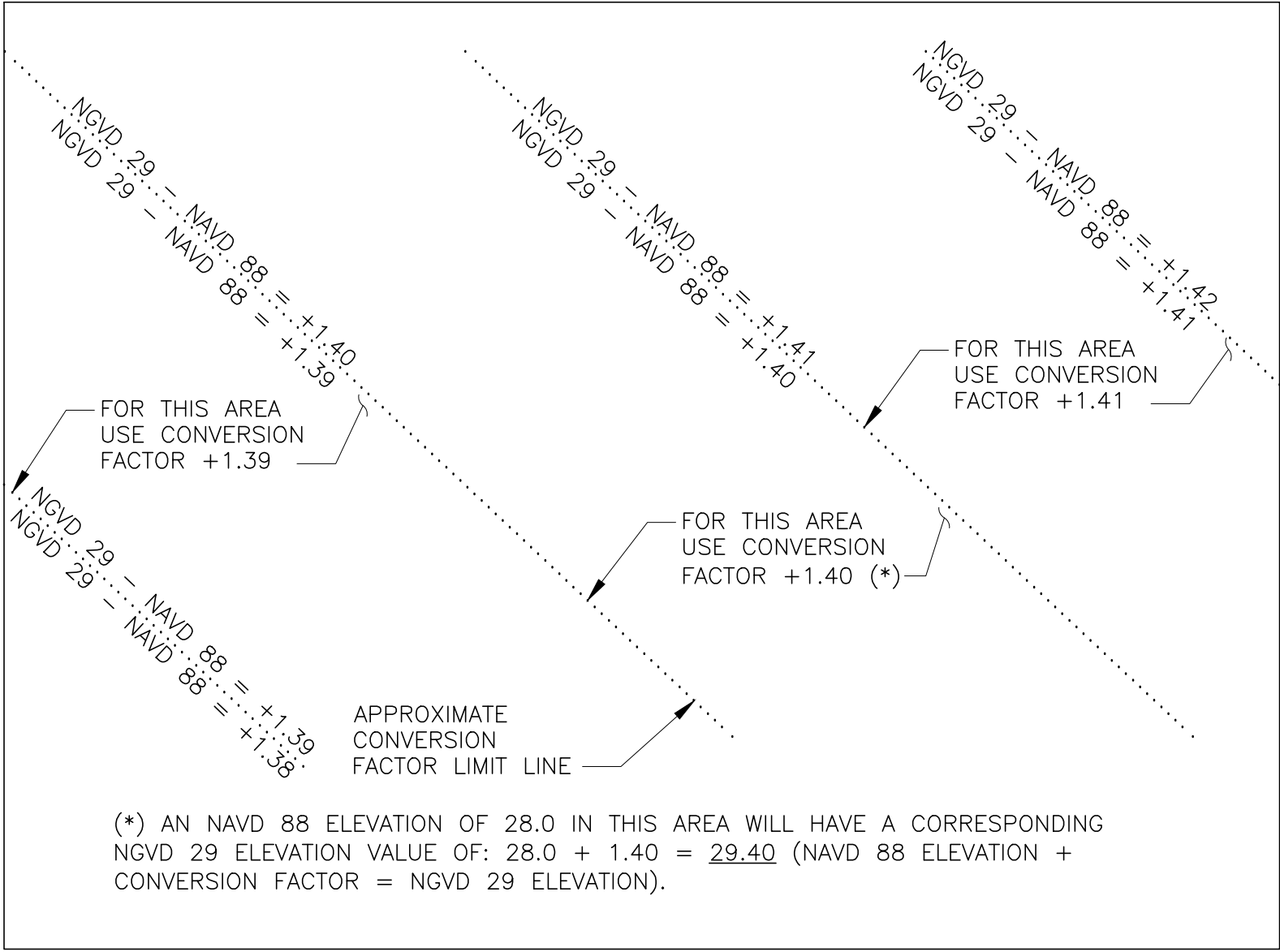
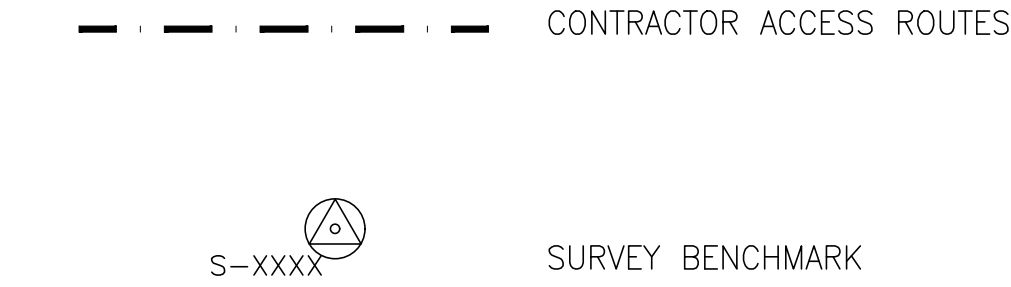
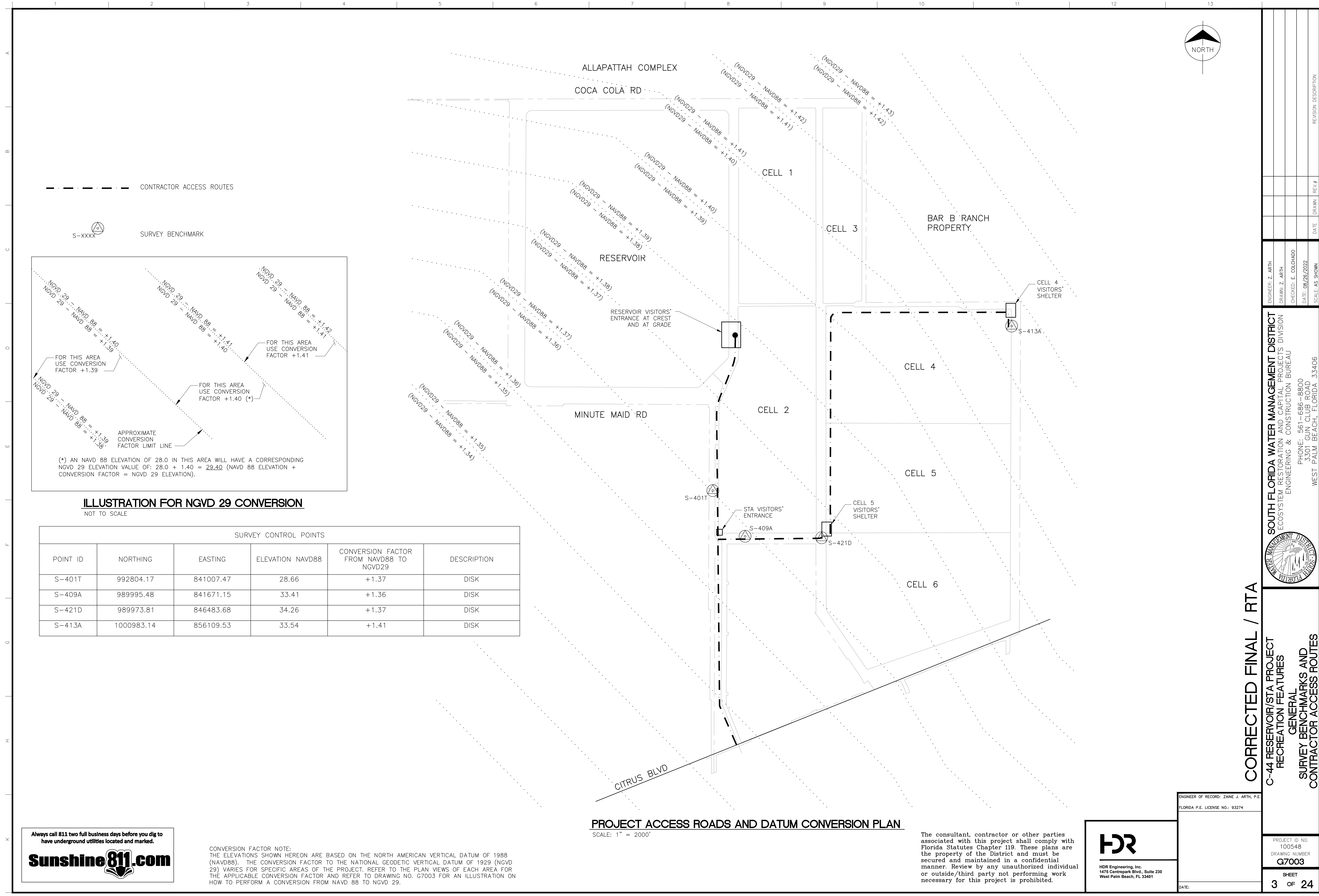


ILLUSTRATION FOR NGVD 29 CONVERSION
NOT TO SCALE

SURVEY CONTROL POINTS					
POINT ID	NORTHING	EASTING	ELEVATION NAVD88	CONVERSION FACTOR FROM NAVD88 TO NGVD29	DESCRIPTION
S-401T	992804.17	841007.47	28.66	+1.37	DISK
S-409A	989995.48	841671.15	33.41	+1.36	DISK
S-421D	989973.81	846483.68	34.26	+1.37	DISK
S-413A	1000983.14	856109.53	33.54	+1.41	DISK

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

CONVERSION FACTOR NOTE:
THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) VARIES FOR SPECIFIC AREAS OF THE PROJECT. REFER TO THE PLAN VIEWS OF EACH AREA FOR THE APPLICABLE CONVERSION FACTOR AND REFER TO DRAWING NO. G7003 FOR AN ILLUSTRATION ON HOW TO PERFORM A CONVERSION FROM NAVD 88 TO NGVD 29.

PROJECT ACCESS ROADS AND DATUM CONVERSION PLAN
SCALE: 1" = 2000'

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HDR

HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: ZANE J. ARTH, P.E. FLORIDA P.E. LICENSE NO.: 93274
DATE:

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES
GENERAL
SURVEY BENCHMARKS AND
CONTRACTOR ACCESS ROUTES

PROJECT ID NO. 100548 DRAWING NUMBER G7003 SHEET 3 OF 24

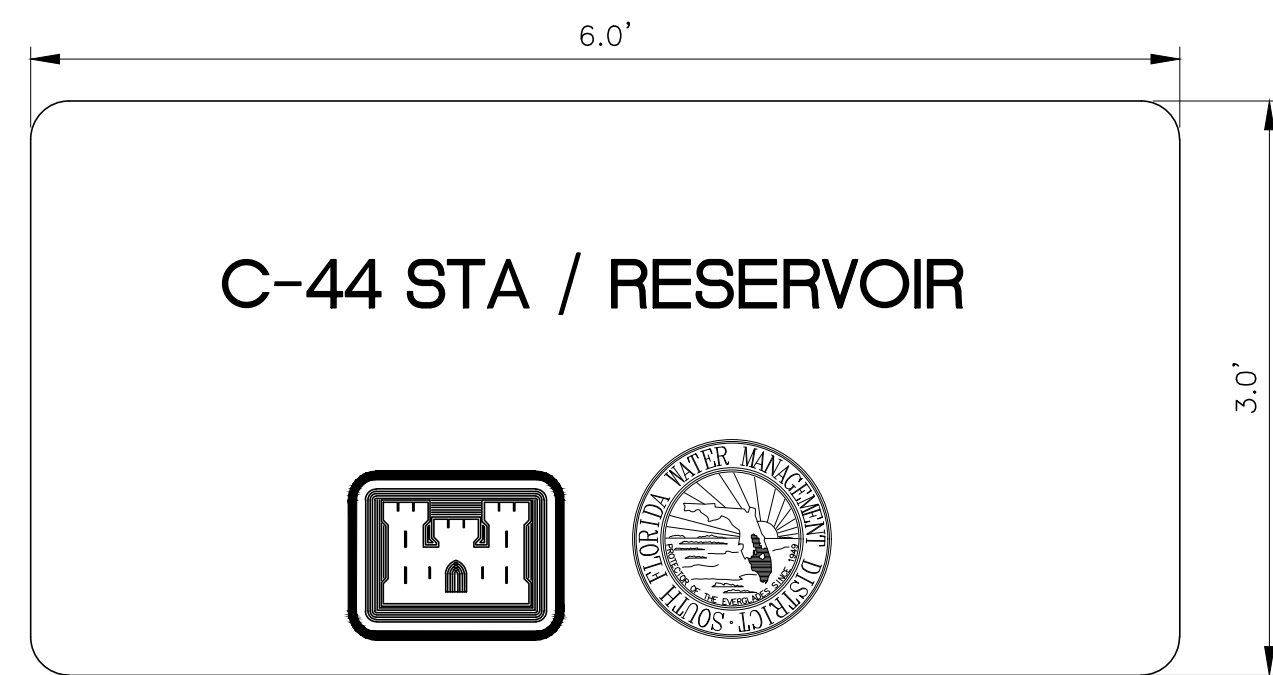
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

PHONE: 561-686-8800
3301 SUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406



ENGINEER: Z. ARTH	DATE: 08/26/2022
DRAWN: Z. ARTH	SCALE: AS SHOWN
CHECKED: E. COLCHADO	REVISION DESCRIPTION

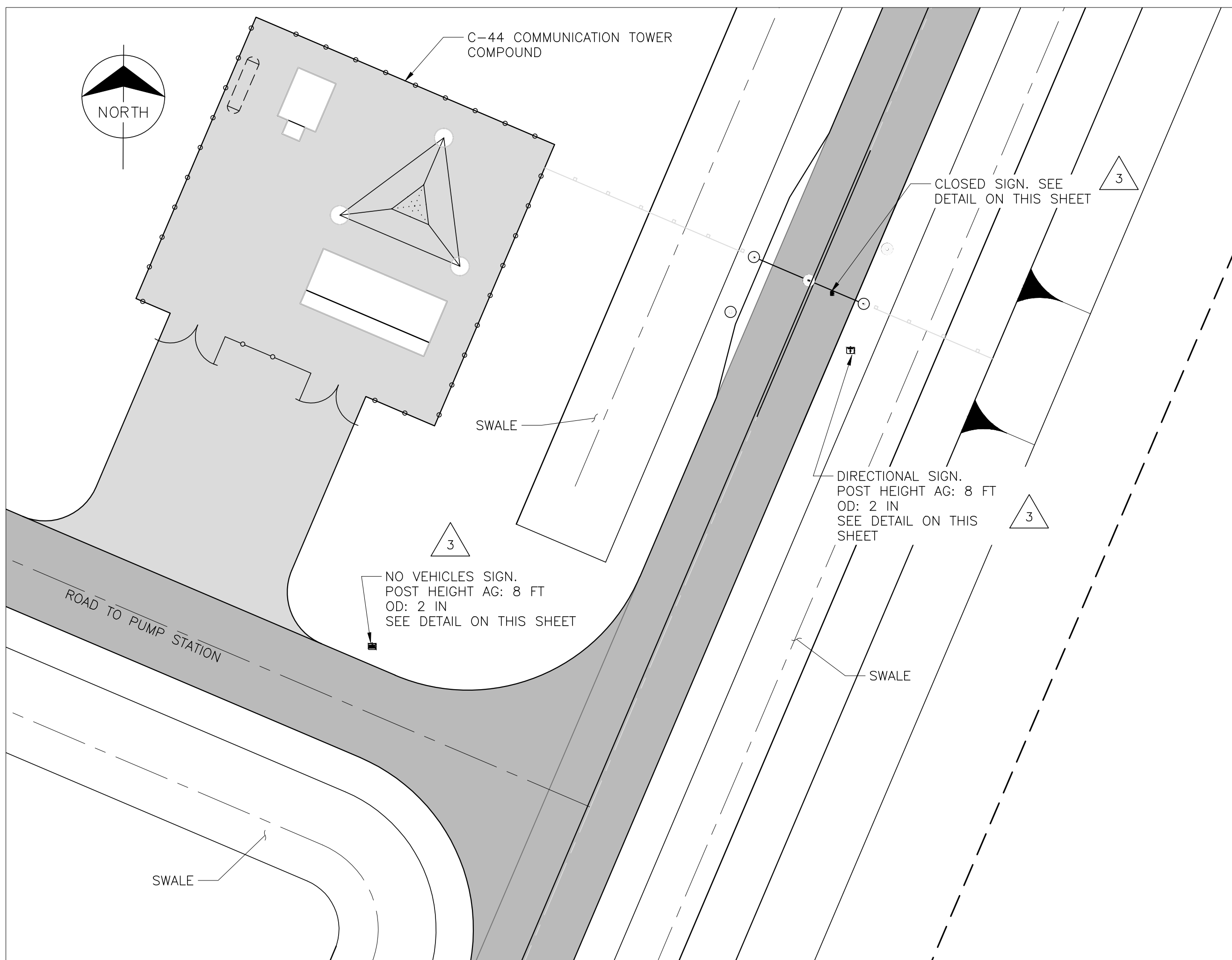
SHELTER LOCATIONS AND FEATURES							
SHELTER INDEX	TYPE	SHELTER SIZE (LxW)	NO. OF INTERPRETIVE SIGNAGE BOARDS	NO. OF BENCHES	NO. OF TABLES	LAYOUT REFERENCE	KEY NOTE
STA VISITORS' ENTRANCE SHELTER	1	26'X14'	1	2	0	C7006	
RESERVOIR VISITORS' ENTRANCE AT GRADE SHELTER	3	46'X24'	1 (1)	0	5	C7002, C7003	
RESERVOIR VISITORS' ENTRANCE AT CREST	NA	NA	1	NA	NA	C7004	
STA CELL 4 VISITORS' SHELTER	2	30'X18'	0	0	3	C7008	
STA CELL 5 VISITORS' SHELTER	2	30'X18'	0	0	3	C7008	



ENTRANCE SIGN DETAIL

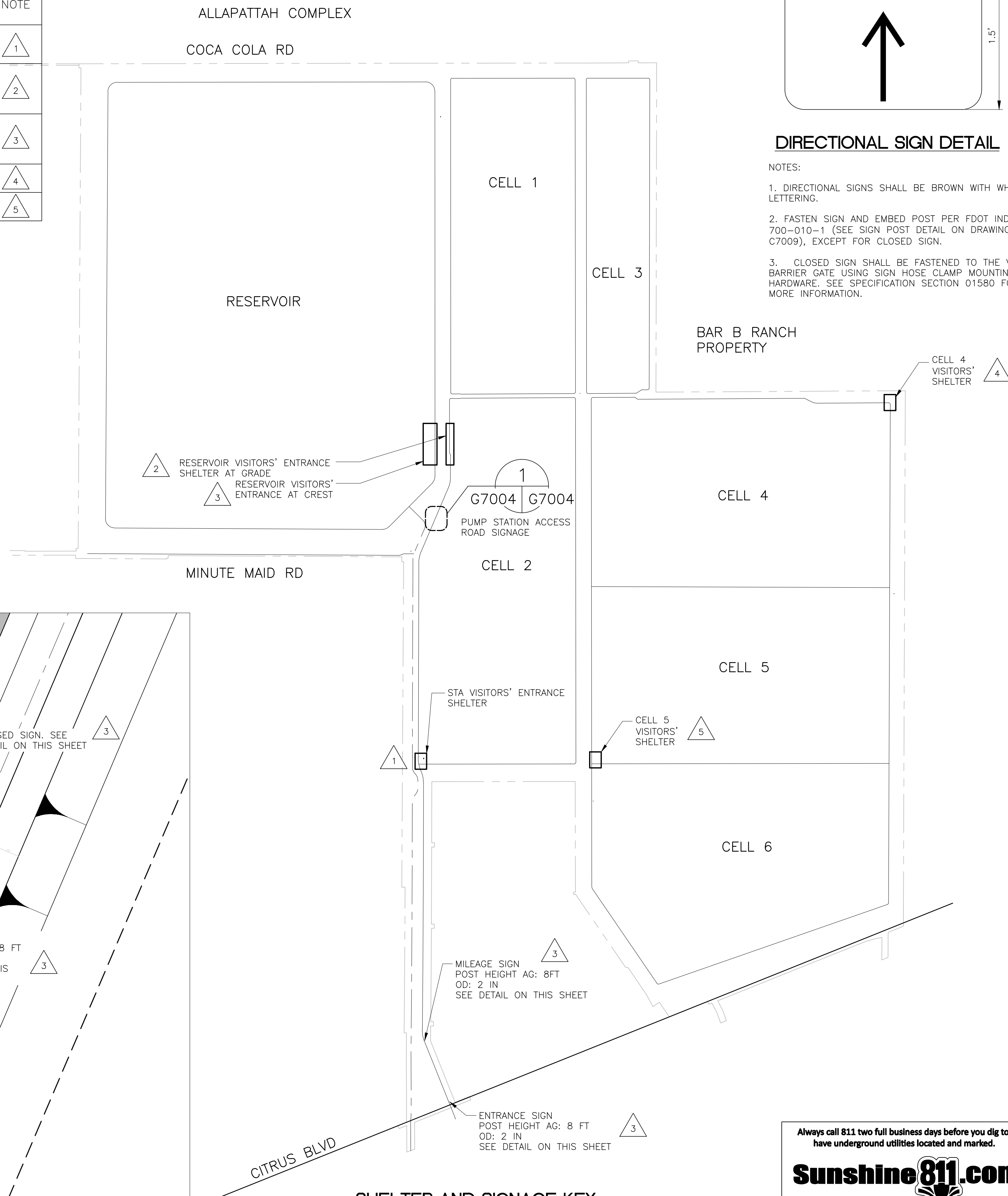
ENTRANCE SIGN NOTES:

1. FASTEN SIGN AND EMBED POST PER FDOT INDEX 700-010-1 (SEE SIGN POST DETAIL ON DRAWING NO. C7009).



PUMP STATION ACCESS ROAD SIGNAGE DETAIL

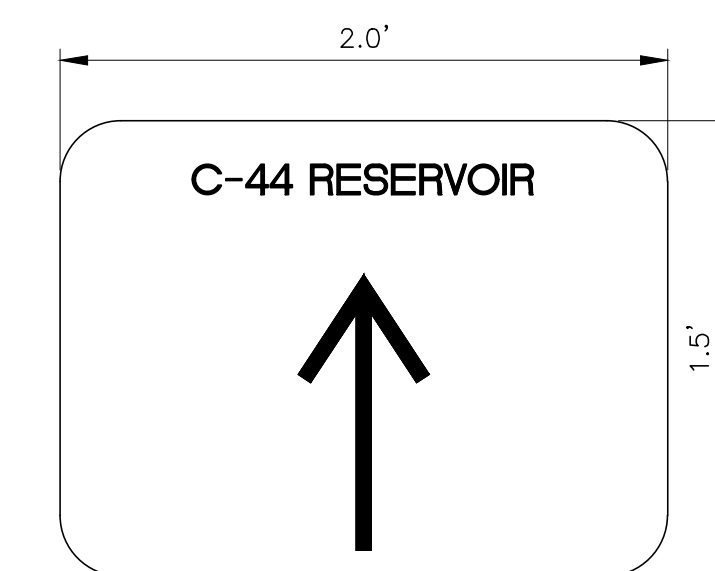
G7004 | G7004 SCALE: 1/2" = 1' - 0'



SHELTER AND SIGNAGE KEY

SCALE: 1" = 2000'

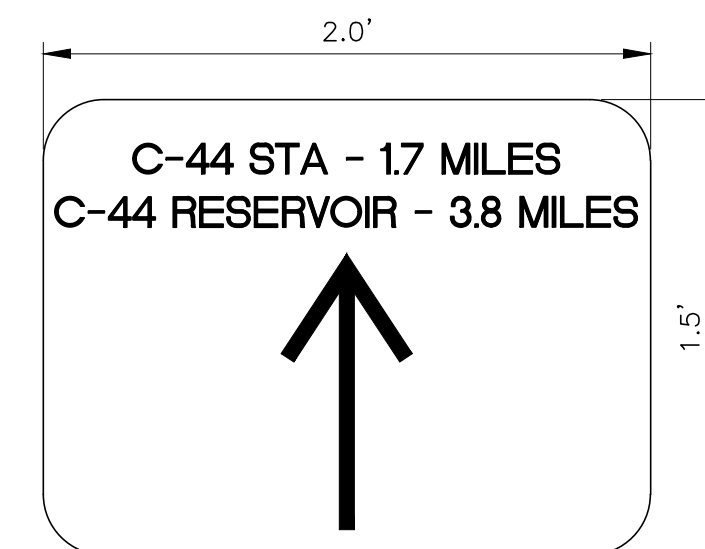
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G7003 FOR AN ILLUSTRATION ON HOW TO PERFORM A CONVERSION FROM
NAVD 88 TO NGVD 29.



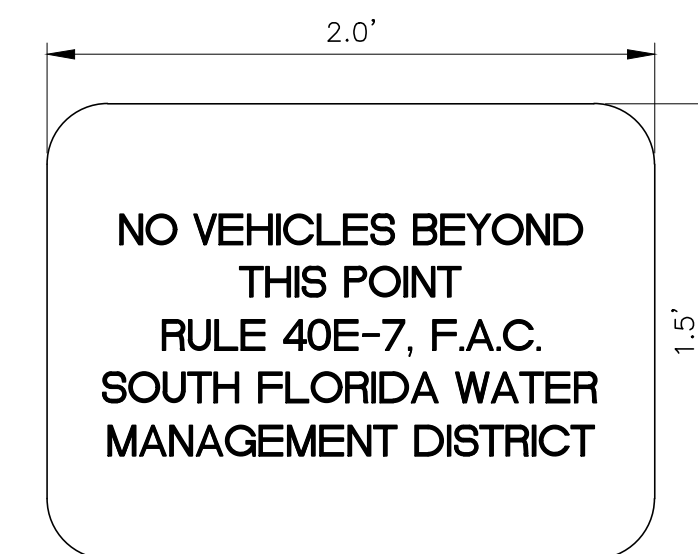
DIRECTIONAL SIGN DETAIL

NOTES:

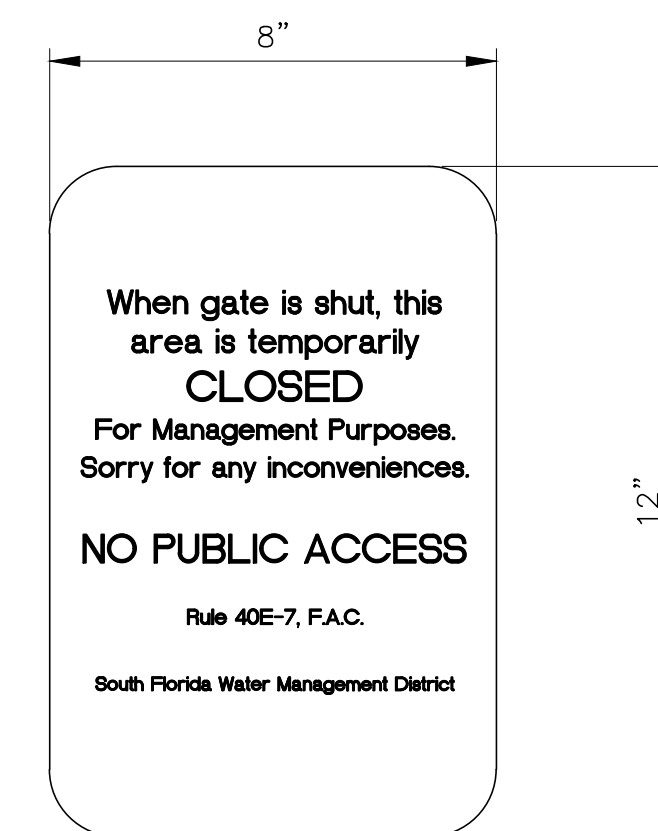
- | | |
|---|--|
| 1. DIRECTIONAL SIGNS SHALL BE BROWN WITH WHITE LETTERING. | 4. SIGNS' EXACT LOCATION SHALL BE APPROVED BY THE DISTRICT. |
| 2. FASTEN SIGN AND EMBED POST PER FDOT INDEX 700-010-1 (SEE SIGN POST DETAIL ON DRAWING NO. C7009), EXCEPT FOR CLOSED SIGN. | 5. 1/4 " DIA ANCHORING HOLES AT TOP AND BOTTOM CENTERED ON SIGN. |
| 3. CLOSED SIGN SHALL BE FASTENED TO THE VEHICLE BARRIER GATE USING SIGN HOSE CLAMP MOUNTING HARDWARE. SEE SPECIFICATION SECTION 01580 FOR MORE INFORMATION. | 6. SIGNS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 01580. |



MILEAGE SIGN DETAIL



NO VEHICLES SIGN DETAIL



CLOSED SIGN DETAIL

Always call 811 two full business days before you dig to have underground utilities located and marked.



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HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: ZAINE J. ARTH, P.E.

FLORIDA P.E. LICENSE NO.: 93274

DATE _____

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT RECREATION FEATURES

GENERAL SHELTER AND SIGNAGE KEY SHEET



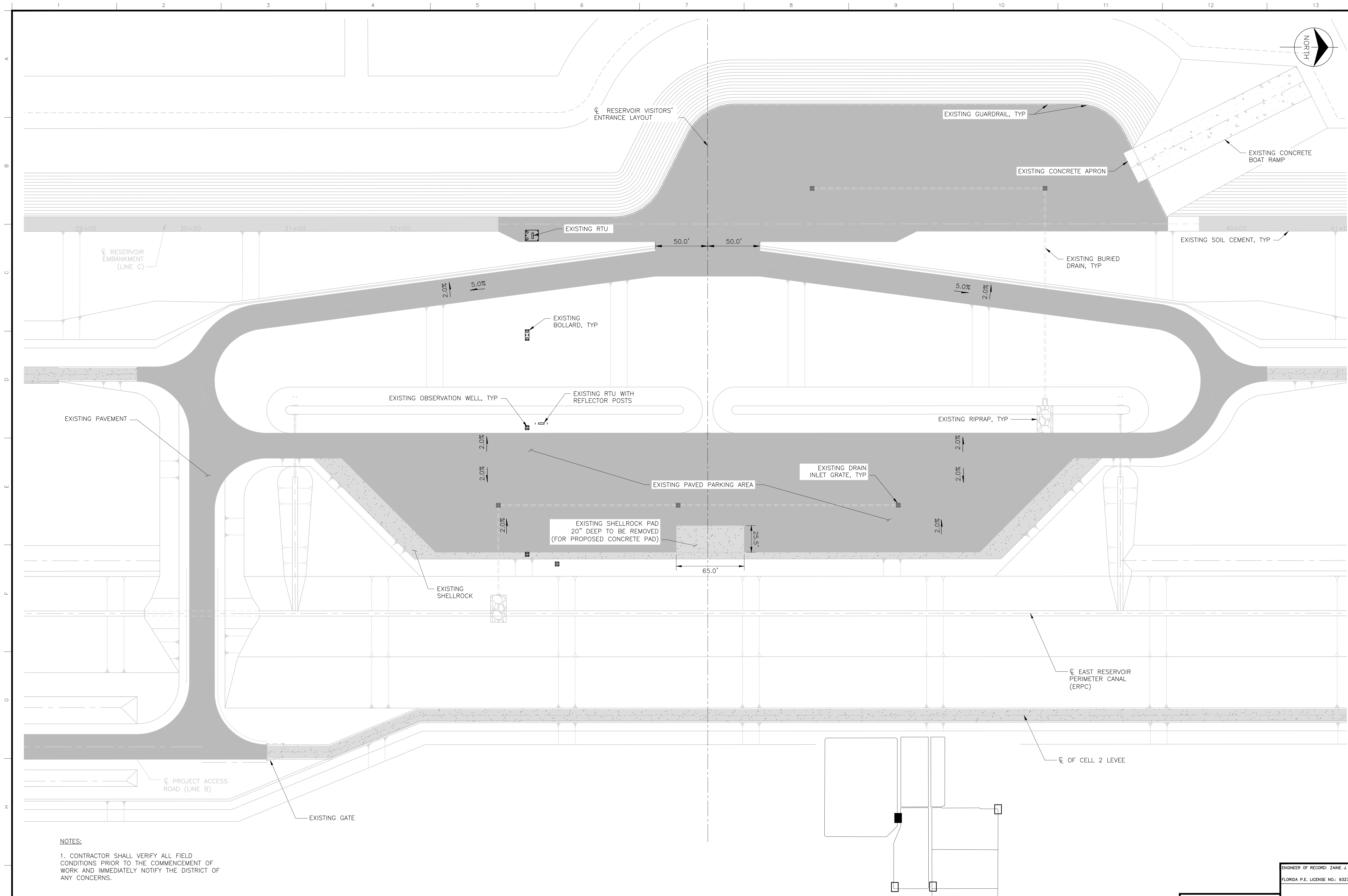
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

PHONE: 561-686-8800
3301 GUN CLUB ROAD

BUREAU

CHECKED: E. COLCH
DATE: 08/26/2022

[illegible]



NOTES:

1. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND IMMEDIATELY NOTIFY THE DISTRICT OF ANY CONCERNS.

Always call 811 two full business days before you dig to have underground utilities located and marked.

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CONVERSION FACTOR NOTE:
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RESERVOIR VISITORS' ENTRANCE AT CREST AND AT GRADE EXISTING CONDITIONS - PLAN VIEW



KEY MAP

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HDR

HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: ZANE J. ARTH, P.E. FLORIDA P.E. LICENSE NO.: 93274
DATE:

CORRECTED FINAL / RTA

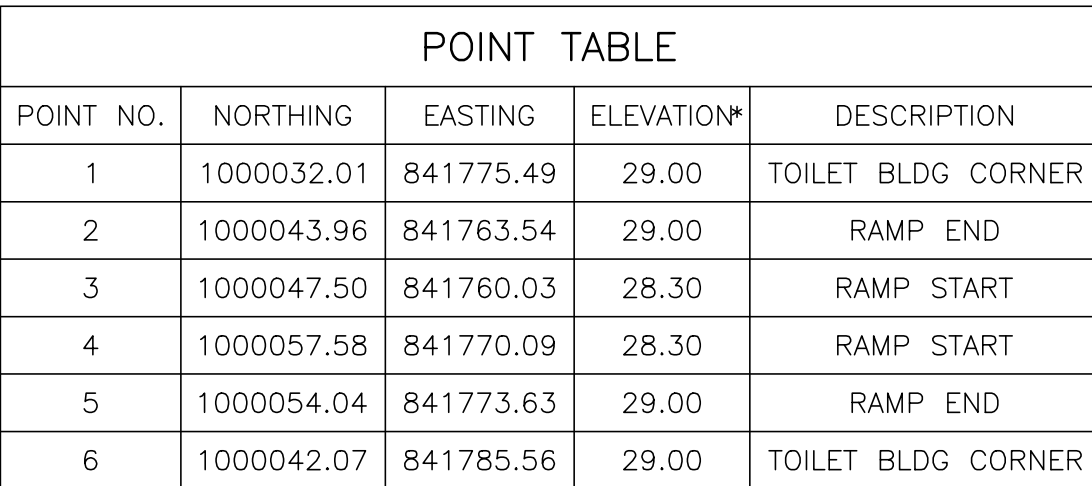
C-44 RESERVOIR/STA PROJECT RECREATION FEATURES CIVIL	PROJECT ID NO. 100548
RESERVOIR VISITORS' ENTRANCE AT CREST AND AT GRADE EXISTING CONDITIONS	DRAWING NUMBER C7001
	SHEET 5 OF 24

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

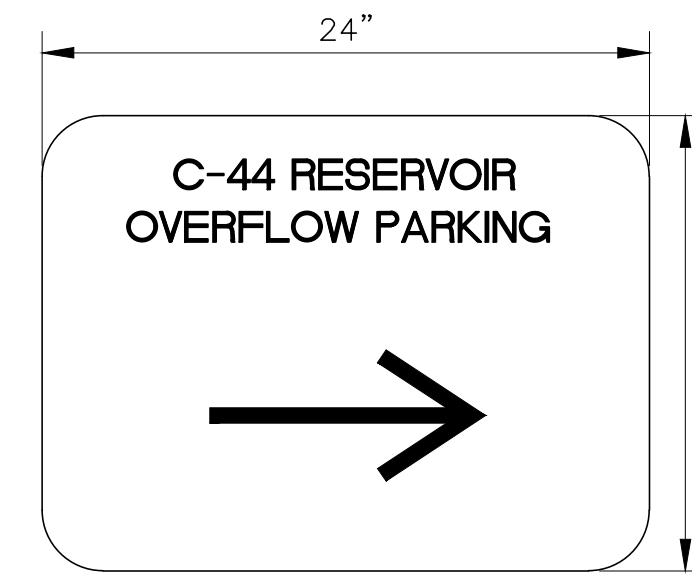
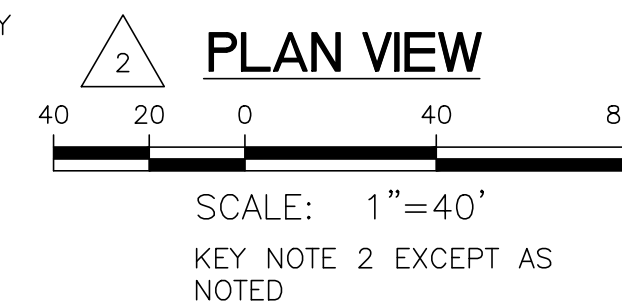
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: Z. ARTH	DATE: 08/26/2022	SCALE: AS SHOWN
DRAWN: Z. ARTH	CHECKED: E. COLCHADO	DATE: 08/26/2022
		REVISION DESCRIPTION
		REV #
		DRAWN
		DATE

CONVERSION FACTOR NOTE:
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* CONTRACTOR SHALL VERIFY ELEVATIONS PRIOR TO COMMENCEMENT OF WORK, THE RAMP SHALL START FLUSH WITH THE ADJACENT EXISTING ASPHALT AND THE TOP OF TOILET BLDG SLAB SHALL BE 4-6 INCHES ABOVE EXISTING GRADE.



OVERFLOW PARKING SIGN DETAIL

5. SIGNS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 01580.



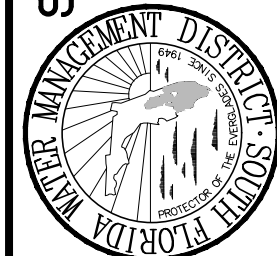
Always call 811 two full business days before you dig to have underground utilities located and marked.



REGISTRATION PLATES
CIVIL
RESERVOIR VISITORS' ENTRANCE



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU



PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA

ENGINEER: Z. ARTH

DATE: 08/26/2022	
SCALE: AS SHOWN	

REVISION DESCRIPTION

DATE	DRAWN	REV #
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INVOICE NO. 3731923

WEST PALM BEACH, FLORIDA 33406

ENGINEER OF RECORD: ZAINE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274

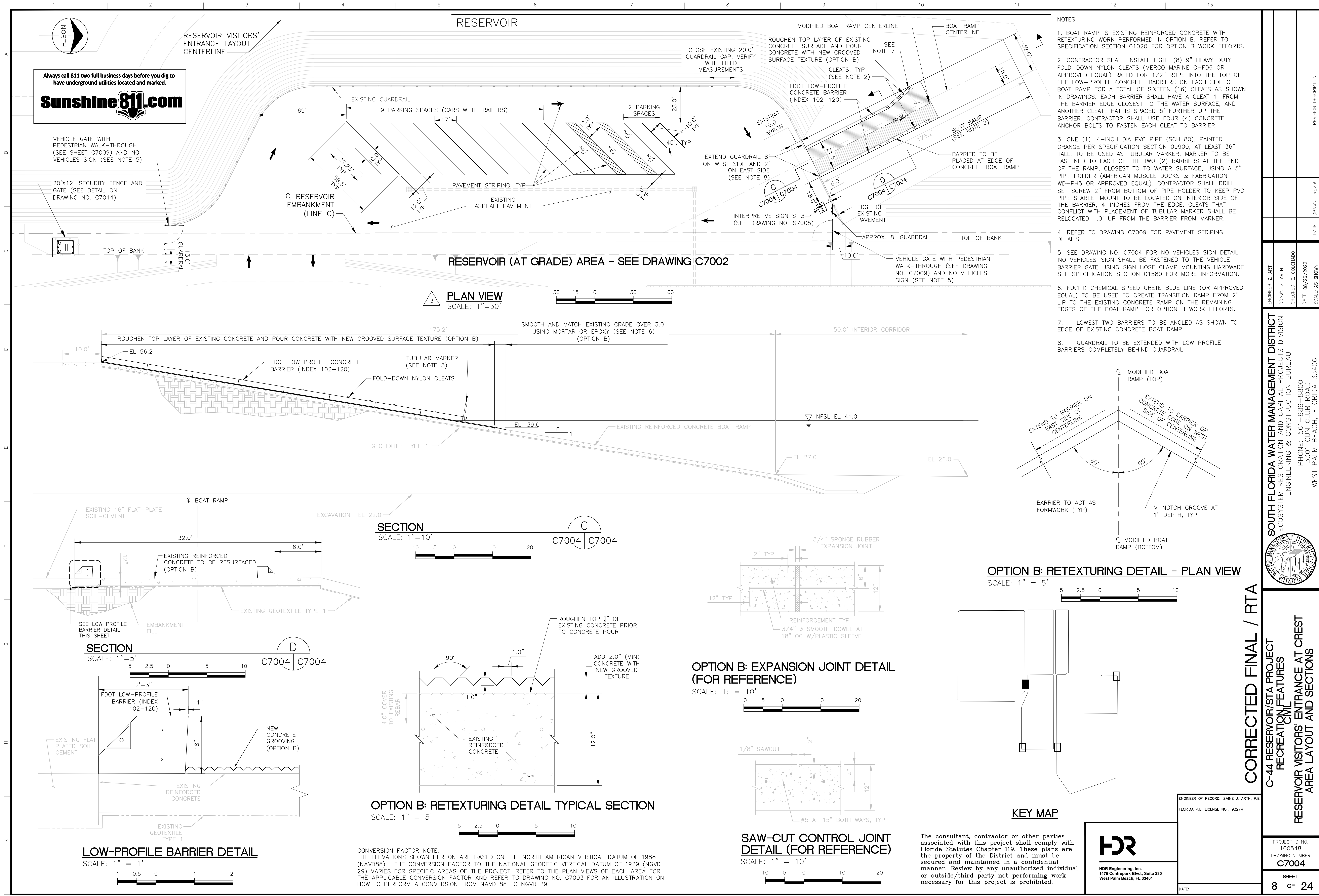


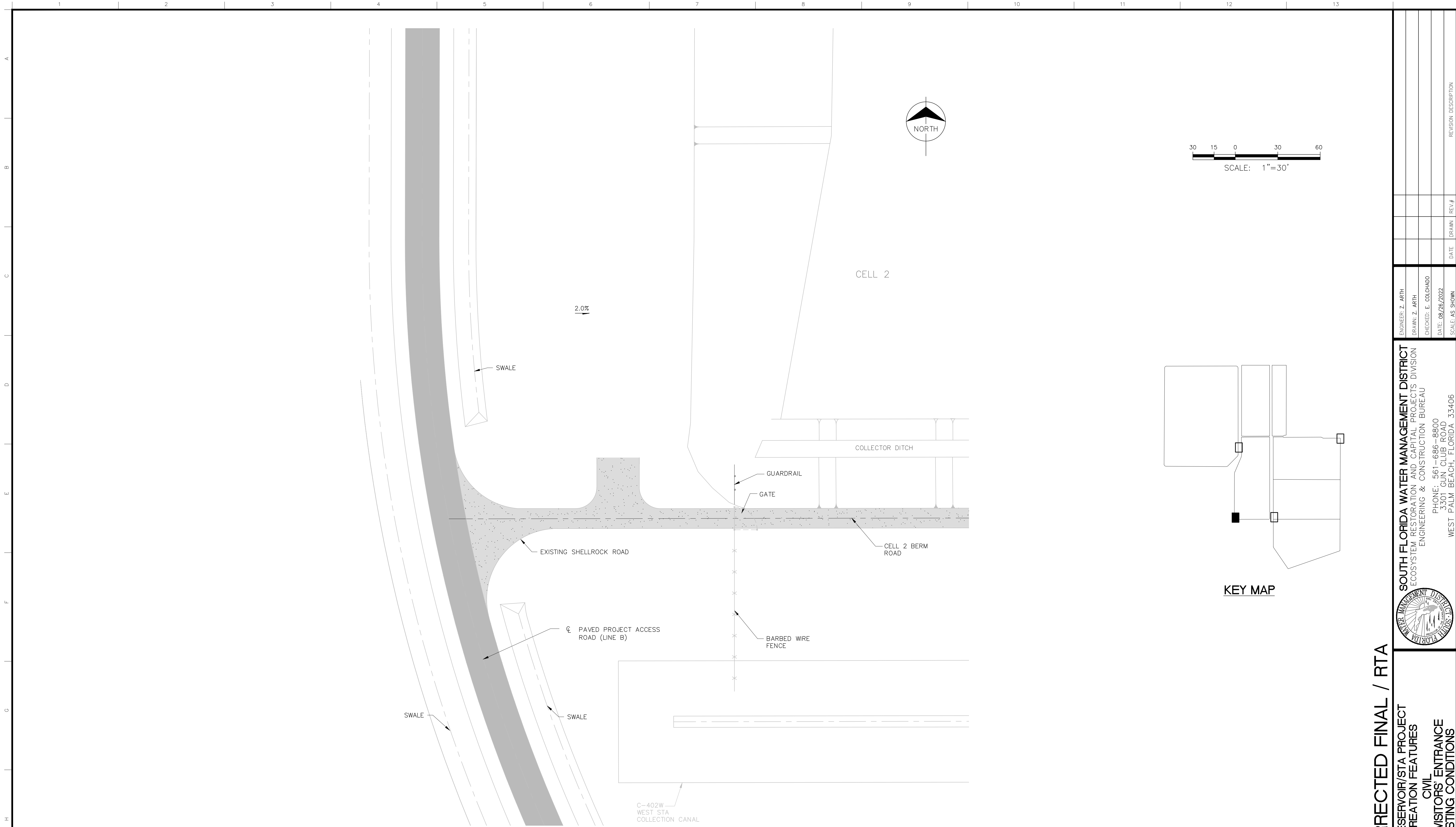
HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

DATE:

PROJECT ID NO.
100548
DRAWING NUMBER
C7002

SHEET
6 OF 24





STA VISITORS' ENTRANCE EXISTING CONDITIONS - PLAN VIEW
SCALE: 1"=30'

Always call 811 two full business days before you dig to have underground utilities located and marked.



CONVERSION FACTOR NOTE:
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1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: ZANE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274

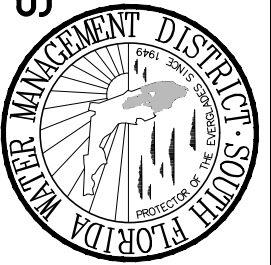
DATE:

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES
CIVIL
STA VISITORS' ENTRANCE
EXISTING CONDITIONS

PROJECT ID NO.
100548
DRAWING NUMBER
C7005

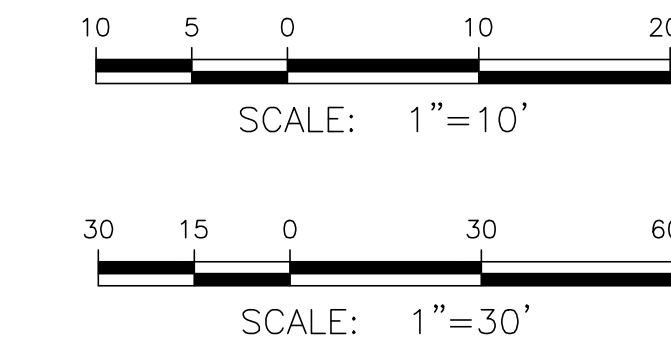
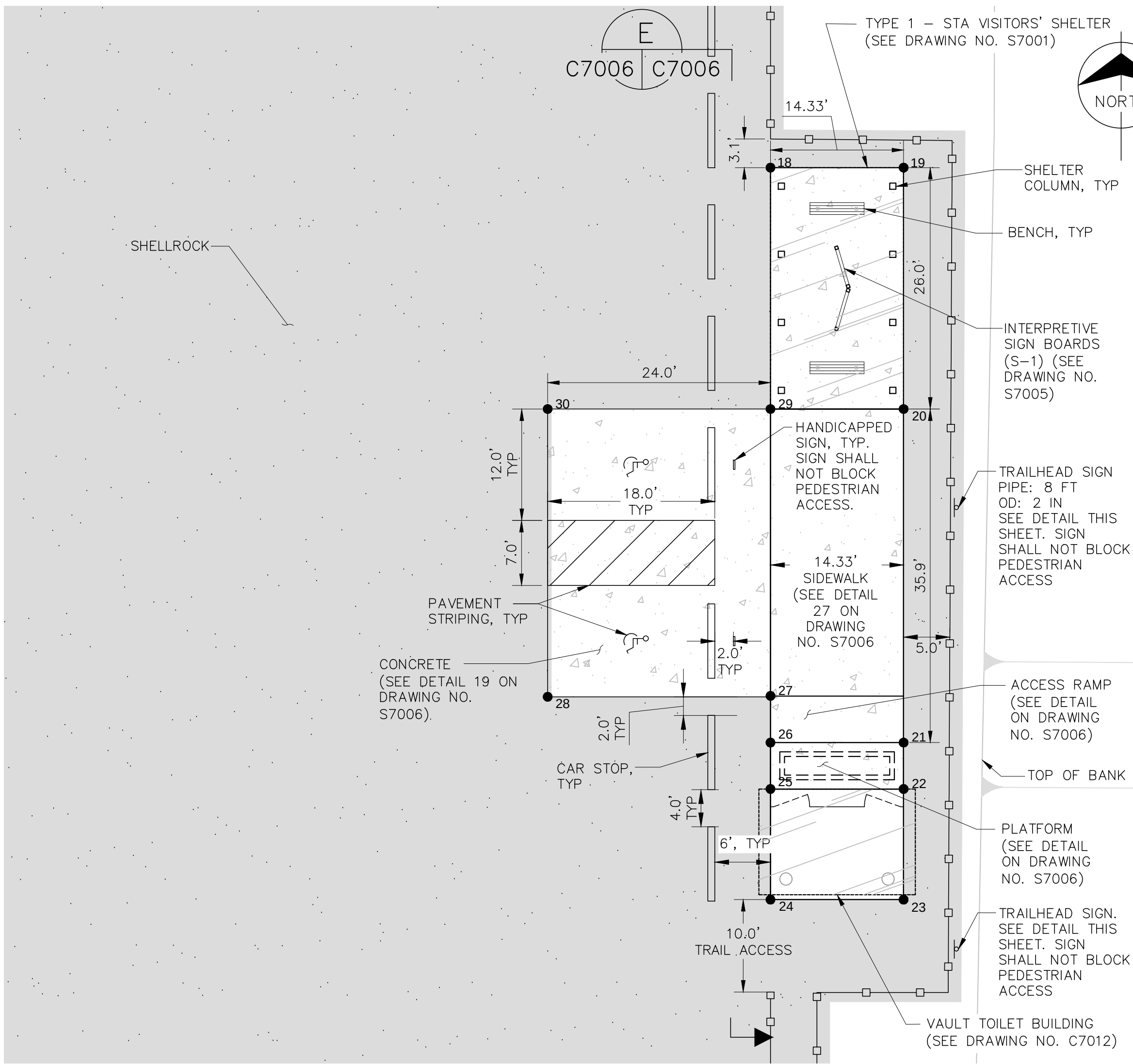
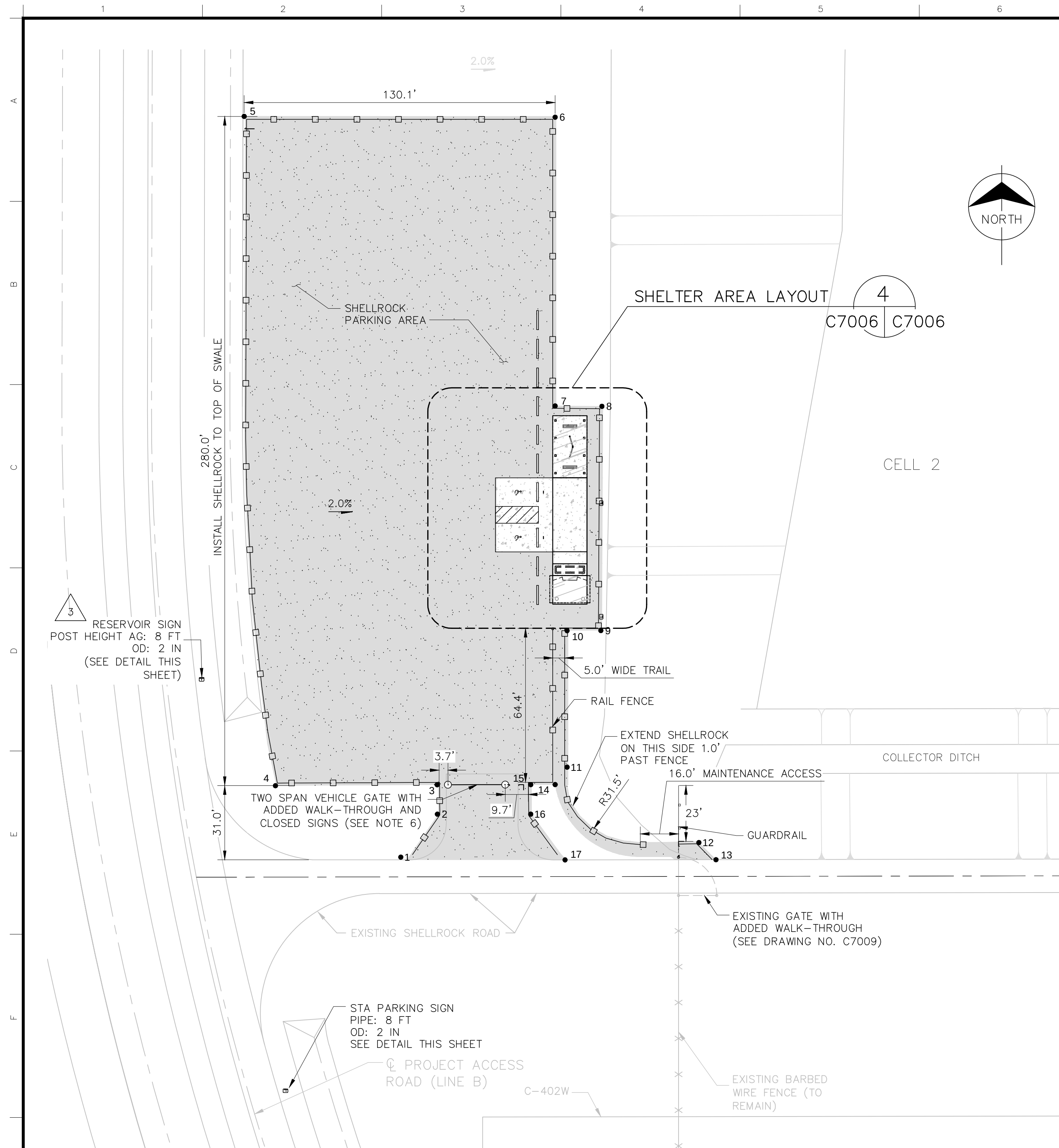
SHEET
9 OF 24



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLCHADO
DATE: 08/26/2022
SCALE: AS SHOWN

REVISION DESCRIPTION	REV.#	DATE	DRAWN



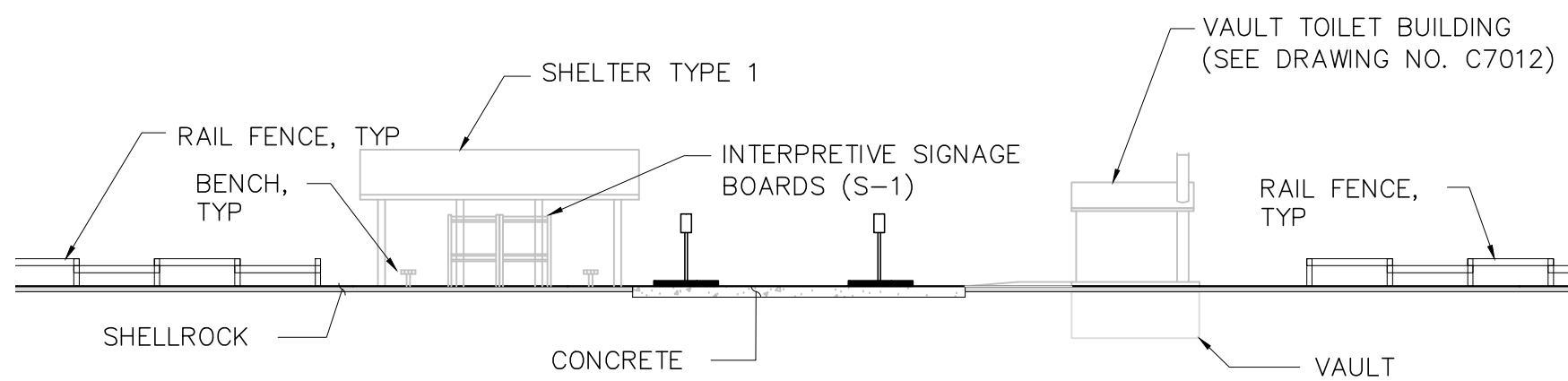
- NOTES:**
- REFER TO DRAWING C7009 FOR CAR STOP DETAIL.
 - GUARDRAIL SHALL EXTEND TO THE WATERLINE IN THE COLLECTOR DITCH/CELL 2. CONTRACTOR SHALL ADD A PEDESTRIAN WALKWAY AT LOCATION OF SHELLROCK TRAIL. THE EXISTING BOLLARD AND CONCRETE BASE NEAREST TO THE PEDESTRIAN WALK-THROUGH IS TO BE REPLACED. SEE DRAWING NO. S7009.
 - RAIL FENCE TO BE INSTALLED 1.0' INSIDE THE EDGE OF THE SHELLROCK.
 - NOMINAL WATER LEVEL (NWL) OF CELL 2 IS 29.0.
 - CONTRACTOR SHALL SLOPE FINISHED GRADE TO DRAIN.
 - REFER TO DRAWING NO. C7011 FOR TWO SPAN VEHICLE GATE DETAILS, DRAWING NO. C7009 FOR WALK-THROUGH DETAILS AND DRAWING NO. G7004 FOR SIGN DETAILS.
 - CONCRETE ON THIS SHEET IS TO BE RAISED 2.0 INCHES ABOVE SHELLROCK UNLESS NOTED OTHERWISE.

DETAIL - SHELTER AREA LAYOUT

SCALE: 1" = 10'

C7006 C7006

Always call 811 two full business days before you dig to have underground utilities located and marked.



SECTION VIEW

1" = 16'-0"

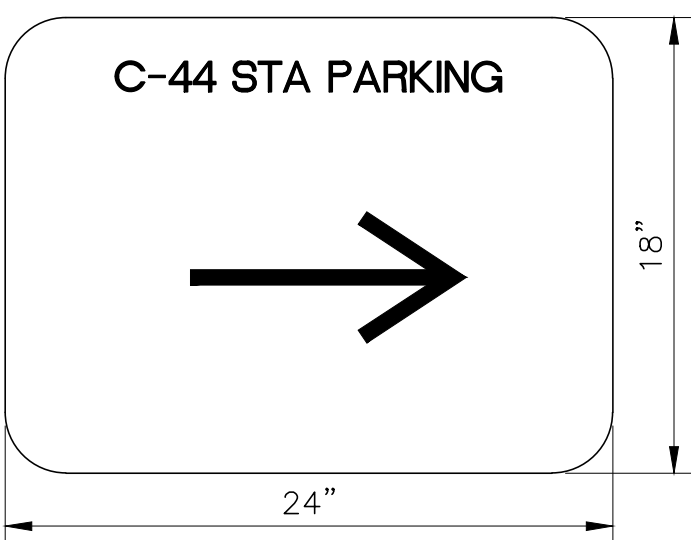
C7006 C7006

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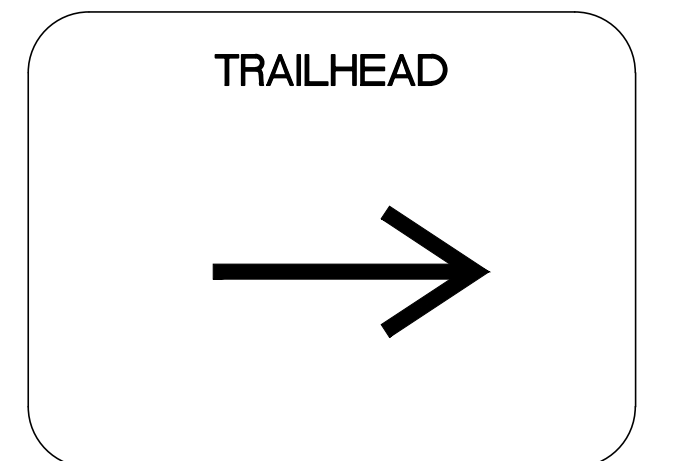
POINT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	989991.56	841038.65	33.40	PARKING AREA ENTRANCE ROAD
2	990009.54	841053.98	32.40	PARKING AREA ENTRANCE ROAD
3	990021.84	841053.87	31.40	PARKING AREA ENTRANCE ROAD
4	990021.46	840986.20	32.80	SW PARKING AREA CORNER
5	990301.48	840973.11	33.20	NW PARKING AREA CORNER
6	990301.15	841103.24	30.60	NE PARKING AREA CORNER
7	990180.33	841103.24	30.60	NW SHELTER AREA
8	990180.17	841122.80	30.20	NE SHELTER AREA
9	990086.36	841122.37	30.20	SE SHELTER AREA
10	990086.32	841108.24	30.60	SW SHELTER AREA
11	990029.23	841108.24	30.60	TRAIL
12	989997.66	841163.39	32.90	TRAIL

POINT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
13	989990.49	841170.54	33.00	TRAIL
14	990021.93	841103.24	30.50	TRAIL
15	990021.89	841093.02	30.80	PARKING AREA ENTRANCE ROAD
16	990009.54	841093.02	32.40	PARKING AREA ENTRANCE ROAD
17	989990.41	841107.39	31.40	PARKING AREA ENTRANCE ROAD
18	990176.26	841102.24	30.77	NW SHELTER CORNER
19	990176.26	841116.57	30.57	NE SHELTER CORNER
20	990150.26	841116.57	30.57	SE SHELTER CORNER
21	990114.33	841116.57	31.00	ACCESS RAMP
22	990109.33	841116.57	31.00	NE RESTROOM CORNER
23	990097.42	841116.57	31.30	SE RESTROOM CORNER
24	990097.42	841102.24	31.30	SW RESTROOM CORNER

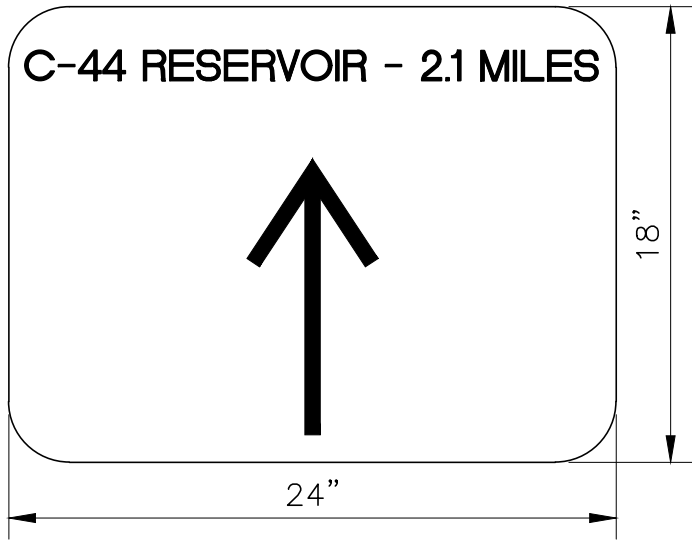
POINT TABLE				
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25	990109.33	841102.24	31.00	NW RESTROOM CORNER
26	990114.33	841102.24	31.00	ACCESS RAMP
27	990119.36	841102.24	30.57	SE ADA CONCRETE CORNER
28	990119.26	841078.24	31.10	SW ADA CONCRETE CORNER (FLUSH W/ SHELLROCK)
29	990150.26	841102.24	30.77	NW ADA CONCRETE CORNER
30	990150.26	841078.24	31.10	NE ADA CONCRETE CORNER (FLUSH W/ SHELLROCK)



STA PARKING SIGN DETAIL



TRAILHEAD SIGN DETAIL



RESERVOIR SIGN DETAIL

- SIGN NOTES:**
- SIGNS SHALL BE BROWN WITH WHITE LETTERING AND ARROWS.
 - FASTEN SIGN AND EMBED POST PER FDOT INDEX 700-010-1 (SEE SIGN POST DETAIL ON DRAWING NO. C7009).
 - EXACT LOCATION SHALL BE DISTRICT APPROVED.
 - 1/4" DIA ANCHORING HOLES AT TOP AND BOTTOM CENTERED ON SIGN.
 - SIGNS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SPECIFICATION SECTION 01580.

KEY MAP

ENGINEER OF RECORD: ZANE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274



HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

DATE:

CORRECTED FINAL / RTA

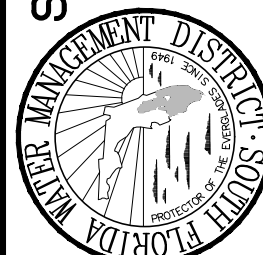
**C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES**

**CIVIL
STA VISITORS' ENTRANCE
LAYOUT**

PROJECT ID NO.
100548
DRAWING NUMBER
C7006

SHEET
10 OF 24

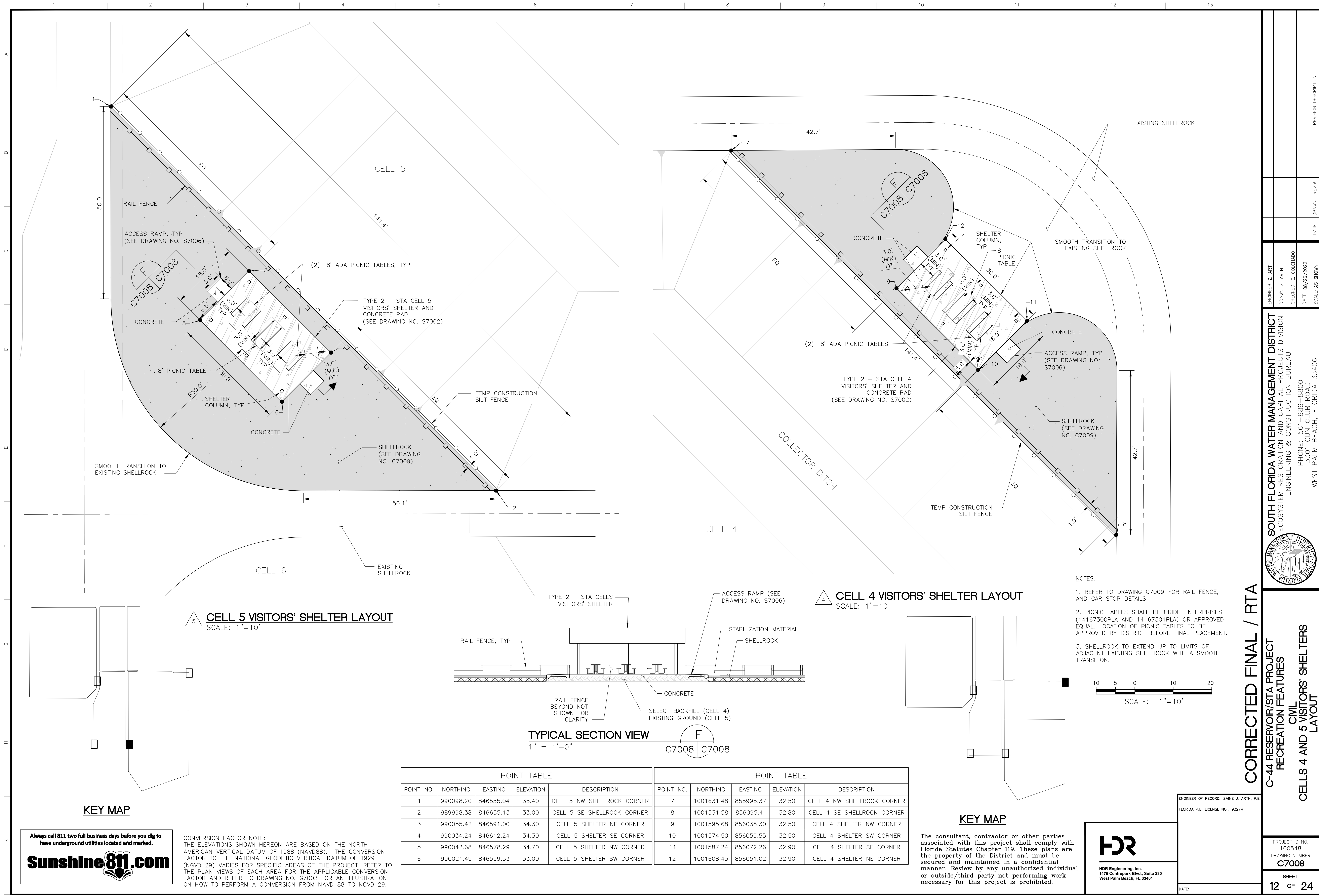
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU



PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLCHADO
DATE: 08/26/2022
SCALE: AS SHOWN

REVISION DESCRIPTION

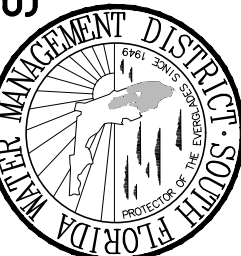


ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLCHADO
DATE: 08/26/2022
SCALE: AS SHOWN

DATE: _____
DRAWN: _____
REV: # _____

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

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3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

**C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES
CIVIL
CELLS 4 AND 5 VISITORS' SHELTERS
LAYOUT**

PROJECT ID NO.
100548
DRAWING NUMBER
C7008
SHEET
12 OF 24

ENGINEER OF RECORD: ZANE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274

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POINT TABLE					POINT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	990098.20	846555.04	35.40	CELL 5 NW SHELLROCK CORNER	7	1001631.48	855995.37	32.50	CELL 4 NW SHELLROCK CORNER
2	989998.38	846655.13	33.00	CELL 5 SE SHELLROCK CORNER	8	1001531.58	856095.41	32.80	CELL 4 SE SHELLROCK CORNER
3	990055.42	846591.00	34.30	CELL 5 SHELTER NE CORNER	9	1001595.68	856038.30	32.50	CELL 4 SHELTER NW CORNER
4	990034.24	846612.24	34.30	CELL 5 SHELTER SE CORNER	10	1001574.50	856059.55	32.50	CELL 4 SHELTER SW CORNER
5	990042.68	846578.29	34.70	CELL 5 SHELTER NW CORNER	11	1001587.24	856072.26	32.90	CELL 4 SHELTER SE CORNER
6	990021.49	846599.53	33.00	CELL 5 SHELTER SW CORNER	12	1001608.43	856051.02	32.90	CELL 4 SHELTER NE CORNER

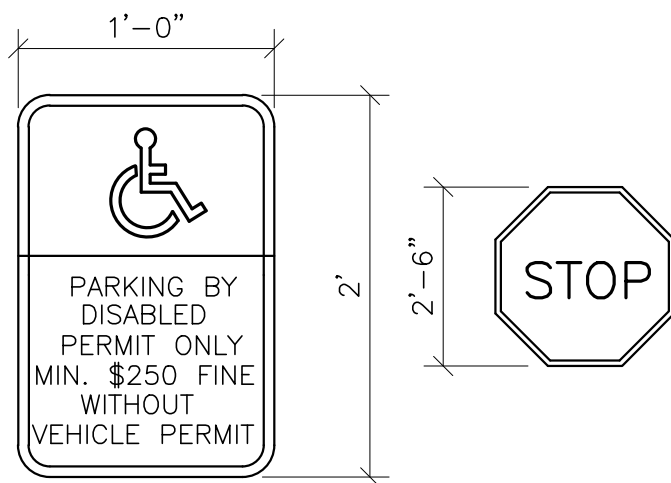
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HDR

HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

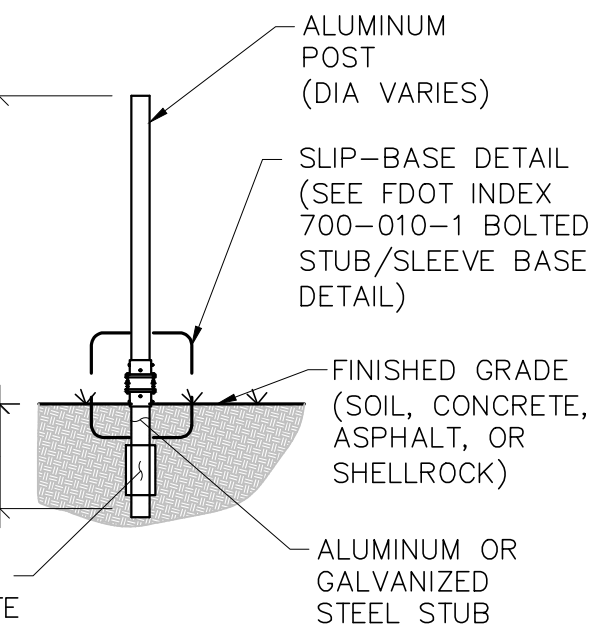
ENGINEER OF RECORD: ZANE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274

DATE: _____



FTP - 26
HANDICAP SIGN

R1-1
STOP SIGN



SIGN POST DETAIL

GENERAL SPECIFICATIONS

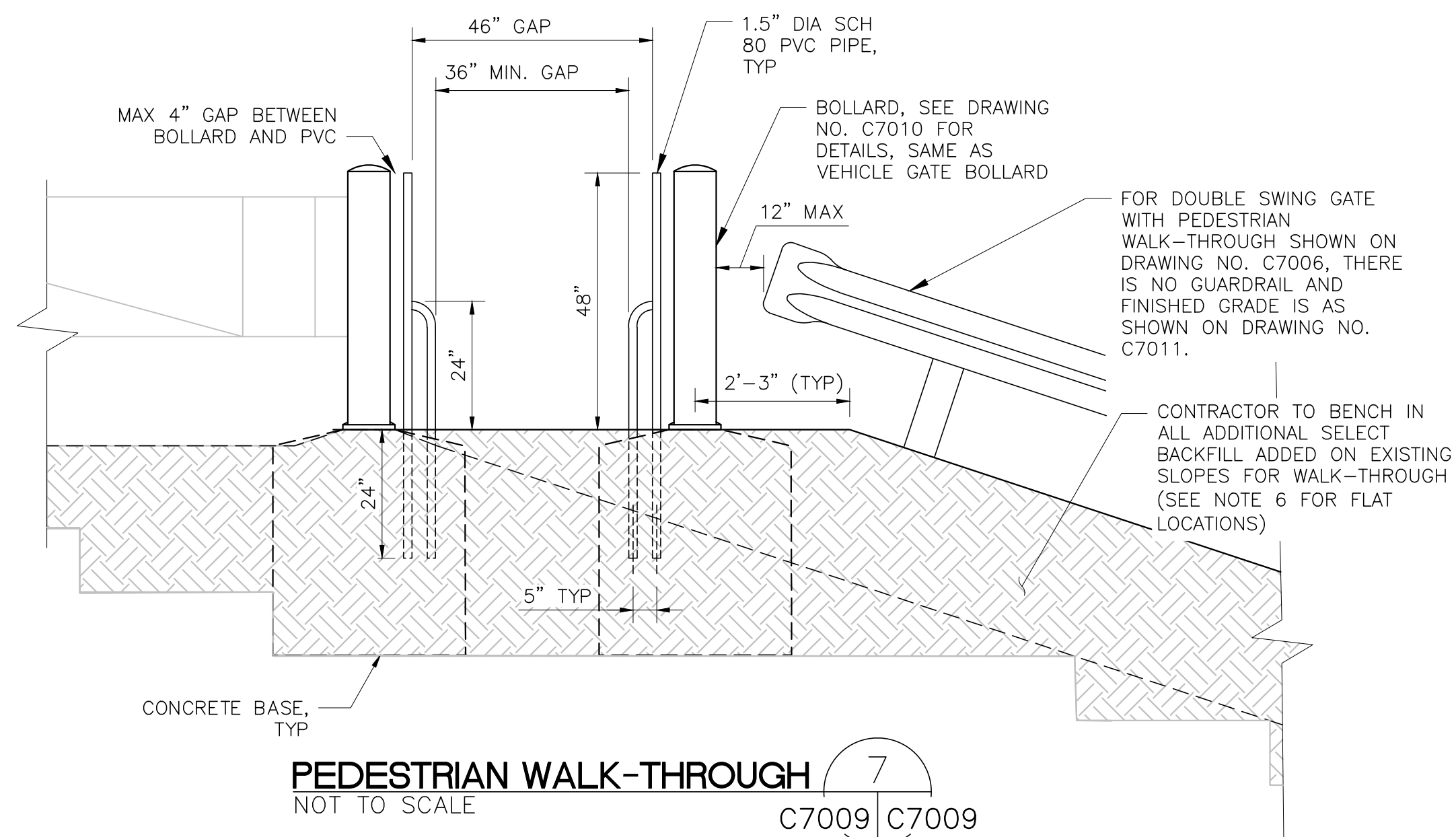
POST: PER FDOT INDEX 700-010-1
FINISH PER A.S.T.M. - A123 WITHOUT ANCHOR PLATES.
BASE: 3000 P.S.I. CONCRETE.
STOP SIGN: R1-1 MUTCD - 30" x 30" (HIGH INTENSITY).
HANDICAP SIGN: D.O.T. INDEX NO. 17355, FTP-26.

GENERAL NOTES:

- STOP SIGNS TO BE PLACED AT THE FOLLOWING LOCATIONS:
 - STA VISITORS' ENTRANCE PARKING AREA INTERSECTION VISIBLE WHEN LEAVING THE SITE.
 - RESERVOIR VISITORS' ENTRANCE RAMPS TO CREST, JUST BEFORE TURNING ONTO THE CREST ON EACH RAMP.
 - RESERVOIR VISITORS' ENTRANCE PARKING AREA INTERSECTION VISIBLE WHEN LEAVING THE SITE.
 - PUMP STATION/COMMUNICATION TOWER ACCESS ROAD INTERSECTION.
 - PROJECT ACCESS ROAD AT CITRUS BLVD VISIBLE WHEN LEAVING THE SITE.
 - STOP SIGN 1A PART OF KEY NOTE 1. STOP SIGNS 1B THROUGH 1E PART OF KEY NOTE 3.
- ALL OTHER SIGNS PER SPECIFICATION SECTION 01580 SHALL BE MOUNTED ON SINGULAR ALUMINUM COLUMN POSTS PER FDOT INDEX 700-010-1 AND SHALL CONFORM TO STANDARD MUTCD SIGN PANELS FOR REGULATORY, WARNING AND GUIDE SIGNS.
- ONE HANDICAP SIGN REQUIRED FOR EACH HANDICAP PARKING SPACE
- HEIGHT OF SIGNS SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL ON UNIFORMED TRAFFIC CONTROL DEVICES (MUTCD)

SIGN DETAILS

NTS



PEDESTRIAN WALK-THROUGH NOTES:

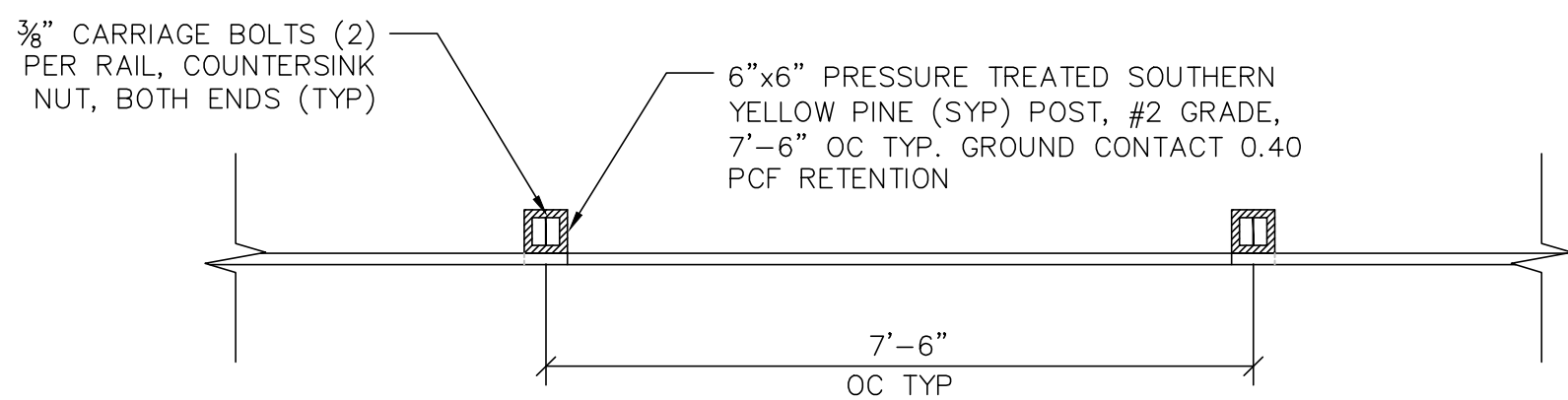
- 36" MINIMUM CLEARANCE AT BOTTOM OF WALK-THROUGH.
- PIPE DIA. TO BE MINIMUM 1.5" SCH 80 PVC PIPE.
- ALL EDGES AND CORNERS TO BE SMOOTH.

- TOP OF PIPES TO BE CAPPED.

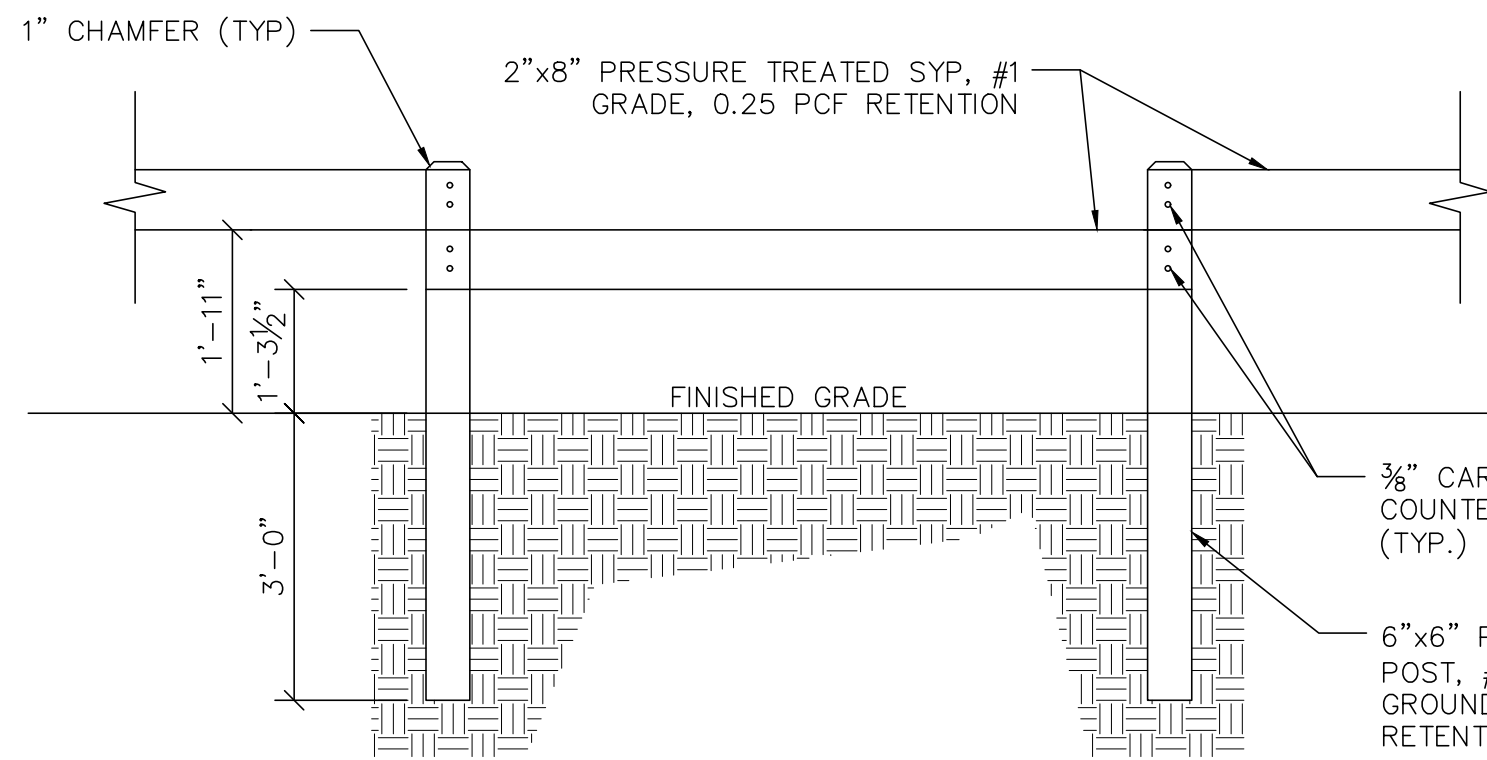
- PIPES TO BE EMBEDDED 24" BELOW GRADE IN SITEWORK CONCRETE FROM ADJACENT BOLLARD. REQUIRES NEW BOLLARD. SEE DRAWING NO. C7010 FOR VEHICLE BARRIER BOLLARD DETAIL.

- CONTRACTOR SHALL ADD SELECT BACKFILL IN ACCORDANCE WITH SPECIFICATION SECTION 02220 AS NEEDED TO MEET REQUIRED GRADE.

- IN AREAS WHERE PEDESTRIAN WALK-THROUGH TO BE INSTALLED ON EXISTING VEHICLE GATES, BOLLARDS AND CONCRETE BASE NEAREST TO WALK-THROUGH ARE TO BE REPLACED WITH PVC AND BOLLARD EMBEDDED IN CONCRETE.



PLAN

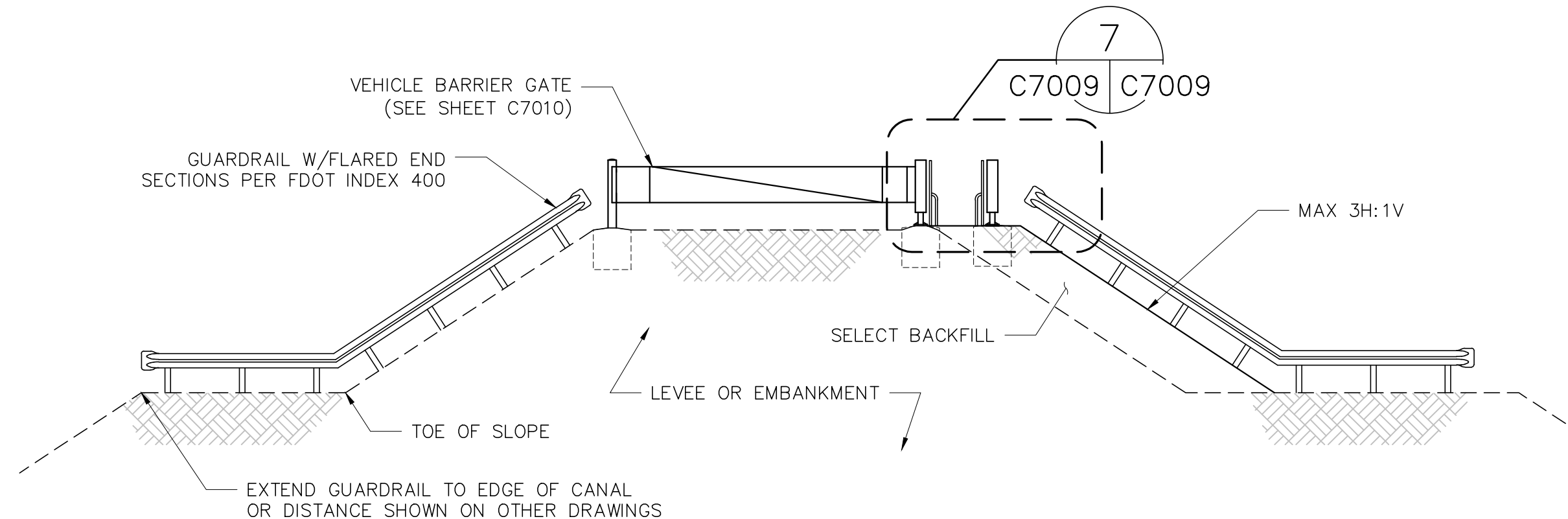


POST AND RAIL FENCE DETAIL

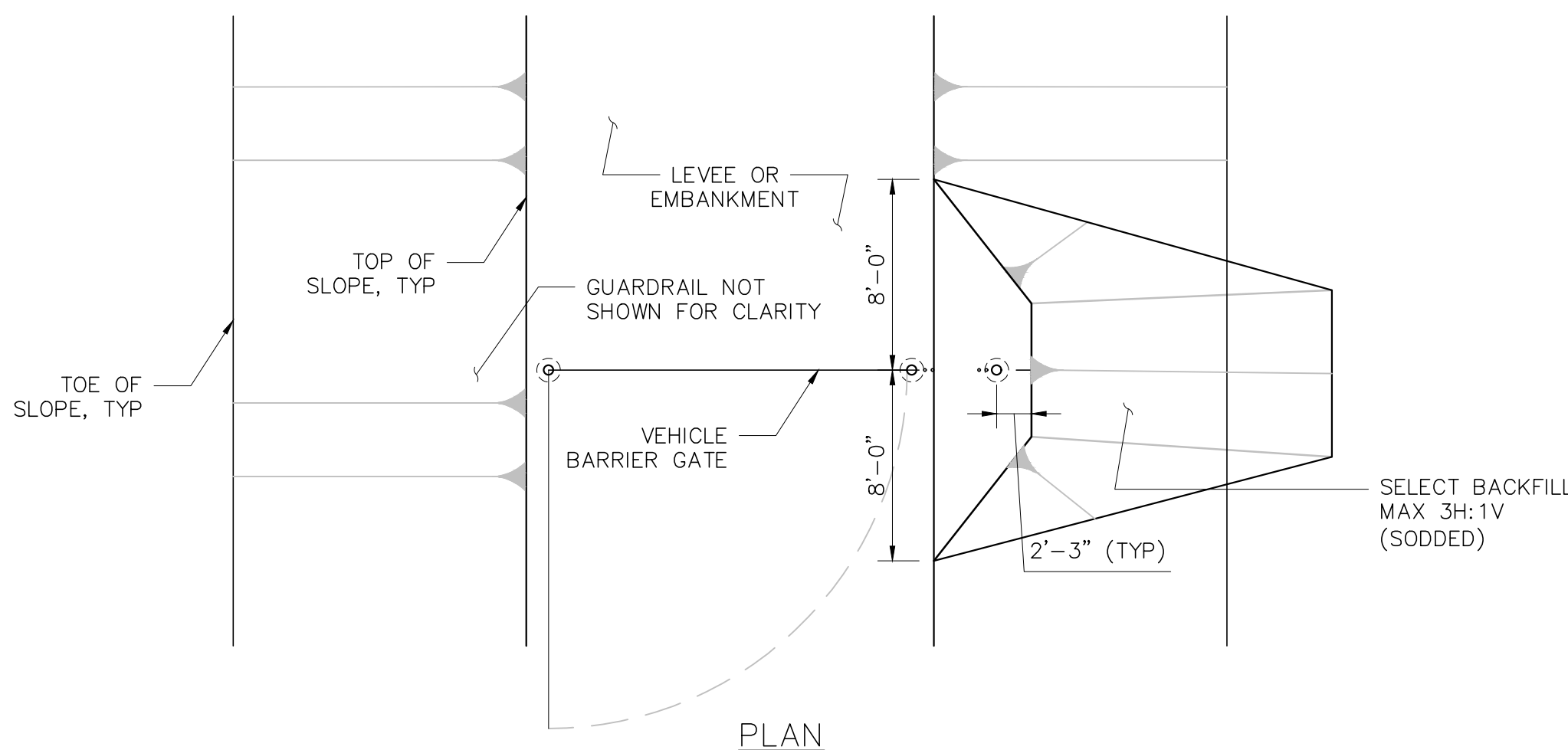
SCALE: 1/2" = 1'-0"

RAIL FENCING NOTES:

- CARRIAGE BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL.
- RAIL FENCE POSTS SHALL BE LOCATED AT EVERY CORNER, INCLUDING WHERE A PERPENDICULAR FENCE JOINS, AND AT FENCE GAPS AND ENDS.



ELEVATION



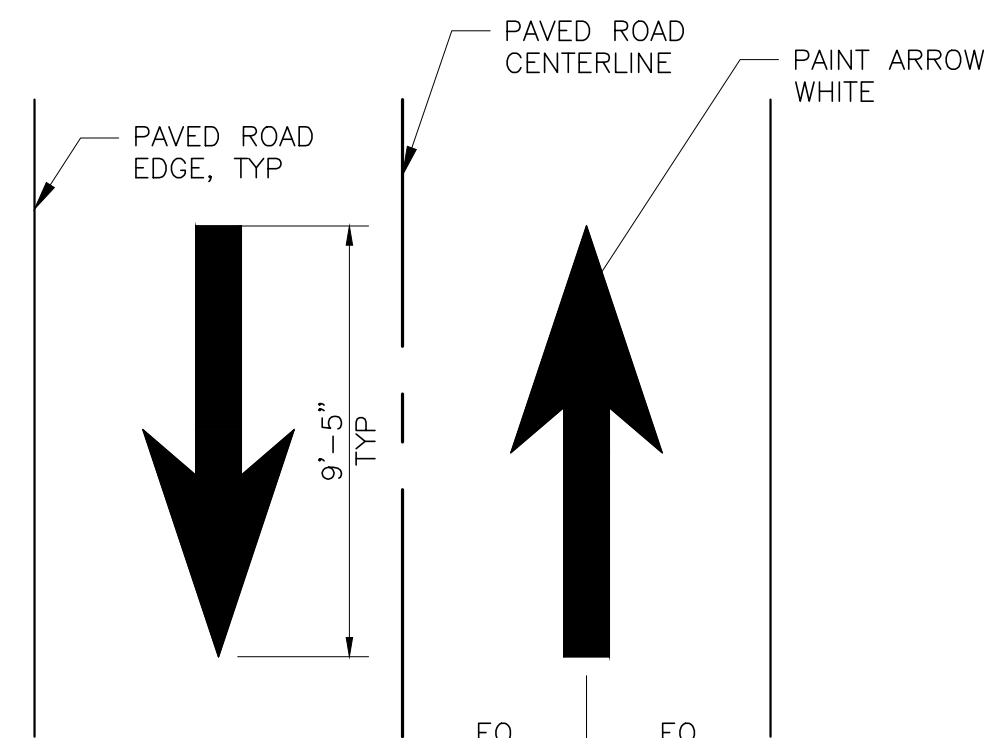
PLAN

WALK-THROUGH AT VEHICLE BARRIER GATE

ONE SPAN GATE
NOT TO SCALE

CONVERSION FACTOR NOTE:

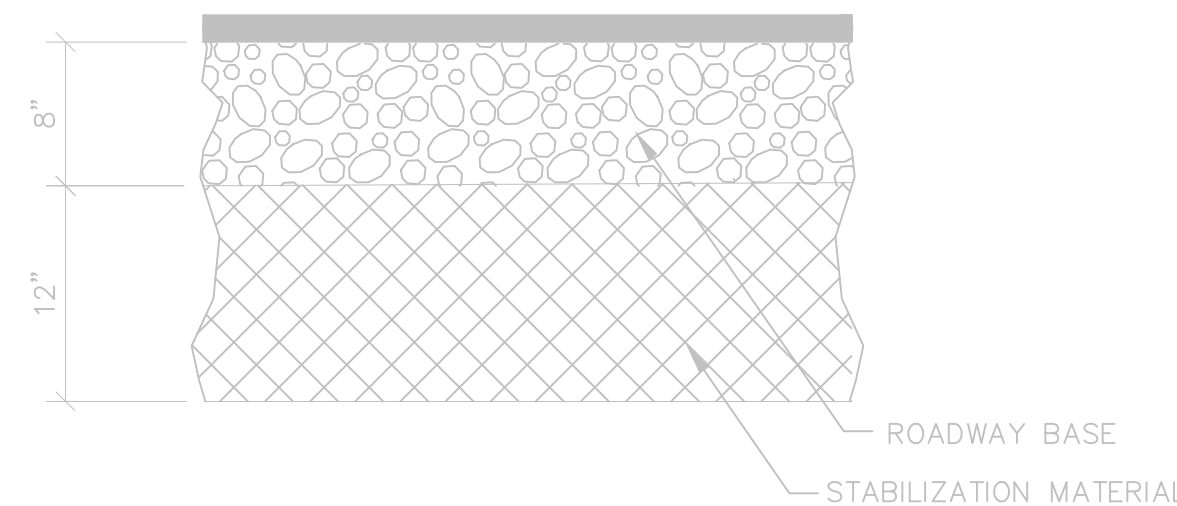
THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) VARIES FOR SPECIFIC AREAS OF THE PROJECT. REFER TO THE PLAN VIEWS OF EACH AREA FOR THE APPLICABLE CONVERSION FACTOR AND REFER TO DRAWING NO. G7003 FOR AN ILLUSTRATION ON HOW TO PERFORM A CONVERSION FROM NAVD 88 TO NGVD 29.



ARROW MARKING DETAIL

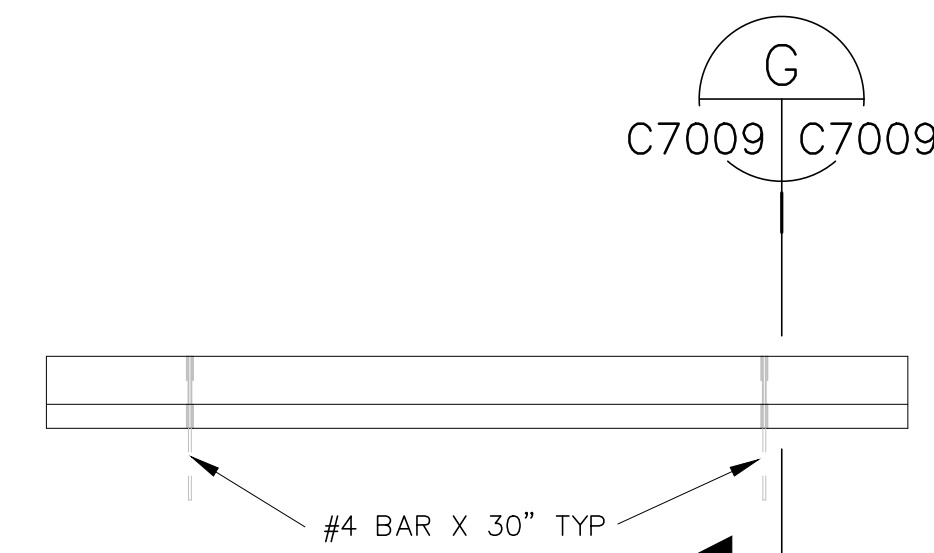
NOT TO SCALE

ARROW MARKING NOTE: FOR ARROW MARKING LOCATIONS WHERE ROAD EDGE OR CENTERLINES DO NOT FOLLOW DIRECTION OF THROUGH TRAFFIC, CONTRACTOR SHALL GET DISTRICT APPROVAL ON EXACT LOCATION OF MARKING



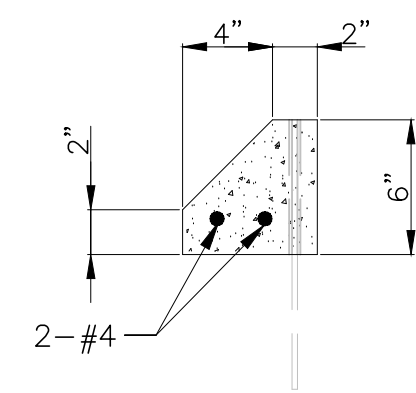
EXISTING ASPHALTIC CONCRETE PAVEMENT TYPICAL SECTION (FOR REFERENCE)

NOT TO SCALE



ELEVATION

NTS

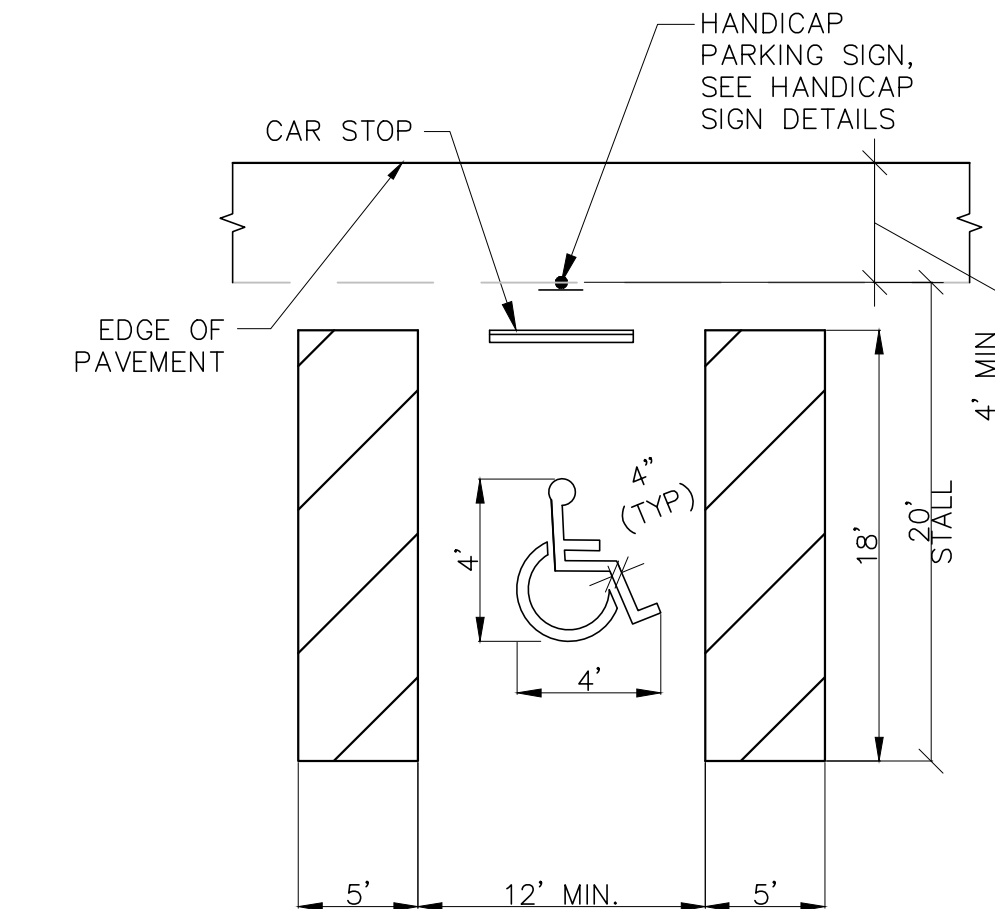


SECTION

NTS

CAR STOP DETAIL

NOT TO SCALE

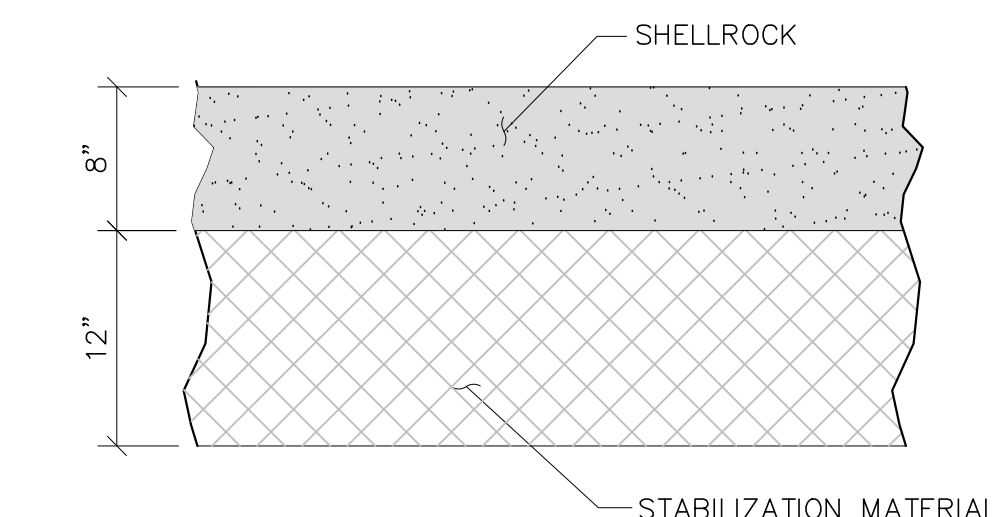


HANDICAP PARKING MARKING DETAILS

NTS

PAVEMENT MARKING NOTES:

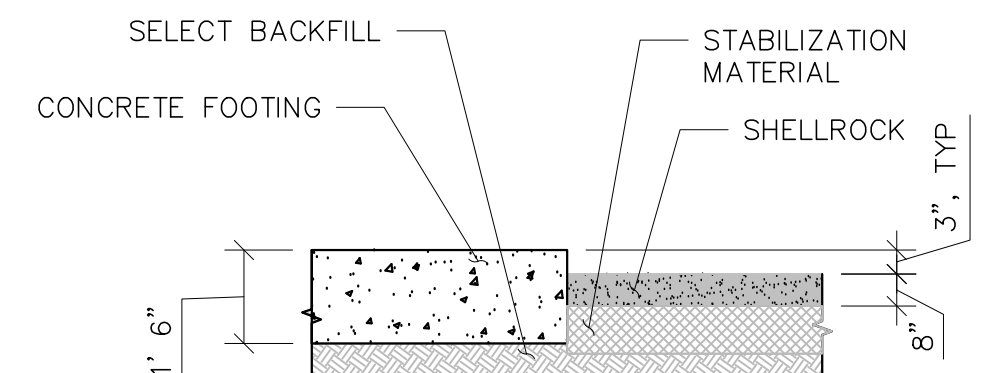
- ALL MARKINGS TO BE 4" WIDE.
- MARKING TO BE IN ACCORDANCE WITH SPECIFICATION 02577.
- PAVEMENT MARKINGS MEASURED FROM CENTERLINE OF STRIPES.



TYPICAL SHELLROCK SECTION

NOT TO SCALE

- REFER TO SPECIFICATION SECTIONS 02233 AND 02240.



CONCRETE AND SHELLROCK INTERFACE DETAIL

NOT TO SCALE

- THIS DETAIL ONLY APPLICABLE TO SHELTER TYPE 2 AT STA CELLS.

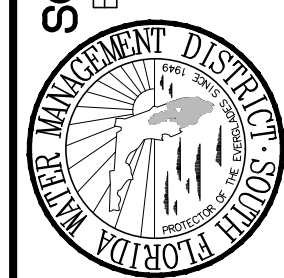
Always call 811 two full business days before you dig to have underground utilities located and marked.

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CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES

CIVIL
GENERAL CIVIL DETAILS



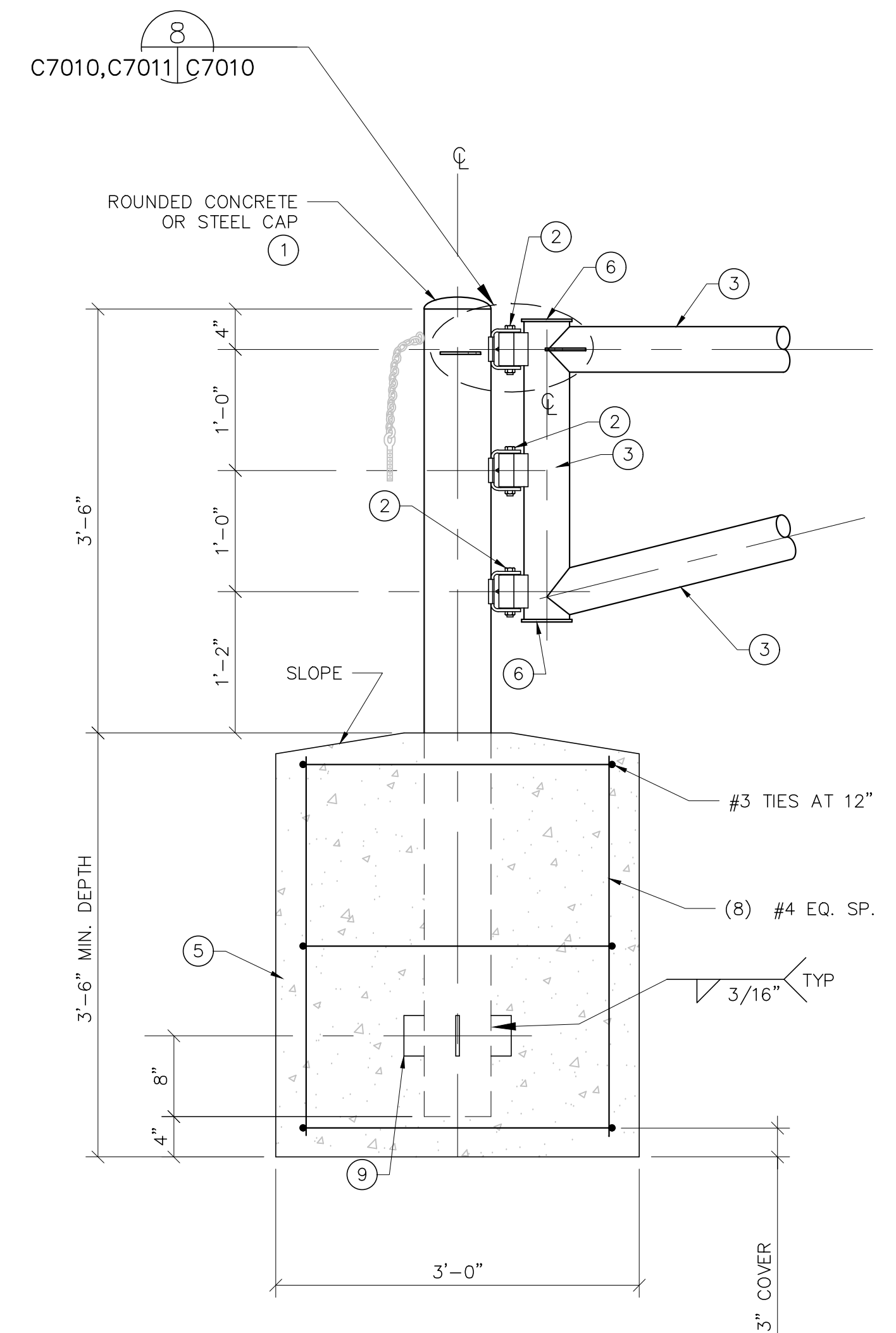
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLCHADO
DATE: 08/26/2022
SCALE: AS SHOWN

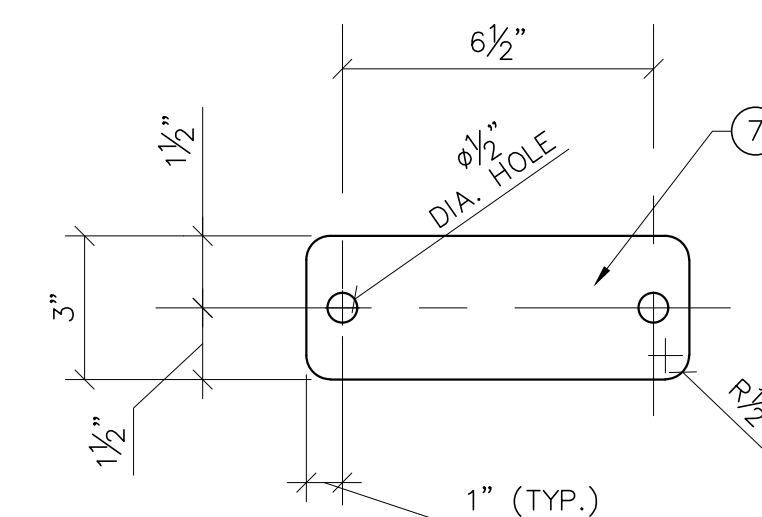
REVISION DESCRIPTION	DATE	DRAWN	REV.#

ENGINEER OF RECORD: ZANE J. ARTH, P.E. FLORIDA P.E. LICENSE NO.: 93274	PROJECT ID NO. 100548 DRAWING NUMBER C7009 SHEET 13 OF 24
---	--

HDR
HDR Engineering, Inc.
1475 Centpark Blvd., Suite 230
West Palm Beach, FL 33401



DETAIL, TYP
SCALE: 3" = 1'-0" 

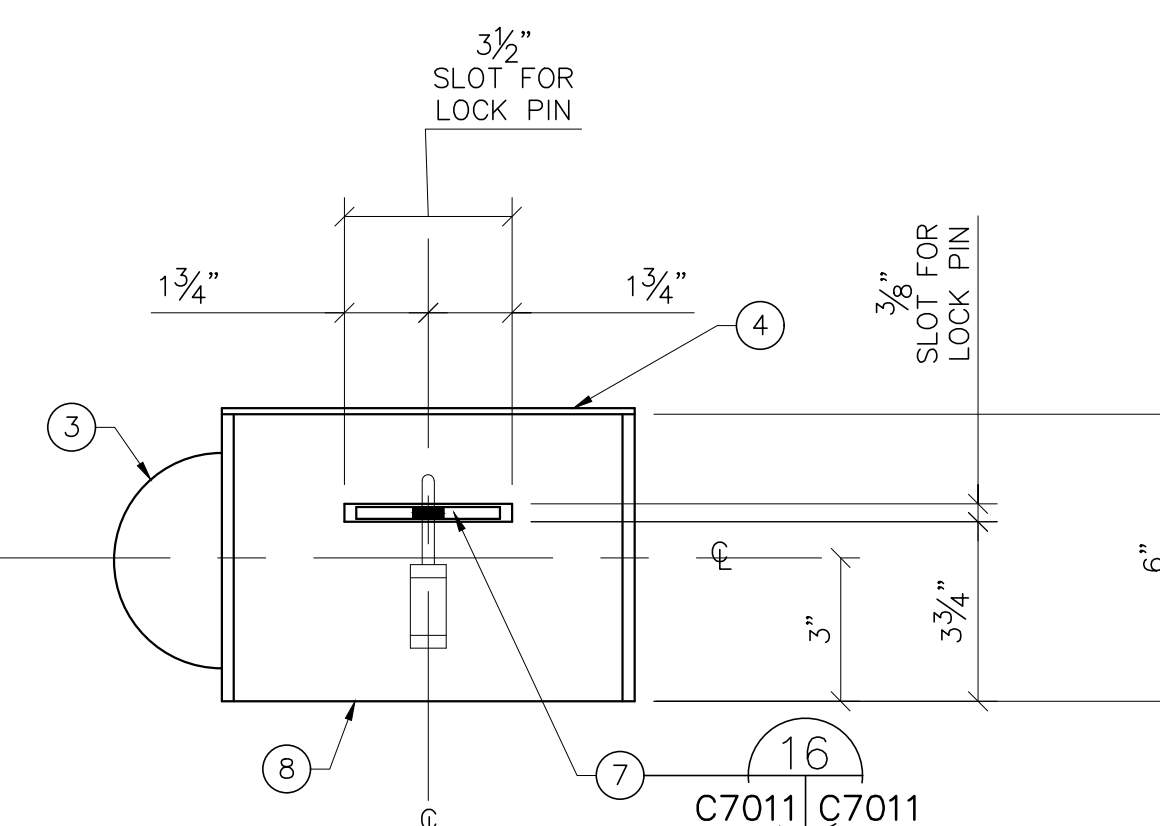


DETAIL

SCALE: 3" = 1'-0"

16

C7011 | C7011



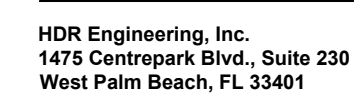
SECTION
SCALE: 3" = 1'-0"

C7011 C7011

- The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

CONVERSION FACTOR NOTE:
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SPECIFIC AREAS OF THE PROJECT. REFER TO THE PLAN VIEWS OF EACH
AREA FOR THE APPLICABLE CONVERSION FACTOR AND REFER TO DRAWING
NO. G7003 FOR AN ILLUSTRATION ON HOW TO PERFORM A CONVERSION
FROM NAVD 88 TO NGVD 29.

ENGINEER OF RECORD: ZAJNE J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274



DATE: _____

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT RECREATION FEATURES

CIVIL
VEHICLE BARRIER GATE DETAILS 2 OF 2

PROJECT ID NO.
100548
DRAWING NUMBER
C7011

SHEET
15 OF 24

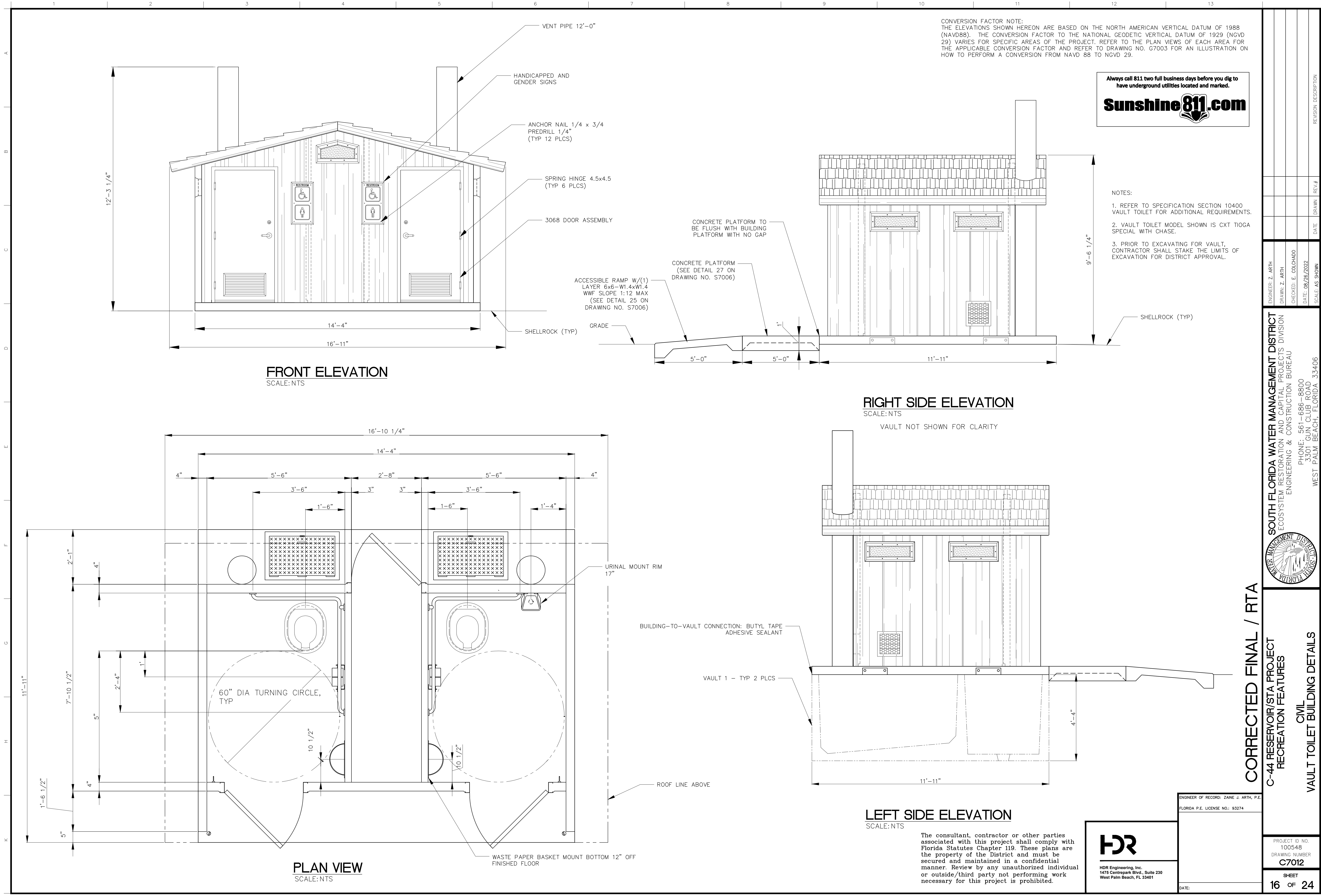
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

ENGINEER: Z. ARTH
DRAWN: Z. ARTH
CHECKED: E. COLICH
DATE: 08/26/2022
SCALE: AS SHOWN

PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

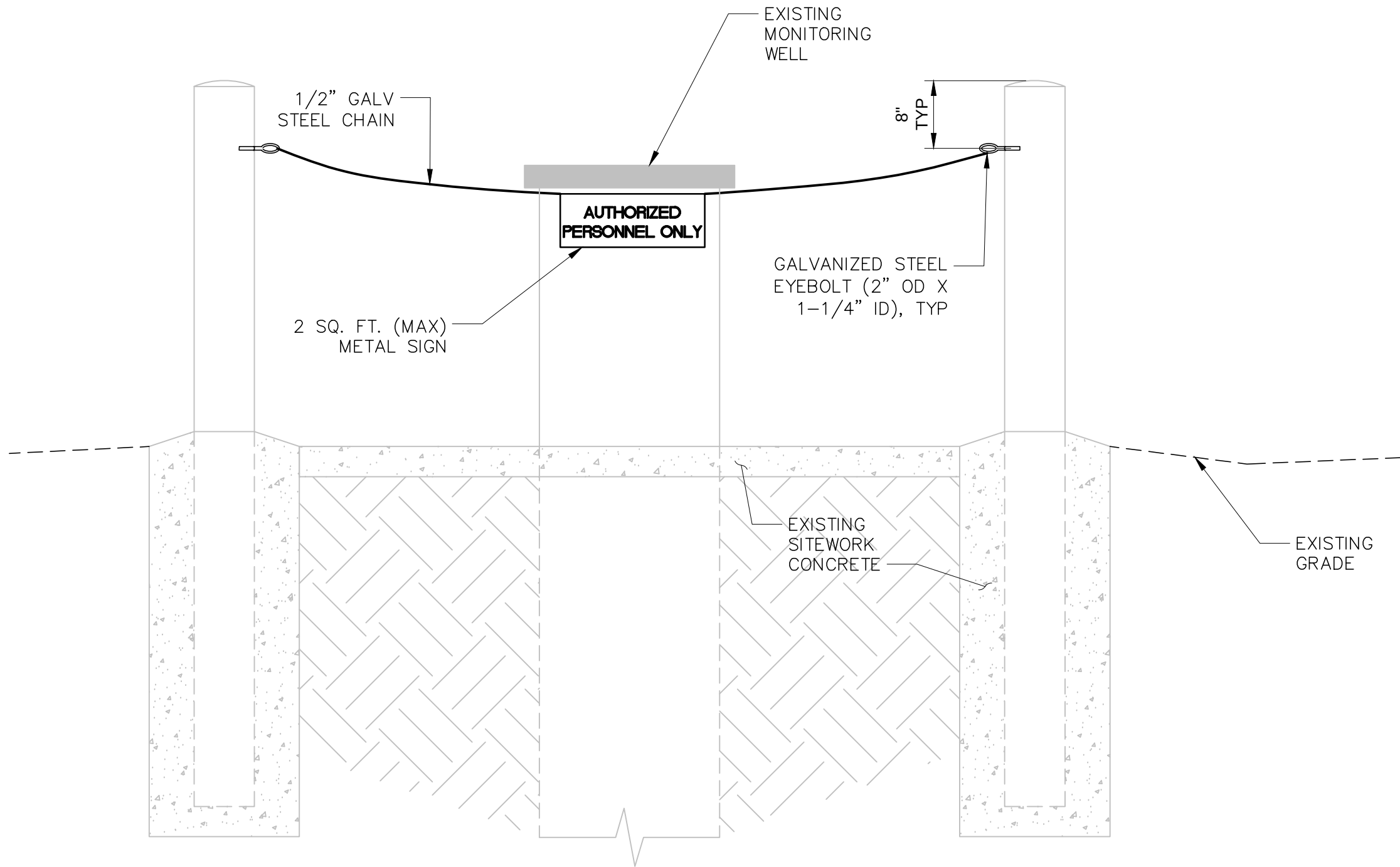
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION

PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33411

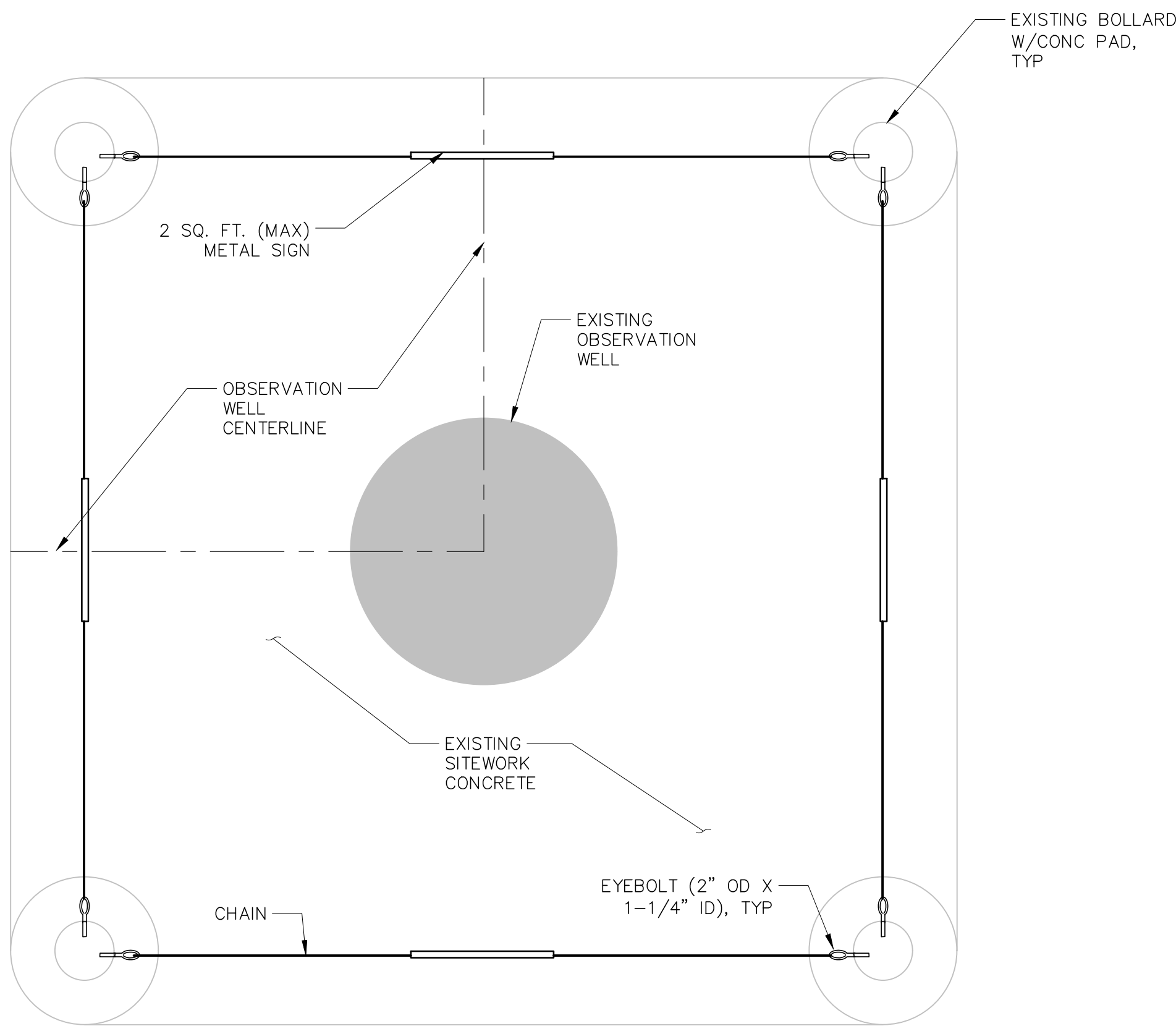


A
B
C
D
E
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H
K

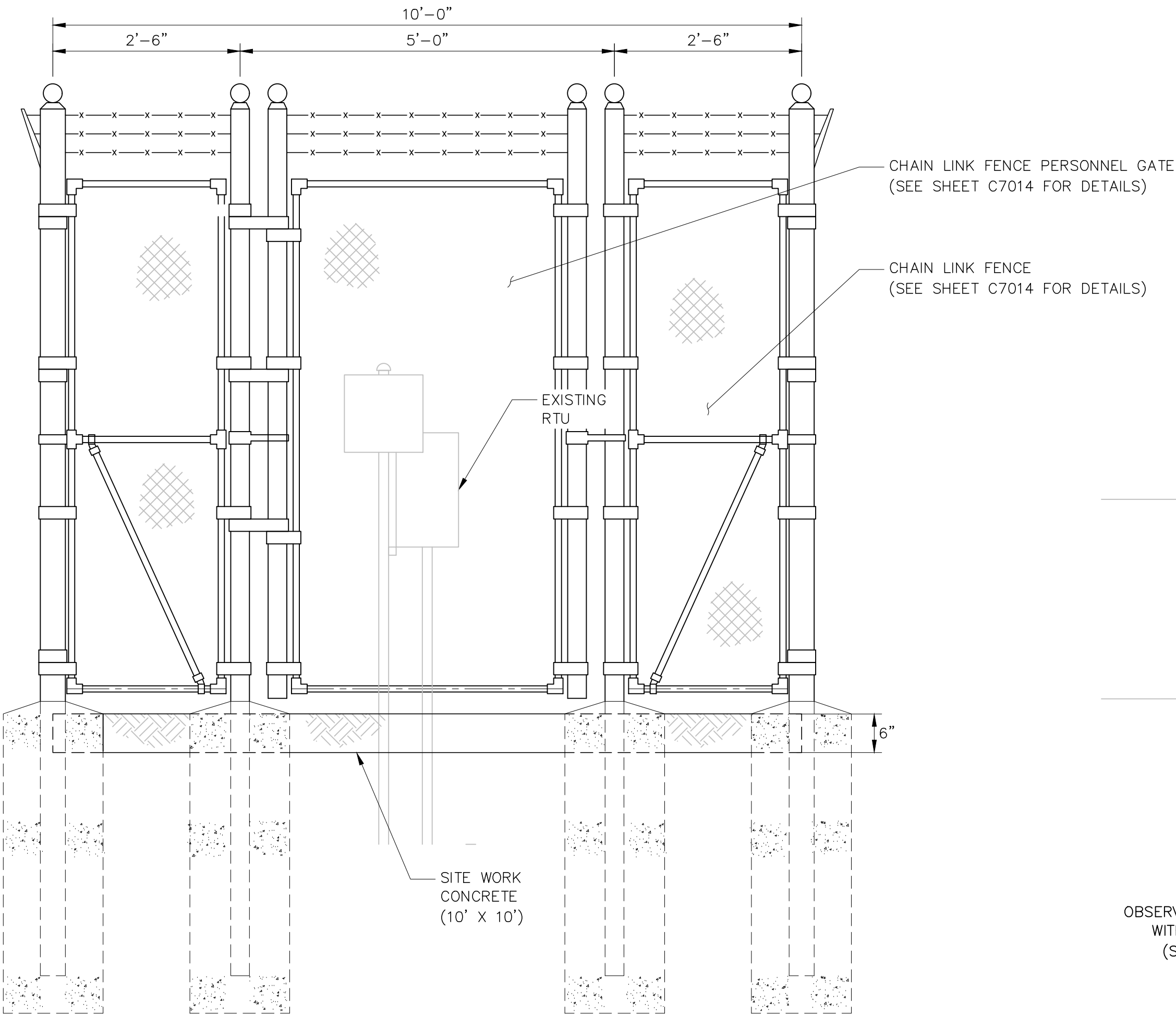
1 2 3 4 5 6 7 8 9 10 11 12 13



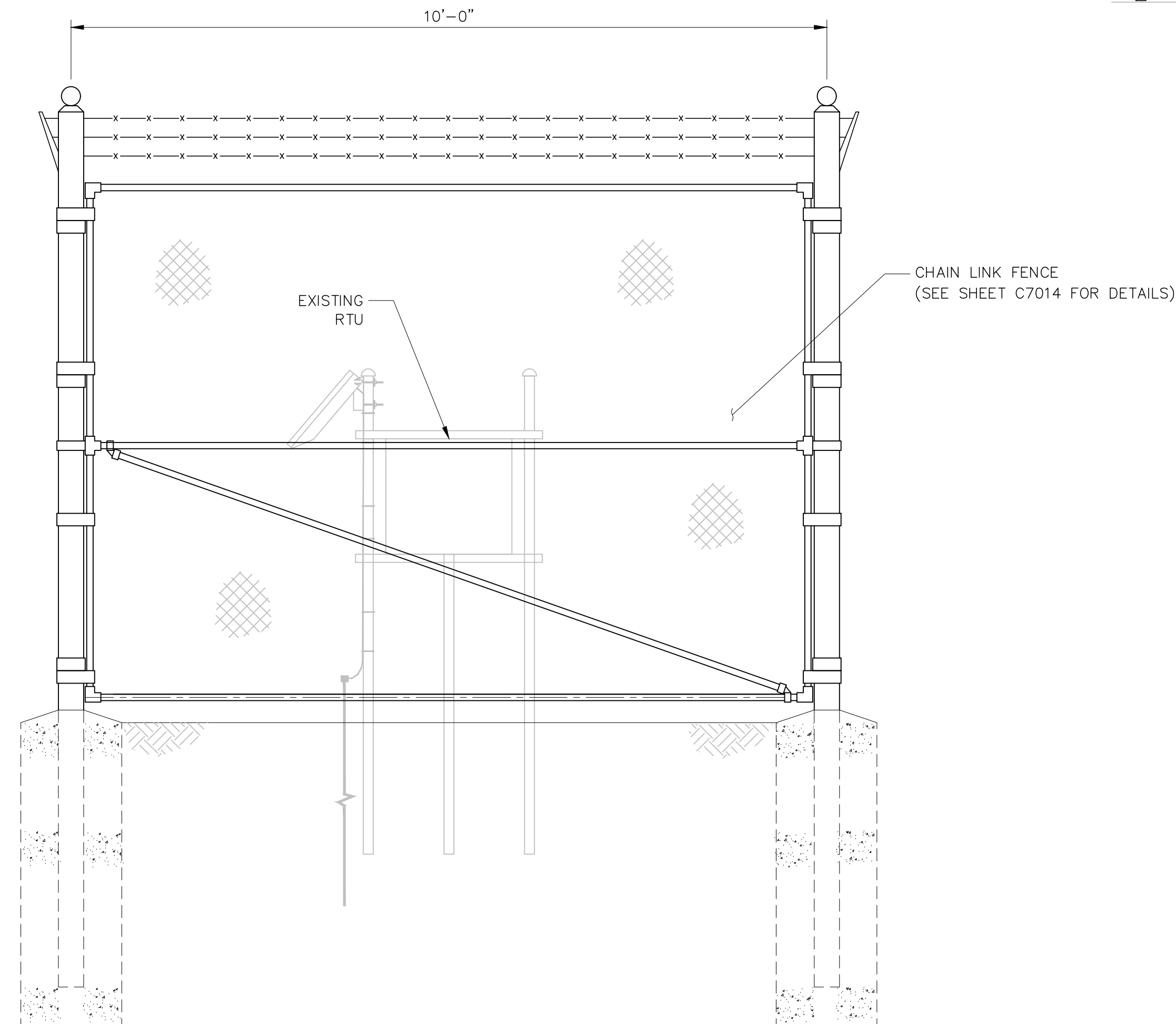
OBSERVATION WELL SIDE VIEW (TYP)
SCALE: NOT TO SCALE



OBSERVATION WELL PLAN VIEW
SCALE: NOT TO SCALE



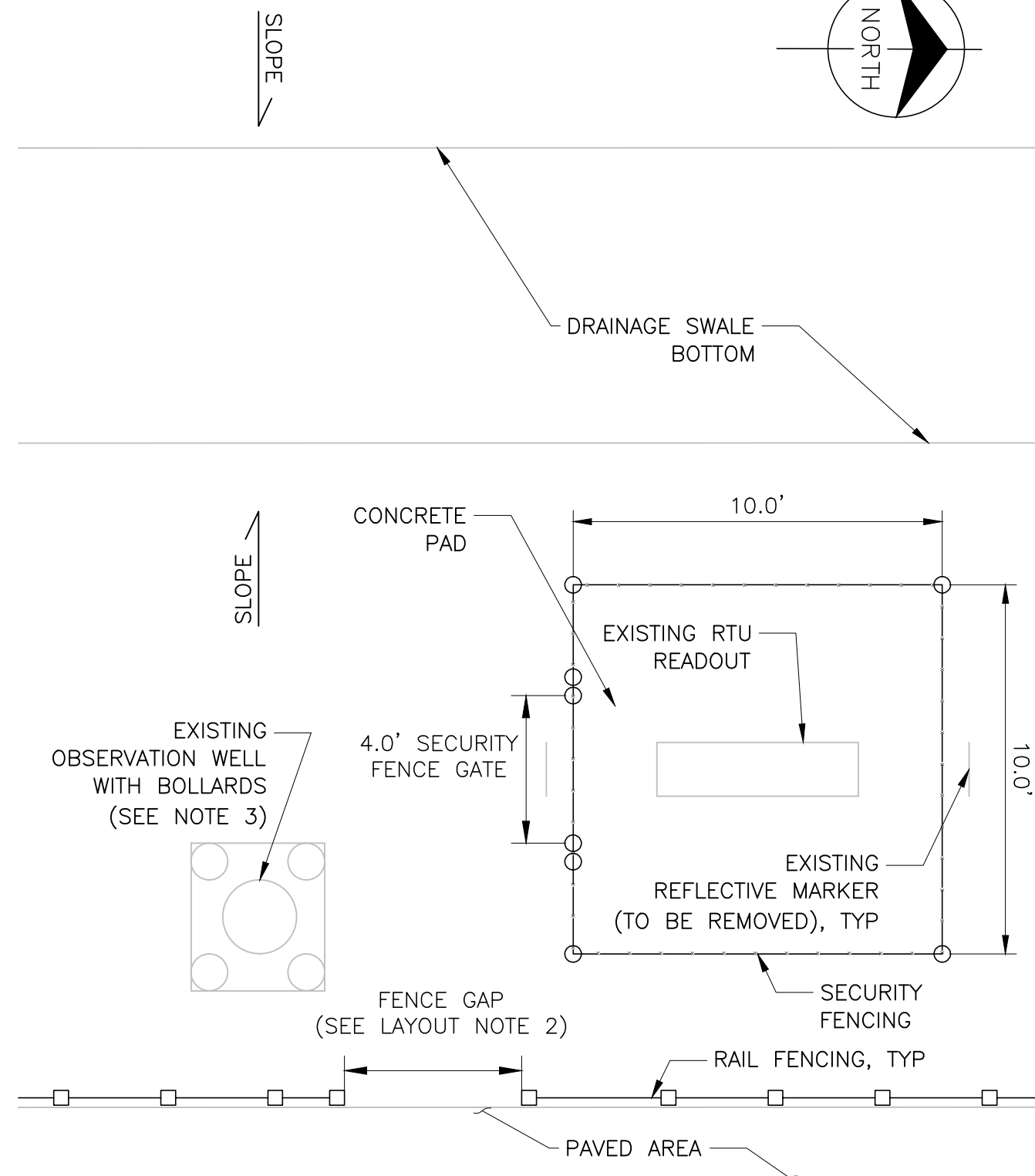
SECURITY FENCING AT RTU READOUT AT TOE SIDE VIEW (LOOKING NORTH)
SCALE: 3/4" = 1'-0"



SECURITY FENCING AT RTU READOUT AT TOE FRONT VIEW (LOOKING WEST)
SCALE: 3/4" = 1'-0"

NOTES:

1. TWO (2) EXISTING OBSERVATION WELLS AND BOLLARDS ADJACENT TO THE PAVED PARKING AREA TO REQUIRE SAME TYPE, MATERIAL, AND SIZE EYEBOLTS, CHAIN, AND POSTED SIGN AS SHOWN ON THIS SHEET.
2. REFER TO DRAWING C7002 FOR LOCATION OF FEATURES SHOWN ON THIS DRAWING.
3. TYPICAL SECURITY FENCING FOR ALL RTU SITES ON THE C-44 PROJECT.
4. SEE DRAWING NO. C7014 FOR ADDITIONAL SECURITY FENCING REQUIREMENTS.
5. CONTRACTOR TO COORDINATE WITH DISTRICT FOR AUTHORIZED PERSONNEL SIGN.
6. SIGN TO BE FASTENED TO CHAIN WITH TWO GALV STRAP BANDS. CHAIN TO BE CONNECTED TO EYEBOLT WITH 1/2 " GALV QUICK LINK.



RTU READOUT AT TOE LAYOUT
SCALE: NOT TO SCALE

NOTES:

1. EXISTING RTU READOUT TO BE CENTERED IN SECURITY FENCE.
2. FENCE GAP TO MATCH SPACING BETWEEN WELL BOLLARD AND RTU FENCE FOR ACCESS.
3. CHAIN AND POSTED SIGNAGE TO BE INSTALLED ON EXISTING OBSERVATION WELL BOLLARDS PER VIEW ON THIS SHEET.

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

ENGINEER OF RECORD: ZAIN J. ARTH, P.E.
FLORIDA P.E. LICENSE NO.: 93274

HDR

HDR Engineering, Inc.
1475 Centrapark Blvd., Suite 230
West Palm Beach, FL 33401

DATE:

CORRECTED FINAL / RTA

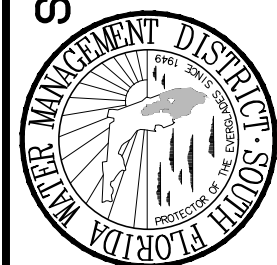
**C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES**

**CIVIL
EXISTING RTU AND OBSERVATION WELLS
SITE ADDITIONS**

PROJECT ID NO.
100548
DRAWING NUMBER
C7013

SHEET
17 OF 24

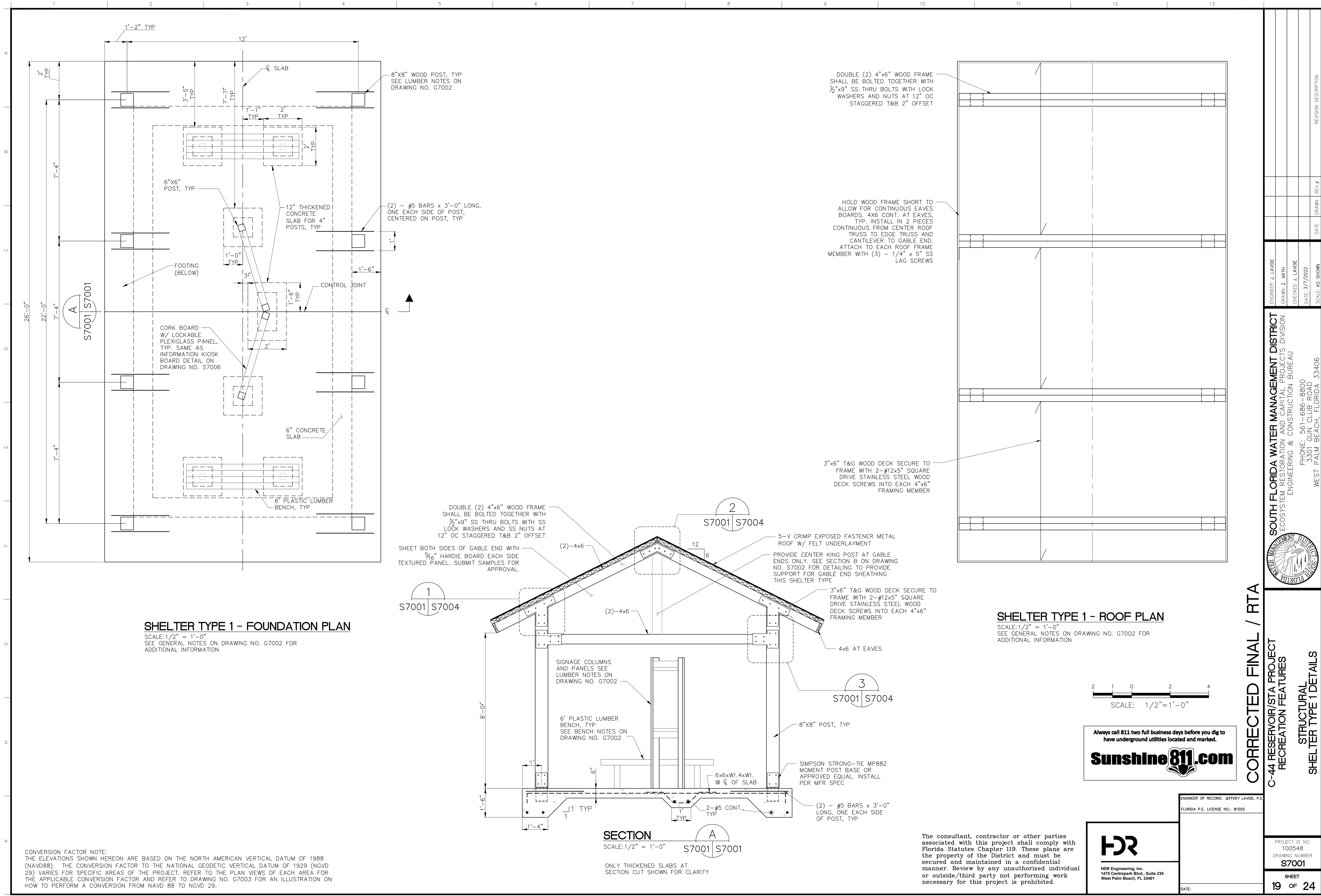
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

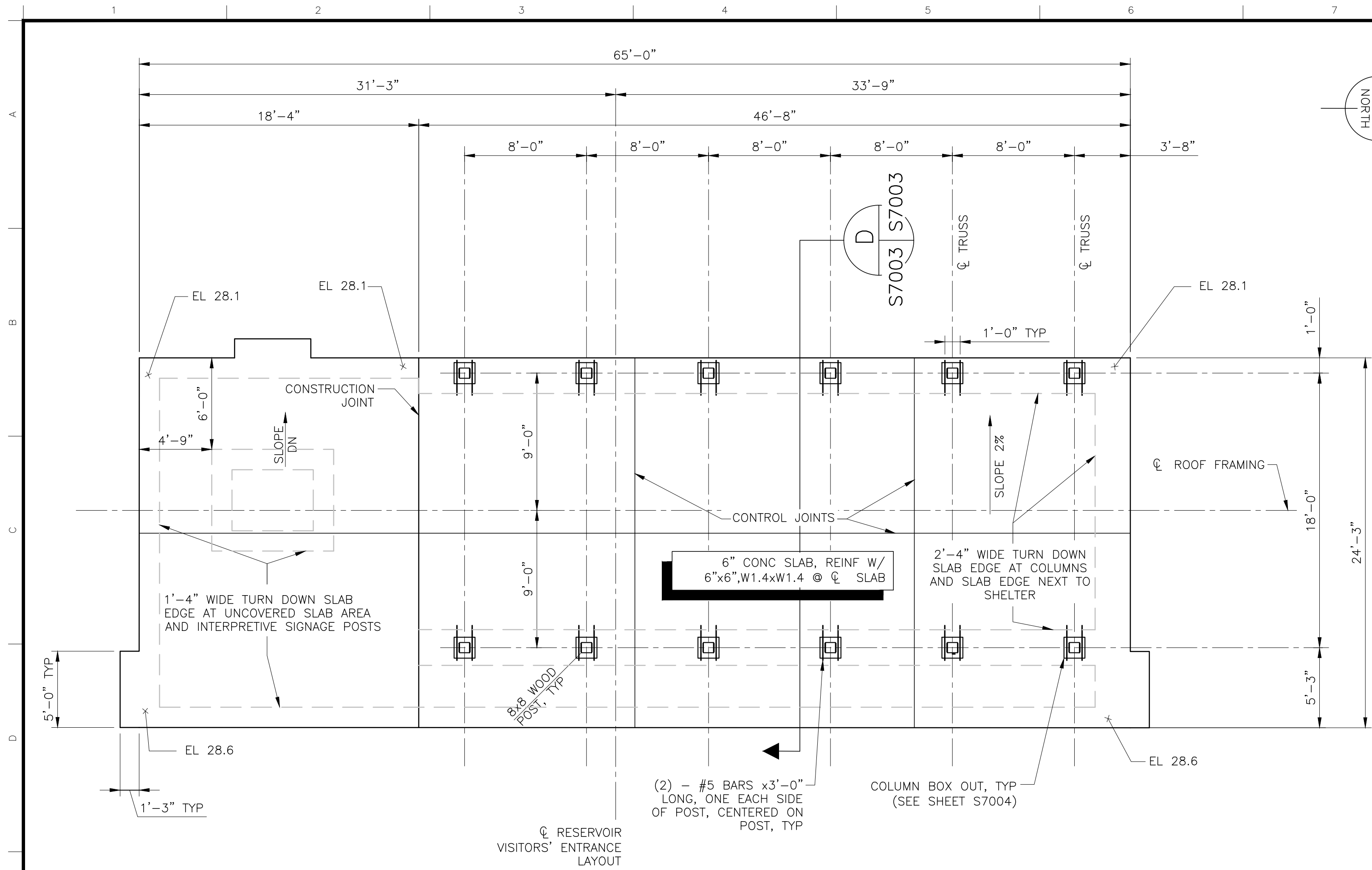


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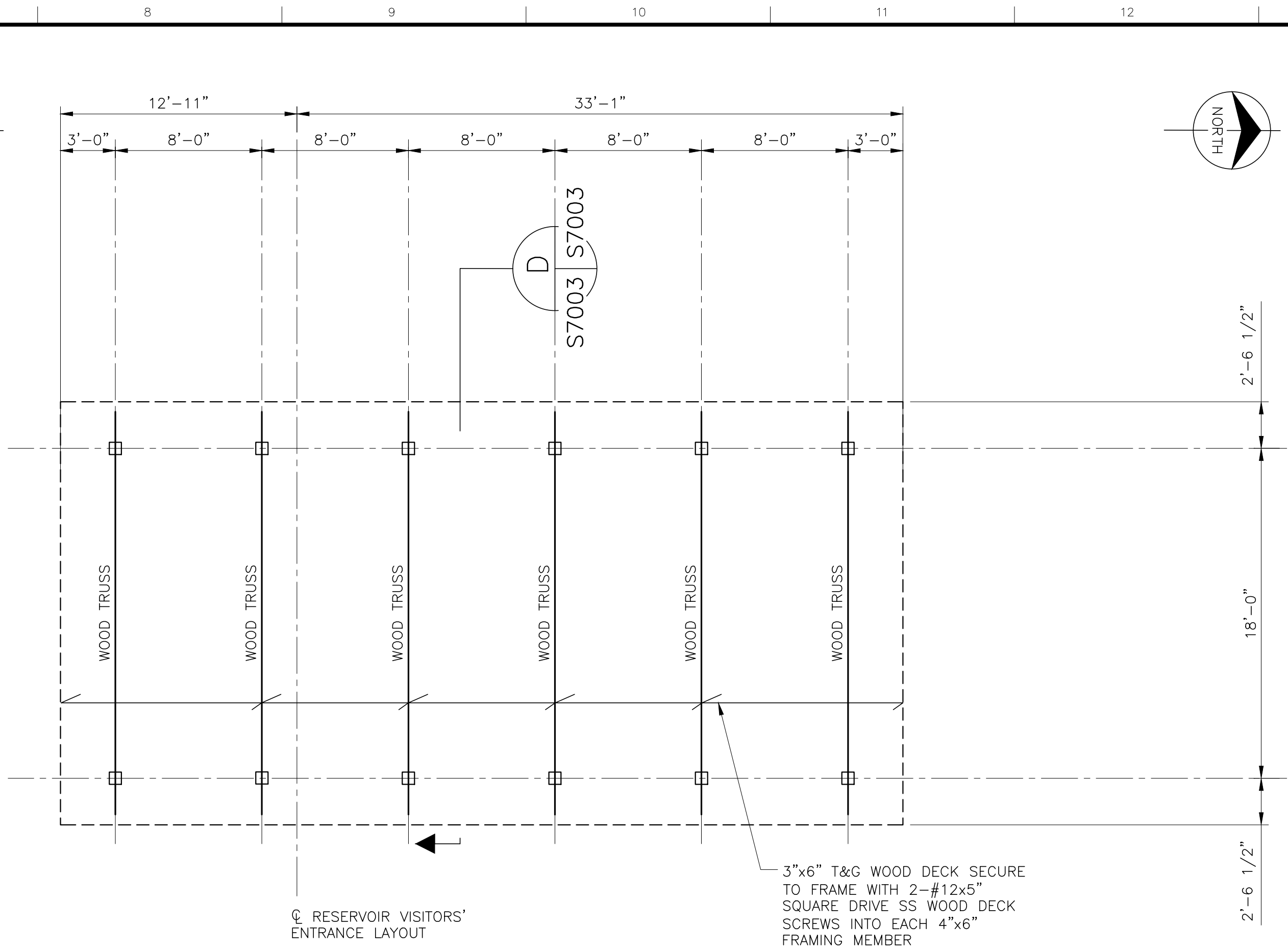
CONVERSION FACTOR NOTE:
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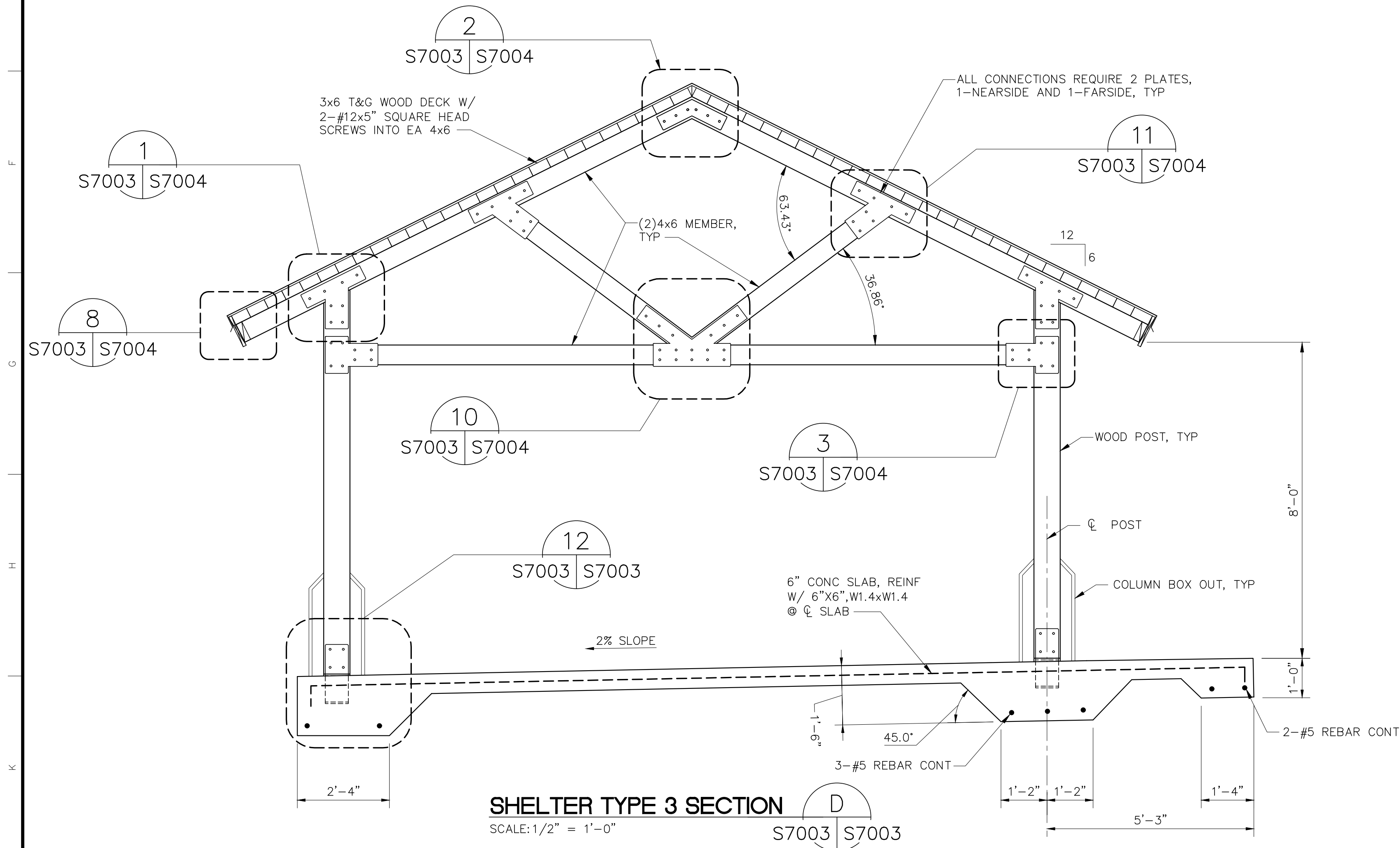
RESERVOIR VISITORS' ENTRANCE AT GRADE SHELTER TYPE 3 - FOUNDATION PLAN

SCALE: 3/16" = 1'-0"
SEE GENERAL NOTES ON DRAWING NO. G7002 FOR
ADDITIONAL INFORMATION



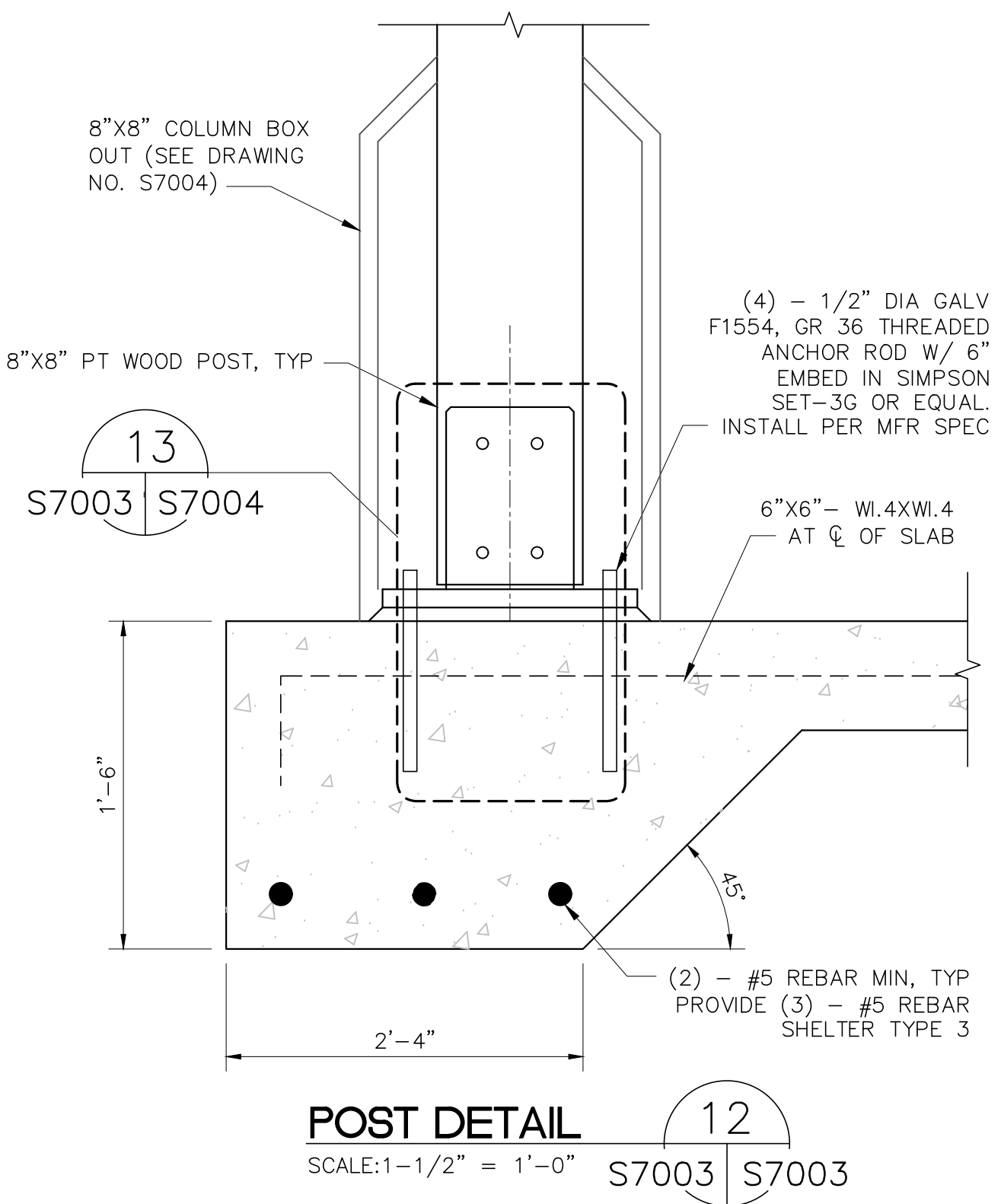
RESERVOIR VISITORS' ENTRANCE AT GRADR SHELTER TYPE 3 - ROOF FRAMING PLAN

SCALE: 3/16" = 1'-0"
SEE GENERAL NOTES ON DRAWING NO. G7002 FOR
ADDITIONAL INFORMATION



SHELTER TYPE 3 SECTION

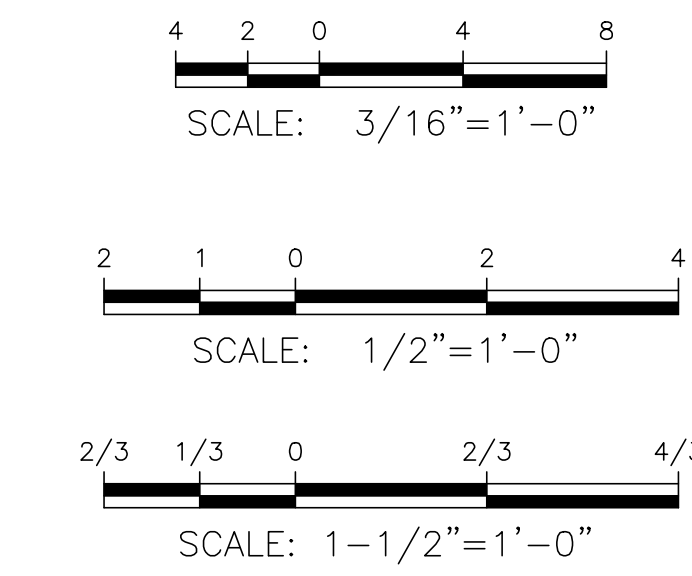
SCALE: 1/2" = 1'-0"



POST DETAIL

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

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HDR

HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: JEFFERY LAVOIE, P.E.
FLORIDA P.E. LICENSE NO.: 81555

DATE:

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES

STRUCTURAL
SHELTER TYPE 3 DETAILS

PROJECT ID NO.
100548
DRAWING NUMBER
S7003

SHEET
21 OF 24

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU



PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

ENGINEER: J. LAVOIE
DRAWN: Z. ARTH
CHECKED: J. LAVOIE
DATE: 3/7/2022
SCALE: AS SHOWN

DATE

REV #

DESCRIPTION



Technical drawing of a square base plate. The overall dimensions are 1'-2" (16 inches) by 1'-2" (16 inches). The plate is composed of a 1" thick base plate and a 3/8" x 7" x 10" plate. The center of gravity (C.G.) is indicated by a dashed line. The plate is to be galvanized.

ALL STEEL PLATES TO BE GALVANIZED

1'-2"

2" TYP

1'-2"

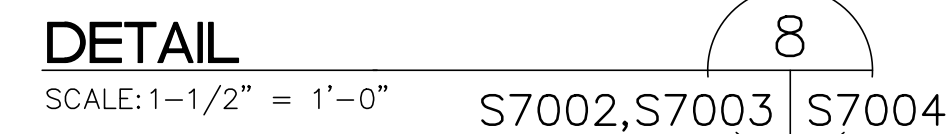
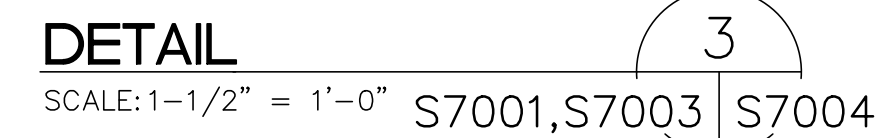
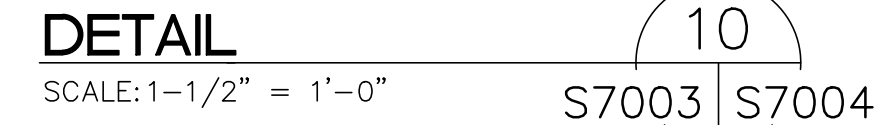
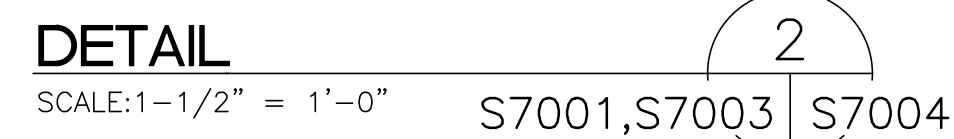
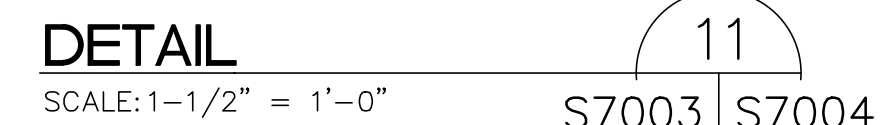
7"

1" BASE PLATE

3/8" x 7" x 10" PLATE

C.G.

C.G.



1. FOR MATERIAL TYPES AND GENERAL SPECIFICATIONS REFER TO GENERAL NOTES ON G7003.
2. ALL FASTENERS FOR WOOD TO WOOD CONNECTIONS TO BE STAINLESS STEEL.
4. ALL FASTENERS IN STEEL PLATED CONNECTIONS TO BE GALVANIZED. DO NOT USE STAINLESS FASTENERS WITH GALVANIZED PLATE.

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CONVERSION FACTOR NOTE:
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1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: JEFFERY LAVOIE, P.E.
FLORIDA P.E. LICENSE NO.: 81555

DATE: _____

CORRECTED FINAL / RTA

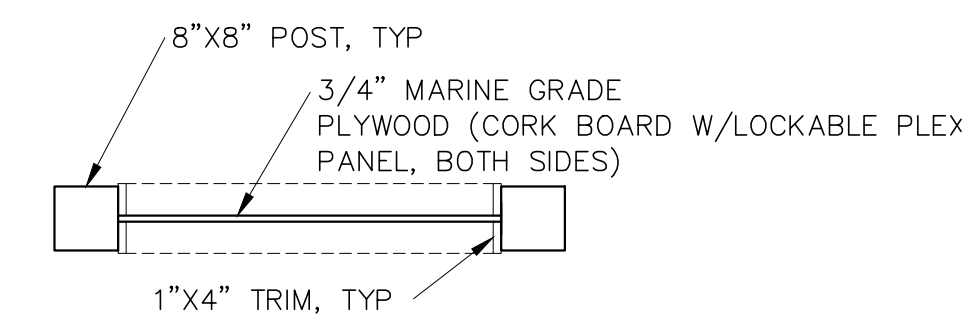
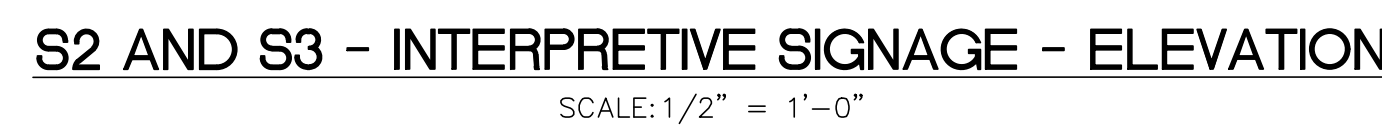
C-44 RESERVOIR/STA PROJECT RECREATION FEATURES

STRUCTURAL SHELTER TYPES 1, 2 AND 3 DETAILS

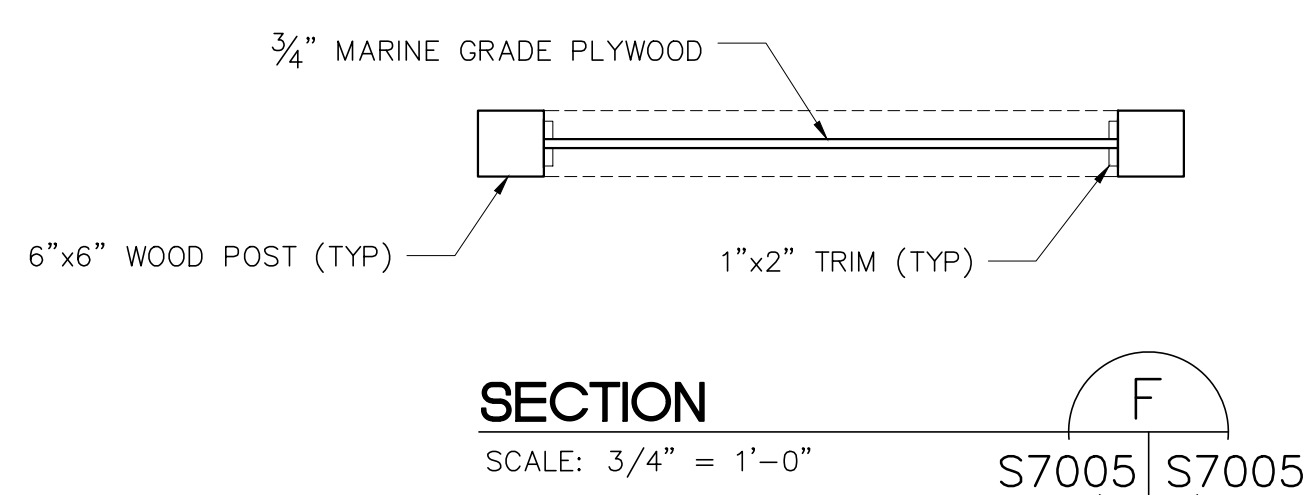
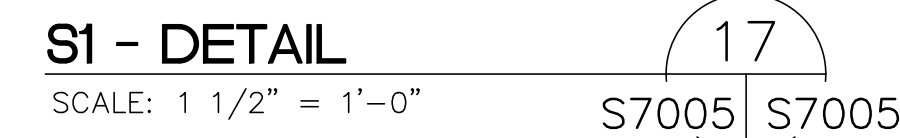
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

PHONE: 561-686-8800
3301 GUN CLUB ROAD
PALM BEACH, FLORIDA 33411

ENGINEER: J. LAVOIE
DRAWN: Z. ARTH
CHECKED: J. LAVOIE
DATE: 3/7/2022
SCALE: AS SHOWN



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



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1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: JEFFERY LAVOIE, P.E.
FLORIDA P.E. LICENSE NO.: 81555

DATE: _____

CORRECTED FINAL / RTA

C-44 RESERVOIR/STA PROJECT RECREATION FEATURES

STRUCTURAL INTERPRETIVE SIGN DETAILS

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU

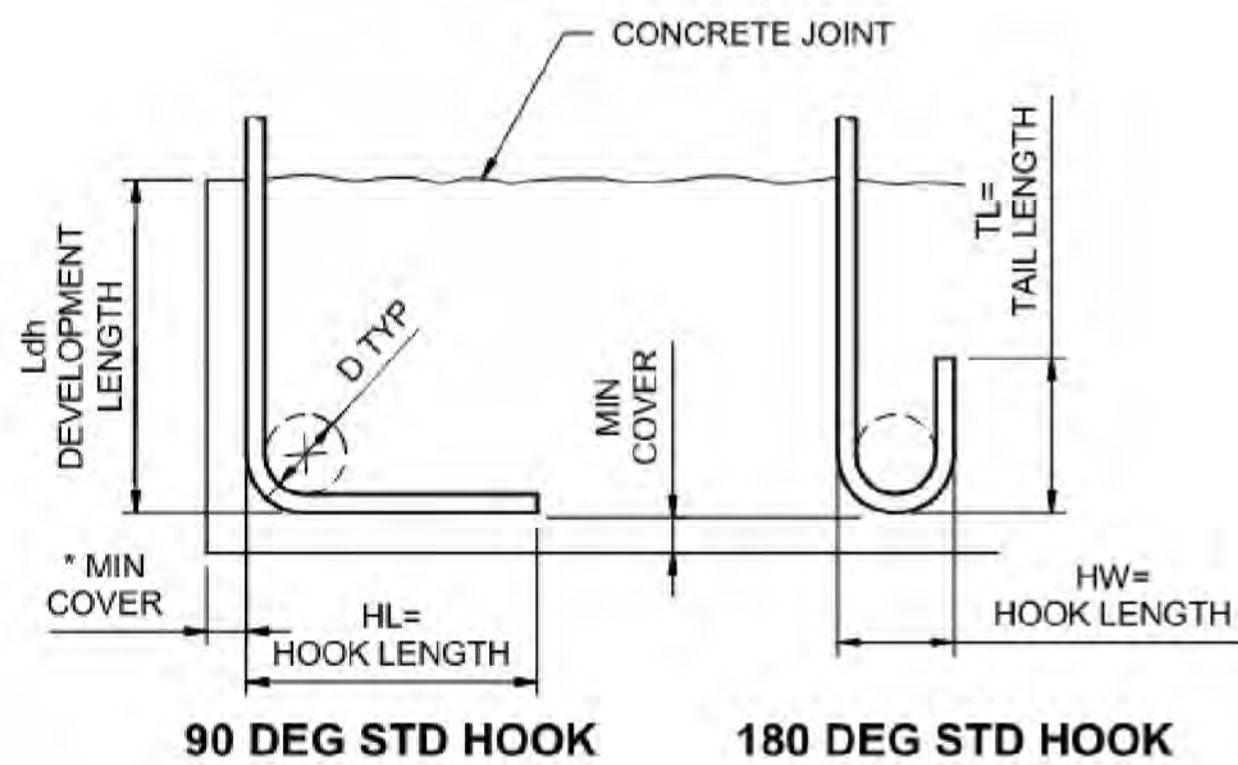
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

PHONE: 561-686-8800
3301 GUN CLUB ROAD
PALM BEACH, FLORIDA 33410

ENGINEER: J. LAVOIE
DRAWN: Z. ARTH
CHECKED: J. LAVOIE
DATE: 3/7/2022
SCALE: AS SHOWN

DATE	DRAWN	REV. #
------	-------	--------

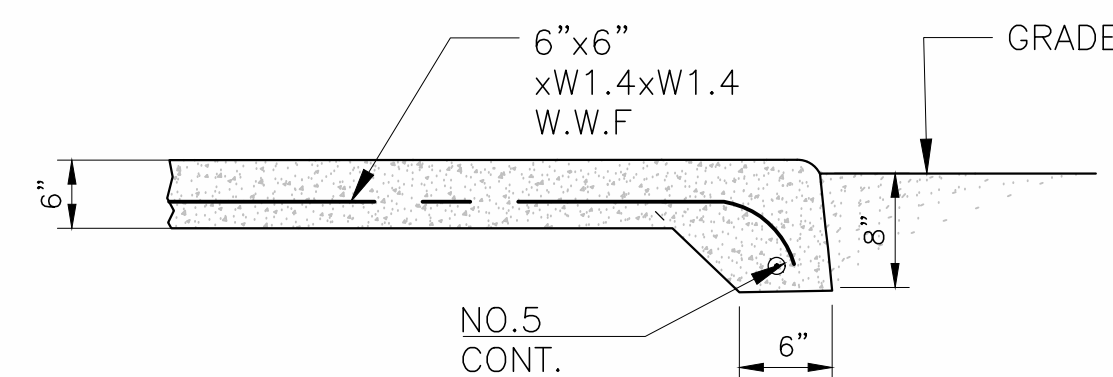
REVISION	DESCRIPTION
1	Initial release



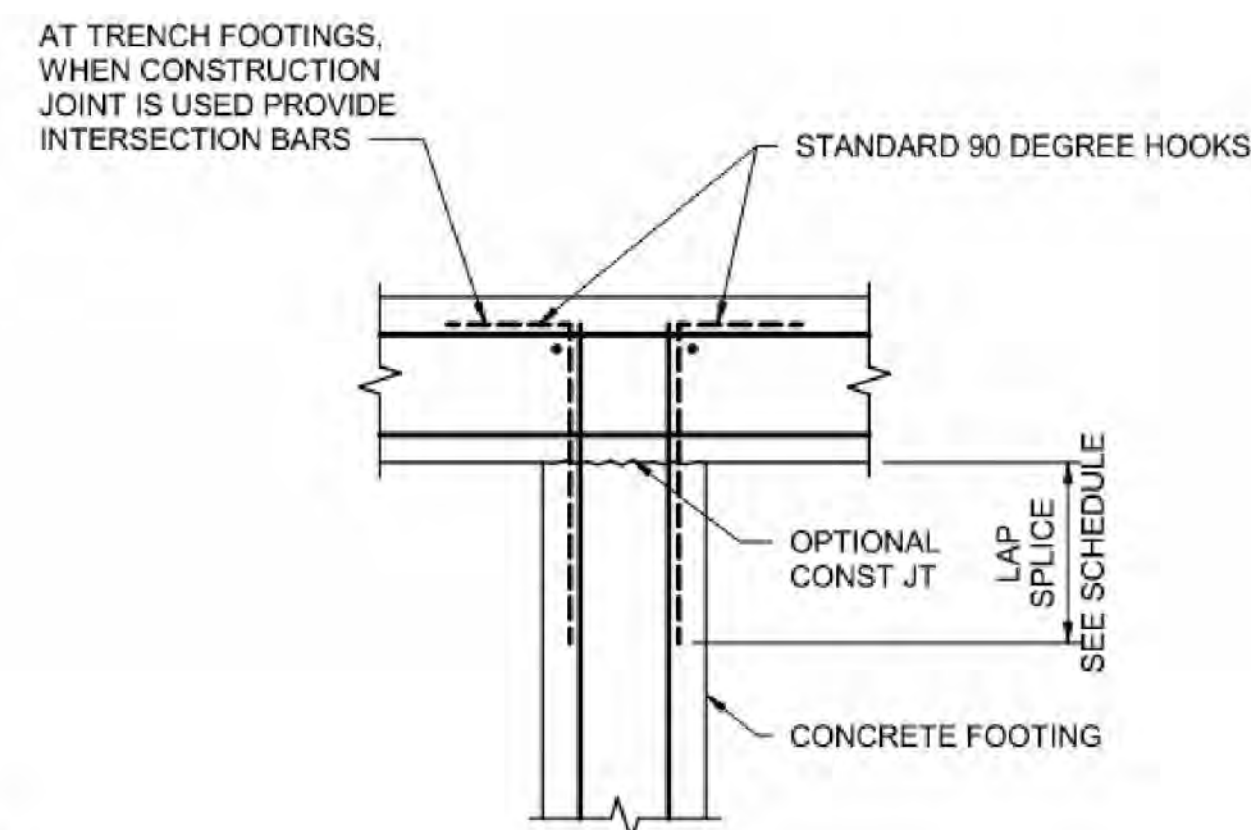
BAR SIZE	HL	HW	TL	D	f _c =4.0 OR 4.5 KSI
GRADE 60					Ldh *
#3	6"	3"	3"	2 1/4"	6"
#4	8"	4"	4 1/2"	3"	7"
#5	10"	5"	5"	3 3/4"	9"
#6	1'-0"	6"	6"	4 1/2"	10"
#7	1'-2"	7"	7"	5 1/4"	12"
#8	1'-4"	8"	8"	6"	14"
#9	1'-7"	11 3/4"	10 1/2"	9 1/2"	15"
#10	1'-10"	1'-1 1/4"	11 1/2"	10 3/4"	17"
#11	2'-0"	1'-2 3/4"	1'-1"	12"	19"

* COMPLYING WITH MINIMUM COVER REQUIREMENTS OF ACI 318, 12.5.3. OTHERWISE Ldh MUST BE RE-CALCULATED.

REINFORCING HOOK SCHEDULE
NOT TO SCALE



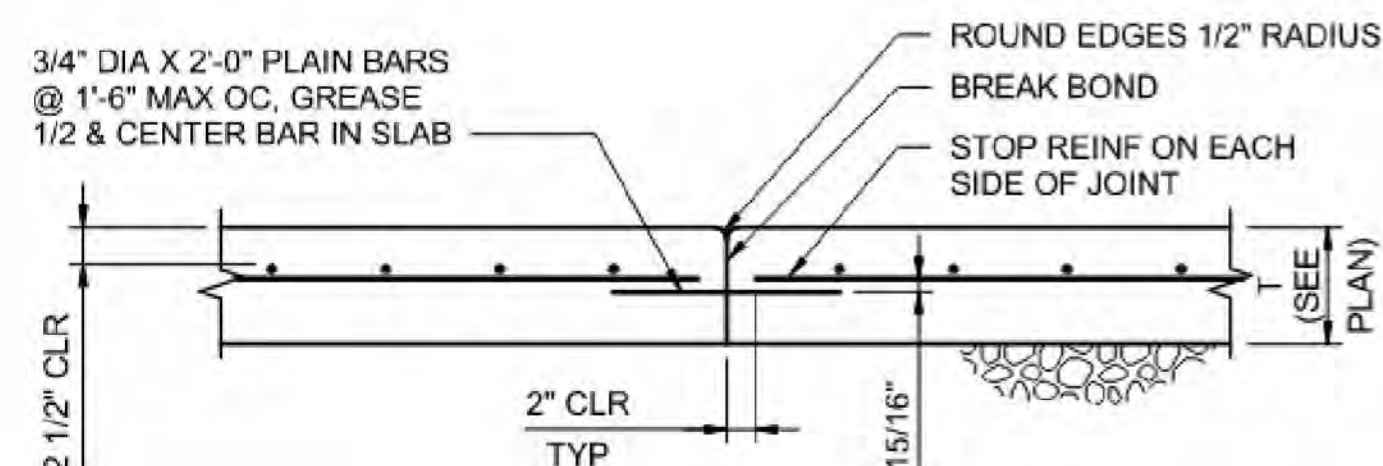
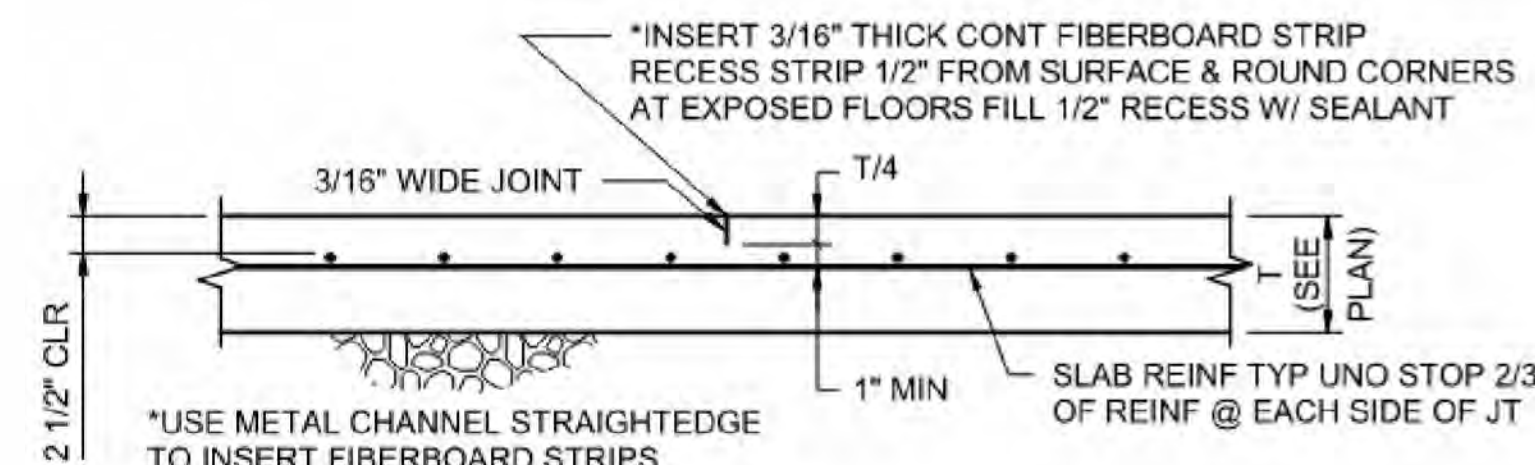
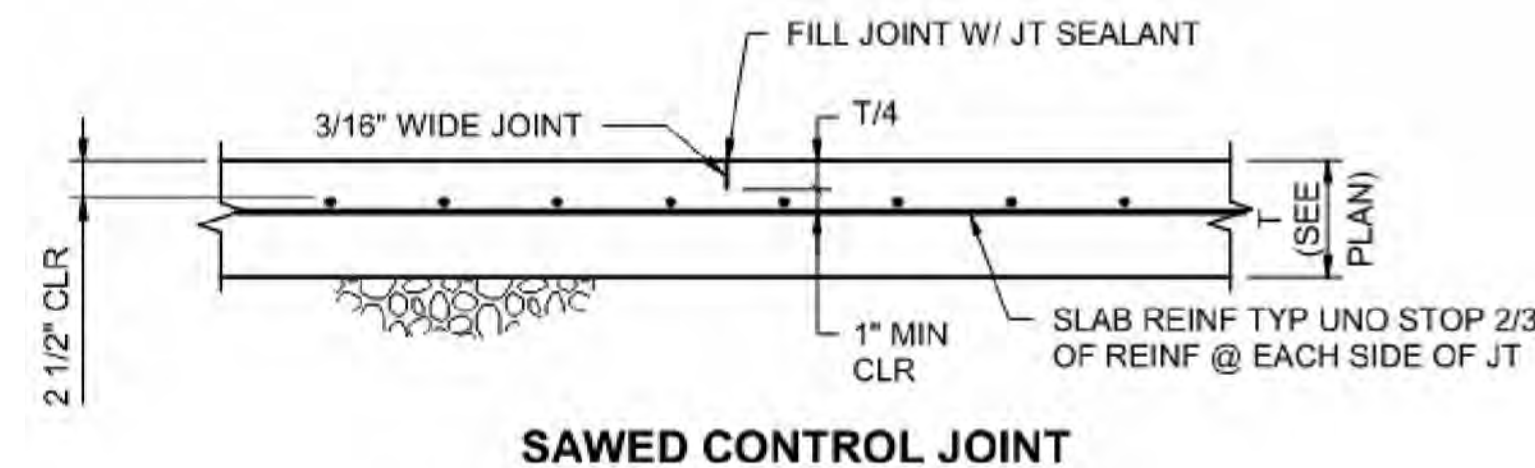
CONCRETE PAVEMENT DETAIL
NOT TO SCALE



NOTE:

- INTERSECTION BARS TO BE SAME SIZE AND SPACING AS FOOTING REINFORCING.

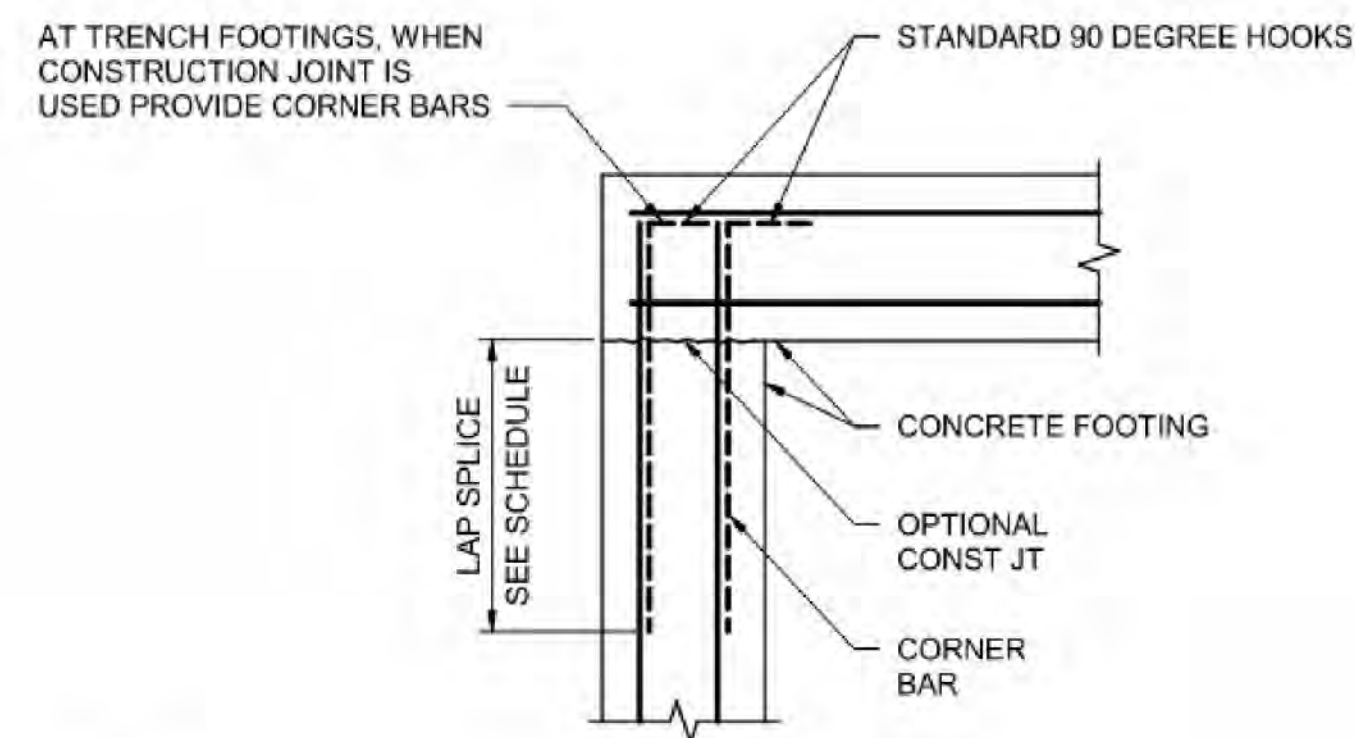
FOOTING REINFORCING AT INTERSECTION
NOT TO SCALE



NOTE:

- ANY ONE OF THE DETAILS ABOVE MAY BE USED AT LOCATIONS INDICATED ON DRAWINGS AS "SJ," AT CONTRACTOR'S OPTION.
- WHERE "DSJ" IS INDICATED ON PLAN, THE "DSJ" SHALL BE USED.

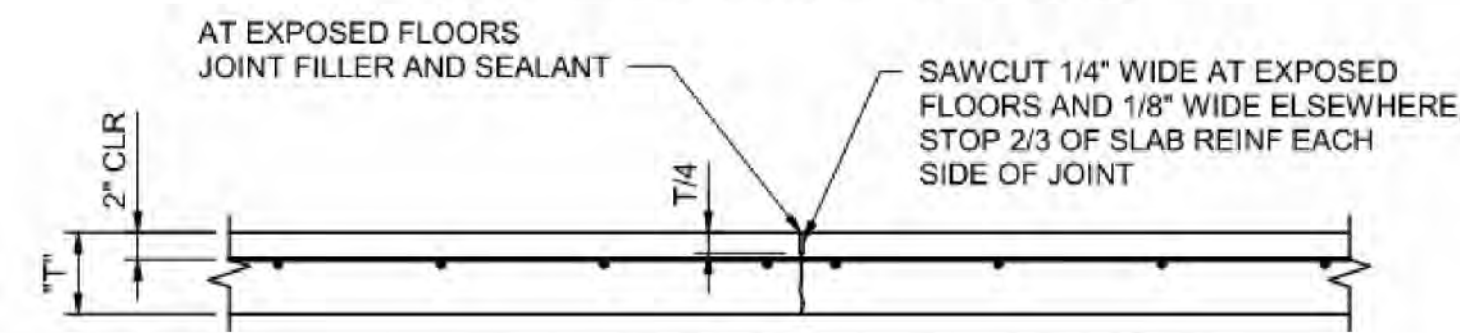
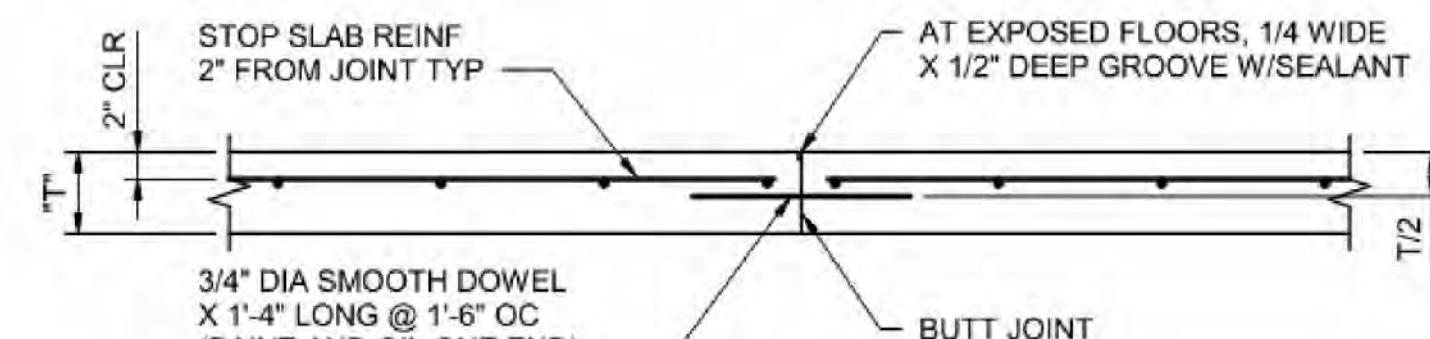
SLAB-ON-GRADE JOINT
NOT TO SCALE



NOTE:

- CORNER BARS TO BE SAME SIZE AND SPACING AT FOOTING REINFORCING.

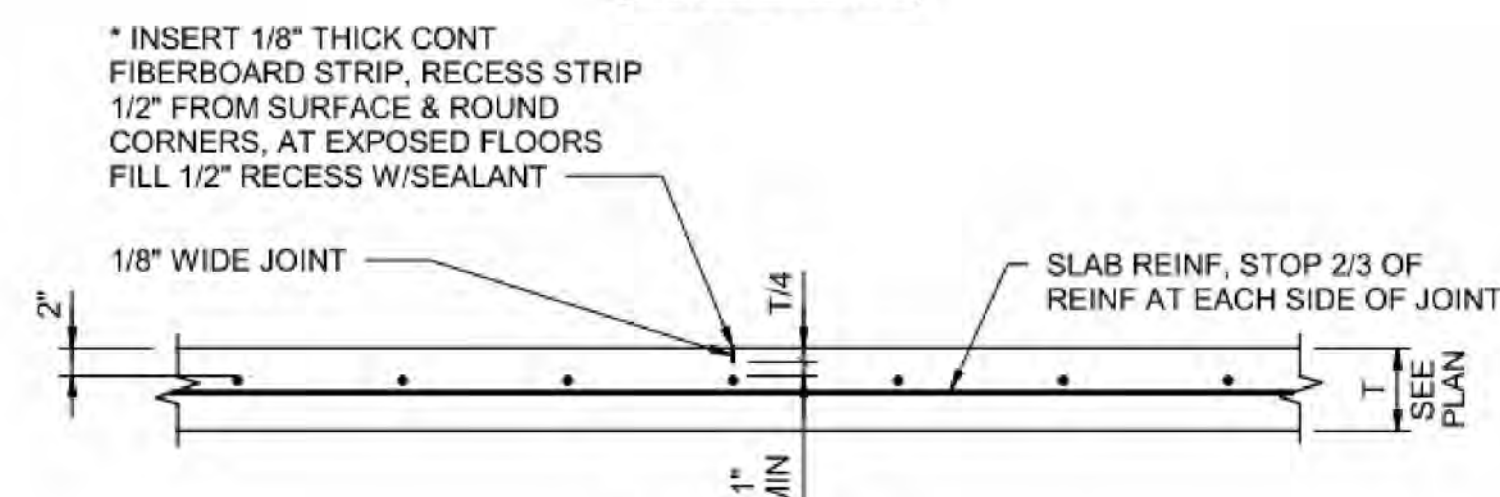
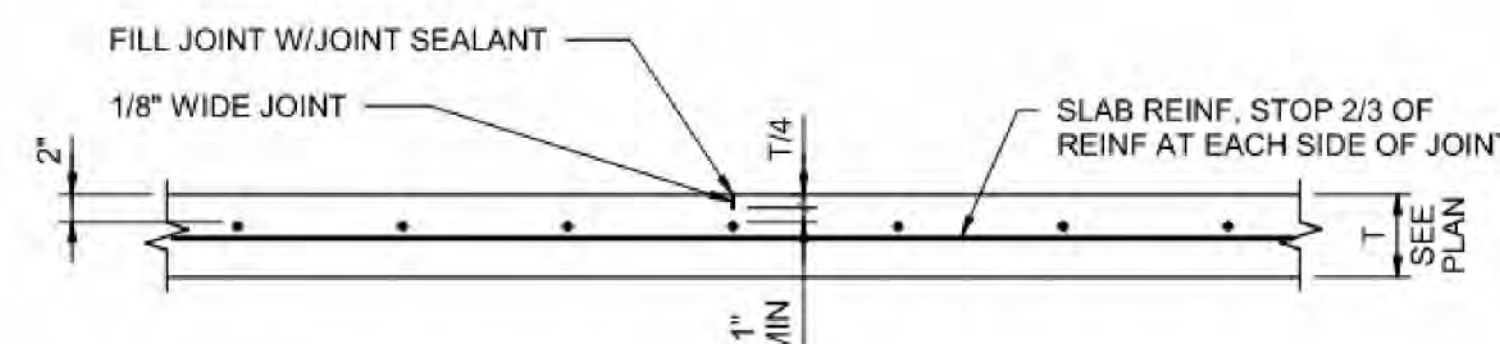
FOOTING REINFORCING AT CORNER
NOT TO SCALE



NOTES:

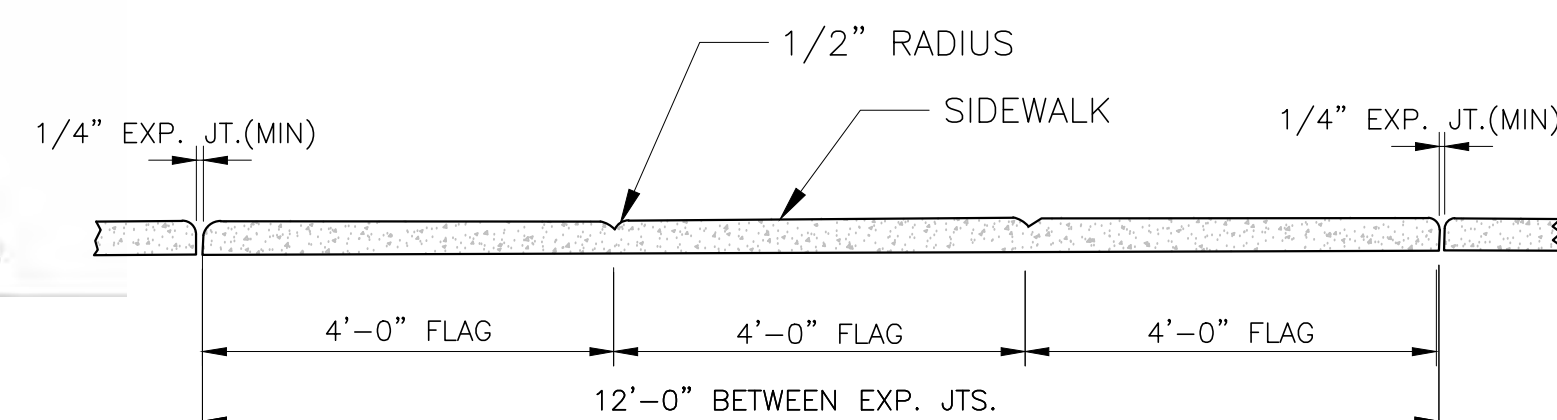
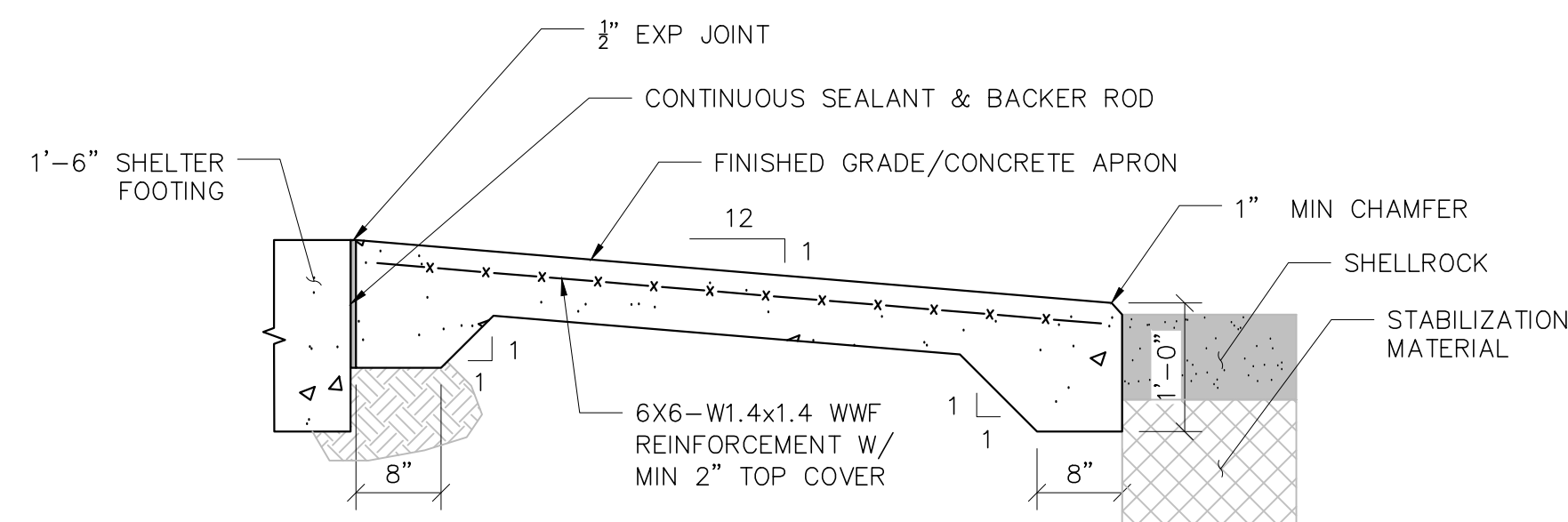
- AT CONTRACTORS OPTION, CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR CONTROL JOINTS.
- LOCATE DCJ IN SLAB ON GRADE WHERE SPECIFIED ON PLANS.

SLAB ON GRADE JOINTS - 4" TO 6" THICK
NOT TO SCALE

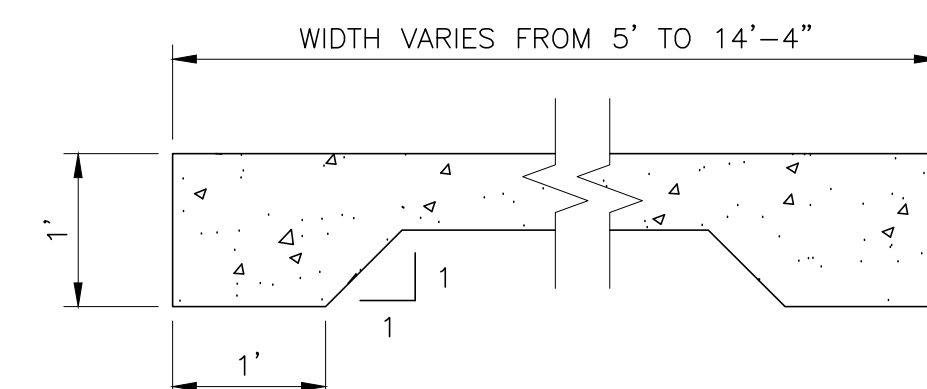
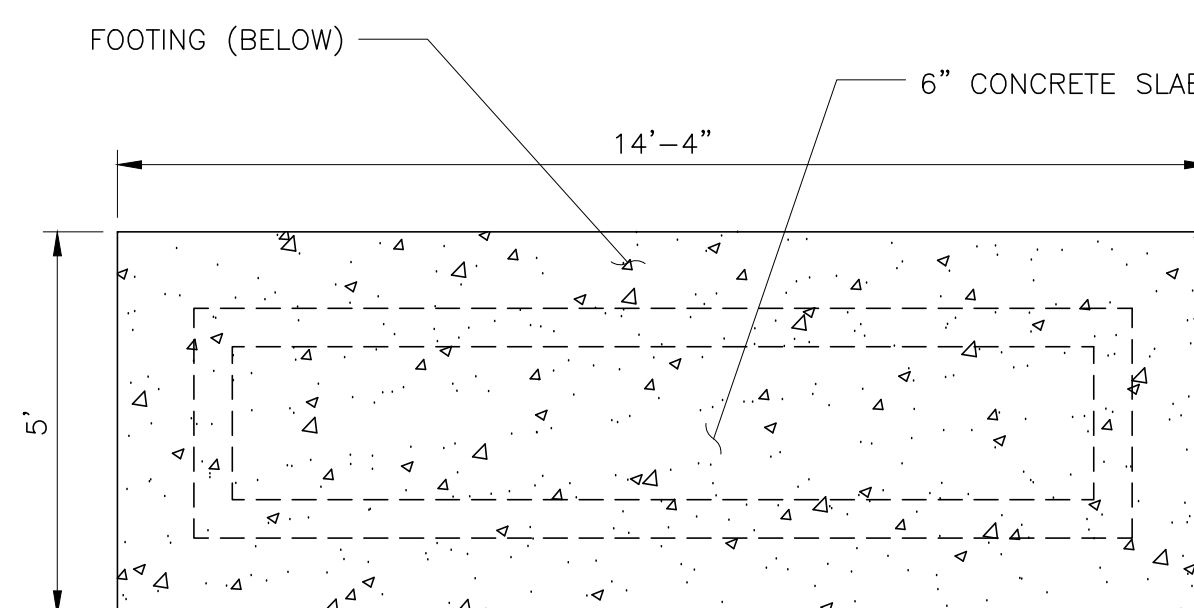
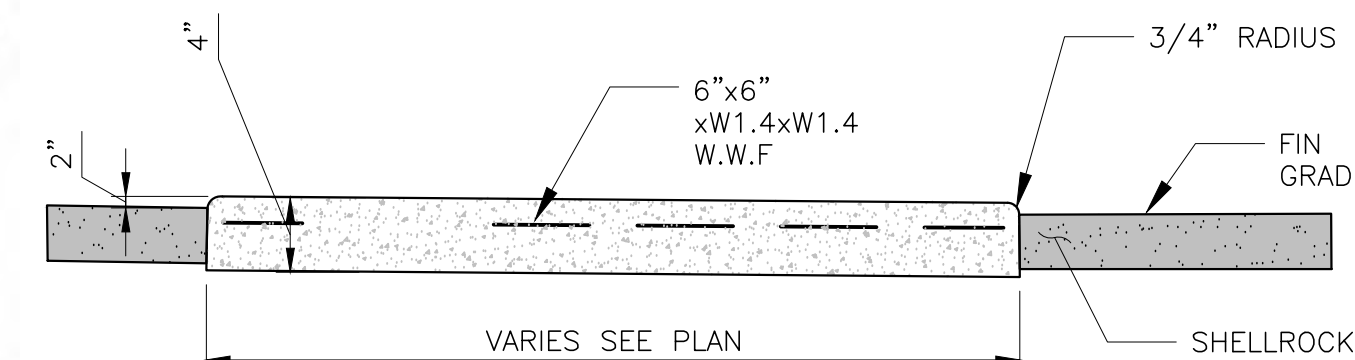


* USE METAL CHANNEL STRAIGHTEDGE TO INSERT FIBERBOARD STRIPS.

SLAB ON GRADE JOINTS - SAWED OR FORMED JOINTS
NOT TO SCALE



FLAG AND EXPANSION JOINT DETAIL
NOT TO SCALE



CONCRETE PLATFORM DETAIL
NOT TO SCALE

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

CONVERSION FACTOR NOTE:
THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE CONVERSION FACTOR TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29) VARIES FOR SPECIFIC AREAS OF THE PROJECT. REFER TO THE PLAN VIEWS OF EACH AREA FOR THE APPLICABLE CONVERSION FACTOR AND REFER TO DRAWING NO. 67003 FOR AN ILLUSTRATION ON HOW TO PERFORM A CONVERSION FROM NAVD 88 TO NGVD 29.

The consultant, contractor or other parties associated with this project shall comply with Florida Statutes Chapter 119. These plans are the property of the District and must be secured and maintained in a confidential manner. Review by any unauthorized individual or outside/third party not performing work necessary for this project is prohibited.

HDR
HDR Engineering, Inc.
1475 Centrepark Blvd., Suite 230
West Palm Beach, FL 33401

ENGINEER OF RECORD: JEFFERY LAVOIE, P.E.
FLORIDA P.E. LICENSE NO.: 81555

DATE:

CORRECTED FINAL / RTA

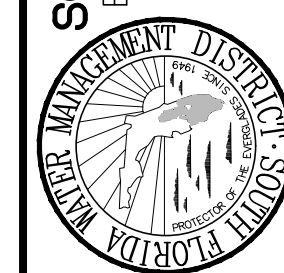
C-44 RESERVOIR/STA PROJECT
RECREATION FEATURES

STRUCTURAL
CONCRETE DETAILS

PROJECT ID NO.
100548
DRAWING NUMBER
S7006

SHEET
24 OF 24

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ECOSYSTEM RESTORATION AND CAPITAL PROJECTS DIVISION
ENGINEERING & CONSTRUCTION BUREAU
PHONE: 561-686-8800
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406



ENGINEER: J. LAVOIE
DRAWN: Z. ARTH
CHECKED: J. LAVOIE
DATE: 3/7/2022
SCALE: AS SHOWN

REVISION DESCRIPTION

DATE

SCALE: AS SHOWN

DATE

SCALE: AS SHOWN

STRUCTURAL
CONCRETE DETAILS

PROJECT ID NO.
100548
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SHEET
24 OF 24