



# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

## OAK CREEK WLA – COWICHE UNIT PHASE 2 LIVESTOCK FENCE YA:R101:2021-3

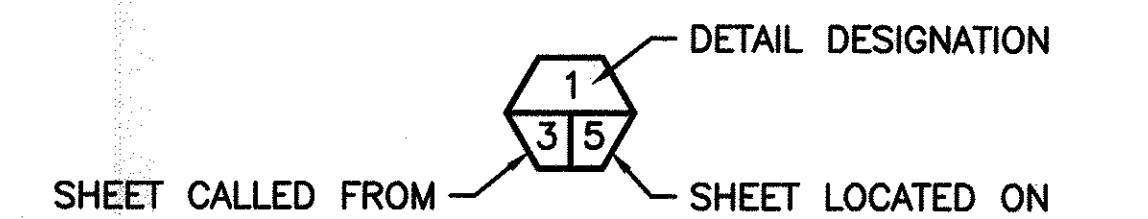
### SHEET INDEX

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1	COVER SHEET
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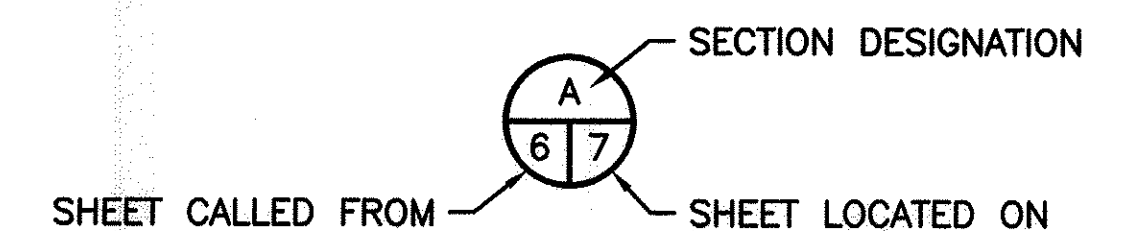
### ABBREVIATIONS

ALUM	-	ALUMINUM
L	-	ANGLE
APPROX	-	APPROXIMATELY
BM	-	BENCH MARK
CL	-	CENTERLINE
CMP	-	CORRUGATED METAL PIPE
CLR	-	CLEARANCE
CONC	-	CONCRETE
CSBC	-	CRUSHED SURFACE BASE COURSE
CSTC	-	CRUSHED SURFACE TOP COURSE
DIA,Ø	-	DIAMETER
ELEV	-	ELEVATION
FB	-	FLAT BAR
FTG	-	FOOTING
GALV	-	GALVANIZED
ID	-	INSIDE DIAMETER
IE	-	INVERT ELEVATION
L.F.	-	LINEAR FEET
MFG	-	MANUFACTURER'S
MAX	-	MAXIMUM
MIN	-	MINIMUM
MISC	-	MISCELLANEOUS
O.C.	-	ON CENTER
OD	-	OUTSIDE DIAMETER
OHW	-	ORDINARY HIGH WATER
PL	-	PLATE
REQ'D	-	REQUIRED
SEC	-	SECTION
SPEC'S	-	PROJECT SPECIFICATIONS
SS	-	STAINLESS STEEL
TYP	-	TYPICAL
SQ	-	SQUARE
WS	-	WATER SURFACE

### SHEET SYMBOLS



#### DETAIL



#### SECTION

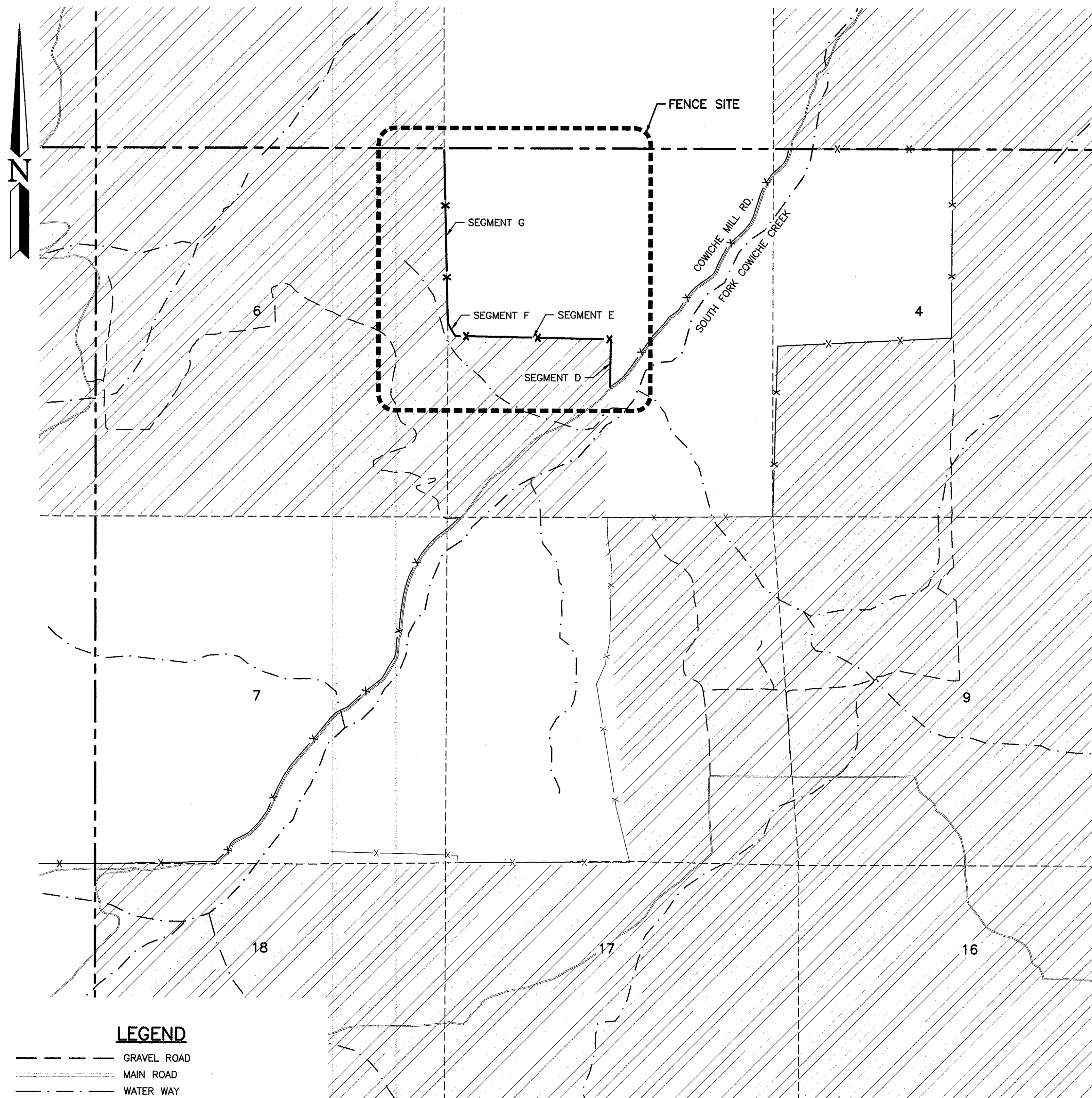


#### NOTE REFERENCE

REFERENCE DESIGNATION TO A  
NOTE, A PART, OR MATERIAL IN A  
SCHEDULE/TABLE

PROJECT NO.  
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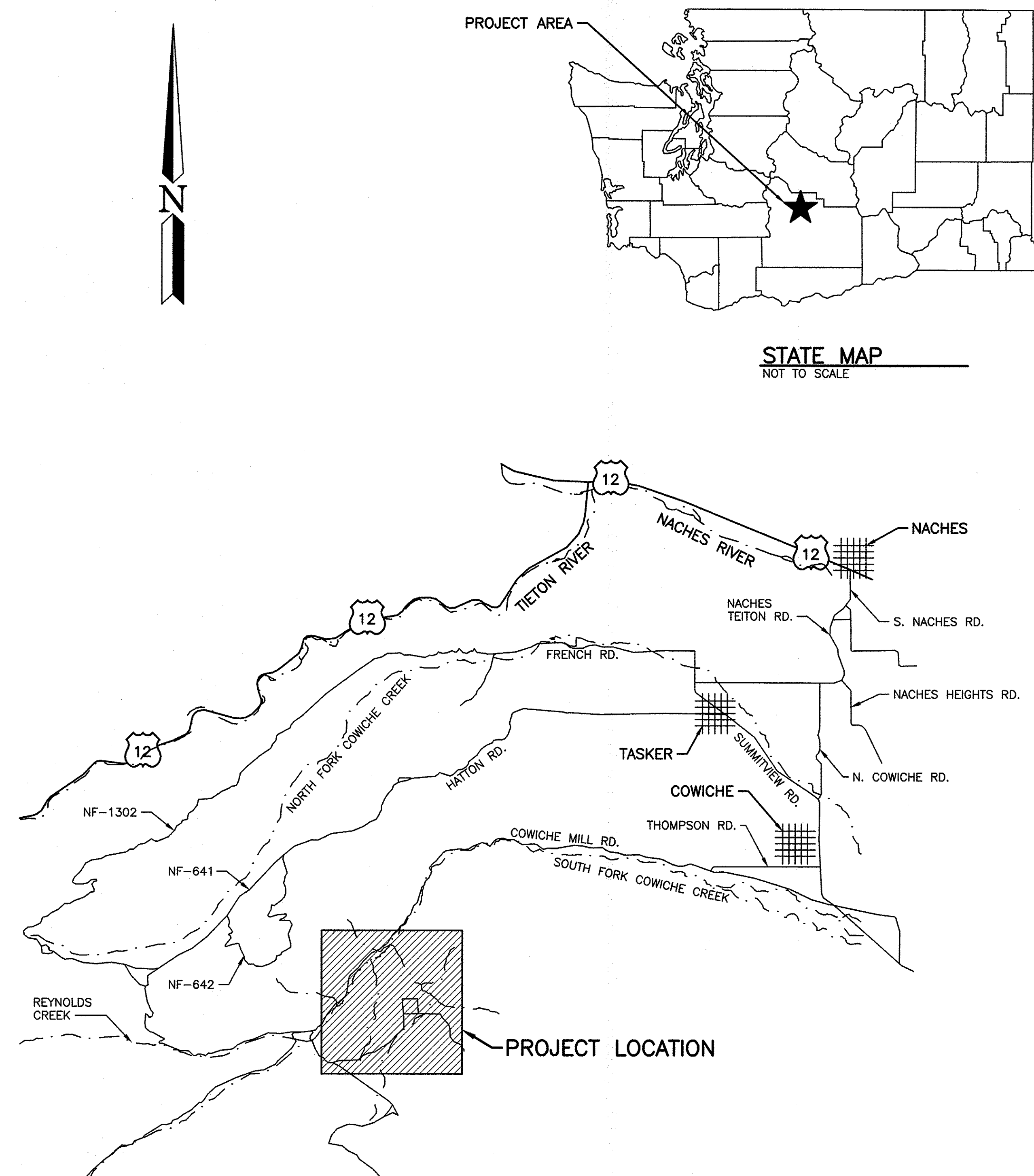
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### OVERALL SITE PLAN

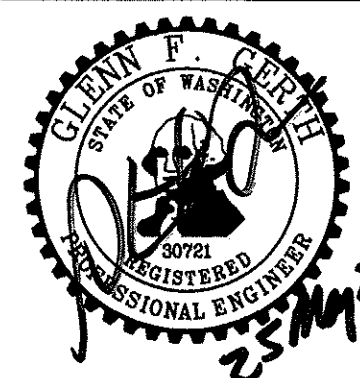
NOT TO SCALE

**NOTE:** LOCATIONS ARE APPROXIMATE AND BASED OF AERIAL IMAGES AND GPS. FIELD VERIFY ALL LOCATIONS OF EXISTING REMAINS OF FENCE, GATES, BREAKAWAY, CORNER BRACES AND DRAWS.



**DIRECTIONS:**  
EXIT US-12 ONTO S. NACHES RD.  
CONTINUE ONTO NACHES TIETON RD.  
TURN LEFT ONTO N. COWICHE RD. AT  
THE END, TURN LEFT ONTO  
SUMMITVIEW RD. AND TURN RIGHT  
ONTO THOMPSON RD. AT THE END,  
TURN RIGHT ONTO COWICHE MILL RD.  
AND FOLLOW THAT TO THE SITE.

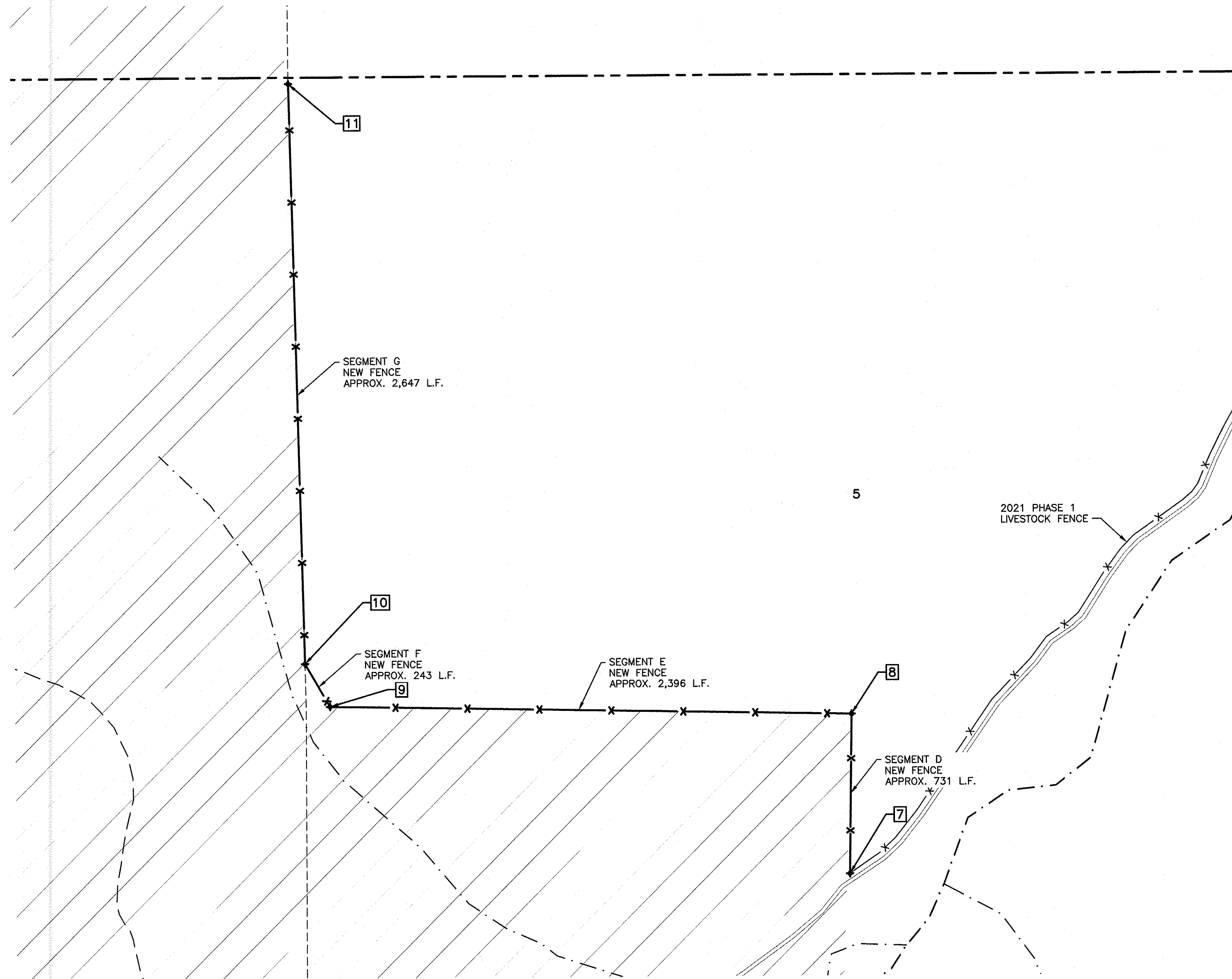
WASHINGTON DEPARTMENT OF  
**FISH & WILDLIFE**



SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER	DATE: 2/27/22		DESIGNED BY RM & BN
PROGRAM	DATE: 5/25/2022		CHECKED BY D. SMITH
			DRAWN BY CT & DS
			DATE 5/25/2022

OAK CREEK WLA - COWICHE UNIT  
**PHASE 2 LIVESTOCK FENCE**  
OVERALL SITE PLAN & VICINITY MAP

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FENCE SITE 2			
POINT #	LATITUDE	LONGITUDE	DESCRIPTION
7	46.639903°	-120.856569°	END OF FENCE/ TIE INTO EXISTING
8	46.64385°	-120.856533°	FENCE CORNER
9	46.643947°	-120.866056°	FENCE CORNER
10	46.64448°	-120.86651°	FENCE CORNER
11	46.635092	-120.850122°	END OF FENCE

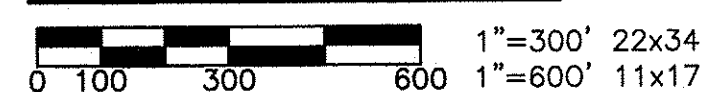
NOTES:

- LOCATIONS ARE APPROXIMATE AND BASED OF AERIAL IMAGES AND GPS. FIELD VERIFY ALL LOCATIONS OF EXISTING REMAINS OF FENCE, GATES, BREAKAWAY, CORNER BRACES AND DRAWS.
- RIGHT OF WAY IS LOCATED APPROXIMATELY 30 FEET FROM THE CENTER LINE OF THE ROADWAY.

LEGEND

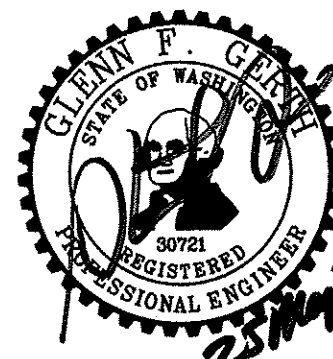
- GRAVEL ROAD
- == MAIN ROAD
- - - WATER WAY
- x- NEW FENCE
- x- EXISTING FENCE TO BE REMOVED
- x- EXISTING FENCE
- - - TOWNSHIP/RANGE LINE
- - - SECTION LINE
- //// OTHERS PROPERTY

FENCE SITE



NEW FENCE TO BE INSTALLED APPROXIMATELY 1.14 MILES  
EXISTING FENCE TO BE REMOVED APPROXIMATELY 0 MILES

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SYN DATE REVISION DESCRIPTION BY  
APPROVED AND RELEASED FOR CONSTRUCTION  
CHIEF ENGINEER *Dr. M. J.* DATE: 25 May 22  
PROGRAM DATE:

DESIGNED BY RM & BN  
CHECKED BY D. SMITH  
DRAWN BY CT & DS  
DATE 5/25/2022

OAK CREEK WLA - COWICHE UNIT

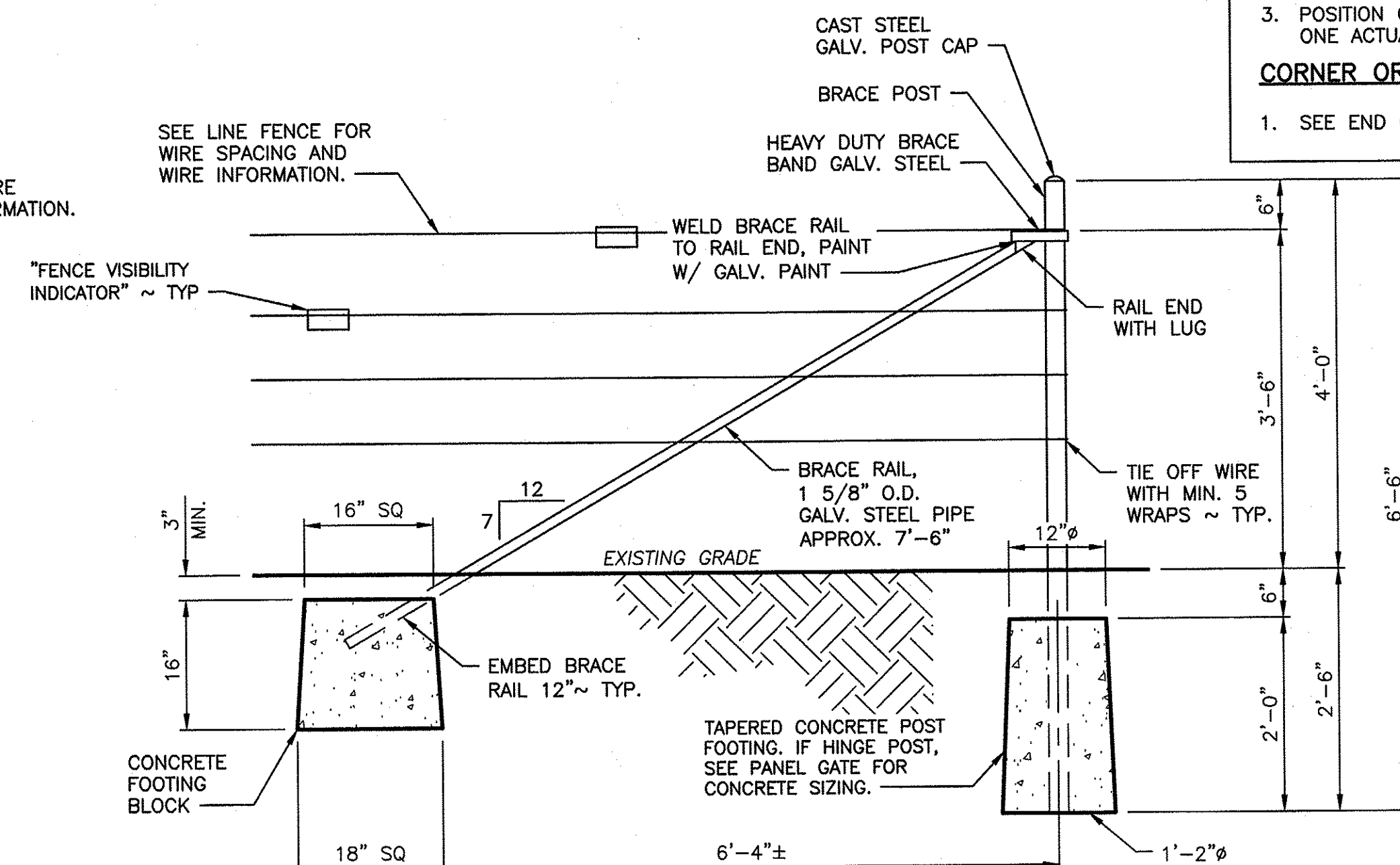
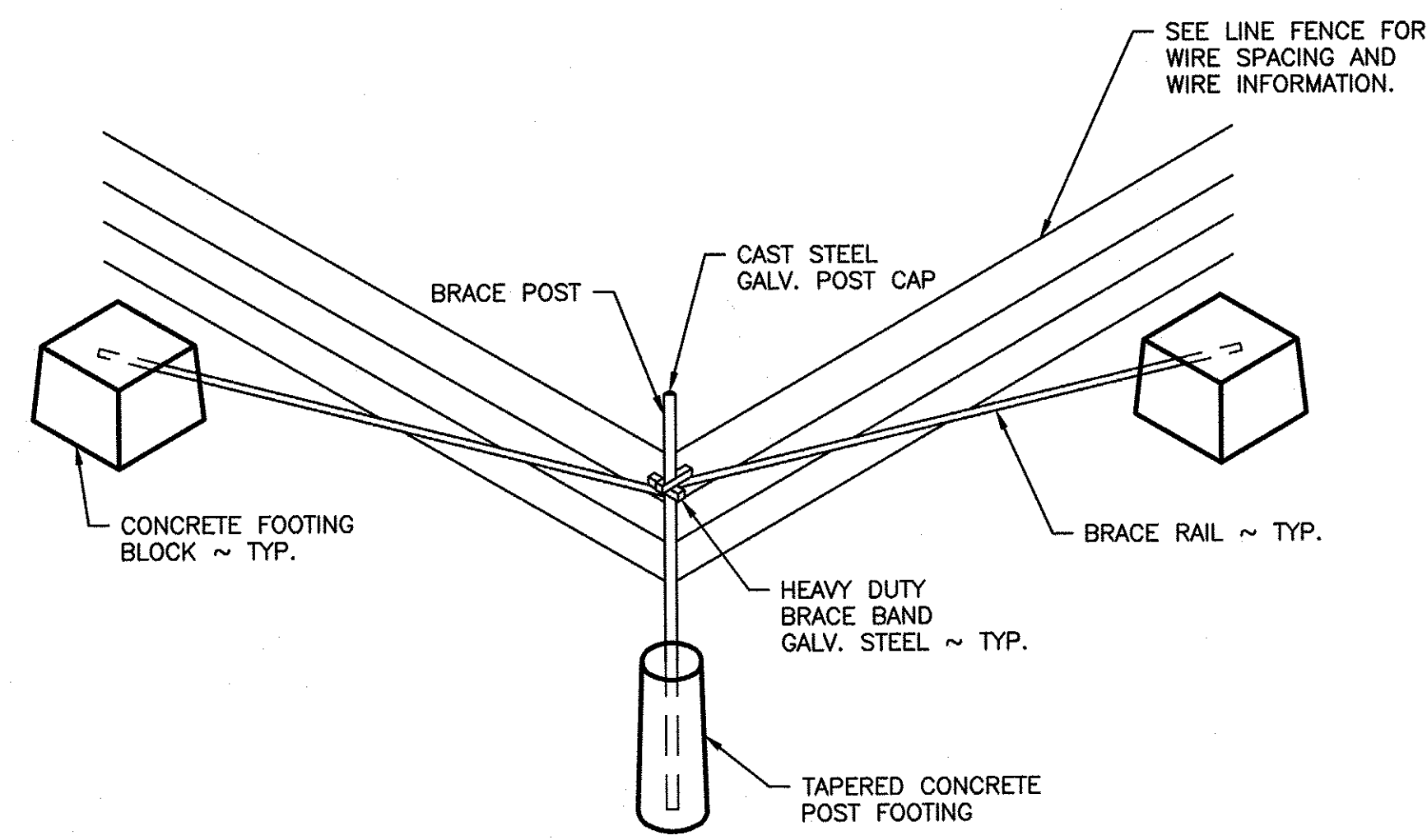
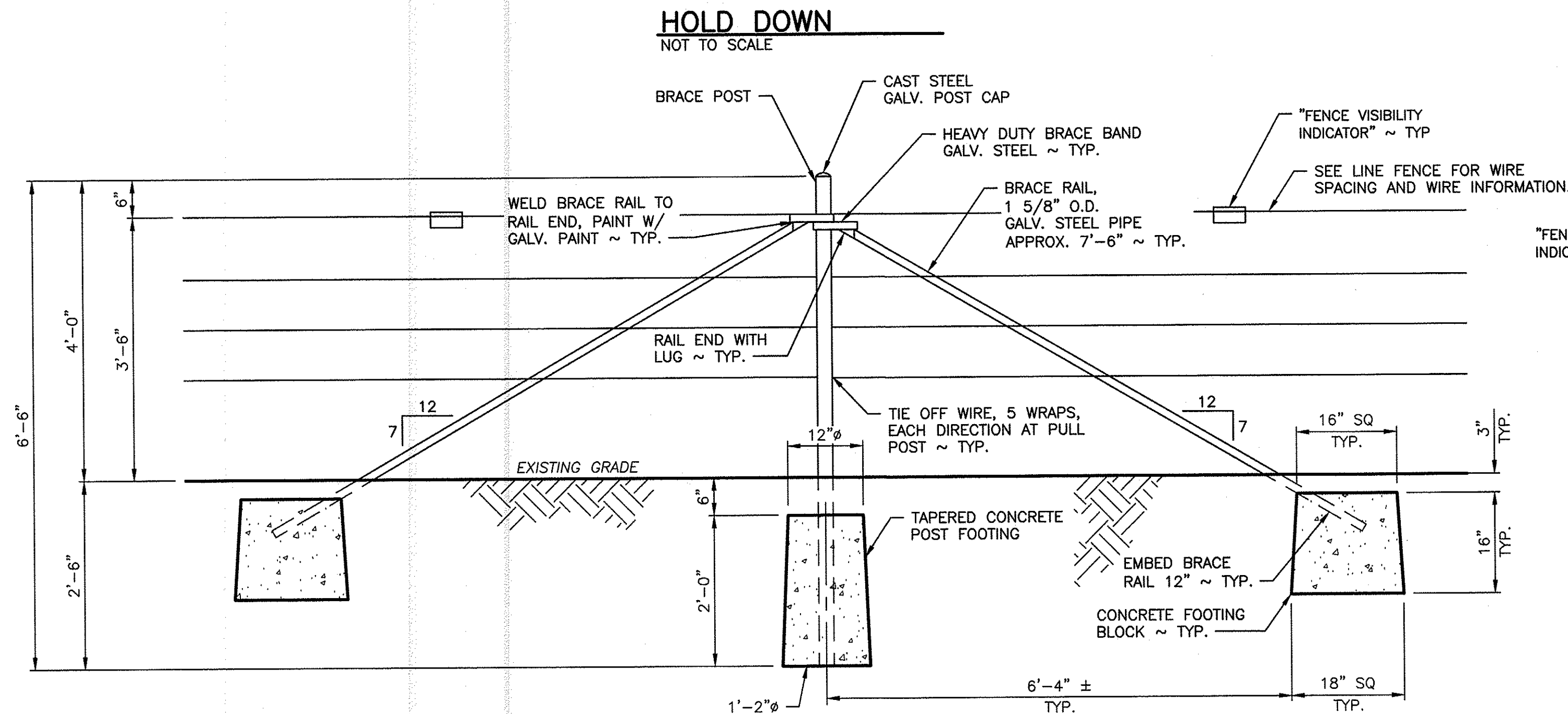
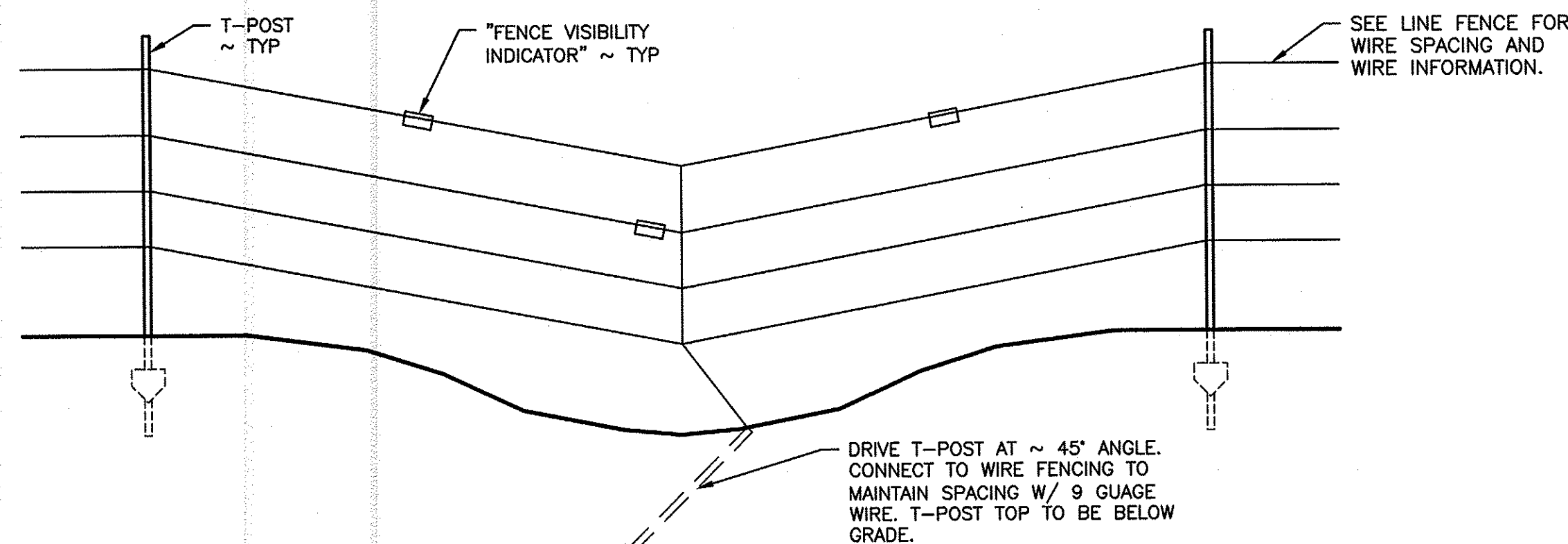
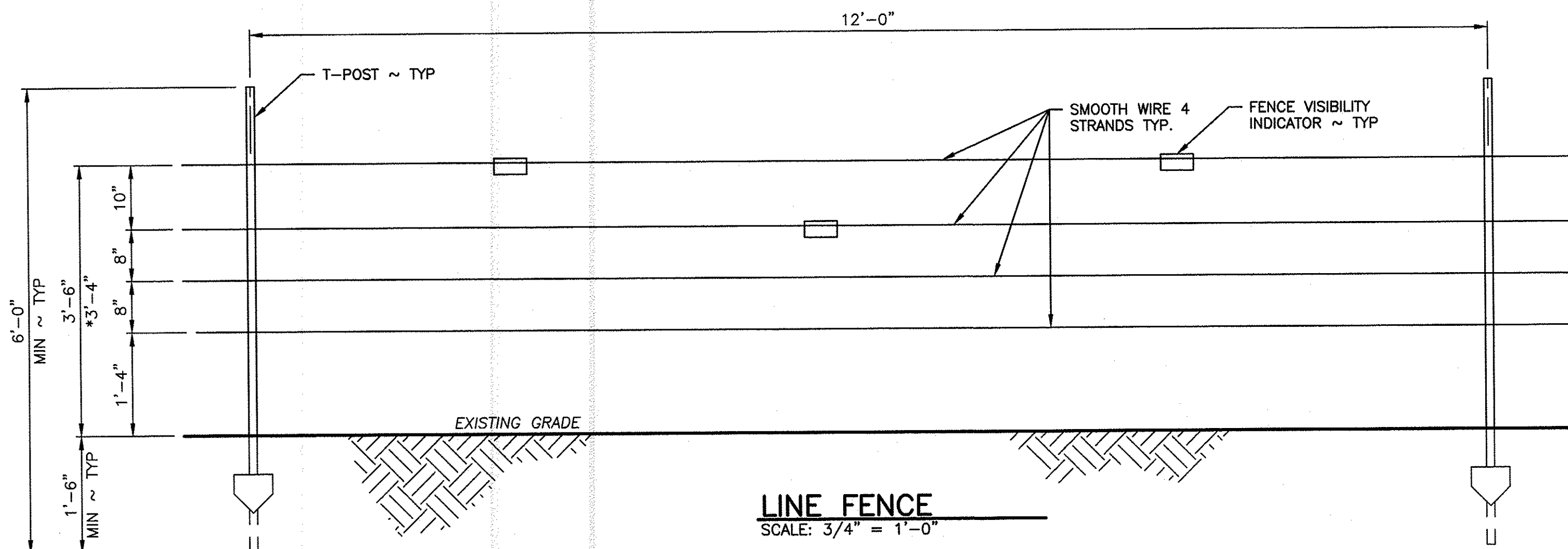
PHASE 2 LIVESTOCK FENCE

FENCE SITE 2  
PLAN

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#### GENERAL NOTES:

1. ALL VERTICAL STEEL BRACE AND HINGE POSTS SHALL HAVE A POST CAP.
2. IF DEPTH CANNOT BE REACHED DUE TO GROUND CONDITION USE ALTERNATE METHOD SHOWN ON SHEET 6.

#### HOLD DOWN:

1. INSTALL HOLD DOWNS AS NECESSARY TO MAINTAIN WIRE TO GROUND SPACING PER LINE FENCE DETAIL.
2. DRIVEN T-POSTS MINIMUM 4 FEET IN LENGTH; NO FIELD CUTTING ALLOWED.

#### CORNER OR STRETCH BRACE:

1. BRACE POSTS SHALL BE AT LEAST 5 FEET 6 INCHES LONG X 2 3/8 INCHES IN DIAMETER.
2. HEAVY DUTY BRACE BAND SHALL BE FIXED IN PLACE WITH ONE ACTUATED NAIL OR SELF-TAPPING SCREW.

#### END OR GATE BRACE:

1. POSITION OF WIRE ON END POST SHALL BE FIXED IN PLACE WITH ONE ACTUATED NAIL OR SELF-TAPPING SCREW.
2. SEE CORNER OR STRETCH BRACE NOTES AND PANEL GATE DETAIL FOR MORE INFORMATION.

#### NOTES FOR ALTERNATE METHODS:

##### T-POST INSTALLATION:

1. IF THE LINE POST DESIGN DEPTH CANNOT BE OBTAINED BY CONVENTIONAL DRIVING DUE TO EXISTING SOIL/ROCK CONDITIONS, THE POST HOLE SHALL BE DRILLED. SEE T-POST INSTALLATION.

##### END OR GATE BRACE POSTS:

1. IF THE POST HOLE CANNOT BE DUG CONVENTIONALLY DUE TO BEDROCK, A 3 INCH DIAMETER. HOLE FOR THE BRACE POST SHALL BE DRILLED TO A DEPTH OF AT LEAST 24 INCHES INTO THE ROCK AND THE POST BE GROUTED WITH A THIN FLOWABLE GROUT (OR LARGER TO ACCOMMODATE HINGE POST). AN IDENTICAL HOLE FOR A FOOTING POST TO RECEIVE THE LOWER END OF THE BRACE RAIL SHALL ALSO BE DRILLED, AND 2 3/4 INCH DIAMETER. POST GROUTED IN. ALL VERTICAL METAL POSTS (BRACE AND FOOTING) SHALL HAVE A GALVANIZED METAL POST CAP. SEE END OR GATE BRACE POST.

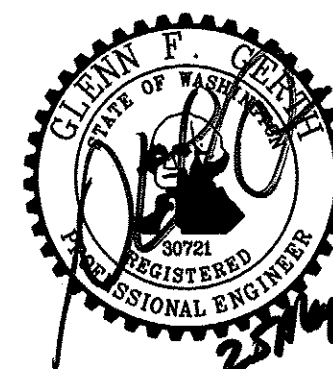
2. HEAVY DUTY BRACE BAND SHALL BE FIXED IN PLACE WITH ONE ACTUATED NAIL OR SELF-TAPPING SCREW.

3. POSITION OF WIRE ON END POST SHALL BE FIXED IN PLACE WITH ONE ACTUATED NAIL OR SELF-TAPPING SCREW.

##### CORNER OR STRETCH BRACE:

1. SEE END OR GATE BRACE FOR MORE INFORMATION.

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SYM	DATE	REVISION DESCRIPTION	BY
		APPROVED AND RELEASED FOR CONSTRUCTION	
CHIEF ENGINEER			25/7/22
PROGRAM			DATE: 5/25/2022

OAK CREEK WLA - COWICHE UNIT

PHASE 2 LIVESTOCK FENCE

LINE FENCE HOLD DOWN WITH  
STRETCH AND CORNER BRACE

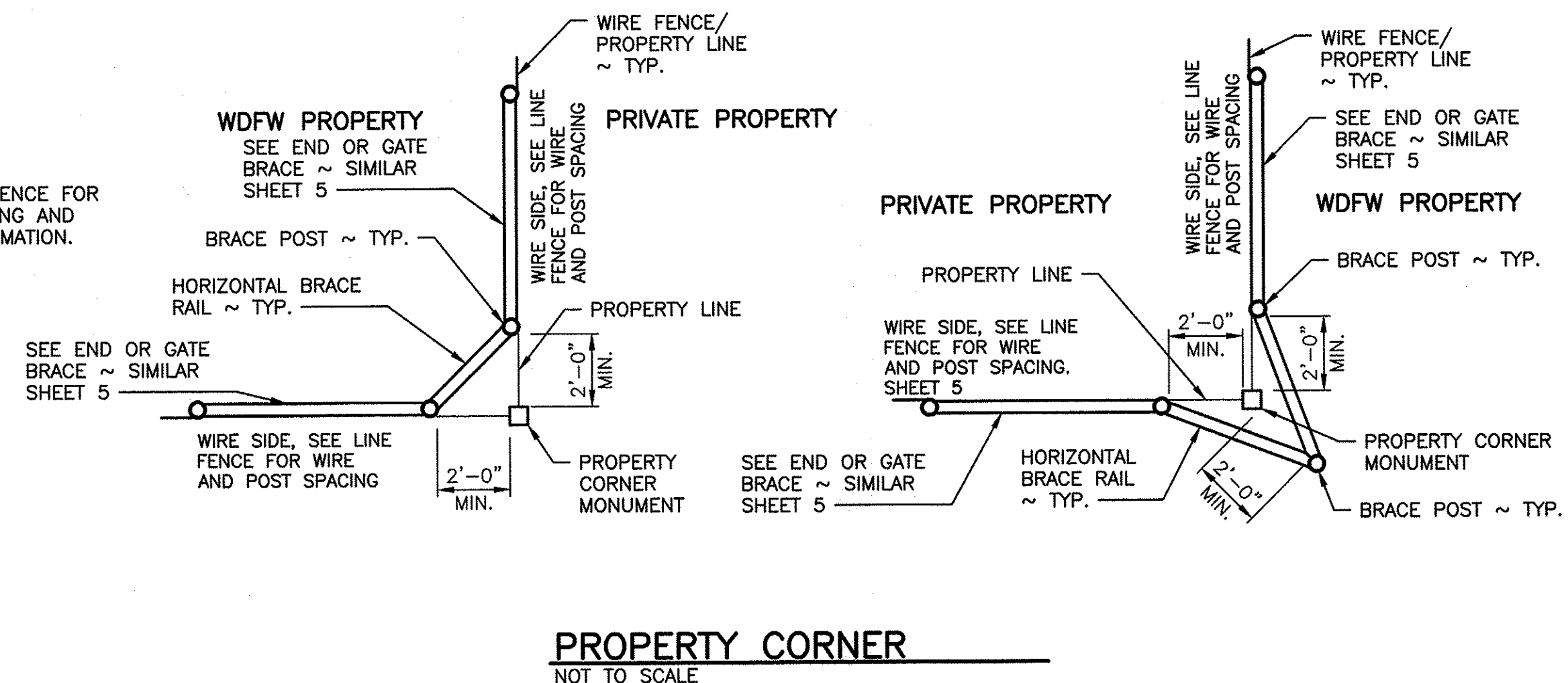
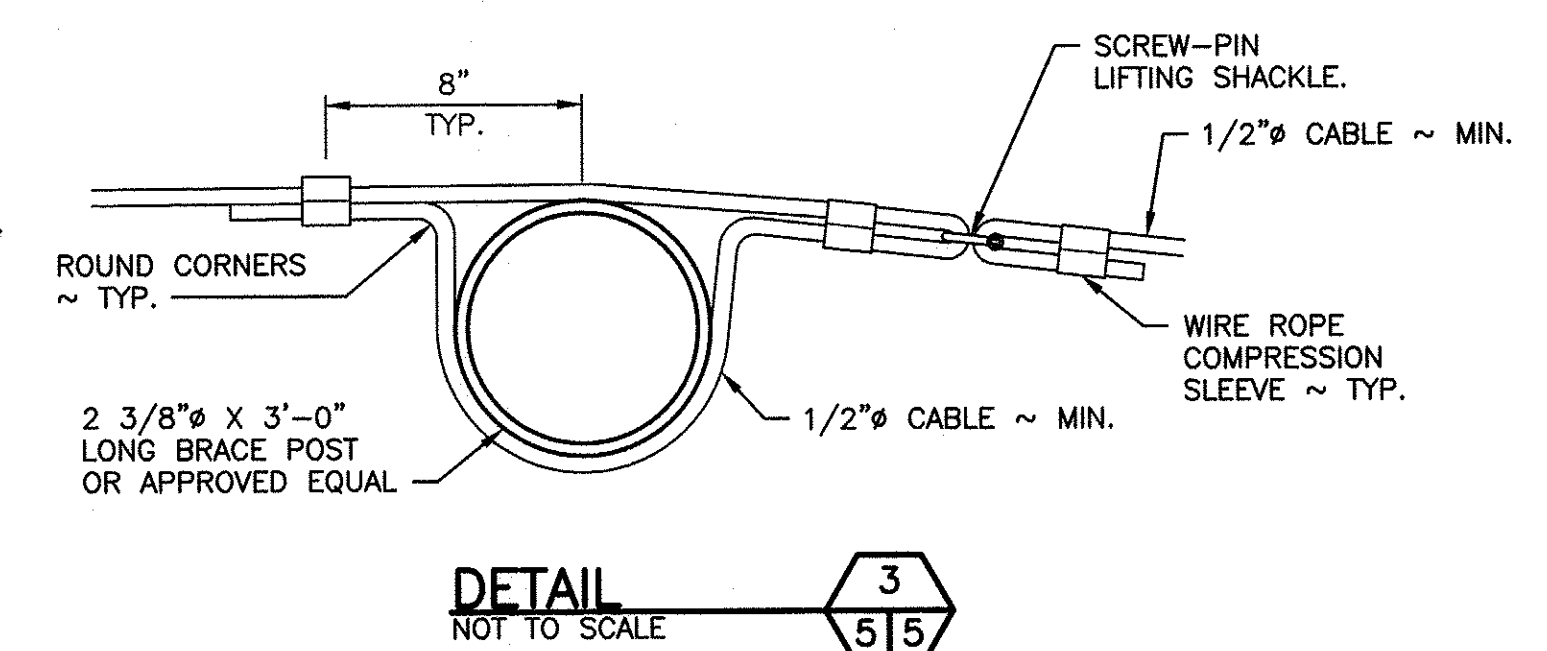
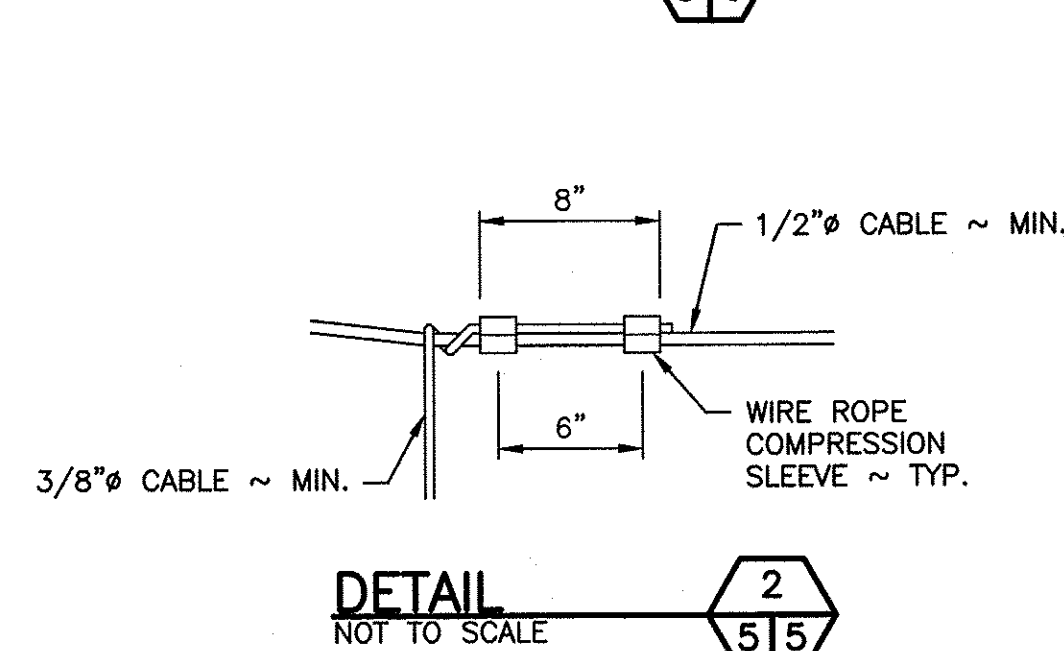
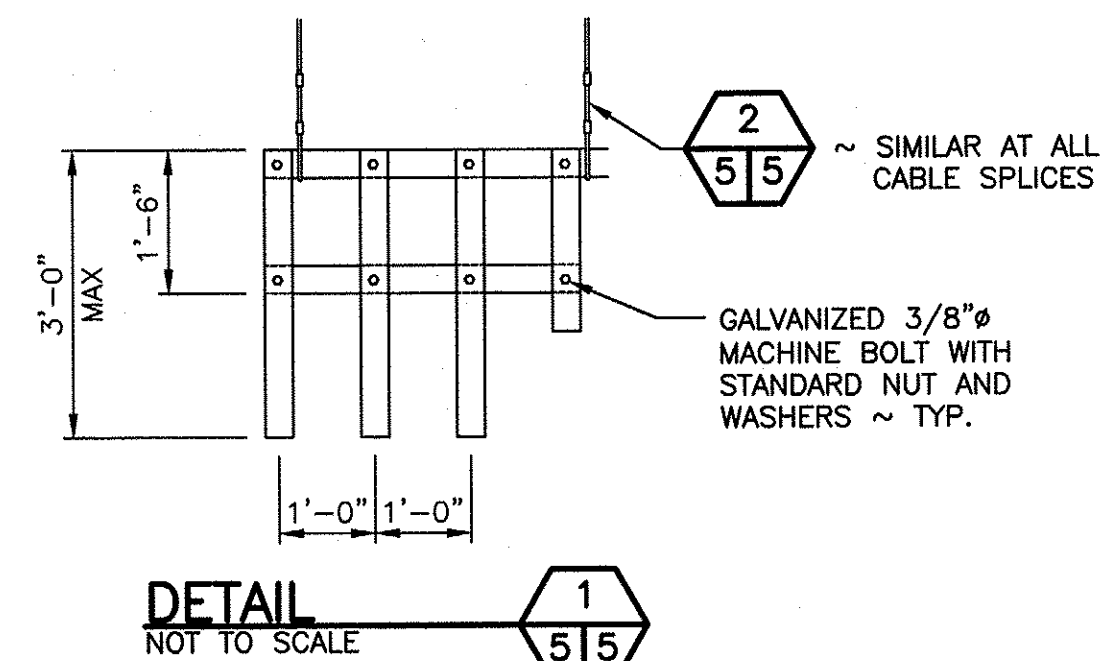
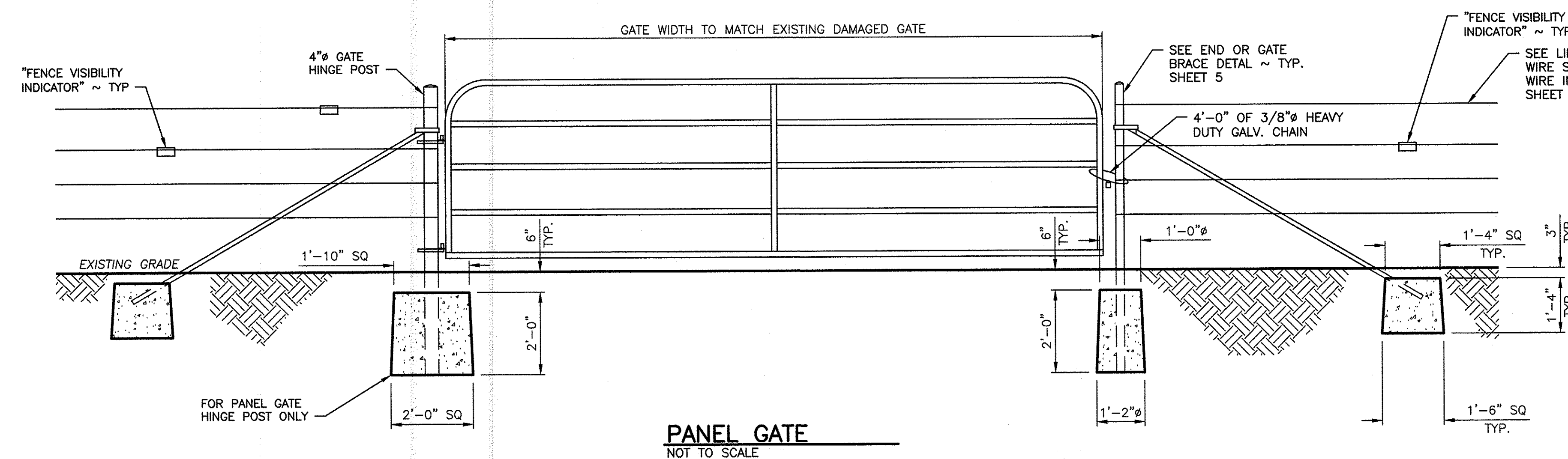
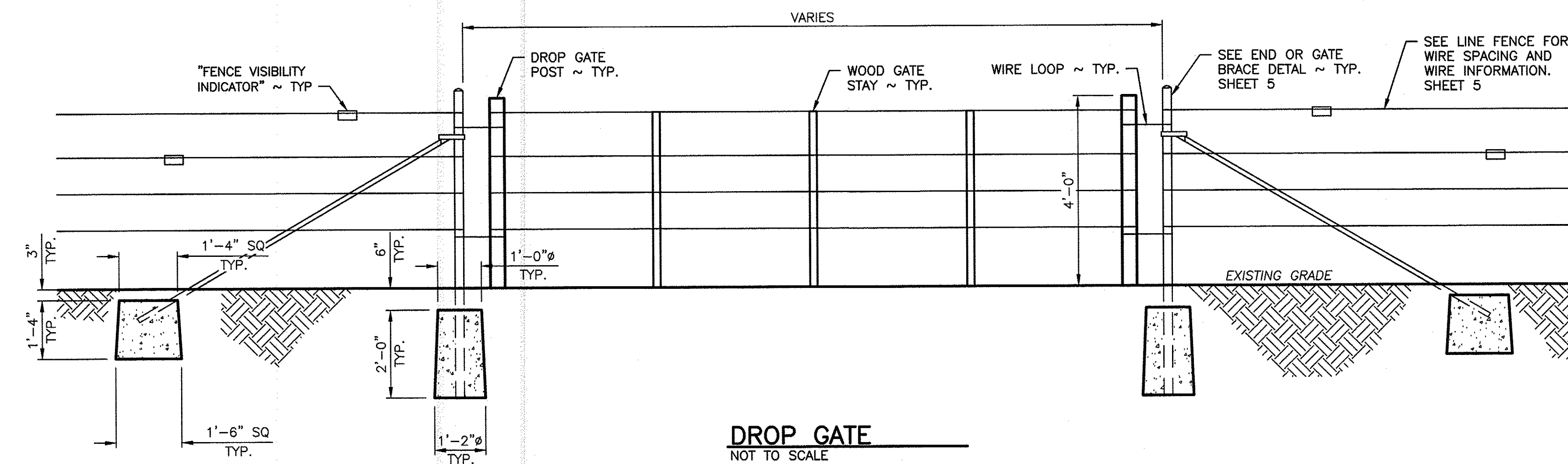
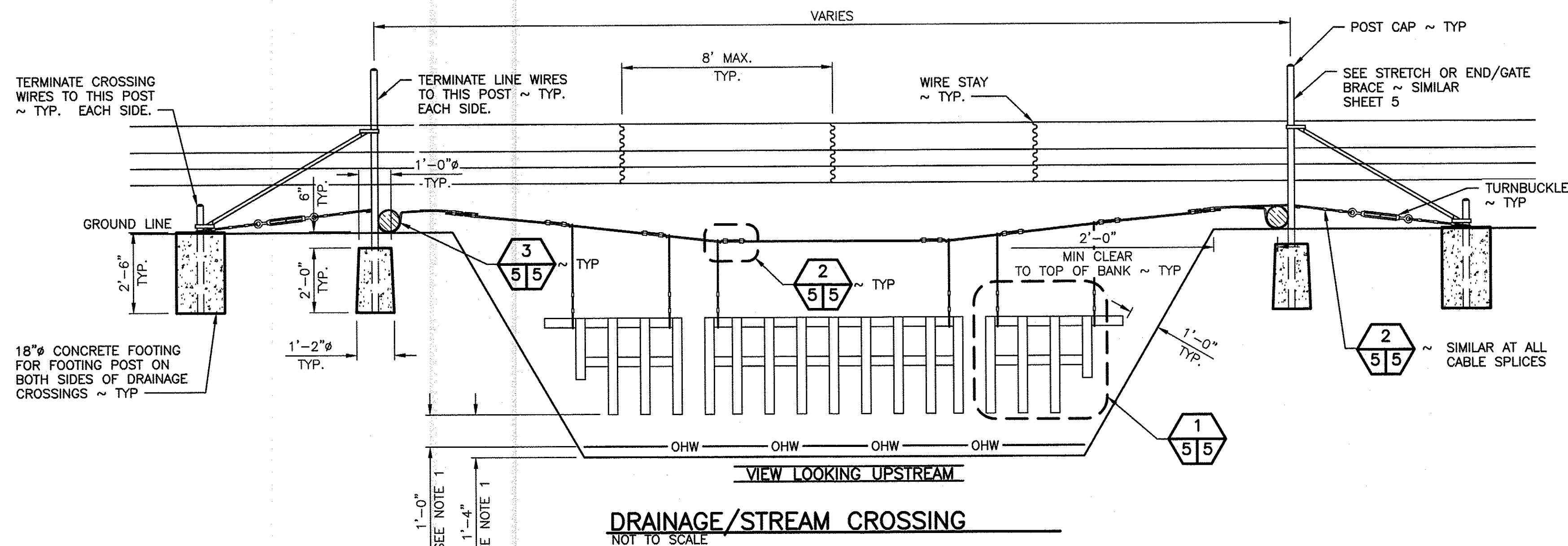
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# NOTES:

## DRAINAGE/STREAM CROSSING:

- PICKETS SHALL BE CONSTRUCTED AS SHOWN IN THE DRAWINGS. INSTALL PICKETS 1 FOOT 4 INCHES ABOVE GRADE OR 1 FOOT ABOVE ORDINARY HIGH WATER, WHICHEVER IS GREATER.
- CROSSING CABLE SHALL BE PLACED ON THE UPSTREAM SIDE OF POSTS.
- CABLE COMPRESSION SLEEVE SHALL BE FOR GALVANIZED CABLE OR APPROVED EQUAL.
- SCREW PIN SHACKLES SHALL HAVE A 600 POUND CAPACITY FOR CROSSING SPANS UP TO 10 FEET IN LENGTH. FOR CROSSING SPANS GREATER THEN 10 FEET IN LENGTH, THE SHACKLES SHALL HAVE A 1,100 POUND CAPACITY.

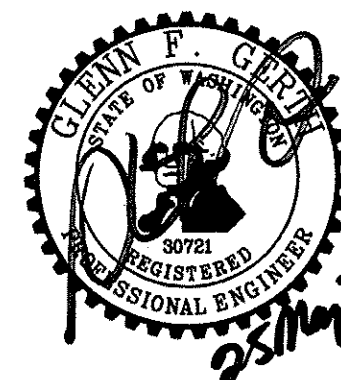
## DROP GATE:

- GATE SHALL HAVE THREE VERTICAL 48 INCHES X 2 INCHES X 2 INCHES UNTREATED WOOD STAYS AT 1/4 POINTS ALONG GATE. THE DROP POSTS LOCATED AT EACH END SHALL BE 3-4 INCH DIAMETER. WOOD POSTS CUT TO A LENGTH OF 4 FEET 4 INCHES. LOOP HINGES AND LOOP CLOSURES CONSTRUCTED OF BRACE WIRE AND LOOPED AROUND END BRACE POSTS TO FACILITATE CLOSURE OF THE GATE.
- SPACING OF THE LONGITUDINAL WIRES SHALL BE THE SAME AS THE LINE FENCE.

## PANEL GATE:

- PANEL GATE MANUFACTURER, TYPE, AND SIZE AS SPECIFIED IN SPECIFICATION. INSTALLED PER MANUFACTURERS SPECIFICATION.

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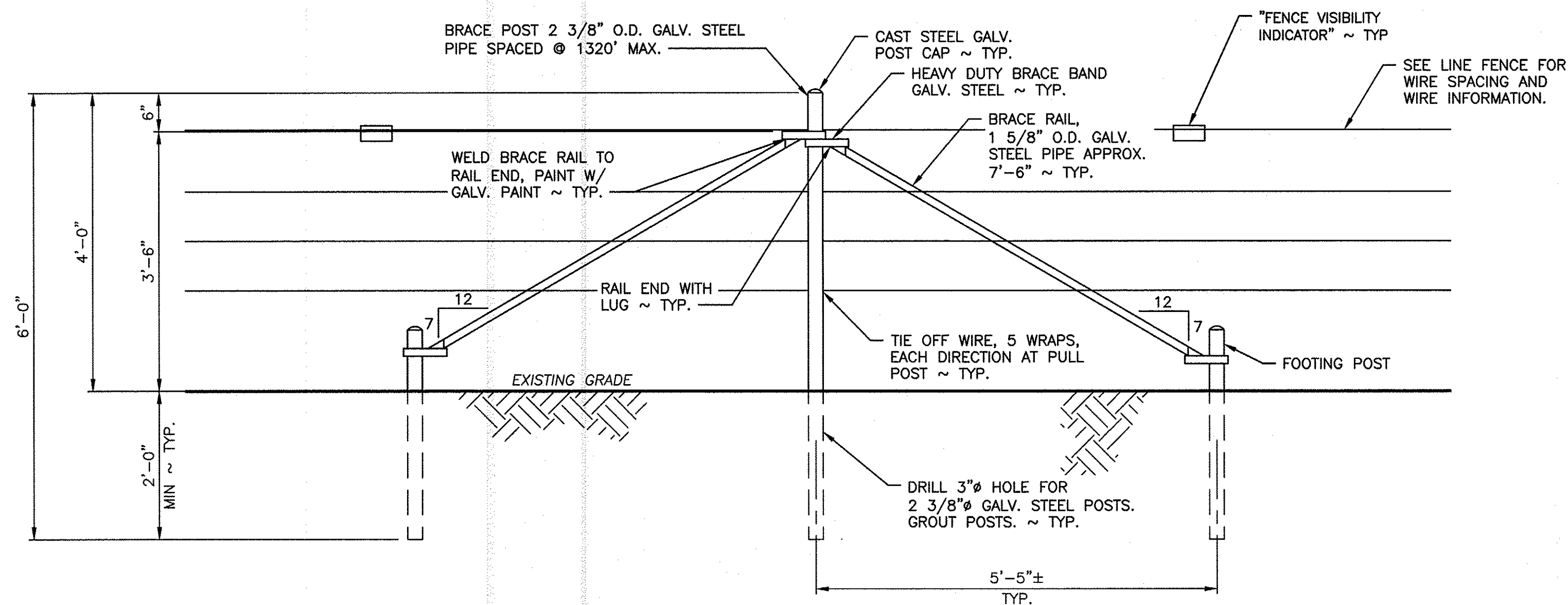
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CHIEF ENGINEER			DATE: 25 May 22
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DATE 5/25/2022

OAK CREEK WLA – COWICHE UNIT  
PHASE 2 LIVESTOCK FENCE  
PROPERTY CORNER GATES AND CROSSINGS

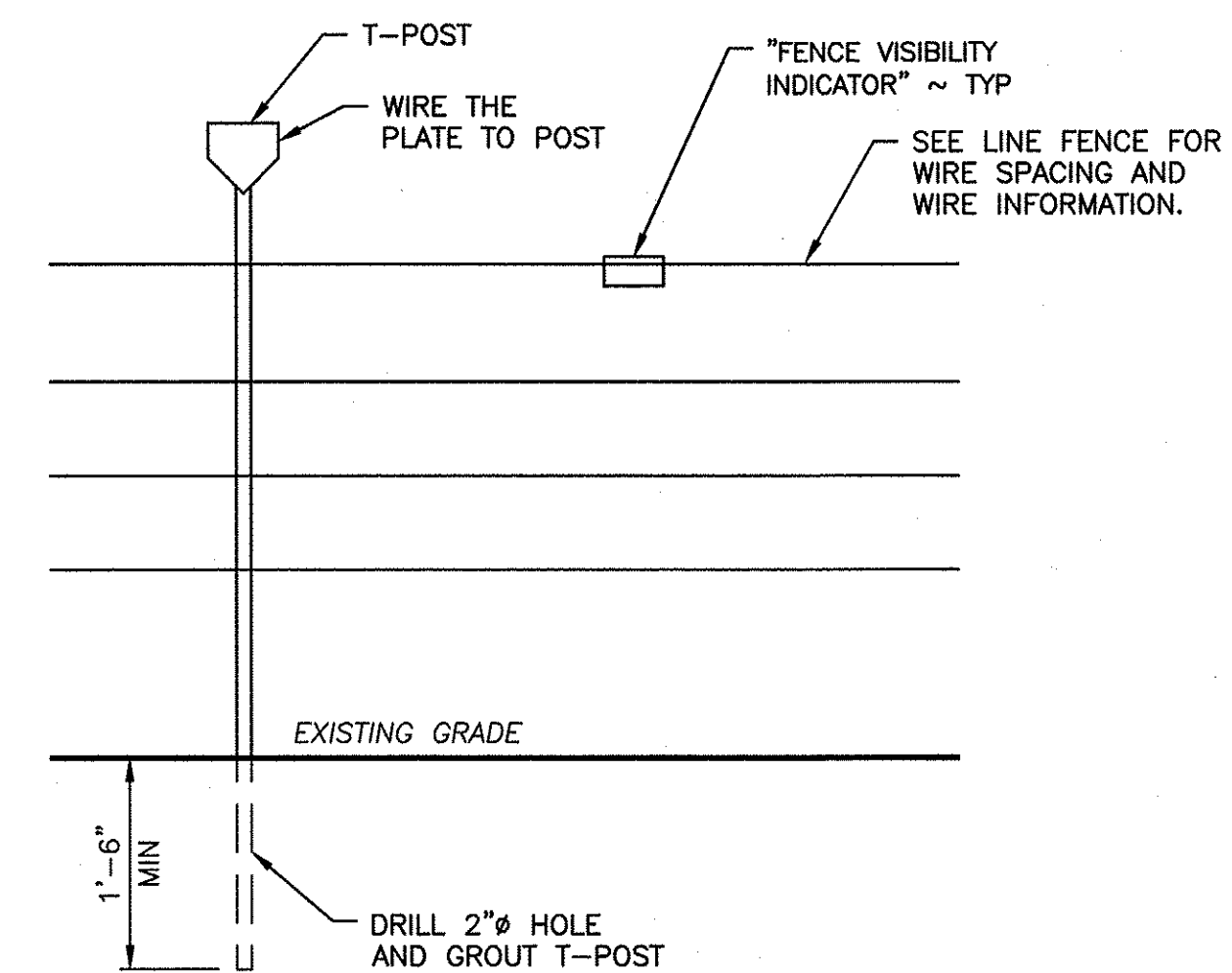
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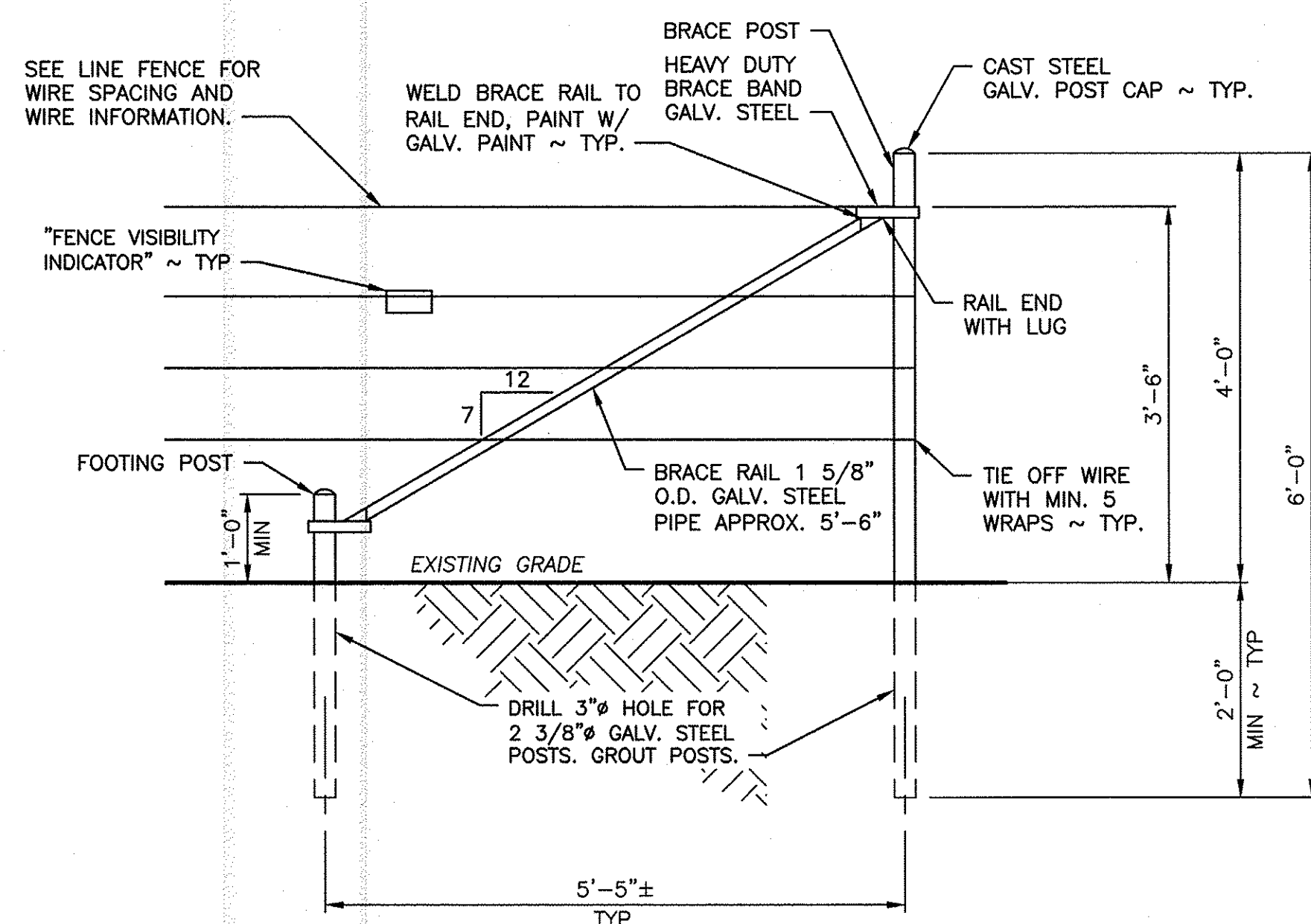
**ALTERNATIVE CORNER OR STRETCH BRACE**

SCALE: 3/4" = 1'-0"



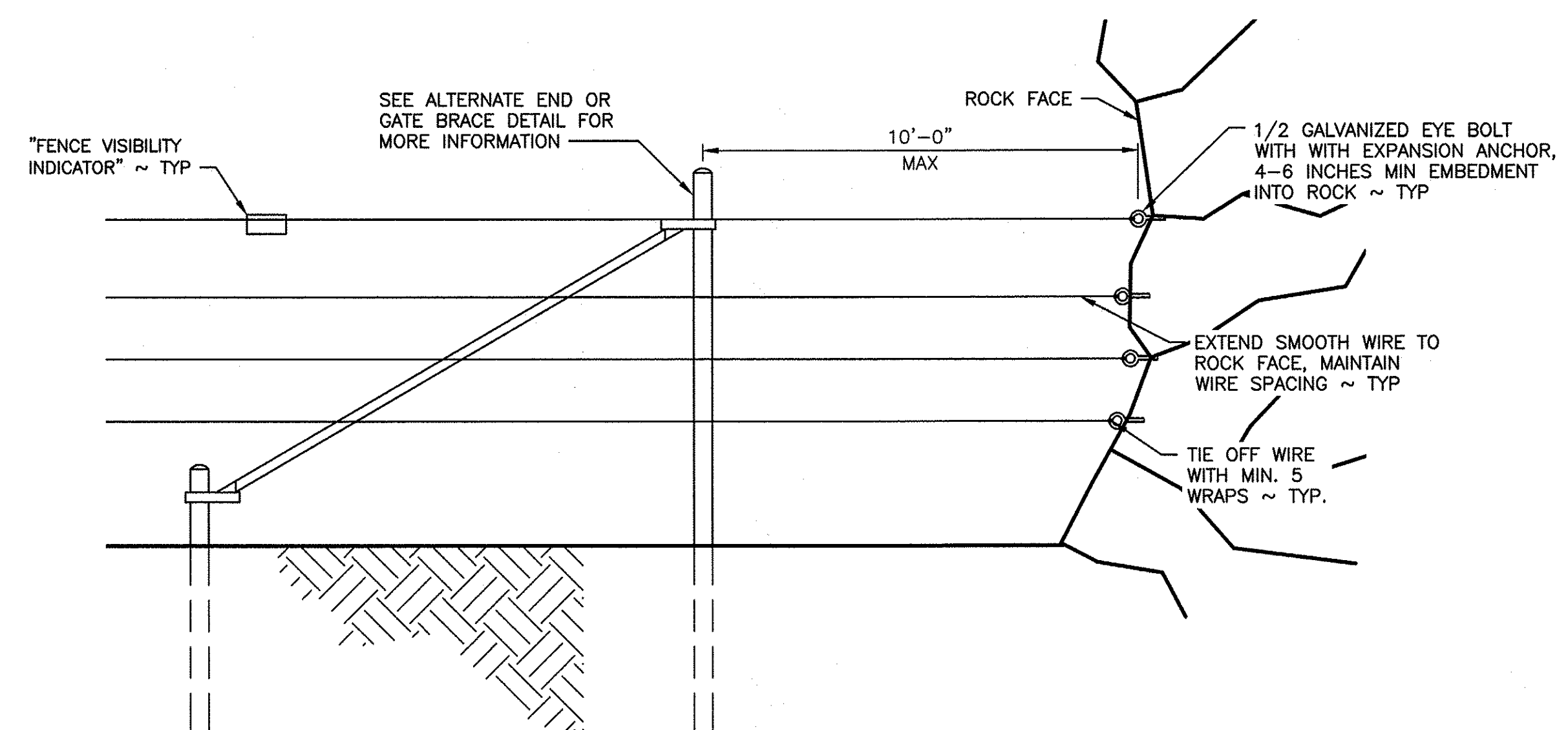
**ALTERNATE T-POST INSTALLATION**

SCALE: 3/4" = 1'-0"



**ALTERNATE END OR GATE BRACE**

SCALE: 3/4" = 1'-0"



**ROCK FACE END**

NOT TO SCALE

**NOTES FOR ALTERNATE METHODS:**

- OWNERS PRIOR APPROVAL REQUIRED FOR ALTERNATE INSTALLATION METHODS
- IF THE POST HOLE CANNOT BE DUG CONVENTIONALLY DUE TO BEDROCK, DRILL A 3 INCH DIAMETER HOLE FOR THE BRACE POST (OR 4 1/2 INCH DIAMETER HOLE FOR A 4 INCH HINGE POST) TO A DEPTH OF 24 INCHES INTO THE ROCK AND GROUT THE POST WITH HYDRAULIC CEMENT GROUT, DRILL A 3 INCH HOLE FOR A FOOTING POST TO RECEIVE THE LOWER END OF THE BRACE RAIL AND GROUT IN POST. ALL VERTICAL METAL POSTS SHALL HAVE A POST CAP.

**ALTERNATE T-POST INSTALLATION:**

- IF THE LINE POST DESIGN DEPTH CANNOT BE OBTAINED BY CONVENTIONAL DRIVING DUE TO EXISTING SOIL/ROCK CONDITIONS, THE POST HOLE SHALL BE DRILLED AND GROUTED WITH A THIN FLOWABLE GROUT.

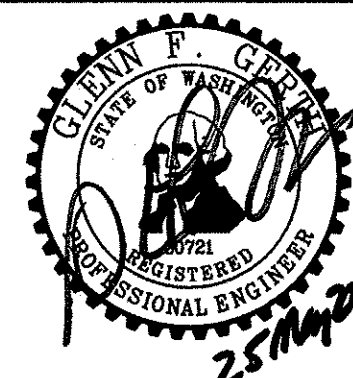
**ALTERNATE CORNER OR STRETCH BRACE:**

- BRACE POSTS SHALL BE AT LEAST 7 FEET 3 INCHES LONG X 2 3/8 INCHES IN DIAMETER, POSTS SHALL BE BURIED A MINIMUM DEPTH OF 33 INCHES.
- HEAVY DUTY BRACE BAND SHALL BE FIXED IN PLACE WITH ONE 0.27 CALIBER POWER ACTUATED NAIL OR 1/4 INCH SELF-TAPPING SCREW.
- THE DISTANCE BETWEEN STRETCH BRACES SHALL NOT EXCEED THE DISTANCE OF 1320 FEET (1/4 MILE).
- INSTALL STRETCH BRACES AT CHANGES OF GRADE OF 10 DEGREES (1.75 FEET OF RISE OR DROP ON 10 FEET OF RUN) OR MORE.
- CHANGES IN ALIGNMENT OF 10 DEGREES OR MORE (1.75 FEET OF DIRECTION CHANGE IN 10 FEET OF RUN) SHALL BE CONSIDERED AS CORNERS, AND A CORNER BRACE STRUCTURE SHALL BE INSTALLED.

**ALTERNATE END OR GATE BRACE:**

- POSITION OF WIRE ON END POST SHALL BE FIXED IN PLACE WITH ONE 0.27 CALIBER POWER ACTUATED NAIL OR 1/4 INCH SELF-TAPPING SCREW.
- SEE ALTERNATE CORNER OR STRETCH BRACE NOTES AND PANEL GATE DETAIL FOR MORE INFORMATION.
- GATE HINGE POST SHALL BE 4 INCH DIAMETER GALVANIZED STEEL PIPE.

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OAK CREEK WLA – COWICHE UNIT

PHASE 2 LIVESTOCK FENCE

ALTERNATE BRACE METHODS

PROJECT NO.

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