

# Staff Report

for the Water and Hydroelectric Operations Committee Meeting of  
May 20, 2020

**TO:** Water and Hydroelectric Operations Committee

**FROM:** Keane Sommers, P.E., Hydroelectric Manager *KSS*  
Nathan Droivold, E.I.T., Project Manager *ND*

**DATE:** May 13, 2020

**SUBJECT:** **Combie South Access Road (FATR #6943)**

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## ***HYDROELECTRIC***

### **RECOMMENDATION:**

Review and discuss the Combie South Access Road Project (FATR 6943), and provide direction on the preferred route given recent communications with property owners.

### **BACKGROUND:**

Over the past several years, the District has been working to improve its access to the Combie South Powerhouse by way of the Combie South Access Road Project, (Project). The current access road to the powerhouse is steep, narrow, and in poor repair. The existing easements do not allow for the necessary improvements to be made as they state the easements are limited to access “across that portion of the existing roadway, as it presently exists on the ground.” This limitation has led the District to attempt to identify an alternative route to access the powerhouse for a number of years.

In January of 2016 the necessity of improved access was brought to the forefront when the Federal Energy Regulatory Commission (FERC) directed the District to “consider improving access to the south side of the dam during emergency conditions.”

On May 19, 2016, the District met with a representative of the Federal Bureau of Investigation (FBI) onsite. Then in September of 2016, the District met onsite with a representative of the Placer County Sheriff’s Office. Both parties assessed that the current access should be improved. Following those visits the District hired an independent security consultant. This consultant’s opinion mirrored those of law enforcement.

In an effort to identify improved routes to the Combie South Powerhouse, the District contracted with Nevada City Engineering to complete a study identifying alternative access routes for the Project. During the March 2018 Water and Hydroelectric Operations (WHO) Committee meeting an update on progress was provided, and four alternatives were presented for consideration. The WHO Committee decided that it wanted property owner input, and deferred any action until the April 2018 WHO Committee meeting.

During the April 2018 WHO Committee meeting, several residents from the area were in attendance, and identified concerns with the Project. At that meeting, the members of the WHO Committee determined that three routes should be reviewed in more detail, and cost estimates should be prepared.

The requested information, including drawings and a cost estimate for each of the three alternatives, was presented to the WHO Committee in March of 2019. This information showed that Alternative 1, which considers acquiring additional property easements necessary to improve the existing access road, would prove to be the most expensive option costing approximately \$406,000, with an anticipated \$135,000 in Right of Way acquisition costs alone. Alternatives 2 and 3 proposed new access roads with total costs of about \$195,000 and \$267,000, respectively.

However, several residents and affected property owners attended this meeting and voiced concerns with Alternatives 2 and 3 in constructing a new access road to the powerhouse. They indicated that improving the existing access road by Alternative 1 as their preference, and expressed their willingness to consider donating the easements required to pursue Alternative 1 as a cost-reduction measure. This led the WHO Committee to instruct District staff to explore cost savings for Alternative 1 to improve the existing route such that the cost would be more comparable to the other Project alternatives.

On April 9, 2020, NID mailed a request to affected property owners asking for a donation of the required easements needed to improve the existing access road according to Alternative 1. Doing so would achieve the cost reduction necessary to keep the Project's costs in-line with the other two alternatives.

This request was mailed to all six property owners that NID would need to obtain easements from to pursue Alternative 1 with the desired cost savings. One positive response and two negative responses were received. Non-responsive property owners were assumed to be uninterested in the District's proposal. This conclusion will not achieve the cost reduction necessary to consider Alternative 1 as the preferred option for the Project from a budgetary standpoint.

District staff requests the WHO Committee provide a direction on the preferred Project alternative in light of this information. The aforementioned study by Nevada City Engineering containing drawings and cost estimates for the three project alternatives is attached for review and further discussion.

The Project aligns with Goal No. 1 of the District's Strategic Plan as improving access to the Combie South Powerhouse will allow NID to better manage this critical asset both under normal operating conditions and during an emergency situation.

In an effort to provide notification of today's WHO Committee meeting to residents, a letter was sent via UPS on May 6, 2020.

**BUDGETARY IMPACT:**

Budgetary impact is dependent on the alternative selected. Costs are outlined in the attached Preliminary Engineer's Estimates.

ND

Attachments: (3)

- Combie South Access Road Alternatives Overview Drawings
- Combie South Access Road Preliminary Engineer's Estimate
- May 20, 2020 WHO Committee Meeting Presentation



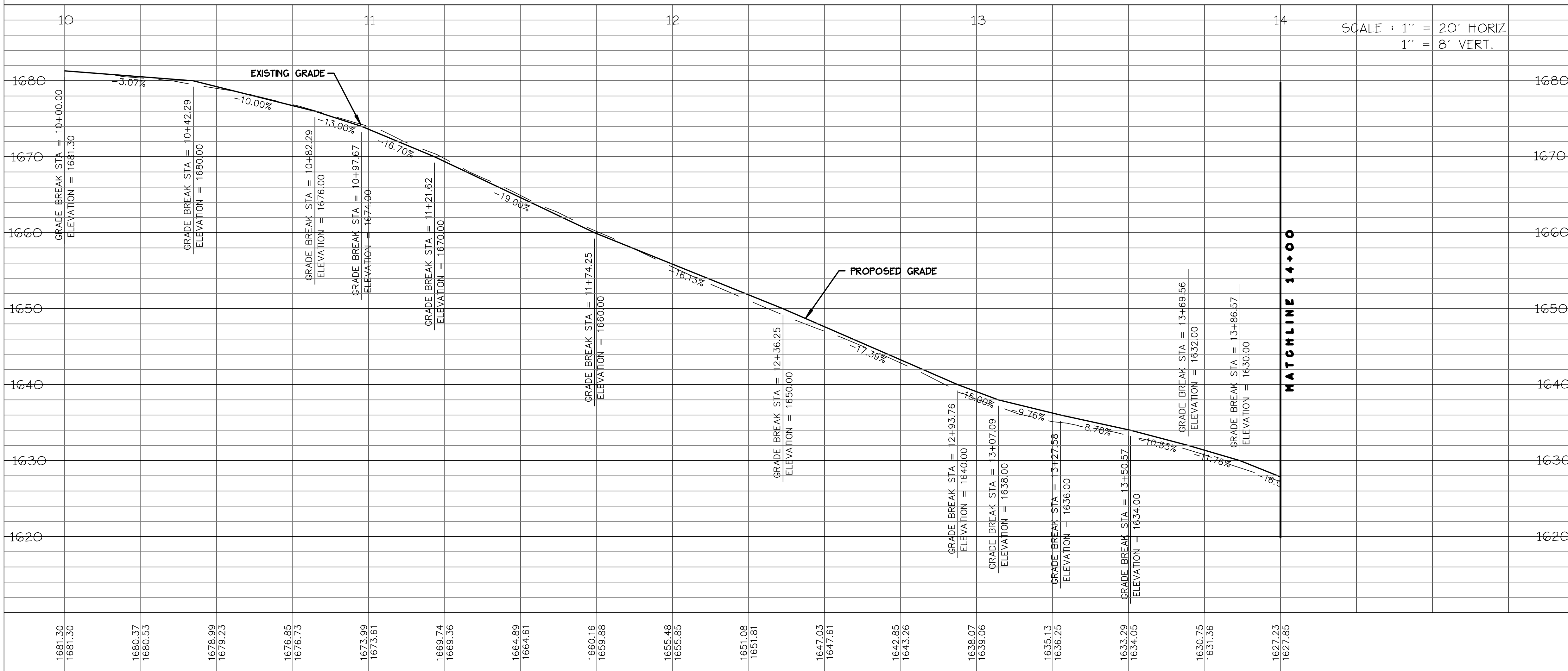
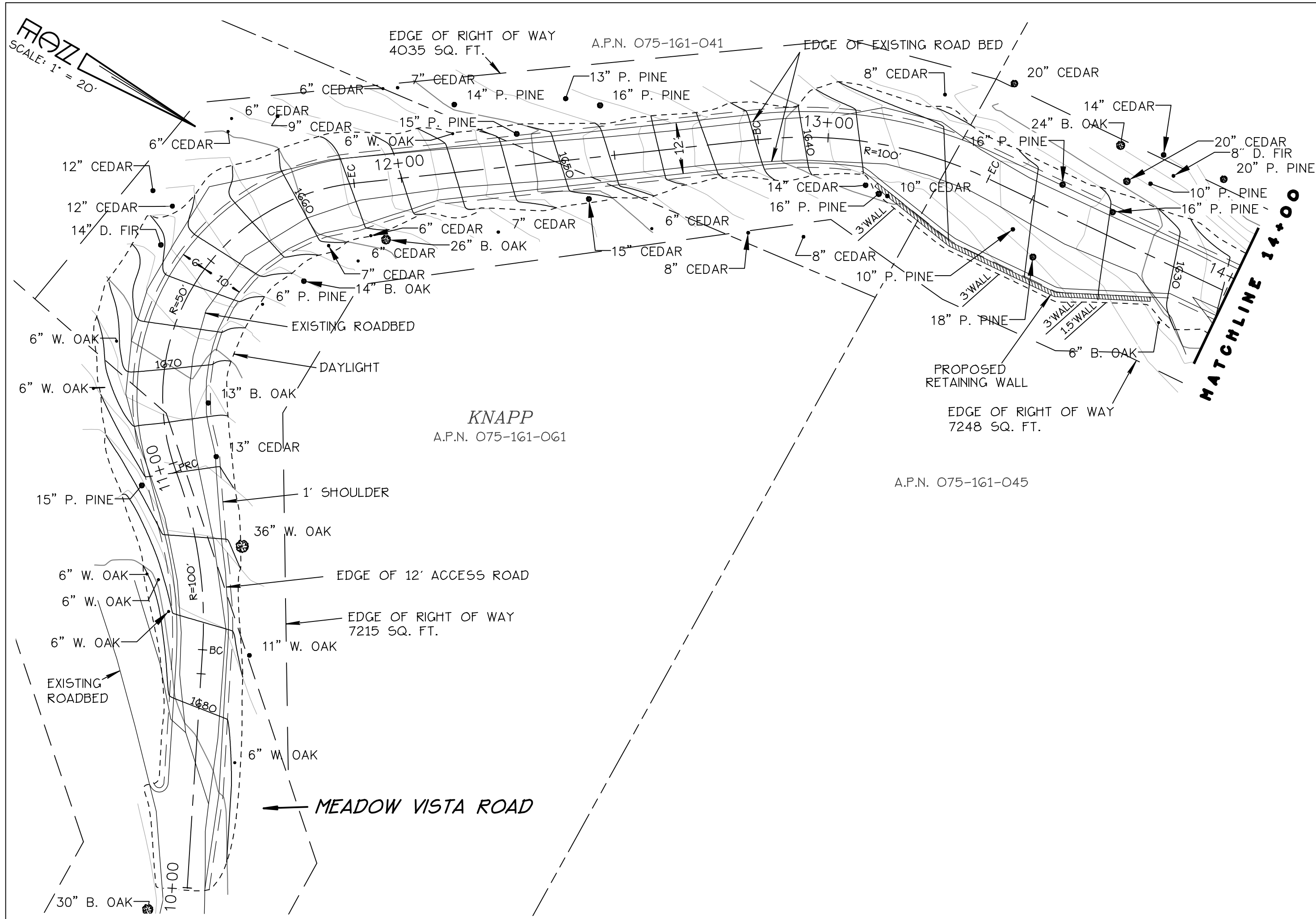


SHEET INDEX

- 1 OVERVIEW
- 2-5 ROUTE 1 PLAN+PROFILE
- 6-7 ROUTE 2 PLAN+PROFILE
- 8-10 ROUTE 3 PLAN+PROFILE

COMBIE SOUTH ACCESS ROUTE STUDIES			
<b>NEVADA IRRIGATION DISTRICT</b>			
NEVADA COUNTY	ALTERNATIVES OVERVIEW	CALIFORNIA	
PREPARED BY			
NEVADA CITY ENGINEERING, INC.			
505 COYOTE STREET - P.O. BOX 1437 - NEVADA CITY - CALIFORNIA			
DESIGNED	DATE	JOB NO.	
	OCT. 2018	18-077	
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COMBIE SOUTH ACCESS ROUTE STUDIES  
NEVADA IRRIGATION DISTRICT

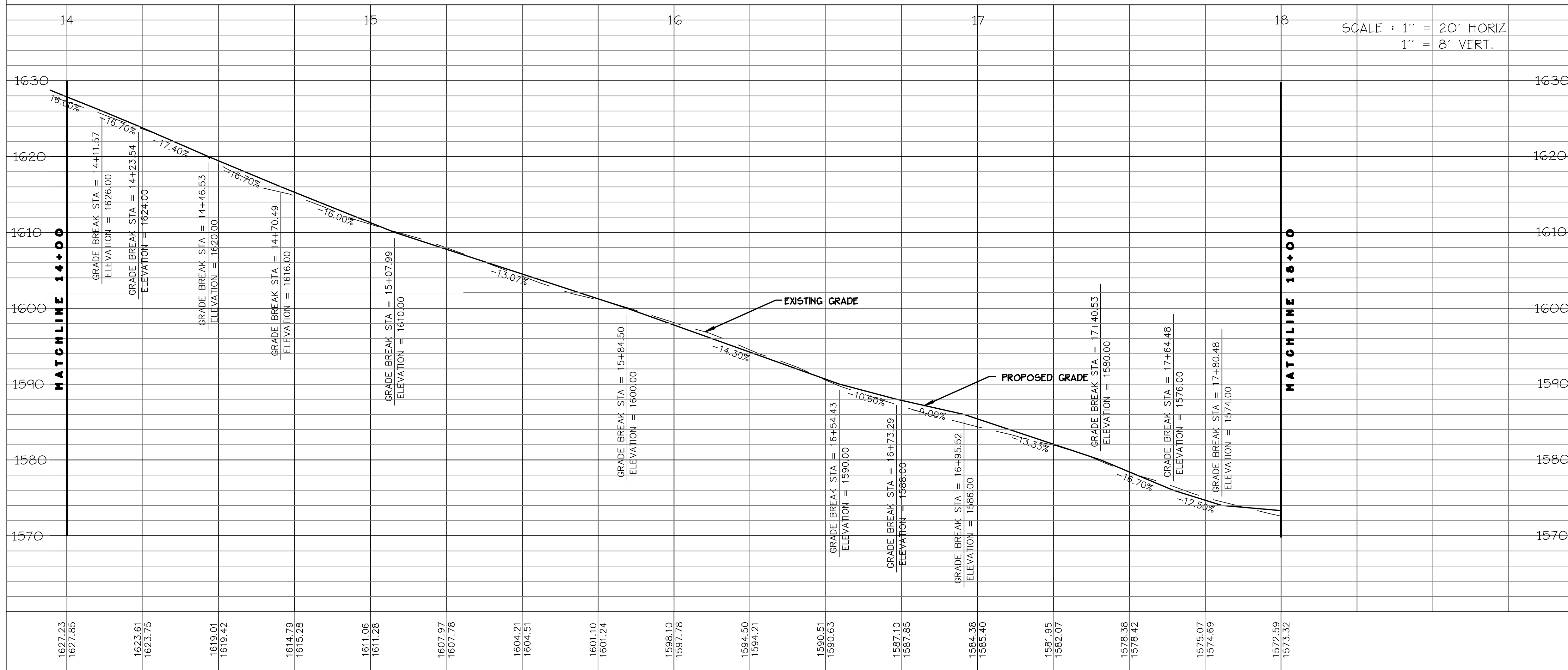
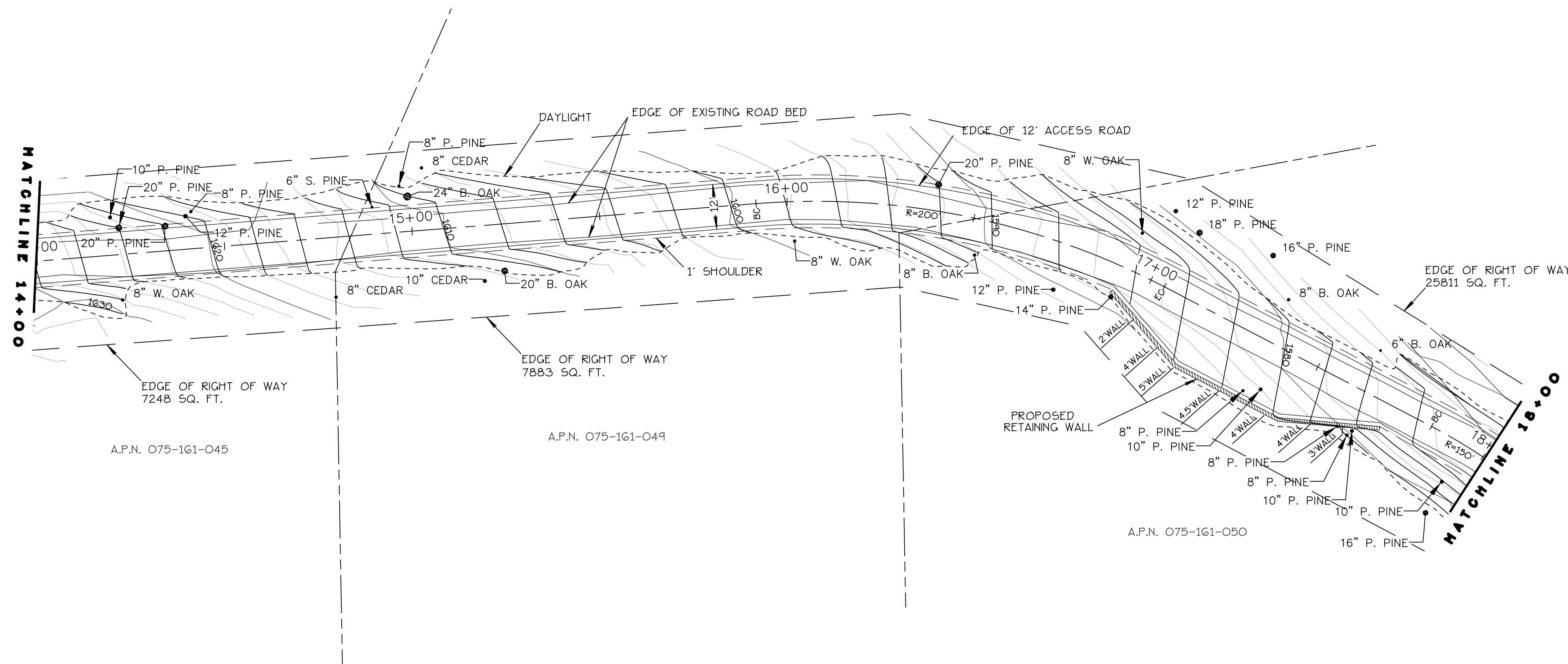
## ROUTE 1

NEVADA COUNTY      GRADING PLAN      CALIFORNIA

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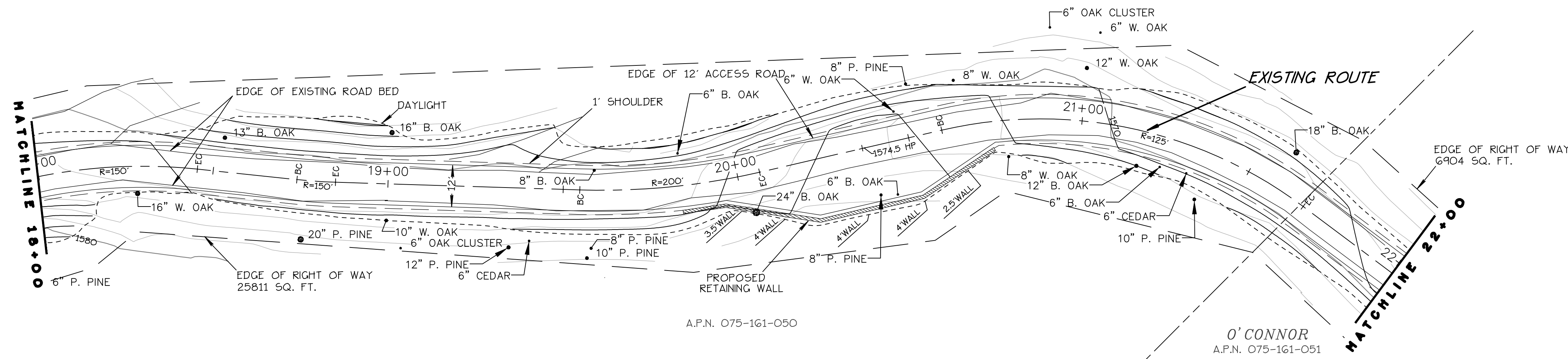
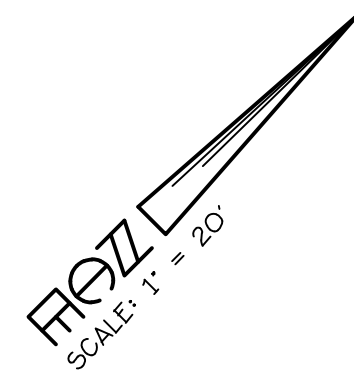
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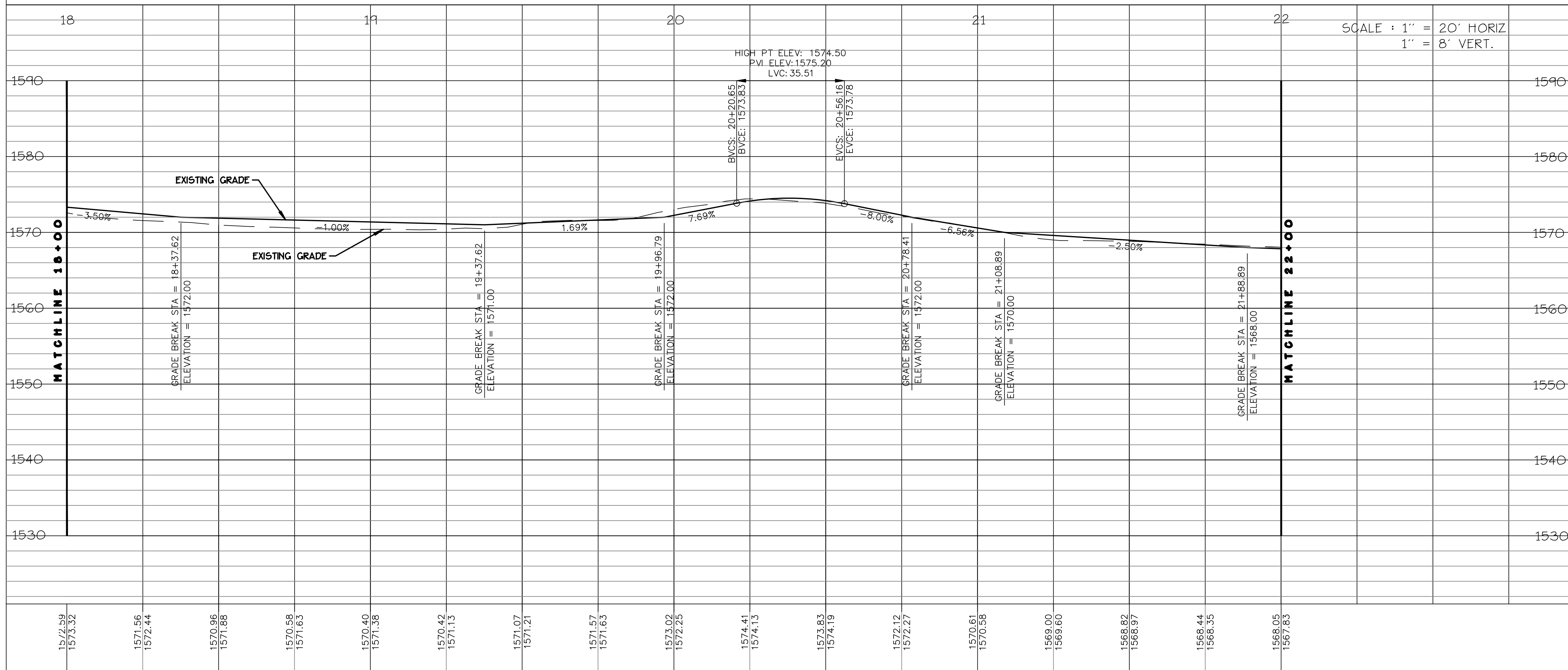
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A.P.N. 075-161-050

O'CONNOR  
A.P.N. 075-161-051



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COMBIE SOUTH ACCESS ROUTE STUDIES  
NEVADA IRRIGATION DISTRICT

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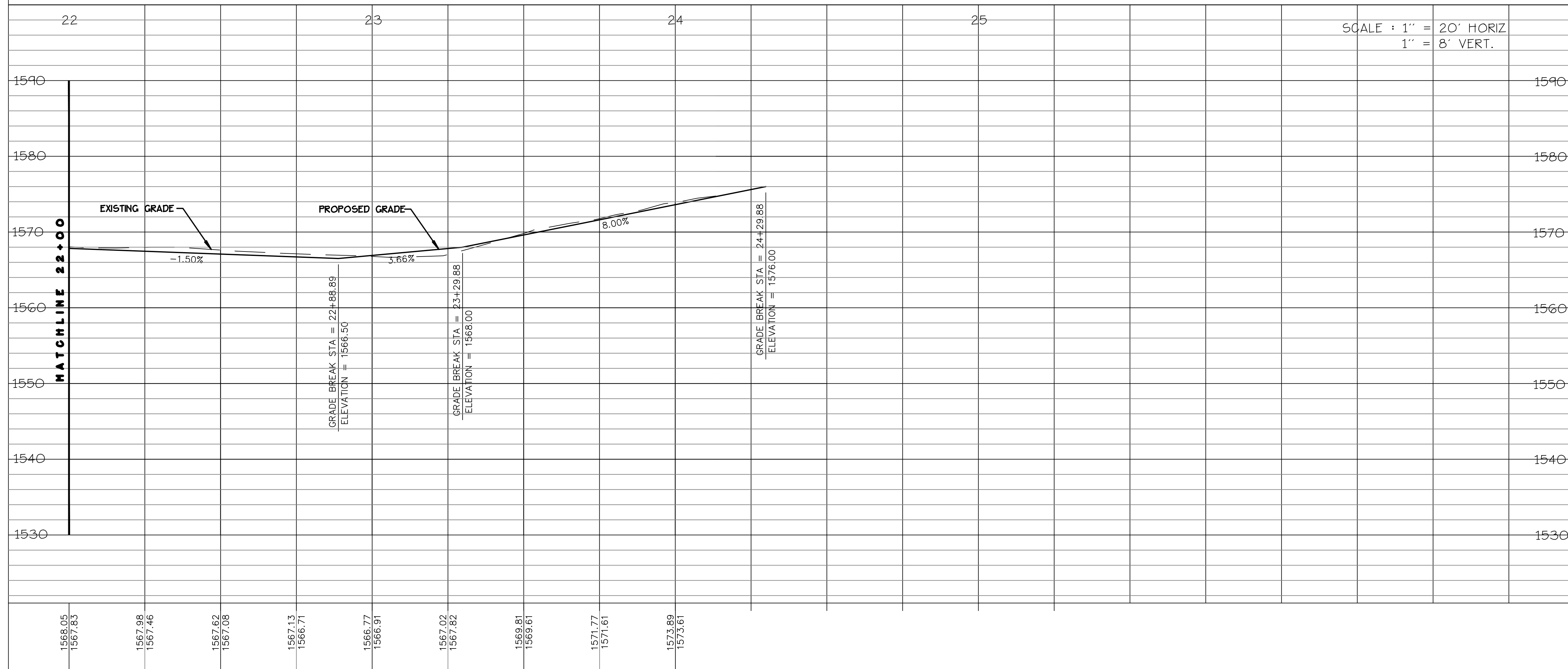
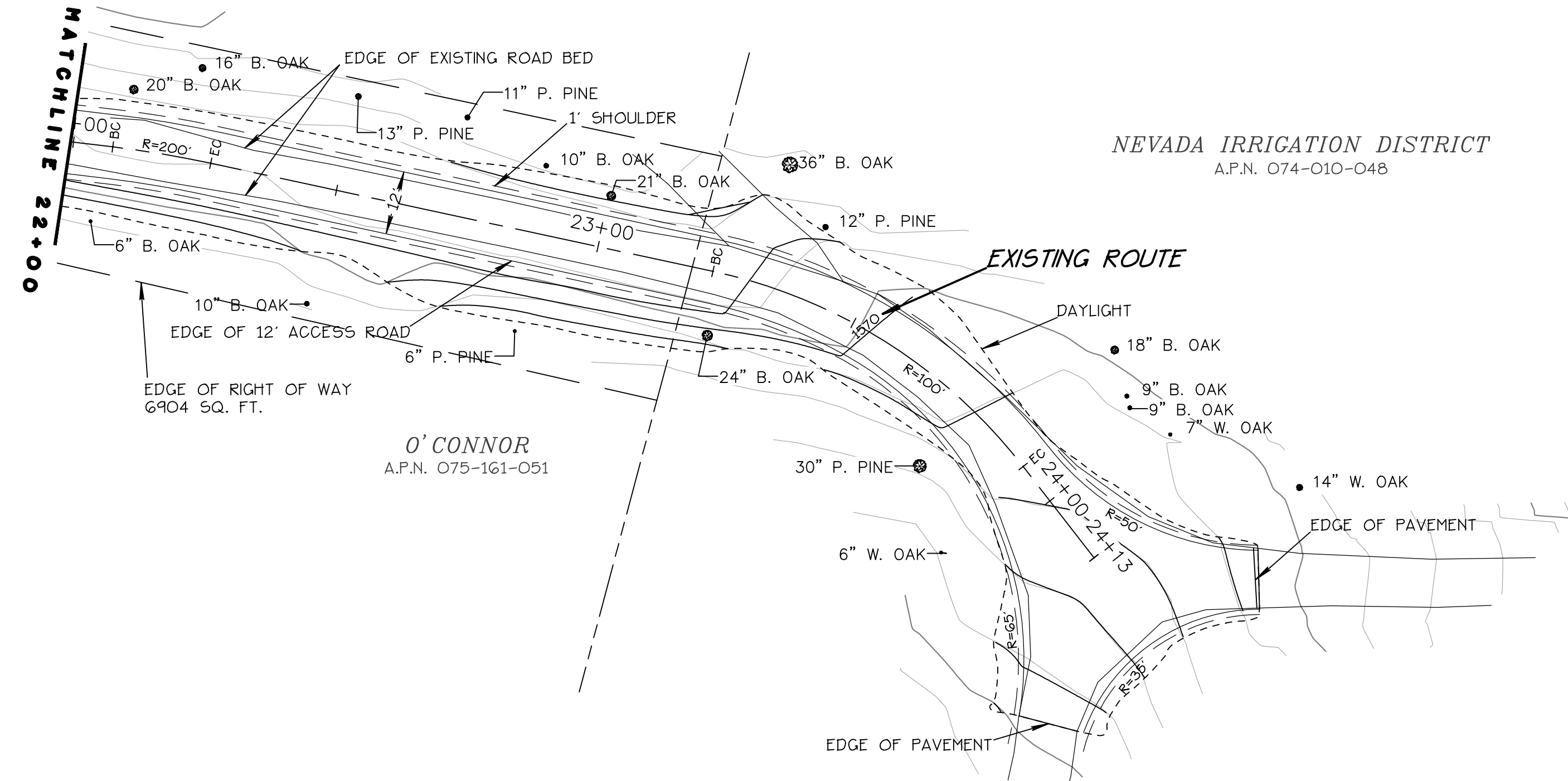
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NEVADA IRRIGATION DISTRICT

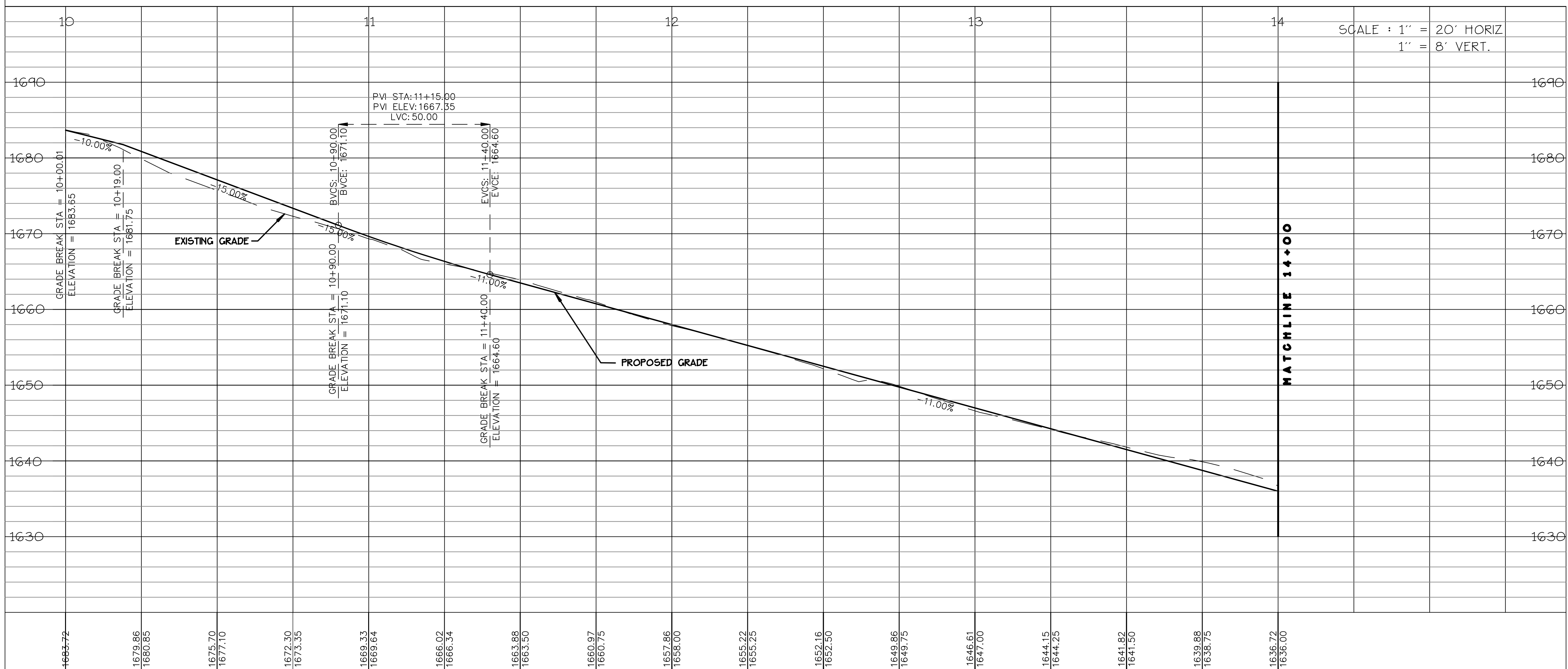
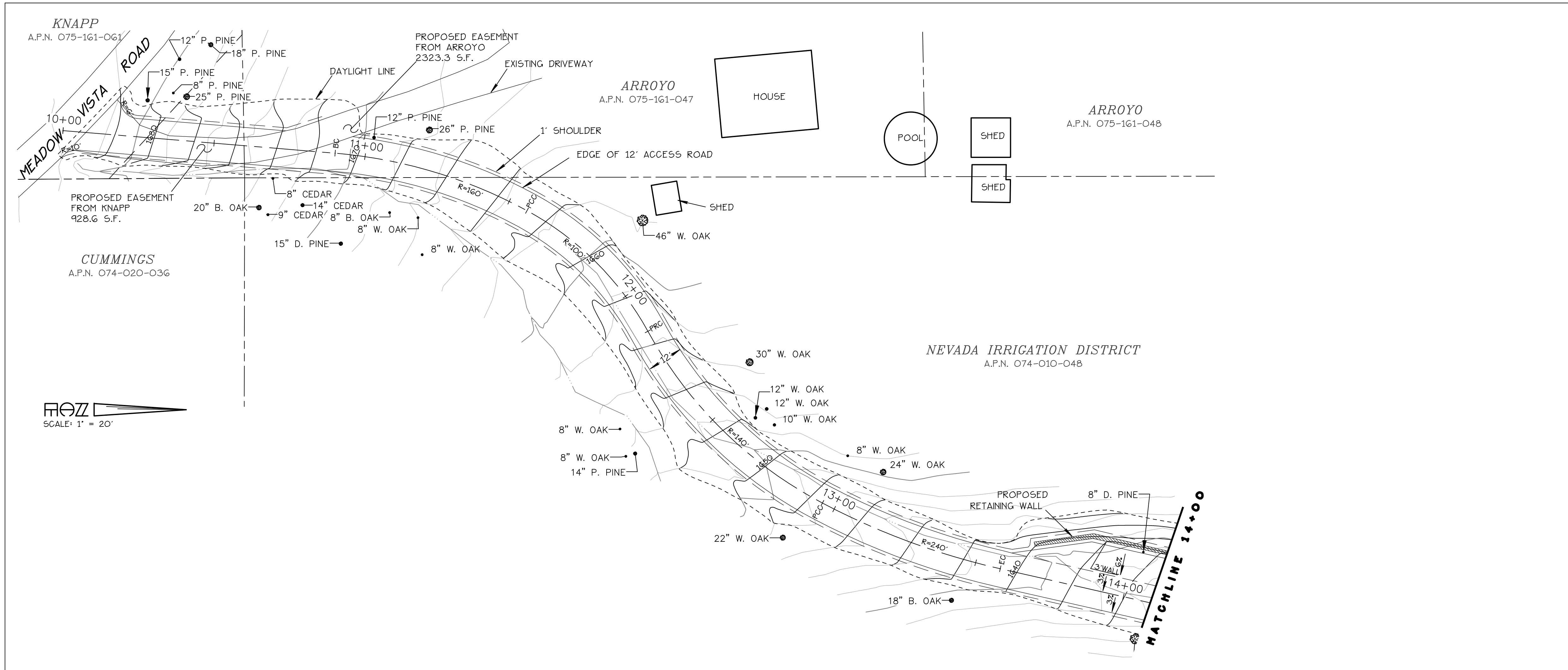
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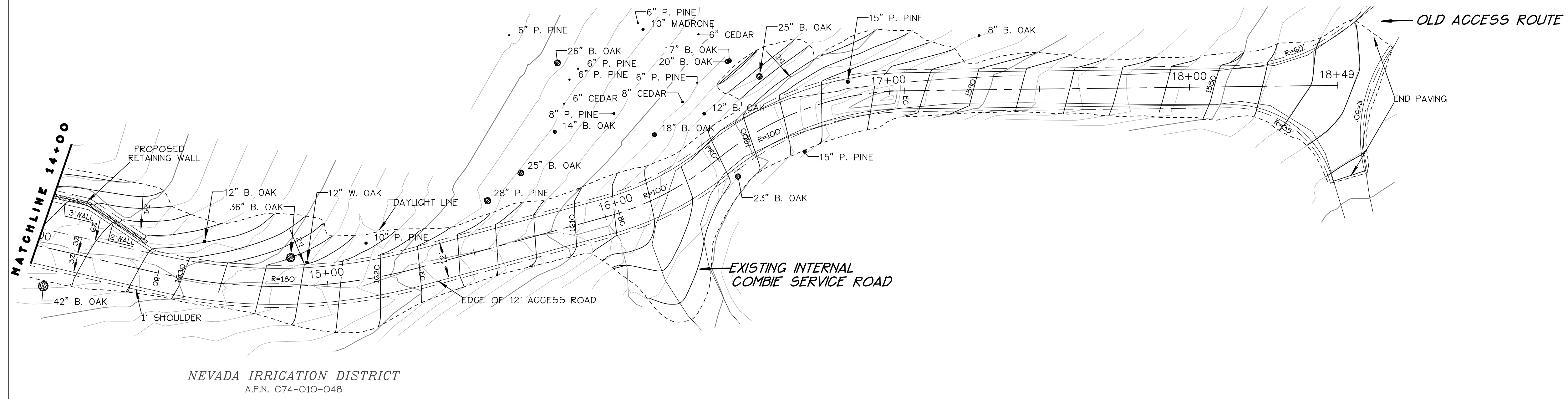
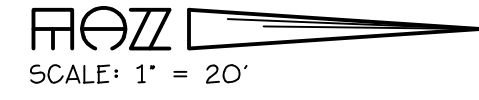
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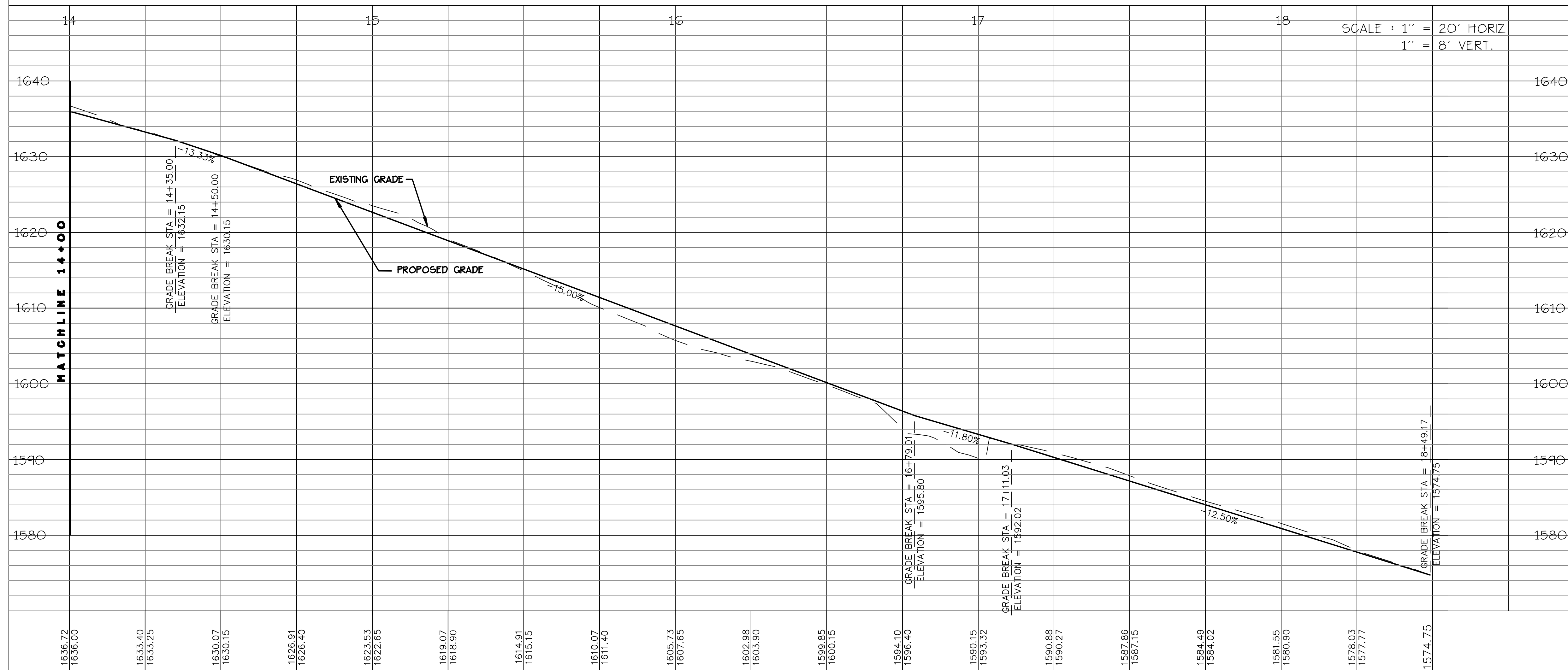
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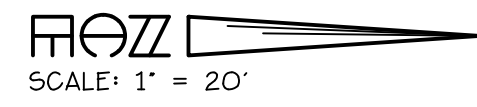
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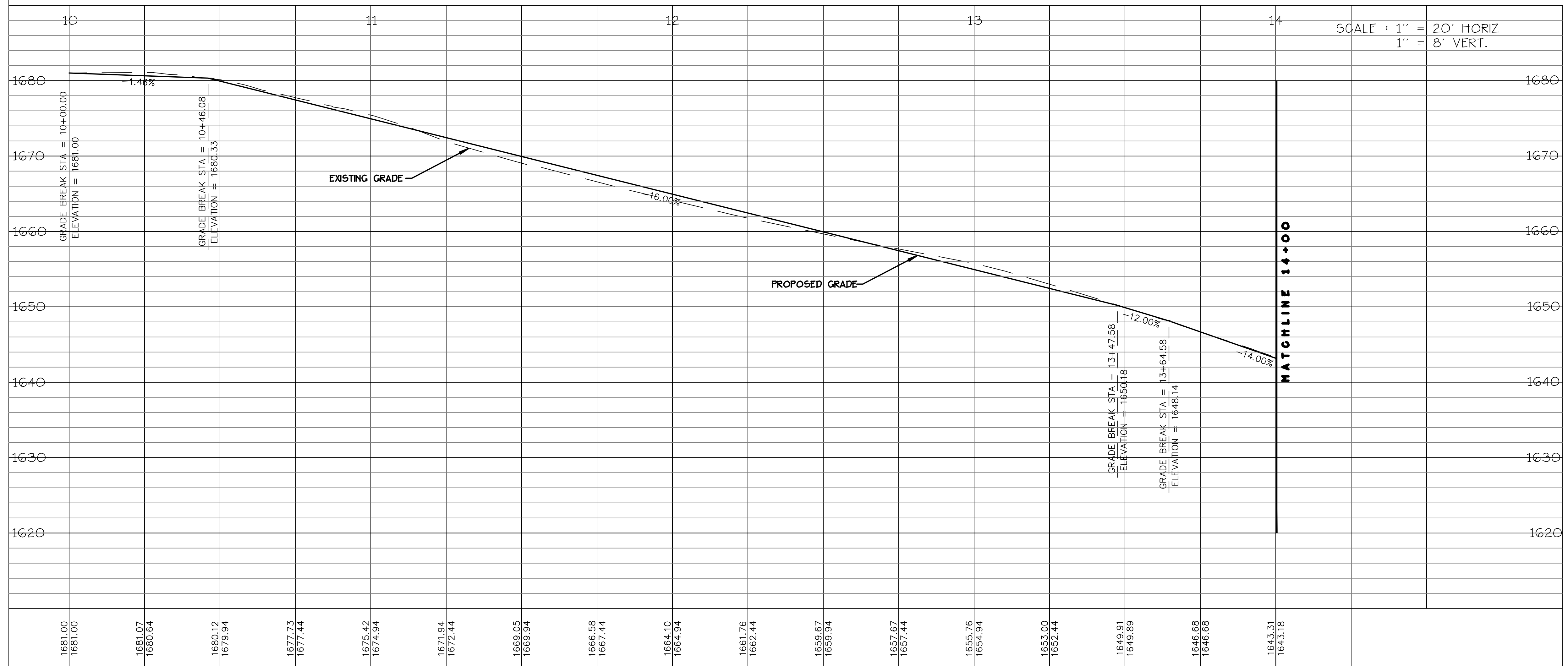
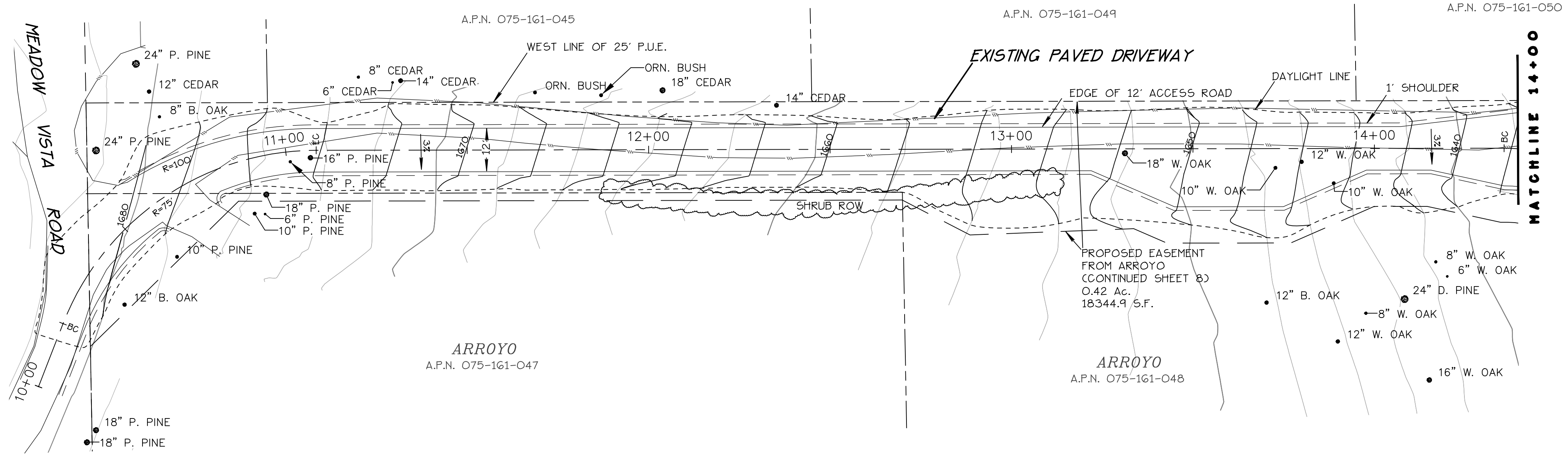
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COMBIE SOUTH ACCESS ROUTE STUDIES NEVADA IRRIGATION DISTRICT			
<b>ROUTE 2</b>			
NEVADA COUNTY		GRADING PLAN	
PREPARED BY			
<b>NEVADA CITY ENGINEERING, INC.</b>			
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KNAPP  
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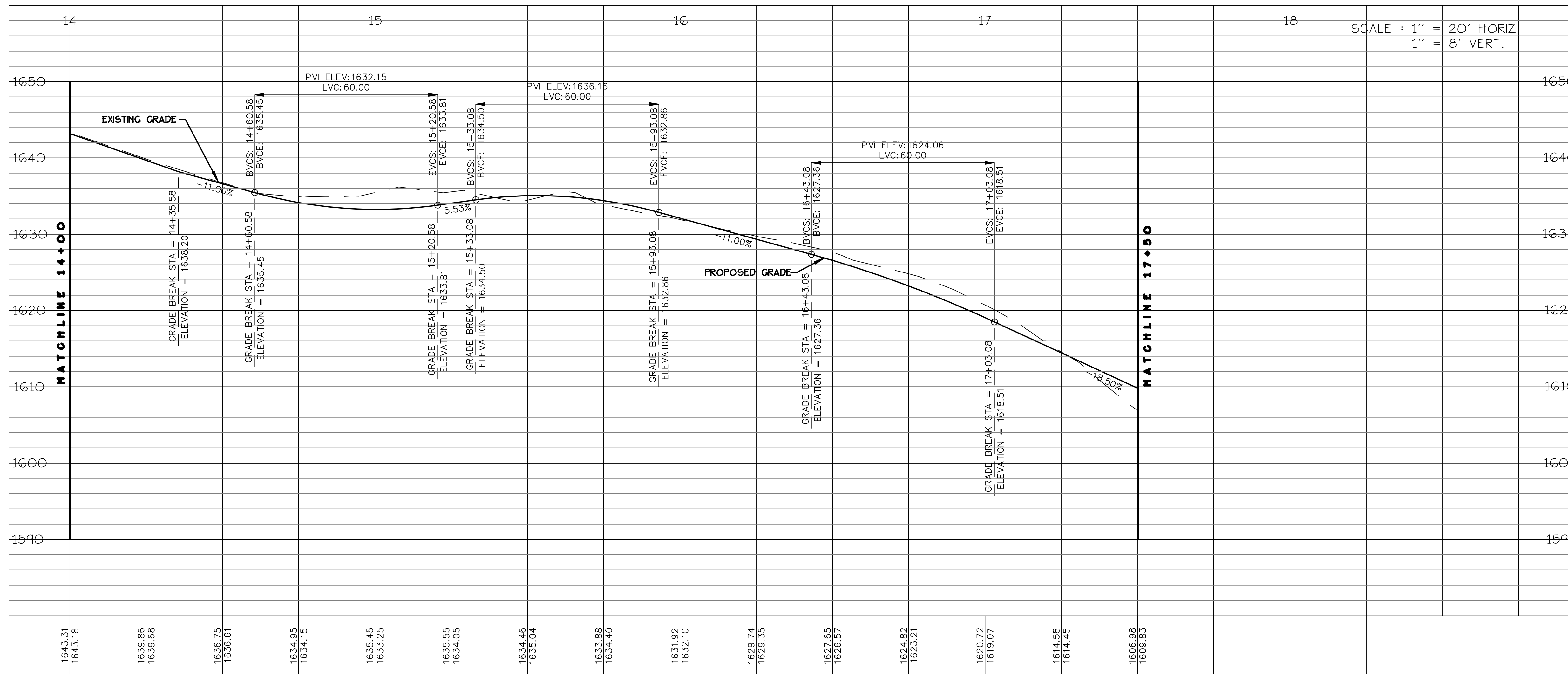
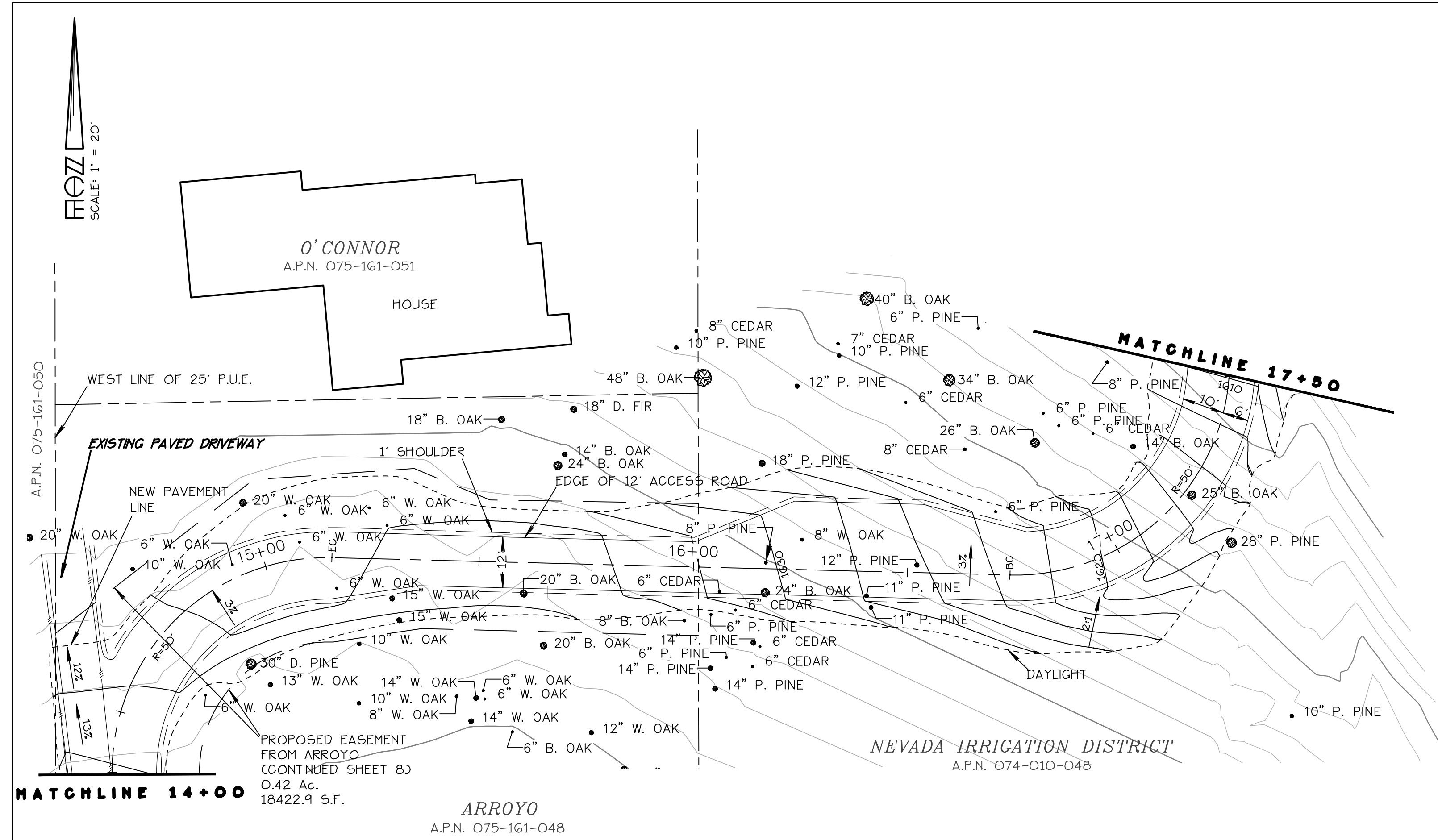
### ROUTE 3

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NEVADA IRRIGATION DISTRICT

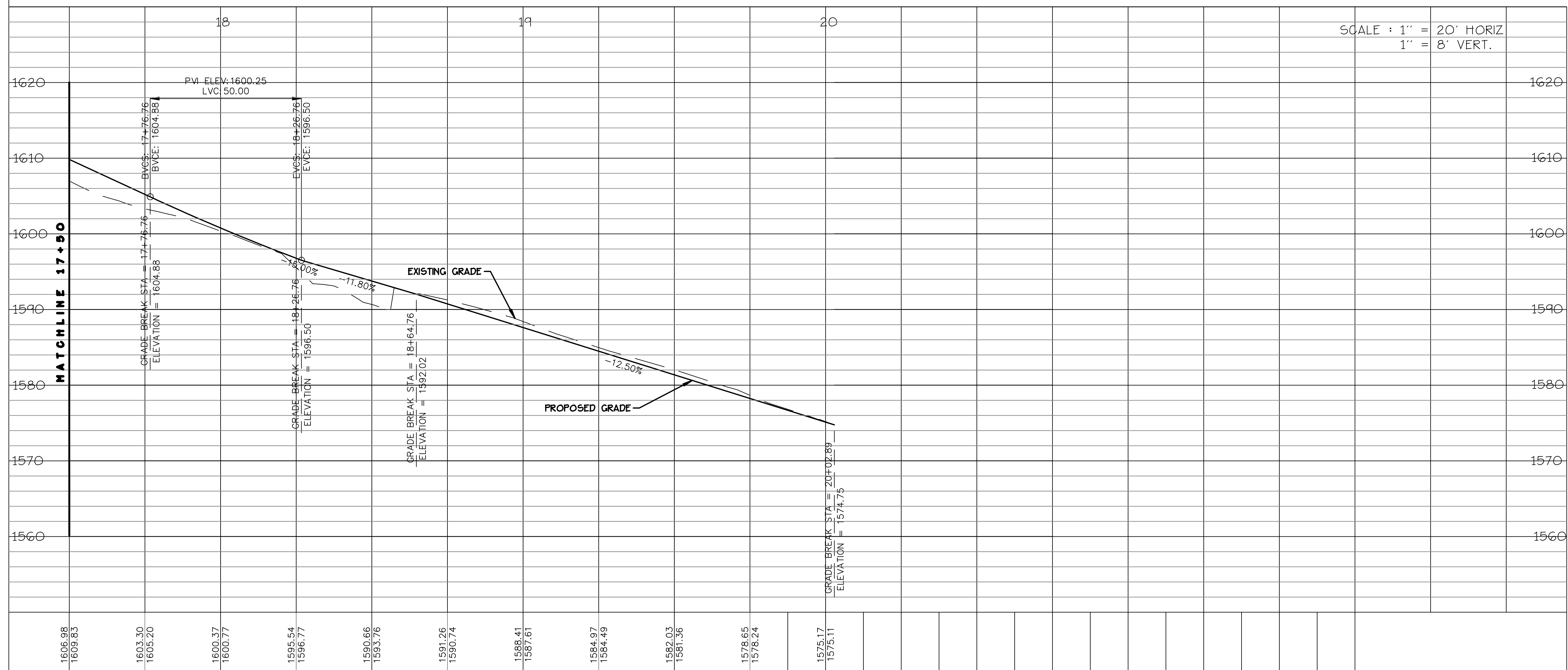
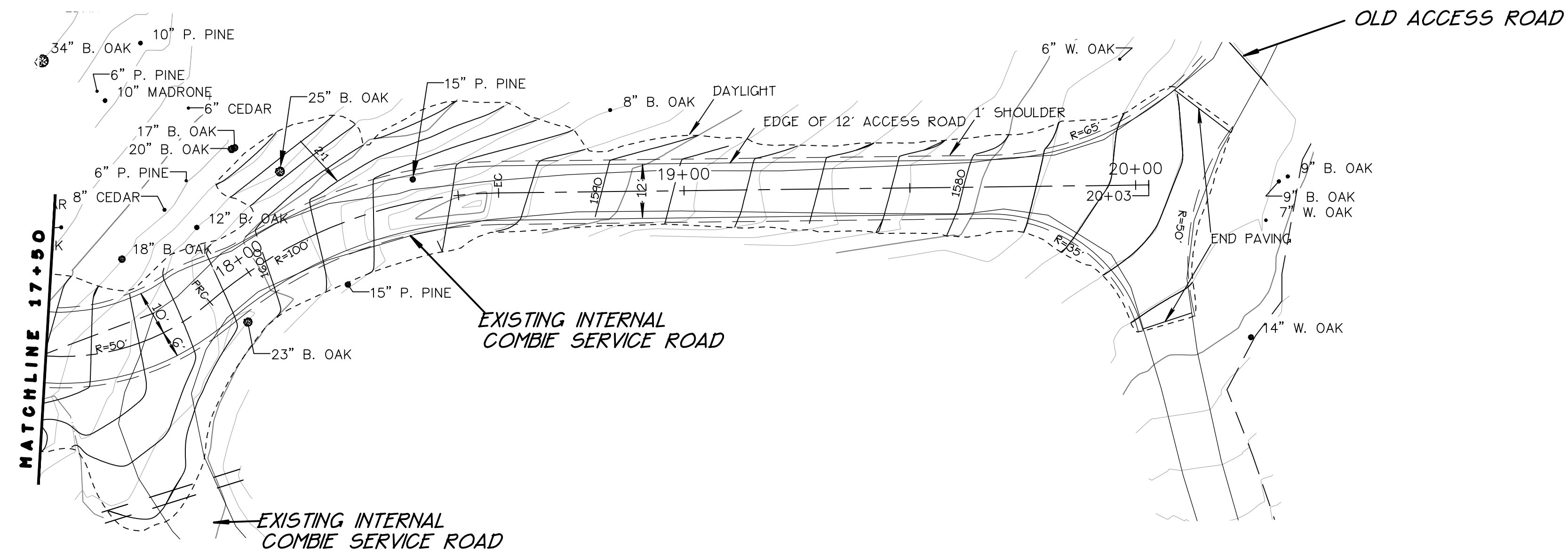
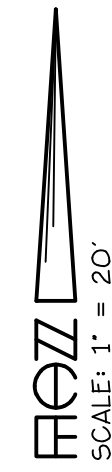
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NEVADA IRRIGATION DISTRICT

## ROUTE 3

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# Nevada City Engineering, Inc.

505 COYOTE STREET, SUITE B • P.O. BOX 1437  
NEVADA CITY, CALIFORNIA 95959 • TELEPHONE (530) 265-6911 • FAX (530) 265-8058  
*Engineering • Surveying • Planning*

## NID SOUTH COMBIE ROUTE STUDIES Preliminary Engineer's Estimate

January 2019

Updated January 22, 2019

### I. Existing-Route 1

### UPGRADE EXISTING ACCESS ROAD

<u>Item No.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Line Total</u>
1	1	EA	Environmental Review by Staff and CDFW Fees	5,000	\$5,000
2	1	EA	Right of Way Acquisition Costs	135,000	\$135,000
3	1	EA	Civil Design Allowance	12,500	\$12,500
4	1	EA	CalFire Timber Removal Permitting Allowance	5,000	\$5,000
5	1	EA	Bidding and Contract Administration Allowance	3,500	\$3,500
6	1	EA	Construction Staking Allowance	5,000	\$5,000
7	1	EA	Mobilization	6,000	\$6,000
8	0.81	AC	Clearing & Grubbing	1,700	\$1,377
9	0	SF	Pavement Removal	2	\$0
10	795	CY	Roadway Excavation	30	\$23,850
11	516	CY	Class II Aggregate Base	69	\$35,604
12	360	Ton	3" Asphalt Pavement	125	\$45,000
13	1301	SF	Retaining Wall	30	\$39,030
14	0	LF	Paved Gutter Ditch		\$0
15	3	EA	Electric Gates	6,000	\$18,000
16	1	EA	Gate Electrical Service	20,000	\$20,000
17	0	EA	Cross Culverts		\$0
18	1	LS	Erosion Control	5,000	\$5,000
19	1	EA	Compaction Testing and Inspection	7,500	\$7,500
20	1	EA	Certificate of Completion and Final Processing Allowance	1,500	\$1,500
<b>Subtotal Construction</b>					<b>\$202,861</b>
Subtotal Non-Construction					\$166,000
All Costs					\$368,861
+10% omissions & contingencies					\$36,886
<b>TOTAL I</b>					<b>\$405,747</b>



**II. Arroyo-Route 2****SHORTEST ROUTE TO NID LANDS**

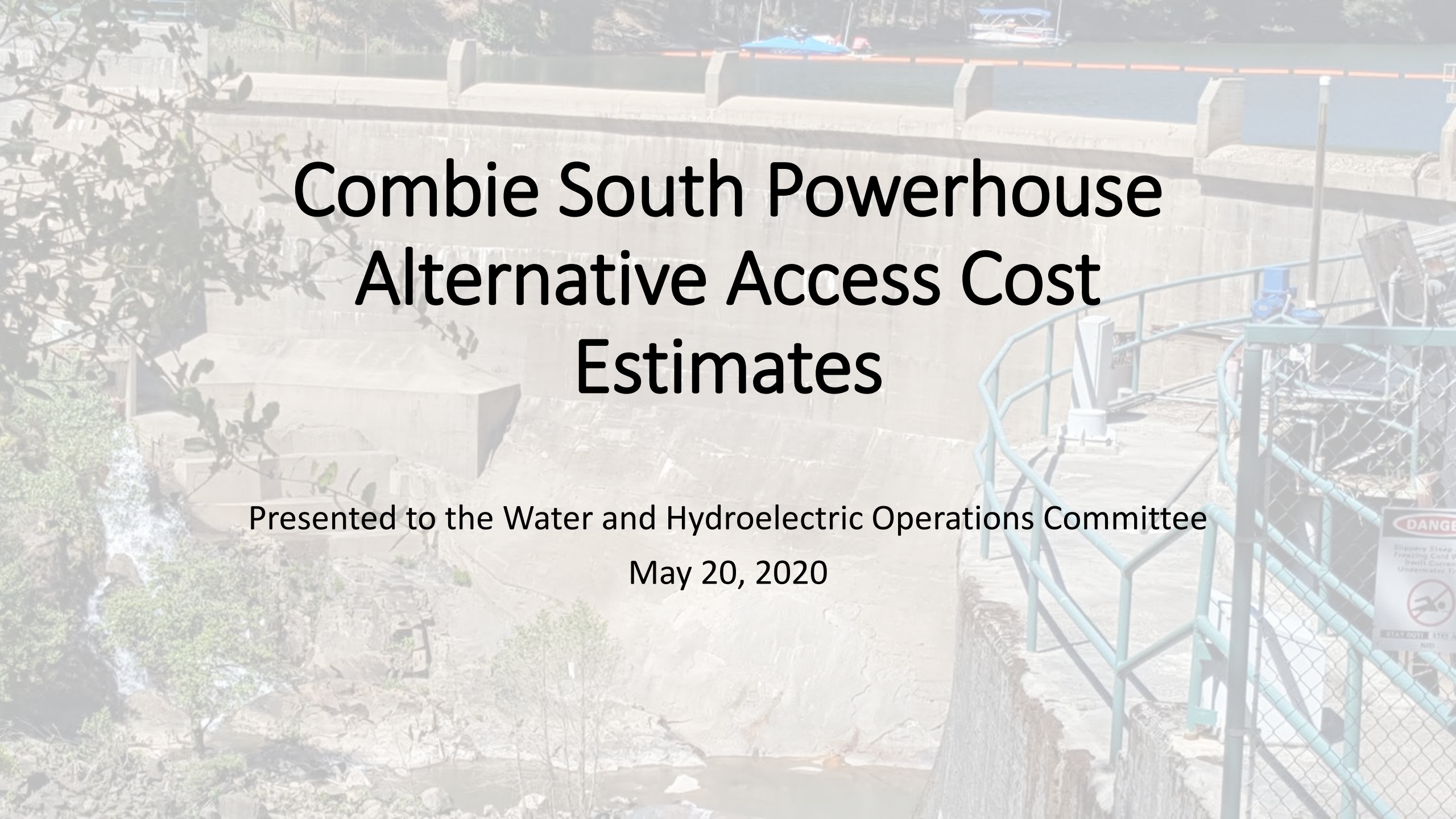
<u>Item No.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Total Price</u>
1	1	EA	Environmental Review by Staff and CDFW Fees	\$7,500	\$7,500
2	1	EA	Right of Way Acquisition	\$45,000	\$45,000
3	1	EA	Civil Design Allowance	\$8,500	\$8,500
4	1	EA	CalFire Timber Removal Permitting Allowance	\$5,000	\$5,000
5	1	EA	Bidding and Contract Administration Allowance	\$4,500	\$4,500
6	1	EA	Construction Staking Allowance	\$4,500	\$4,500
7	1	EA	Mobilization	\$6,000	\$6,000
8	0.74	AC	Clearing & Grubbing	\$3,500	\$2,606
9	924	SF	Pavement Removal	\$2	\$1,386
10	266	CY	Roadway Excavation	\$27	\$7,182
11	360	CY	Class II Aggregate Base	\$67	\$24,120
12	214	Ton	3" Asphalt Pavement	\$125	\$26,750
13	236	SF	Retaining Wall	\$30	\$7,080
14	0	LF	Paved Gutter Ditch		\$0
15	1	EA	Electric Gates	\$6,000	\$6,000
16	1	EA	Gate Electrical Service	\$10,000	\$10,000
17	0	EA	Cross Culverts		\$0
18	1.00	LS	Erosion Control	\$5,000	\$5,000
19	1.0	EA	Compaction Testing and Inspection	\$4,500	\$4,500
20	1.0	EA	Certificate of Completion and Final Processing Allowance	\$1,500	\$1,500
<b>Subtotal Construction</b>					<b>\$102,124</b>
Subtotal Non-Construction					\$75,000
All Costs					\$177,124
+10% omissions & contingencies					\$17,712
<b>TOTAL II</b>					<b>\$194,837</b>



**III. Arroyo-Route 3****SHARED DRIVEWAY THROUGH ARROYO**

<u>Item No.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Item Description</u>	<u>Unit Price</u>	<u>Total Price</u>
1	1	EA	Environmental Review by Staff and CDFW Fees	\$10,000	\$10,000
2	1	EA	Right of Way Acquisition Costs	\$80,000	\$80,000
3	1	EA	Civil Design Allowance	\$11,500	\$11,500
4	1	EA	CalFire Timber Removal Permitting Allowance	\$5,000	\$5,000
5	1	EA	Bidding and Contract Administration Allowance	\$6,000	\$6,000
6	1	EA	Construction Staking Allowance	\$6,500	\$6,500
7	1	EA	Mobilization	\$6,000	\$6,000
8	0.92	AC	Clearing & Grubbing	\$3,500	\$3,220
9	4846	SF	Pavement Removal	\$2	\$7,269
10	411	CY	Roadway Excavation	\$25	\$10,275
11	480	CY	Class II Aggregate Base	\$67	\$32,160
12	276	Ton	3" Asphalt Pavement	\$125	\$34,500
13	0	LF	Retaining Wall		\$0
14	0	LF	Paved Gutter Ditch		\$0
15	1	EA	Electric Gates	\$6,000	\$6,000
16	1	EA	Gate Electrical Service	\$10,000	\$10,000
17	0	EA	Cross Culverts		\$0
18	1.00	LS	Erosion Control	\$5,000	\$5,000
19	1.0	EA	Compaction Testing and Inspection	\$7,500	\$7,500
20	1.0	EA	Certificate of Completion and Final Processing Allowance	\$1,500	\$1,500
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<b>Subtotal Construction</b>					<b>\$123,424</b>
Subtotal Non-Construction					\$119,000
All Costs					\$242,424
+10% omissions & contingencies					\$24,242
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<b>TOTAL III</b>					<b>\$266,666</b>





# Combie South Powerhouse Alternative Access Cost Estimates

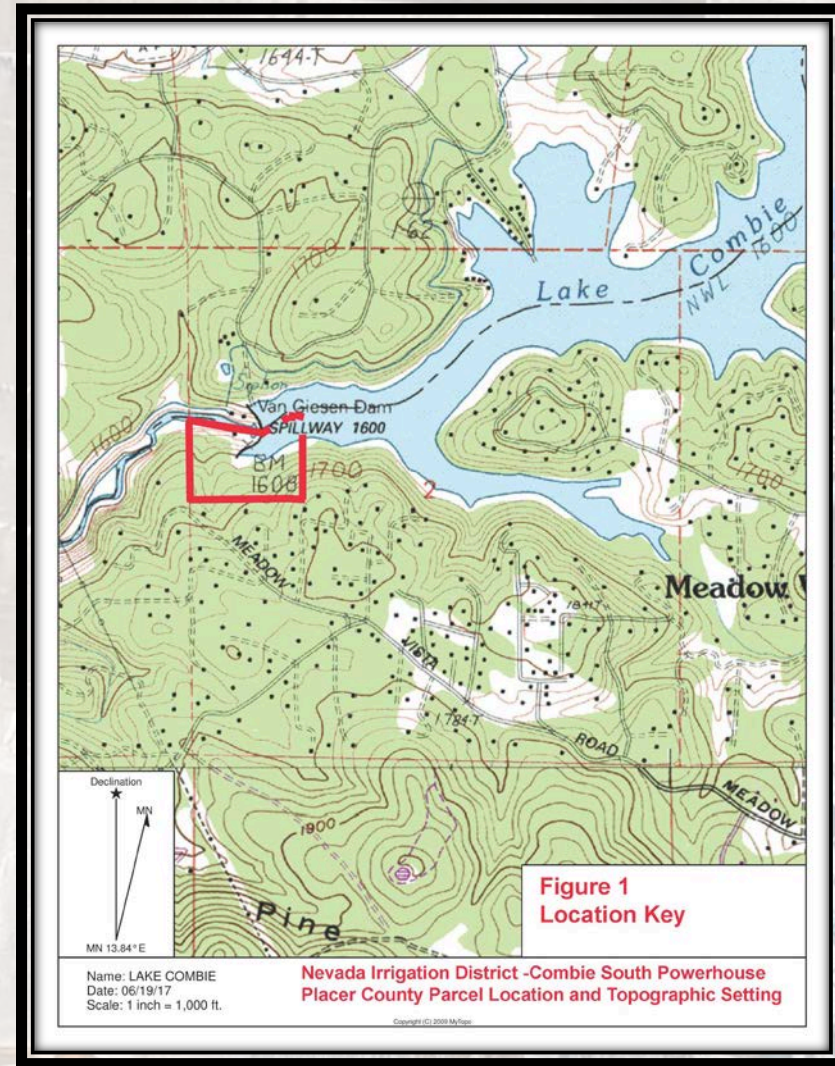
Presented to the Water and Hydroelectric Operations Committee

May 20, 2020



# Combie South access background

Powerhouse is located on an NID Parcel served by Meadow Vista Road





# Combie South Powerhouse



Combie South Powerhouse Access Improvement





# The need for improved access

- 9-11-01 Attacks brought the need for enhanced security and emergency access
- The Oroville Dam spillway illustrates the need for improved access for maintenance and emergency response
- Gannett Fleming Study strongly recommended improved access after FBI and Sheriff's review

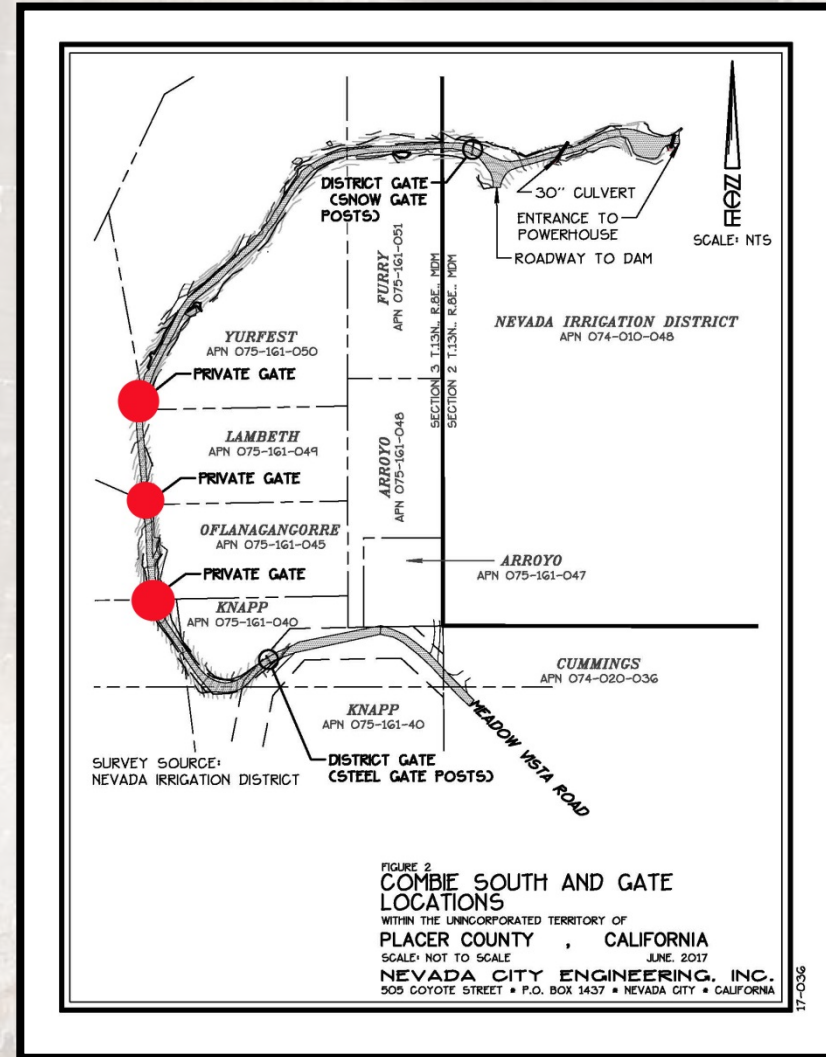
**“The access to Combie South Powerhouse, as it is currently configured, creates unnecessary hardship and potential increase in downstream consequences, due to delayed responses. I recommend NID pursue any available options for rerouting the access road to reduce those delays.”**

**-Gannett Fleming Evaluation Report**



# What's wrong with the current access?

- Multiple private gates, in addition to NID gates, make access time consuming and tedious.





# What's wrong with the current access?



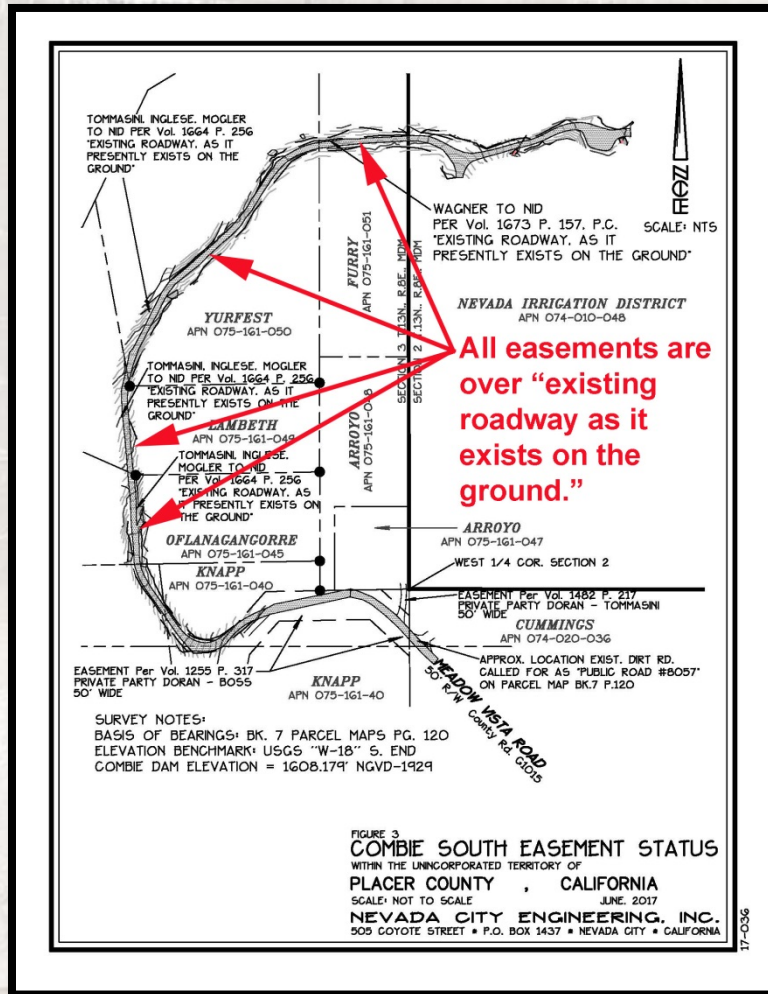
**Gates!**



# What's wrong with the current access?

Easements are limited to “as it exists on the ground” and the easements are quite old.

This means that any road improvements would require new easements from multiple owners.





# What's wrong with the existing access?

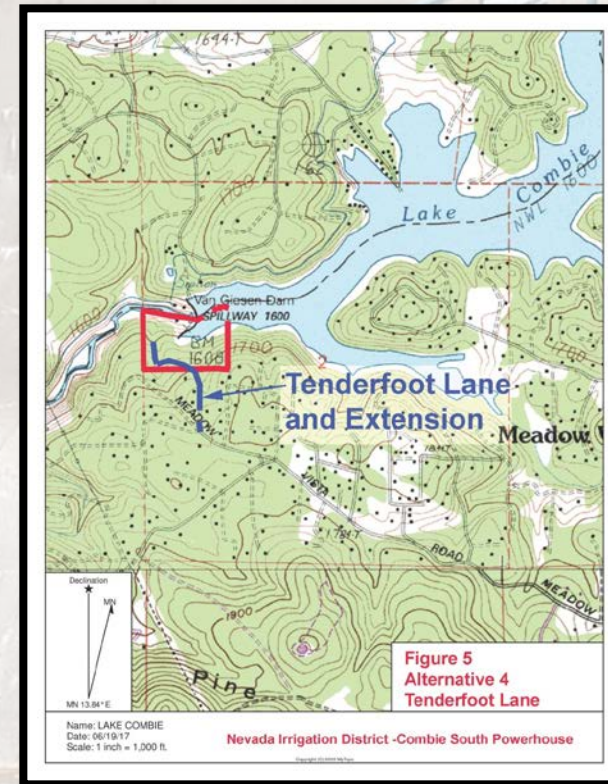
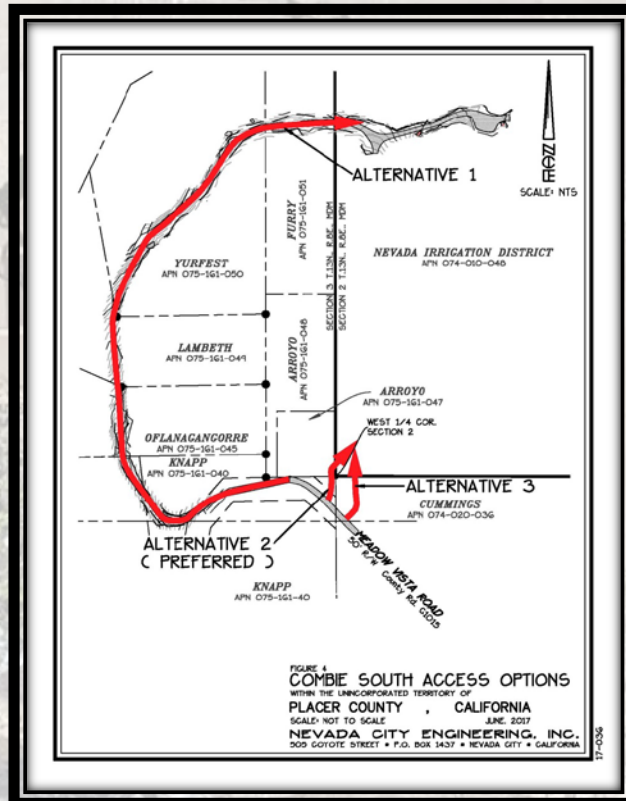
Inability to add road-side drainage and other improvements results in constant storm damage and the need for annual or semi-annual repairs





# Recent Efforts

- July 13, 2017 Study by Nevada City Engineering
- March and April 2018 WHO Committee Meetings





# Access Alternatives Developed



- Route 1: The existing access road
- Route 2: The previously recommended alternative from Meadow Vista Road to NID corner
- Route 3: A new route over existing driveways and Arroyo Property



# Uniform Road Standard Used for All 3 Options

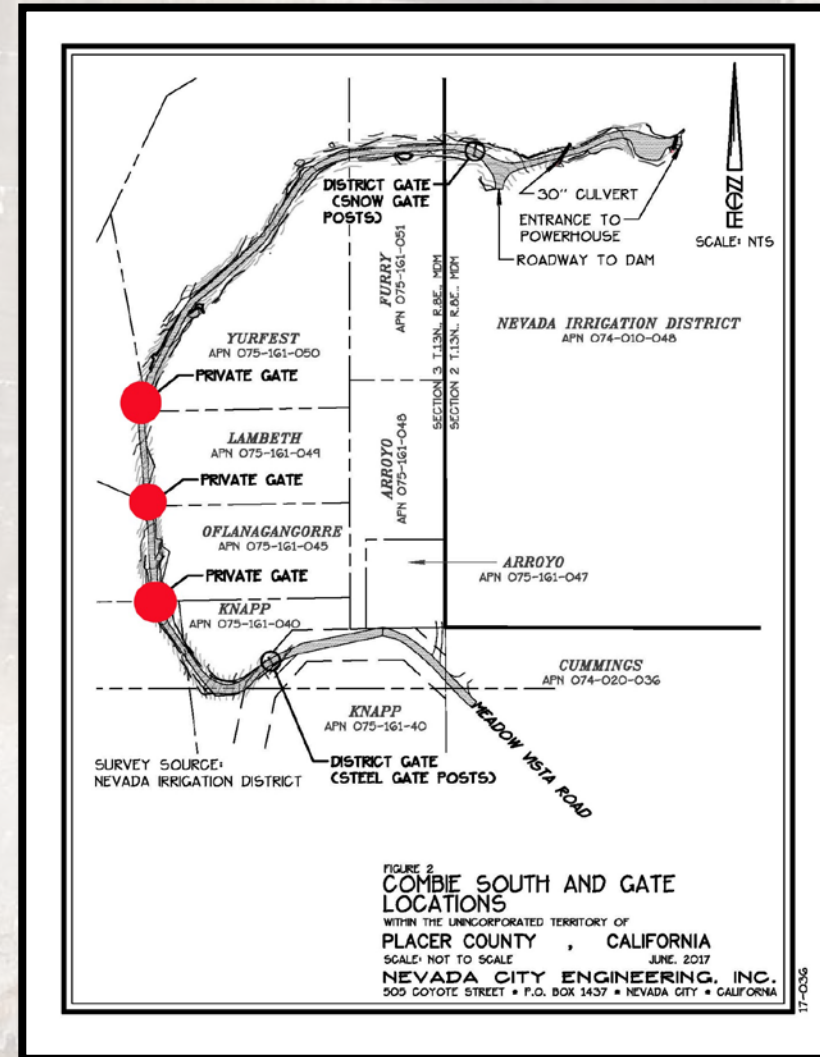
## California 2016 Fire Safe Driveway Standard:

- 12' of graded width
- 10' of pavement
- 16% target road grade, up to 20% grade in limited areas
- Turnouts provided approximately every 400'
- 15' vertical clearance
- 10' vegetation clearing on each side of road
- Electric gates where needed



# Alternative 1: Upgrade to the Existing Access Road

- Total Cost Allowance: \$406,000
- Construction Cost: \$223,000
- Easements, Engineering, CEQA, and Administration: \$183,000





# Alternative 2: Short Route to NID Corner





# Alternative 2 Cost Estimate

- Total Cost Allowance: \$195,000
- Construction Cost: \$112,000
- Easements, Engineering, CEQA, and Administration: \$83,000



# Alternative 3 – Across Arroyo Property



- Would reconstruct an existing shared driveway for about half the length
- Crosses between houses to NID Property
- Includes limited reconstruction on NID Property



# Alternative 3: Shared Driveway Across Arroyo

- Total Cost Allowance: \$267,000
- Construction Cost: \$136,000
- Easements, Engineering, CEQA, and Administration: \$131,000



# Summary of Alternative Costs

(includes 10% contingency allowance)

Alternative	Non-Construction	Construction	Total Cost Allowance
1-Existing Route	\$182,600	\$223,147	\$405,747
2-Previous “Preferred Route” from Meadow Vista to Southwest Corner of NID	\$82,500	\$112,337	\$194,837
3-New Route over Existing Shared Driveway and Arroyo Property	\$130,900	\$135,766	\$266,666



# Questions?

Combie South Powerhouse Access Improvement