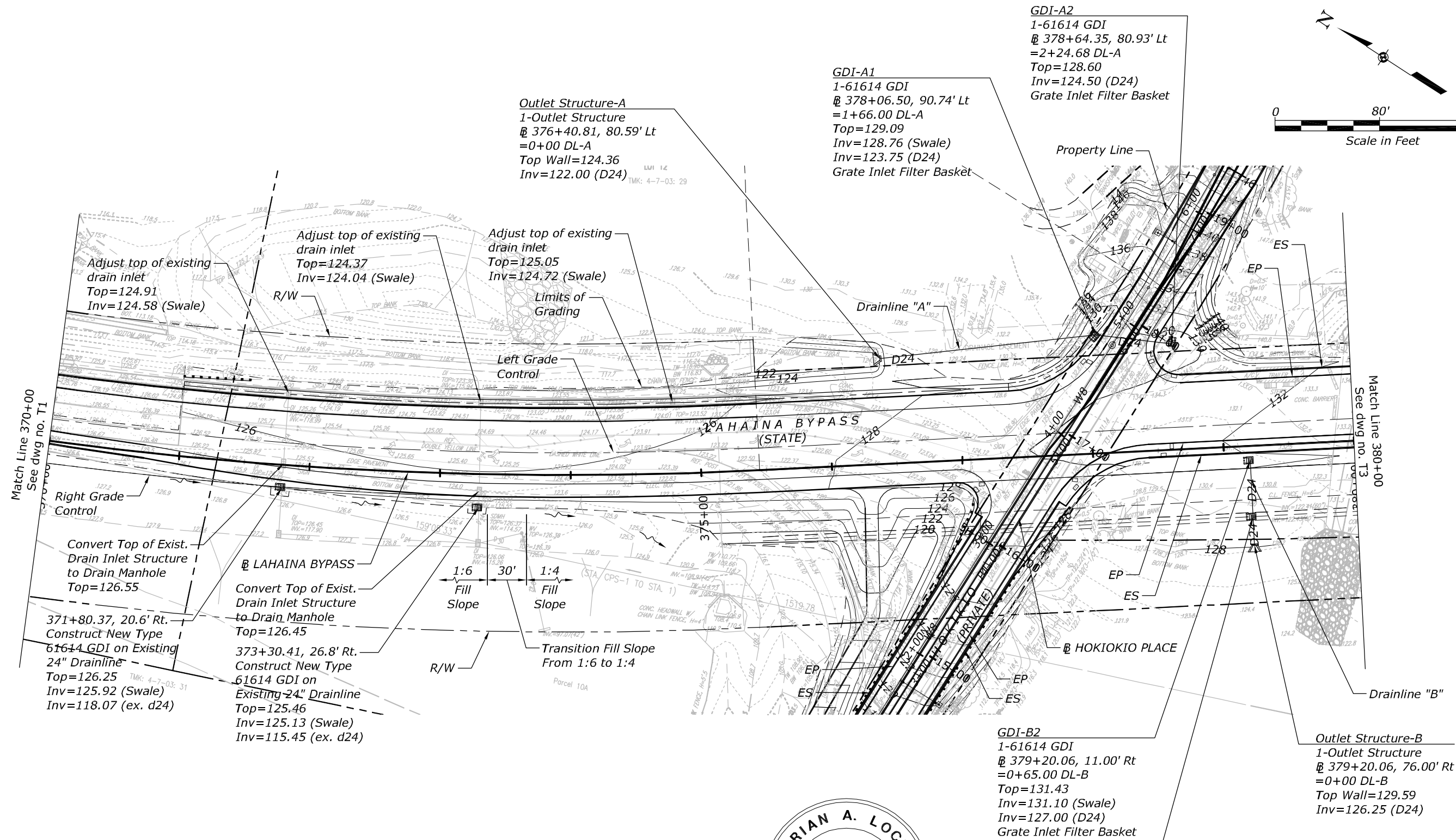
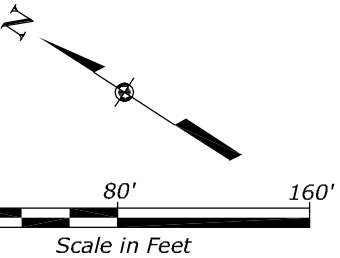
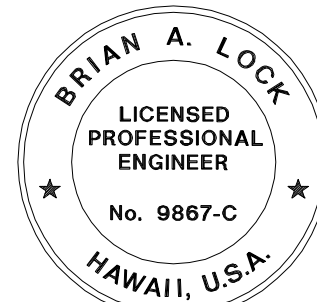






NOTES:

- Contractor Shall Verify Existing Inverts and Elevations in Field
- @ Stationing is off Lahaina Bypass Unless Otherwise Stated.



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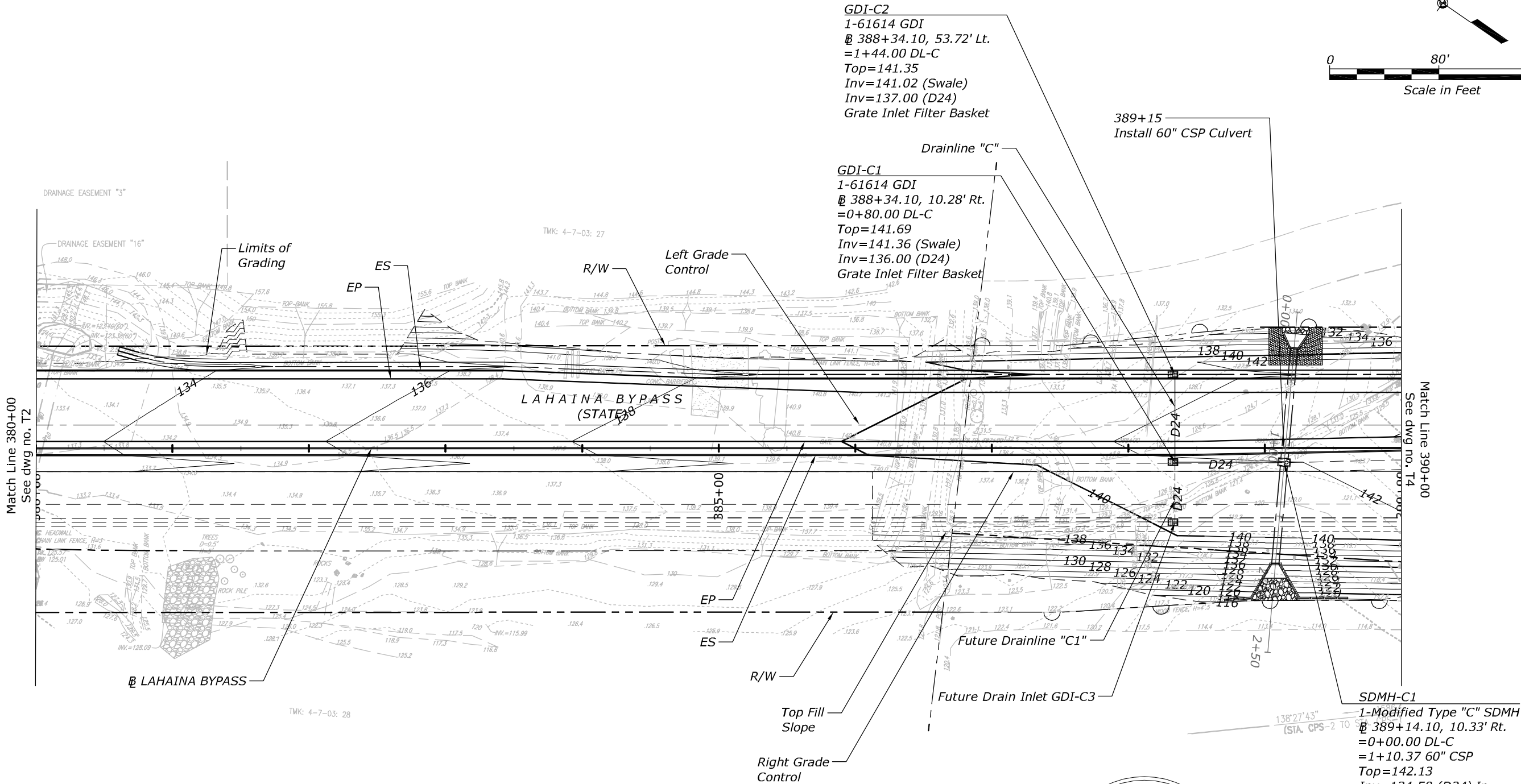
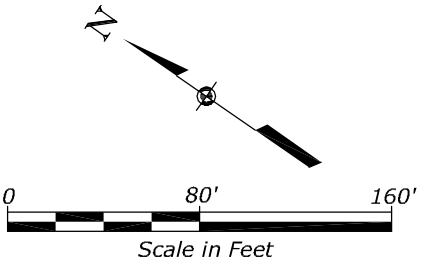
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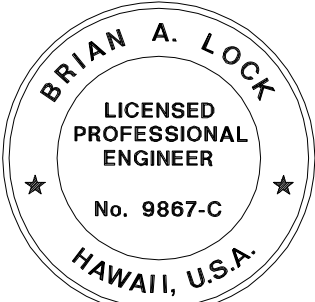
GRADING AND DRAINAGE  
PLAN

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T3        |



**NOTES:**

- See Culvert Section Sheets for Box and Pipe Culvert Layouts and Inlet/Outlet Grading
- Stationing is off Lahaina Bypass Unless Otherwise Stated.



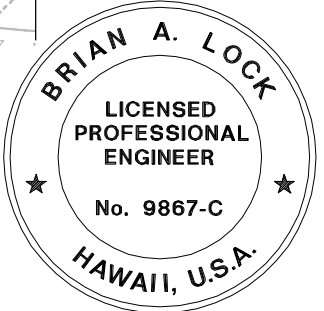
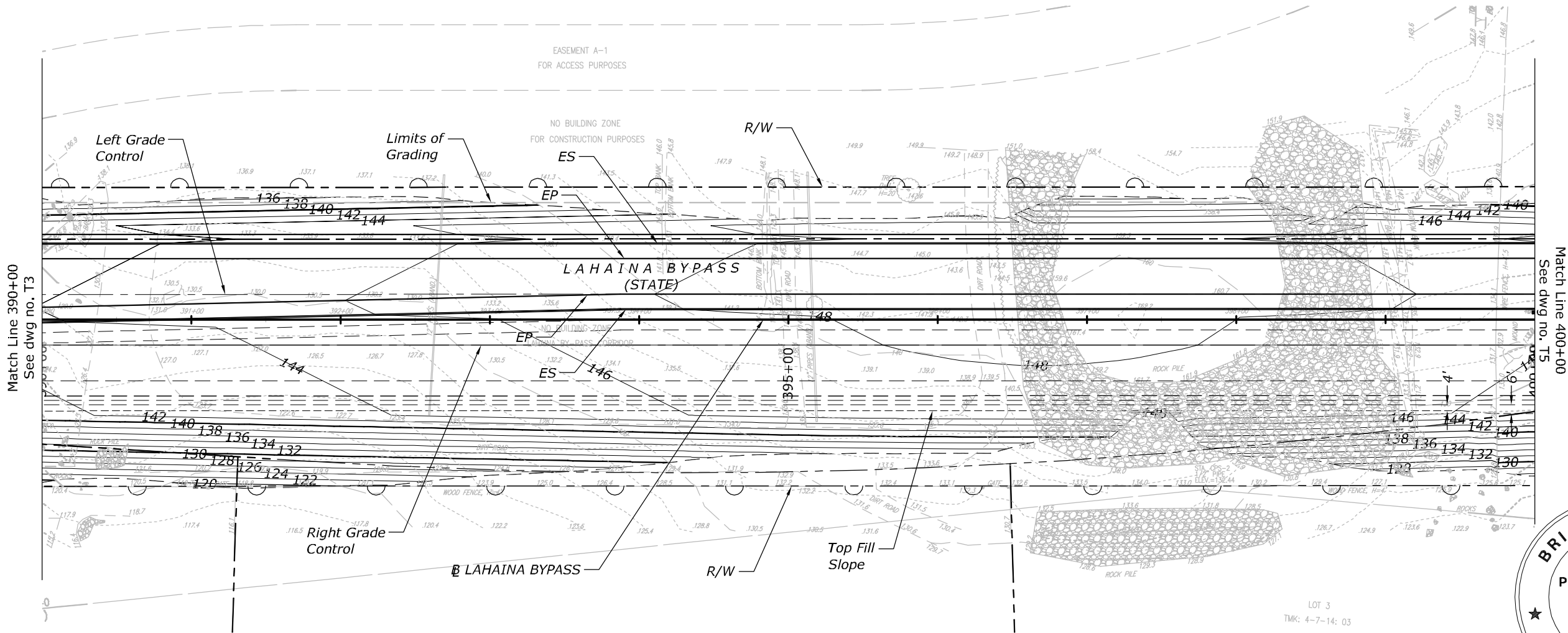
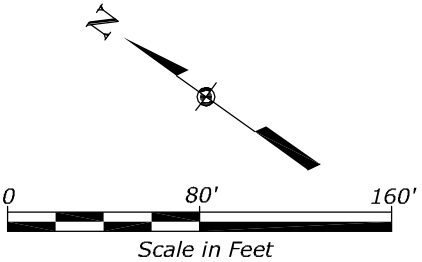
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**GRADING AND DRAINAGE  
PLAN**

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
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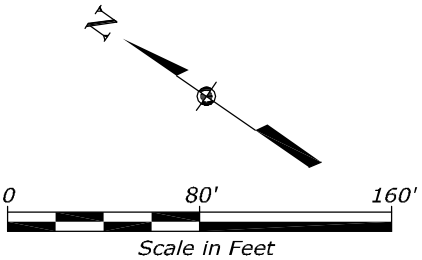
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**GRADING AND DRAINAGE  
PLAN**



| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T5        |



**GDI-D3**  
1-61614 GDI  
@ 400+61.15, 58.00' Lt.  
=1+59.00 DL-D  
Top=144.26  
Inv=143.93 (Swale)  
Inv=139.00 (D24)  
Grate Inlet Filter Basket

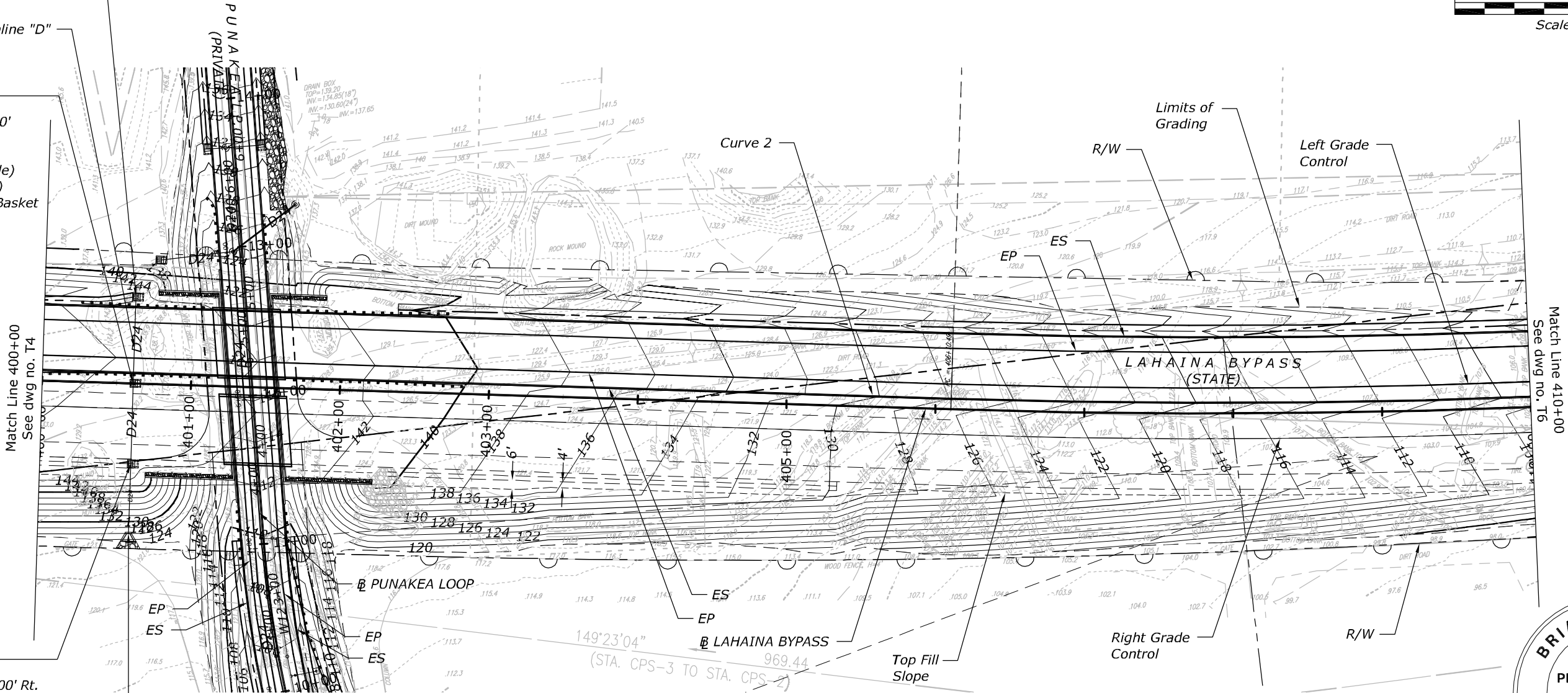
**GDI-D2**  
1-61614 GDI  
@ 400+61.15, 0.00'  
=1+01.00 DL-D  
Top=144.43  
Inv=144.10 (Swale)  
Inv=138.00 (D24)  
Grate Inlet Filter Basket

**GDI-D1**  
1-61614 GDI  
@ 400+61.15, 54.00' Rt.  
=0+47.00 DL-D  
Top=144.92  
Inv=144.59 (Swale)  
Inv=137.00 (D24) In  
Inv=129.60 (D24) Out  
Grate Inlet Filter Basket

**Outlet Structure-D**  
1-Outlet Structure  
@ 400+61.15, 101.00' Rt.  
=0+00 DL-D  
Top Wall=126.93  
Inv=123.50 (D24)

**NOTES:**

- See Grading and Drainage Plan - Punakea Loop for Additional Grading and Drainage.
- See Punakea Loop Bridge Deck Grading Plan for Detailed Grading of Bridge Structure.
- @ Stationing is off Lahaina Bypass Unless Otherwise Stated.



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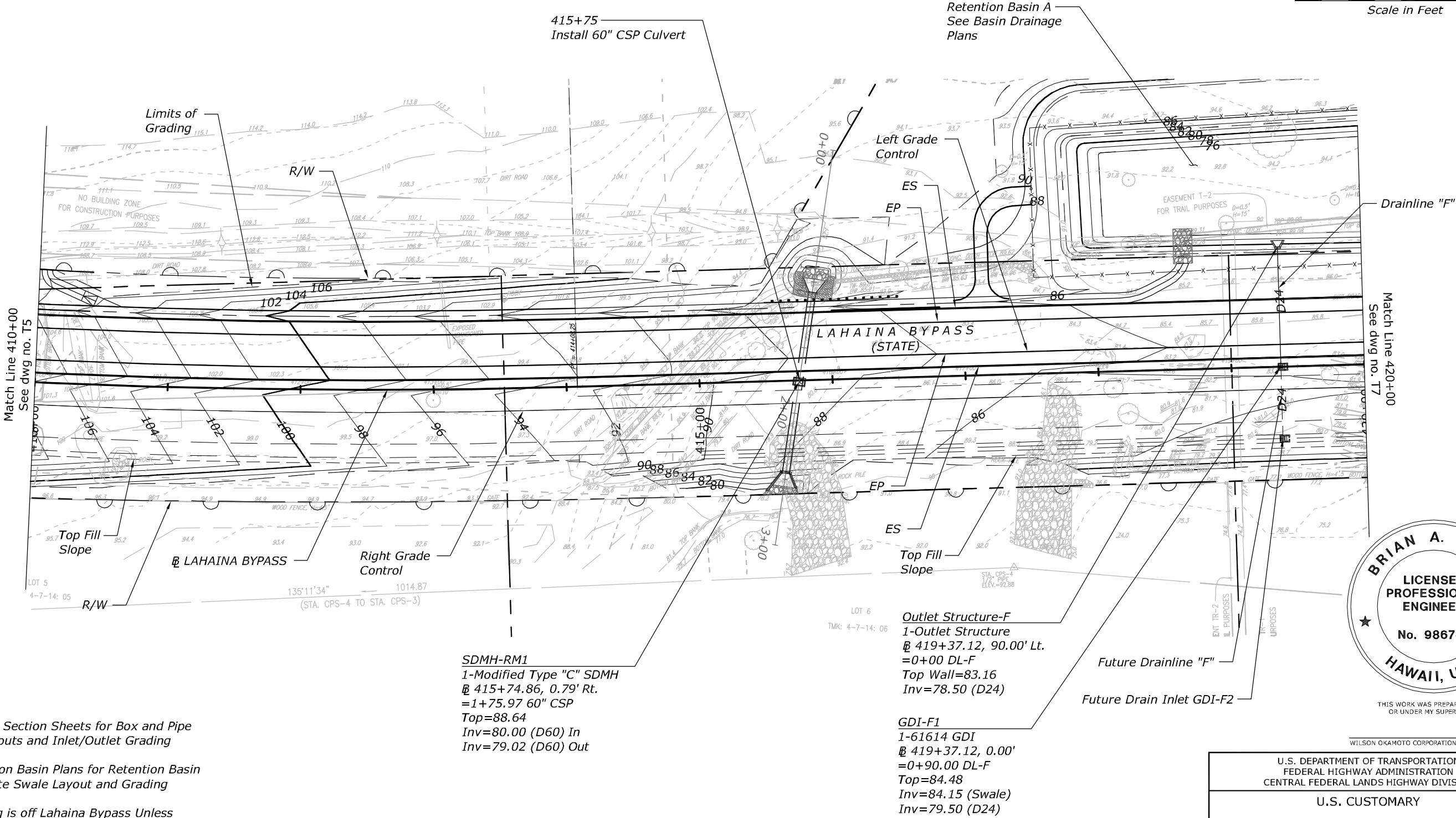
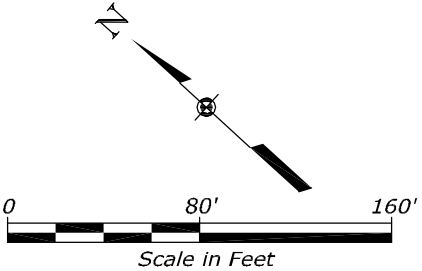
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**GRADING AND DRAINAGE  
PLAN**

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T6        |



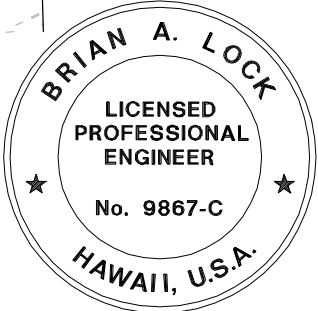
**NOTES:**

1. See Culvert Section Sheets for Box and Pipe Culvert Layouts and Inlet/Outlet Grading
2. See Retention Basin Plans for Retention Basin and Concrete Swale Layout and Grading
3. Stationing is off Lahaina Bypass Unless Otherwise Stated.

**SDMH-RM1**  
1-Modified Type "C" SDMH  
Ø 415+74.86, 0.79' Rt.  
=1+75.97 60" CSP  
Top=88.64  
Inv=80.00 (D60) In  
Inv=79.02 (D60) Out

**Outlet Structure-F**  
1-Outlet Structure  
Ø 419+37.12, 90.00' Lt.  
=0+00 DL-F  
Top Wall=83.16  
Inv=78.50 (D24)

**GDI-F1**  
1-61614 GDI  
Ø 419+37.12, 0.00'  
=0+90.00 DL-F  
Top=84.48  
Inv=84.15 (Swale)  
Inv=79.50 (D24)



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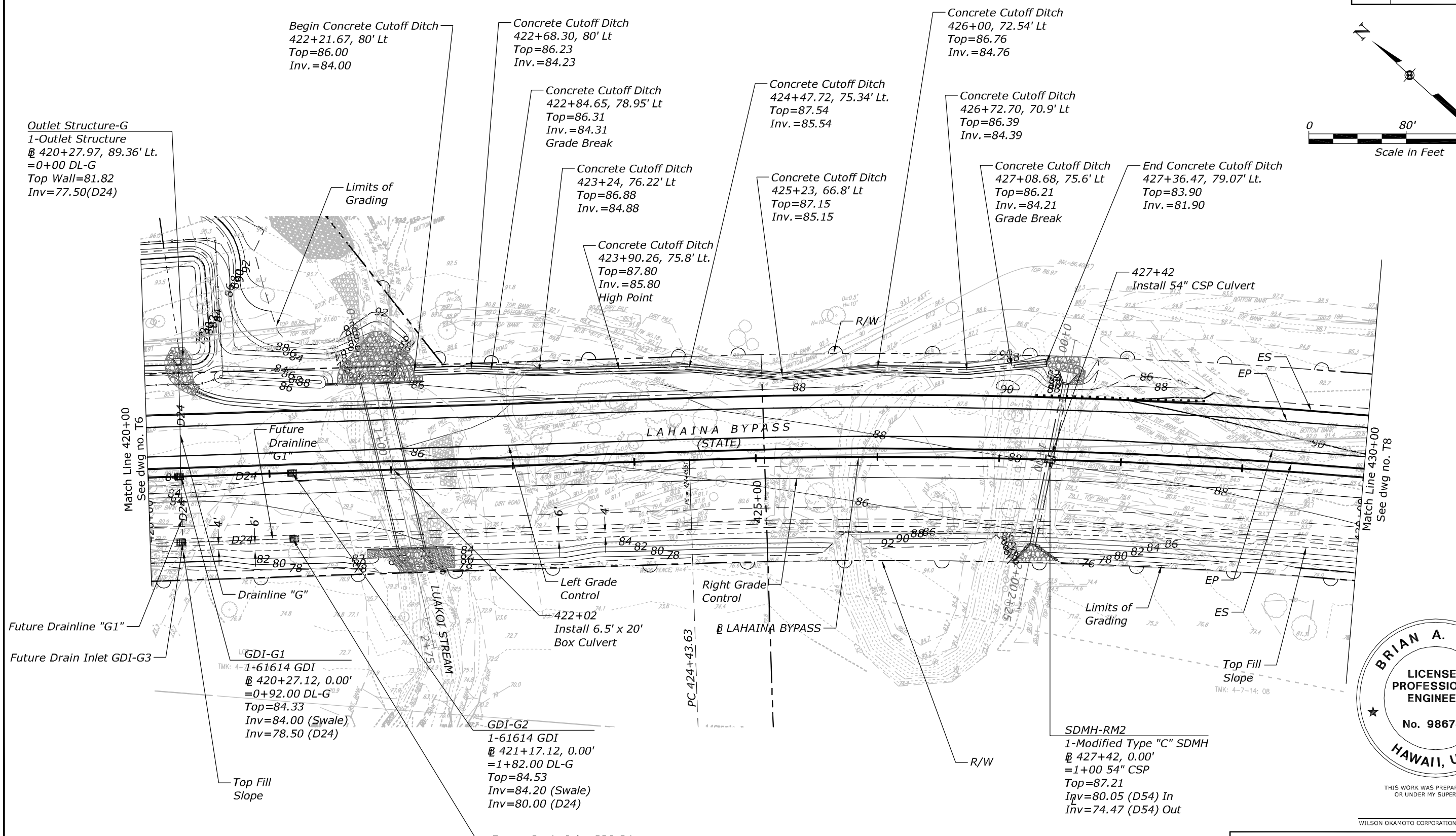
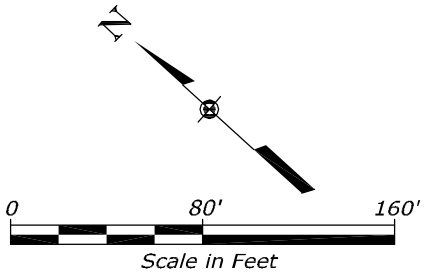
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**GRADING AND DRAINAGE  
PLAN**

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T7        |



Outlet Structure-G  
1-Outlet Structure  
@ 420+27.97, 89.36' Lt.  
=0+00 DL-G  
Top Wall=81.82  
Inv=77.50(D24)

Begin Concrete Cutoff Ditch  
422+21.67, 80' Lt  
Top=86.00  
Inv.=84.00

Concrete Cutoff Ditch  
422+68.30, 80' Lt  
Top=86.23  
Inv.=84.23

Concrete Cutoff Ditch  
422+84.65, 78.95' Lt  
Top=86.31  
Inv.=84.31  
Grade Break

Concrete Cutoff Ditch  
423+24, 76.22' Lt  
Top=86.88  
Inv.=84.88

Concrete Cutoff Ditch  
423+90.26, 75.8' Lt.  
Top=87.80  
Inv.=85.80  
High Point

Concrete Cutoff Ditch  
424+47.72, 75.34' Lt.  
Top=87.54  
Inv.=85.54

Concrete Cutoff Ditch  
425+23, 66.8' Lt  
Top=87.15  
Inv.=85.15

Concrete Cutoff Ditch  
426+00, 72.54' Lt  
Top=86.76  
Inv.=84.76

Concrete Cutoff Ditch  
426+72.70, 70.9' Lt  
Top=86.39  
Inv.=84.39

Concrete Cutoff Ditch  
427+08.68, 75.6' Lt  
Top=86.21  
Inv.=84.21  
Grade Break

End Concrete Cutoff Ditch  
427+36.47, 79.07' Lt.  
Top=83.90  
Inv.=81.90

427+42  
Install 54" CSP Culvert

Match Line 420+00  
See dwg no. T6

Match Line 430+00  
See dwg no. T8

Future Drainline "G1"  
Future Drain Inlet GDI-G3

GDI-G1  
1-61614 GDI  
@ 420+27.12, 0.00'  
=0+92.00 DL-G  
Top=84.33  
Inv=84.00 (Swale)  
Inv=78.50 (D24)

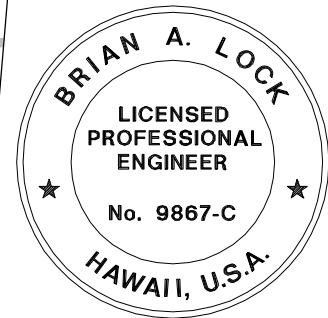
GDI-G2  
1-61614 GDI  
@ 421+17.12, 0.00'  
=1+82.00 DL-G  
Top=84.53  
Inv=84.20 (Swale)  
Inv=80.00 (D24)

Future Drain Inlet GDI-G4

Left Grade Control  
Right Grade Control

422+02  
Install 6.5' x 20'  
Box Culvert

SDMH-RM2  
1-Modified Type "C" SDMH  
@ 427+42, 0.00'  
=1+00 54" CSP  
Top=87.21  
Inv=80.05 (D54) In  
Inv=74.47 (D54) Out



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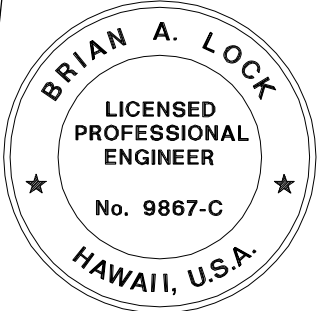
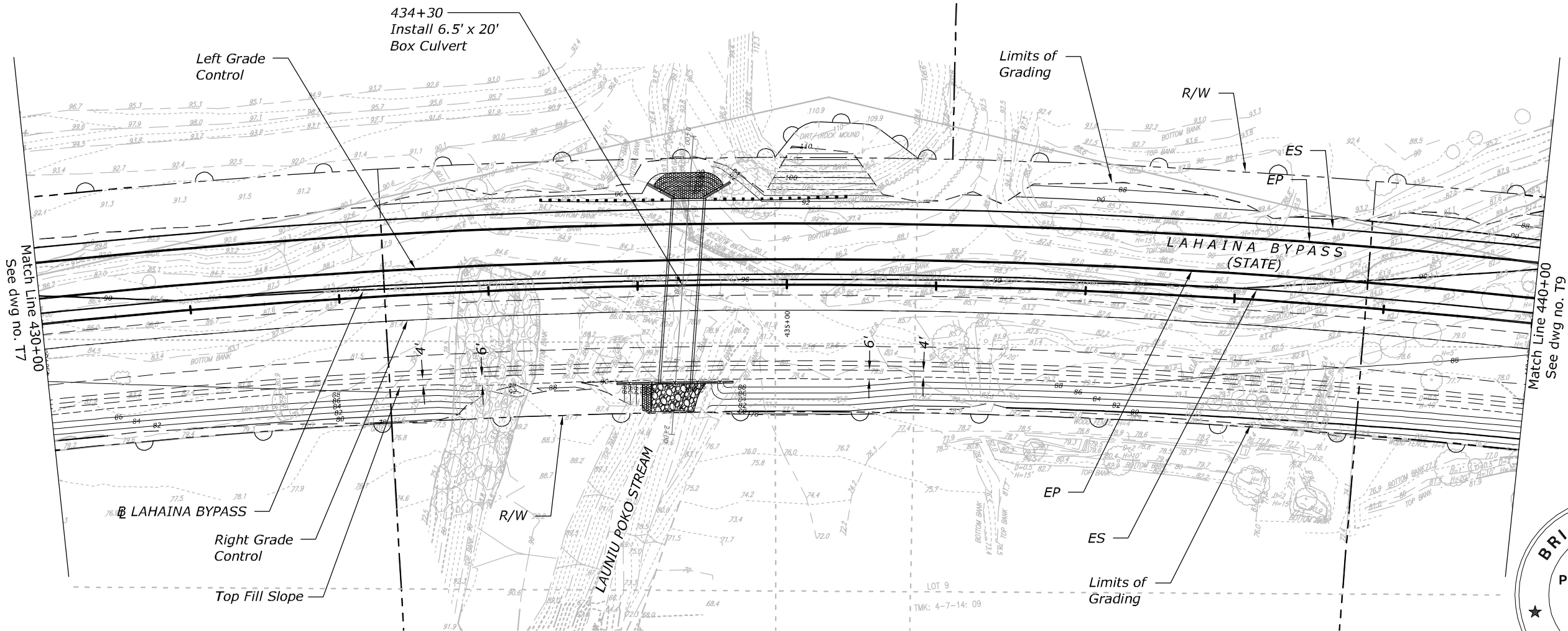
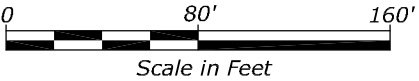
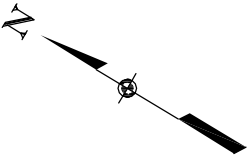
- See Culvert Section Sheets for Box and Pipe Culvert Layouts and Inlet/Outlet Grading
- See Retention Basin Plans for Retention Basin Layout and Grading
- Stationing is off Lahaina Bypass Unless Otherwise Stated.

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GRADING AND DRAINAGE  
PLAN

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T8        |



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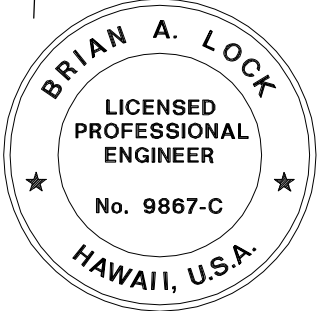
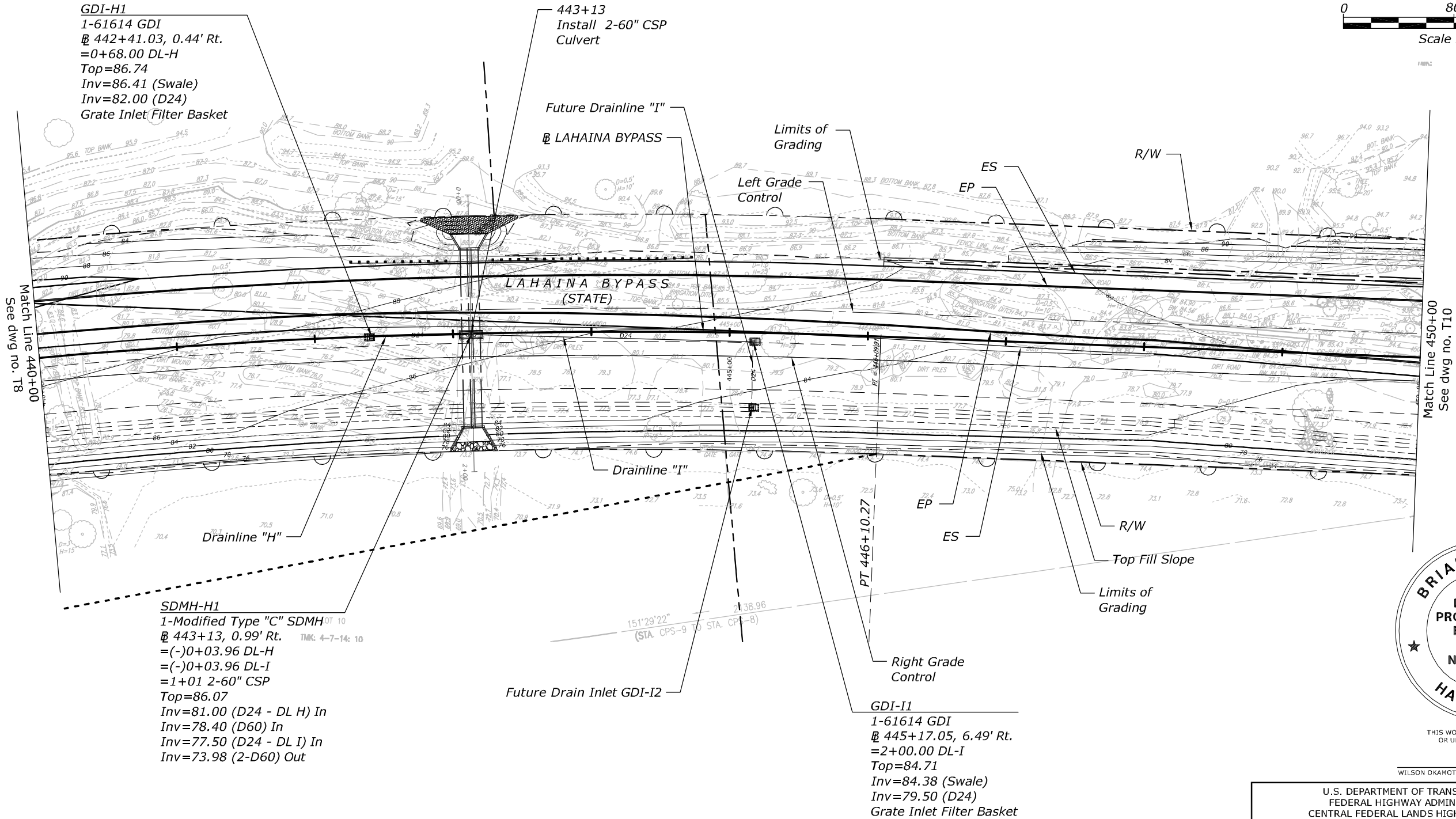
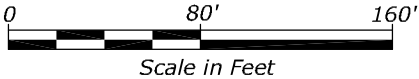
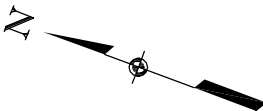
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**GRADING AND DRAINAGE  
PLAN**

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
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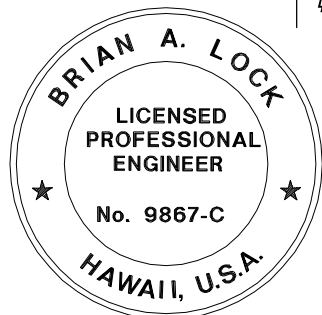
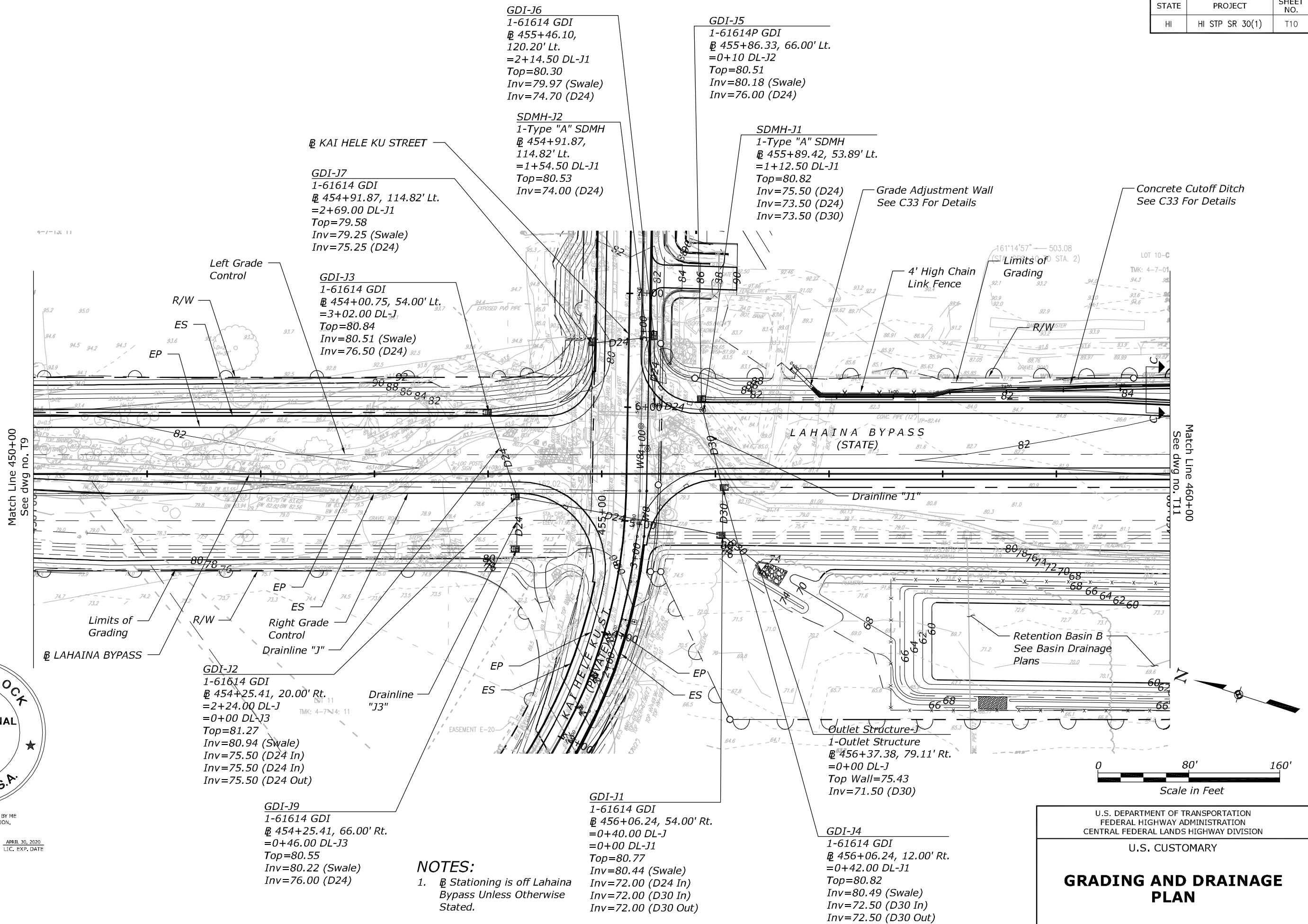
## GRADING AND DRAINAGE PLAN

### NOTES:

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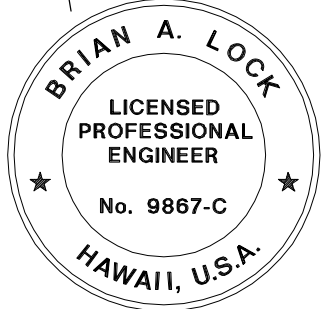
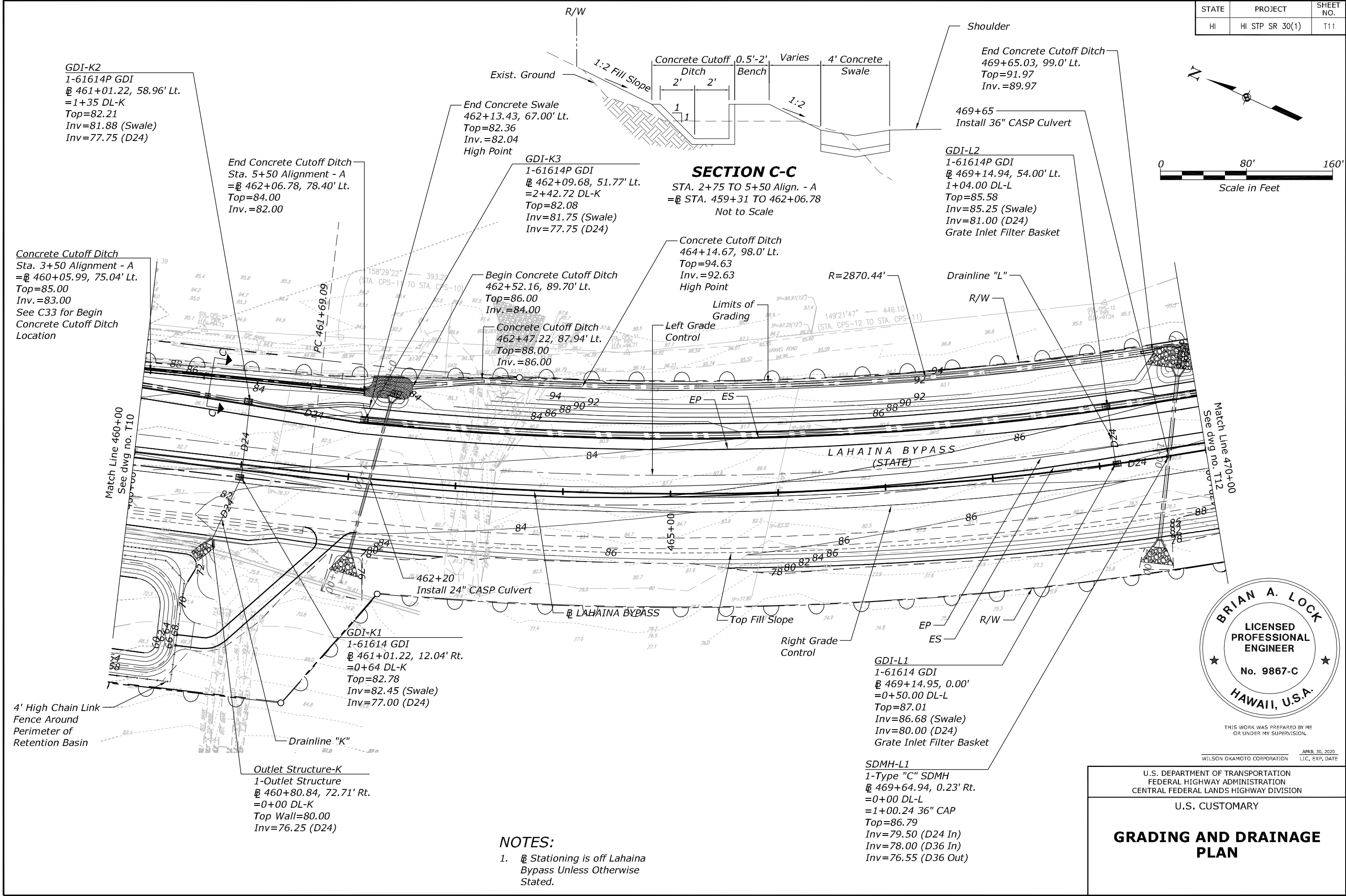
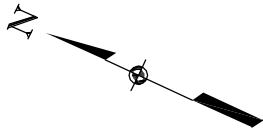
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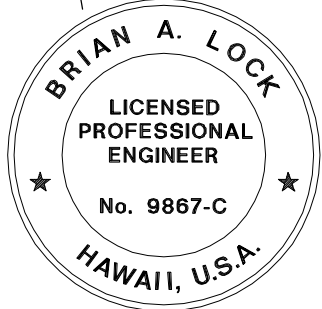
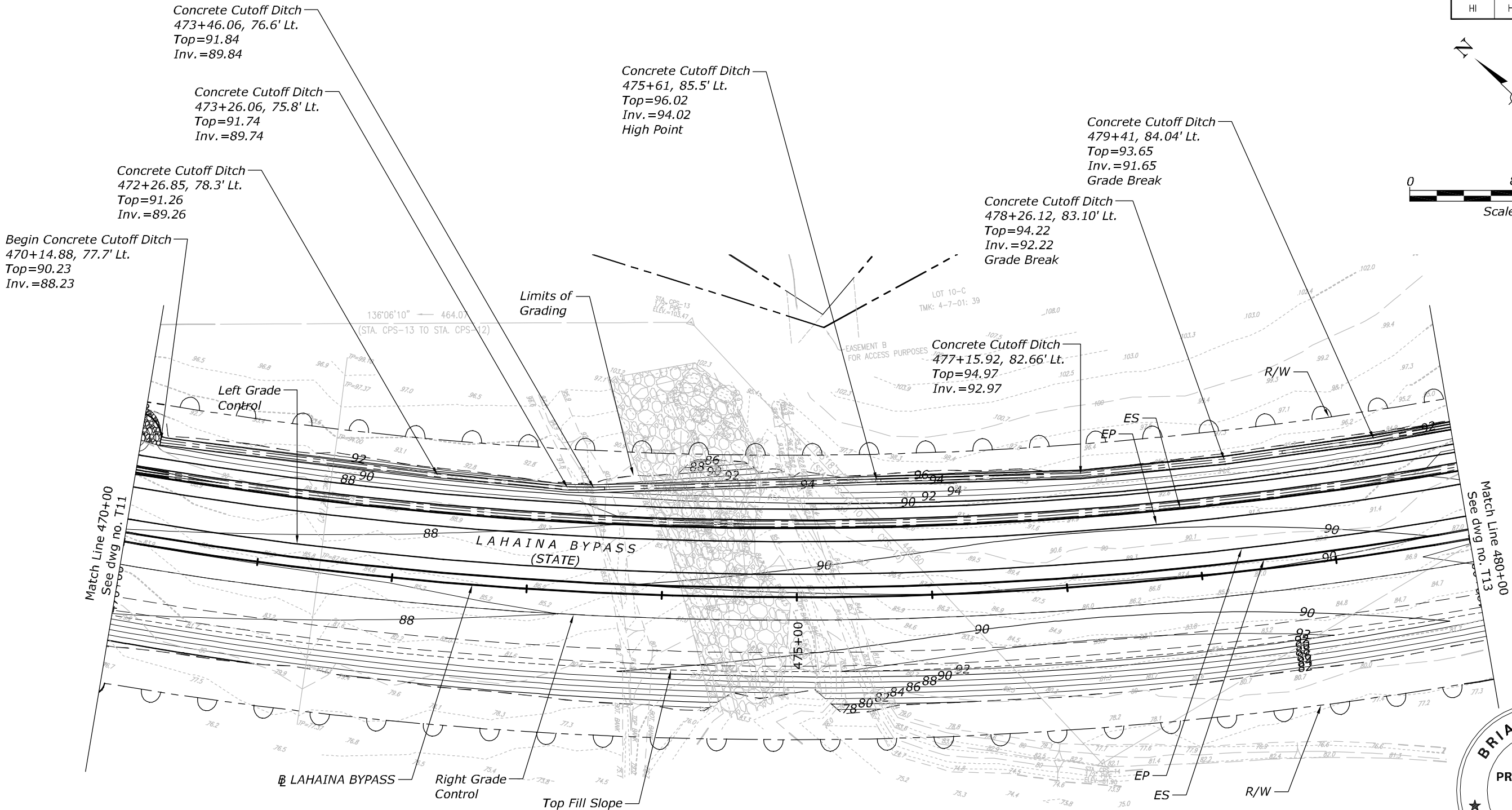
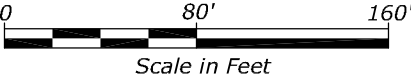
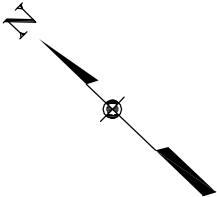
## GRADING AND DRAINAGE PLAN

### NOTES:

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| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
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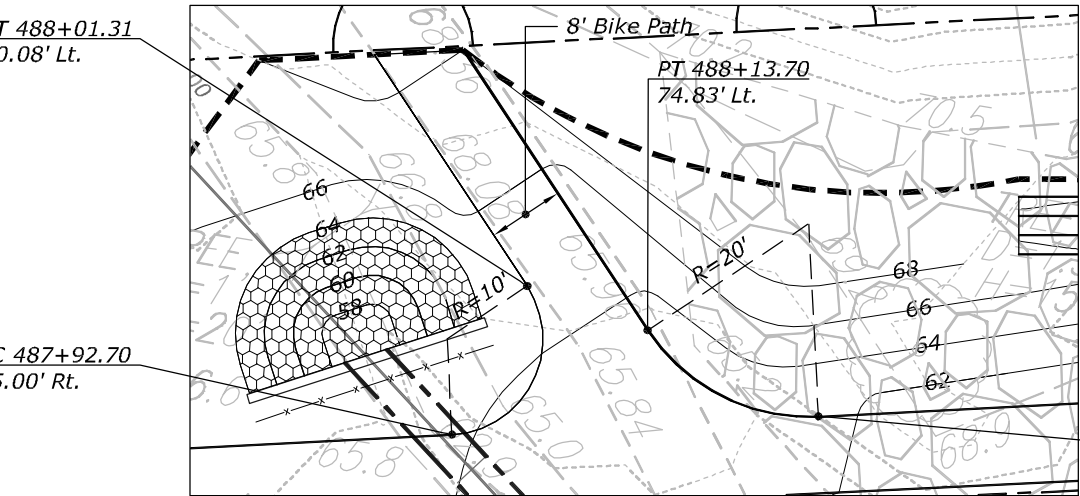
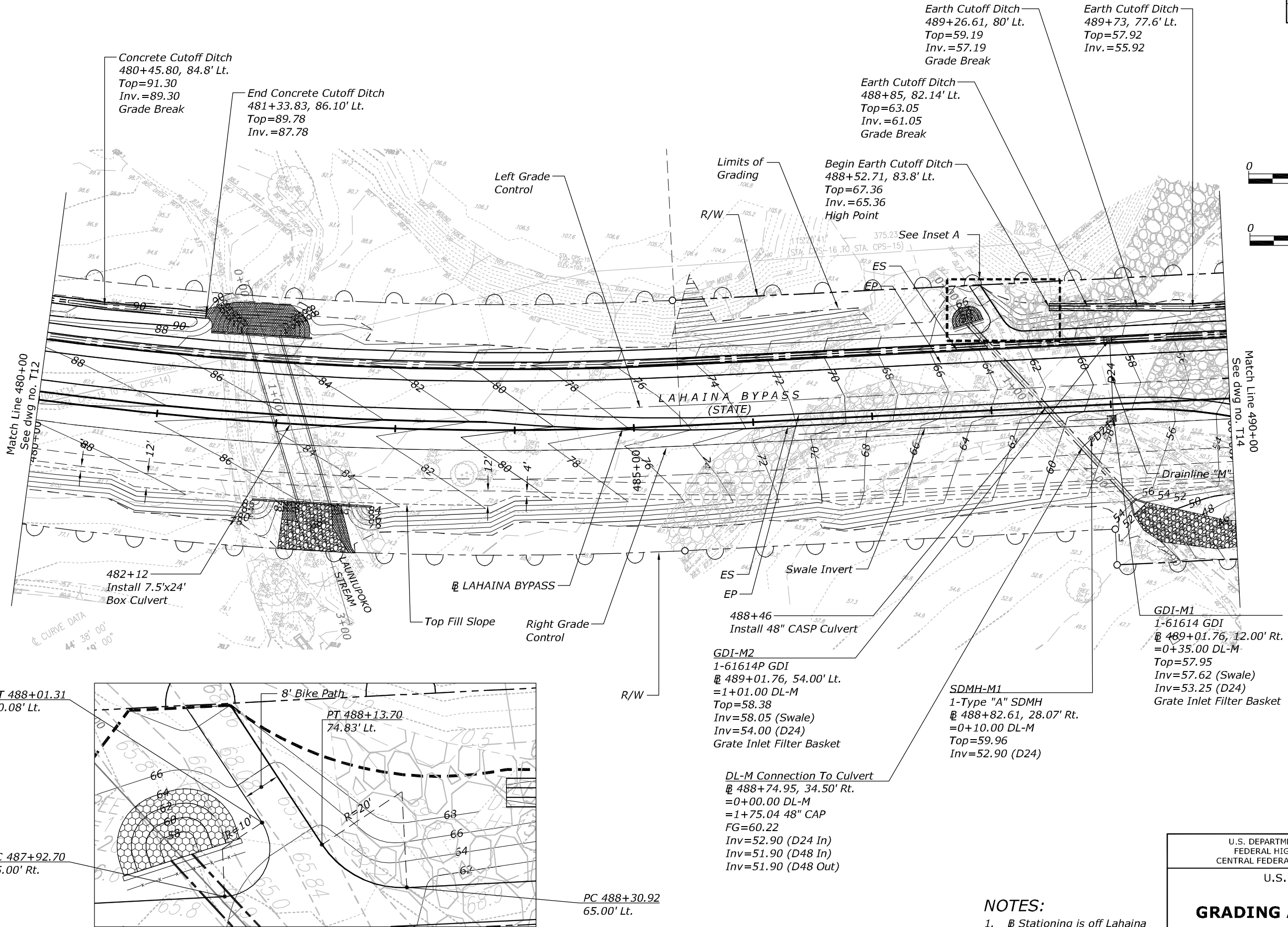
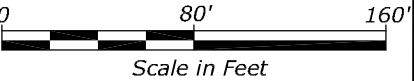
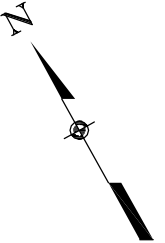
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**GRADING AND DRAINAGE  
PLAN**

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T13       |



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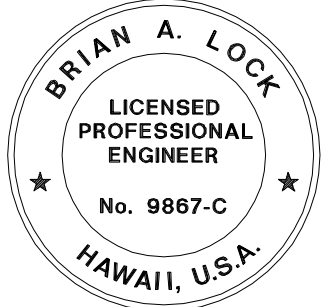
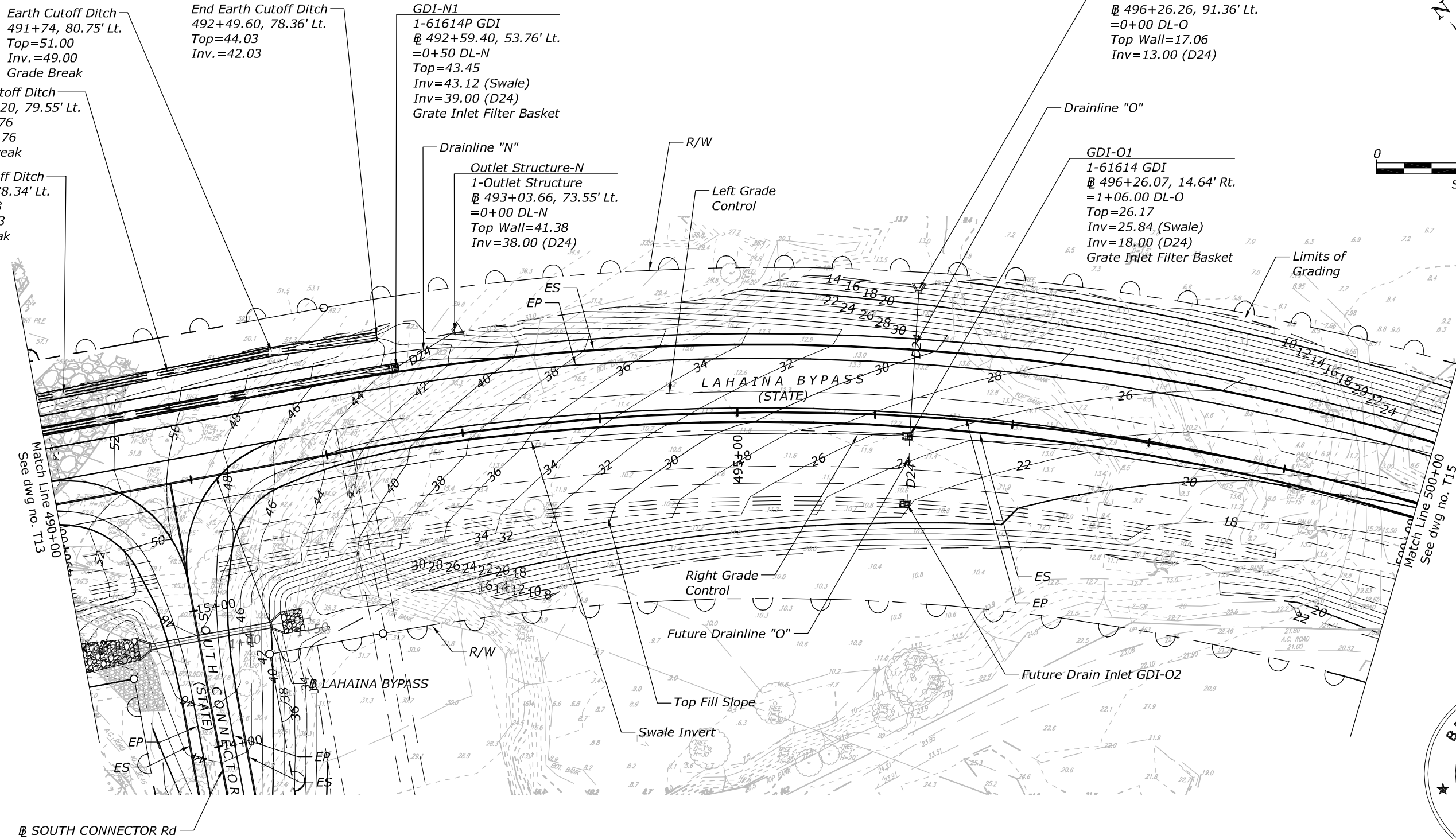
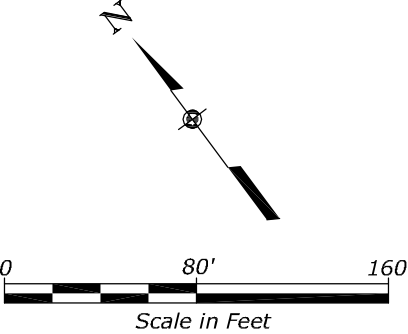
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### GRADING AND DRAINAGE PLAN

- NOTES:**
- Stationing is off Lahaina Bypass Unless Otherwise Stated.

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|-------|-----------------|-----------|
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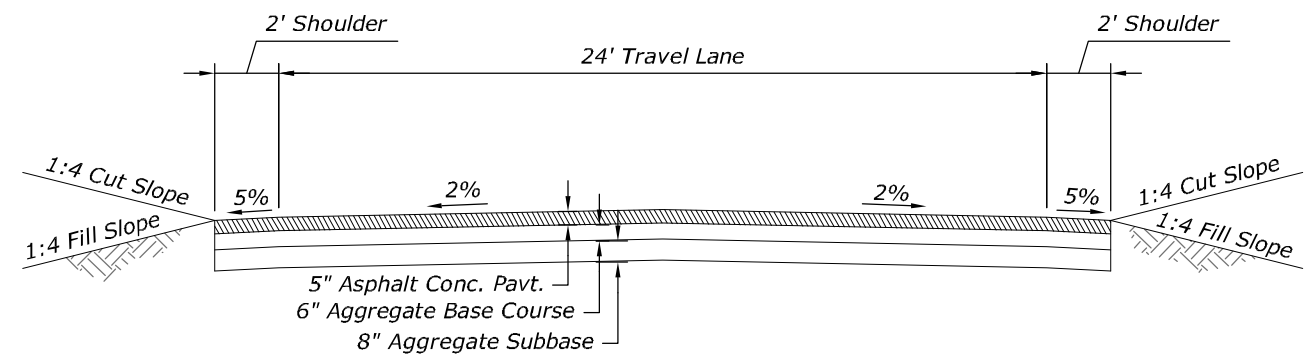
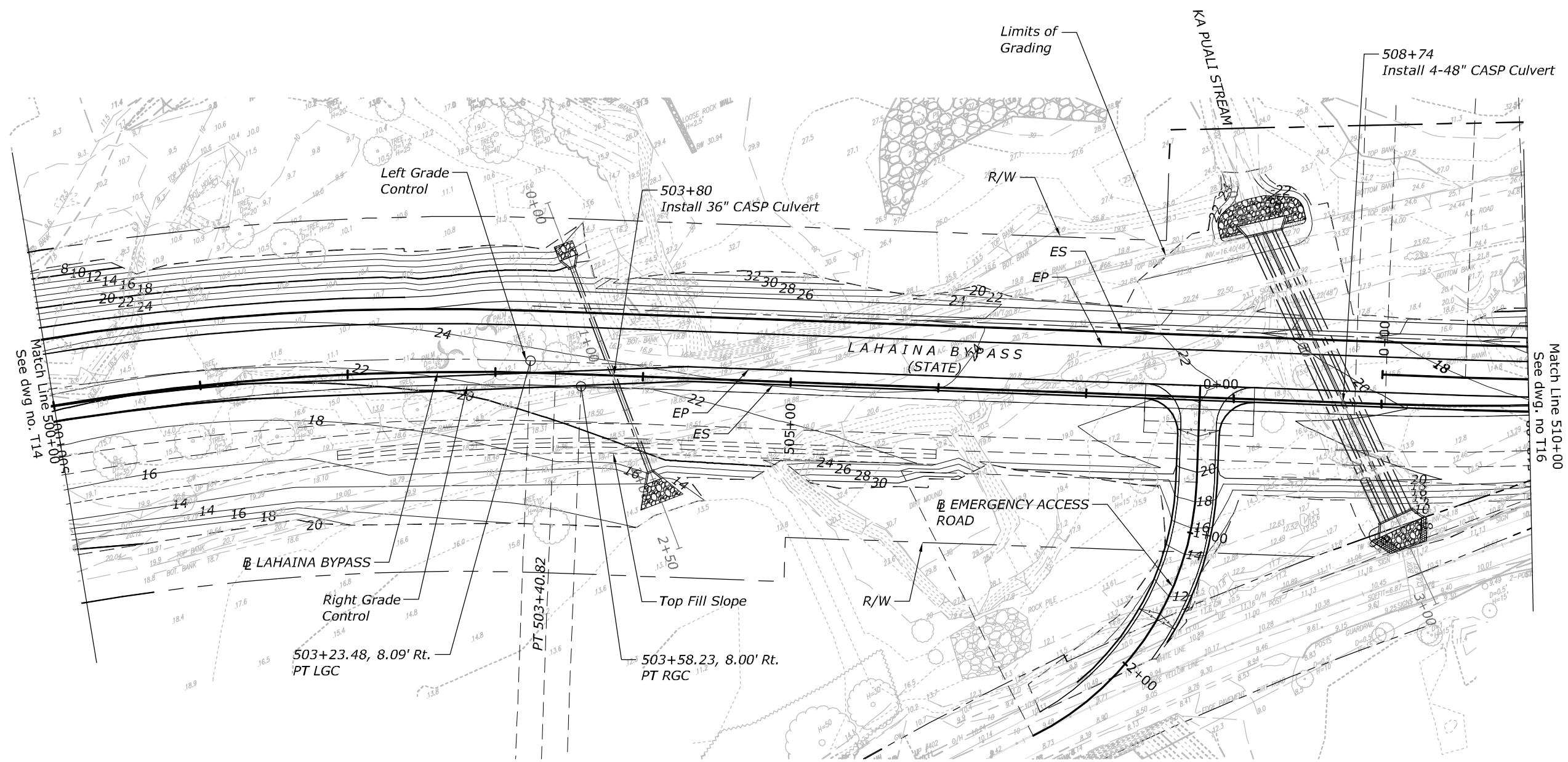
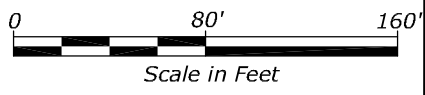
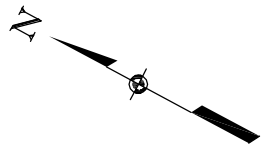
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**GRADING AND DRAINAGE  
PLAN**

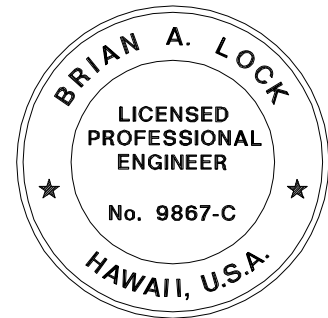
**NOTES:**

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| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
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**TYPICAL SECTION - EMERGENCY ACCESS ROAD**  
Not to Scale



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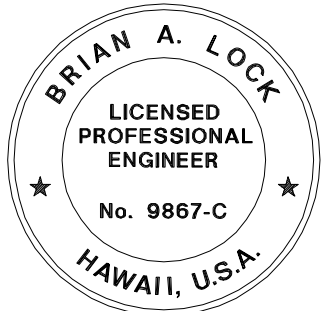
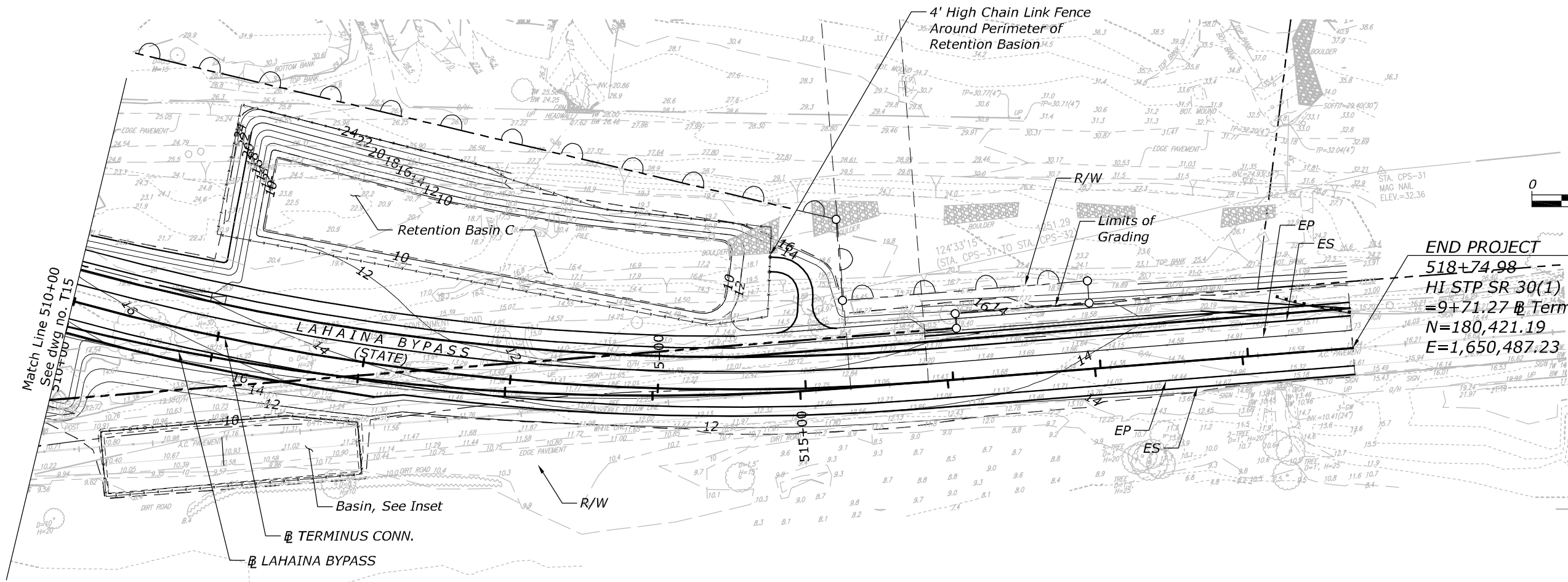
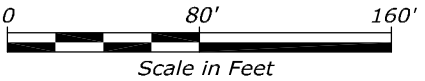
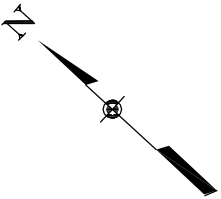
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**GRADING AND DRAINAGE  
PLAN**

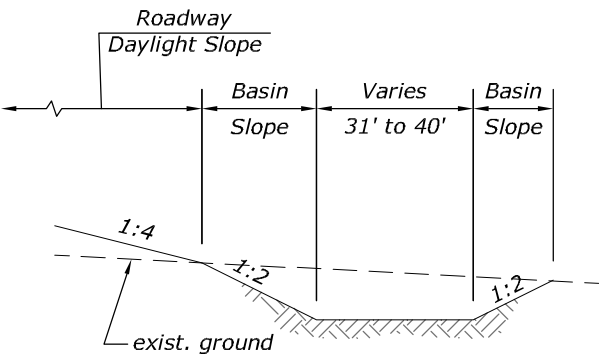
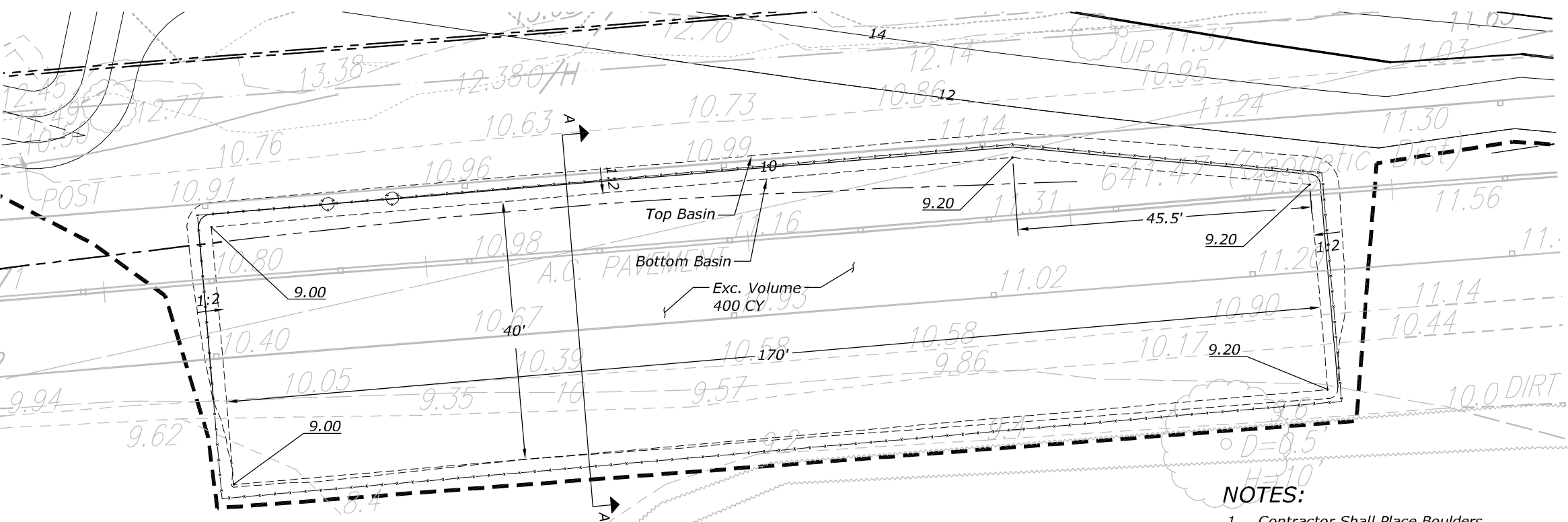


| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T16       |



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APRIL 30, 2020  
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**SECTION A-A**  
Not to Scale

**NOTES:**

- Contractor Shall Place Boulders To Block Vehicle Access to Abandoned section of Honoapiilani Hwy.

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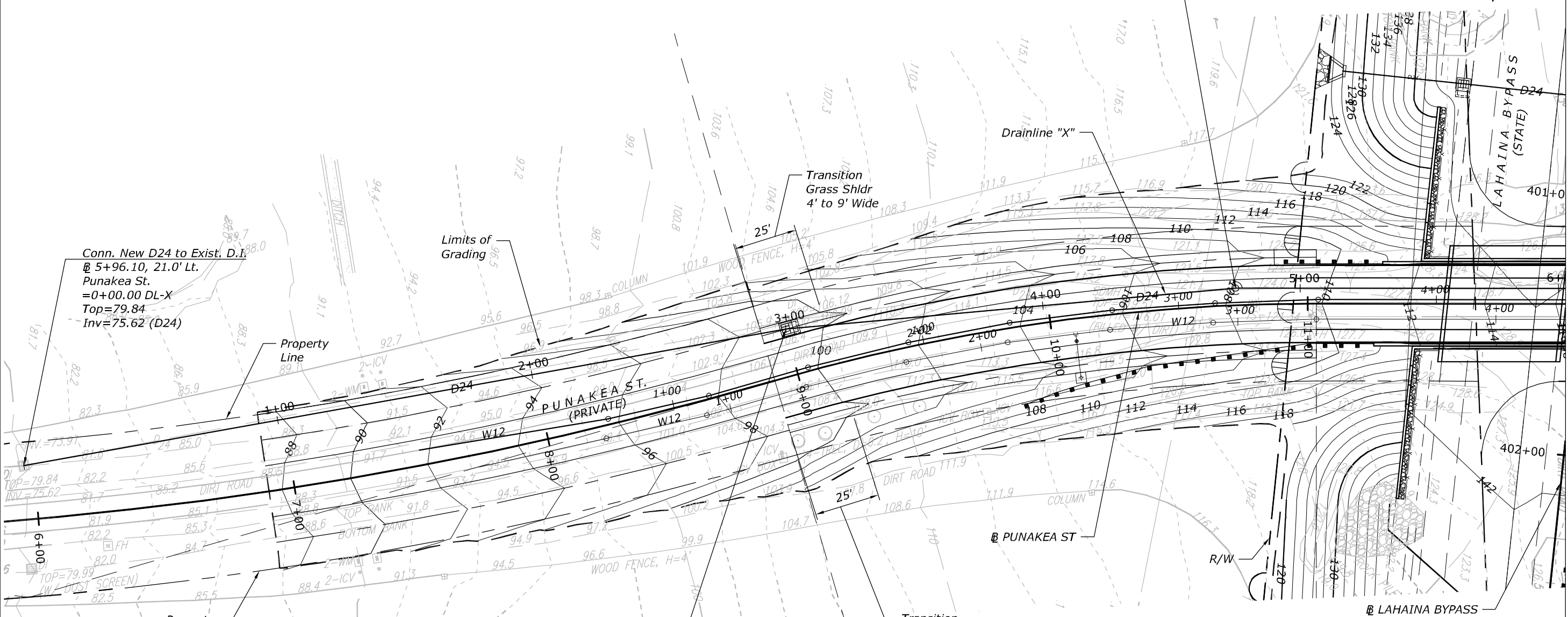
**GRADING AND DRAINAGE  
PLAN**





| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T18       |

SDMH-X2  
Relocated Exist. SDMH #1  
@ 10+72.42, 6.63' Lt.  
Punakea St.  
=4+75.00 DL-X  
Top=108.08  
Inv=102.46 (D24)



Conn. New D24 to Exist. D.I.  
@ 5+96.10, 21.0' Lt.  
Punakea St.  
=0+00.00 DL-X  
Top=79.84  
Inv=75.62 (D24)

Limits of Grading

Property Line

GDI-X1  
Relocated Exist. GDI #1  
@ 9+00.23, 18.0' Lt.  
Punakea St.  
=3+00 DL-X  
Top=99.13  
Inv=98.80 (Swale)  
Inv=93.30 (D24)

Transition Grass Shldr  
4' to 9' Wide

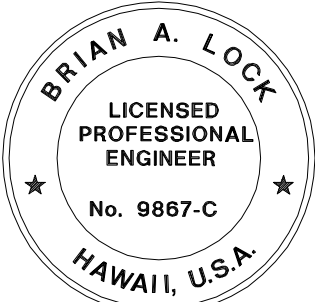
Drainline "X"

PUNAKEA ST

Transition Grass Shldr  
4' to 9' Wide

LAHAINA BYPASS

- NOTES:
- Contractor Shall Verify Existing Inverts and Elevations in Field.



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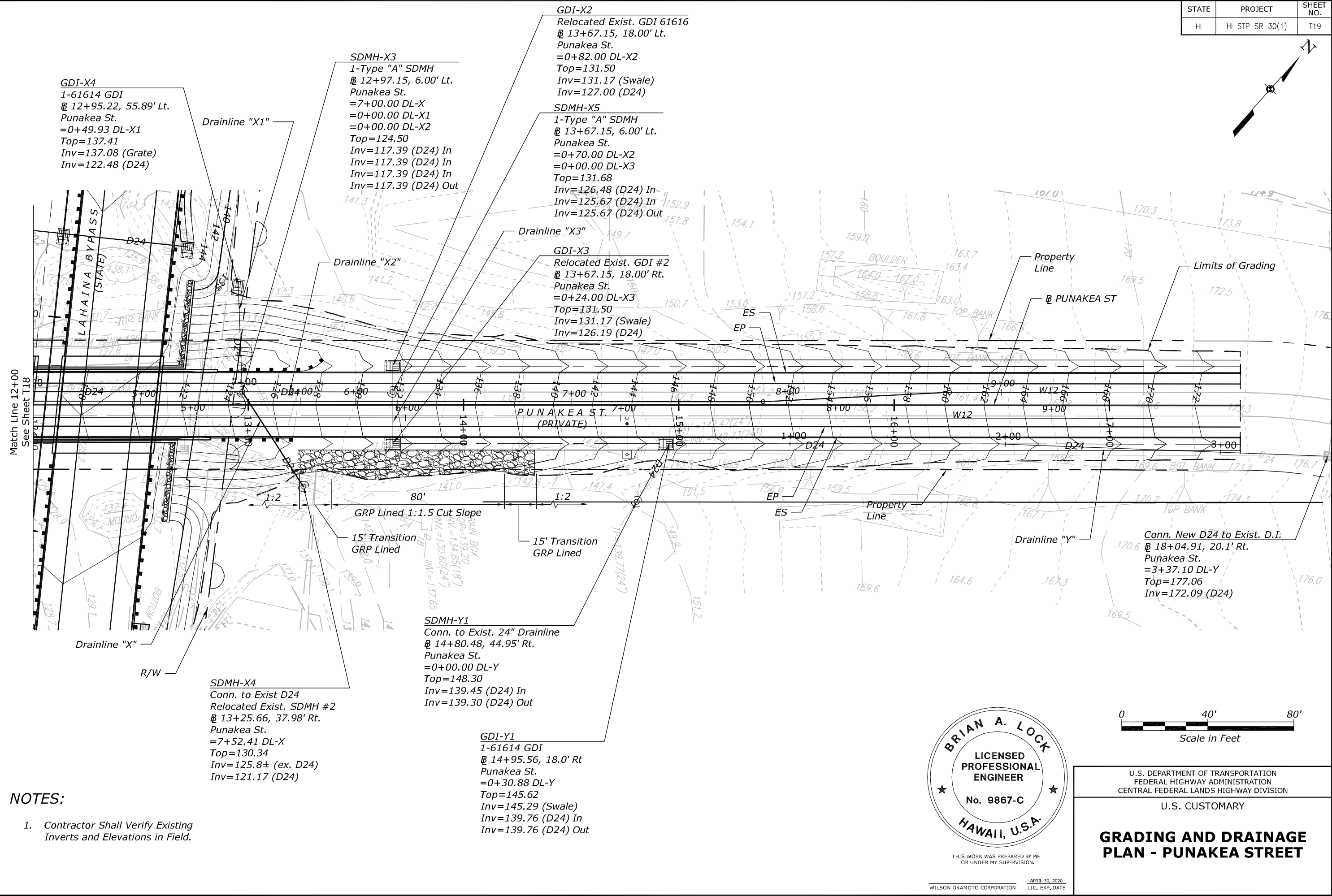
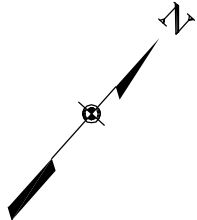
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GRADING AND DRAINAGE  
PLAN - PUNAKEA STREET

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|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T19       |

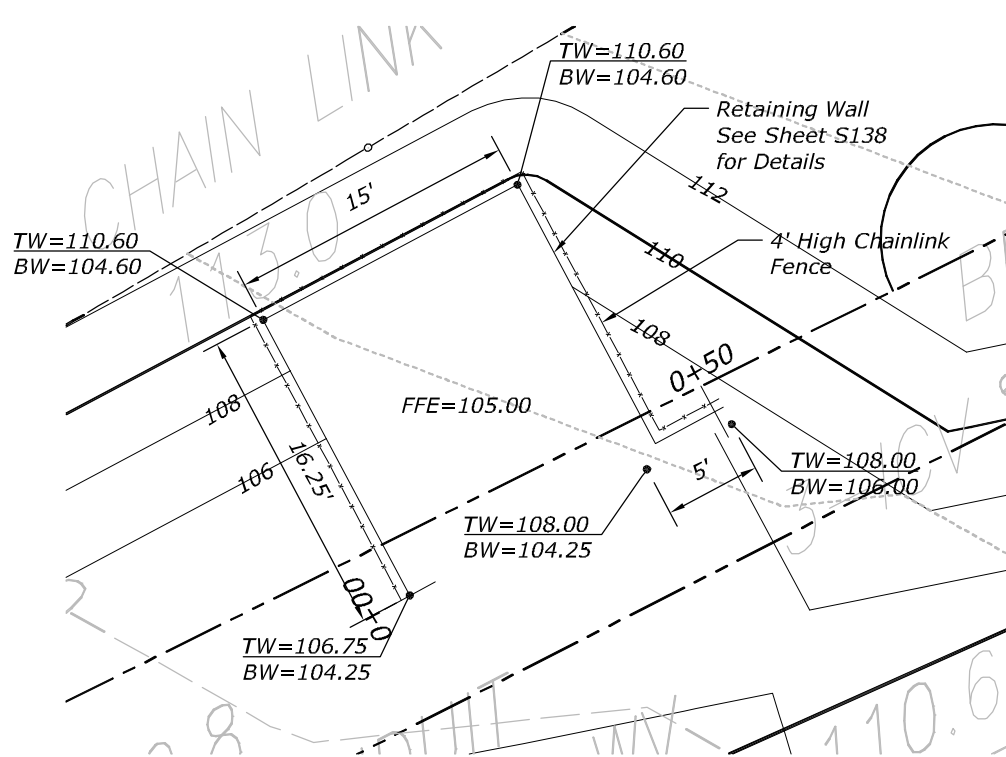
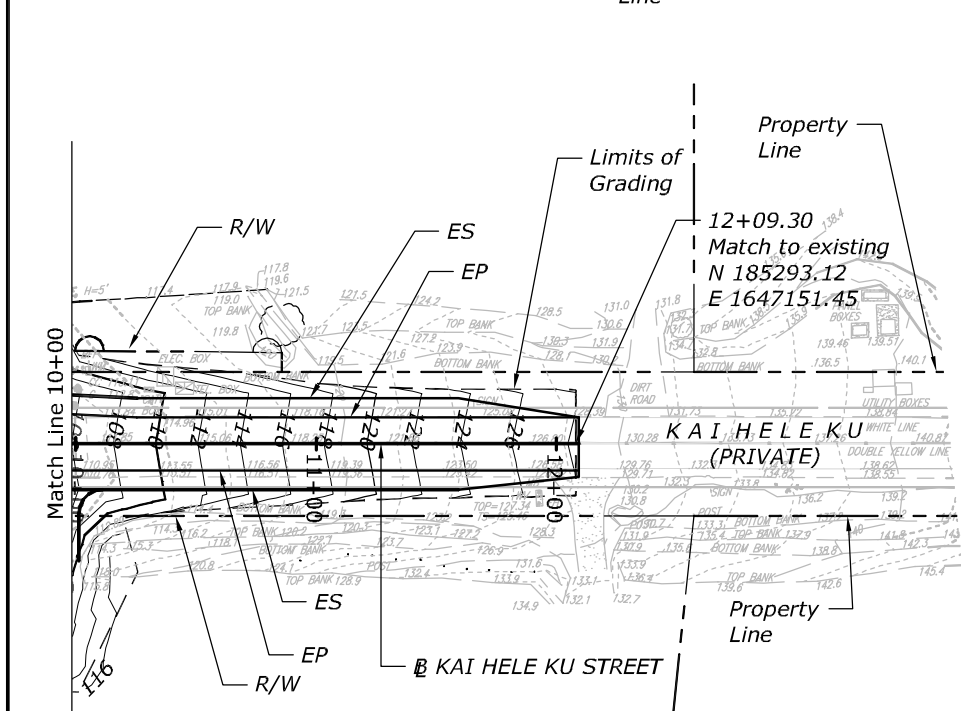
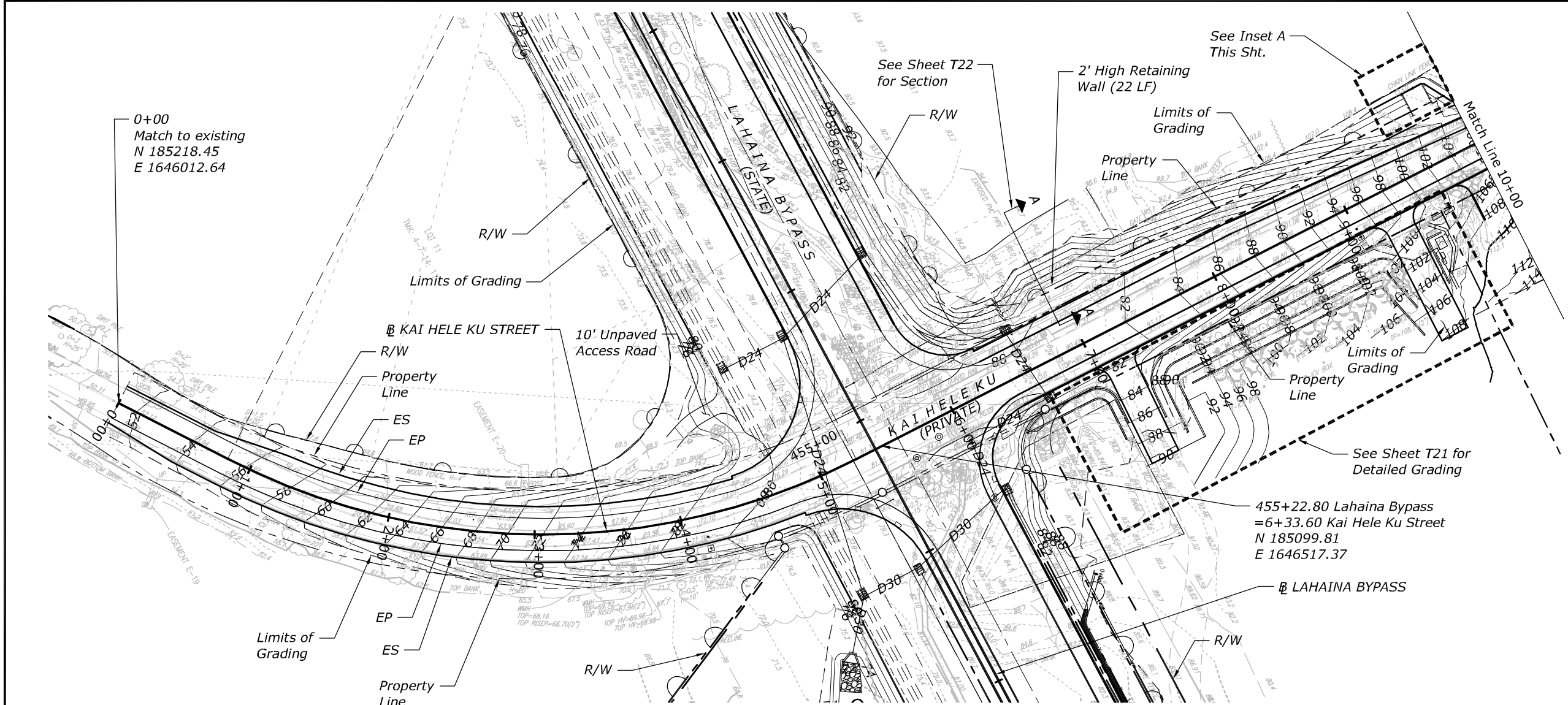


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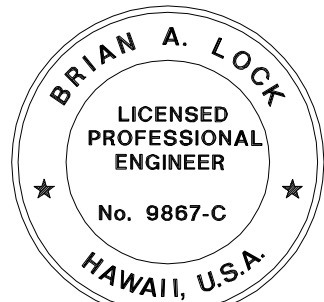
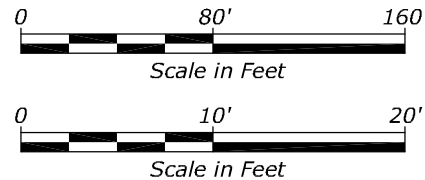
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DRAWING NO.:

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|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T20       |



**INSET A**  
Scale: 1"=10'



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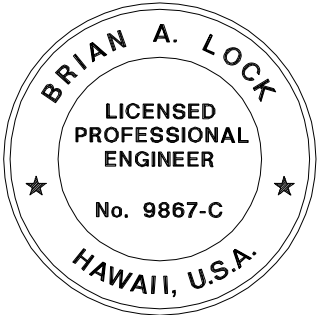
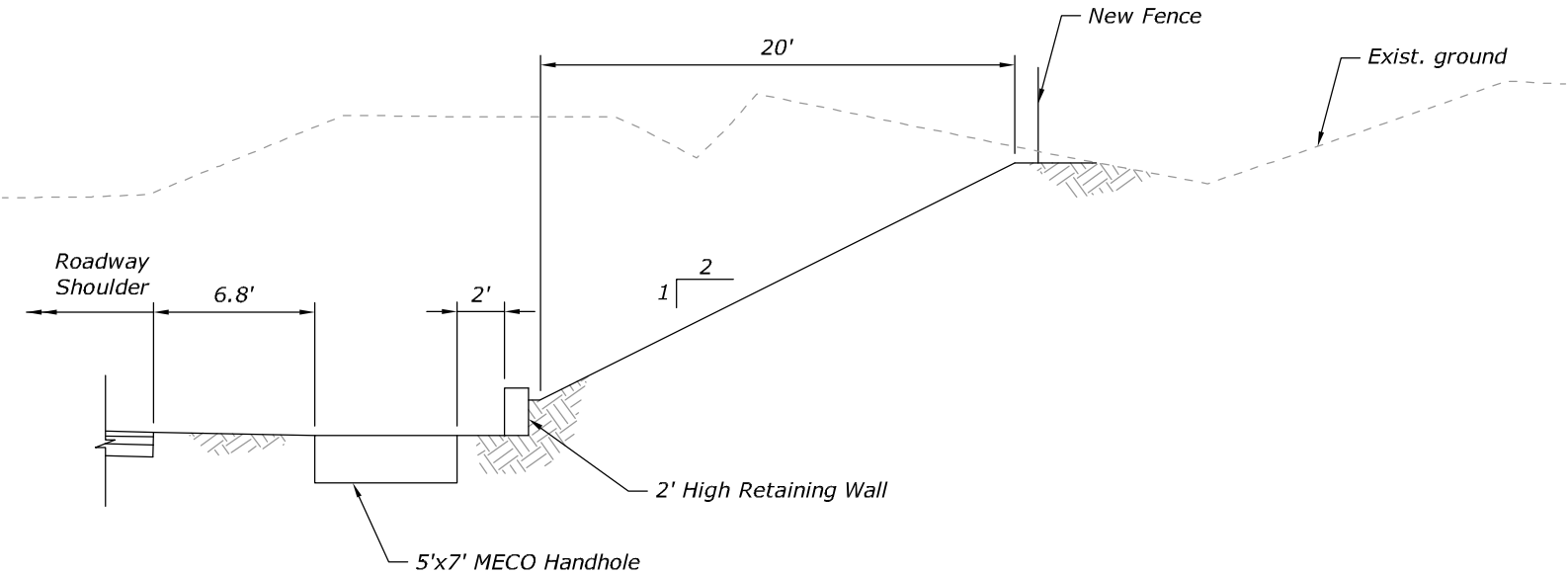
## GRADING AND DRAINAGE PLAN - KAI HELE KU STREET







| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T22       |



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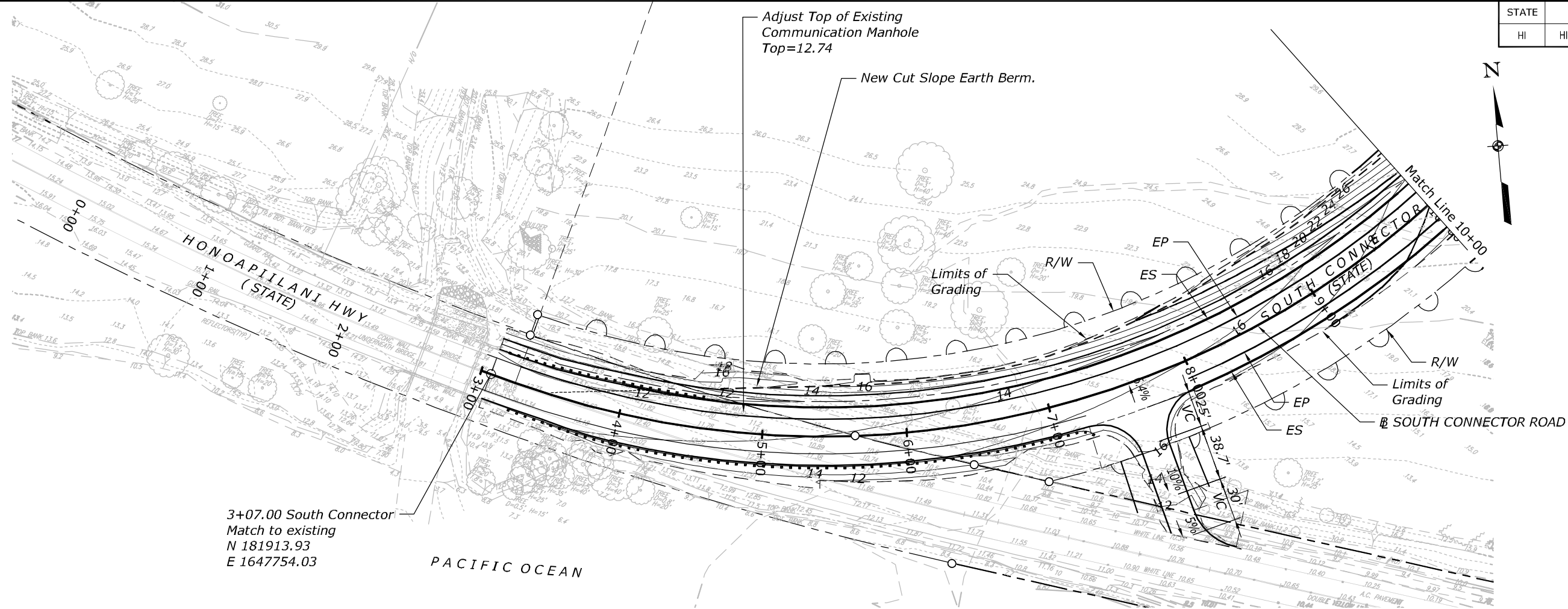
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CENTRAL FEDERAL LANDS HIGHWAY DIVISION

U.S. CUSTOMARY SPECIAL

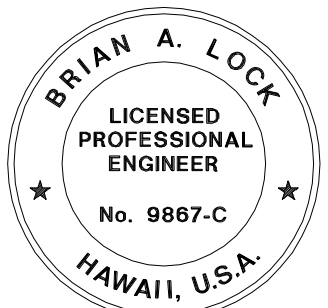
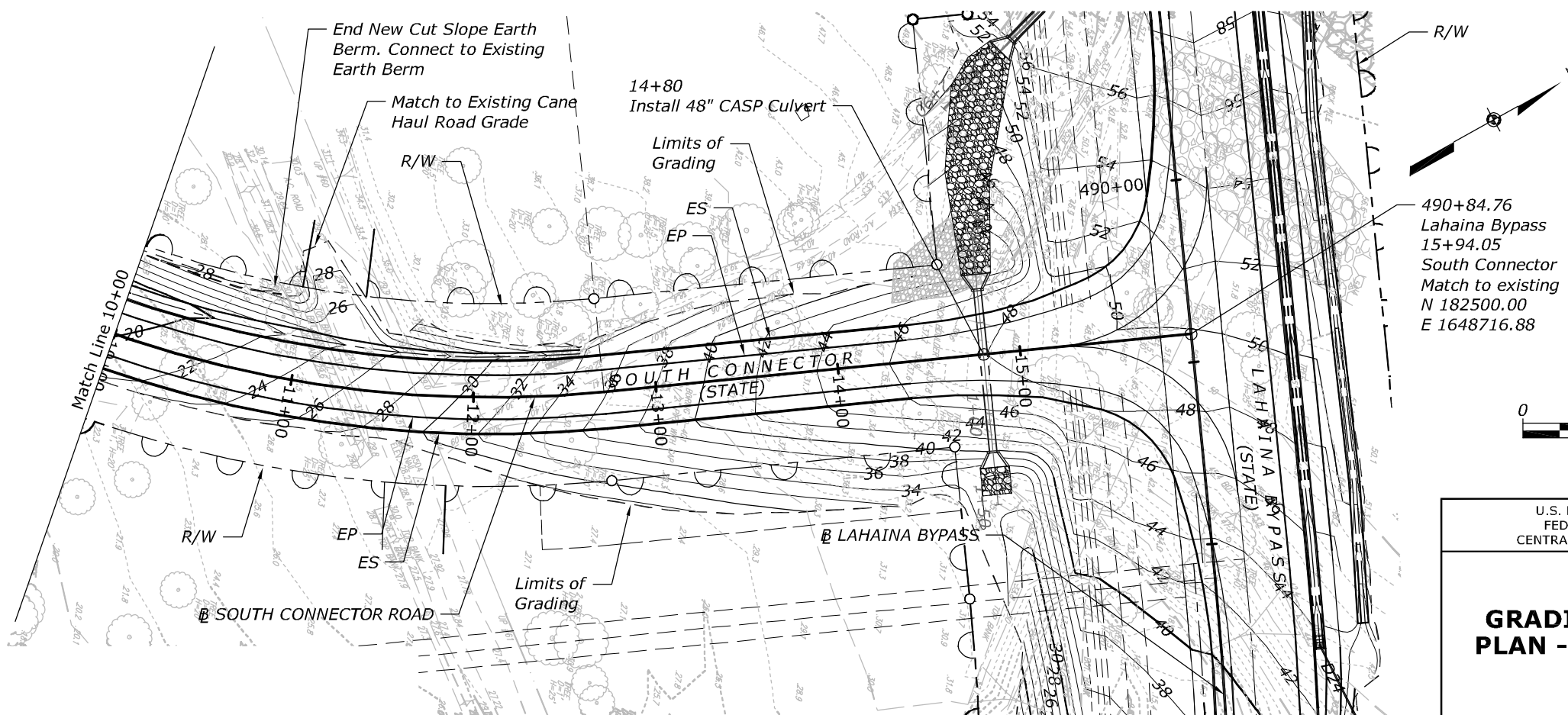
**GRADING DETAILS**

SPECIAL

| STATE | PROJECT         | SHEET NO. |
|-------|-----------------|-----------|
| HI    | HI STP SR 30(1) | T23       |



3+07.00 South Connector  
Match to existing  
N 181913.93  
E 1647754.03



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## GRADING AND DRAINAGE PLAN - SOUTH CONNECTOR