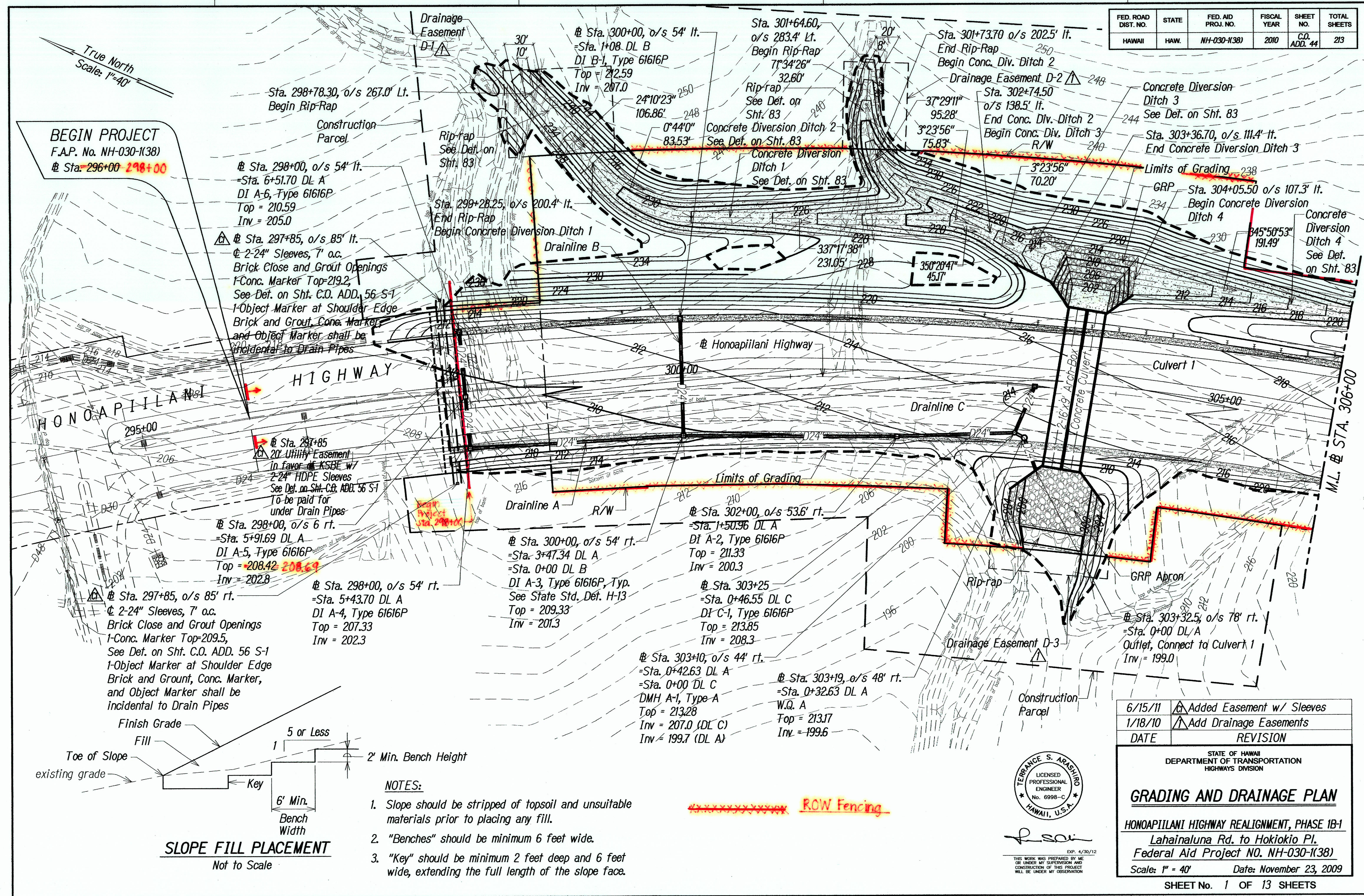
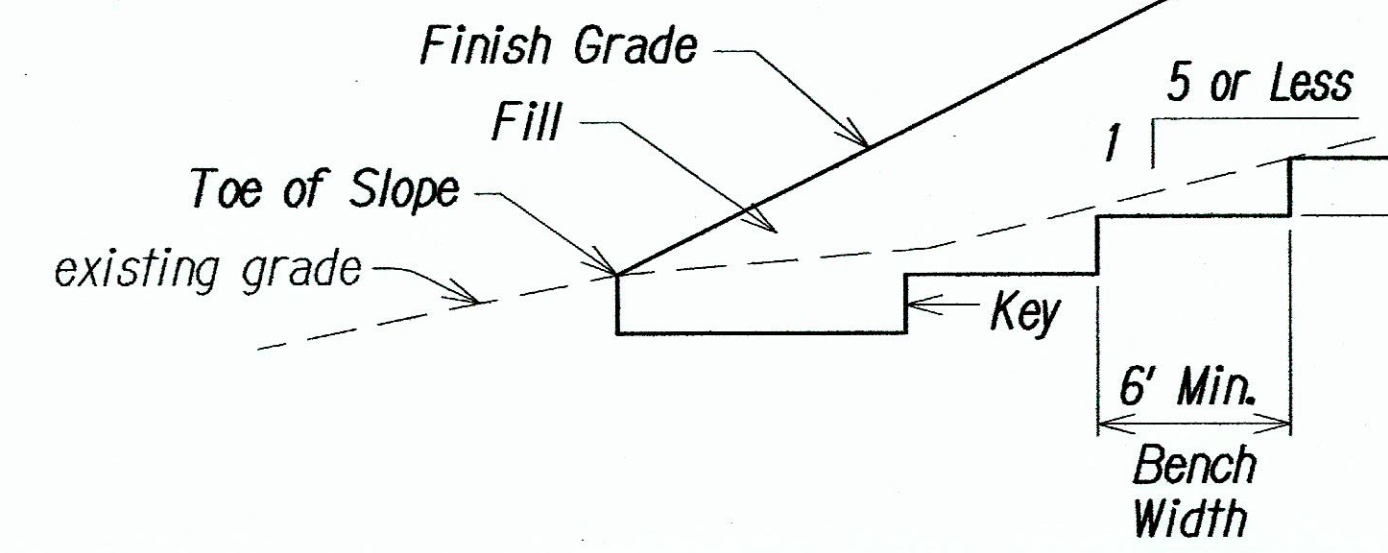




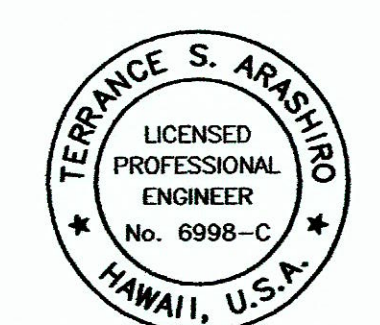
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | C.O. ADD. 44 | 213          |

**BEGIN PROJECT**  
F.A.P. No. NH-030-1(38)  
Sta. 296+00 298+00



- NOTES:**
- Slope should be stripped of topsoil and unsuitable materials prior to placing any fill.
  - "Benches" should be minimum 6 feet wide.
  - "Key" should be minimum 2 feet deep and 6 feet wide, extending the full length of the slope face.

\*\*\*\*\* ROW Fencing



|         |                           |
|---------|---------------------------|
| 6/15/11 | Added Easement w/ Sleeves |
| 1/18/10 | Add Drainage Easements    |
| DATE    | REVISION                  |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRADING AND DRAINAGE PLAN**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-1(38)

Scale: 1" = 40'      Date: November 23, 2009

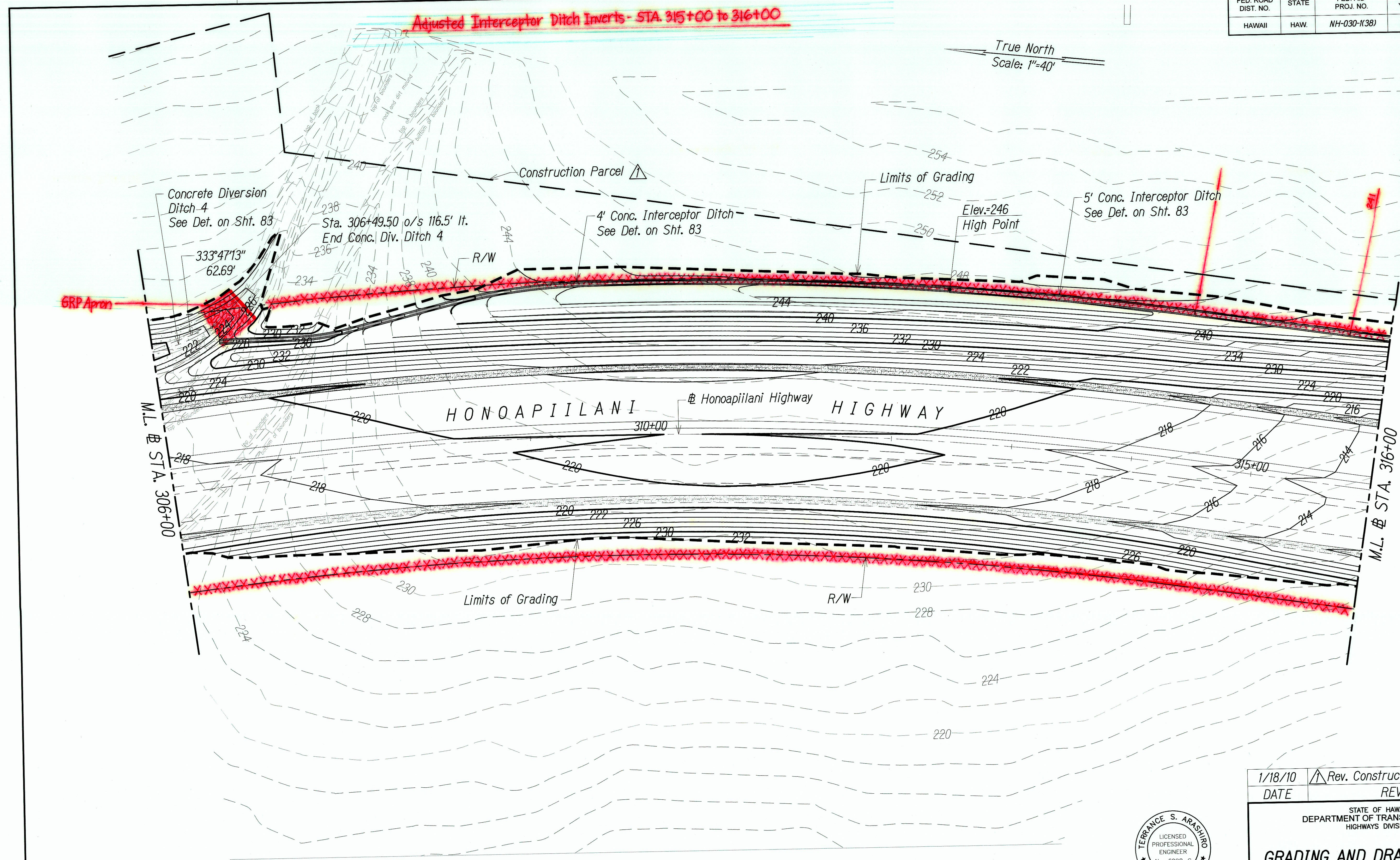
SHEET No. 1 OF 13 SHEETS

**"AS-BUILT"**

**C.O. ADD. 44**



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | 45        | 213          |



TERRANCE S. ARASHIRO  
 LICENSED PROFESSIONAL ENGINEER  
 No. 6998-C  
 HAWAII, U.S.A.  
 EXP. 4/30/10  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

|                                                                                                                         |                          |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1/18/10                                                                                                                 | Rev. Construction Parcel |
| DATE                                                                                                                    | REVISION                 |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION                                                    |                          |
| <b>GRADING AND DRAINAGE PLAN</b>                                                                                        |                          |
| HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl.<br>Federal Aid Project NO. NH-030-1(38) |                          |
| Scale: 1" = 40'                                                                                                         | Date: November 23, 2009  |
| SHEET No. 2 OF 13 SHEETS                                                                                                |                          |

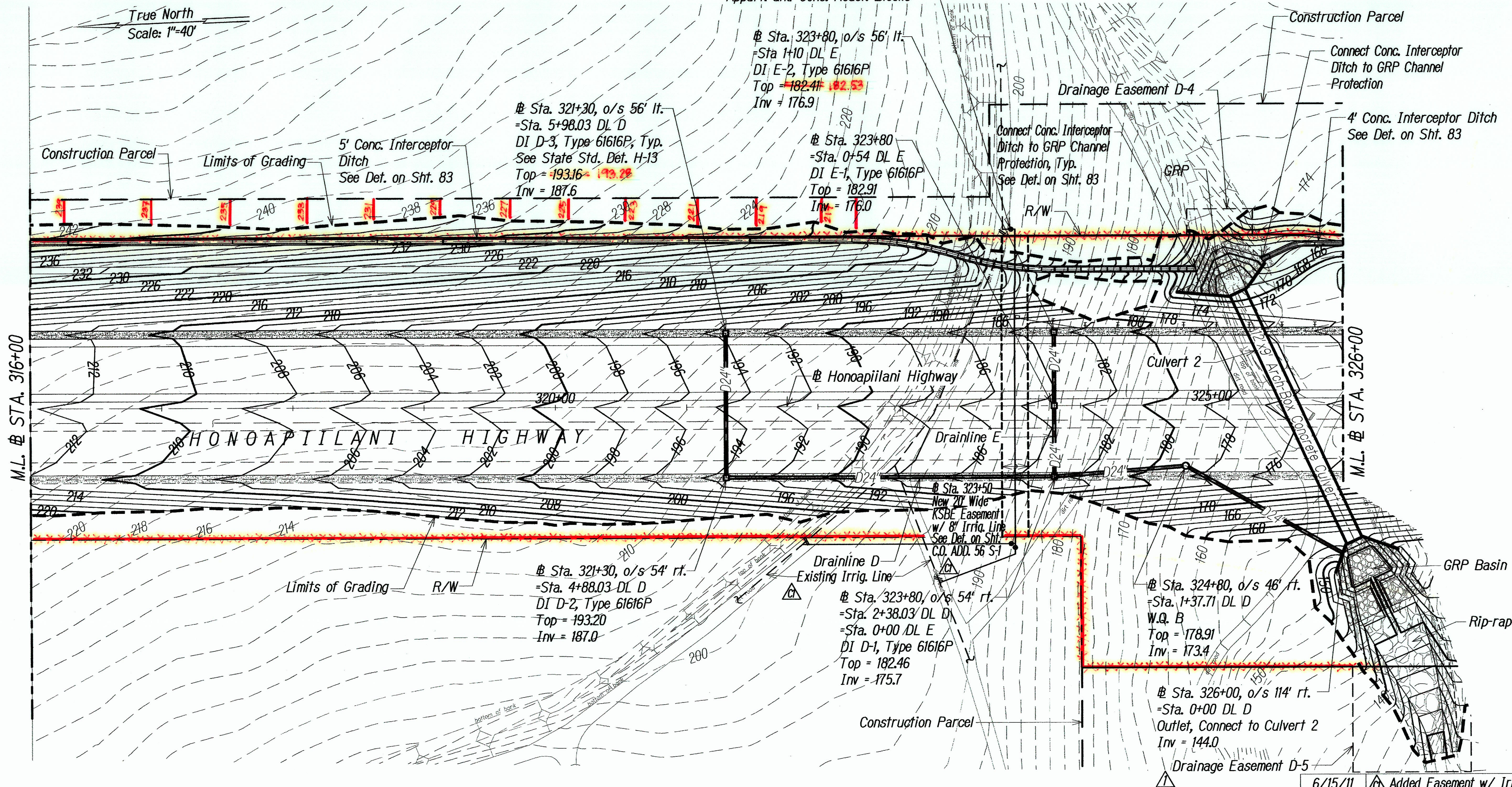
"AS-BUILT"

ADD. 45

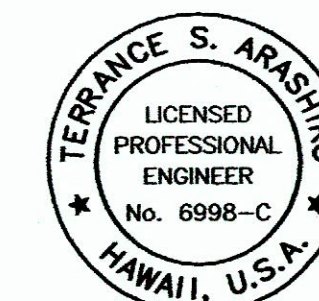


Adjusted Interceptor Ditch Inverts Sta. 316+00 to 322+00

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-K(38)       | 2010        | C.O. ADD. 46 | 213          |



|         |                                   |
|---------|-----------------------------------|
| 6/15/11 | Added Easement w/ Irrigation Line |
| 1/18/10 | Add Drainage Easements            |
| DATE    | REVISION                          |



EXP. 4/30/12  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION AND  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRADING AND DRAINAGE PLAN**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-K(38)

Scale: 1" = 40' Date: November 23, 2009

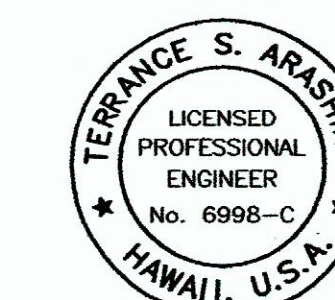
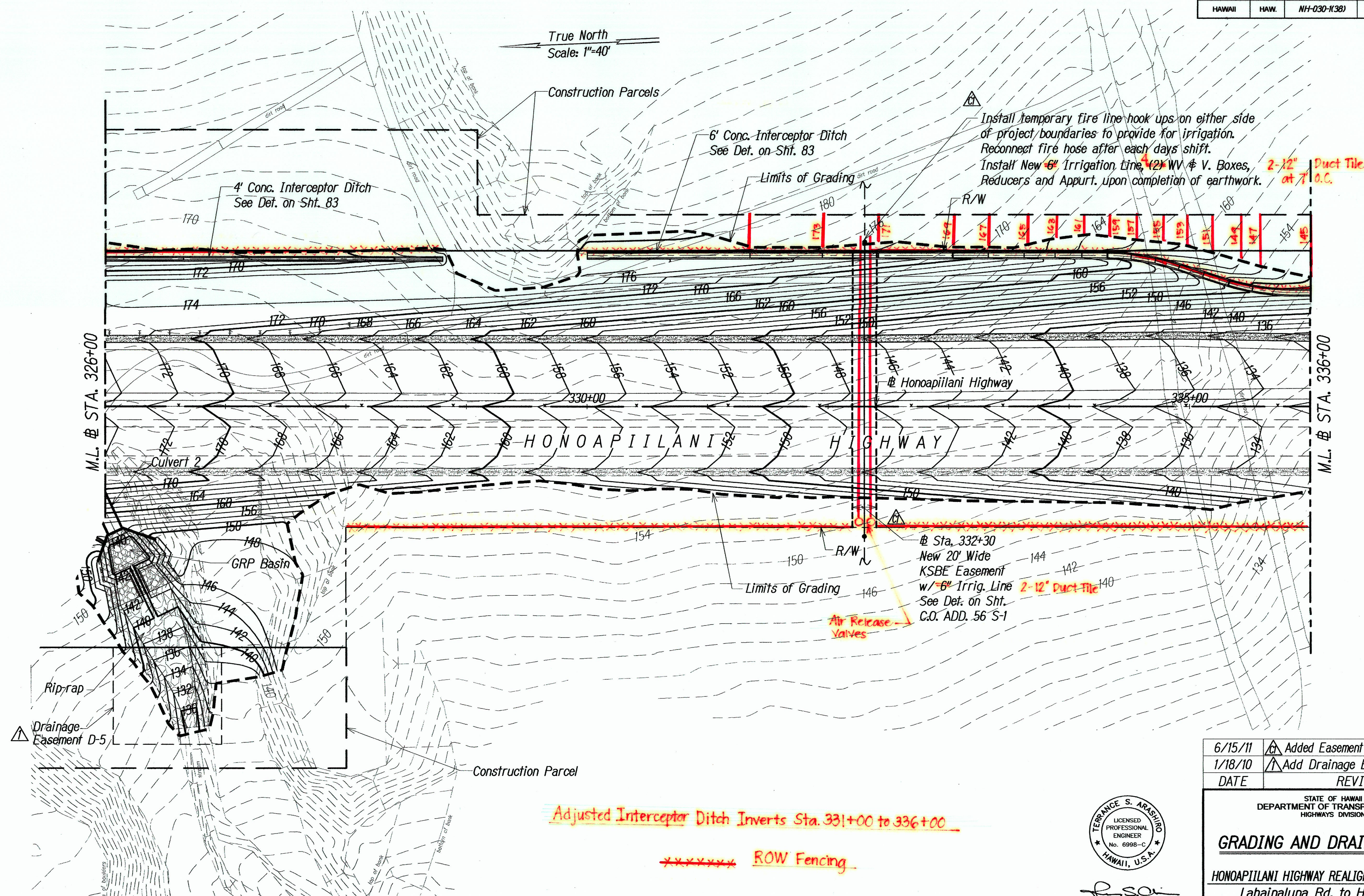
SHEET No. 3 OF 13 SHEETS

"AS-BUILT"

C.O. ADD. 46



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-K(38)       | 2010        | C.O. ADD. 47 | 213          |



EXP. 4/30/12  
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OR UNDER MY SUPERVISION AND  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION

|         |                                   |
|---------|-----------------------------------|
| 6/15/11 | Added Easement w/ Irrigation Line |
| 1/18/10 | Add Drainage Easements            |
| DATE    | REVISION                          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRADING AND DRAINAGE PLAN**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-K(38)

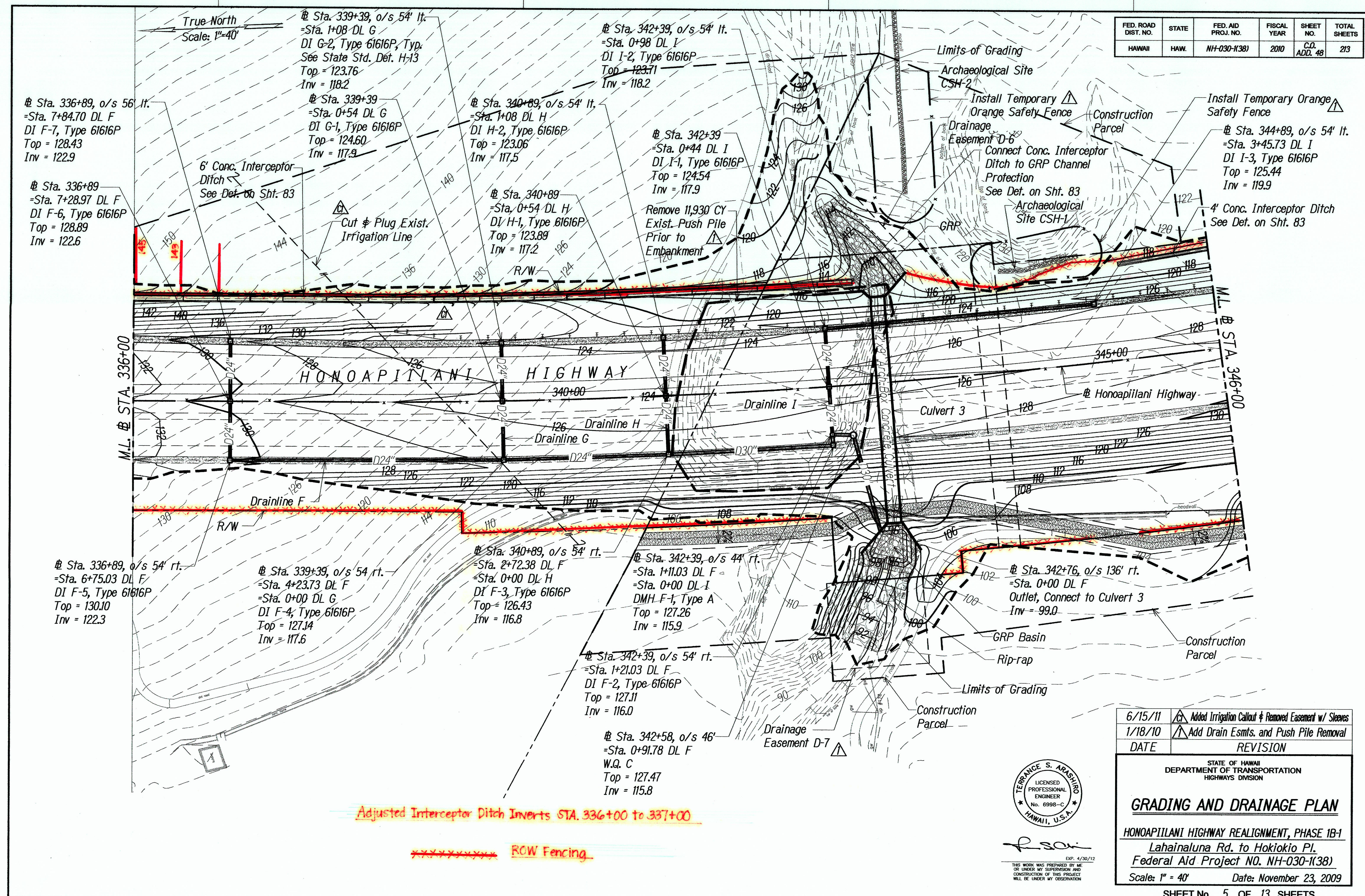
Scale: 1" = 40' Date: November 23, 2009

SHEET No. 4 OF 13 SHEETS

"AS-BUILT"

C.O. ADD. 47





| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | C.O. ADD. 48 | 213          |



|         |                                                        |
|---------|--------------------------------------------------------|
| 6/15/11 | Added Irrigation Callout & Removed Easement w/ Sleeves |
| 1/18/10 | Add Drain Esms. and Push Pile Removal                  |
| DATE    | REVISION                                               |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRADING AND DRAINAGE PLAN**

HONOAPIʻILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-1(38)

Scale: 1" = 40' Date: November 23, 2009

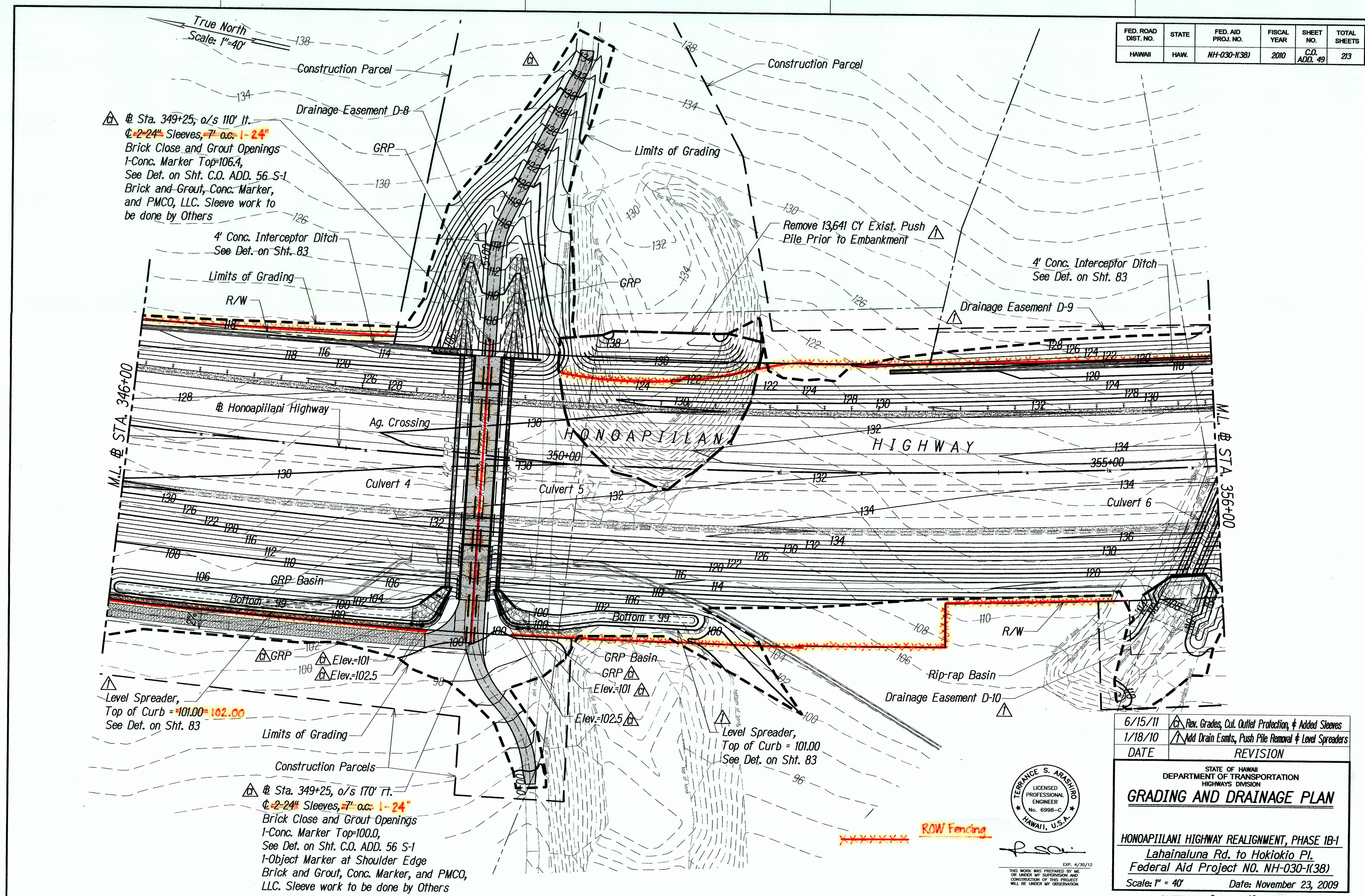
EXP. 4/30/12  
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OR UNDER MY SUPERVISION AND  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION

"AS-BUILT"

SHEET No. 5 OF 13 SHEETS  
**C.O.ADD. 48**



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | C.O. ADD. 49 | 213          |



|         |                                                      |
|---------|------------------------------------------------------|
| 6/15/11 | Rev. Grades, Cul. Outlet Protection, & Added Sleeves |
| 1/18/10 | Add Drain Esmts, Push Pile Removal & Level Spreaders |
| DATE    | REVISION                                             |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GRADING AND DRAINAGE PLAN**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-1(38)

Scale: 1" = 40'      Date: November 23, 2009



EXP. 4/30/12  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION AND  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION

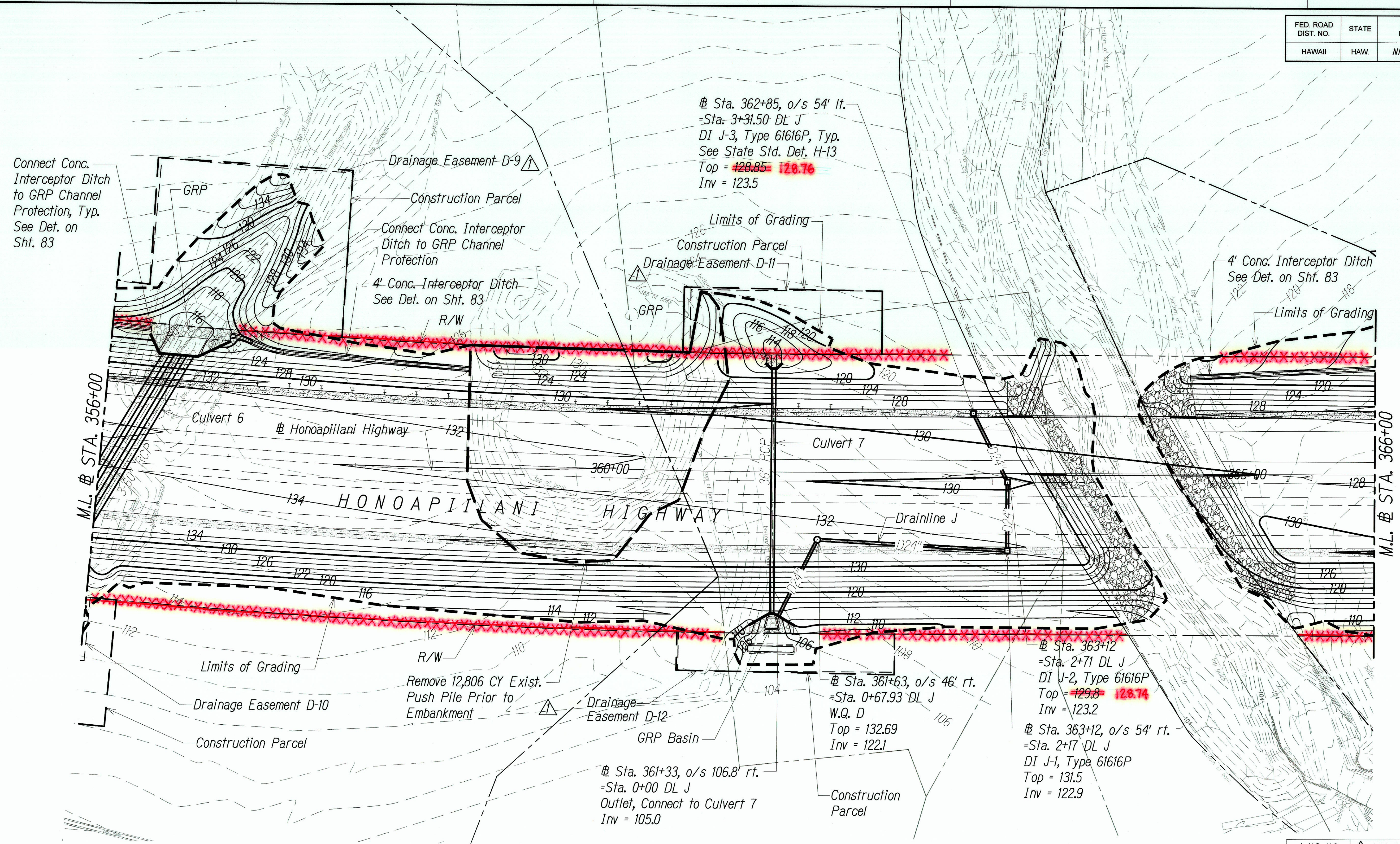
ROW Fencing

"AS-BUILT"

SHEET No. 6 OF 13 SHEETS  
**C.O. ADD. 49**



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | 50        | 213          |



\*\*\*\*\* ROW Fencing



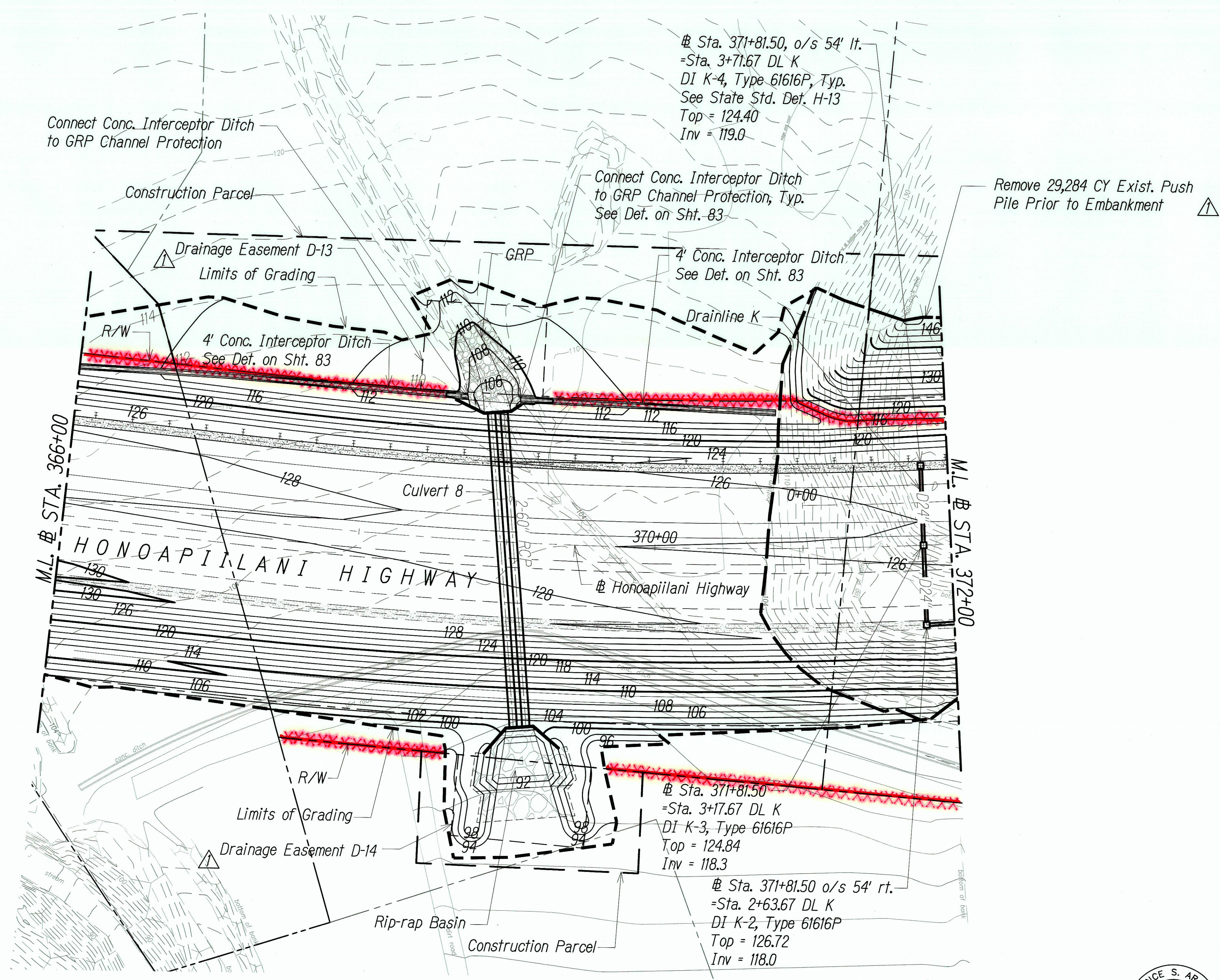
|                                                                                 |                                        |
|---------------------------------------------------------------------------------|----------------------------------------|
| 1/18/10                                                                         | ADD Drain Esmts. and Push Pile Removal |
| DATE                                                                            | REVISION                               |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION            |                                        |
| <b>GRADING AND DRAINAGE PLAN</b>                                                |                                        |
| HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl. |                                        |
| Federal Aid Project NO. NH-030-1(38)                                            |                                        |
| Scale: 1" = 40'                                                                 | Date: November 23, 2009                |
| SHEET No. 7 OF 13 SHEETS                                                        |                                        |

"AS-BUILT"

ADD. 50



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | 51        | 213          |



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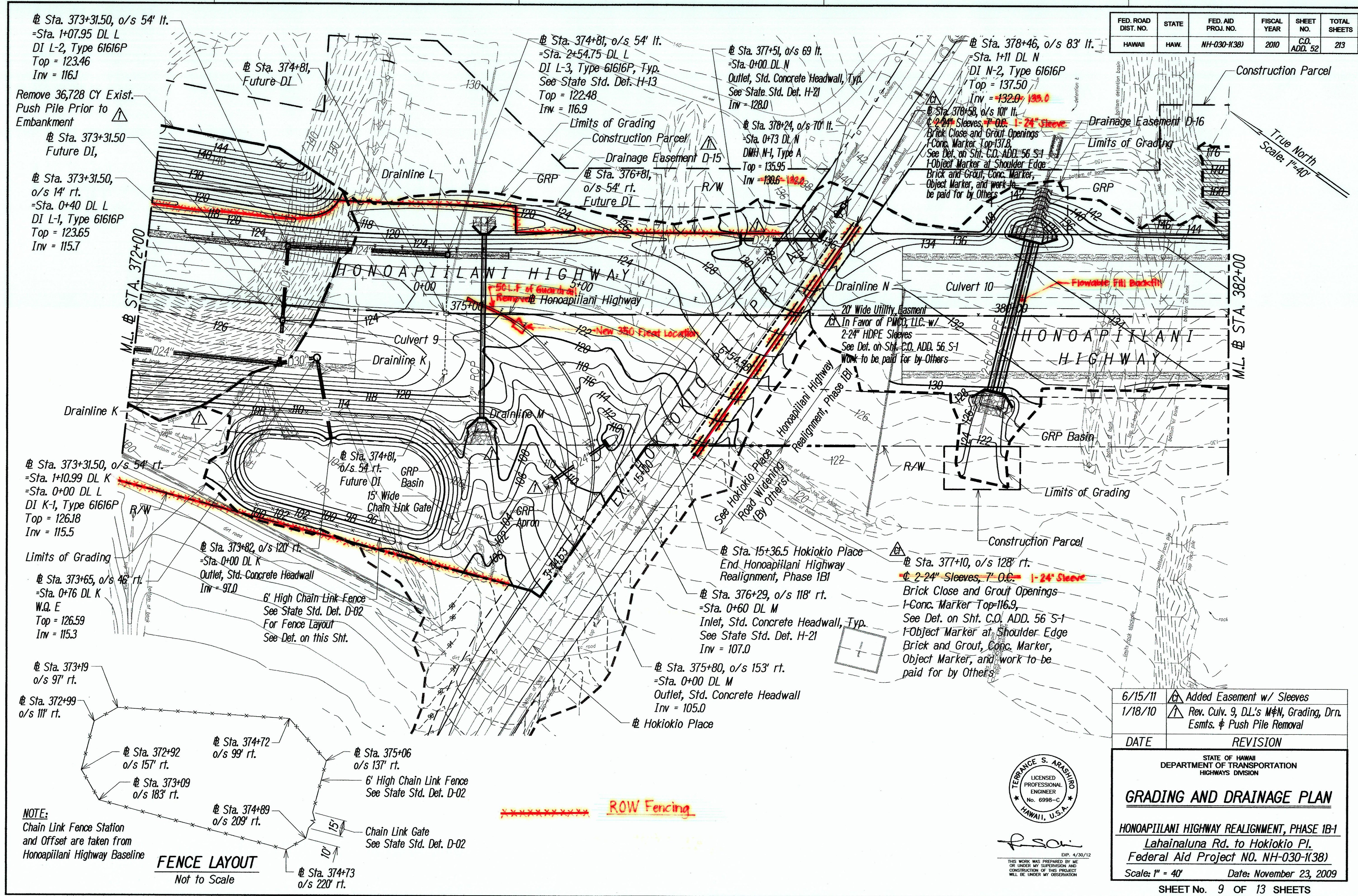
|                                                                                 |                                        |
|---------------------------------------------------------------------------------|----------------------------------------|
| 1/18/10                                                                         | ADD Drain Esmts. and Push Pile Removal |
| DATE                                                                            | REVISION                               |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION            |                                        |
| <b>GRADING AND DRAINAGE PLAN</b>                                                |                                        |
| HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl. |                                        |
| Federal Aid Project NO. NH-030-1(38)                                            |                                        |
| Scale: 1" = 40'                                                                 | Date: November 23, 2009                |
| SHEET No. 8 OF 13 SHEETS                                                        |                                        |

"AS-BUILT"

ADD. 51



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-K(38)       | 2010        | C.O. ADD. 52 | 213          |



|                                                                                                                                                                                                                                                                                     |                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 6/15/11                                                                                                                                                                                                                                                                             | Added Easement w/ Sleeves                                        |
| 1/18/10                                                                                                                                                                                                                                                                             | Rev. Culv. 9, DL's M&N, Grading, Drn. Esmts. & Push Pile Removal |
| DATE                                                                                                                                                                                                                                                                                | REVISION                                                         |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>GRADING AND DRAINAGE PLAN</b><br>HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl.<br>Federal Aid Project NO. NH-030-K(38)<br>Scale: 1" = 40'      Date: November 23, 2009 |                                                                  |
| SHEET No. 9 OF 13 SHEETS                                                                                                                                                                                                                                                            |                                                                  |



EXP. 4/30/12  
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"AS-BUILT"

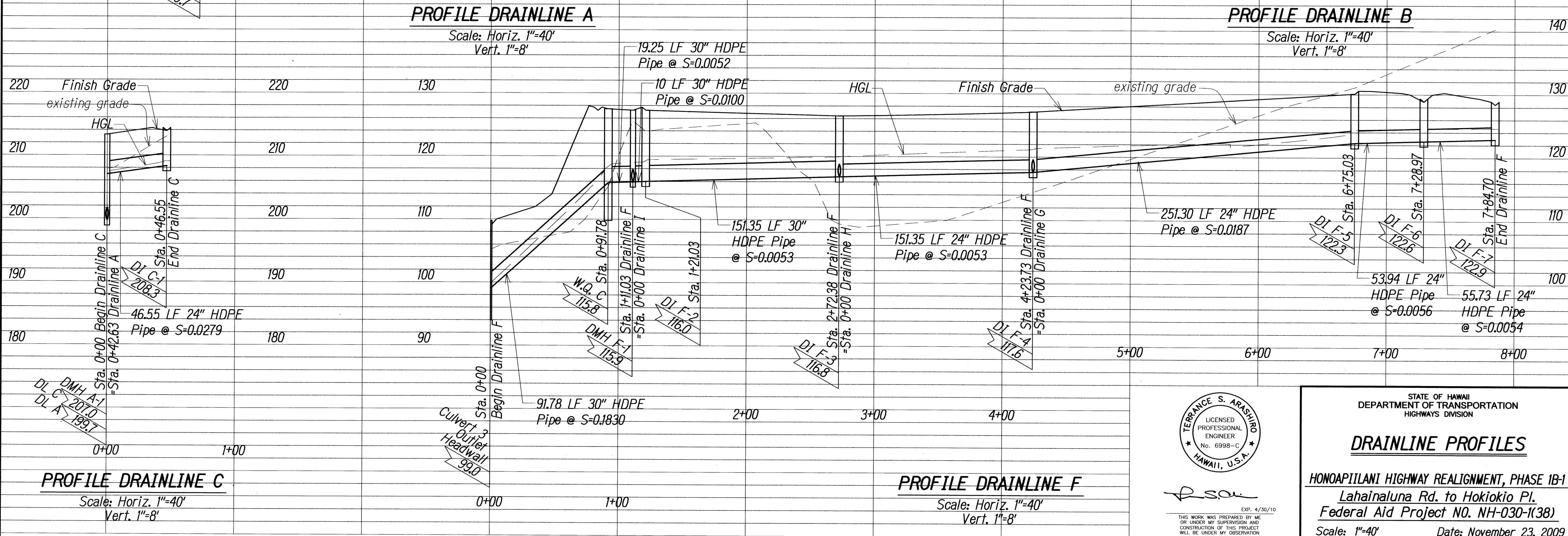
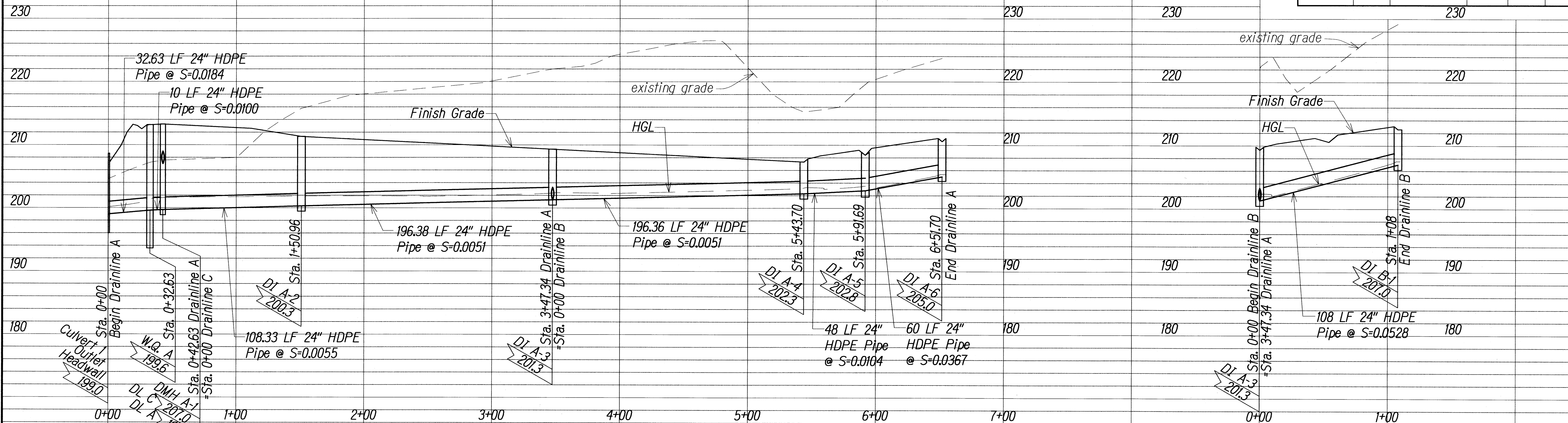
C.O. ADD. 52







| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-030-K(38)       | 2010        | 54        | 213          |



EXP. 4/30/10  
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

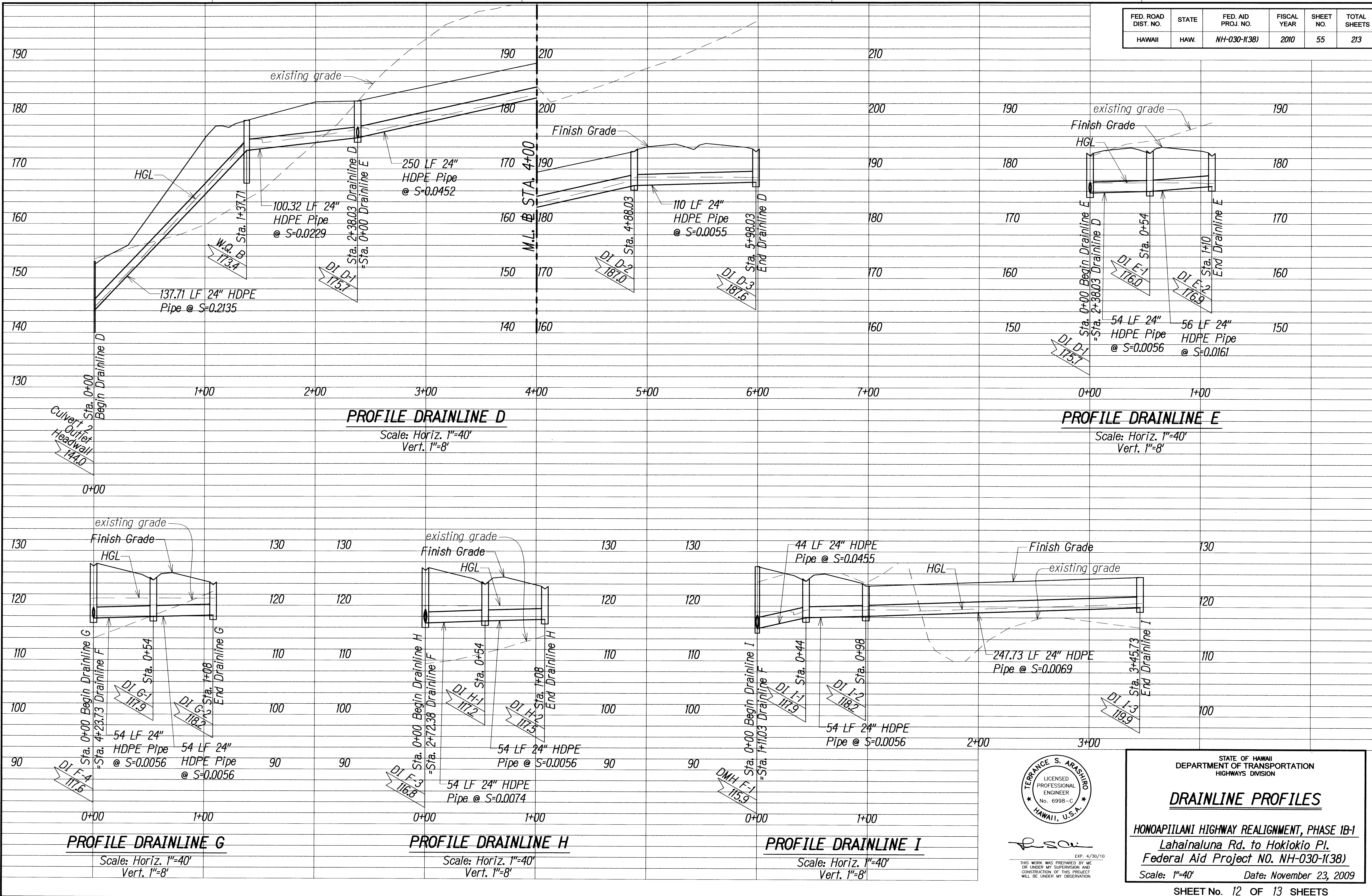
**DRAINLINE PROFILES**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-K(38)

Scale: 1"=40' Date: November 23, 2009



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-030-K(38)       | 2010        | 55        | 213          |



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

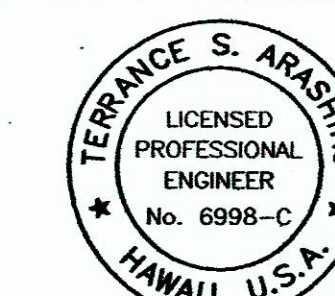
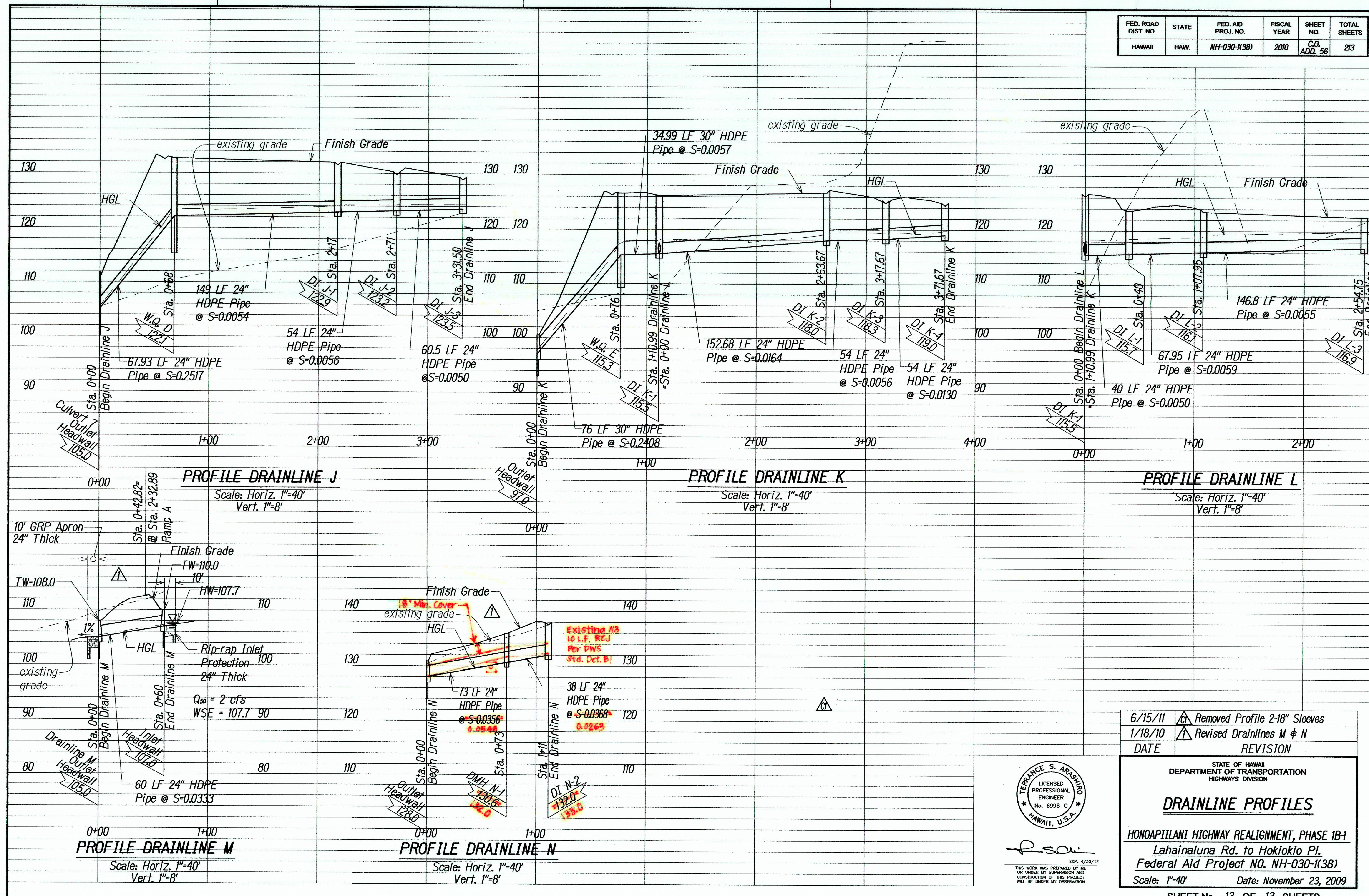
**DRAINLINE PROFILES**

HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1  
Lahainaluna Rd. to Hokiokio Pl.  
Federal Aid Project NO. NH-030-K(38)

Scale: 1"=40' Date: November 23, 2009



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | C.O. ADD. 56 | 213          |



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

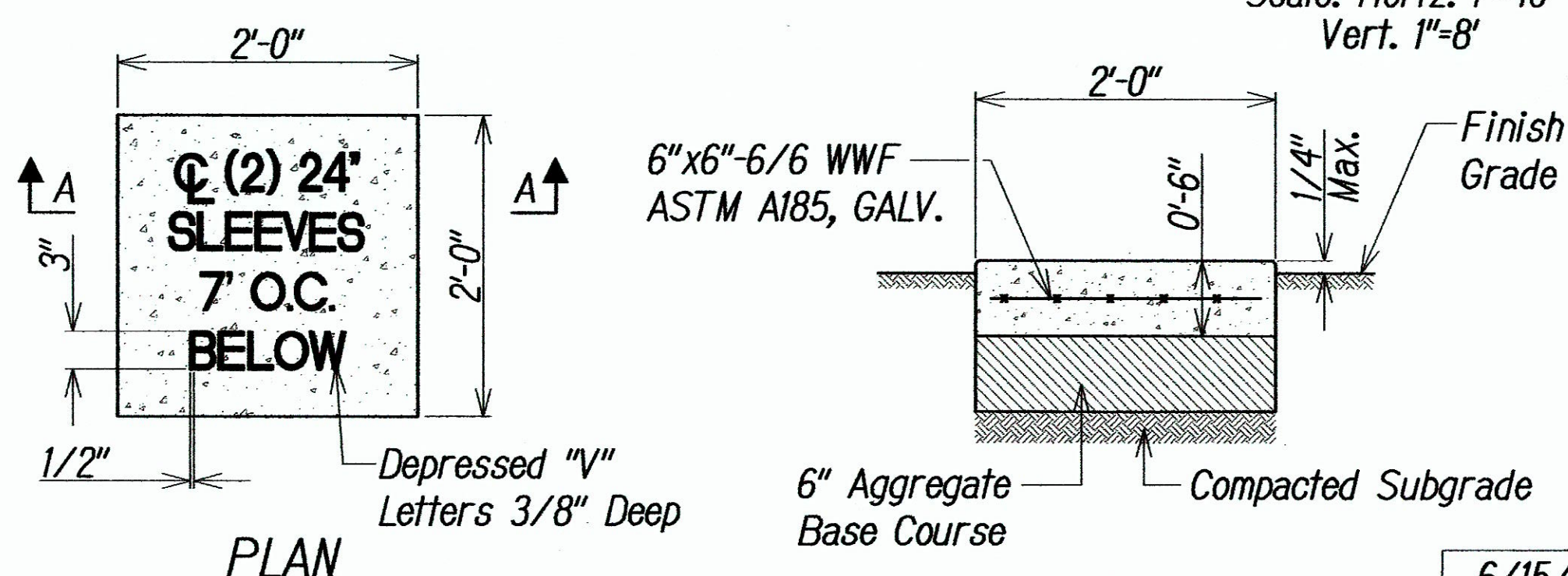
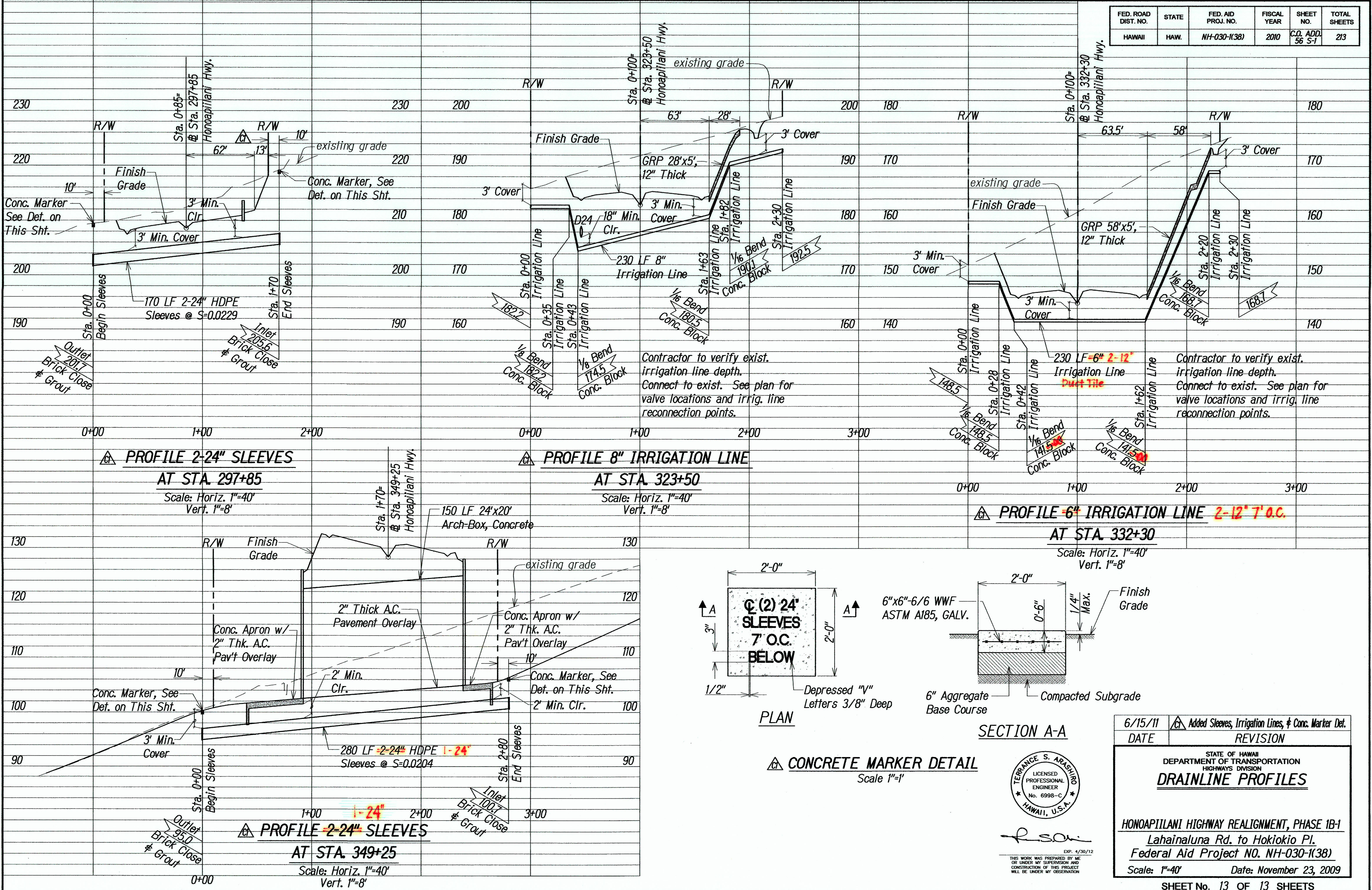
|                                                                                                                                                                                                                                                                       |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 6/15/11                                                                                                                                                                                                                                                               | Removed Profile 2-18" Sleeves |
| 1/18/10                                                                                                                                                                                                                                                               | Revised Drainlines M & N      |
| DATE                                                                                                                                                                                                                                                                  | REVISION                      |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>DRAINLINE PROFILES</b><br>HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl.<br>Federal Aid Project NO. NH-030-1(38)<br>Scale: 1"=40' Date: November 23, 2009 |                               |
| SHEET No. 13 OF 13 SHEETS                                                                                                                                                                                                                                             |                               |

"AS-BUILT"

C.O. ADD. 56



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO.        | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|------------------|--------------|
| HAWAII              | HAW.  | NH-030-1(38)       | 2010        | C.O. ADD. 56 S-1 | 213          |



CONCRETE MARKER DETAIL  
Scale 1"=1'

TERENCE S. ARASHIRO  
LICENSED PROFESSIONAL ENGINEER  
No. 6998-C  
HAWAII, U.S.A.

|                                                                                                                         |                                                      |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| 6/15/11                                                                                                                 | Added Sleeves, Irrigation Lines, & Conc. Marker Det. |
| DATE                                                                                                                    | REVISION                                             |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>DRAINLINE PROFILES</b>                       |                                                      |
| HONOAPIILANI HIGHWAY REALIGNMENT, PHASE 1B-1<br>Lahainaluna Rd. to Hokiokio Pl.<br>Federal Aid Project NO. NH-030-1(38) |                                                      |
| Scale: 1"=40'                                                                                                           | Date: November 23, 2009                              |

"AS-BUILT"