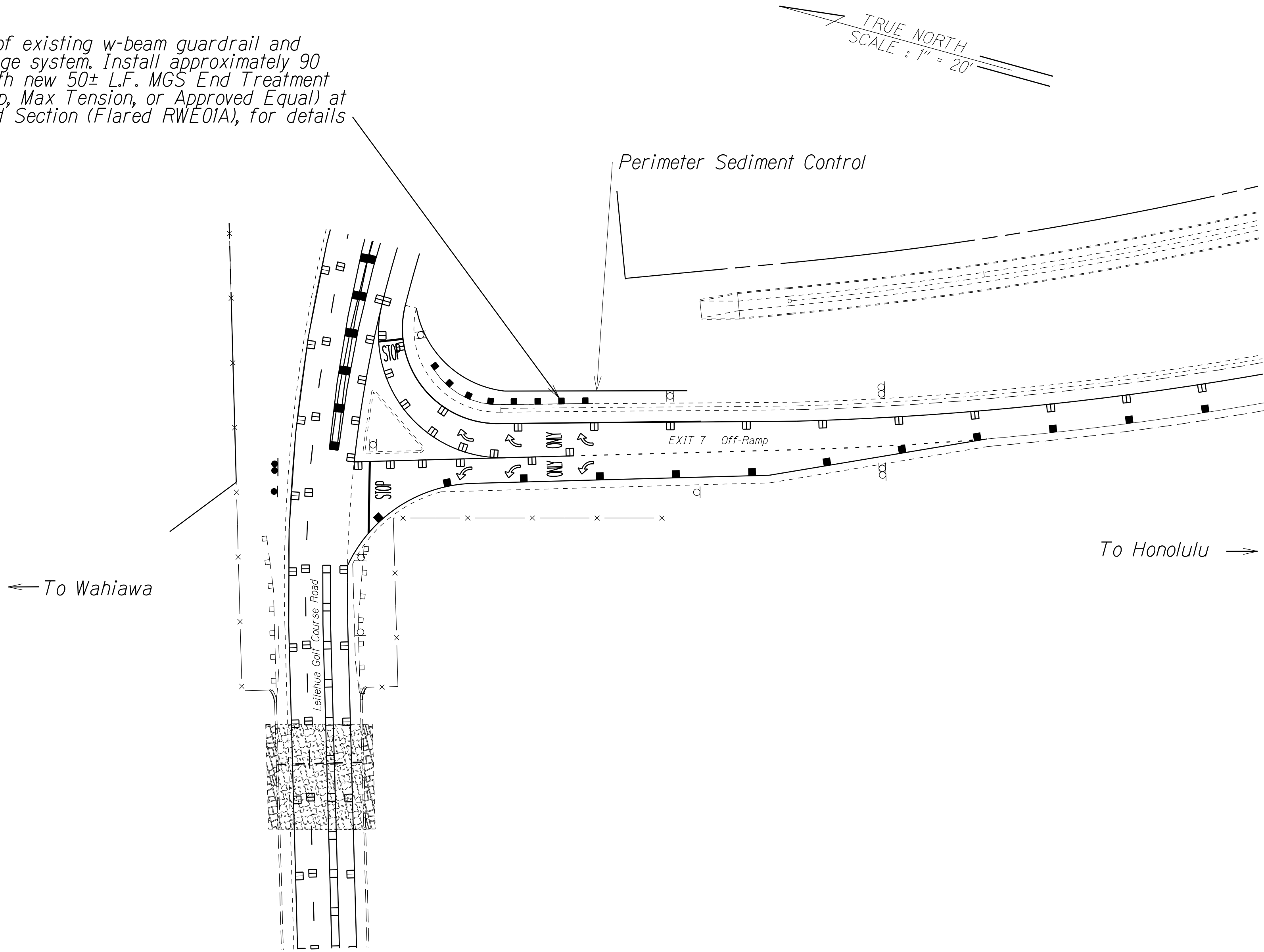


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	8	22

Remove approximately 90 L.F. of existing w-beam guardrail and existing approach end anchorage system. Install approximately 90 L.F. of New MGS Guardrail with new 50± L.F. MGS End Treatment TL-3 (MSKT-SP-MGS, Soft Stop, Max Tension, or Approved Equal) at approach end and W-Beam End Section (Flared RWE01A), for details see Sheet 21, at trailing end.  
See Note 5 and 6.



NOTES:

- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

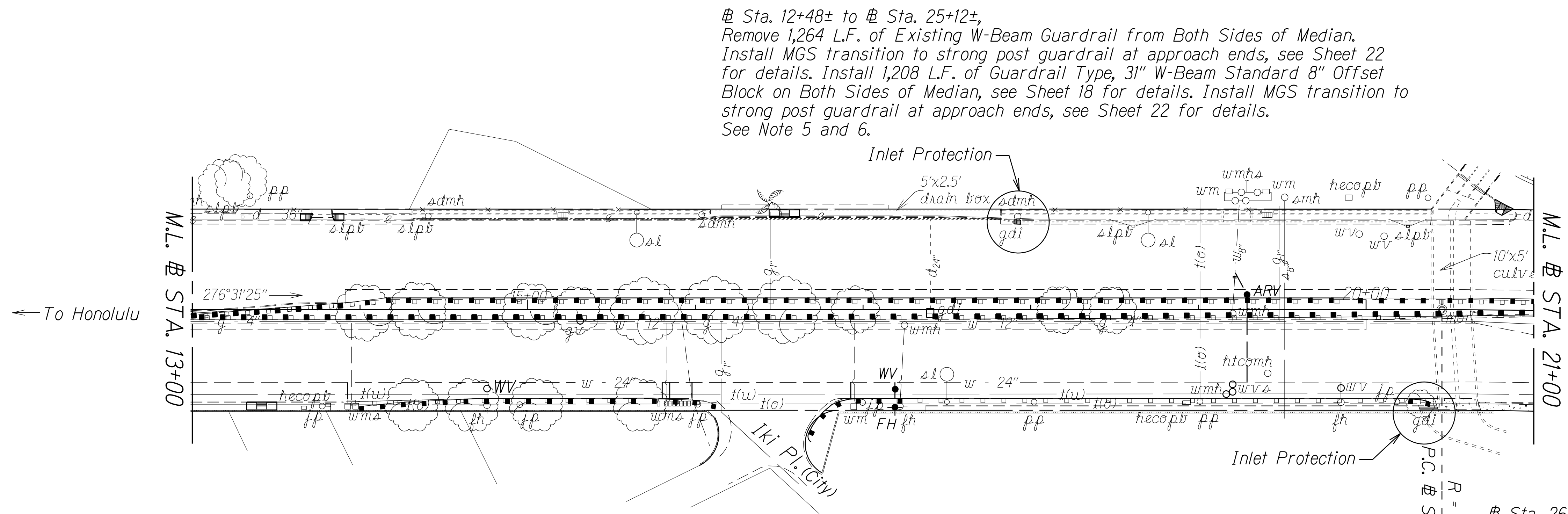
- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	• X
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN**  
**RT. H-2 LEILEHUA INTERCHANGE**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 1 OF 9 SHEETS

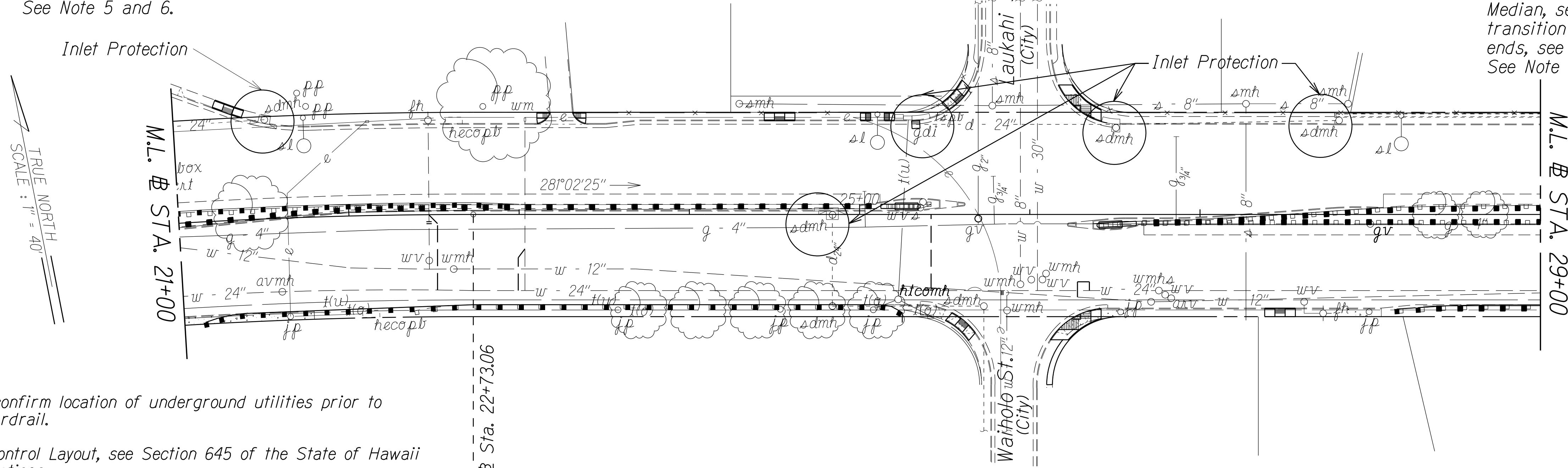


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	10	22



# Sta. 12+48± to # Sta. 25+12±,  
Remove 1,264 L.F. of Existing W-Beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22  
for details. Install 1,208 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset  
Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition  
to strong post guardrail at approach ends, see Sheet 22 for details.  
See Note 5 and 6.

# Sta. 26+54± to # Sta. 41+58±  
Remove 1,480 L.F. of Existing W-beam Guardrail  
from Both Sides of Median.  
Install MGS transition to strong post guardrail  
at approach ends, see Sheet 22 for details.  
Install 1,424 L.F. of Guardrail Type, 31" W-Beam  
Standard 8" Offset Block on Both Sides of  
Median, see Sheet 18 for details. Install MGS  
transition to strong post guardrail at trailing  
ends, see Sheet 22 for details.  
See Note 5 and 6.



NOTES:

- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY PLAN 2**  
**RT. 72 KALANIANA'OLE HIGHWAY**

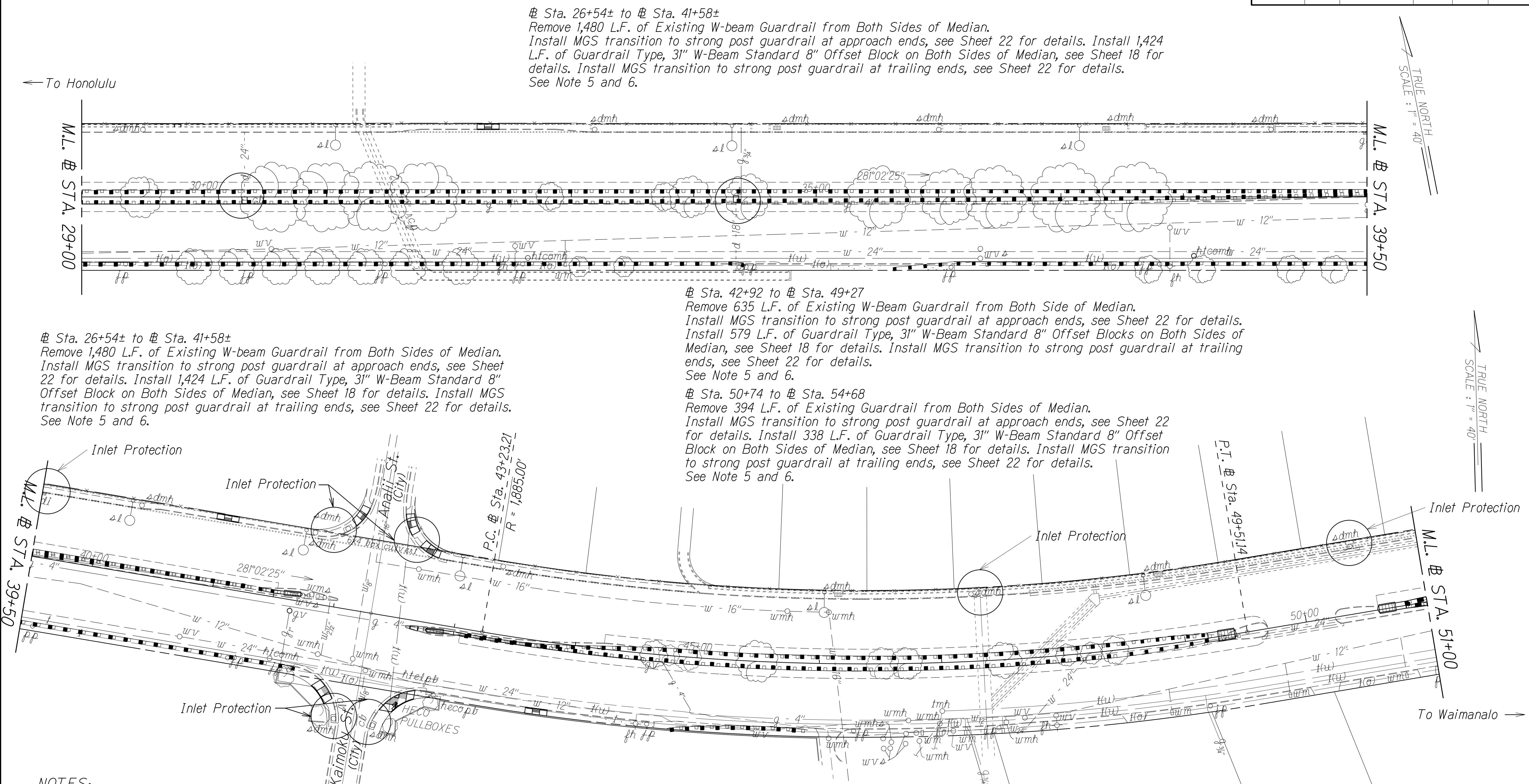
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**

Scale: 1" = 40' Date: September, 2022

SHEET No. 3 OF 9 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	11	22



± Sta. 26+54± to ± Sta. 41+58±  
Remove 1,480 L.F. of Existing W-beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 1,424 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

± Sta. 26+54± to ± Sta. 41+58±  
Remove 1,480 L.F. of Existing W-beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 1,424 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

± Sta. 42+92 to ± Sta. 49+27  
Remove 635 L.F. of Existing W-Beam Guardrail from Both Side of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 579 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Blocks on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

± Sta. 50+74 to ± Sta. 54+68  
Remove 394 L.F. of Existing Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 338 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

- NOTES:
- Contractor to confirm location of underground utilities prior to installation of guardrail.
  - For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
  - The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
  - The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
  - Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
  - If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

1. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN 3**  
**RT. 72 KALANIANA'OLE HIGHWAY**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 4 OF 9 SHEETS

DATE	_____
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DESIGNED BY	_____
CHECKED BY	_____
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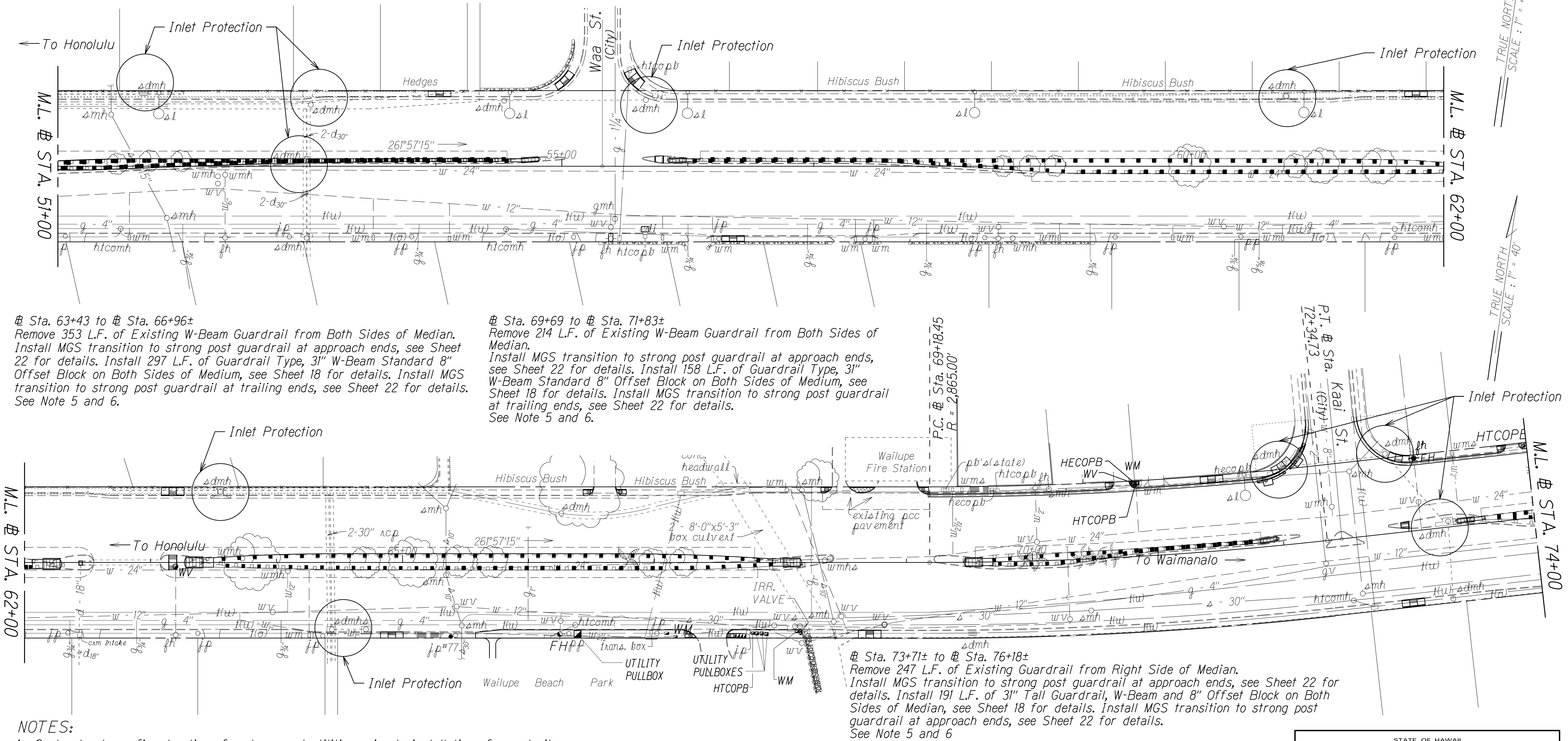
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	12	22

# Sta. 50+74 to # Sta. 54+68

Remove 394 L.F. of Existing W-Beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 338 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

# Sta. 55+99± to # Sta. 62+14± Median

Remove 615 L.F. of Existing W-Beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 559 L.F. of Thrie-Beam Guardrail and Offset Blocks on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.



# Sta. 63+43 to # Sta. 66+96±

Remove 353 L.F. of Existing W-Beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 297 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Medium, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

# Sta. 69+69 to # Sta. 71+83±

Remove 214 L.F. of Existing W-Beam Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 158 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Block on Both Sides of Medium, see Sheet 18 for details. Install MGS transition to strong post guardrail at trailing ends, see Sheet 22 for details.  
See Note 5 and 6.

# Sta. 73+71± to # Sta. 76+18±

Remove 247 L.F. of Existing Guardrail from Right Side of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 191 L.F. of 31" Tall Guardrail, W-Beam and 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details.  
See Note 5 and 6

NOTES:

- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY PLAN 4**  
**RT. 72 KALANIANA'OLE HIGHWAY**

GUARDRAIL AND SHOULDER IMPROVEMENTS  
At Various Locations, Phase 2, Oahu  
Federal Aid Project No. NH-0300(166)

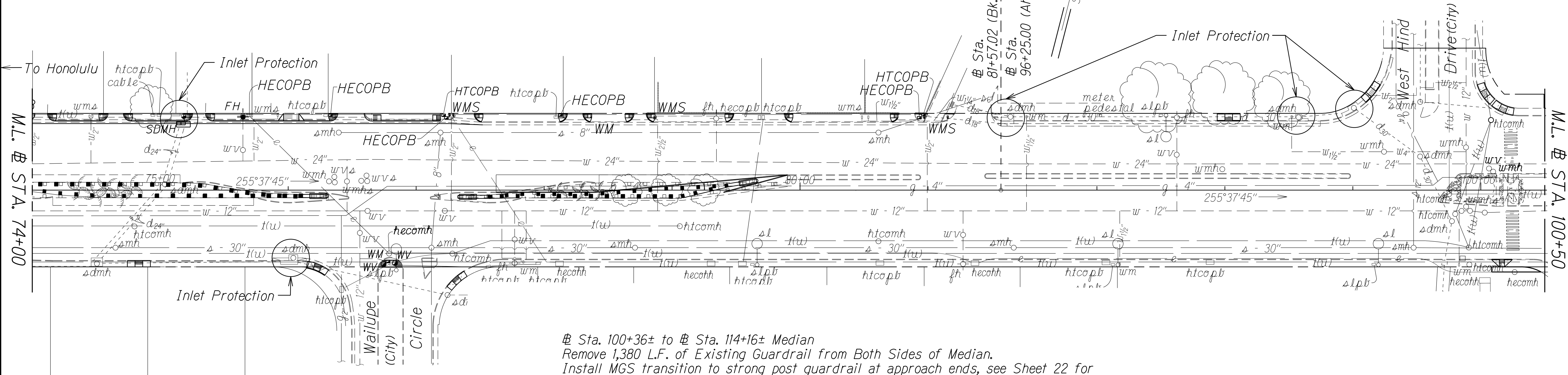
Scale: 1" = 40'      Date: September, 2022

SHEET No. 5 OF 9 SHEETS



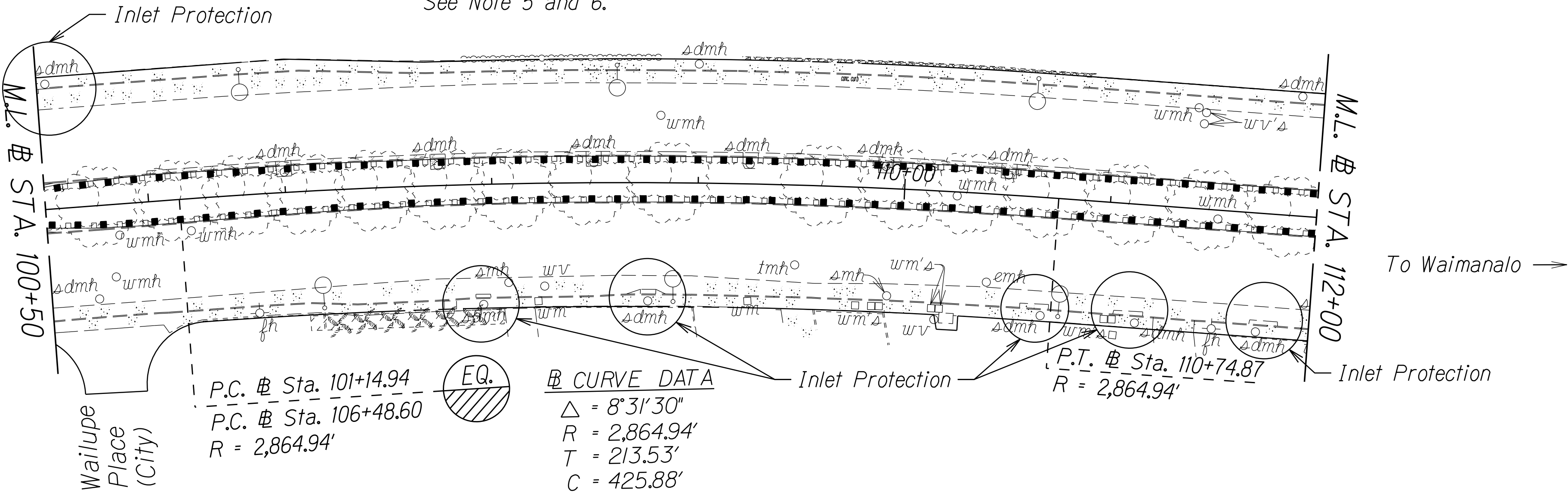
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	13	22

# Sta. 77+57± to # Sta. 79+44±  
Remove 187 L.F. of Existing W-Beam Guardrail from Right Side of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 131 L.F. of 31" Tall Guardrail, W-Beam and 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details.  
See Note 5 and 6



# Sta. 73+71± to # Sta. 76+18±  
Remove 247 L.F. of Existing Guardrail from Right Side of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22. Install 191 L.F. of 31" Tall Guardrail, W-Beam and 8" Offset Block on Both Sides of Median, see Sheet 18 for details. Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details.  
See Note 5 and 6

# Sta. 100+36± to # Sta. 114+16± Median  
Remove 1,380 L.F. of Existing Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends, see Sheet 22 for details. Install 1,380 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Blocks from Both Sides of Median, see Sheet 18 for details.  
See Note 5 and 6.



- NOTES:
- Contractor to confirm location of underground utilities prior to installation of guardrail.
  - For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
  - The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
  - The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
  - Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
  - If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

# CURVE DATA  
 $\Delta = 8^\circ 31' 30''$   
 $R = 2,864.94'$   
 $T = 213.53'$   
 $C = 425.88'$   
 $L_c = 426.27'$

BMP NOTES:

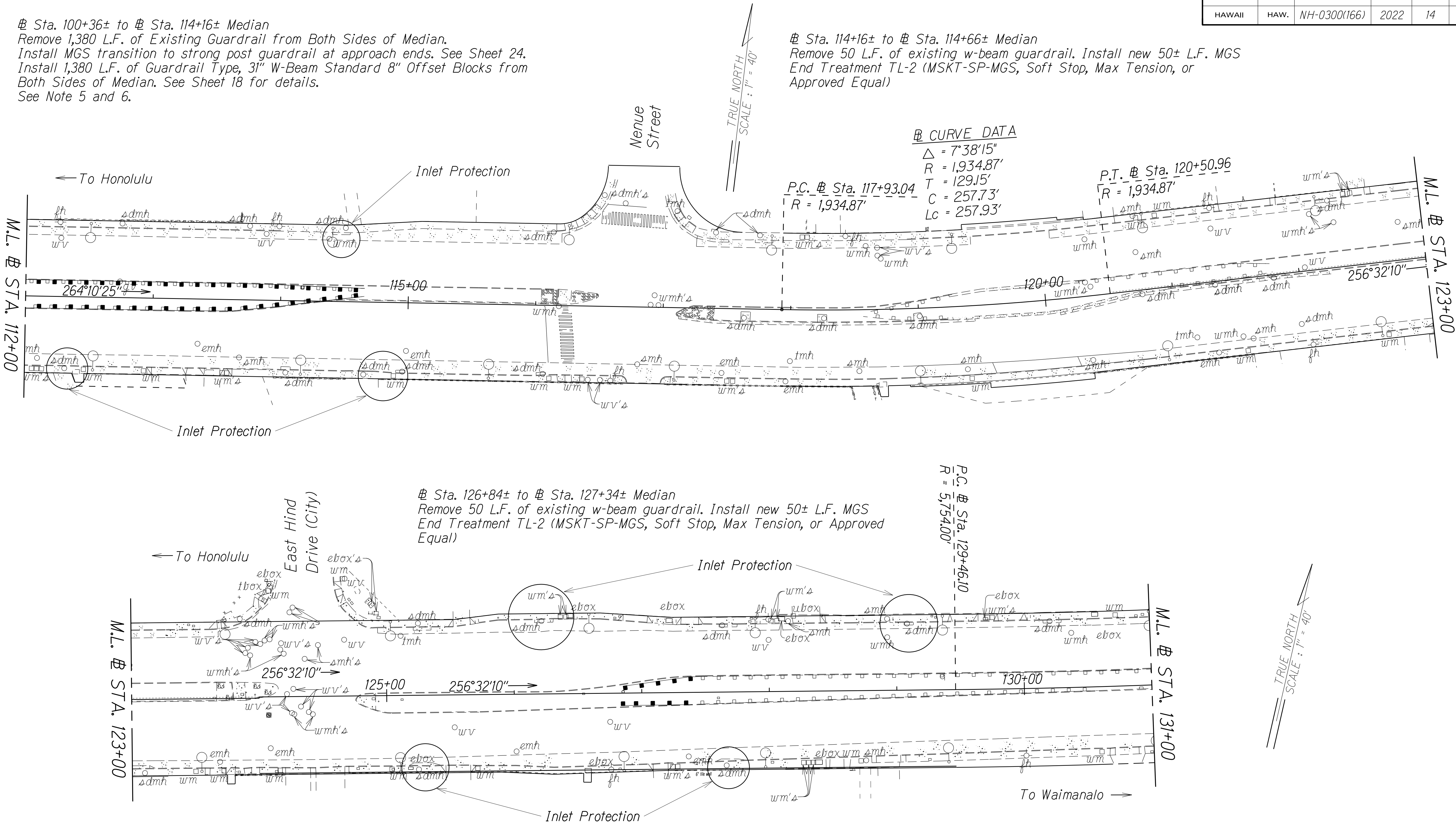
- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN 5**  
**RT. 72 KALANIANA'OLE HIGHWAY**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 6 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	14	22

# Sta. 100+36± to # Sta. 114+16± Median  
Remove 1,380 L.F. of Existing Guardrail from Both Sides of Median.  
Install MGS transition to strong post guardrail at approach ends. See Sheet 24.  
Install 1,380 L.F. of Guardrail Type, 31" W-Beam Standard 8" Offset Blocks from  
Both Sides of Median. See Sheet 18 for details.  
See Note 5 and 6.

# Sta. 114+16± to # Sta. 114+66± Median  
Remove 50 L.F. of existing w-beam guardrail. Install new 50± L.F. MGS  
End Treatment TL-2 (MSKT-SP-MGS, Soft Stop, Max Tension, or  
Approved Equal)



NOTES:

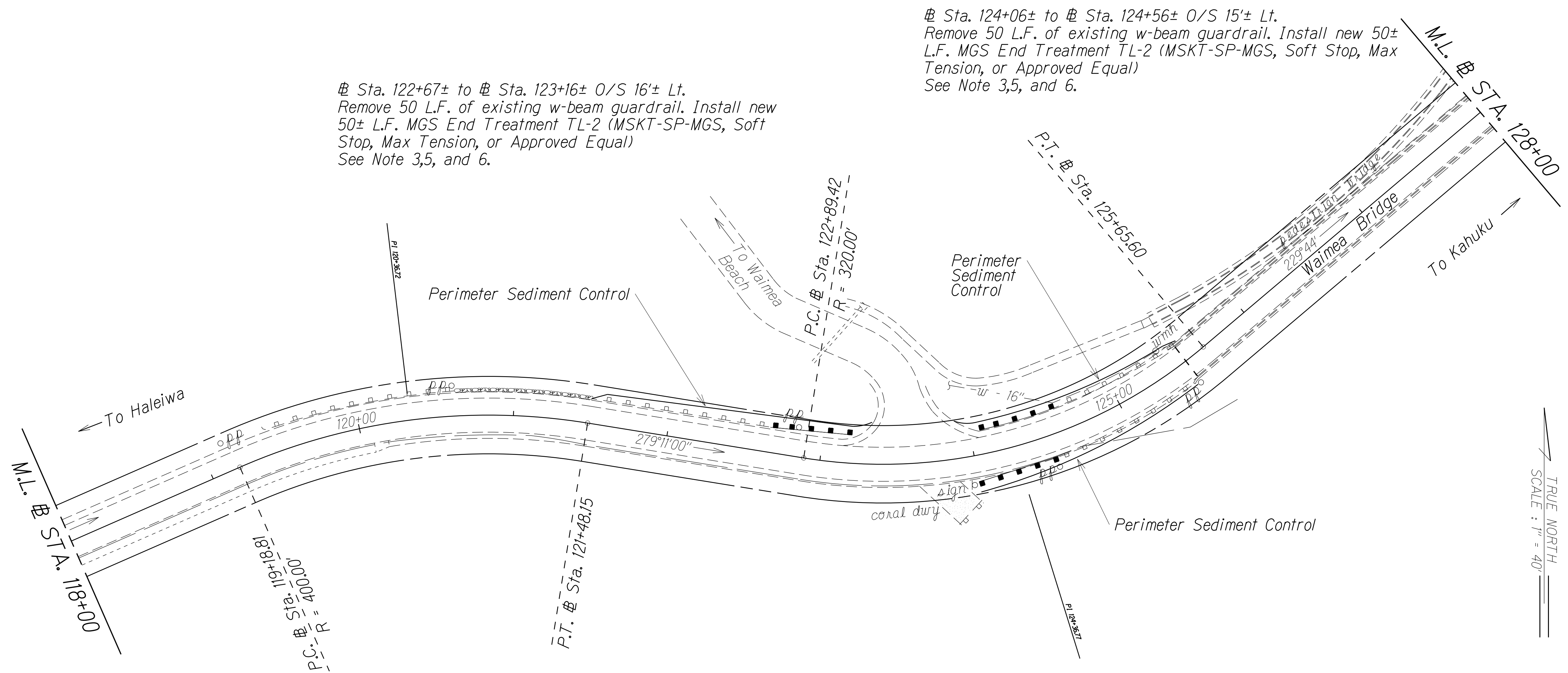
- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN 6**  
**RT. 72 KALANIANA'OLE HIGHWAY**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 7 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	15	22



NOTES:

- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- Water line location shall be field verified. Please take caution when excavating for posts as not to damage the waterline. See detail on Sheet 20 for details on Guardrails crossing an underground line.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP NOTES:

- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

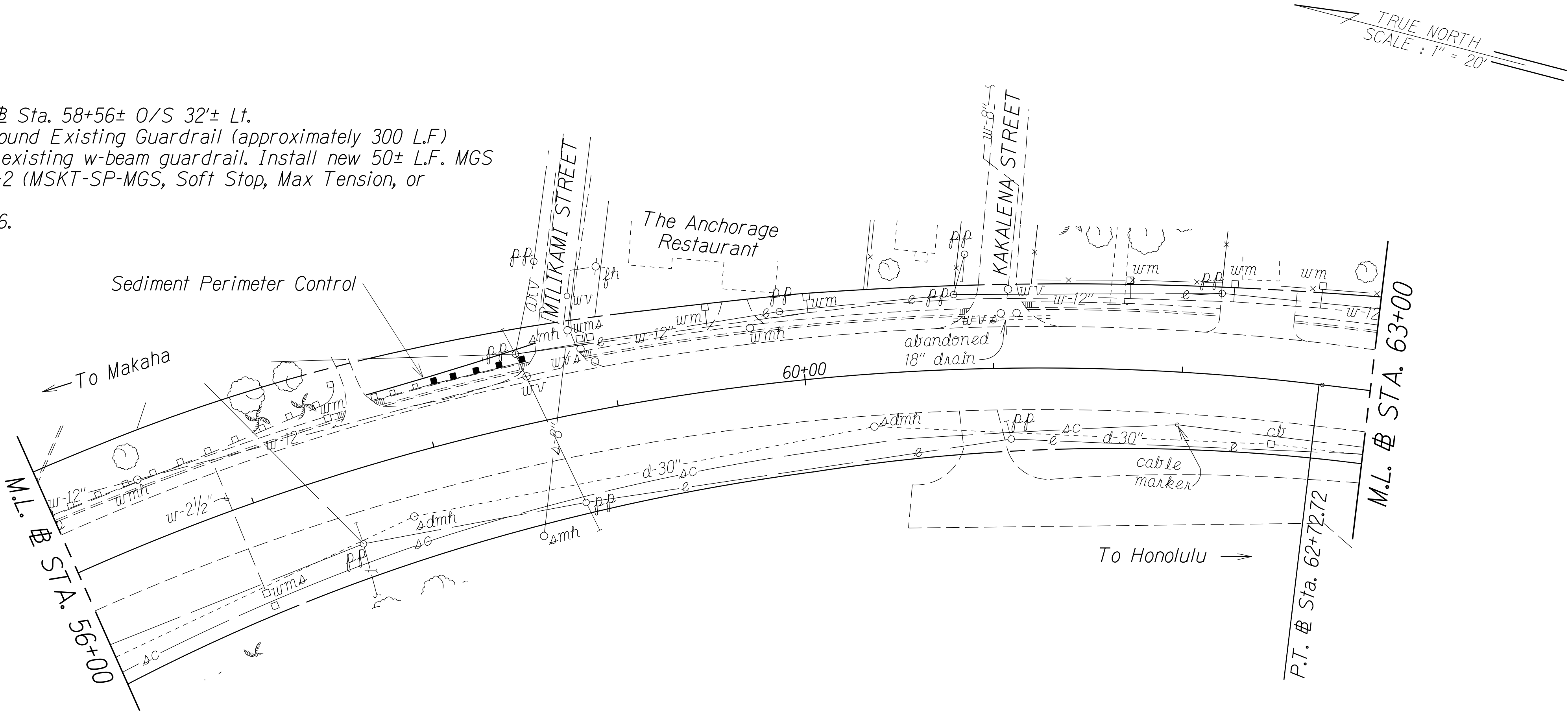
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN**  
**RT. 83 KAMEHAMEHA HIGHWAY**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 8 OF 9 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(166)	2022	16	22

Sta. 58+06± to Sta. 58+56± O/S 32'± Lt.  
Clear and Grub around Existing Guardrail (approximately 300 L.F.)  
Remove 50 L.F. of existing w-beam guardrail. Install new 50± L.F. MGS  
End Treatment TL-2 (MSKT-SP-MGS, Soft Stop, Max Tension, or  
Approved Equal)  
See Note 4,5, and 6.



NOTES:

- Contractor to confirm location of underground utilities prior to installation of guardrail.
- For Traffic Control Layout, see Section 645 of the State of Hawaii Standard Specifications.
- The removal and disposal of existing concrete barriers, inertial barrels, concrete pads, and landscaping within the work area shall be considered incidental to various contract items.
- The End Guardrail Treatment System shall be installed per manufacturer's recommendations.
- Post for new Guardrail shall be installed at existing guardrail post location as specified in Spec Section 606.
- If Thrie beam exist for existing guardrail, use Thrie beam for proposed condition. See Sheet 19. For transition, see Sheet 20.

BMP Note:

- Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ROADWAY PLAN**  
**RT. 93 FARRINGTON HIGHWAY**  
**GUARDRAIL AND SHOULDER IMPROVEMENTS**  
**At Various Locations, Phase 2, Oahu**  
**Federal Aid Project No. NH-0300(166)**  
Scale: 1" = 40'      Date: September, 2022  
SHEET No. 9 OF 9 SHEETS