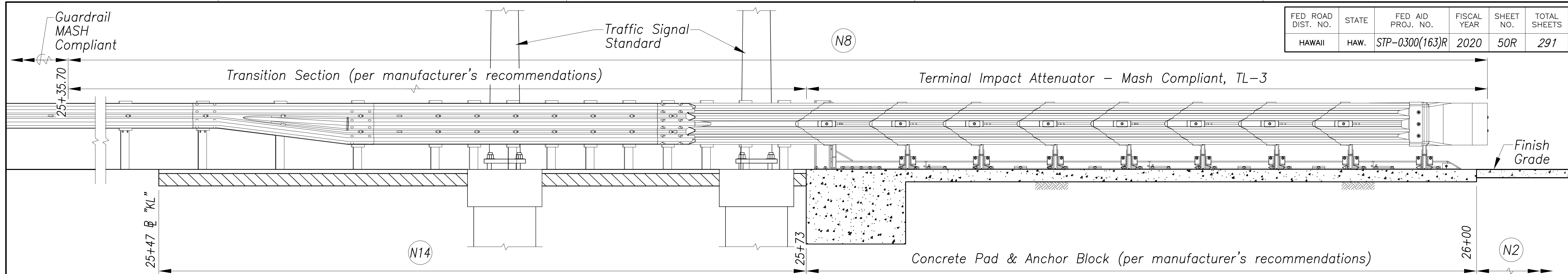
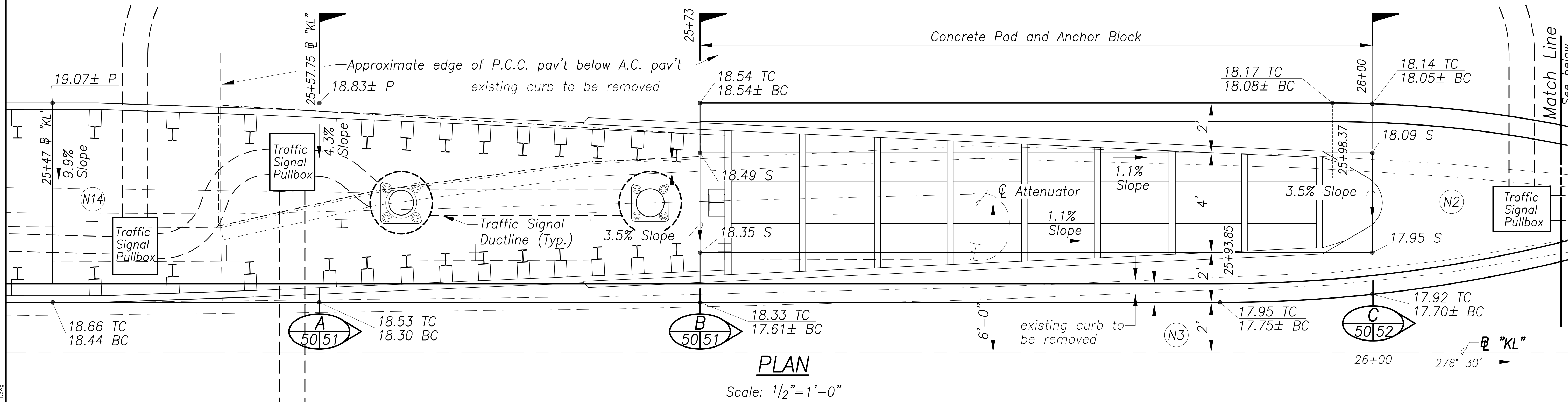


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)R	2020	50R	291



ELEVATION

Scale: 1/2"=1'-0"



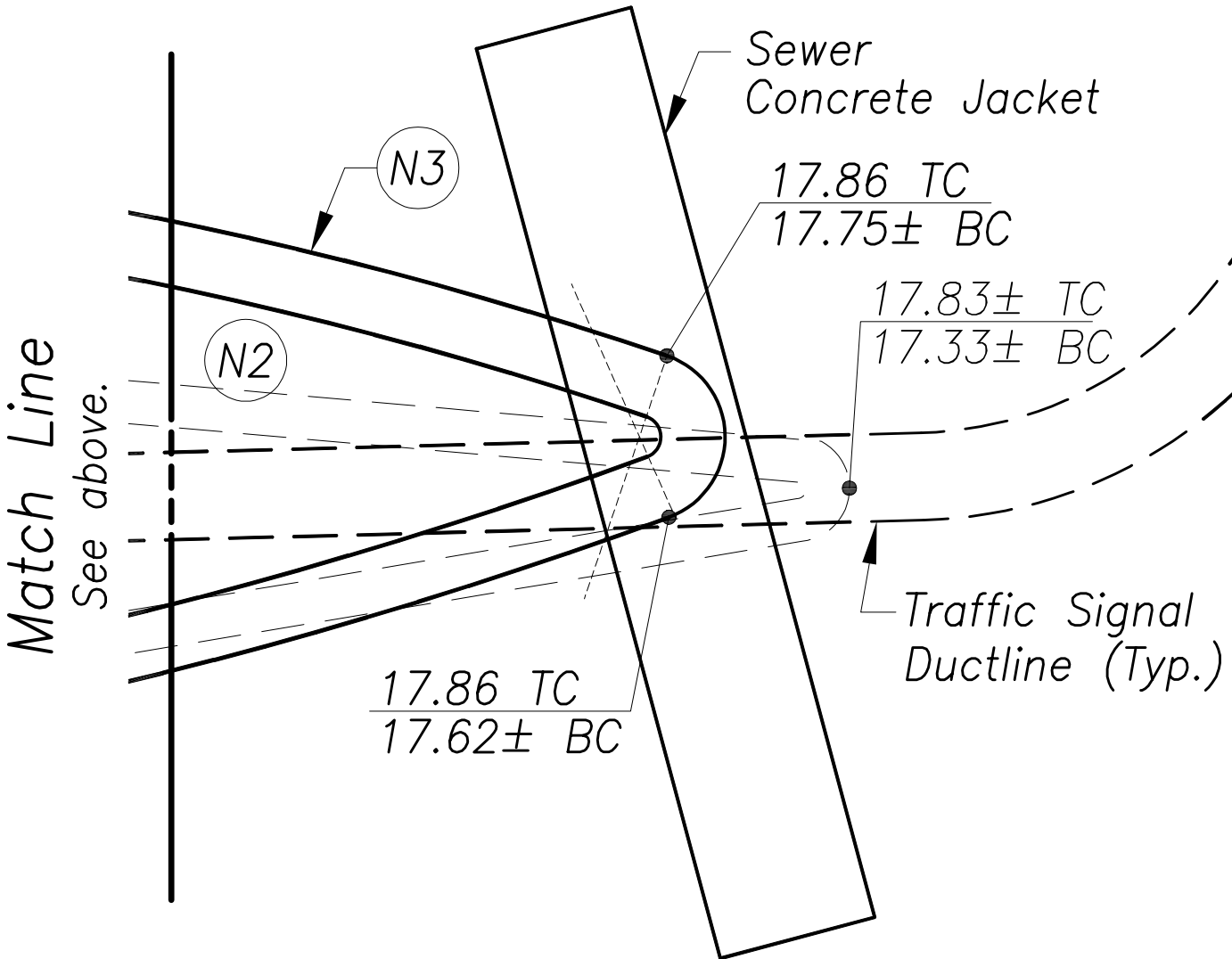
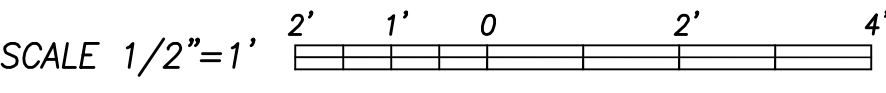
PLAN

Scale: 1/2"=1'-0"

Legend

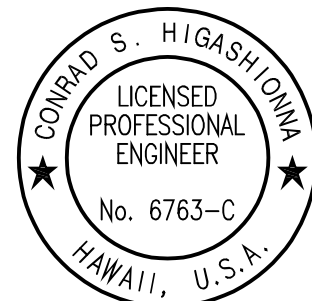
- 18.41± P Existing Top Pavement Elevation
- 18.36 S Finish Top Slab Elevation
- 18.16 TC Finish Top Curb Elevation
- 18.03 BC Existing Bottom Curb Elevation
- Demolish and dispose of P.C.C. Pav't

GRAPHIC SCALES



New Construction Callouts:

- N2 Concrete Sidewalk per Standard Plan D-15. For connection to existing sidewalk, see details on sheets 81 and 82.
- N3 Curb, Type 2A Modified and limits of asphalt pavement restoration for installation of curb. For details, see sheet 51.
- N8 Terminal Impact Attenuator - HDOT Approved MASH Compliant, TL-3; and Transition Section. The Transition section shall be incidental to the Terminal Impact Attenuator and will not be paid for separately.
- N14 Hot Mix Asphalt (HMA) Sidewalk 2-inch thick, HMA Pavement State Mix No. V 4-inch thick, Aggregate Base Course 6-inch thick, Scarify and re-compact to 95% relative compaction



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Conrad Higashi

Added new construction callout N8.
Revised Elevation view and added N8.

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TERMINAL IMPACT ATTENUATOR

Kalaniana'ole Hwy & Kalaniki St

ADDITIVE ALTERNATE #2

Traffic Signal Modernization, Oahu, Phase 1

Federal-Aid Project No. STP-0300(163)R

Scale: 1/2"=1'-0" Date: Oct. 2020
SHEET No. R-29 OF 81 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)R	2020	51	291

Demolition Callouts:

- D1 Demolish and dispose of concrete curb.
- D2 Remove and salvage existing guardrail.
- D3 Remove and salvage terminal impact attenuator. Demolish and dispose of concrete pad for attenuator.
- D4 Demolish and dispose of concrete curb, asphalt concrete pavement, and P.C.C. pavement. Fill void with Aggregate Base Course.

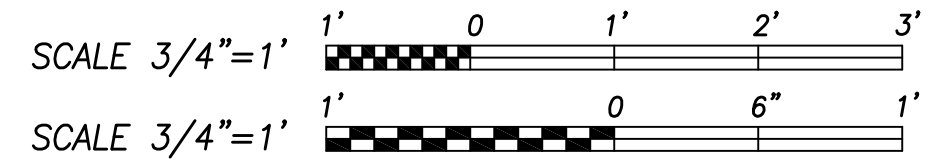
New Construction Callouts:

- N2 Concrete Sidewalk per Standard Plan D-15.
- N3 Curb, Type 2A Modified and limits of asphalt pavement restoration for installation of curb. For details, see this sheet.
- N8 Terminal Impact Attenuator – HDOT Approved MASH Compliant, TL-3.
- N11 HMA Pavement State Mix No. V, 2-inch min. thick
- N13 Apply Tack Coat either SS-1 or SS-1H Emulsified Asphalt
- N14 Hot Mix Asphalt (HMA) Sidewalk 2-inch thick, HMA Pavement State Mix No. V 4-inch thick, Aggregate Base Course 6-inch thick, Scarify and re-compact to 95% relative compaction
- N15 Fill void with Aggregate Base Course

Notes:

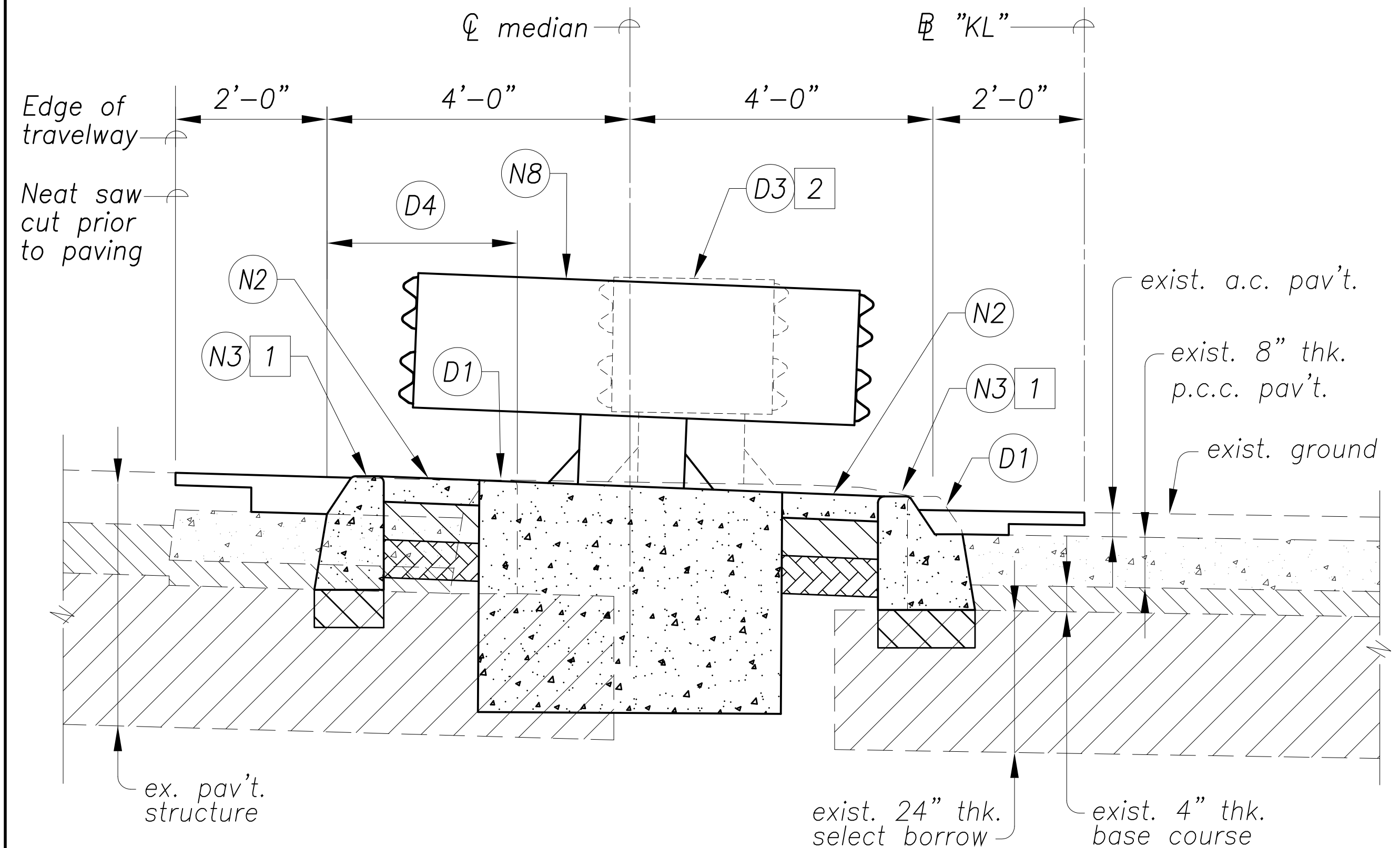
- 1 The Contractor shall install construction and expansion joints in Curb, Type 2A Modified, to match existing joints in P.C.C. pavement.
- 2 The Contractor shall clean salvaged material as required by the Engineer prior to delivery to DOT Halawa Baseyard. Salvage, cleaning, and delivery shall be incidental to the contract items.
- 3 The cost for longitudinal reinforcing bars for Curb, Type 2A Modified, shall be incidental to the various contract items and will not be paid for separately.

GRAPHIC SCALES

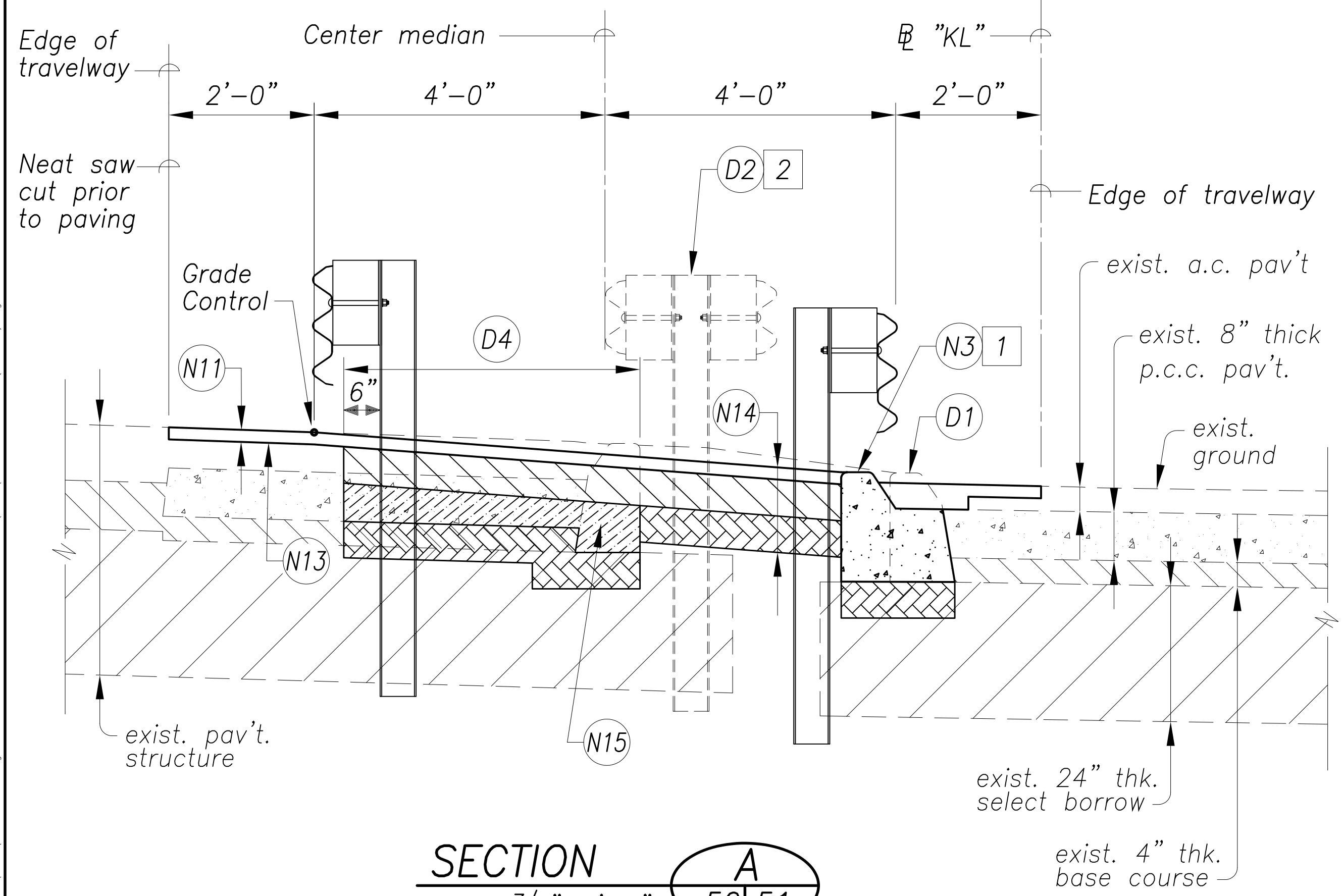


Legend

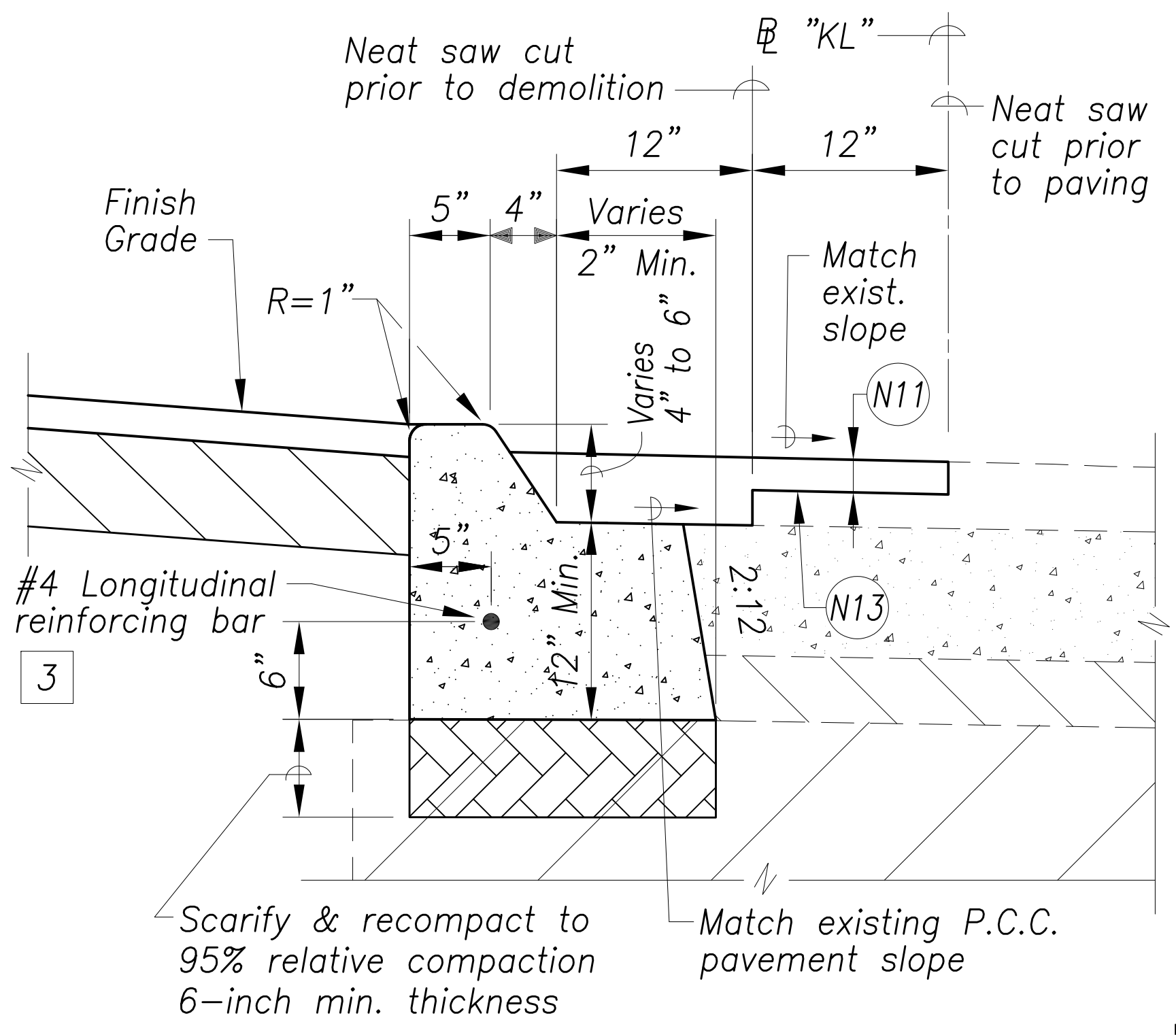
- HMA Pavement State Mix. No. V
- Aggregate Base Course
- Fill void with Aggregate Base Course
- Scarify & re-compact to 95% relative compaction 6-inch minimum thickness



SECTION B
Scale: 3/4"=1'-0" 50/51

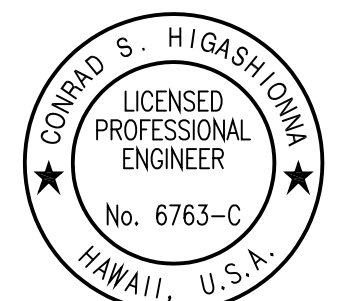


SECTION A
Scale: 3/4"=1'-0" 50/51



CURB, TYPE 2A MODIFIED
Scale: 1 1/2"=1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TERMINAL IMPACT ATTENUATOR

Kalaniana'ole Hwy & Kalaniki St

ADDITIVE ALTERNATE #2

Traffic Signal Modernization, Oahu, Phase 1

Federal-Aid Project No. STP-0300(163)R

Scale: As shown Date: Oct. 2020

SHEET No. R-30 OF 81 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)R	2020	52	291

Demolition Callouts:

D4 Demolish and dispose of concrete curb, asphalt concrete pavement, and P.C.C. pavement. Fill void with Aggregate Base Course.

New Construction Callouts:

N2 Concrete Sidewalk per Standard Plan D-15.

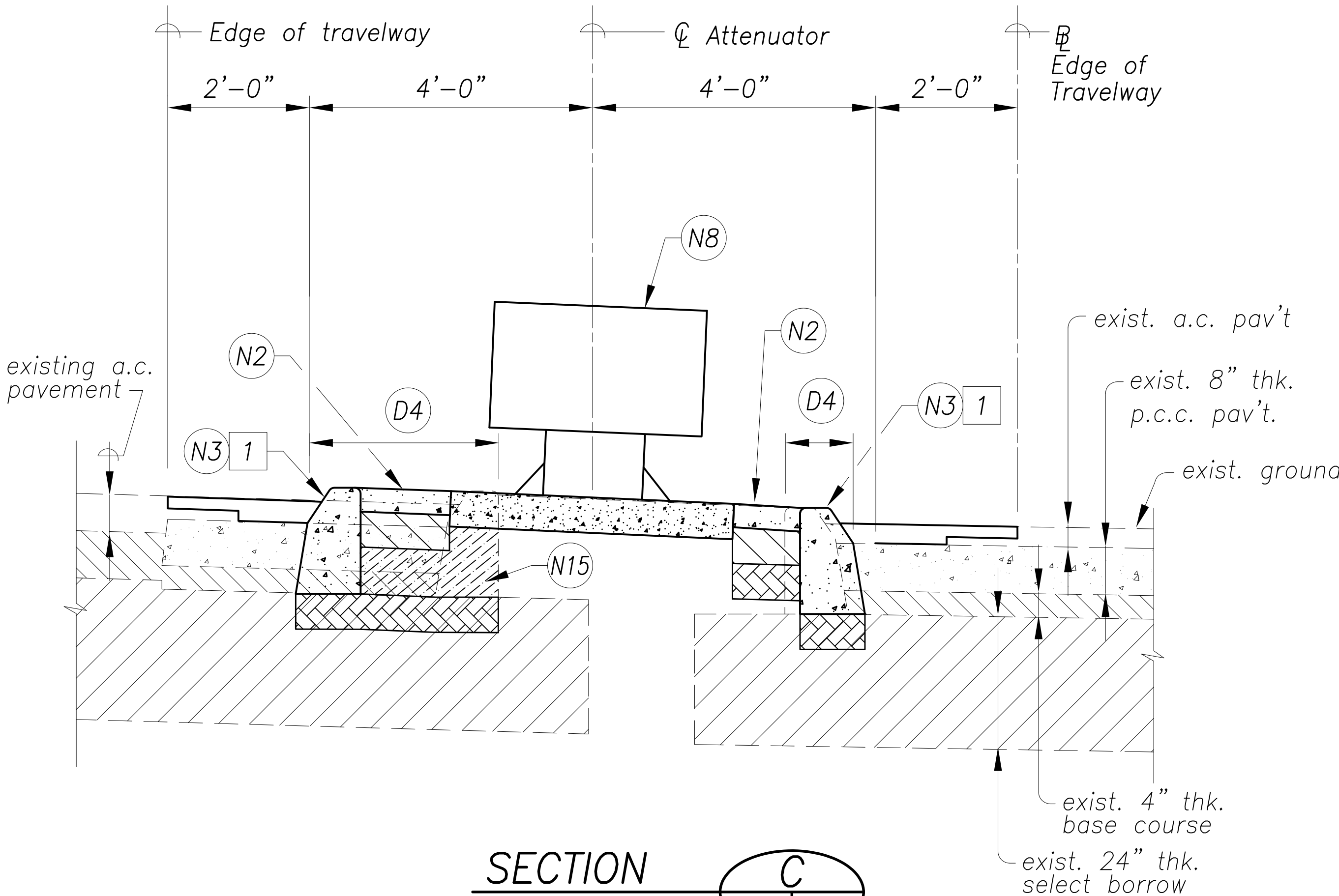
N3 Curb, Type 2A Modified and limits of asphalt pavement restoration for installation of curb. For details, see sheet 51.

N8 Terminal Impact Attenuator – HDOT Approved MASH Compliant, TL-3.

N15 Fill void with Aggregate Base Course

Notes:

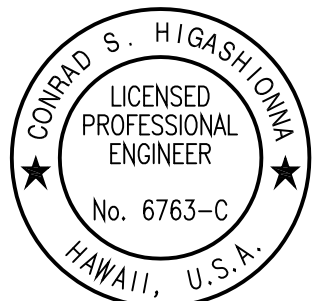
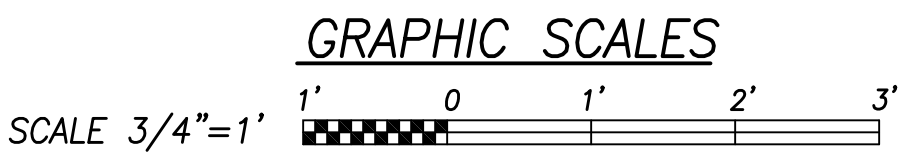
1 The Contractor shall install construction and expansion joints in Curb, Type 2A Modified, to match existing joints in P.C.C. pavement.



SECTION C
Scale: 3/4"=1'-0"

Legend

- HMA Pavement State Mix. No. V
- Aggregate Base Course
- Fill void with Aggregate Base Course
- Scarify & re-compact to 95% relative compaction 6-inch minimum thickness



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Conrad Higashi

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TERMINAL IMPACT ATTENUATOR

Kalanianaʻole Hwy & Kalaniki St

ADDITIVE ALTERNATE #2

Traffic Signal Modernization, Oahu, Phase 1

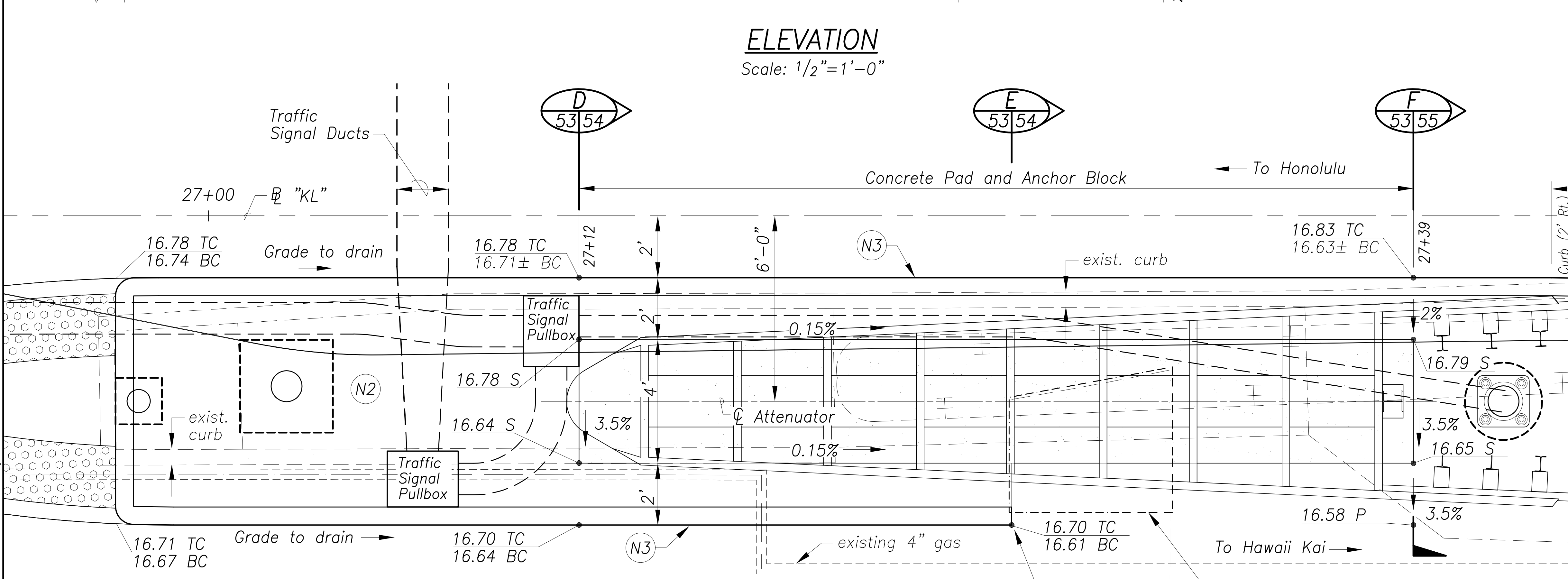
Federal-Aid Project No. STP-0300(163)R

Scale: 3/4"=1'-0" Date: Oct. 2020

SHEET No. R-20 OF 65 SHEETS

Technical drawing of a guardrail cross-section. The drawing shows a side view of the guardrail assembly. Key components and labels include:

- Terminal Impact Attenuator – Mash Compliant, TL-3**: The main section of the guardrail, shown with a series of diamond-shaped impact attenuators.
- Transition Section (per Manufacturer's Recommendation)**: The section of the guardrail that transitions from the terminal attenuator to the concrete pad.
- Traffic Signal Standard**: A vertical post or standard located near the transition section.
- Concrete Pad and Anchor Block (per Manufacturer's Recommendations)**: The base of the guardrail, shown as a cross-section of concrete.
- Finish Grade**: The ground level, indicated by a horizontal line with a hatched area below it.
- Dimensions**:
 - 27+12**: A stationing marker at the left end of the terminal attenuator.
 - 27+39**: A stationing marker at the right end of the terminal attenuator.
 - 27+47.50**: A stationing marker at the right end of the concrete pad.
- Notes**:
 - N8**: A note at the top right of the drawing.
 - N2**: A note at the bottom left of the drawing.
 - N14**: A note at the bottom right of the drawing.



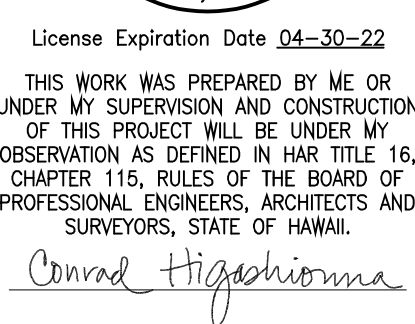
PLAN
Scale: $1/2" = 1'-0"$

- | | |
|-----------------|---------------------------------|
| <u>Legend</u> | |
| <u>18.41± P</u> | Existing Top Pavement Elevation |
| <u>18.36 S</u> | Finish Top Slab Elevation |
| <u>18.16 TC</u> | Finish Top Curb Elevation |
| <u>18.03 BC</u> | Existing Bottom Curb Elevation |

GRAPHIC SCALES

SCALE $1\frac{1}{2}''=1'$

2' 1' 0 2' 4'



ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
	DRAWN BY _____ "
	TRACED BY _____ "
NOTE BOOK	DESIGNED BY _____ "
	QUANTITIES BY _____ "
	CHECKED BY _____ "
No. _____	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)R	2020	54	291

Notes:

- 1
- The Contractor shall install construction and expansion joints in Curb, Type 2A Modified, to match existing joints in P.C.C. pavement.
- 2
- The Contractor shall clean salvaged material as required by the Engineer prior to delivery to DOT Halawa Baseyard. Salvage, cleaning, and delivery shall be incidental to the contract items.

Demolition Callouts:

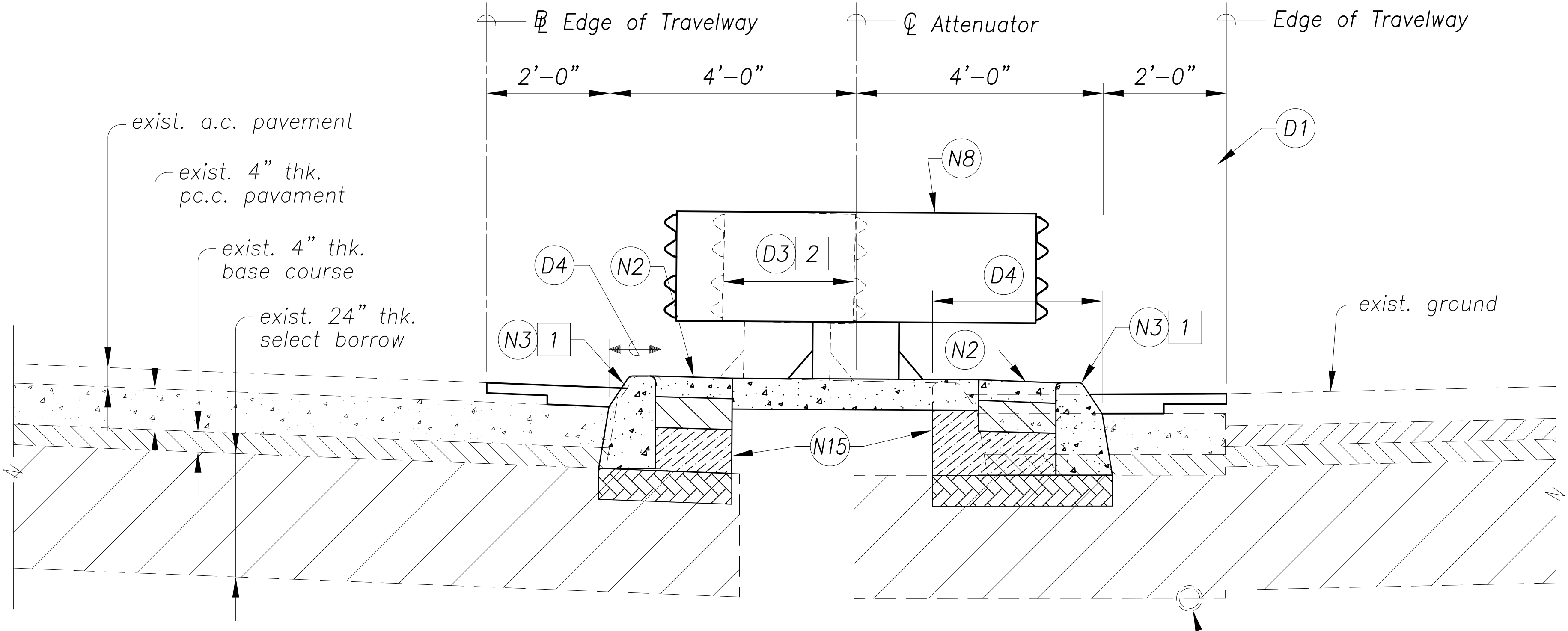
- D3
- Remove and salvage terminal impact attenuator. Demolish and dispose of concrete pad for attenuator.
- D4
- Demolish and dispose of concrete curb, asphalt concrete pavement, and P.C.C. pavement. Fill void with Aggregate Base Course.

New Construction Callouts:

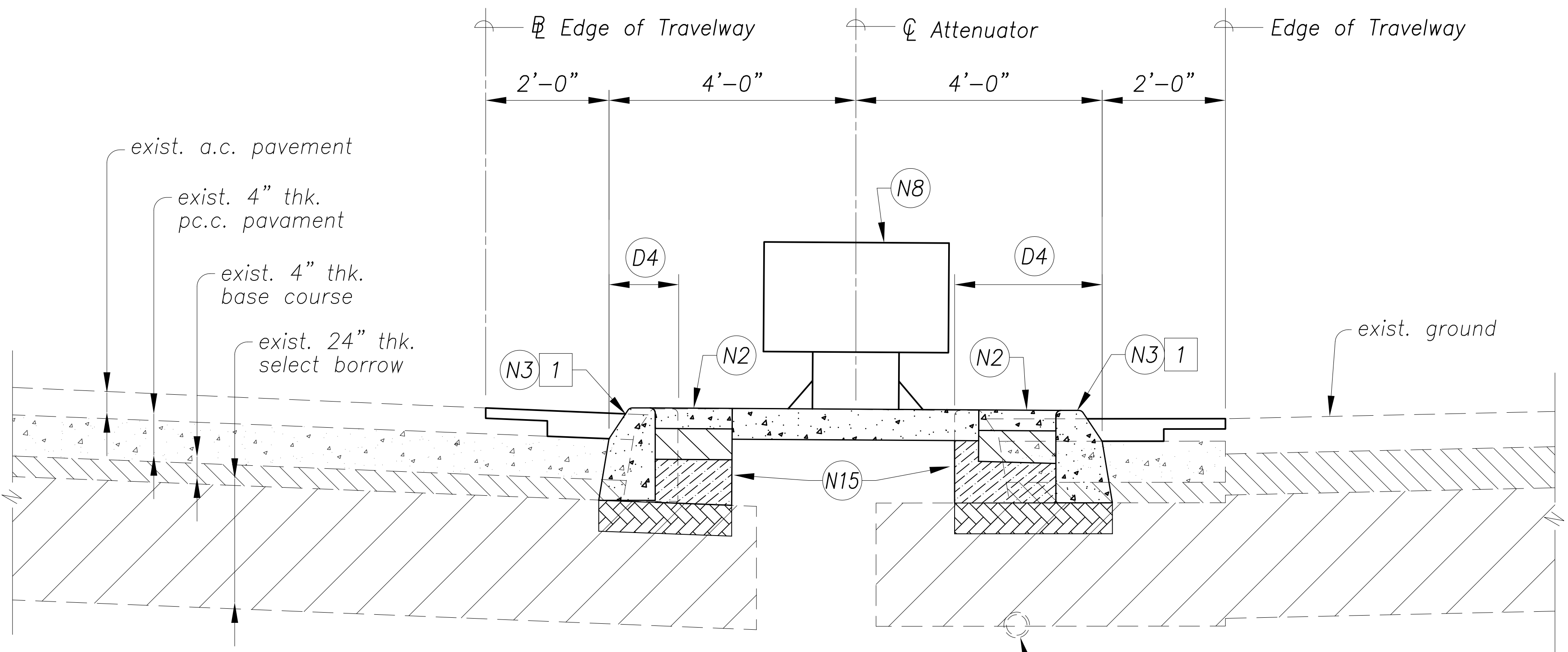
- N2
- Concrete Sidewalk per Standard Plan D-15.
- N3
- Curb, Type 2A Modified and limits of asphalt pavement restoration for installation of curb. For details, see sheet 51.
- N8
- Terminal Impact Attenuator – HDOT Approved MASH Compliant, TL-3.
- N15
- Fill void with Aggregate Base Course

Legend

- HMA Pavement State Mix. No. V
- Aggregate Base Course
- Fill void with Aggregate Base Course
- Scarify & re-compact to 95% relative compaction 6-inch minimum thickness

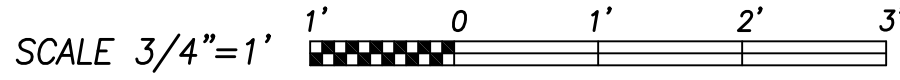


SECTION E
Scale: 3/4"=1'-0"



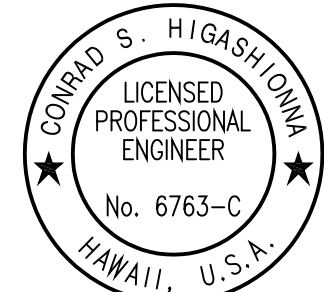
SECTION D
Scale: 3/4"=1'-0"

GRAPHIC SCALES



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

New 18, 2020-247m
N:\CAO\DWG\2015\1512-Traffic Signal Modernization @ Various Locations P&E\FINAL\054-Attenuator_K 2 (Sections).dwg



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Conrad Higashimura

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TERMINAL IMPACT ATTENUATOR

Kalaniana'ole Hwy & Kalaniki St

ADDITIVE ALTERNATE #2

Traffic Signal Modernization, Oahu, Phase 1

Federal-Aid Project No. STP-0300(163)R

Scale: 3/4"=1'-0" Date: Oct. 2020

SHEET No. R-33 OF 65 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(163)R	2020	55	291

Notes:

- 1
- The Contractor shall install construction and expansion joints in Curb, Type 2A Modified, to match existing joints in P.C.C. pavement.

New Construction Callouts:

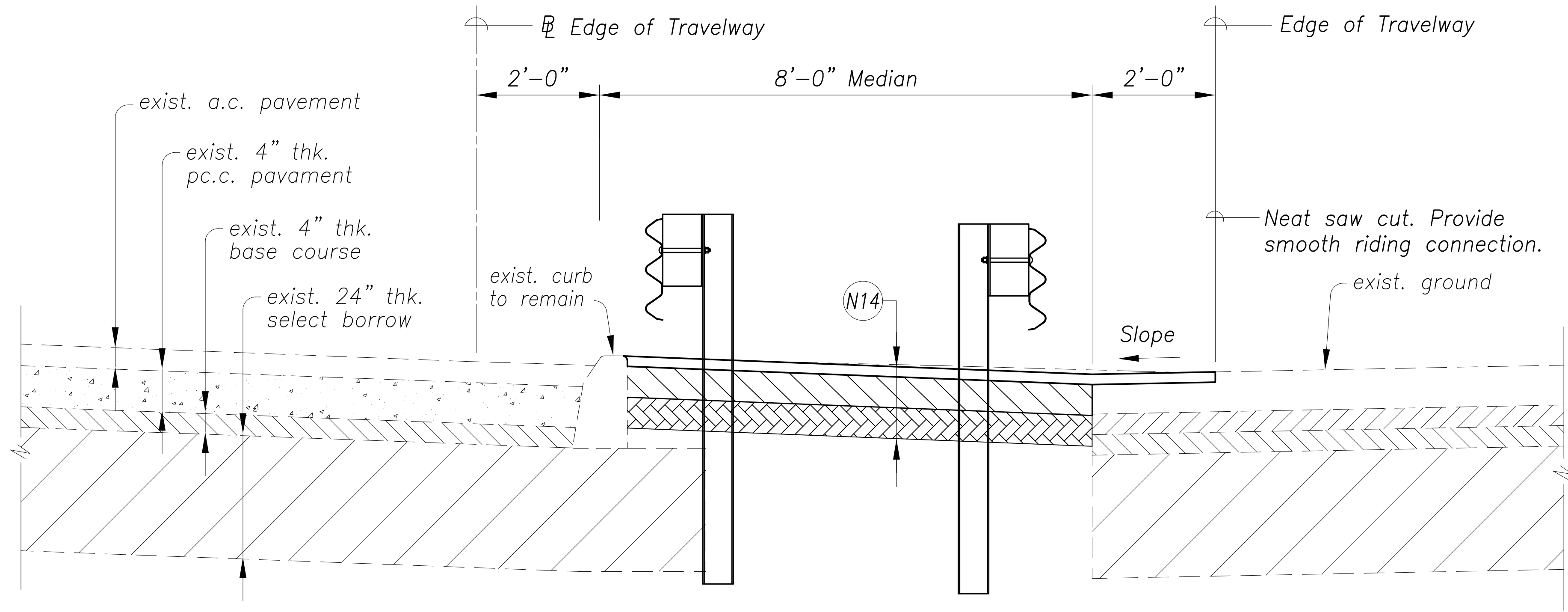
- N2
- Concrete Sidewalk per Standard Plan D-15. For connection to existing sidewalk, see details on sheets 81 and 82.
- N3
- Curb, Type 2A Modified and limits of asphalt pavement restoration for installation of curb. For details, see sheet 51.
- N8
- Terminal Impact Attenuator – HDOT Approved MASH Compliant, TL-3.
- N12
- HMA Pavement State Mix No. V, 4-inch± thickness
- N13
- Apply Tack Coat either SS-1 or SS-1H Emulsified Asphalt
- N14
- Hot Mix Asphalt (HMA) Sidewalk
2-inch thick, HMA Pavement State Mix No. V
6-inch thick, Aggregate Base Course
6-inch thick, Scarify and re-compact to 95% relative compaction
- N15
- Fill void with Aggregate Base Course

Demolition Callouts:

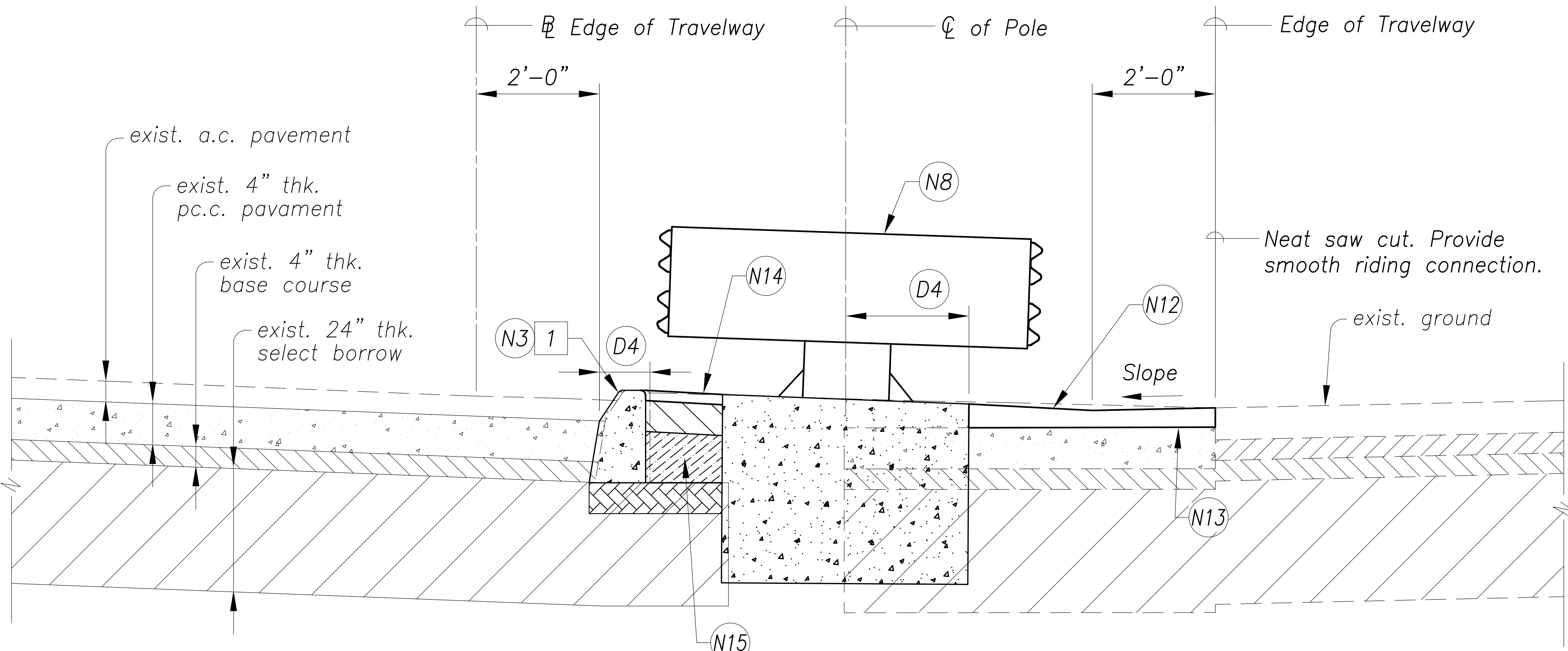
- D4
- Demolish and dispose of concrete curb, asphalt concrete pavement, and P.C.C. pavement.

Legend

- HMA Pavement State Mix. No. V
- Aggregate Base Course
- Fill void with Aggregate Base Course
- Scarify & re-compact to 95% relative compaction 6-inch minimum thickness

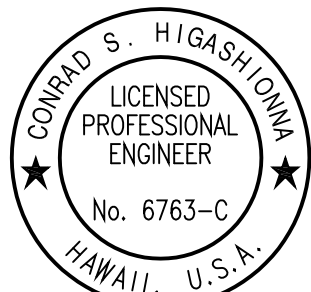
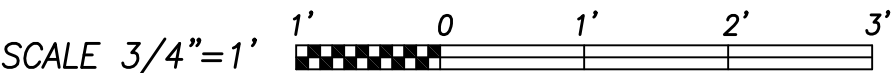


SECTION G
Scale: 3/4"=1'-0"



SECTION F
Scale: 3/4"=1'-0"

GRAPHIC SCALES



License Expiration Date 04-30-22

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Conrad Higashimura

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TERMINAL IMPACT ATTENUATOR

Kalanianaʻole Hwy & Kalaniki St

ADDITIVE ALTERNATE #2

Traffic Signal Modernization, Oahu, Phase 1

Federal-Aid Project No. STP-0300(163)R

Scale: 3/4"=1'-0" Date: Oct. 2020

SHEET No. R-34 OF 81 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

New 18, 2020-2-23pm
N:\CAO\DWG\2015\1512-Traffic Signal Modernization @ Various Locations P&E\FINAL\055 Attenuator K 2 (Sections).dwg