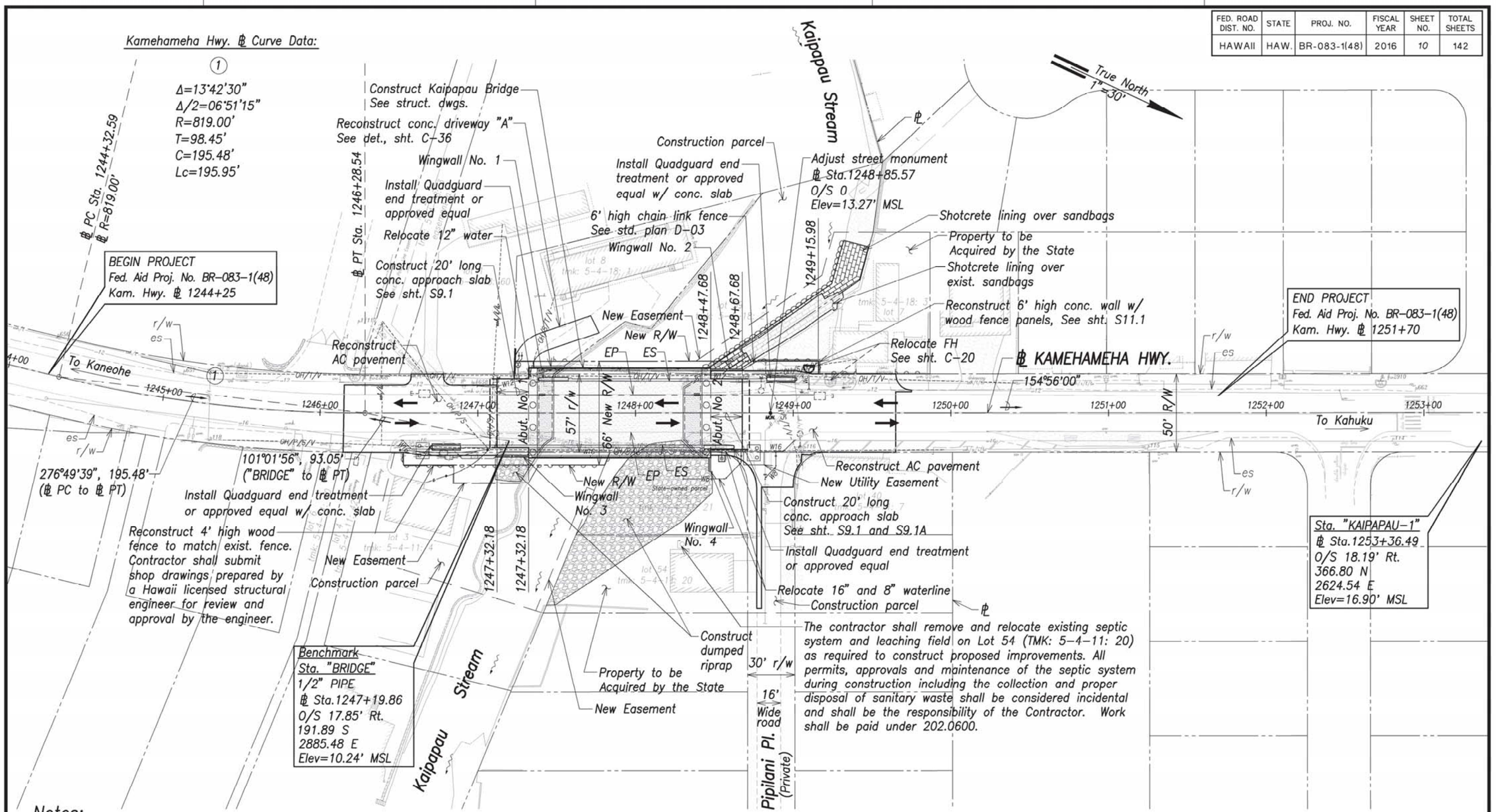
Attachment B

Construction Drawings

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	10	142



Notes:

1. See sheet C-10 for construction phasing and sheet C-29 for 16" waterline phasing.
2. The Contractor shall comply with Environmental Permit Conditions.
3. Kaipapau Stream is able to convey a 2-year storm, 1-hour storm. The stream frequently overtops. It is critical that the Contractor shall ensure that the flow capacity of the Kaipapau Stream is not reduced during a storm event. Equipment and materials within the stream during a storm event shall be removed immediately. Final damages that occur due to the contractor equipment and materials blocking flow during a rain storm will be the contractor's responsibility.
4. The Contractor shall construct a temporary detour road, temporary detour waterline, and other temporary improvements. See sht. C-10.

GENERAL SITE PLAN

SCALE 1"=30'

Graphic Scale:

1" = 30' 30' 15' 0 30' 60'

Scale in Feet

APPROVED:

Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only) DATE

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4/30/16
SIGNATURE LIC. EXPIRATION
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL SITE PLAN

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

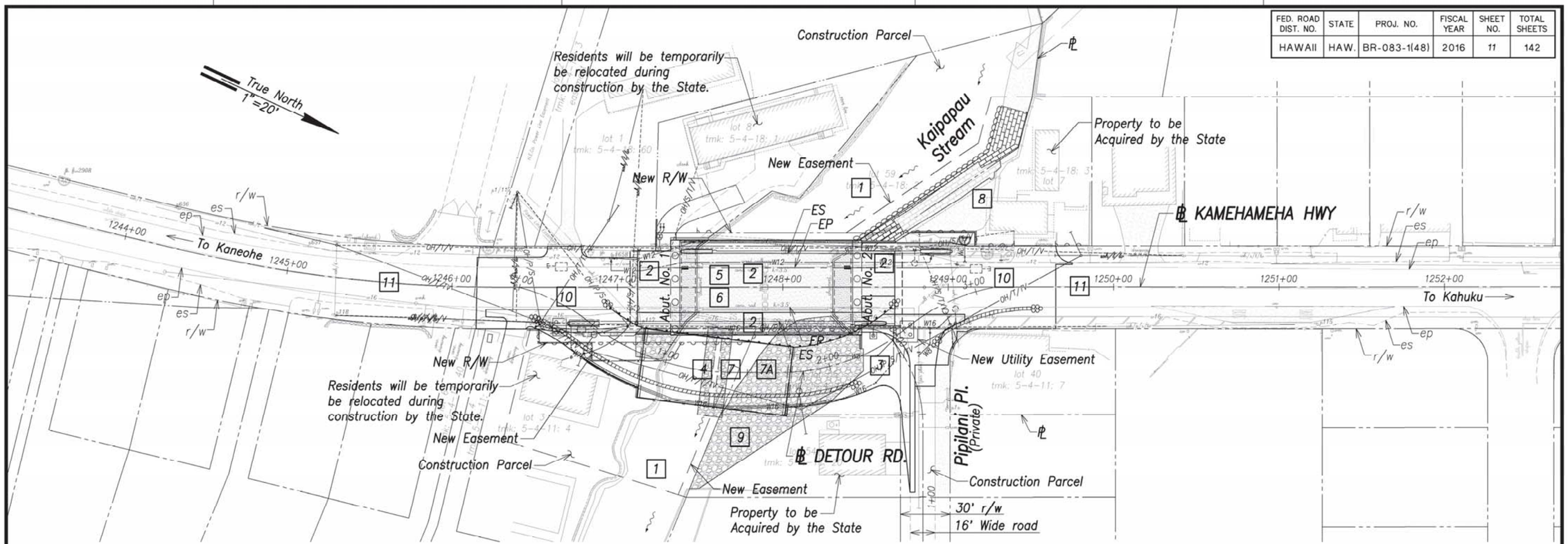
Scale: As Noted Date: April 2015

SHEET No. C-9 OF SHEETS

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

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	11	142



OVERALL CONSTRUCTION PHASING PLAN

Scale: 1"=20'

Suggested Construction Sequence of Major Constuction Items:

1. Install best management practices/erosion control measures. See Notes sheets and sht. C-17.
2. Install temporary 12" waterline and relocate existing 12" water line. See 12" Waterline Plan and Profile, sht. C-20. Relocate electrical utilities. See electrical drawings for temporary and permanent electrical relocation phasing.
3. Construct trial and load test drilled shafts and perform load test. See structural drawings.
4. Construct detour roadway and temporary bridge. See sht. C-22 to C-27 and stuctural drawings.
5. Demolish existing Kaipapau Stream bridge. See sht. C-15 and structural drawings. Expose existing 16" water line jacket and concrete support system.
6. Construct Phase 1 new Kaipapau Stream bridge. See Construction Sequence, Phase 1 of structural drawings, shts. S0.7, S0.7A, and S0.7B.
7. Partially remove Detour roadway and temporary bridge. Construct temporary pavement transitions, signing and pavement markings. Temporary work shall be considered incidental to the various items of work. Construct Phase 2 of new Kaipapau Stream bridge. See Construction Sequence, Phase 2 of structural drawings, shts. S0.8, S0.8A, and S0.8B..

7A. Remove remainder of Detour roadway and temporary bridge.

8. Construct sand bags and shotcrete lining along north bank, upstream of Kaipapau Stream bridge. See sht. C-18.
9. Construct dumped riprap along north and south bank, downstream of Kaipapau Stream bridge. See sht. C-16 and C-18.
10. Construct AC pavement. See sht. C-16. The contractor shall submit a pavement phasing plan and schedule for Engineer's review and approval.
11. Construct final signing and pavement markings. See sht. C-21.

Phasing Notes:

1. For electrical phasing see electrical drawings.
2. For structural phasing see structural drawings.
3. The Contractor shall perform work to ensure continuous traffic and pedestrian flow.
4. Phasing indicated shall not be modified unless approved in writing by the Engineer.
5. The Contractor shall ensure that water and other utility line construction are fully coordinated with Board of Water Supply and Private Utility Companies.
6. All temporary measures required shall be considered incidental to the various items of work.
7. For water line phasing see sht. C-28 and C-29.

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL CONSTRUCTION PHASING PLAN

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

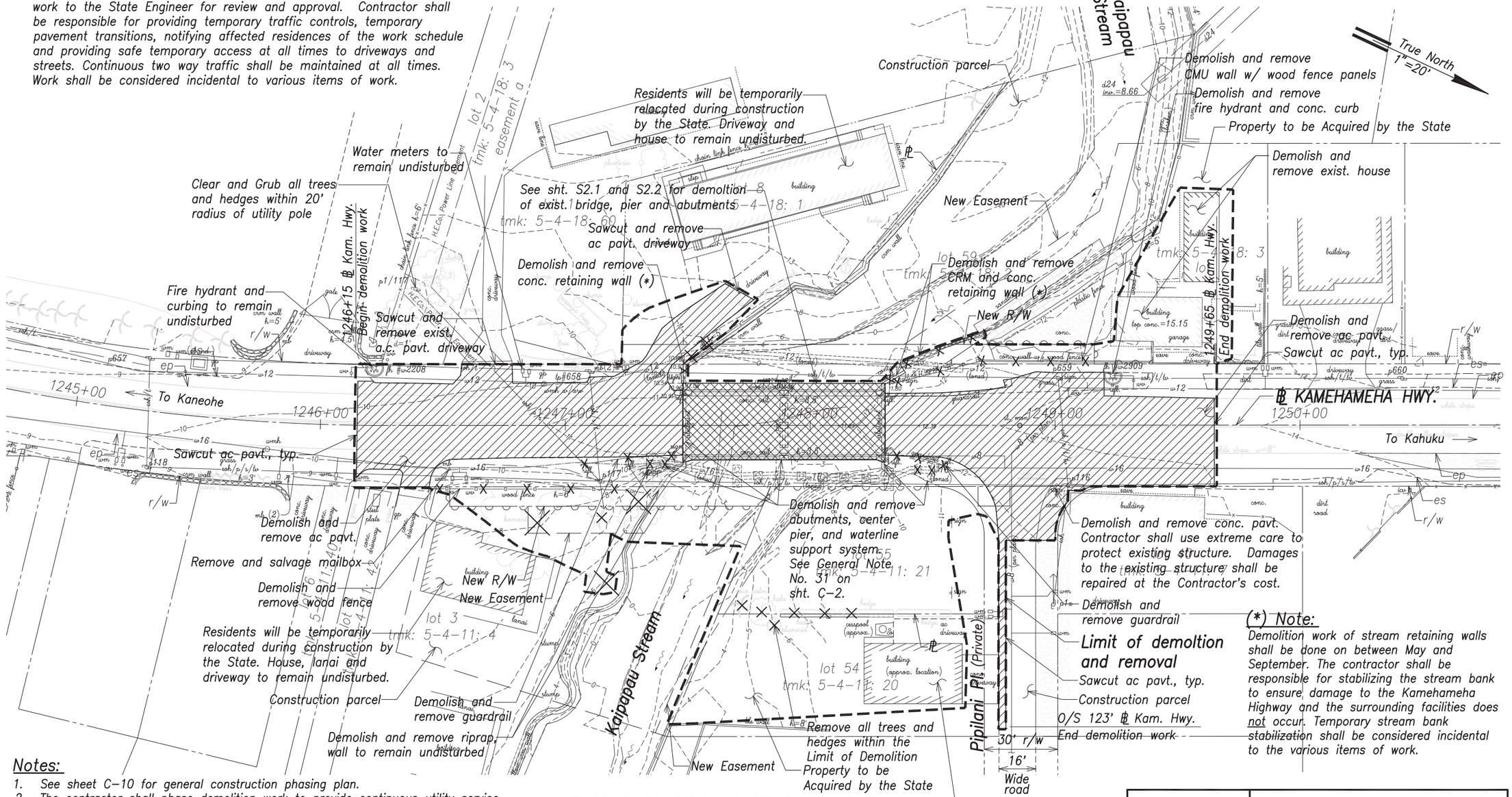
SHEET No. C-10 OF SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	16	142

Phasing Note:

Contractor shall submit a phasing plan and schedule for demolition work to the State Engineer for review and approval. Contractor shall be responsible for providing temporary traffic controls, temporary pavement transitions, notifying affected residences of the work schedule and providing safe temporary access at all times to driveways and streets. Continuous two way traffic shall be maintained at all times. Work shall be considered incidental to various items of work.



Notes:

1. See sheet C-10 for general construction phasing plan.
2. The contractor shall phase demolition work to provide continuous utility service.
3. See C-20 and C-32 for waterline demolition work.
4. See C-21 for signing and striping demolition work.
5. See electrical drawings for electrical demolition and temporary relocation work.
6. See structural drawings for structural demolition work.
7. Traffic controls, detour, and best management practices shall be in place prior to the start of demolition work.
8. The contractor shall demolish and remove everything within the Limit of Demolition and Removal unless otherwise indicated to remain.
9. See General Note No. 30 on sht. C-2.

EXISTING CONDITION & DEMOLITION PLAN

Scale: 1"=20'

Bridge Note:

The contractor shall perform photographic documentation of the existing Kaipapau Stream bridge acceptable to the State Historic Preservation Division (SHPD) prior to the start of bridge demolition. Work shall be considered incidental to the various items of work.

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

(*) Note:

Demolition work of stream retaining walls shall be done on between May and September. The contractor shall be responsible for stabilizing the stream bank to ensure damage to the Kamehameha Highway and the surrounding facilities does not occur. Temporary stream bank stabilization shall be considered incidental to the various items of work.

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

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4/30/16

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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING CONDITION & DEMOLITION PLAN

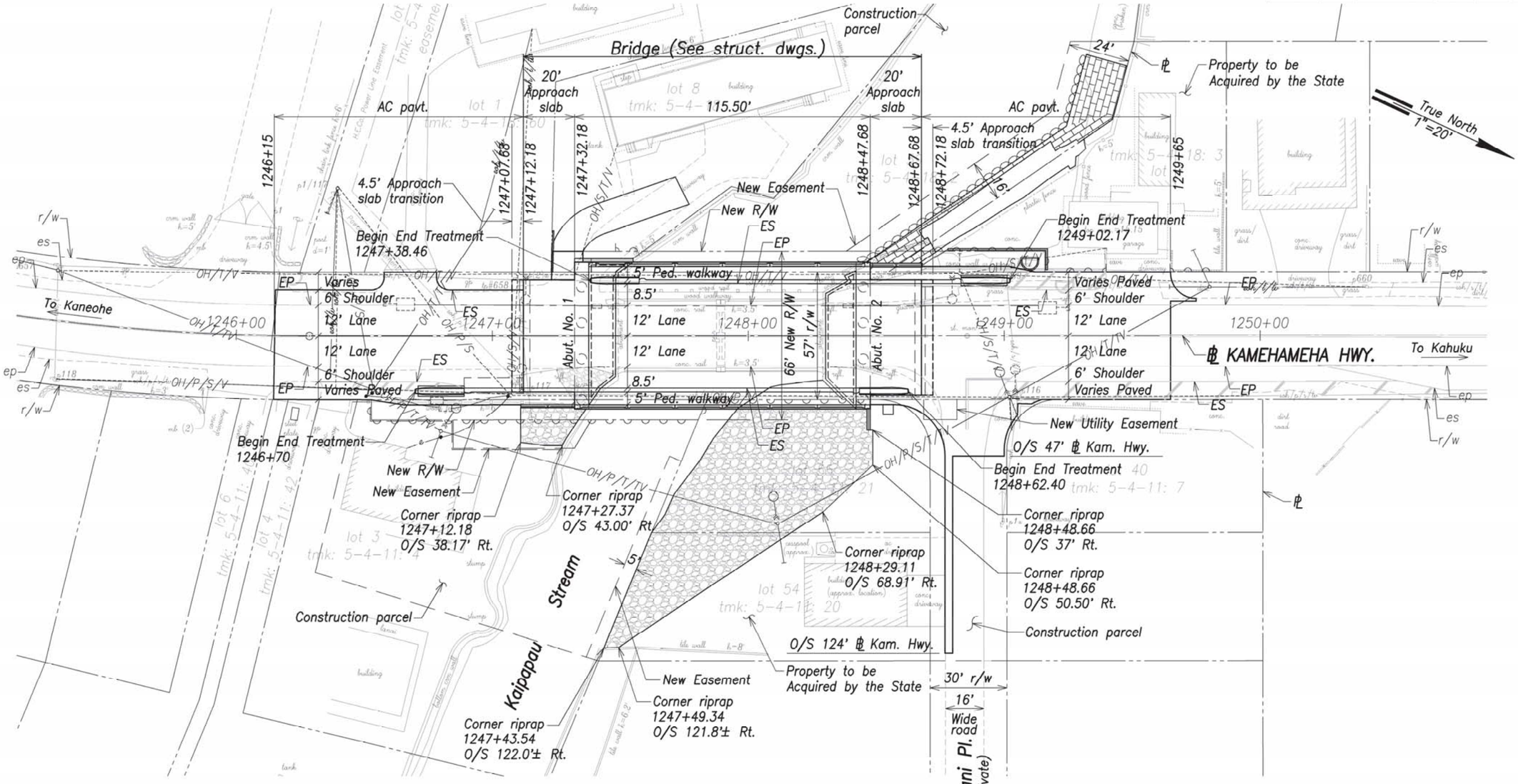
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. C-15 OF SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	17	142



SITE LAYOUT PLAN
SCALE 1"=20'

Pavement Note:

Contractor shall submit a pavement phasing plan and schedule for the AC pavement work to the State Engineer for review and approval. Contractor shall be responsible for providing temporary traffic controls, temporary pavement transitions, notifying affected residences of the work schedule and providing safe temporary access at all times to driveways and streets. Continuous two way traffic shall be maintained at all times. Work shall be considered incidental to various items of work.

Legend:

Dumped Riprap

SURVEY PLOTTED BY ____ DATE
DRAFT BY ____ RST
TRACED BY ____
DESIGNED BY ____ WC
NOTE BOOK ____
QUANTITIES BY ____
CHECKED BY ____
ORIGINAL PLAN
No. ____

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4/30/16
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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SITE LAYOUT PLAN

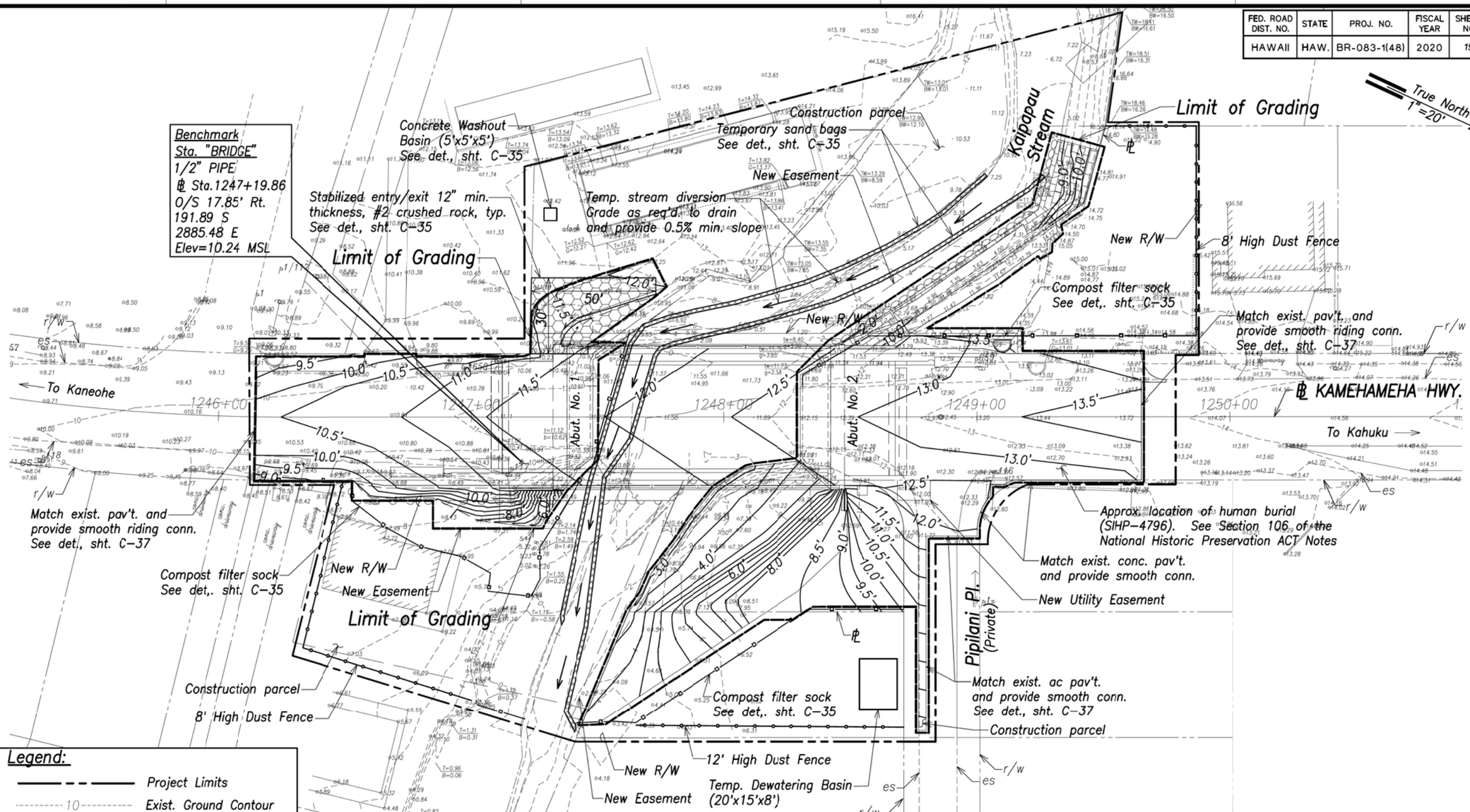
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. C-16 OF SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2020	19	149



Legend:

- Project Limits
- 10 — Exist. Ground Contour
- 10 — Finished Grade Contour
- Limit of Grading
- Dust Fence
- Compost Filter Sock
- Top of Bank
- Bottom of Bank

Fill Condition Cut Condition

- Drainage Flow Direction
- Stabilized Entry/Exit

ROADWAY GRADING, EROSION & SEDIMENT CONTROL PLAN

Scale: 1"=20'

Notes:

1. For additional finished grade elevations, see sht. C-20.
2. For bridge deck elevations, see structural drawings.
3. For grading work under bridge, see sht. C-19.
4. The contractor shall be responsible for obtaining grading permit from the City and County of Honolulu, Department of Planning and Permitting.

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

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4/30/20

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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY GRADING, EROSION & SEDIMENT CONTROL PLAN

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

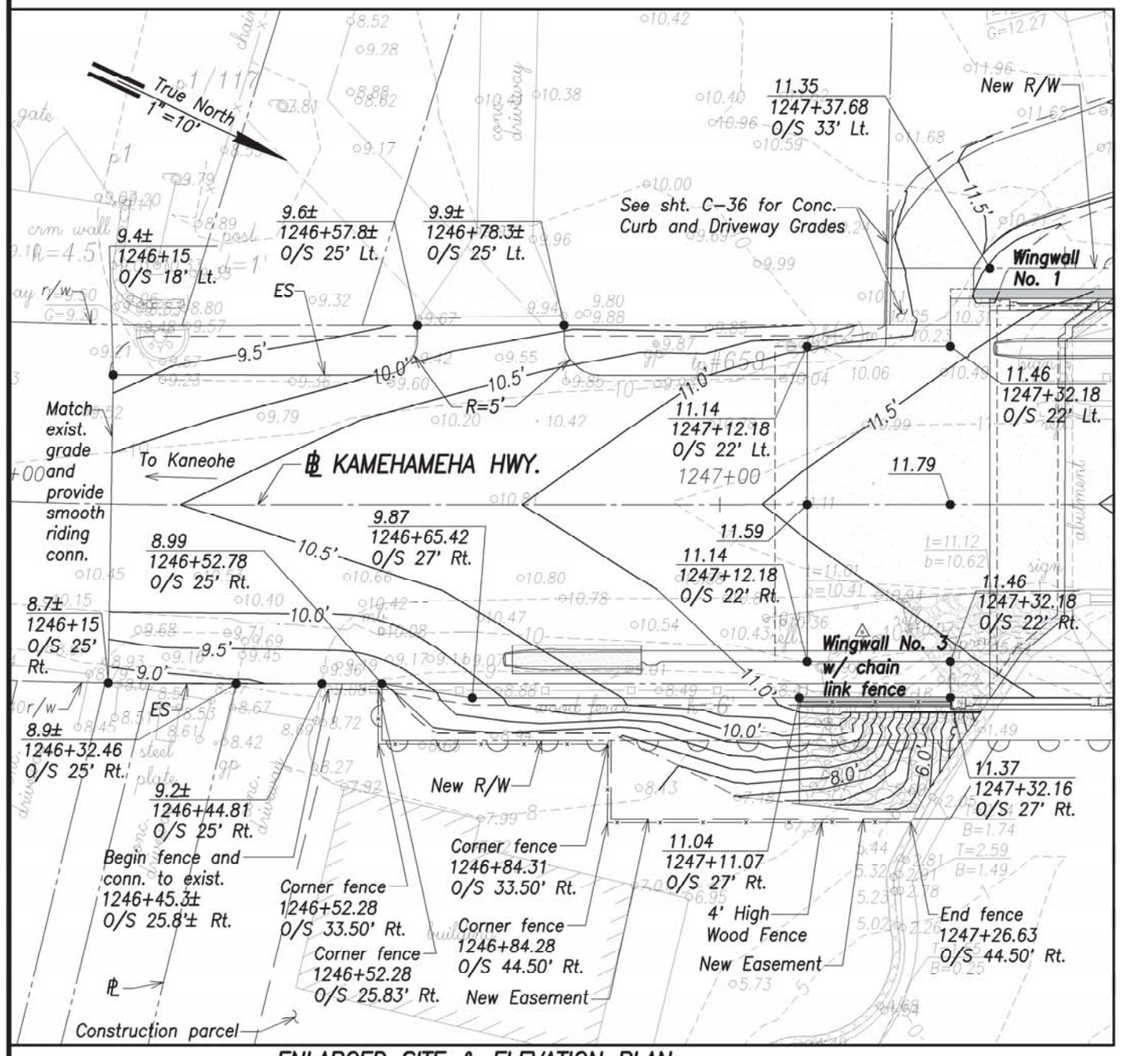
Scale: As Noted Date: April 2019

SHEET No. C-18 OF SHEETS

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

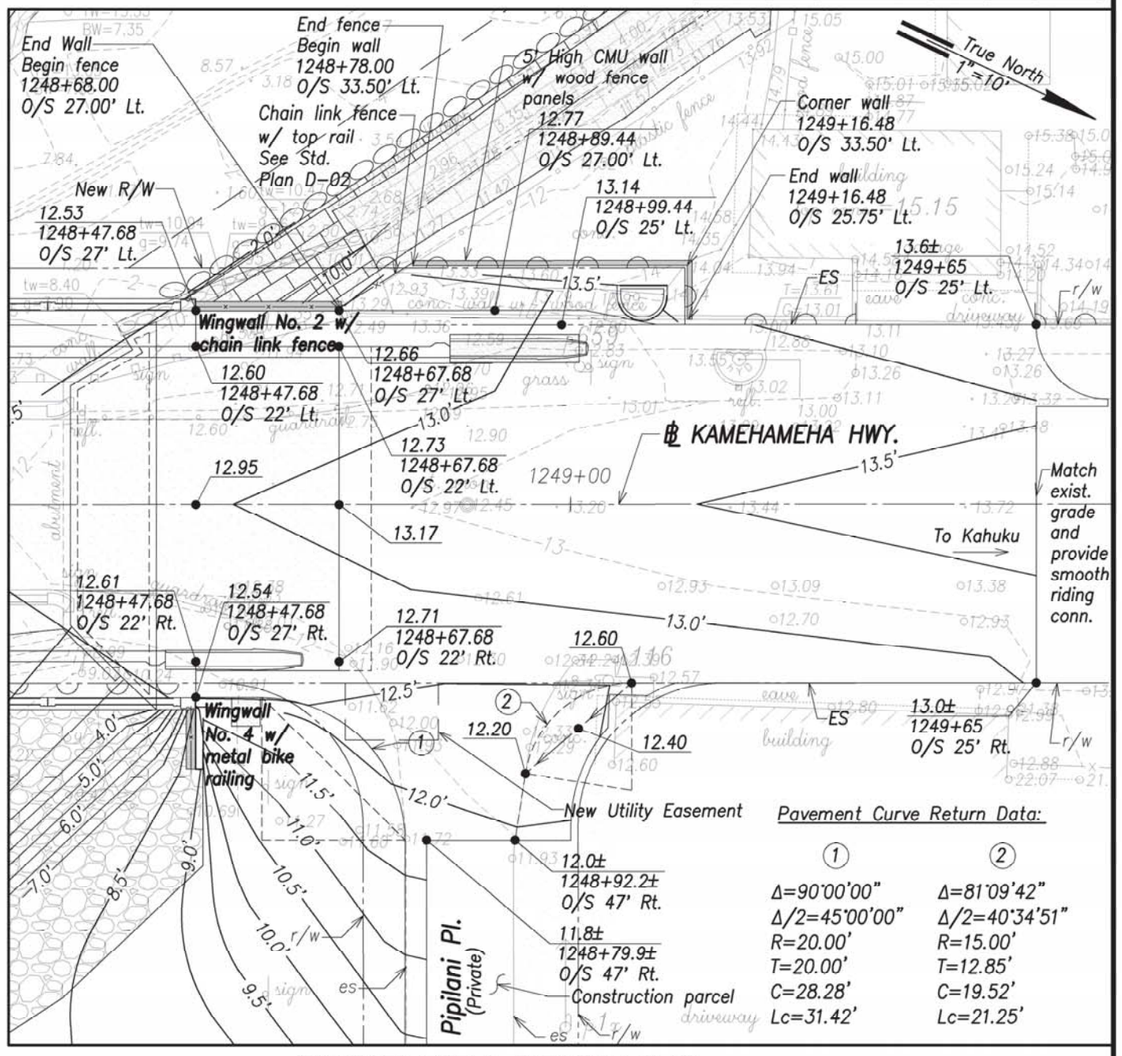
RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	20	142



ENLARGED SITE & ELEVATION PLAN (KANEOHE SIDE)

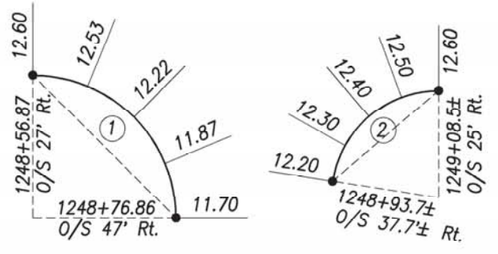
Scale: 1"=10'



ENLARGED SITE & ELEVATION PLAN (KAHUKU SIDE)

Scale: 1"=10'

Pipilani Place
Pavement Curve Return Grades:



Legend:

- Exist. Ground Contour
- Finished Grade Contour
- 10.00 2+37.40 O/S 31.3' Rt. — Finished Grade Elevation
- ℄ Station ℄ Offset

Graphic Scale:

1" = 10' 10' 5' 0 10' 20'

Scale in Feet

SURVEY PLOTTED BY ____ DATE
DRAFT BY RBY
TRACED BY
DESIGNED BY WC
NOTE BOOK
QUANTITIES BY
No. CHECKED BY
ORIGINAL PLAN

RMTC JOB NO. : 1-19548-0E

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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ENLARGED SITE & ELEVATION PLAN

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. C-19 OF SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	21	142

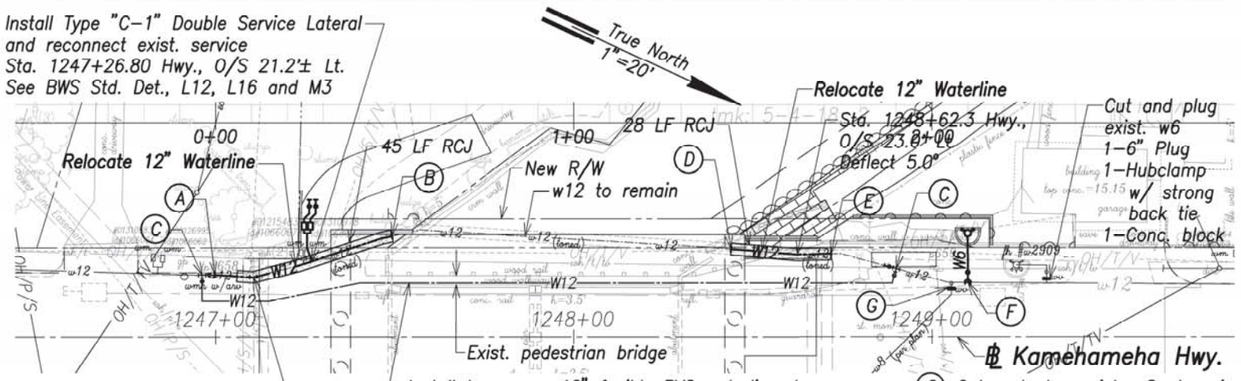
(A) Sta. 1246+99.7± Hwy., O/S 17.5'± Lt. =Sta. 0+00.0± 12" W.L. Deflect 4.0°

(B) Connect to exist. w12 Sta. 1247+49.3± Hwy., O/S 28.2'± Lt. =Sta. 0+51.0± 12" W.L.
Materials for conn.
1–12" Sleeve, 12" long 8± LF 12" D.I.P., Cl. 52
Temp. for testing
1–12" Cap w/4" C.O.
1–Conc. block
Contractor to verify invert and location

(C) Connect to exist. w12 Sta. 1246+96± Hwy., O/S 17.4'± Lt. and Sta. 1248+90± Hwy., O/S 19.2'± Lt.
Materials for conn.
1–12" x 12" Tee
2–12" GV, 150#
2–Valve box w/ cover
1–Conc. block w/ struct. struts
Temp. for testing
1–12" Cap w/4" C.O.
1–Conc. block
Contractor to verify invert and location

Install Type "C–1" Double Service Lateral and reconnect exist. service Sta. 1247+26.80 Hwy., O/S 21.2'± Lt. See BWS Std. Det., L12, L16 and M3

Sta. 1247+10.50 Hwy., O/S 16.70' Lt. =Sta. 0+10.55 12" W.L.
1–12" 1/8 Bend (H & TV)
1–Conc. block



Install temporary 12" fusible PVC waterline. Lay temporary 12" waterline on existing pedestrian walkway. In areas outside of the existing pedestrian walkway and provide temporary ADA accessible route, place temporary waterline in shallow open trench and cover with steel plates. See Temporary Waterline Notes on this sheet.

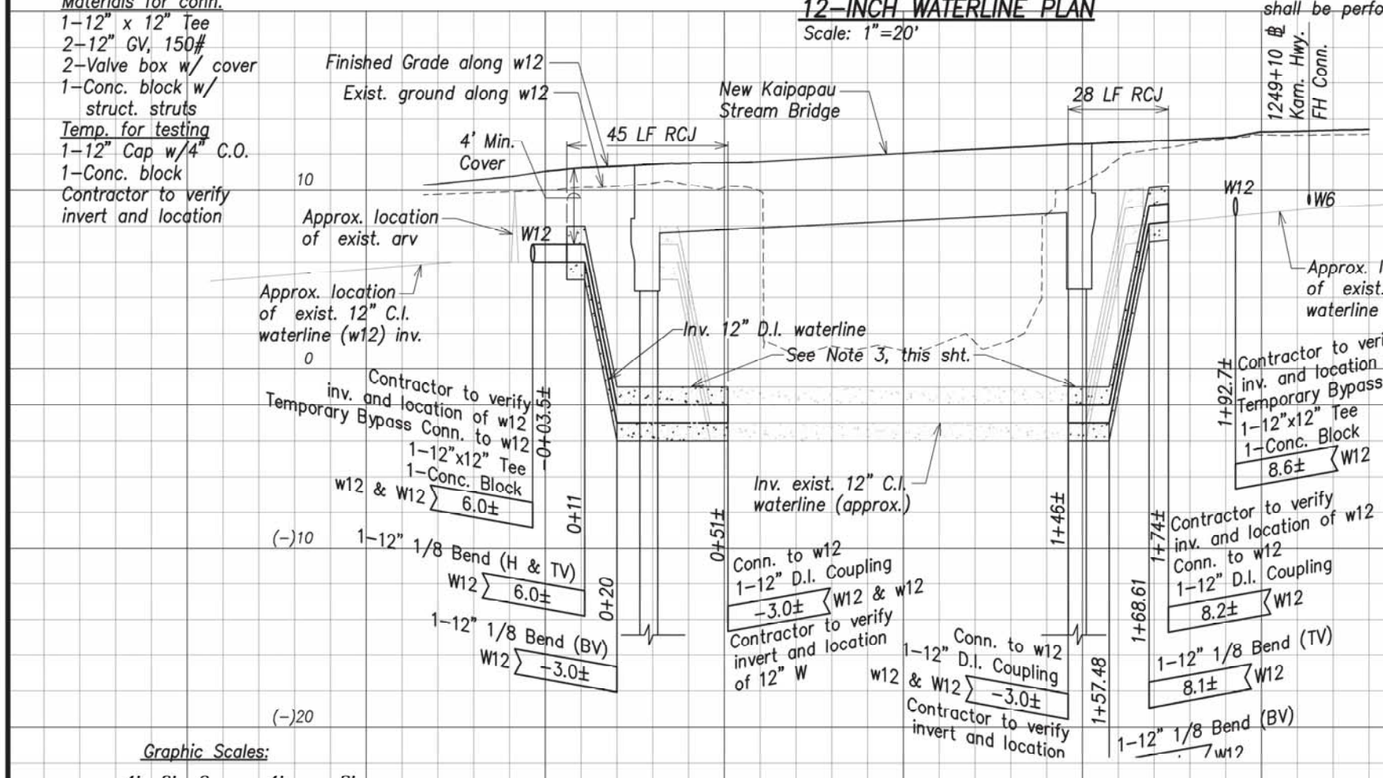
(D) Connect to exist. w12 Sta. 1248+43.9± Hwy., O/S 24.6'± Lt. =Sta. 1+46.0± 12" W.L.
Materials for conn.
1–12" Sleeve, 12" long 8± LF 12" D.I.P., Cl. 52
Temp. for testing
1–12" Cap w/4" C.O.
1–Conc. block
Contractor to verify invert and location

(E) Connect to exist. w12 Sta. 1248+71.9± Hwy., O/S 23.3'± Lt. =Sta. 1+74± 12" W.L.
Materials for conn.
1–12" Sleeve, 12" long 8± LF 12" D.I.P., Cl. 52
1–12" 1/8 Bend (TV)
Temp. for testing
1–12" Cap w/4" C.O.
1–Conc. block
Contractor to verify invert and location

(F) FH Connection Sta. 1249+10 Hwy. O/S 15.1'± Lt.
1–12" x 6" Tapping Tee (MJ x FE)
1–6" 1/4 Bend (BV)
1–6" GV (MJ x FE), Cl. 150
1–Valve box
1–FH (Ht.=6'–4")
1–FH Extension piece
1–FH Marker
1–FH Curb guard
14 LF 6" D.I.P. Cl. 52
1–Conc. block
1–Conc. block w/ struct. struts
See BWS Std. Det. FH4 and FH11
For Profile, see sht. C–37
Temp. for Testing
1–6" cap w/ 2–1/2" C.O.
1–Conc. block

(G) Cut and plug exist. w8 at main. Remove valve and box. Salvage frame and cover.
1–8" Plug
1–Hubclamp w/ strong back tie
1–Conc. block
See sht. C–29 for Phase when work shall be performed.

12–INCH WATERLINE PLAN
Scale: 1"=20'



12–INCH WATERLINE PROFILE
Scales: 1"=20' Horiz.
1"=4' Vert.

Graphic Scales:
1" = 4' 4' 2' 0 4' 8' Scale in Feet
1" = 20' 20' 10' 0 20' 40' Scale in Feet

Notes:
1. The existing waterlines shown on these plans were located using record drawings and toning information from the Board of Water Supply. The contractor shall make an independent check by probing the waterlines and coordinating with the Board of Water Supply to ascertain the exact locations of the waterlines. Any discrepancies shall be immediately brought to the attention of the Engineer prior to any work on the water system.
2. Demolish and remove existing waterline as required to construct waterline.
3. Dewatering for removal of water system shall be considered inciental to Item No. 202.0520.
4. Dewatering for installation of the temporary and pernanent water system shall be considered incidental to Item No. 624.1003 Water Systems. No additional compensation will be provided for dewatering.

Temporary Waterline Notes:
1. The temporary waterline shall be constructed, tested and in–service prior to starting construction of permanent water system. The contractor shall coordinate with the Board of Water Supply (BWS) for shut–down of the 12–inch waterline. The maximum down time shall be six (6) hours unless otherwise approved by the BWS. The contractor shall be responsible for providing advanced notification to all users affected by the waterline shut–down.
2. The temporary waterline shall not be in–service for more than two (2) months unless otherwise approved by the BWS.
3. Contractor to provide all fittings, bends as required and install temporary 3/4" ARV in cage at high point of temporary waterline
4. The contractor shall be responsible for providing safe temporary pedestrian access at all times that meets ADA requirements.
5. The contractor shall be responsible for providing traffic controls during temporary waterline installation.

APPROVED:

Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only) DATE

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4/30/16
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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

12–INCH WATERLINE PLAN & PROFILE

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR–083–1(48)

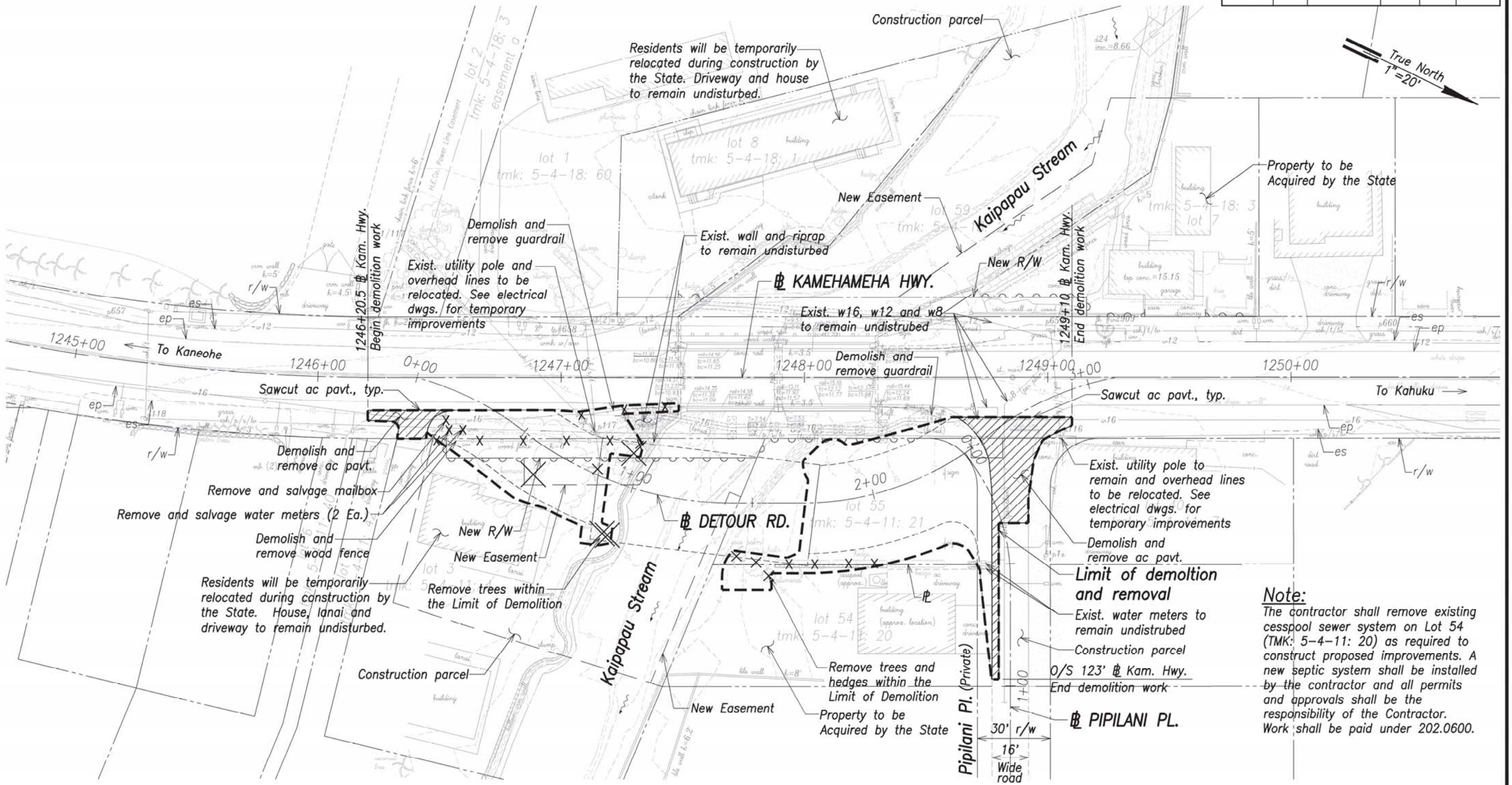
Scale: As Noted Date: April 2015

SHEET No. C-20 OF SHEETS

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAFT BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

RMTC JOB NO. : 1–19548–0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	25	142



DETOUR ROAD – EXISTING CONDITION & DEMOLITION PLAN

Scale: 1"=20'

Note:
The contractor shall remove existing cesspool sewer system on Lot 54 (TMK: 5-4-11: 20) as required to construct proposed improvements. A new septic system shall be installed by the contractor and all permits and approvals shall be the responsibility of the Contractor. Work shall be paid under 202.0600.

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

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

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SIGNATURE 4/30/16
LIC. EXPIRATION
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETOUR RD. – EXISTING CONDITION & DEMOLITION PLAN

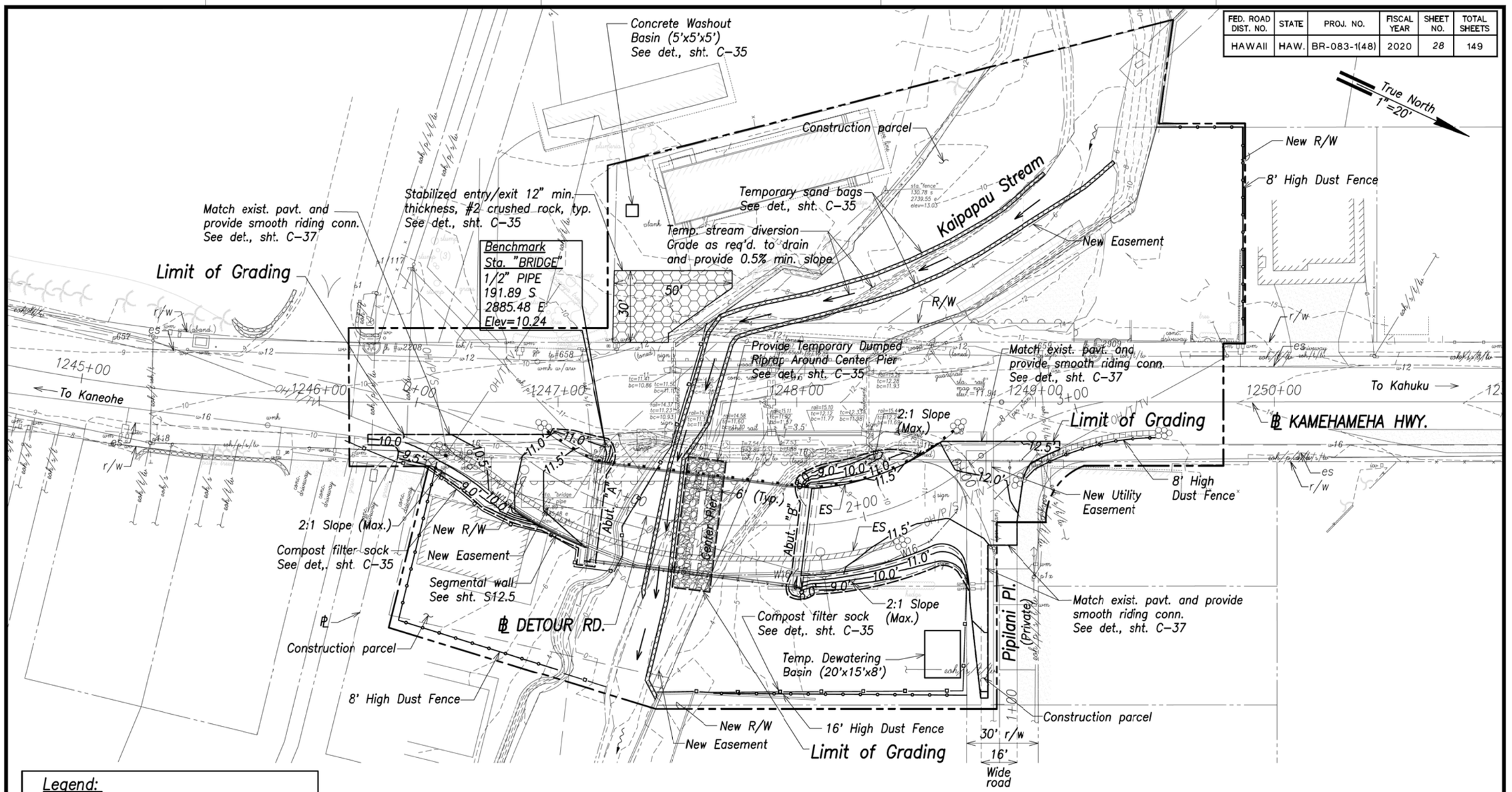
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. C-24 OF SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2020	28	149



Legend:

- Project Limits
- 10 — Exist. Ground Contour
- 10.0' — Finished Grade Contour
- Limit of Grading
- Dust Fence
- Compost Filter Sock
- Drainage Flow Direction
- Stabilized Entry/Exit

DETOUR ROAD – GRADING, EROSION AND SEDIMENT CONTROL PLAN

Scale: 1"=20'

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

SURVEY PLOTTED BY: DATE
DRAWN BY: EST
TRACED BY:
DESIGNED BY: WC
QUANTITIES BY:
CHECKED BY:
ORIGINAL PLAN
NOTE BOOK
NO.

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4/30/20
SIGNATURE LIC. EXPIRATION
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETOUR ROAD-GRADING, EROSION AND SEDIMENT CONTROL PLAN

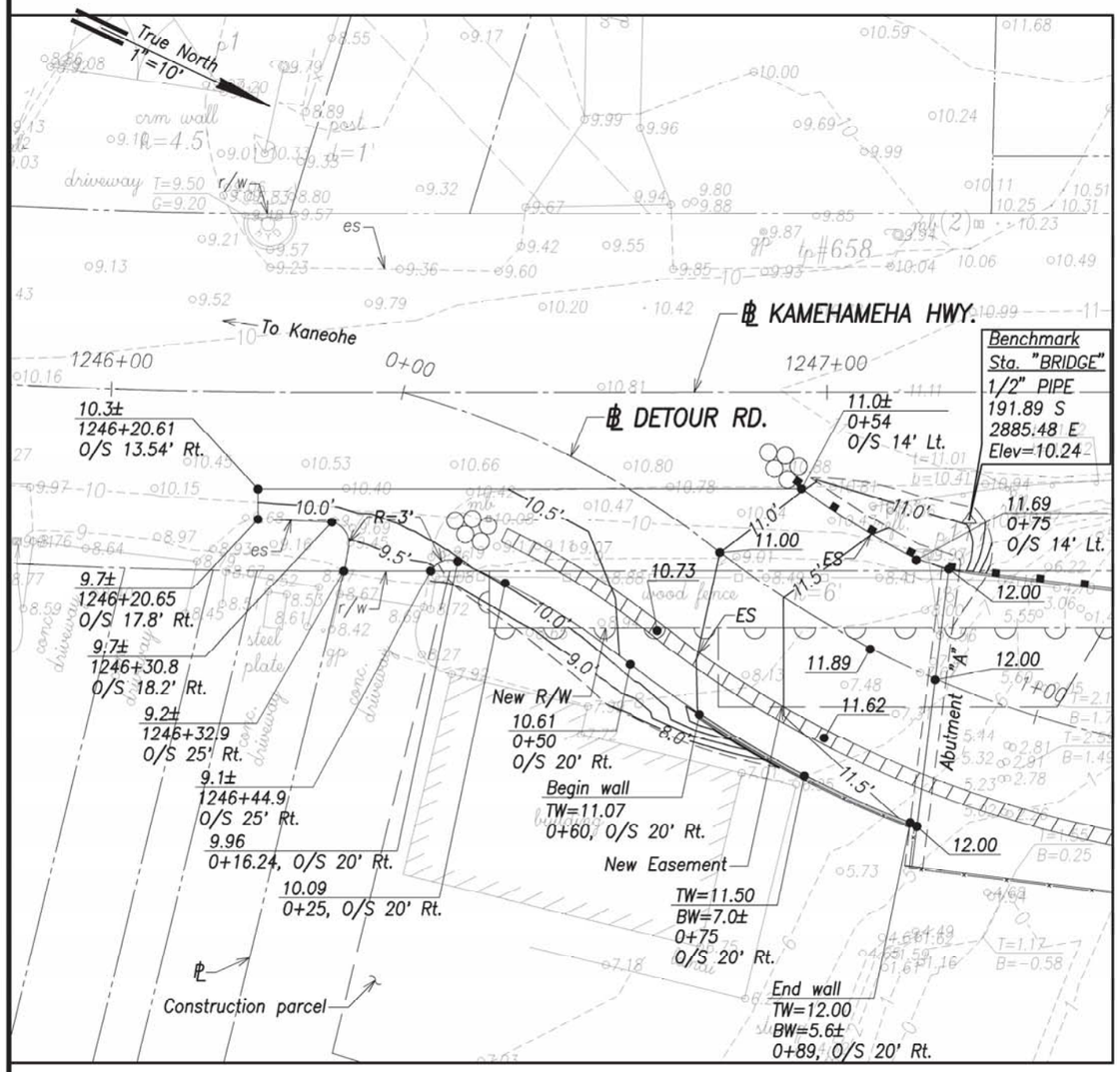
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2019

SHEET No. C-27 OF SHEETS

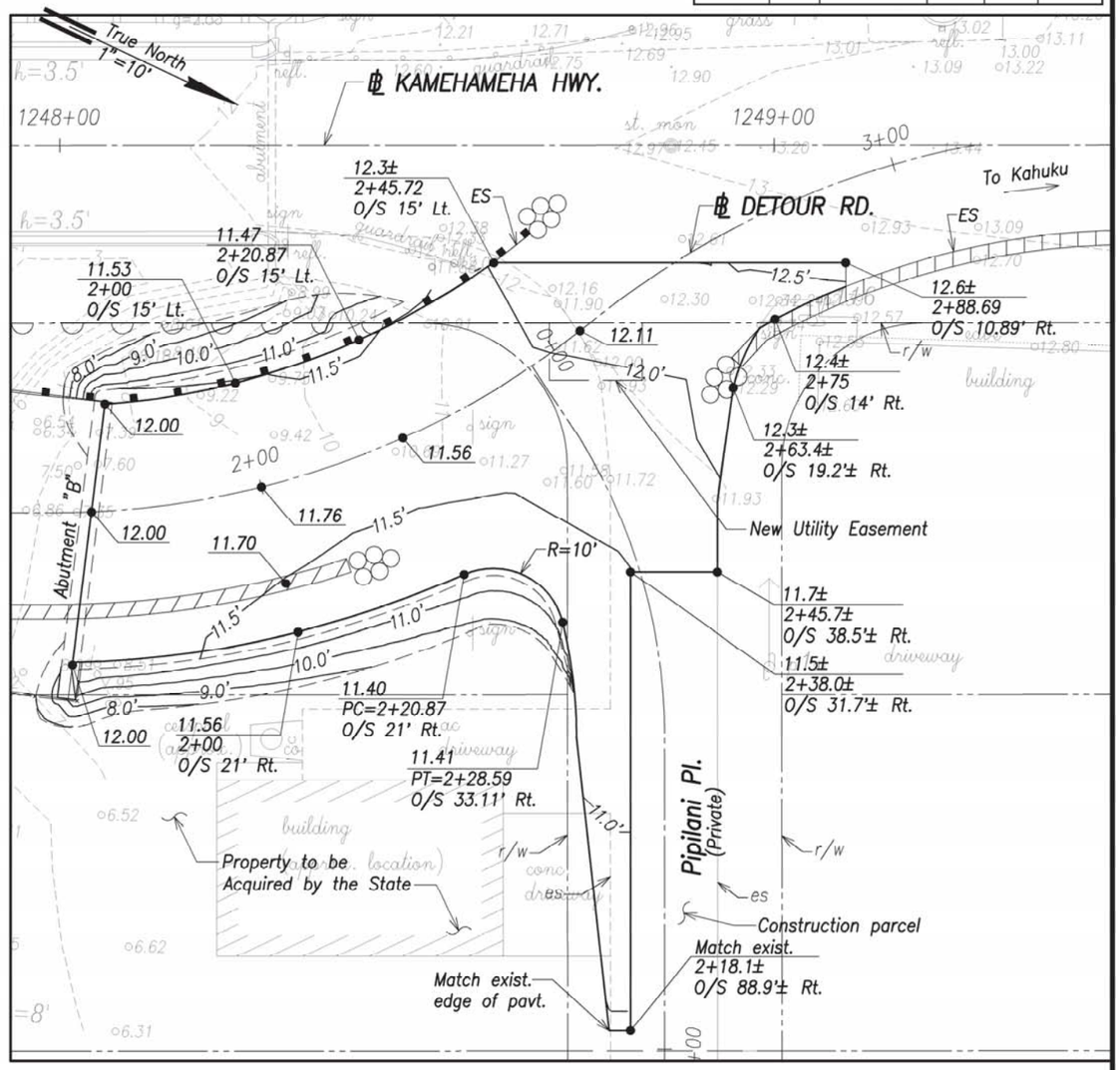
RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	28	142



DETOUR ROAD ENLARGED SITE & ELEVATION PLAN (KANEOHE SIDE)

Scale: 1"=10'



DETOUR ROAD ENLARGED SITE & ELEVATION PLAN (KAHUKU SIDE)

Scale: 1"=10'

Legend:

10	Exist. Ground Contour
10.0'	Finished Grade Contour
10.00 2+37.40 O/S 31.3' Rt.	Finished Grade Elevation ℄ Station ℄ Offset

Graphic Scale:

1" = 10' 10' 5' 0 10' 20'

Scale in Feet

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4/30/16
SIGNATURE LIC. EXPIRATION
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETOUR ROAD ENLARGED SITE & ELEVATION PLAN

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

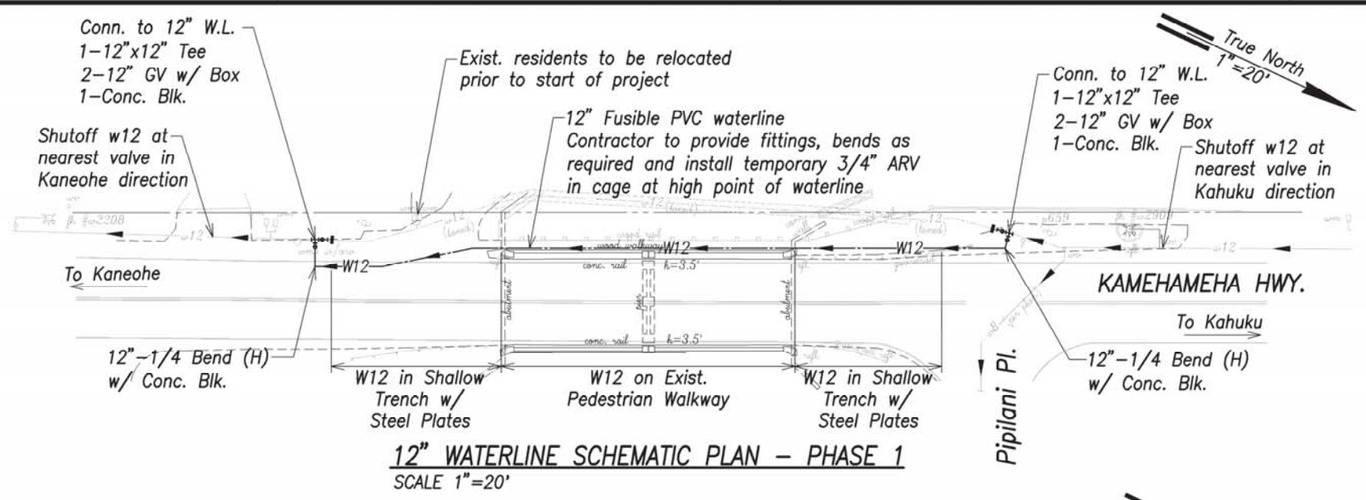
Scale: As Noted Date: April 2015

SHEET No. C-27 OF SHEETS

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

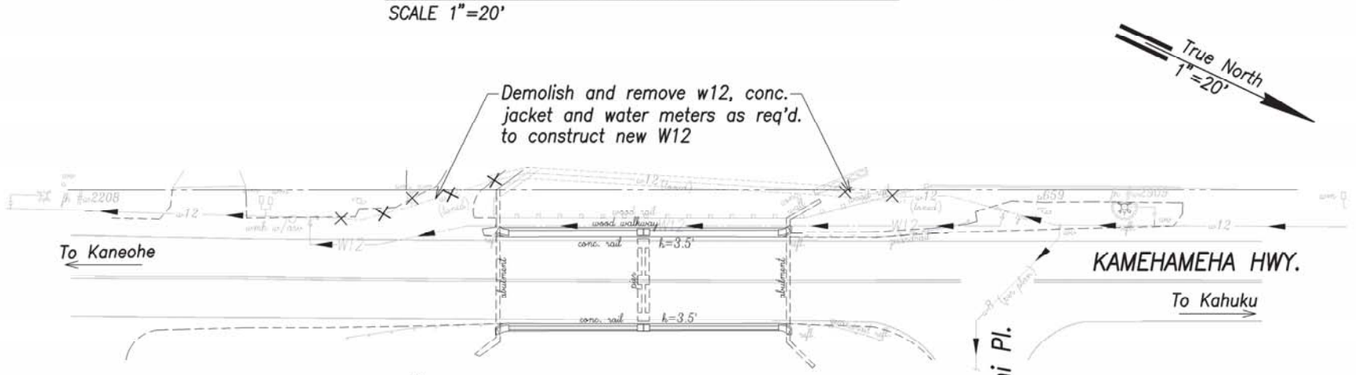
RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	29	142



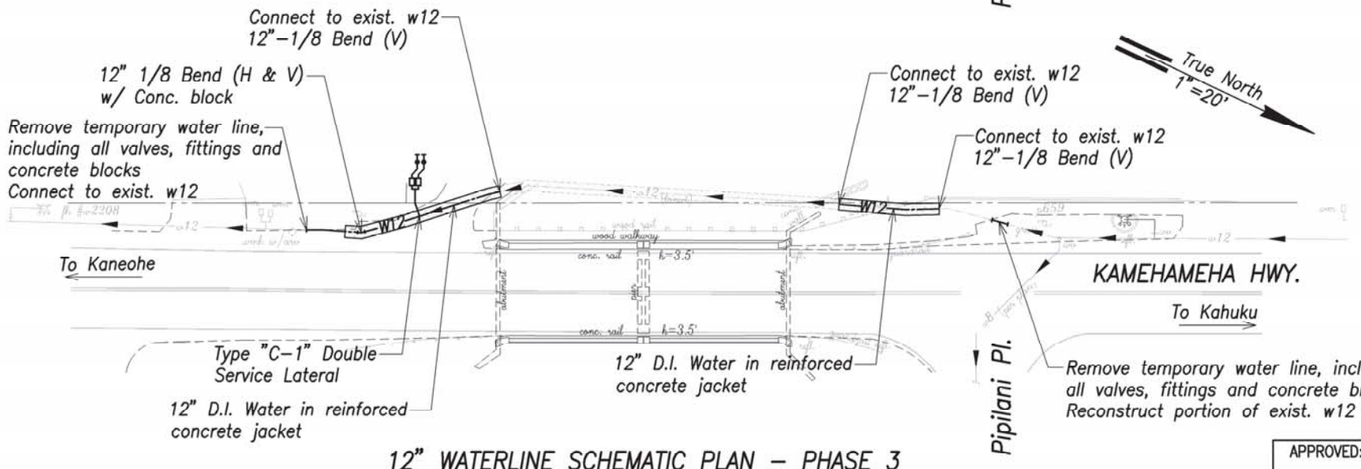
12" WATERLINE SCHEMATIC PLAN – PHASE 1

SCALE 1"=20'



12" WATERLINE SCHEMATIC PLAN – PHASE 2

SCALE 1"=20'



12" WATERLINE SCHEMATIC PLAN – PHASE 3

SCALE 1"=20'

Suggested Phasing for Work on 12" Waterline:

PHASE 1:

Construct temporary bypass waterline improvements shown on this sheet and perform pressure test and chlorination. Shutoff existing w12 by closing the nearest existing valves in the Kaneohe and Kahuku direction and make connections to the existing w12. (Note: Maximum allowable time for w12 shutdown is 6 hours.)

PHASE 2:

Excavate trench and construct shoring for new W12 improvements. Remove portions of existing w12 in concrete jacket required to construct new improvements.

PHASE 3:

Construct permanent waterline improvements shown on this sheet and perform pressure test and chlorination. Shutoff existing w12 by closing the nearest existing valves in the Kaneohe and Kahuku direction and make connections to the existing w12. Remove W12 bypass waterline, including all gate valves, fittings and concrete blocks on both sides of existing bridge. (Note: Maximum allowable time for w12 shutdown is 6 hours.)

Note:

The contractor shall check the invert and location of the existing 12–inch waterline prior to the start of waterline construction and adjust the invert of the new 12–inch waterline to match the existing invert for future connection.

Graphic Scale:

1" = 20' 20' 10' 0 20' 40'

Scale in Feet

ORIGINAL PLAN	SURVEY PLOTTED BY: RST	DATE
	DRAWN BY:	
	TRACED BY:	
NOTE BOOK	DESIGNED BY: WC	
	QUANTITIES BY:	
No.	CHECKED BY:	

APPROVED:

Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only) — DATE

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SIGNATURE LIC. EXPIRATION

R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

12" WATERLINE PHASING PLAN

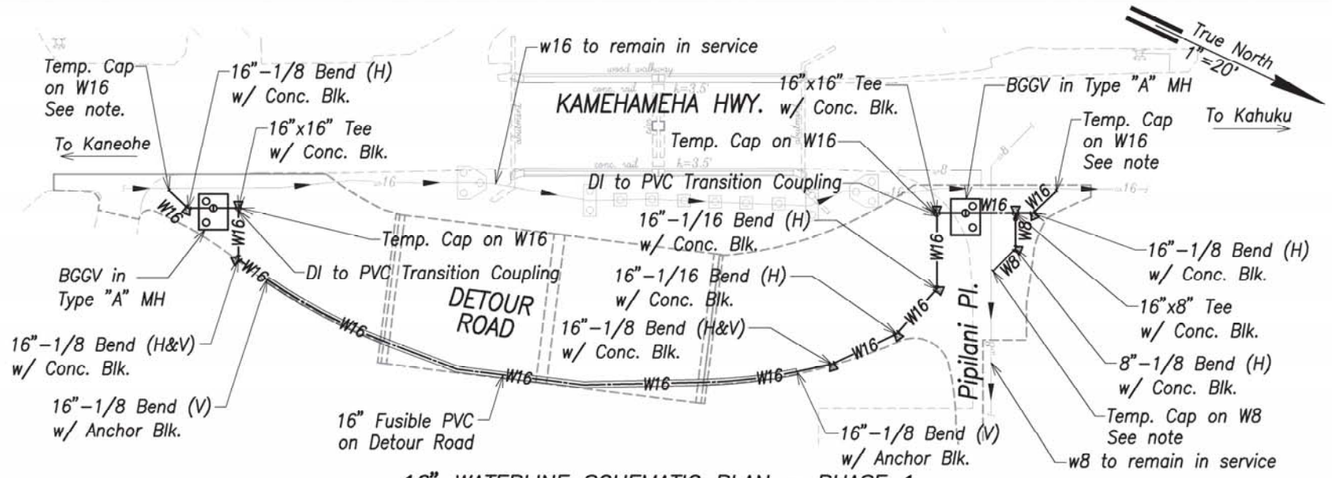
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR–083–1(48)

Scale: As Noted Date: April 2015

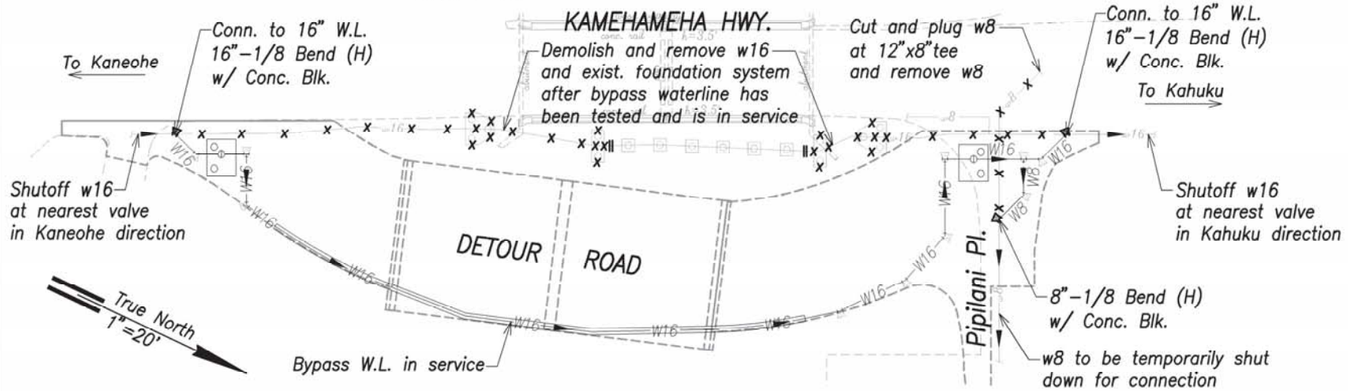
SHEET No. C-28 OF SHEETS

RMTC JOB NO. : 1–19548–0E

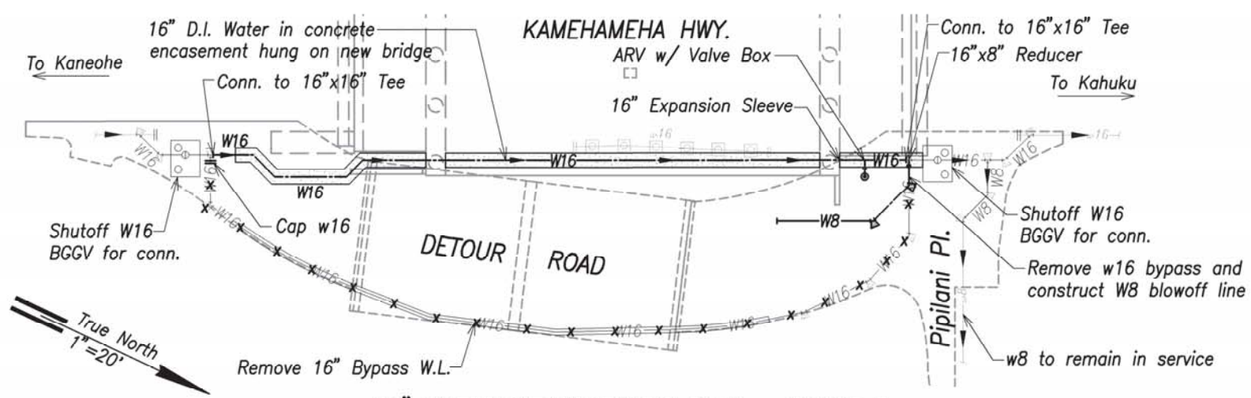
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	30	142



16" WATERLINE SCHEMATIC PLAN – PHASE 1
SCALE 1"=20'



16" WATERLINE SCHEMATIC PLAN – PHASE 2
SCALE 1"=20'



16" WATERLINE SCHEMATIC PLAN – PHASE 3
SCALE 1"=20'

Suggested Phasing for Work on 16" Waterline:

PHASE 1:
Existing w16 and w8 serving Pipilani Road shall remain in service at all times. Construct detour road and temporary bridge. Construct Phase 1 waterline improvements shown on this sheet and perform pressure test and chlorination.

PHASE 2:
Shutoff existing w16 by closing the nearest existing valves in the Kaneohe and Kahuku direction. Drain w16 using existing w8 blowoff line. Construct Phase 2 waterline improvements shown on this sheet. Open existing valves to restore water service. (Note: Maximum allowable time for w16 and w8 shutdown is 8 hours)

After temporary W16 waterline is in service, demolish and remove the existing w16 and existing foundation system shown in Phase 2 on this sheet. Abandon-in-place the existing w16 and existing foundation system under Kaipapau Stream. The contractor shall plug both ends of abandoned waterline.

PHASE 3:
Construct new bridge and Phase 3 waterline improvements, including W8 blowoff line and W16 encased in concrete between new bridge girders, as shown on this sheet. See structural drawings for details. Perform pressure test and chlorination. Shutoff W16 bypass waterline using bevel gear gate valves on both sides of new bridge. (Note: Maximum allowable time for W16 is 8 hours) Connect W16 on both sides of new bridge. Open bevel gear gate valves to restore water service.

After W16 waterline is in service, demolish and remove the bypass waterline.

Note:

The contractor shall check the invert and location of the existing 16-inch waterline prior to the start of waterline construction and adjust the invert of the new 16-inch waterline to match the existing invert for future connection.

Graphic Scale:
1" = 20' 20' 10' 0 20' 40'
Scale in Feet

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

APPROVED:

Manager and Chief Engineer, BWS (for work affecting BWS facilities State R/W & BWS easements only) DATE

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4/30/16
SIGNATURE LIC. EXPIRATION
R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

16" WATERLINE PHASING PLAN

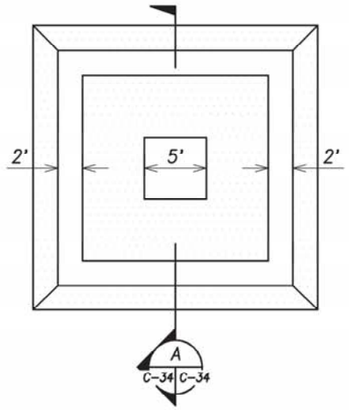
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. C-29 OF SHEETS

RMTC JOB NO. : 1-19548-0E

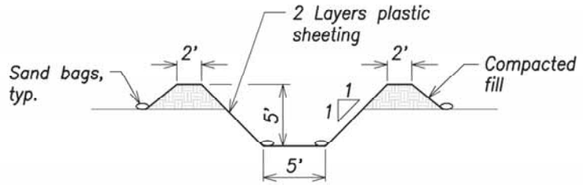
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	35	142



PLAN VIEW

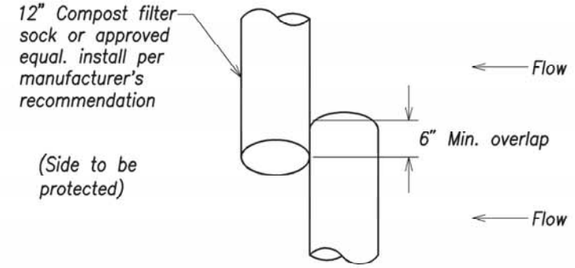
Notes:

1. Line basin with 2 layers of 4 mil. polyethylene plastic.
2. Place sand bags on top sheeting.
3. Clean out hardened concrete to maintain basin capacity.

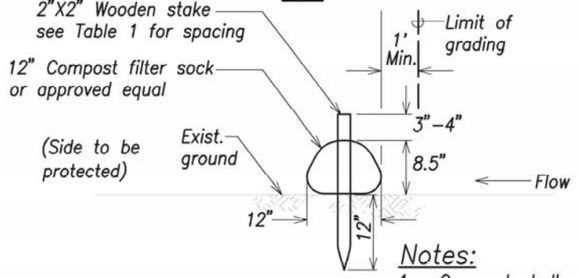


SECTION

CONCRETE WASH-OUT BASIN DETAIL
NOT TO SCALE



PLAN



SECTION

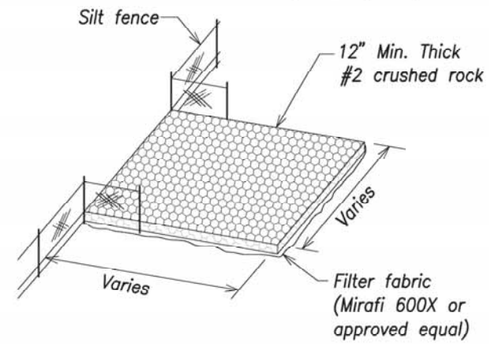
Notes:

1. Compost shall not contain biosolids and should be consistent with EPA guidelines as well as meet all local, state and federal quality requirements.
2. Contractor shall inspect compost filter socks when as required by the project SWPPP.

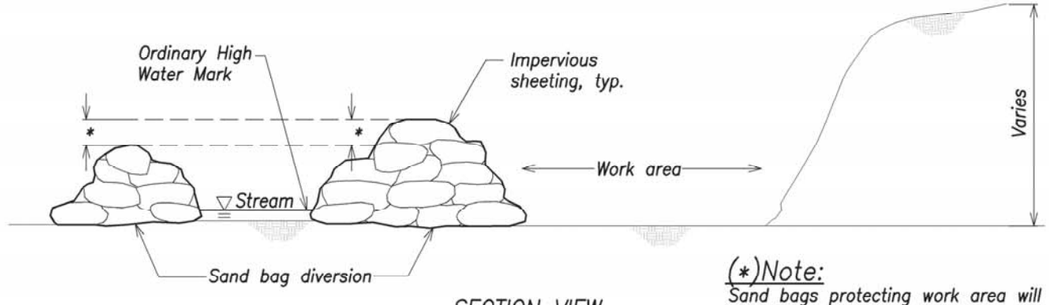
Table 1: Wooden stake anchor spacing

Slope	Anchor spacing
< 4:1	Not required
4:1 to 3:1	10' O.C.
> 3:1 to 2:1	5' to 10' O.C.
> 2:1	5' O.C.

COMPOST FILTER SOCK DETAIL
NOT TO SCALE



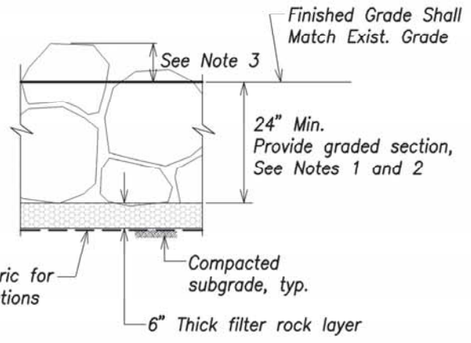
STABILIZED CONSTRUCTION ENTRANCE
Not To Scale



SECTION VIEW

SAND BAG DETAIL
Not To Scale

(*)Note:
Sand bags protecting work area will be constructed 1.5' higher than the opposite side to allow overflow of stream away from work area during high rainfall events.



Notes:

1. Riprap shall be basalt rock and consist of 6"ø average stone size, 12"ø maximum stone size.
2. Riprap gradation:
   D_{85} = 9"
   D_{50} = 6"
   D_{15} = 4"
3. 6" Max. from highest adjacent rock finish top.

TEMPORARY DUMPED RIPRAP
Not to Scale

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

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R. M. TOWILL CORPORATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EROSION & SEDIMENT CONTROL DETAILS
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

Scale: As Noted Date: April 2015

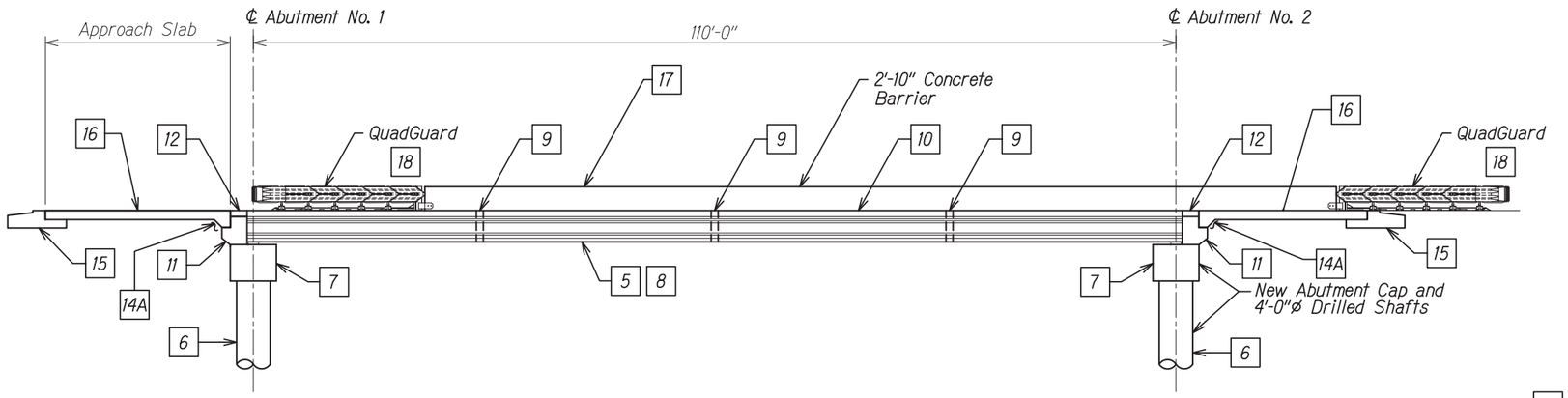
SHEET No. C-34 OF SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	62	148

To Kaneohe ←

→ To Kahuku



CONSTRUCTION SEQUENCE

Scale: 1/8" = 1'-0"

CONSTRUCTION SEQUENCE NOTES:

1. Order of construction sequence shall not be changed.
2. Each sequence stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the sequence stage is complete, and may direct the Contractor to stop work on a sequence stage to complete work on the preceeding sequence stage.
3. Contractor shall submit overweight vehicular details for approval prior to their use.

LEGEND:

[#] Phase 1 Stages

CONSTRUCTION SEQUENCE ELEVATION

[1] Relocate existing utility lines.

[2] Construct trial and load test shafts. Perform load test.

[3] Install detour road and temporary bridge.

[4] Demolish existing bridge.

[5] Construct precast girders. (May be done concurrently with Stages 1 through 4.)

[6] Construct 4 ft diameter drilled shafts. Shaft numbers 1, 2, 3, 5, 6, 7.

[7] Cast Phase 1 drilled shaft cap beams, girder seats, and corbels for concrete encased ducts at least 7 days after the final drilled shaft concrete pour in Stage 6 or until the concrete in Stage 6 has attained a compressive strength of 4,500 psi, whichever occurs later.

[8] Erect Phase 1 precast girders at least 15 days after the concrete pour in Stage 7 or until the concrete in Stage 7 has attained a compressive strength of 5,000 psi, whichever occurs later. Place slush grout immediately prior to placement of precast girders.

[9] Construct Phase 1 intermediate diaphragms.

[10] Pour Phase 1 cast-in-place deck except areas over end beams and electrical duct encasement.

[11] Pour Phase 1 corbel and end beams to top of precast girder at least 30 days after the concrete pour in Stage 10. The concrete pour shall occur between midnight and 3:00 AM (3 hour window).

[12] Pour remainder of Phase 1 deck concrete a minimum of 24 hours after the concrete pour in Stage 11.

[13] Construct Phase 1 wing walls at least 8 days after the concrete pour in Stage 12 or after the concrete in Stage 12 has attained a compressive strength of 5,000 psi, whichever occurs later.

[14A] Backfill to Phase 1 limits and to bottom of approach slab at least 14 days after the concrete pour in Stage 13 or until the concrete in Stage 13 has attained a compressive strength of 5,000 psi, whichever occurs later. Maximum height difference of backfill between abutments shall not exceed 2 feet. Install concrete encased ducts behind abutments when backfill height is at the elevation of the bottom of the concrete encased electrical ducts. Continue backfilling after concrete for encased electrical ducts has attained its 28 day compressive strength.

[14B] Construct barrier wall.

[15] Construct Phase 1 sleeper slabs.

[16] Construct Phase 1 approach slabs.

[17] Construct mauka aesthetic railing, concrete barrier and fence wall.

[18] Install mauka quadguards.

[19] Install temporary barriers.

STEWART N. WILLIAMS
LICENSED PROFESSIONAL ENGINEER
No. 3908-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/16
SIGNATURE LIC. EXPIRATION
MITSUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE
PHASE 1
KAMEHAMEHA HIGHWAY
Kaipapau Stream Bridge Replacement
Federal Aid Proj. No. BR-083-1(48)

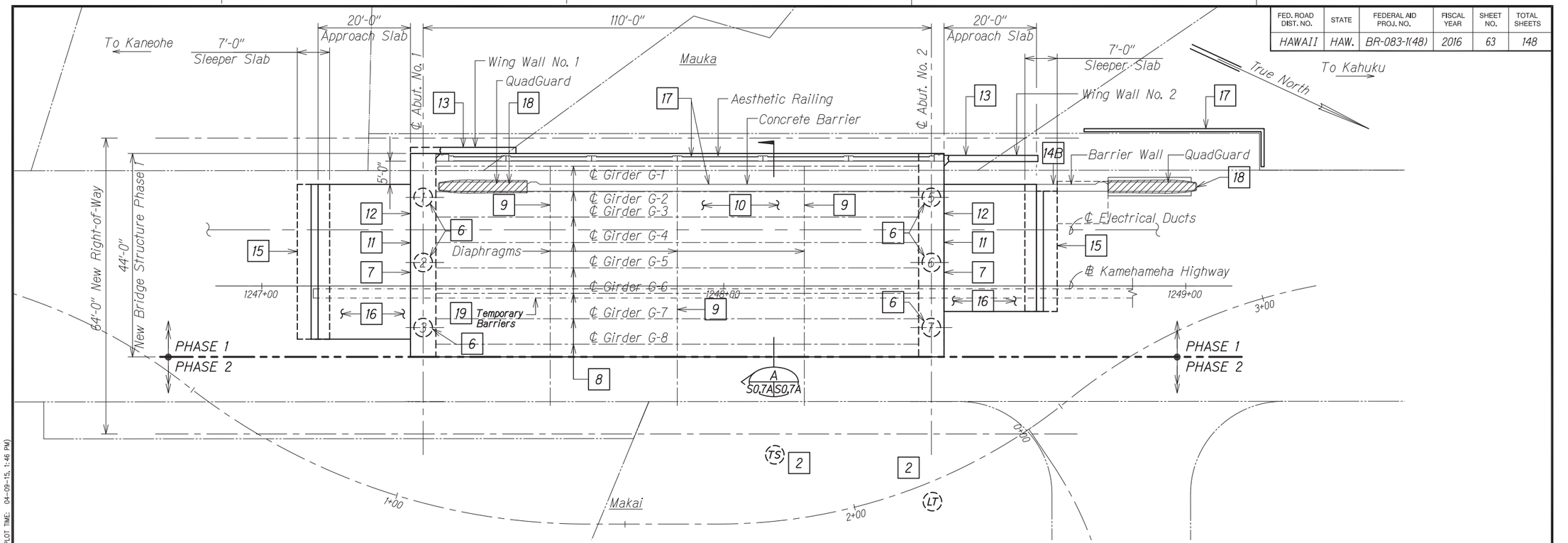
Scale: As Noted Date: April 2015

SHEET No. S0.7 OF 12 SHEETS

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

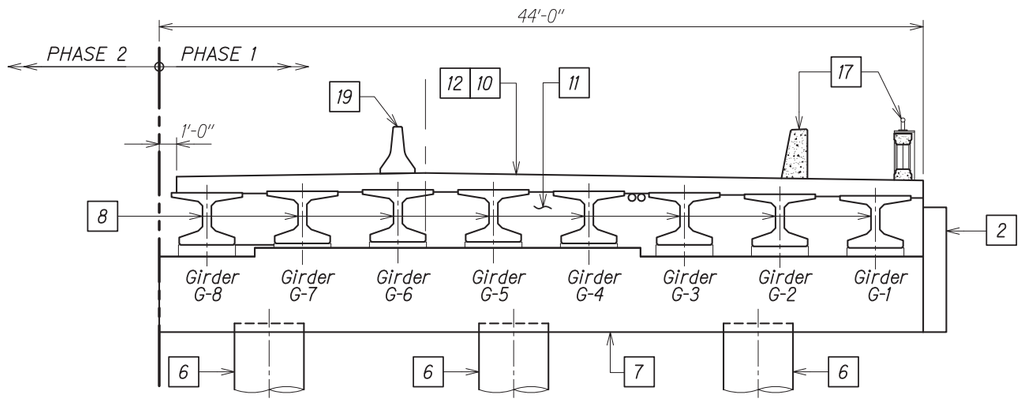
DRAWING NAME: K:\VERBATIM 12-10-14\BRIDGE\K A I 15-4-8\15-4-9 SW CADD PLOT\---1BI SW CADD 2015-04-10\KSB-S007.DWG PLOT TIME: 04-09-15, 10:52 AM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	63	148



PROPOSED CONSTRUCTION SEQUENCE PLAN (PHASE 1)

Scale: 3/32" = 1'-0"



CONSTRUCTION SEQUENCE (PHASE 1)

Scale: 1/4" = 1'-0"

A S0.7A | S0.7A

LEGEND:

- # — Construction Sequence Stage
- (#) — Drilled Shaft ID
- (TS) — Trial Shaft
- (LT) — Load Test Shaft

STEWART N. WILLIAMS — LICENSED PROFESSIONAL ENGINEER — No. 3908-S — HAWAII, U.S.A.

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4/30/16
SIGNATURE — LIC. EXPIRATION
MITSUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE PHASE 1

KAMEHAMEHA HIGHWAY
Kaipapau Stream Bridge Replacement
Federal Aid Proj. No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. S0.7A OF 12 SHEETS

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

DRAWING NAME: K:\VERBATIM 12-10-14\B R I D G E\K A I 15-4-8\15-4-9 SW CADD PLOT\---1BI SW CADD 2015-04-10\KSB-S007A.DWG PLOT TIME: 04-09-15, 1:46 PM)

KAIPAPAU STREAM BRIDGE REPLACEMENT – OVERALL CONSTRUCTION SEQUENCE

			References								
	Structural Construction Stage	Description	Civil	Electrical	Geotech.	Structural	Waterline Work	Exist Bridge Open	Detour Open	Detour Off Peak Lane Closures Anticipated	Remarks
	Prior to Site Mobilization for Demolition	1. Prior to Site Mobilization, the Contractor shall submit required BMP's and other Municipal and National permit applications as indicated in the project Plans, Special Provisions and Specifications. 2. The Contractor shall submit Prefabricated Steel Beam Bridge Structural Computations and Erection drawings to the Owner for Review and Approval Prior to Fabrication.	Civil Sequence See C-10. See Civil 1			Structural Sequence S0.7,S0.7A, S0.8,S0.8A		Exist Bridge Open to Traffic			
	1	1. Install approved BMP measures. 2. Relocate Existing overhead utility lines. 3. Install temporary 12" fusible PVC waterline on existing (upstream) pedestrian walkway.	C-15,16,17, C-20, C-28, see Civil 2	E-8, E-9, E-10, E-11			Temporary 12" fusible PVC waterline				
	2	1. Construct Trial and Load Test shafts * 2. Perform Load Test. Demobilize drilled shaft equipment off site.	See Civil 3		Special drilling equipment*	S1.1, S8.3					*Special Provisions Section 511
	3	1. Install Detour Pier, Abutments and Temporary Bridge. Construct Civil Phase 1 waterline Improvements C-29; C-30. 2. Construct Detour Approach Retaining Wall, Fills and Roadway – chainlink fence see C-23. 3. Construct Civil Phase 2 waterline improvements–see C-29; C-31.	See Civil 4 C-23, C-29, C-30, C-31, C-32	E-10, E-11, E-15	Excavation Bracing–Spec. Prov. 205*	S12.1, S12.2 S12.3, S12.4 S12.5	Civil Phase 1 & 2 (W16) waterline work–see C-29, C-30.		Detour Open to Traffic		*Excavation Bracing anticipated upstream of detour.
	4	1. Relocate existing water line W12 (prior to existing bridge demolition) – see C-20, C-28. 2. Demolish existing bridge.	See Civil 5 C-20, C-28		Excavation Bracing–Spec. Prov. 205*	S2.1, S2.2	Relocate Exist W12 waterline C-20, C-28.	Exist Bridge Demolition			*Exc. Bracing upstream of existing.
	5	Construct precast girders. (May be done concurrently with stages 1 through 4.)	See Civil 6			S4.x series					
	6	Construct 4 ft. diameter drilled shafts. 1, 2, 3, 5, 6, 7. *			Special drilling equipment*	S1.1,S1.2,S6.1, S6.2,S8.1,S8.2					*Special Provisions Section 511
STRUCTURAL PHASE 1	7	Cast phase 1 drilled shaft cap beams, girder seats, and corbels for concrete encased ducts at least 7 days after the final drilled shaft concrete pour in stage 6 or until the concrete in stage 6 has attained a compressive strength of 4,500 psi, whichever occurs later.			Structure – Excavation Bracing per Spec Prov 205	S0.7, S0.7A, S6.x series					Marks 7 through 18 are PHASE 1. Structural see 20 for PHASE 2
	8	Erect phase 1 precast girders at least 15 days after the concrete pour in stage 7 or until the concrete in stage 7 has attained a compressive strength of 5,000 psi, whichever occurs later. Place slush grout immediately prior to placement of precast girders.			Required at Makai Limit	S0.7, S0.7A, S1.2, S1.3, S6.x series					
	9	Construct phase 1 intermediate diaphragms.				S0.7,S0.7A, S5.x series					
	10	Pour phase 1 cast-in-place deck except areas over end beams and duct encasement.				S0.7,S0.7A S1.6,S3.1,S3.2					
	11	Pour phase 1 end beams to top of precast girder and corbel at least 30 days after the concrete pour in Stage 10. The concrete pour shall occur between midnight and 3:00 AM (3 hours).				S0.7,S0.7A, S6.x series					Concrete Placement At Night
	12	Pour remainder of phase 1 deck concrete a minimum of 24 hours after the concrete pour in stage 11.									
	13	Construct phase 1 wing walls at least 8 days after the concrete pour in stage 12 or after the concrete in stage 12 has attained a compressive strength of 5,000 psi, whichever occurs later.				S0.7,S0.7A, S7.x series				Lane Closure Duration Approx 3 weeks each abutment with Further Lane Closure Duration Approx 2 weeks each approach	
	14	Backfill to phase 1 limits and to bottom of approach slab and at least 14 days after the concrete pour in Stage 13 or until the concrete in Stage 13 has attained a compressive strength of 5,000 psi, whichever occurs later. Maximum height difference of backfill between abutments shall not exceed 2 feet. Install concrete encased ducts when backfill height is at the elevation of bottom of concrete encased ducts. Continue backfilling after concrete for encased ducts has attained its 28 day compressive strength.		Signal Corps Work E-1, E-5 E-12, E-13, E-16		S0.7,S0.7A,S6.x S9.x					
	15	Construct phase 1 sleeper slabs.									
	16	Construct phase 1 approach slabs.		Signal Corps Work E-1, E-5 E-12,E-13,E-16							
	17	Construct mauka aesthetic railings and concrete barrier.									
	18	Install mauka quadguards.									
	19	Install Temporary Barriers and Temporary Striping on PHASE 1 of New Bridge.	See Civil for Barriers								

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	64	148

CONSTRUCTION SEQUENCE NOTES:

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2. Each sequence stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the sequence stage is complete, and may direct the Contractor to stop work on a sequence stage to complete work on the preceeding sequence stage.
3. Contractor shall submit overweight vehicular details for approval prior to their use.
4. Construction shall be conducted such that no construction debris, wash water or other contaminants shall enter the Stream Waters.
5. Closing of the Prefabricated Steel Beam Bridge Structure:
   (a) If for any reason or at any time, the Prefabricated Beam Bridge Structure's ability to safely carry traffic is in question, the Contractor shall be responsible for immediately taking the actions necessary to protect the public by closing, repairing and reopening the Prefabricated Steel Truss Bridge.
   (b) When the Contractor closes the Prefabricated Steel Beam Bridge Structure, the Contractor shall immediately notify the Engineer and the appropriate Law Enforcement Agency.
   (c) Closing of the Prefabricated Steel Beam Bridge shall be included as incidental to Maintenance of Traffic Control.
6. The Contractor shall phase 16 inch waterline (W16) to allow no more than 8 hours of down time. Liquidated Damages of $100,000 per day will be imposed if the Contractor exceeds the 8 hour restriction.

ORIGINAL PLAN
SURVEY PLOTTED BY — DATE
DRAWN BY — BSY
TRACED BY — MC
DESIGNED BY
QUANTITIES BY
CHECKED BY
NOTE BOOK — No.

STEWART N. WILLIAMS LICENSED PROFESSIONAL ENGINEER No. 3908-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/16
SIGNATURE — LIC. EXPIRATION
MITSUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL CONSTRUCTION SEQUENCE
STRUCTURAL PHASE 1
Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR-083-1(48)

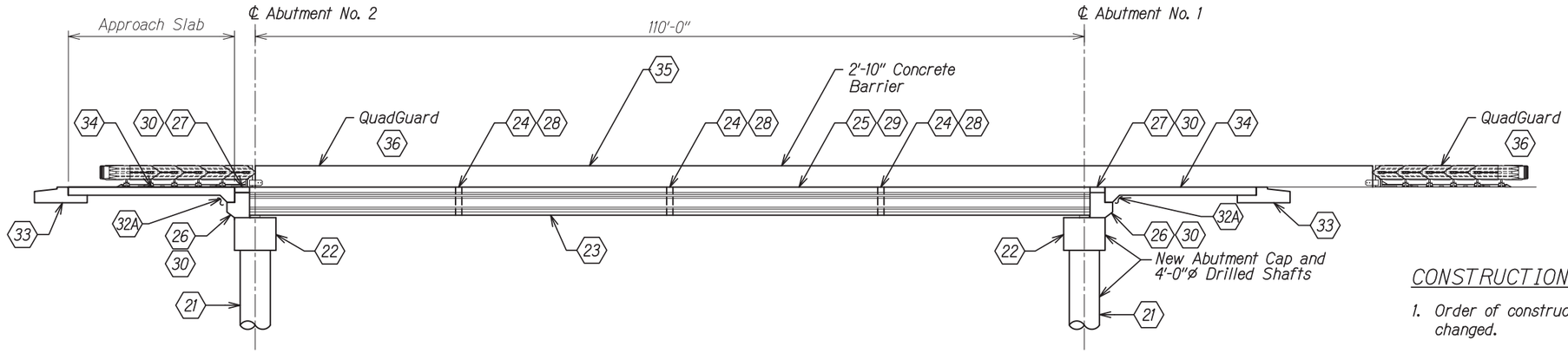
Scale: AS NOTED — Date: April 2015

SHEET No. S0.7B OF 12 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	65	148

To Kaneohe ← → To Kahuku



CONSTRUCTION SEQUENCE

Scale: 1/8" = 1'-0"

CONSTRUCTION SEQUENCE NOTES:

1. Order of construction sequence shall not be changed.
2. Each sequence stage shall be completely finished before proceeding to the next stage unless otherwise noted. The Engineer will be the sole judge of whether the sequence stage is complete, and may direct the Contractor to stop work on a sequence stage to complete work on the preceeding sequence stage.
3. Contractor shall submit overweight vehicular details for approval prior to their use.

LEGEND:

(#) Phase 2 Stages

CONSTRUCTION SEQUENCE ELEVATION

(20) Partially remove temporary bridge as required to construct Phase 2 of Kaipapau Stream Bridge

(21) Construct 4 ft diameter shafts – Shaft nos. 4 and 8.

(22) Cast Phase 2 drilled shaft cap beams, girder seats, and corbels for concrete jacketed waterline at least 7 days after the final drilled shaft concrete pour in Stage 21 or until the concrete in Stage 21 has attained a compressive strength of 4,500 psi, whichever occurs later.

(23) Erect Phase 2 precast girders at least 15 days after the concrete pour in Stage 22 or until the concrete in Stage 22 has attained a compressive strength of 5,000 psi, whichever occurs later. Place slush grout immediately prior to placement of precast girders.

(24) Construct Phase 2 intermediate diaphragms between girders G-9 and G-10, install dowels connecting G-10 and G-11, and install W16 with light-weight concrete jacket between girders G-10 and G-11.

(25) Pour Phase 2 cast-in-place deck except areas over end beams and closure pour.

(26) Pour Phase 2 corbel and end beams (except at closure pour) to top of precast girder at least 30 days after the concrete pour in Stage 25. The concrete pour shall occur between midnight and 3:00 AM (3 hour window).

(27) Pour remainder of Phase 2 deck concrete (except at closure pour) a minimum of 24 hours after the concrete pour in Stage 26.

(28) Pour Phase 2 intermediate diaphragms between girders G-8 and G-9 at least 4 days after the concrete pour in Stage 27.

(29) Pour Phase 2 cast-in-place deck closure except over end beams. Material for cast-in-place deck closure pour shall be VESLMC. (See Special Provisions).

(30) Pour Phase 2 corbel and end beam closure from top of drilled shaft cap beam to top of deck. Material for end beam closure pour shall be VESLMC. (See Special Provisions).

(31) Construct Phase 2 wing walls at least 8 days after the concrete pour in Stage 30 or after the concrete in Stage 30 has attained a compressive strength of 5,000 psi, whichever occurs later.

(32A) Backfill to bottom of approach slab at least 14 days after the concrete pour in Stage 31 or until the concrete in stage 31 has attained a compressive strength of 5,000 psi, whichever occurs later. Maximum height difference of backfill between abutments shall not exceed 2 feet. Install jacketed waterline behind abutments when backfill height is at the elevation of the bottom of the jacketed waterline. Continue backfilling after concrete for jacketed waterline has attained its 28 day compressive strength.

(32B) Construct Barrier Wall.

(33) Construct Phase 2 sleeper slabs.

(34) Construct Phase 2 approach slabs.

(35) Constuct Makai aesthetic railing and concrete barrier.

(36) Install Makai quadguards.

(37) Remove remainder of temporary bridge.

STEWART N. WILLIAMS * LICENSED PROFESSIONAL ENGINEER No. 3908-S * HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/16
SIGNATURE LIC. EXPIRATION
MITSUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE
PHASE 2
KAMEHAMEHA HIGHWAY
Kaipapau Stream Bridge Replacement
Federal Aid Proj. No. BR-083-1(48)

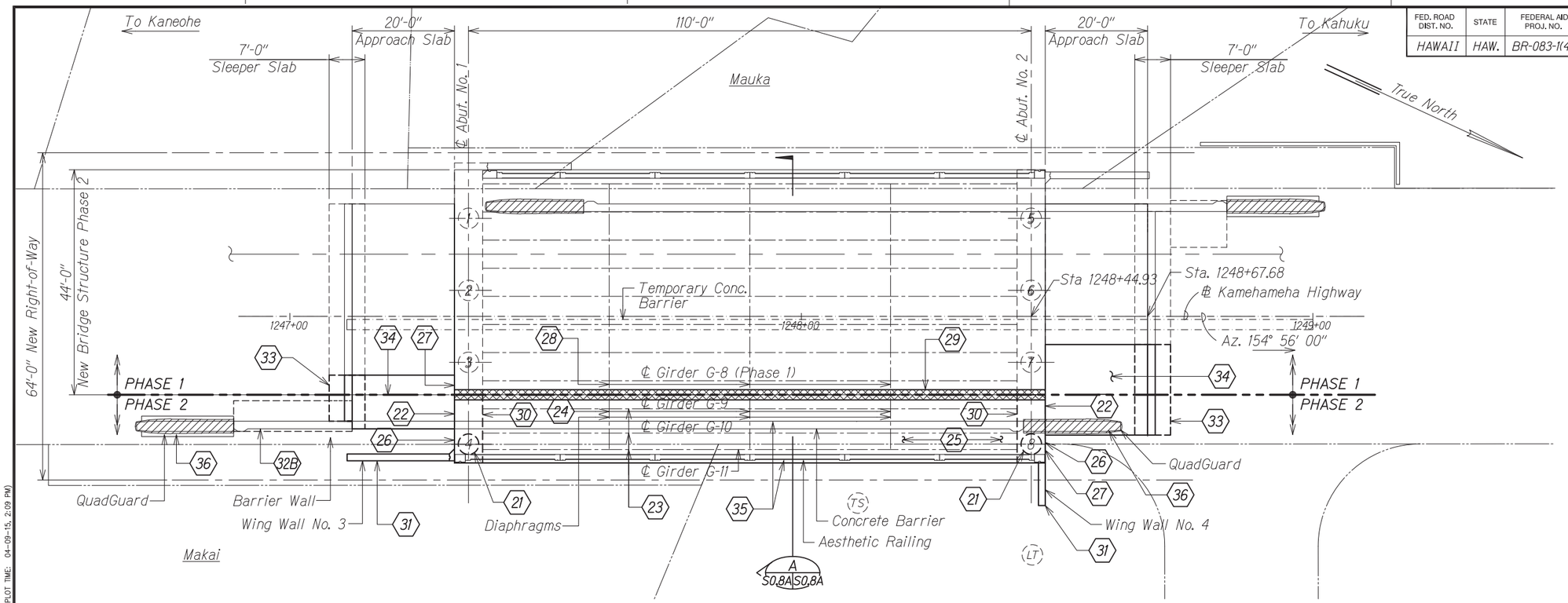
Scale: As Noted Date: April 2015

SHEET No. S0.8 OF 12 SHEETS

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

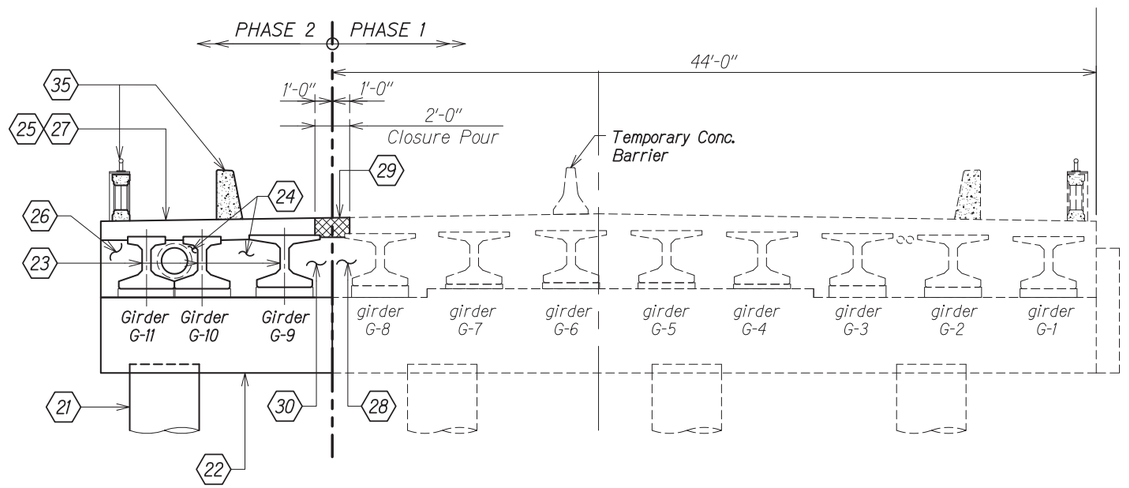
DRAWING NAME: K:\VERBATIM 12-10-14\B R I D G E\K A I 15-4-8\15-4-9 SW CADD PLOT\---1BI SW CADD 2015-04-10\KSB-S008.DWG PLOT TIME: 04-09-15, 11:03 AM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-083-1(48)	2016	66	148



PROPOSED CONSTRUCTION SEQUENCE PLAN (PHASE 2)

Scale: 3/32" = 1'-0"



CONSTRUCTION SEQUENCE (PHASE 2)

A S6.3 S6.3

Scale: 1/4" = 1'-0"

LEGEND:

- (#) Construction Sequence Stage
- (#) Drilled Shaft ID
- (TS) Trial Shaft
- (LT) Load Test Shaft
- Closure Pour

STEWART N. WILLIAMS
LICENSED PROFESSIONAL ENGINEER
No. 3908-S
HAWAII, U.S.A.

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4/30/16
SIGNATURE LIC. EXPIRATION
MITSUNAGA & ASSOCIATES, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE
PHASE 2

KAMEHAMEHA HIGHWAY
Kaipapau Stream Bridge Replacement
Federal Aid Proj. No. BR-083-1(48)

Scale: As Noted Date: April 2015

SHEET No. S0.8A OF 12 SHEETS

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

DRAWING NAME: K:\VERBATIM 12-10-14\B R I D G E\K A I 15-4-8\15-4-9 SW CADD PLOT\---1BI SW CADD 2015-04-10\KSB-S008A.DWG PLOT TIME: 04-09-15, 2:09 PM)

KAIPAPAU STREAM BRIDGE REPLACEMENT – OVERALL CONSTRUCTION SEQUENCE

Structural Construction Stage		Description	References: Civil	Electrical	Geotech.	Structural	Waterline Work	Exist Bridge Open	Detour Open	Detour Off Peak Lane Closures Anticipated	Remarks
	20	1. Open PHASE I of New Bridge to traffic. Close Temporary Bridge and Detour Roadway to traffic. 2. Remove Mauka portion of Temporary Bridge Only (Remainder to remain in place to support construction equipment for construction of PHASE 2 portion of New Bridge and to support temporary W16 until Final W16 is constructed).				S0.8, S0.8A		PHASE I of New Bridge Open to Traffic to allow Detour Closure	Close Detour and Remove Limited Portion of Temporary Bridge	Not Applicable	Close Detour; Open PHASE 1 of New Bridge: Start Construction of PHASE 2 of New Bridge
STRUCTURAL PHASE 2	21	Construct 4 ft. diameter drilled shafts – Shaft nos. 4 and 8.	See Civil 6		Special drilling equipment*	S1.1, S1.2, S6.1, S6.2, S8.1, S8.2			Detour Closed		*Special Provisions Section 511
	22	Cast Phase 2 drilled shaft cap beams, girder seats, and corbels for concrete jacketed waterline at least 7 days after the final drilled shaft concrete pour in stage 21 or until the concrete in stage 21 has attained a compressive strength of 4,500 psi, whichever occurs later.			Structure Excavation Bracing per Spec for 205 Required at Approaches.	S0.8, S0.8A, S6.x series					Special Provisions Section 205
	23	Erect Phase 2 precast girders at least 15 days after the concrete pour in stage 22 or until the concrete in stage 22 has attained a compressive strength of 5,000 psi, whichever occurs later. Place slush grout immediately prior to placement of precast girders.				S0.8, S0.8A, S1.2, S1.3, S6.x series	Civil Phase 3 (W16) waterline improvements seeC–29,C32				
	24	Construct Phase 2 intermediate diaphragms between girders G–9 and G–10 and light–weight W16 concrete jacket between girders G–10 and G–11.	C–29, C–30			S0.8,S0.8A, S5.x series					
	25	Pour Phase 2 cast–in–place deck except areas over end beams and closure pour.				S0.8,S0.8A S1.6,S3.1,S3.2					
	26	Pour Phase 2 end beams (except at closure pour) to top of precast girder and corbel at least 30 days after the concrete pour in Stage 25. The concrete pour shall occur between midnight and 3:00 AM (3 hours).				S0.8,S0.8A, S6.x series					Concrete Placement At Night
	27	Pour remainder of Phase 2 deck concrete (except at closure pour) a minimum of 24 hours after the concrete pour in stage 25.									
	28	Pour Phase 2 intermediate diaphragms between girders G–8 and G–9 at least 4 days after the concrete pour in stage 27.									
	29	Pour Phase 2 cast–in–place deck closure except over end beams. Material for cast–in–place deck closure pour shall be VESLMC.									
	30	Pour Phase 2 end beams closure from top of drilled shaft cap beam to top of deck. Material for end beam closure pour shall be VESLMC.									
	31	Construct Phase 2 wing walls at least 8 days after the concrete pour in stage 30 or after the concrete in stage 30 has attained a compressive strength of 5,000 psi, whichever occurs later.				S0.8,S0.8A, S7.x series					
	32	Backfill to bottom of approach slab at least 14 days after the concrete pour in Stage 31 or until the concrete in Stage 31 has attained a compressive strength of 5,000 psi, whichever occurs later. Maximum height difference of backfill between abutments shall not exceed 2 feet. Install jacketed waterline when backfill height is at the elevation of bottom of the jacketed waterline. Continue backfilling after concrete for jacketed waterline has attained its 28 day compressive strength.				S0.8,S0.8A,S6.x S9.x					
	33	Construct Phase 2 sleeper slabs.									
	34	Construct Phase 2 approach slabs.									
	35	Construct Makai aesthetic railings and concrete barrier.									
	36	Install Makai guadguards. Remove Detour; construct stream hardening. Remove Temporary Barriers at New Bridge. Open Phase 1 and Phase 2 of New Bridge to traffic.	See Civil 7 thru 12	Permanent Electrical Plan See E–12,E–13, E–14			Remove temp W16 at Closed Detour	PHASE I and PHASE 2 of New Bridge Open	Remove Remainder of Detour		

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR–083–1(48)	2016	67	148

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   (c) Closing of the Prefabricated Steel Beam Bridge shall be included as incidental to Maintenance of Traffic Control.
6. The Contractor shall phase 16 inch waterline (W16) to allow no more than 8 hours of down time. Liquidated Damages of $100,000 per day will be imposed if the Contractor exceeds the 8 hour restriction.

ORIGINAL PLAN | SURVEY PLOTTED BY | DATE
NOTE BOOK | DRAWN BY | BSY
No. | TRACED BY | WC
DESIGNED BY
QUANTITIES BY
CHECKED BY

STEWART N. WILLIAMS
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4/30/16
SIGNATURE | LIC. EXPIRATION
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STATE OF HAWAII
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HIGHWAYS DIVISION

OVERALL CONSTRUCTION SEQUENCE
STRUCTURAL PHASE 2

Kamehameha Highway
Kaipapau Stream Bridge Replacement
Federal Aid Project No. BR–083–1(48)

Scale: AS NOTED Date: April 2015

SHEET No. S0.8B OF 12 SHEETS

RMTC JOB NO. : 1–19548–0E