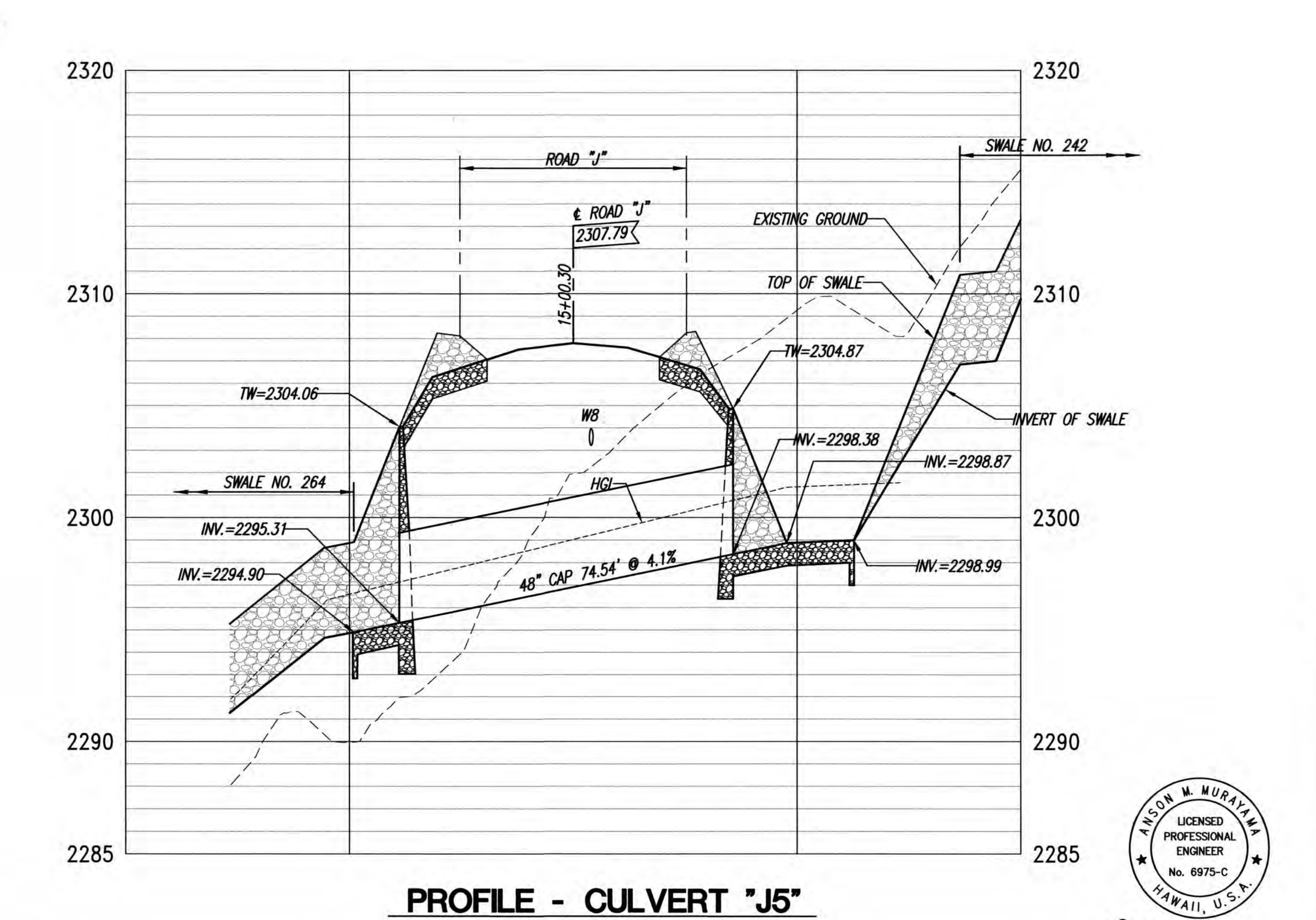
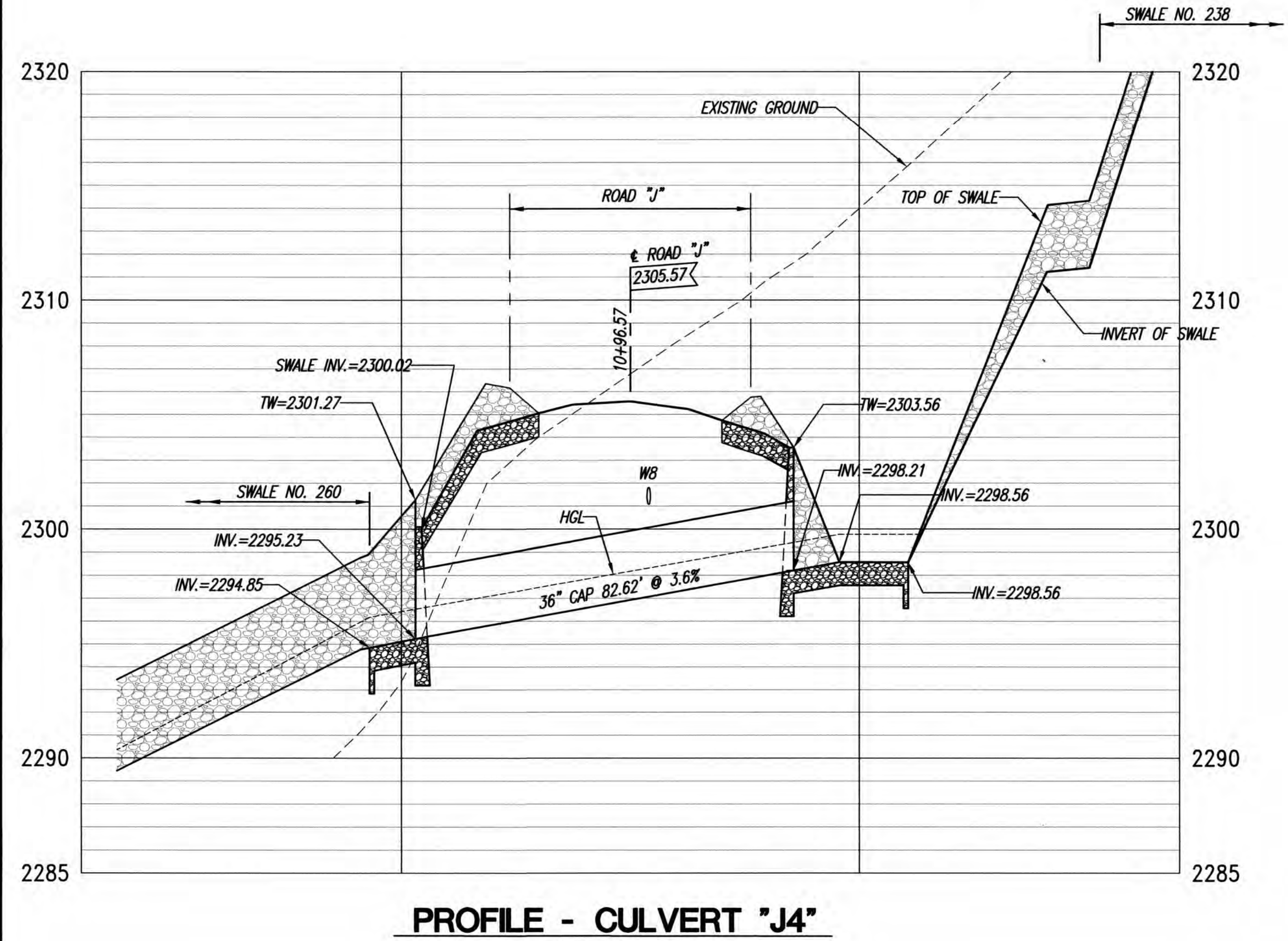
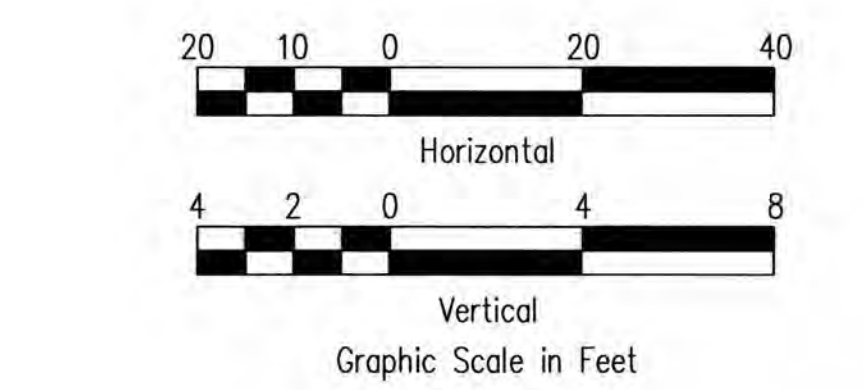


- LEGEND**
- 2500 --- LIMITS OF GRADING
 - 2450 --- EXISTING GROUND CONTOUR
 - 2450 --- FINISH GRADE CONTOUR
 - --- PROPERTY LINE
 - --- GUARDRAIL
 - --- CATTLE GATE
 - WB --- NEW WATER LINE
 - < ---> --- TYPE "A" SERVICE LATERAL
 - > ---> --- TYPE "A-1" SERVICE LATERAL
 - (216) --- LOT NUMBER



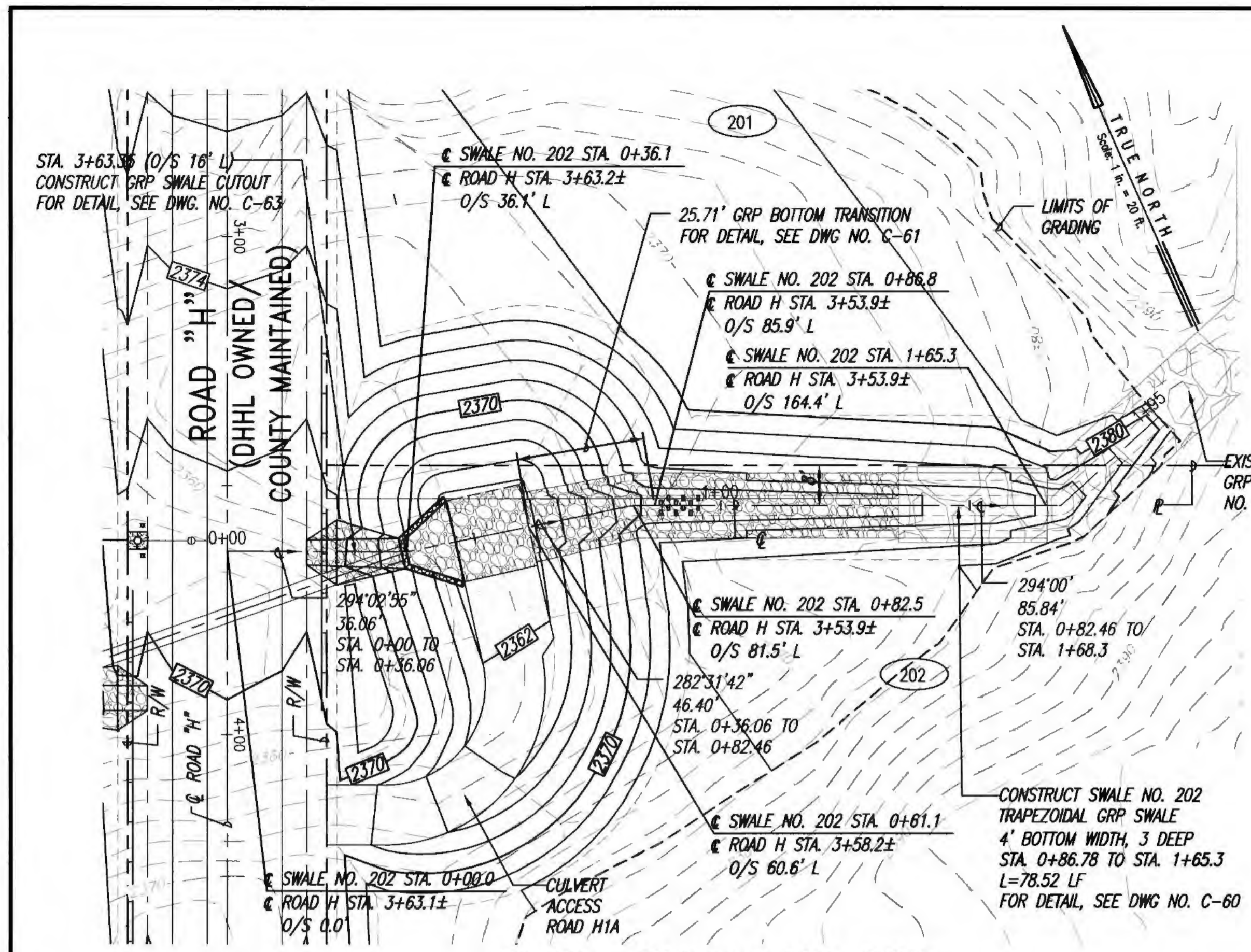
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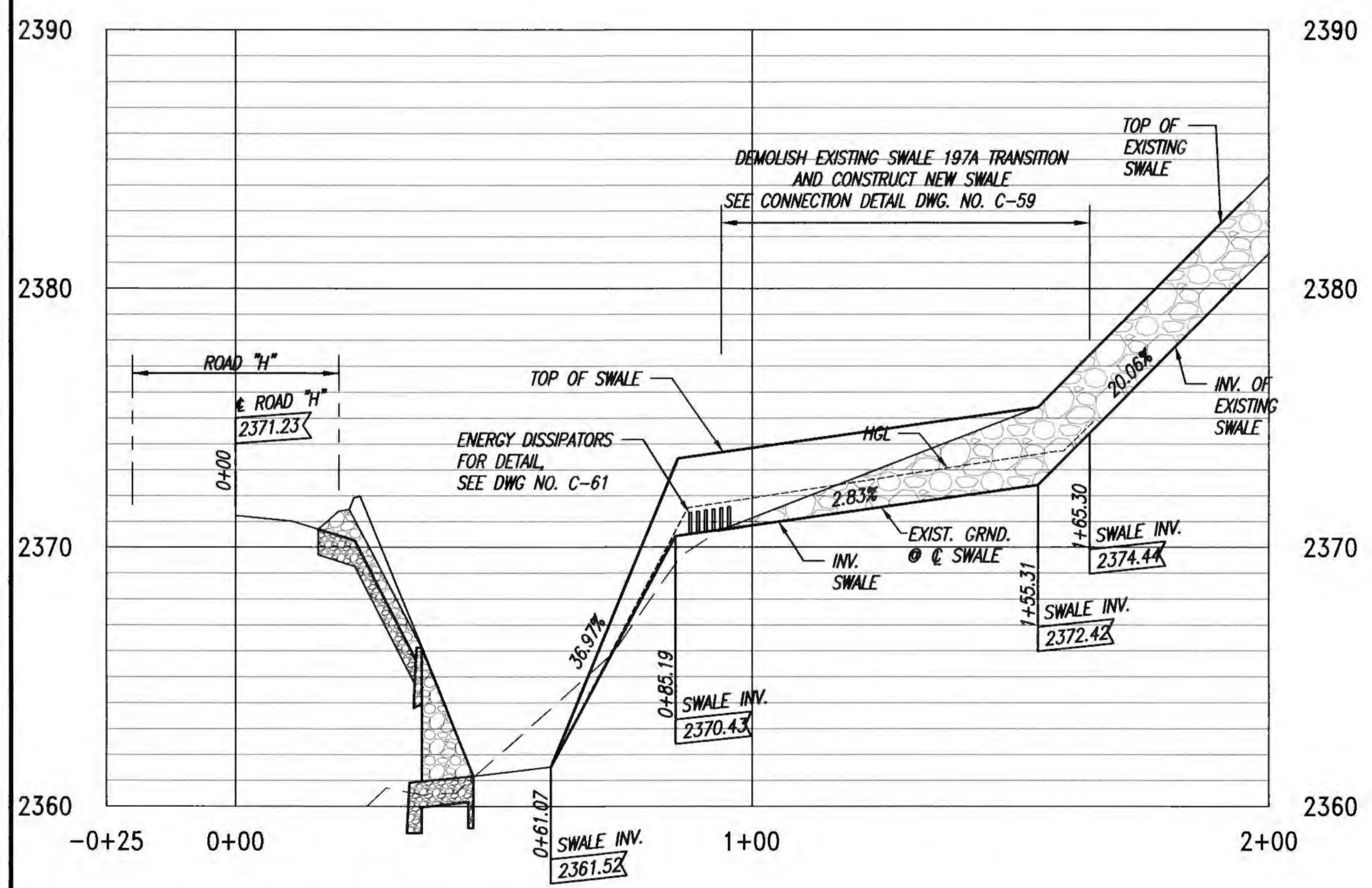
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN AND PROFILE DRAIN CULVERTS "J4" & "J5"

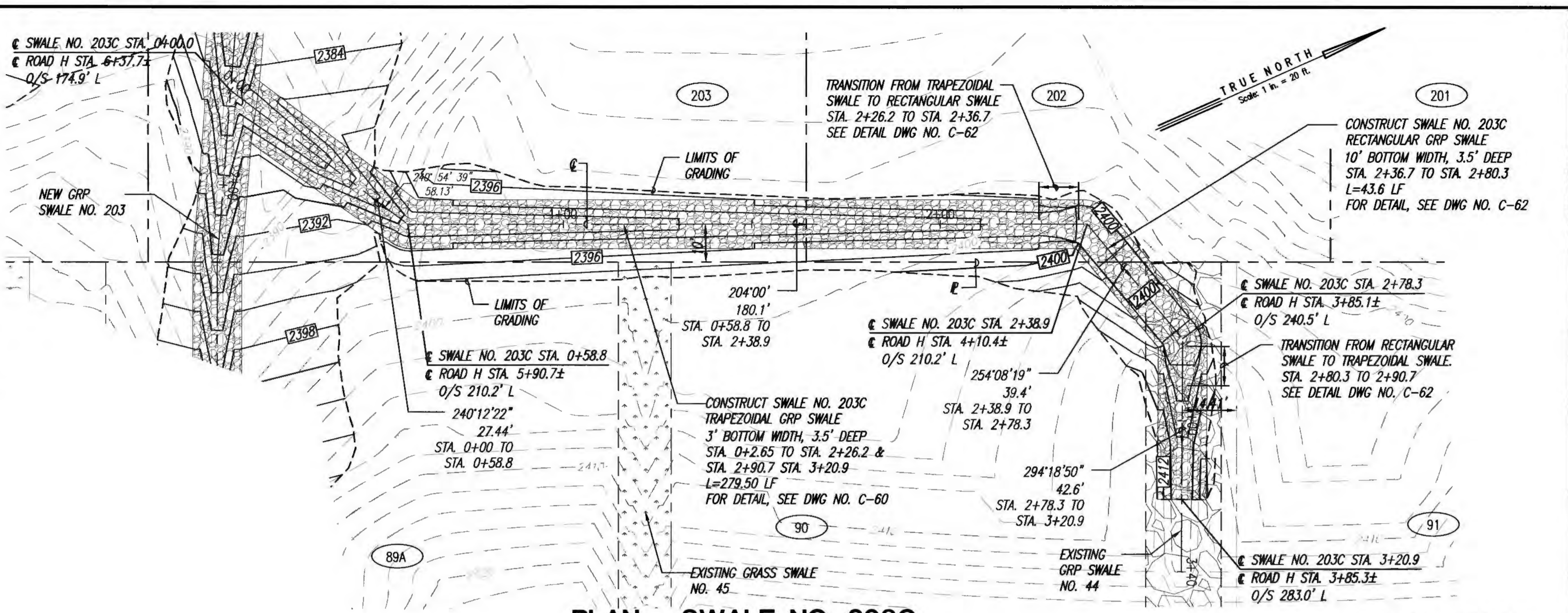
DRAWN BY: HW1 | ENGINEER: HW1, FJC | CHECKED BY: AMM



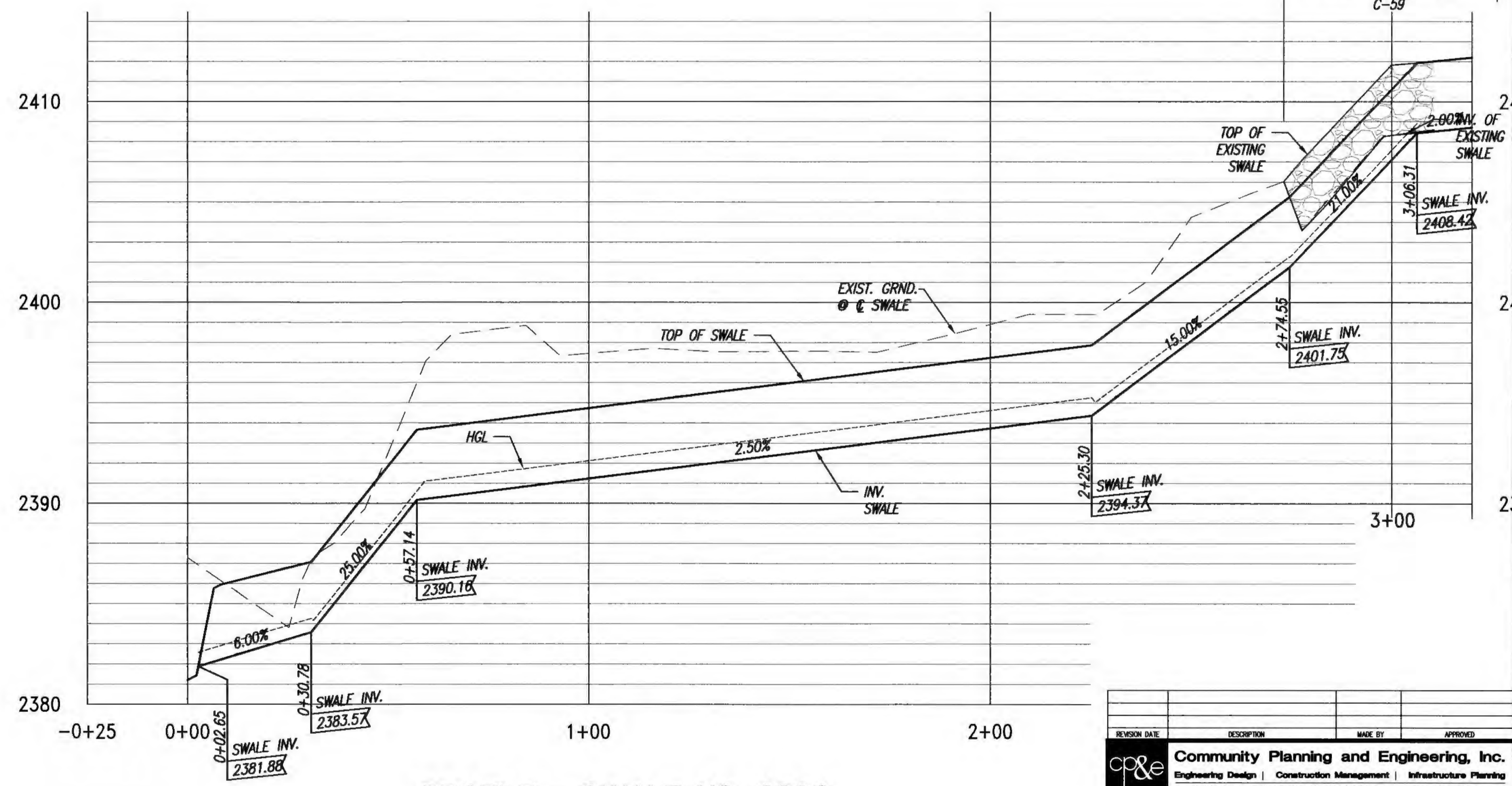
PLAN - SWALE NO. 202
SCALE: 1"=20'



PROFILE - SWALE NO. 202
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

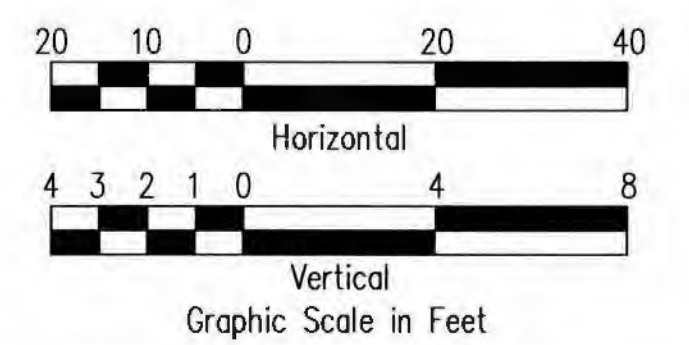
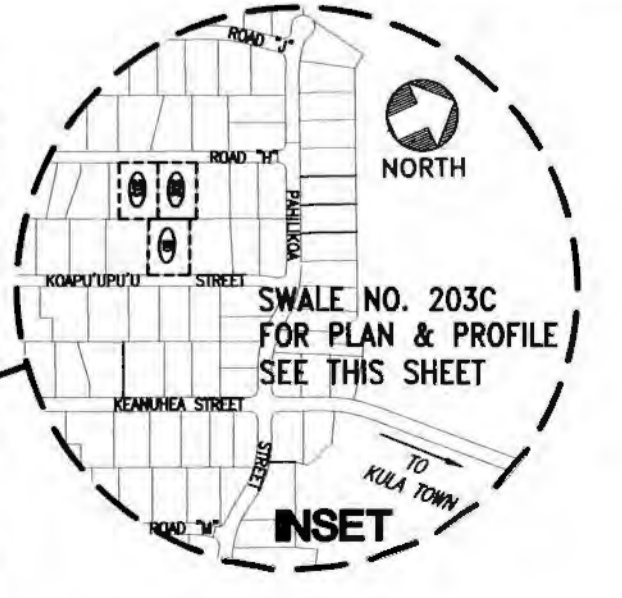
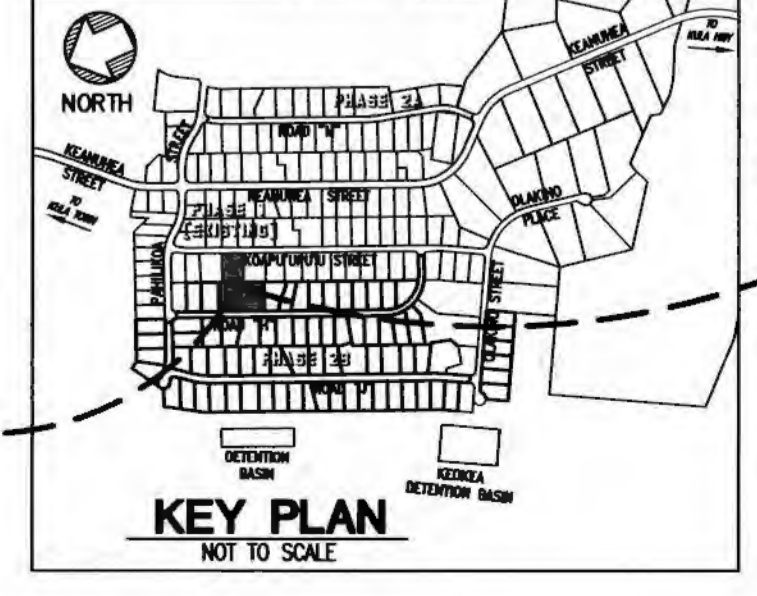


PLAN - SWALE NO. 203C
SCALE: 1"=20'



PROFILE - SWALE NO. 203C
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002-014



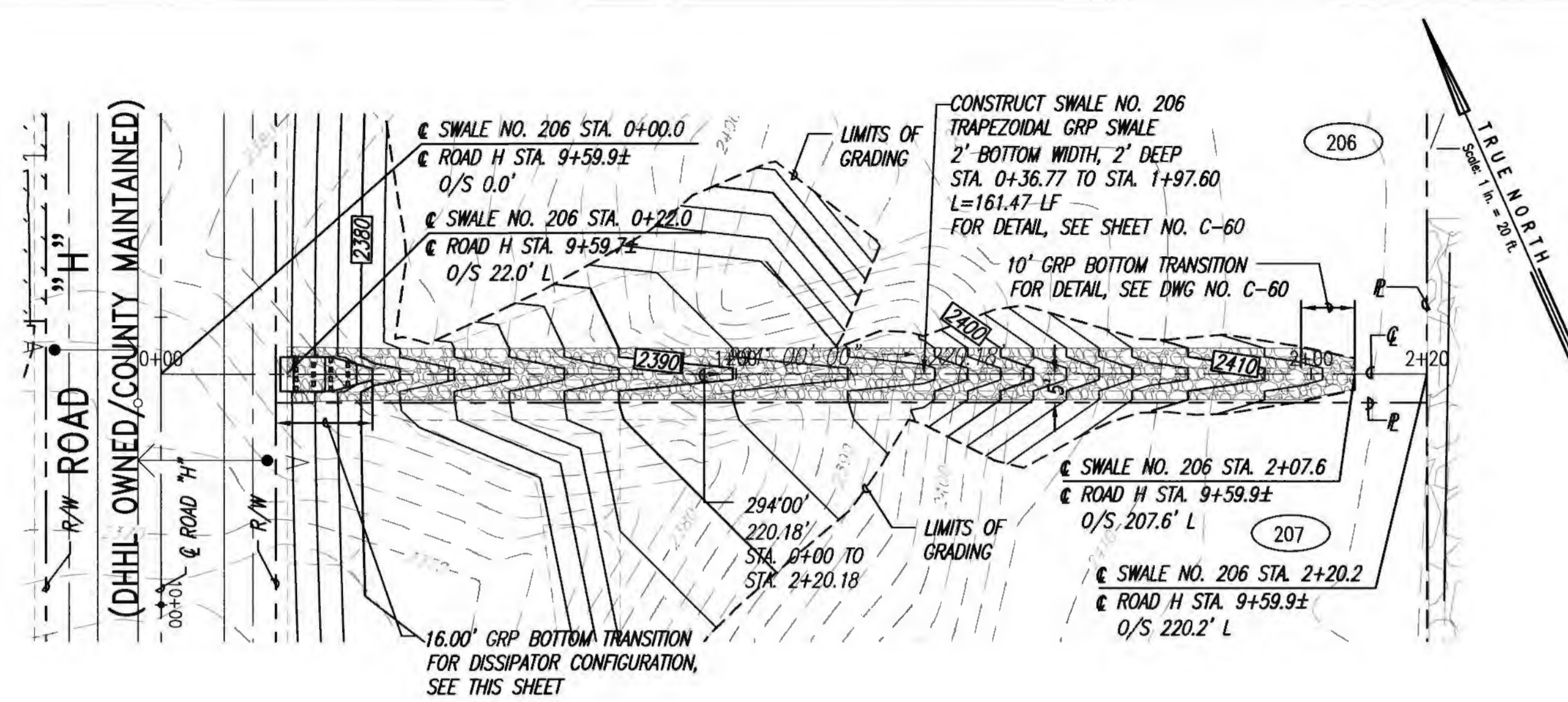
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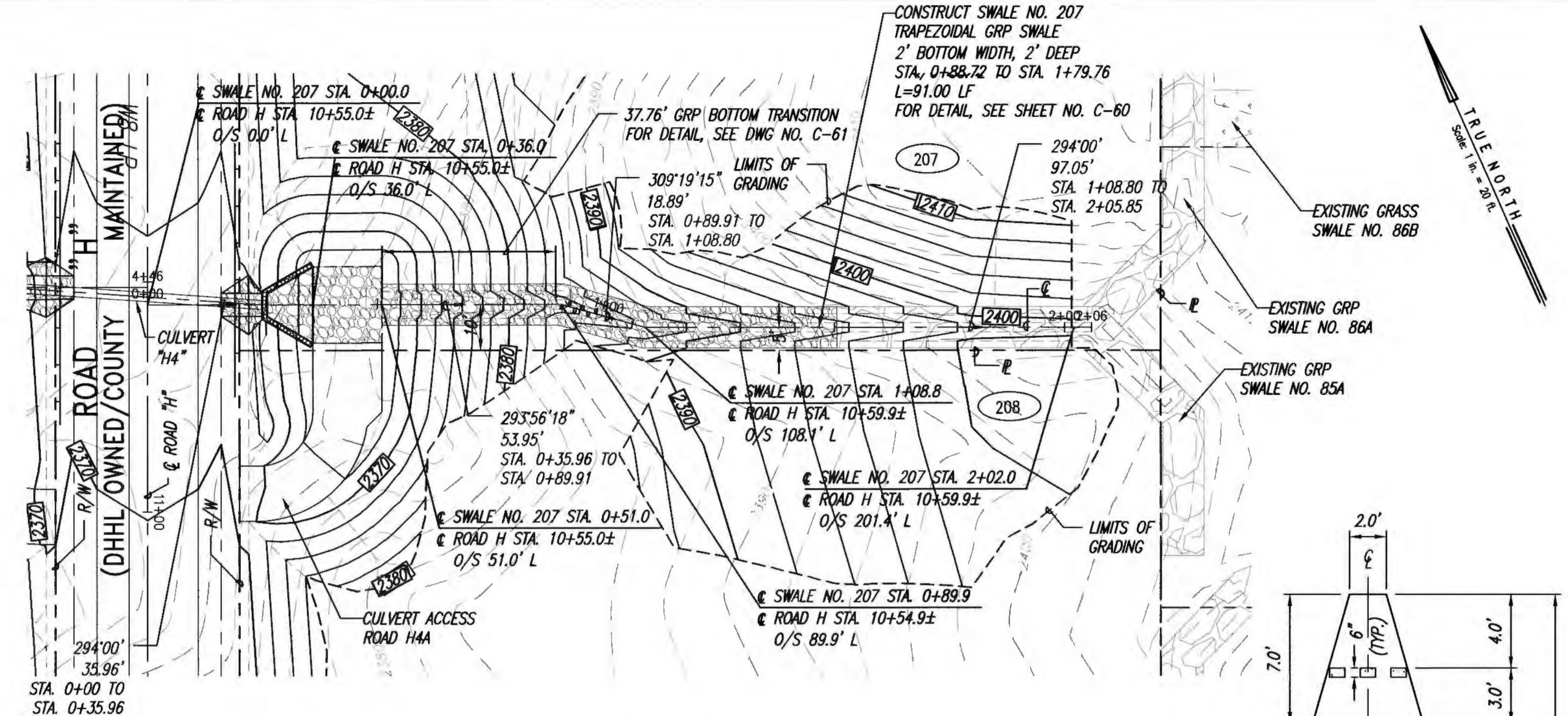
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

PLAN AND PROFILE SWALE NO. 202 & 203C

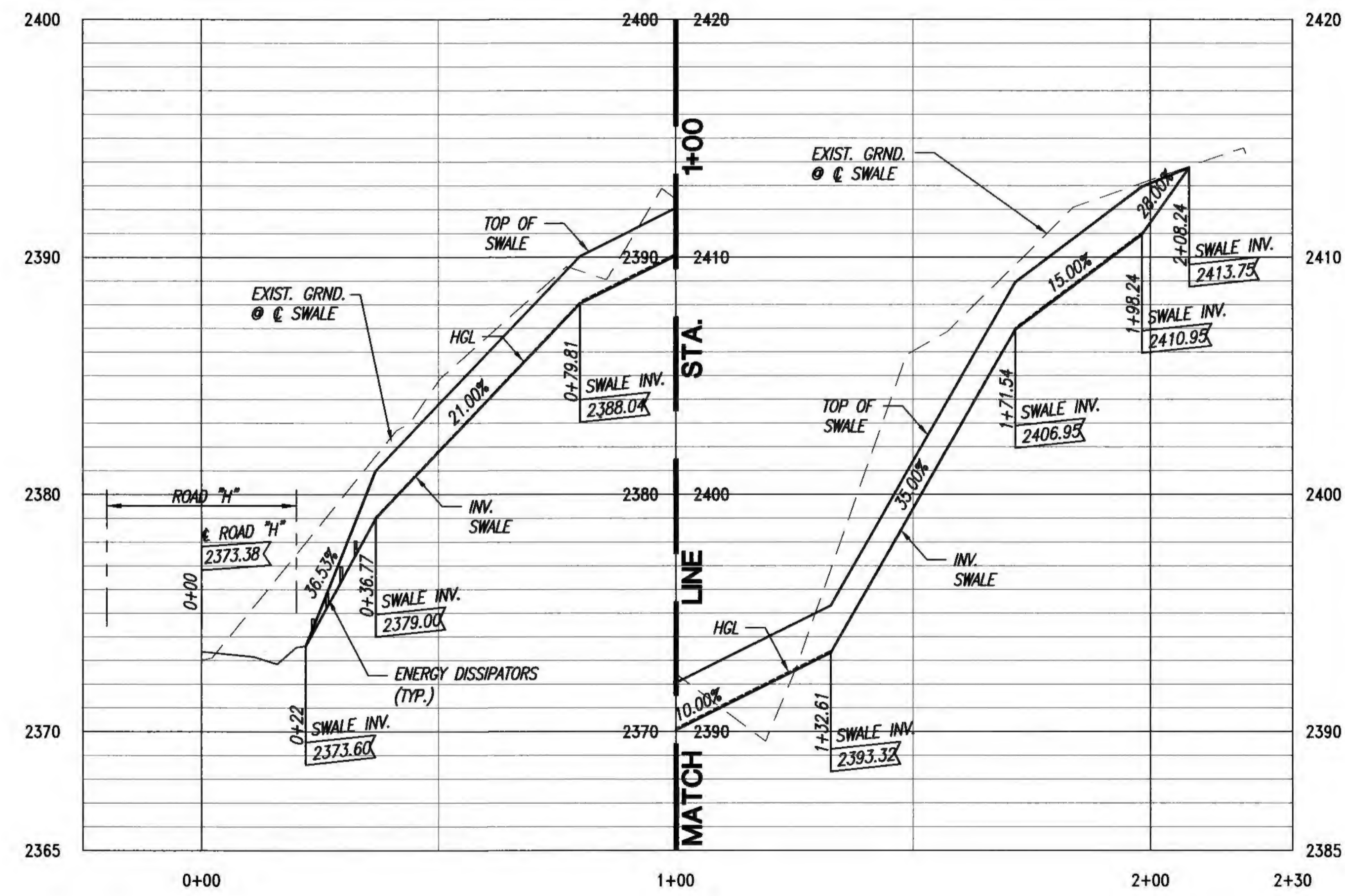
DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



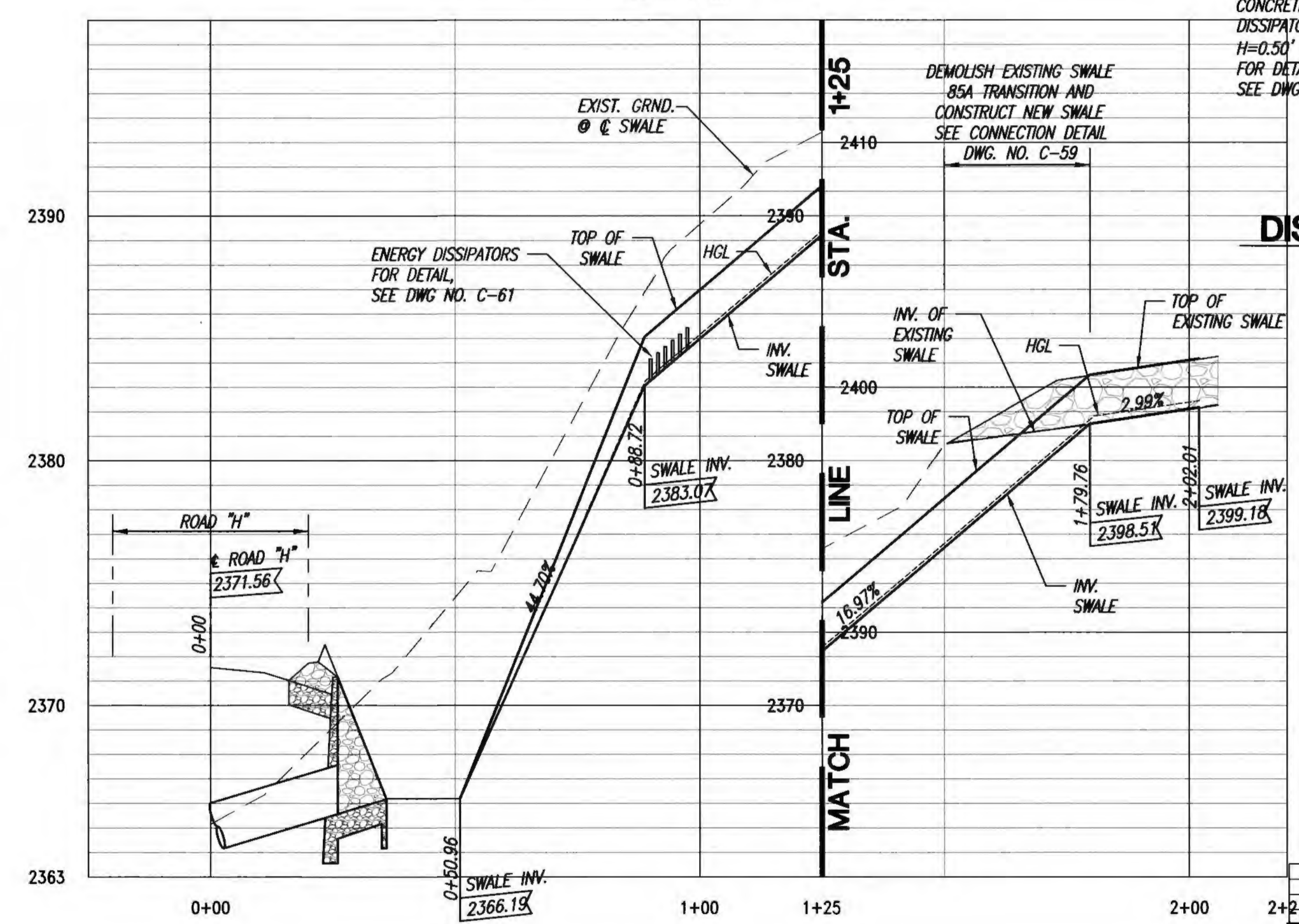
PLAN - SWALE NO. 206
SCALE: 1"=20'



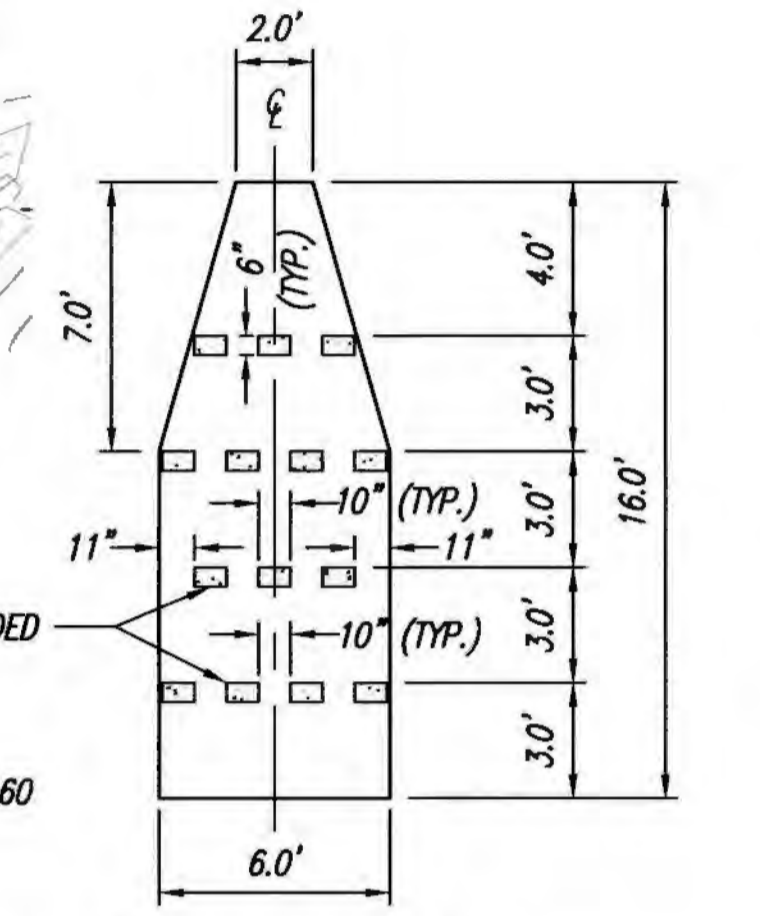
PLAN - SWALE NO. 207
SCALE: 1"=20'



PROFILE - SWALE NO. 206
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

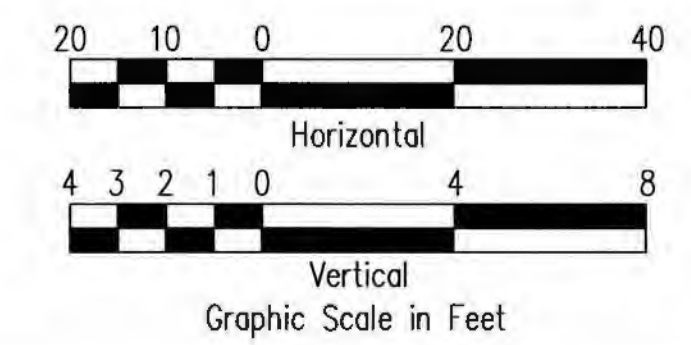
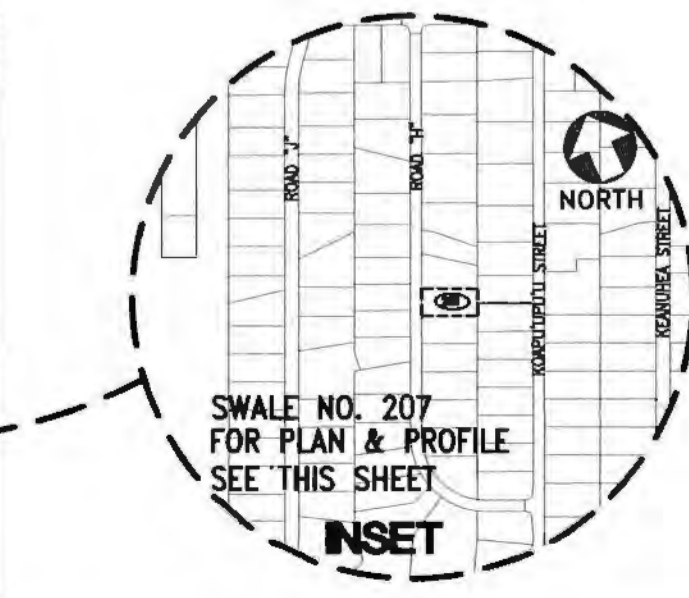
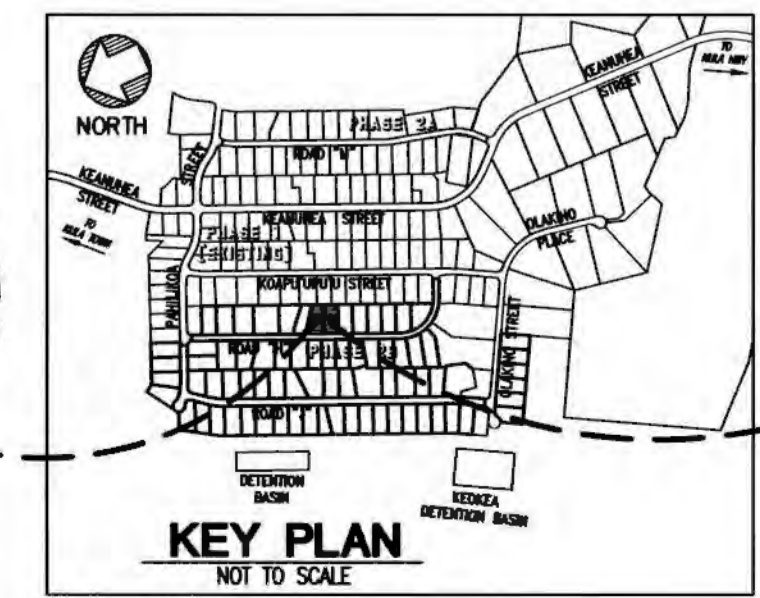
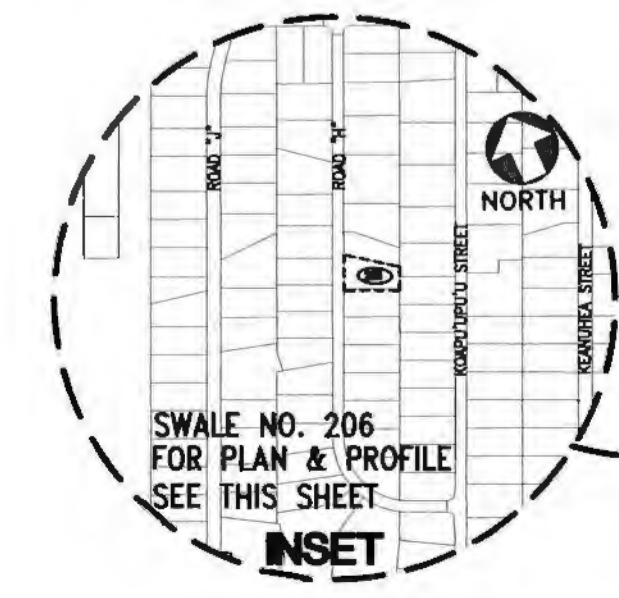


PROFILE - SWALE NO. 207
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



**SWALE NO. 206
DISSIPATOR CONFIGURATION**
SCALE: 1"= 5'

- LEGEND**
- LIMITS OF GRADING
 - - - EXISTING GROUND CONTOUR
 - 2450 — FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



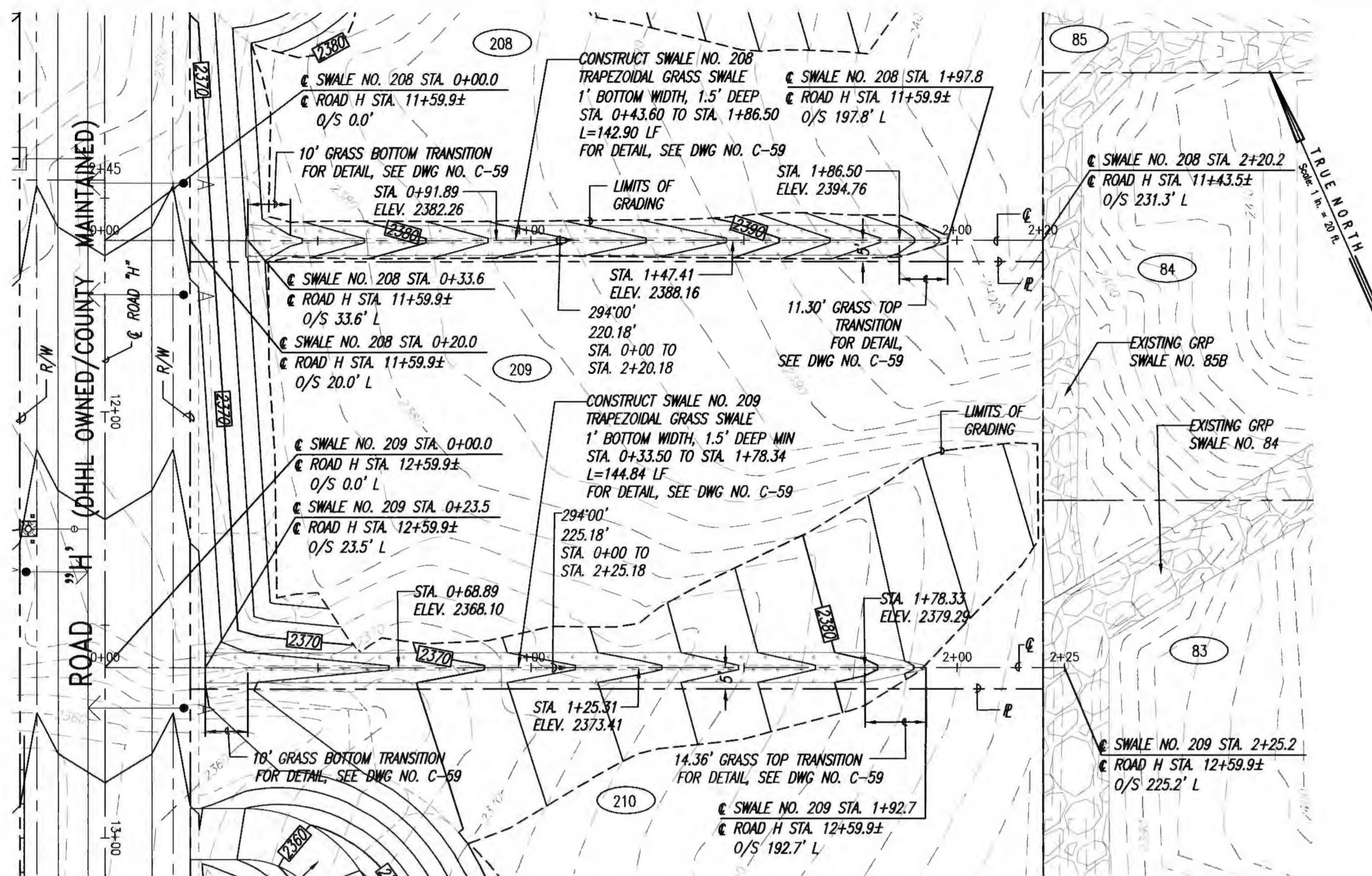
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**KEOKEA-WAIOHULI DEVELOPMENT
PHASE 2B**
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

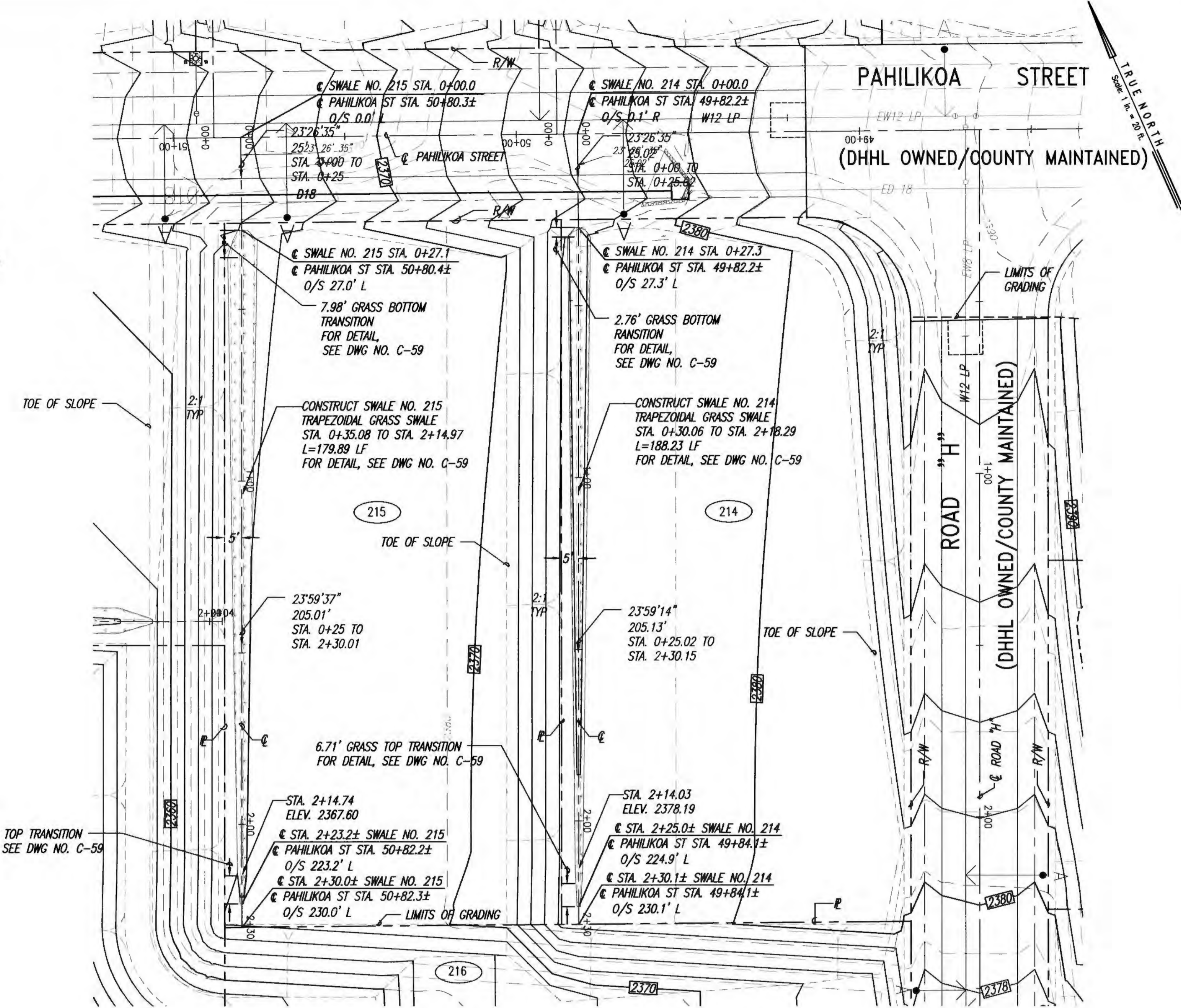
**PLAN AND PROFILE
SWALE NO. 206 & 207**

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



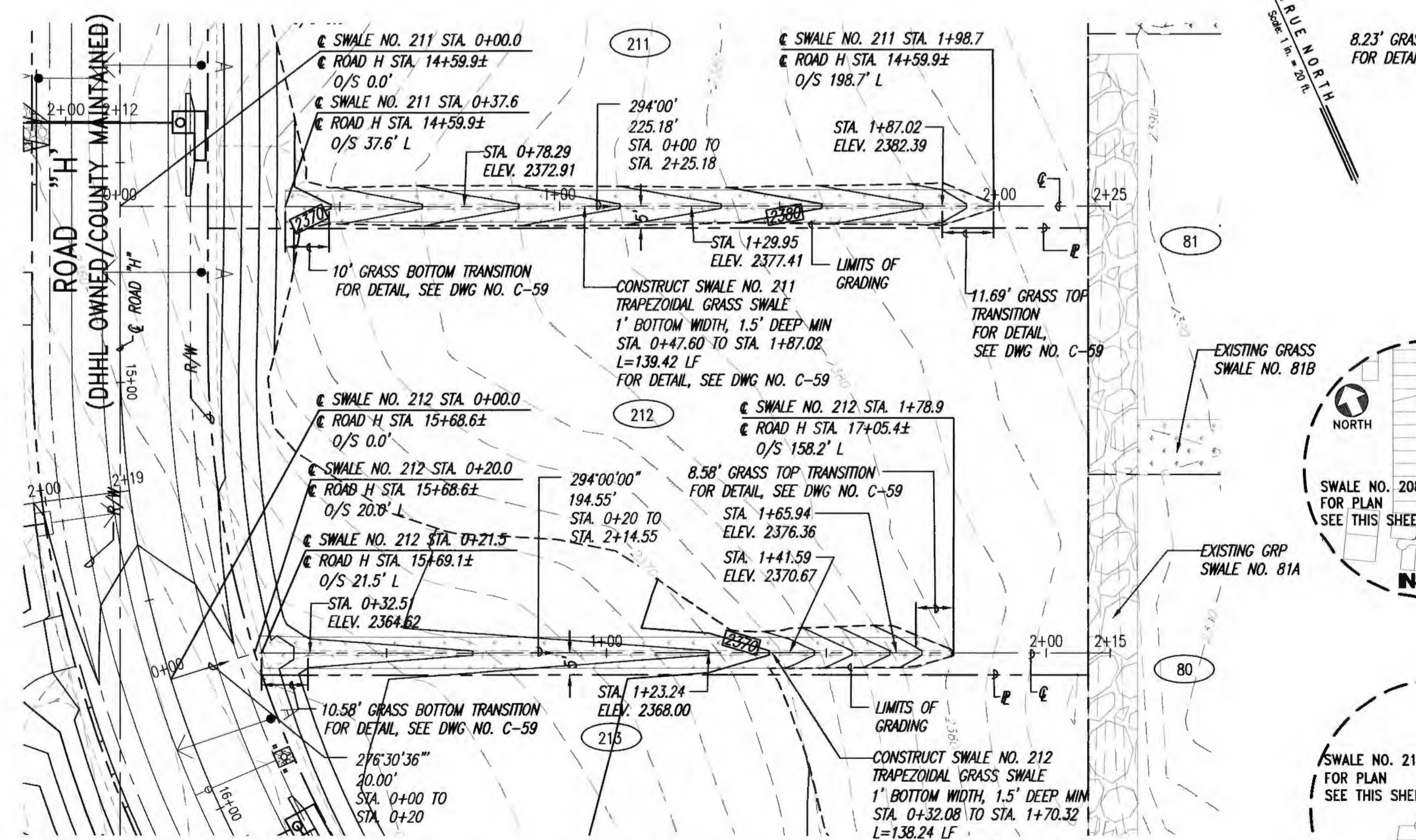
PLAN - SWALE NO. 208 & 209

SCALE: 1"=20'



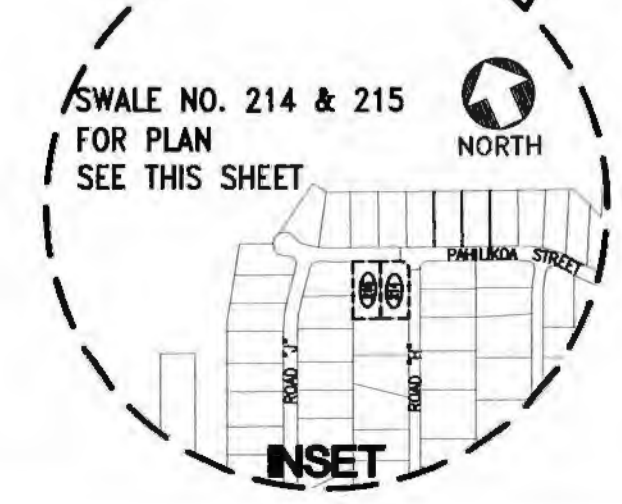
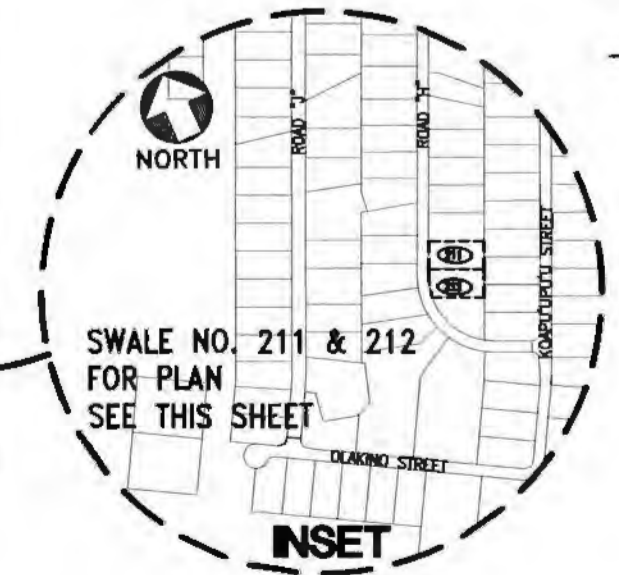
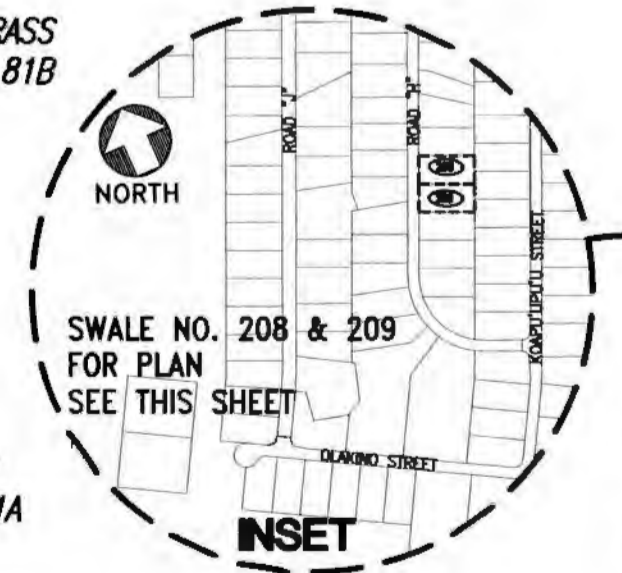
PLAN - SWALE NO. 214 & 215

SCALE: 1"=20'



PLAN - SWALE NO. 211 & 212

SCALE: 1"=20'

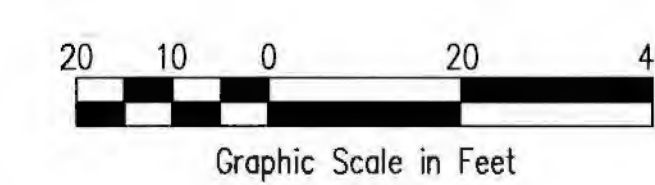


LEGEND

- LIMITS OF GRADING
- 2500 EXISTING GROUND CONTOUR
- 2450 FINISH GRADE CONTOUR
- PROPERTY LINE
- 140 LOT NUMBER
- 165 EXISTING LOT NUMBER
- TMK 2-2-002-014



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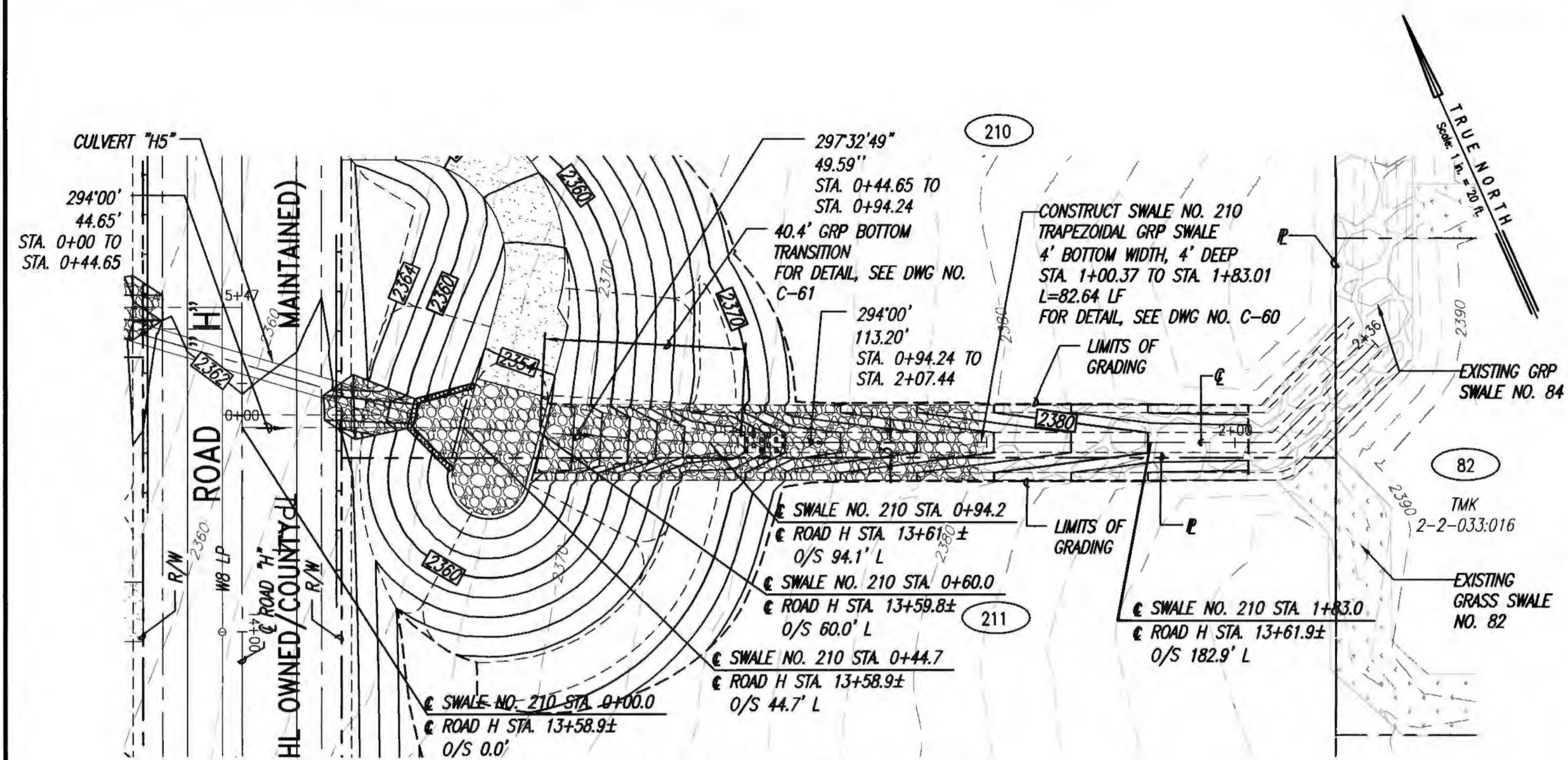
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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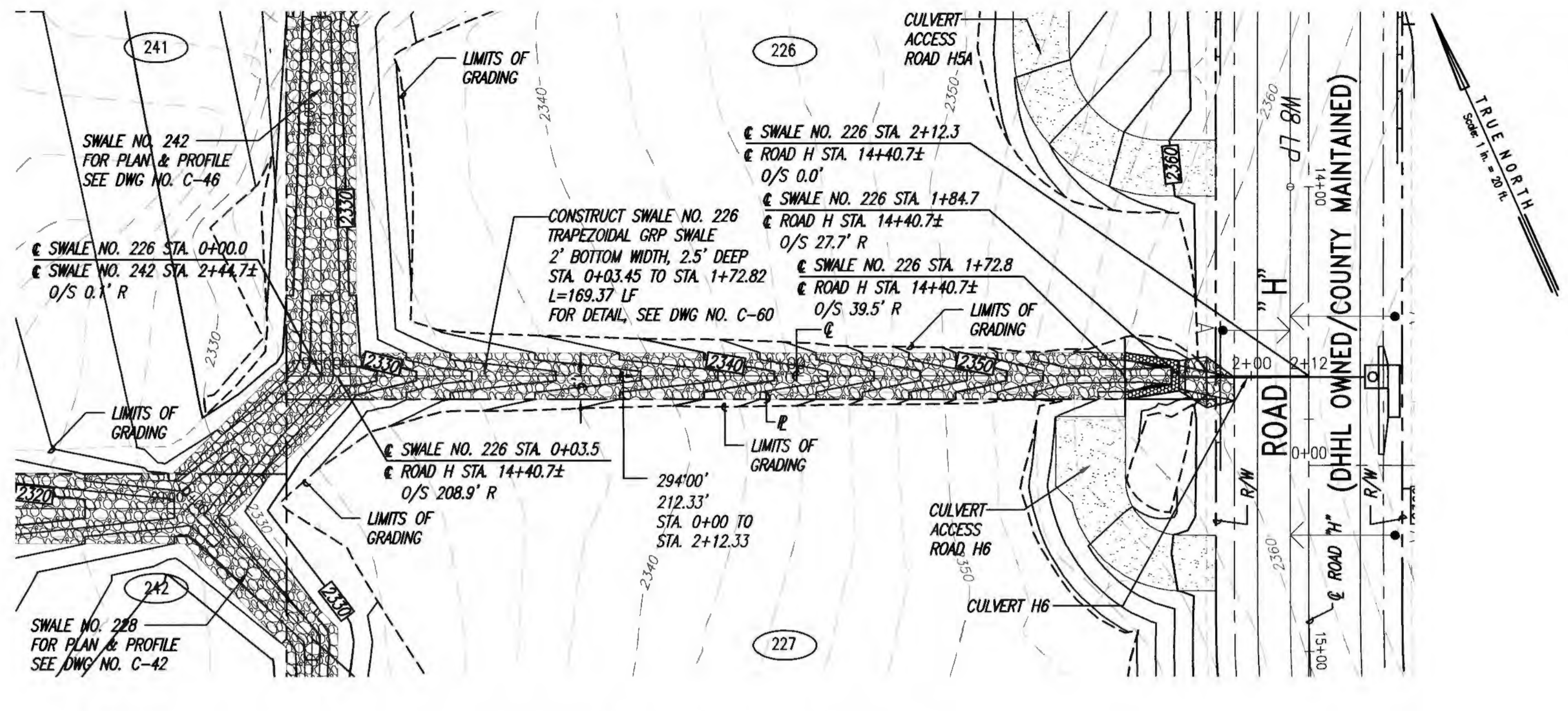
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

PLAN SWALE NO. 208, 209, 211, 212, 214 & 215

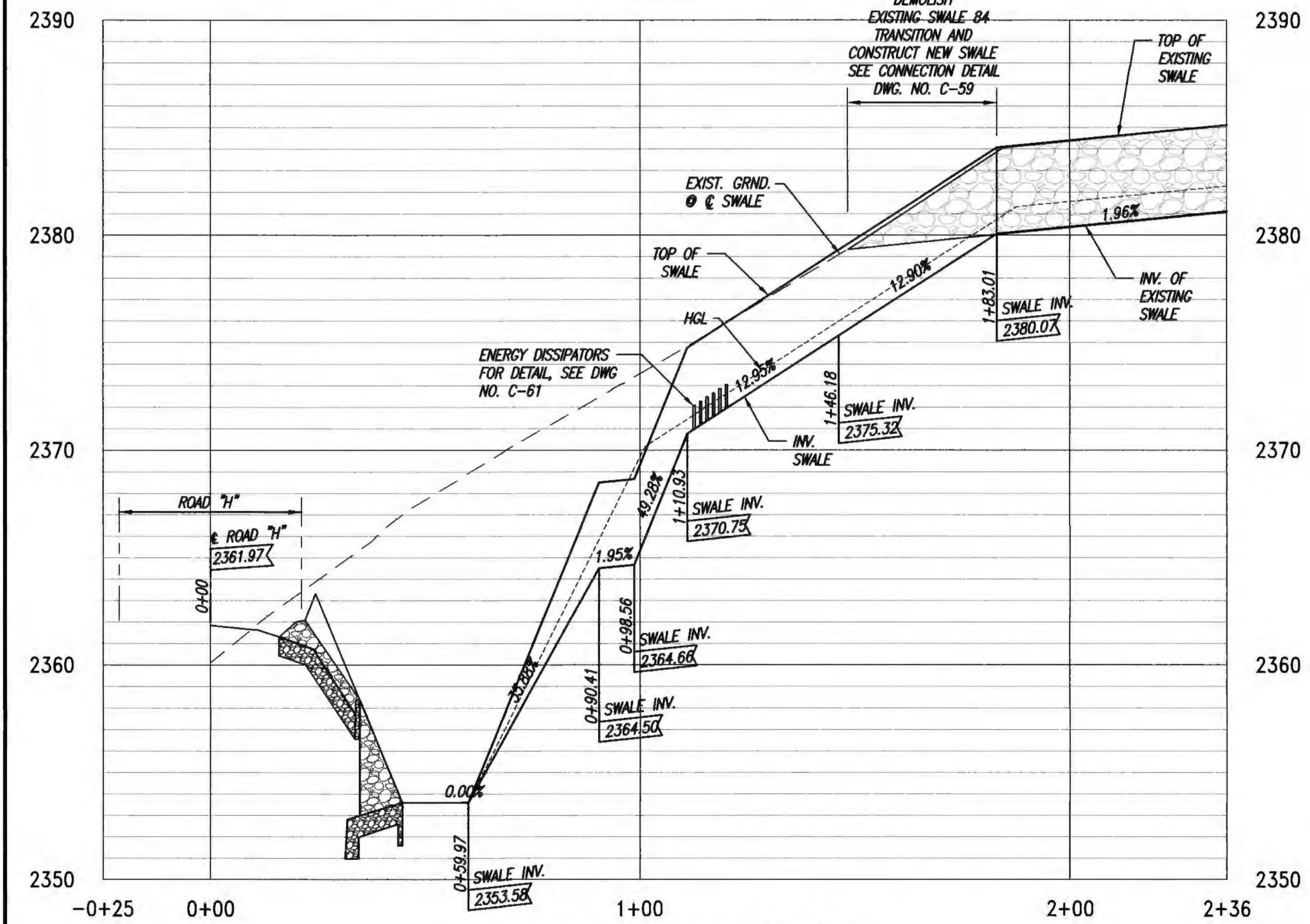
DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



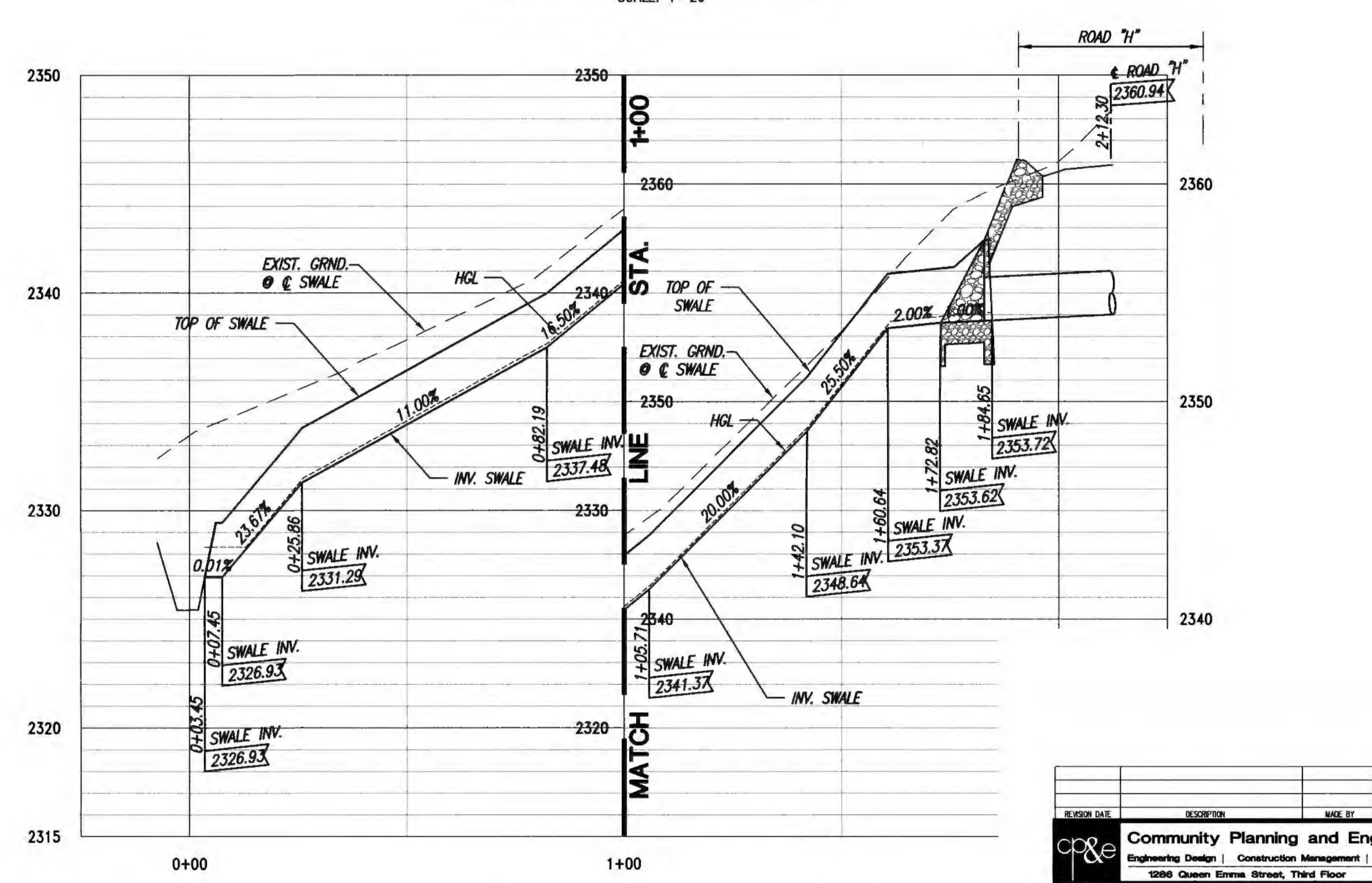
PLAN - SWALE NO. 210
SCALE: 1"=20'



PLAN - SWALE NO. 226
SCALE: 1"=20'



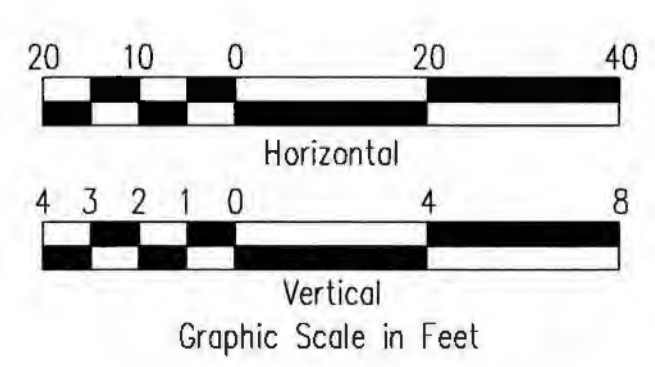
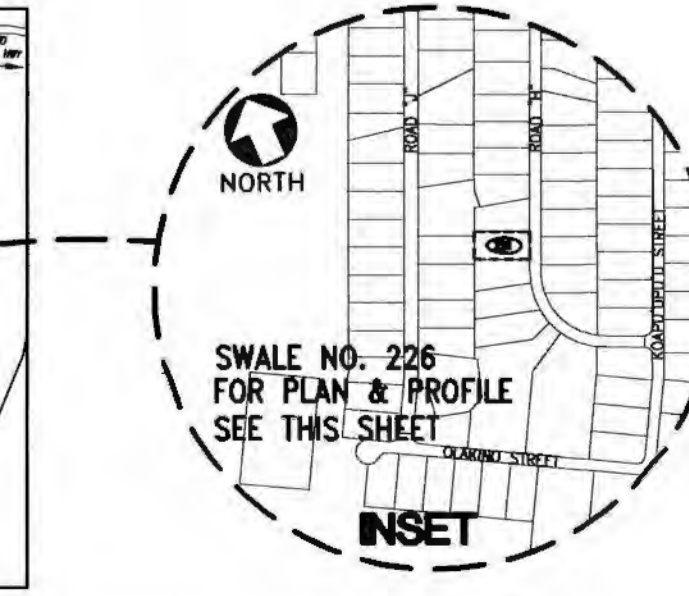
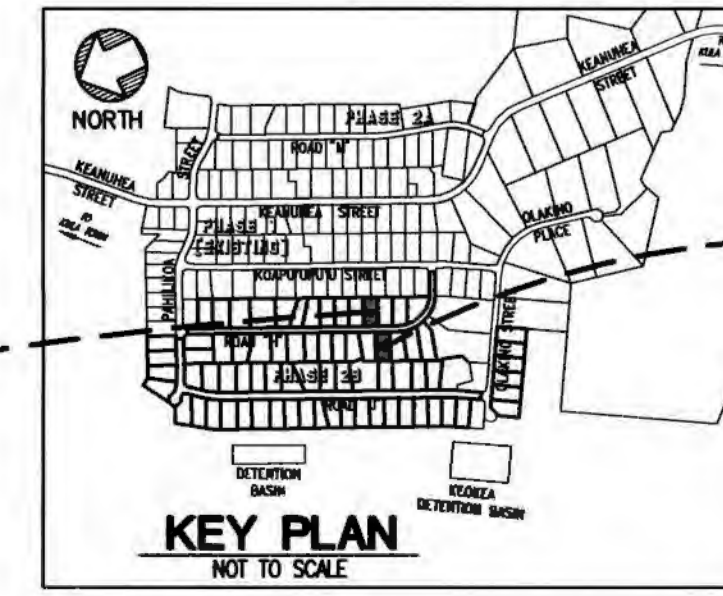
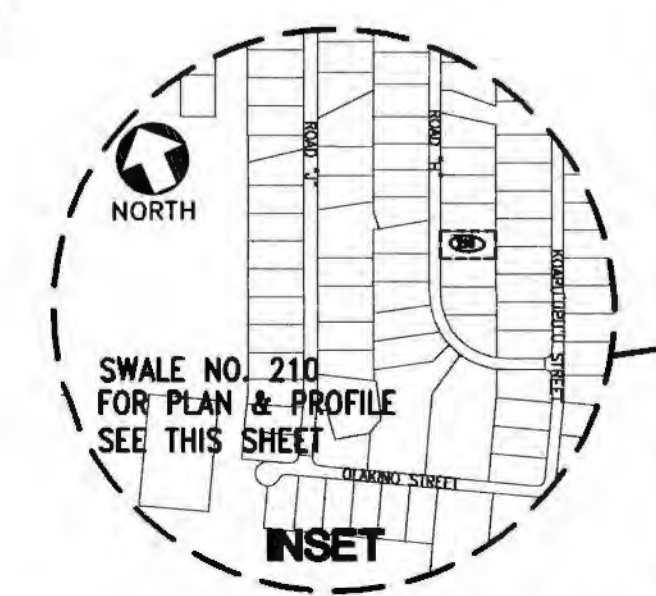
PROFILE - SWALE NO. 210
SCALES: HORIZ. 1"=20'
VERT. 1"=4'



PROFILE - SWALE NO. 226
SCALES: HORIZ. 1"=20'
VERT. 1"=4'

LEGEND

- LIMITS OF GRADING
- - - - - EXISTING GROUND CONTOUR
- FINISH GRADE CONTOUR
- PROPERTY LINE
- (140) LOT NUMBER
- (165) EXISTING LOT NUMBER
- TMK 2-2-002.014



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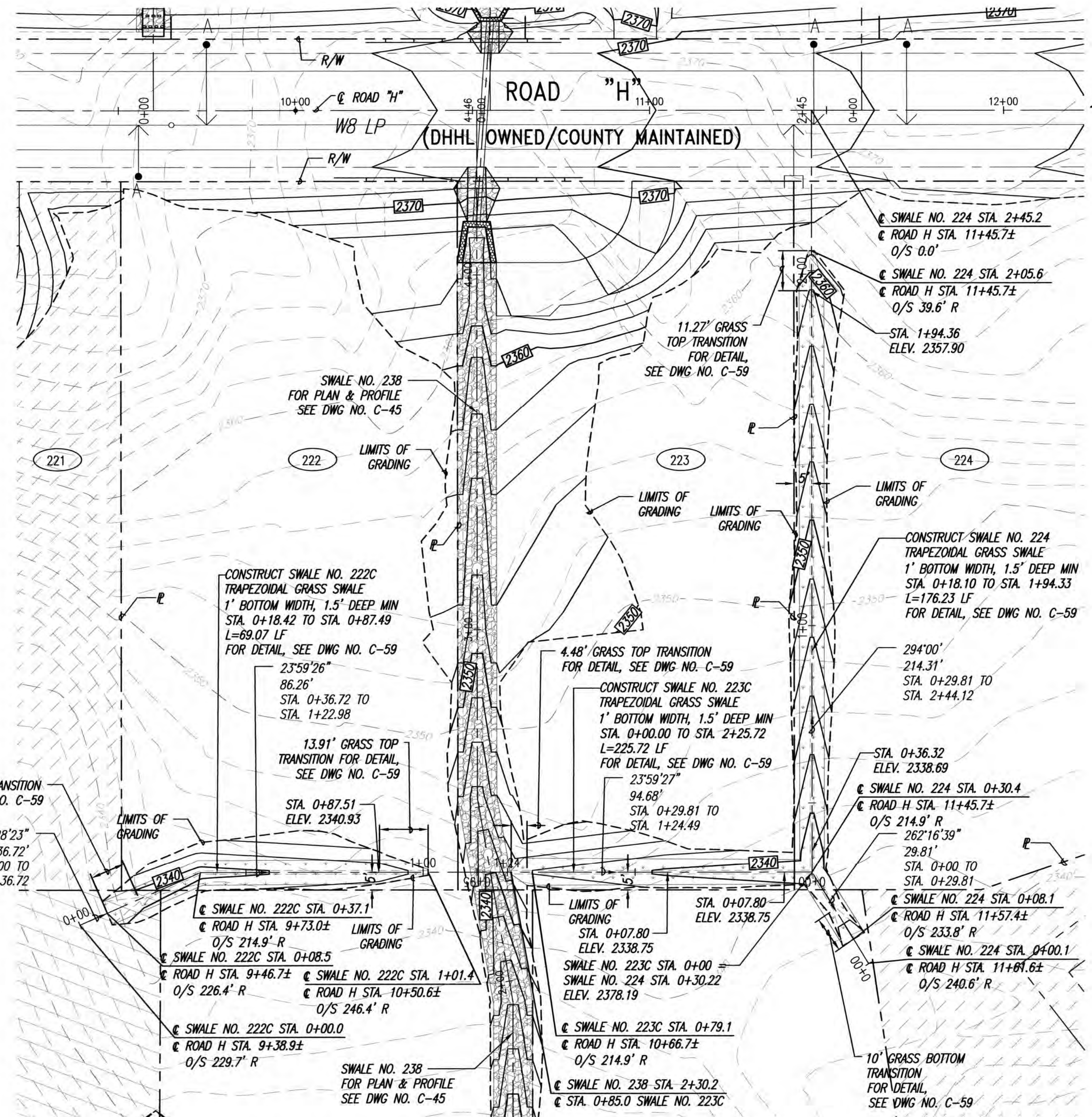
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002.014 AND (2) 2-2-033.023

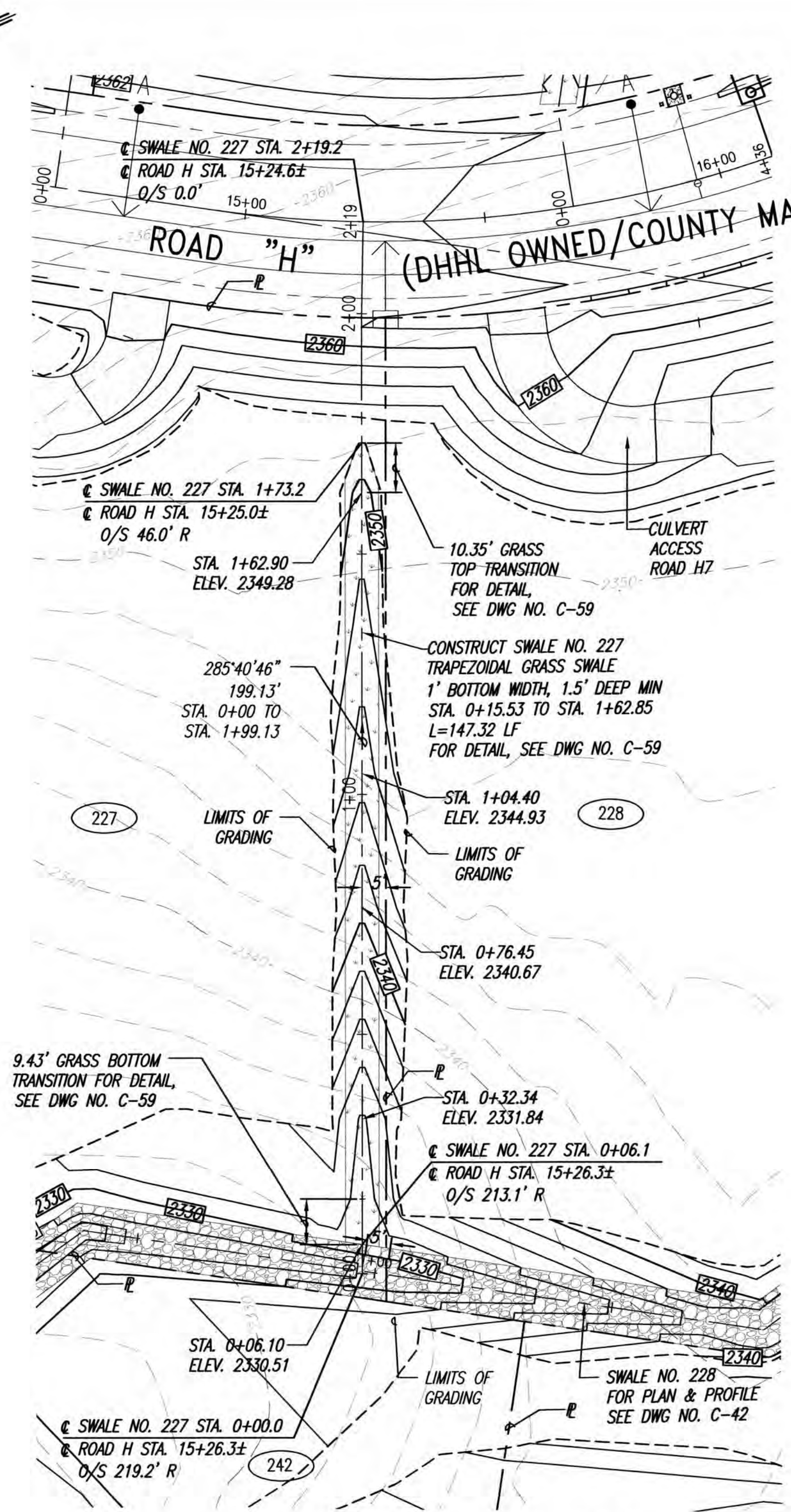
PLAN AND PROFILE SWALE NO. 210 & 226

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



PLAN - SWALE NO. 222C, 223C, & 224

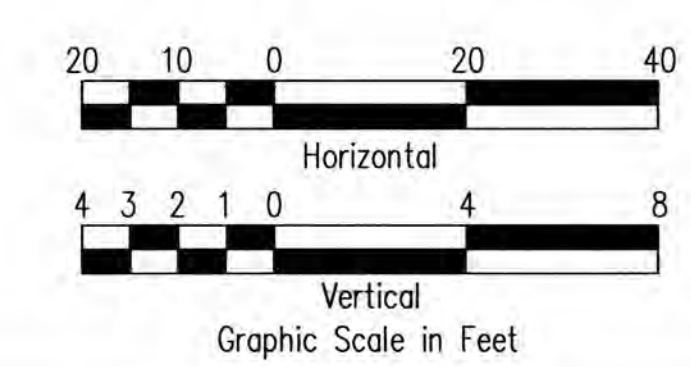
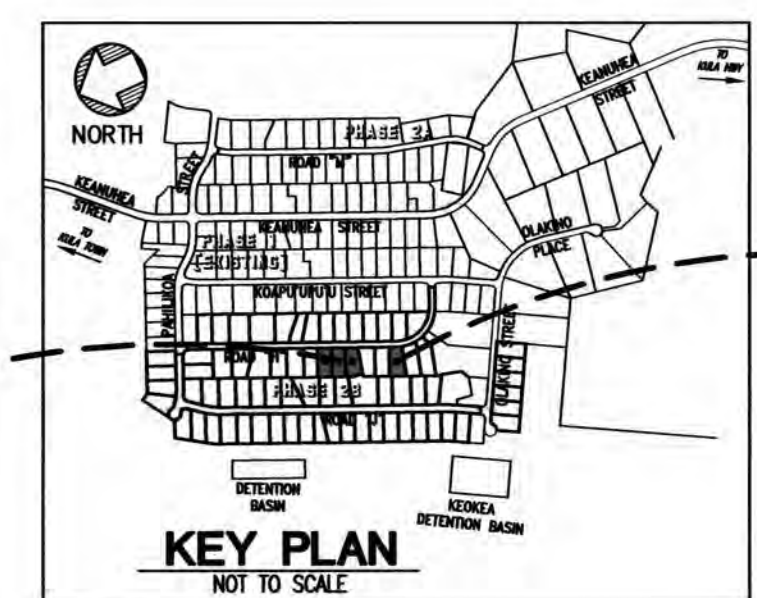
SCALE: 1"=20'



PLAN - SWALE NO. 227

SCALE: 1"=20'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 — FINISH GRADE CONTOUR
 - — — — — PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002:014



ANSON M. MURATAKI
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

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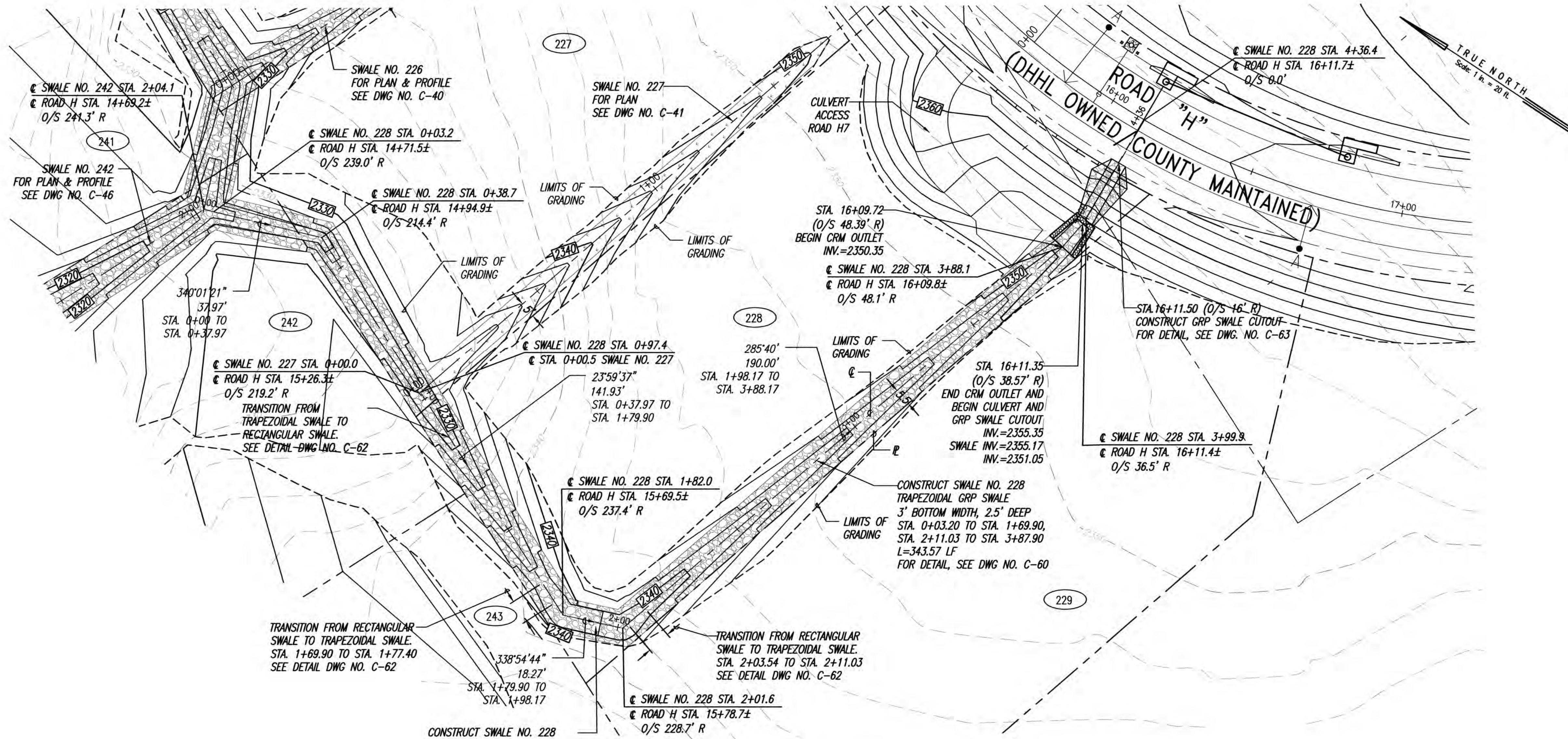
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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN SWALE NO. 222C, 223C, 224 & 227

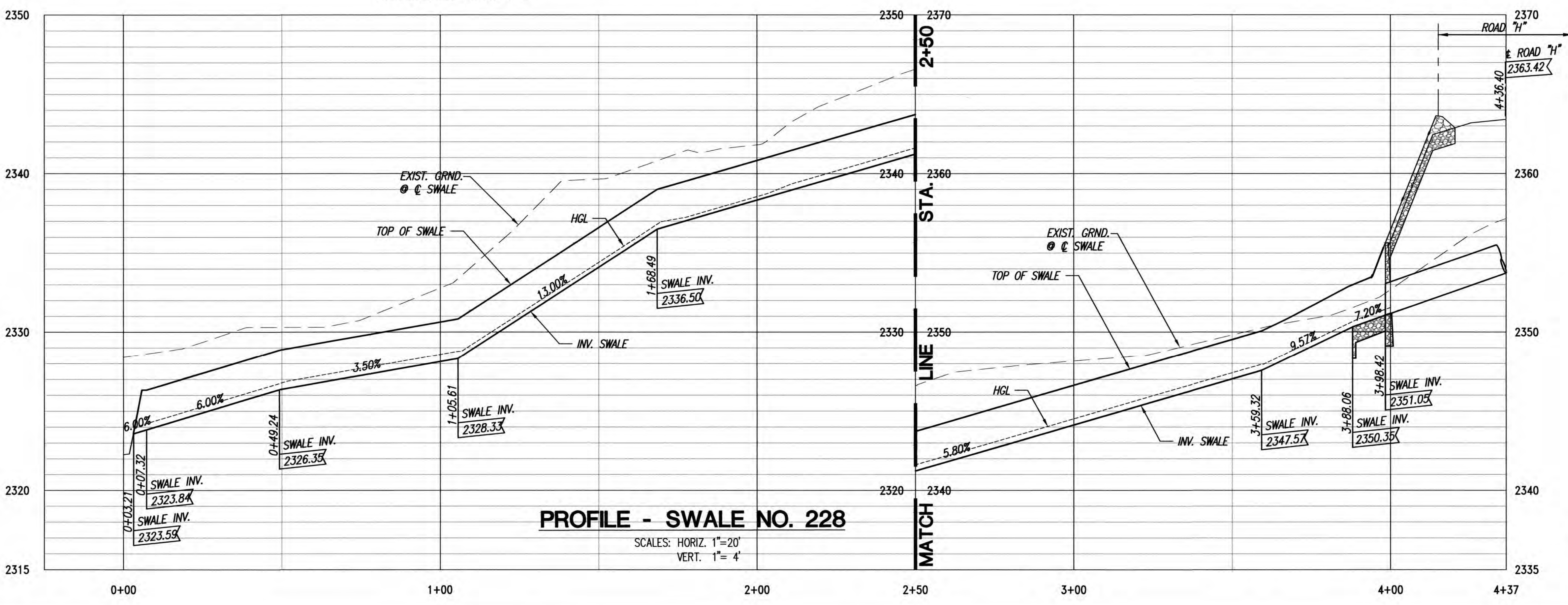
DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM

FILE: POCKET: FOLDER: NO.:



PLAN - SWALE NO. 228

SCALE: 1"=20'

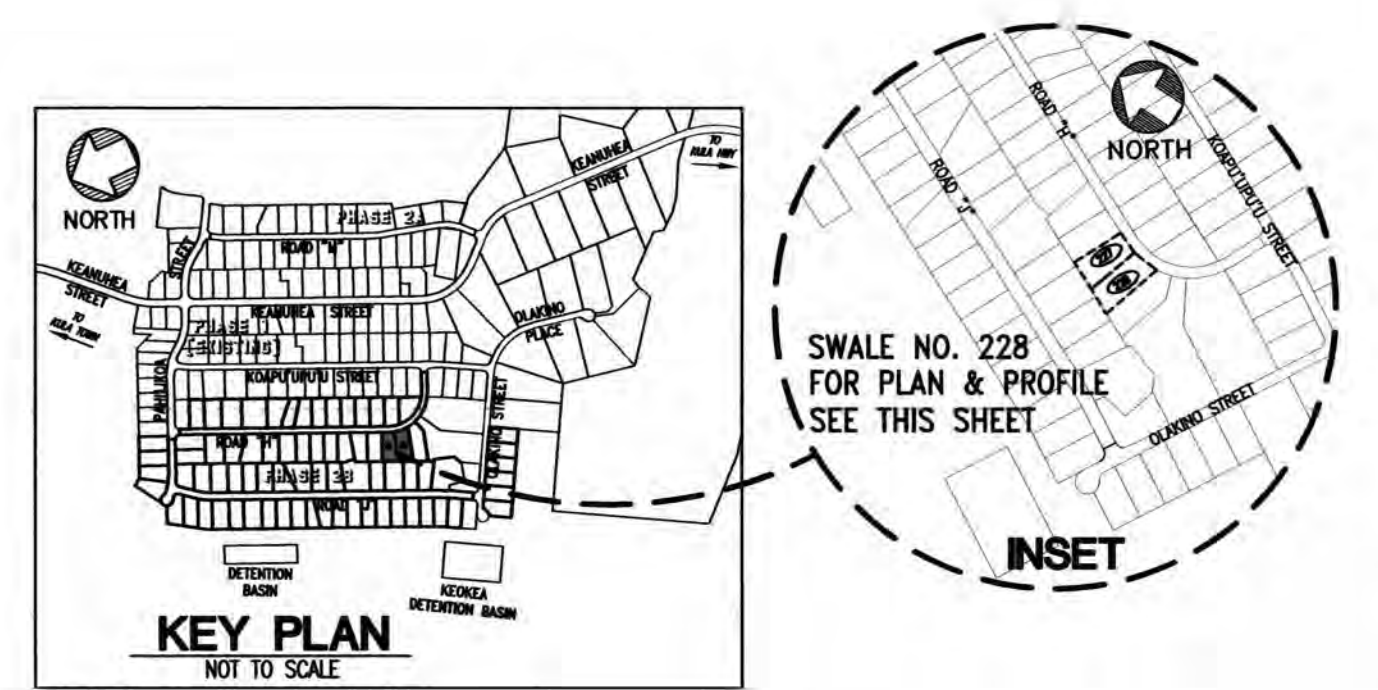


PROFILE - SWALE NO. 228

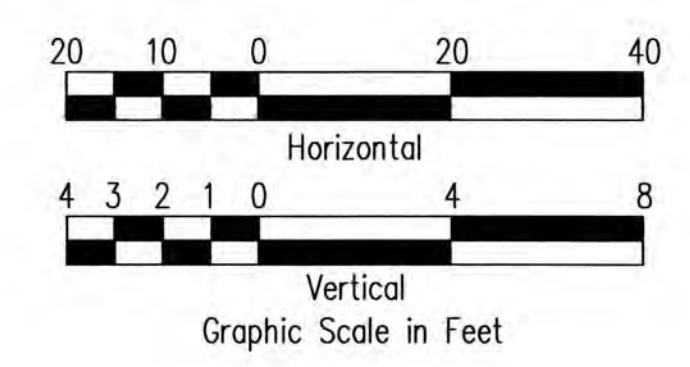
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



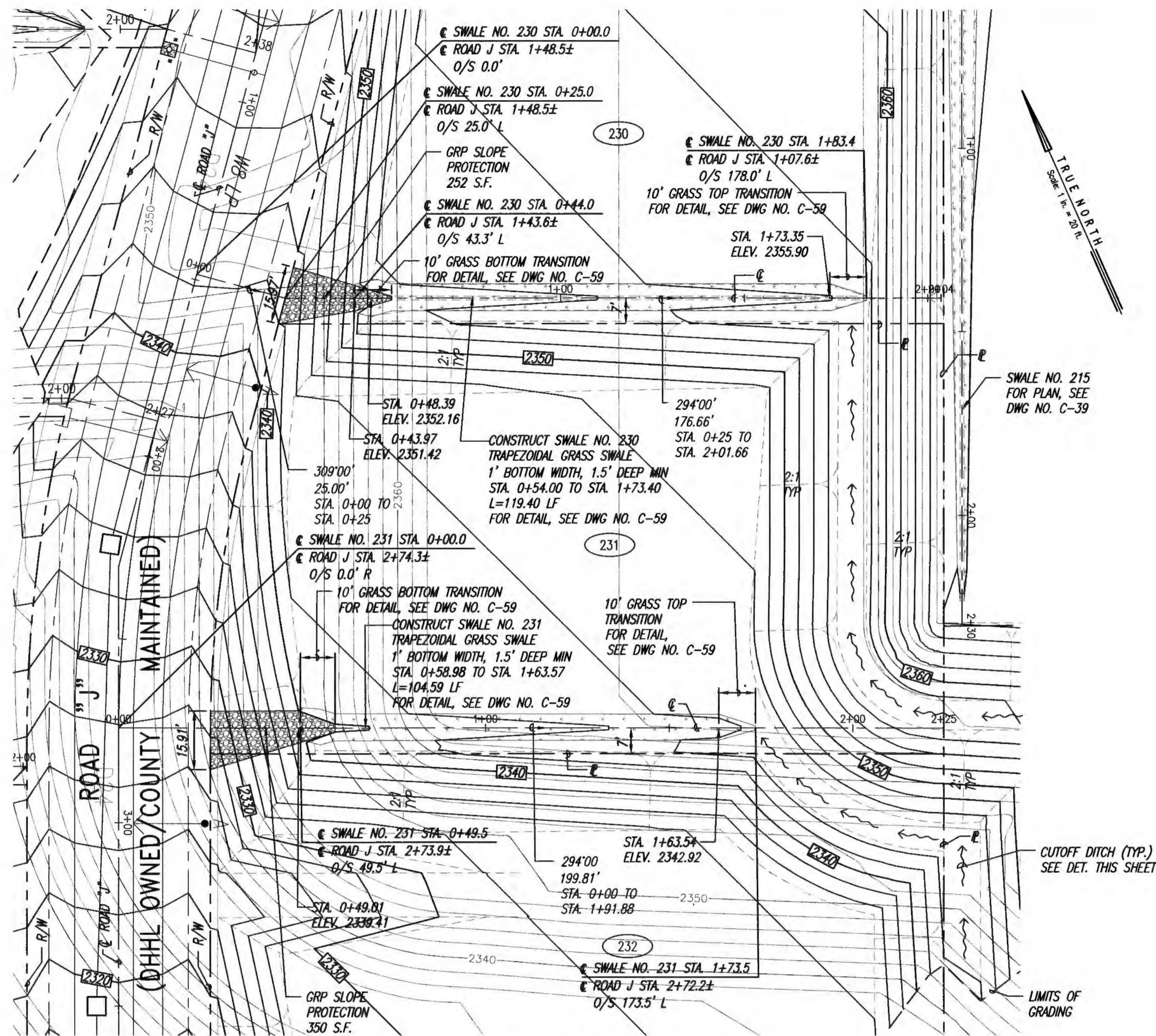
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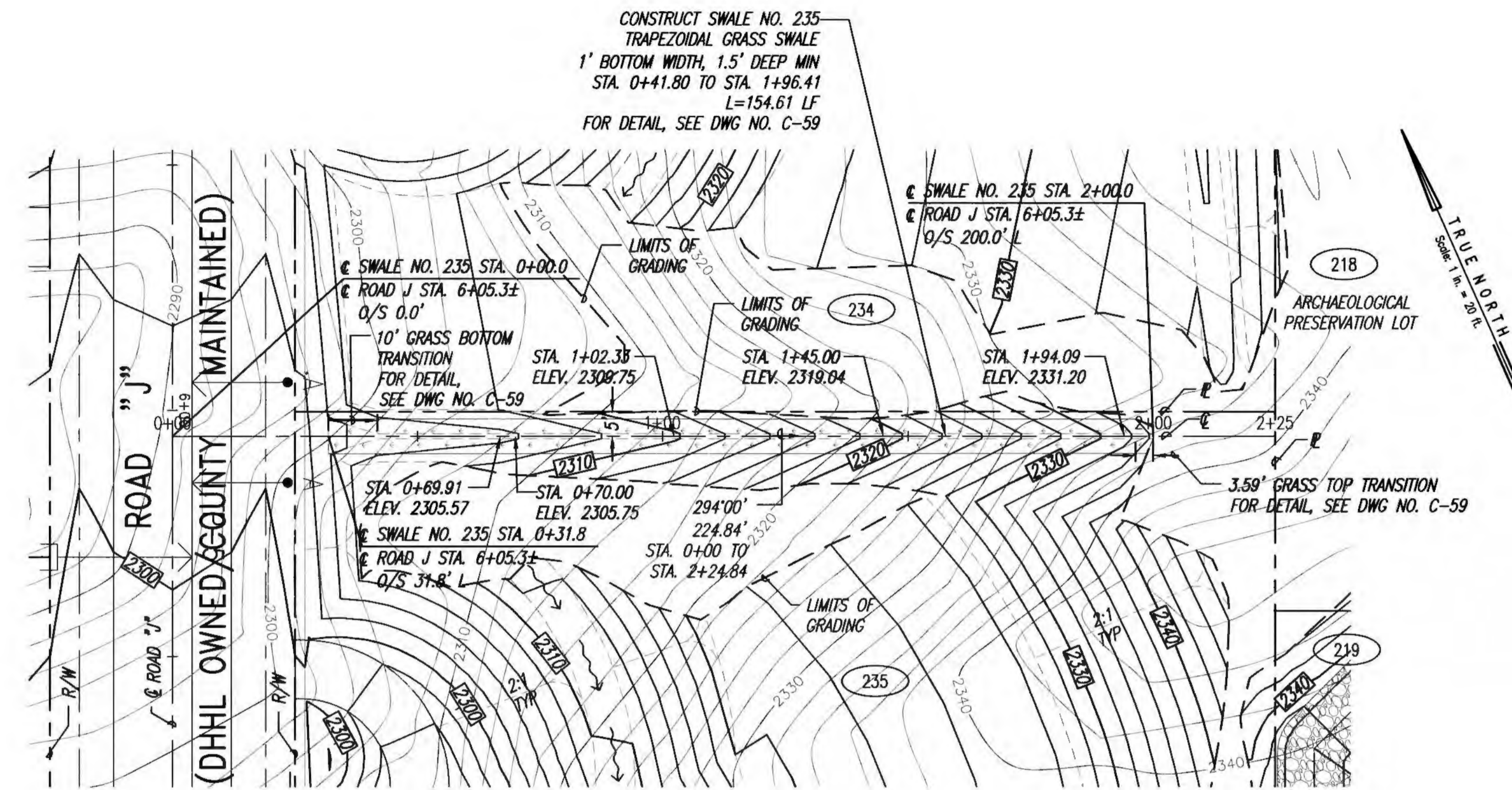
- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002:014



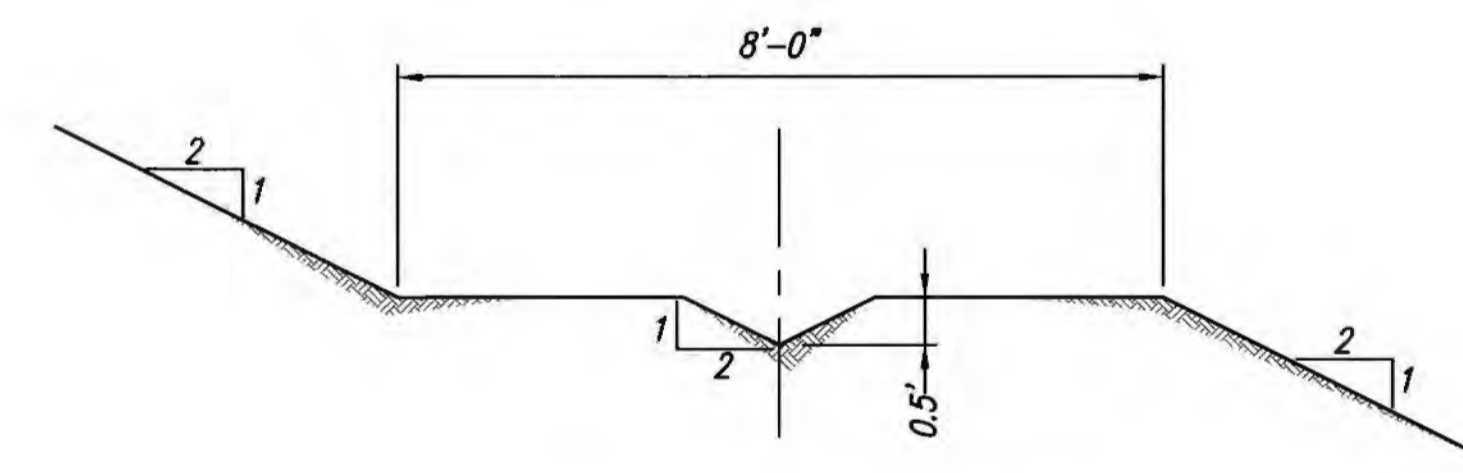
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p>			
<p>PLAN AND PROFILE SWALE NO. 228</p>			
DRAWN BY: HWH, CO		ENGINEER: HWH, FJC	CHECKED BY: AMM
<p>FILE NO. _____ FOLDER NO. _____</p>			



PLAN - SWALE NO. 230 & 231
SCALE: 1"=20'

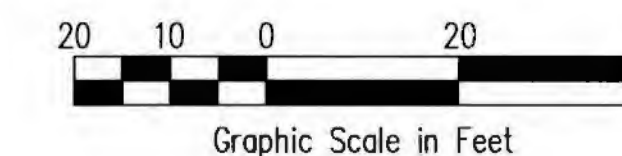
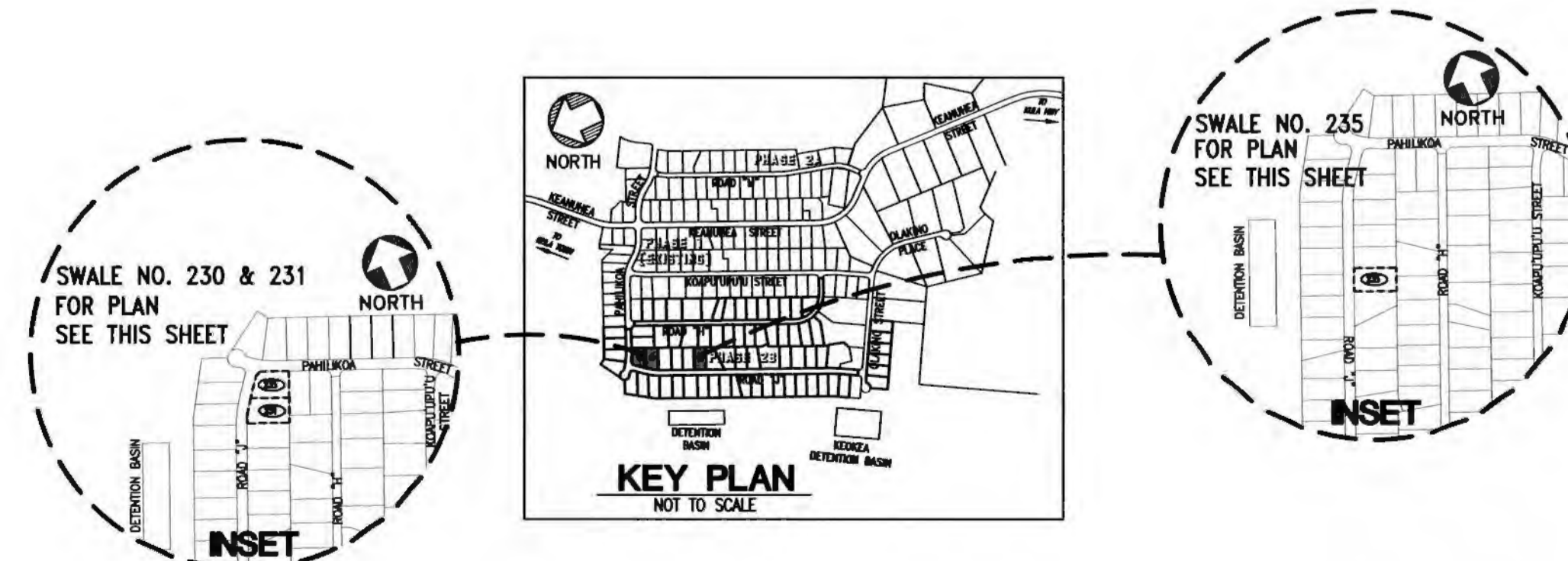


PLAN - SWALE NO. 235
SCALE: 1"=20'



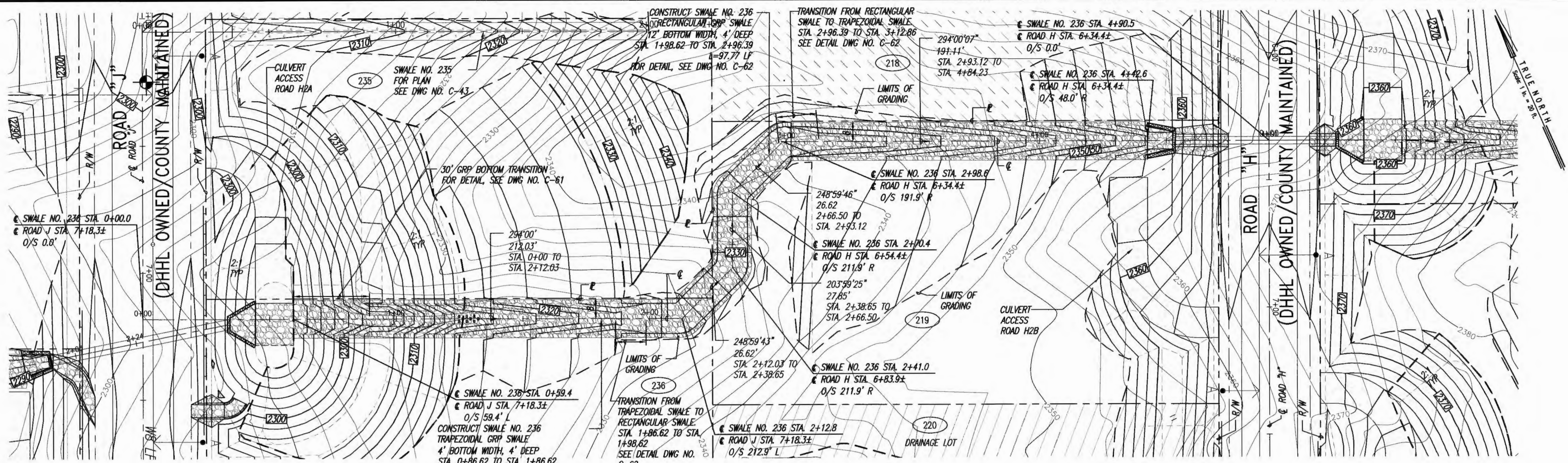
CUTOFF DITCH DETAIL
SCALE: 1"=2'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



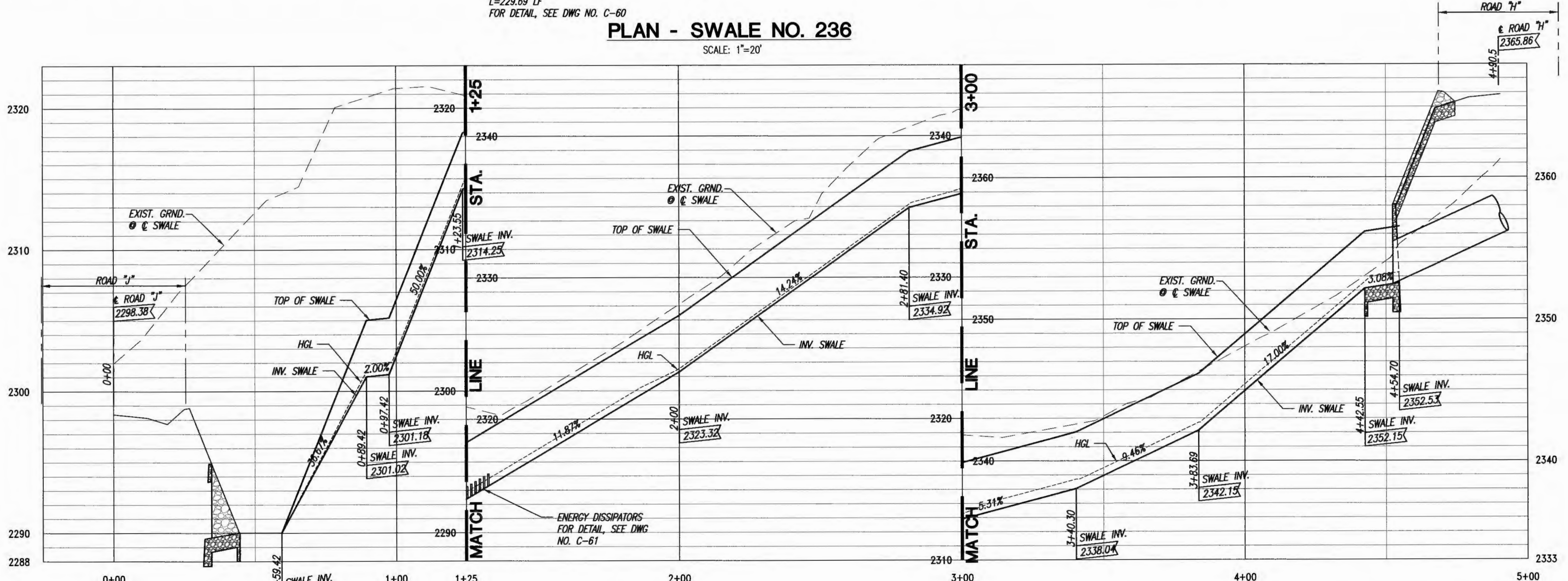
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<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 2286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p>			
<p>PLAN SWALE NO. 230, 231, & 235</p>			
DRAWN BY: HWH, CO	ENGINEER: HWH, FJC	CHECKED BY: AMM	
FILE	POCKET	FOLDER	NO.



PLAN - SWALE NO. 236

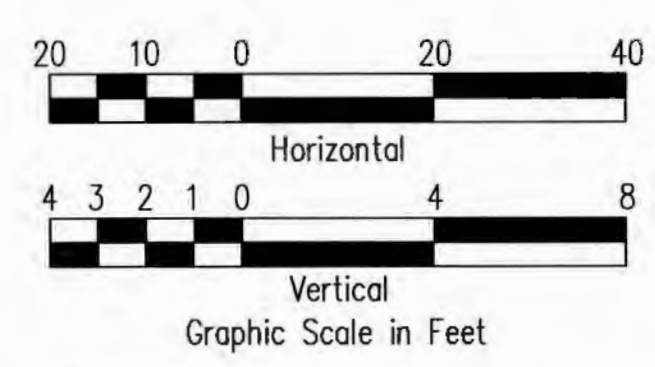
SCALE: 1"=20'



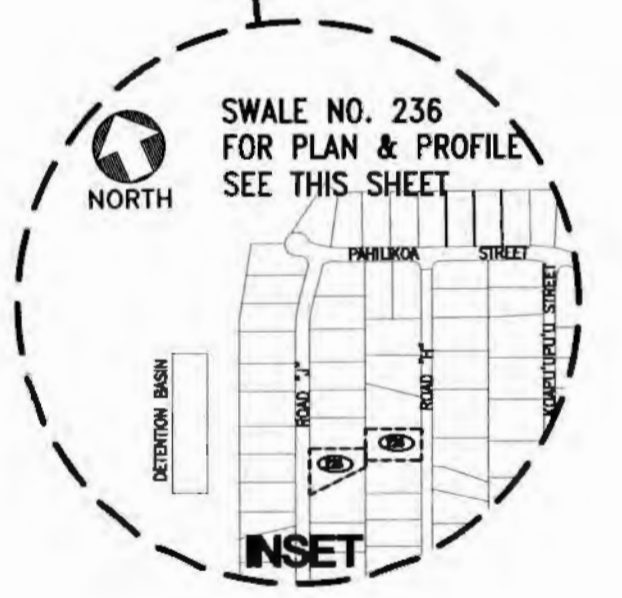
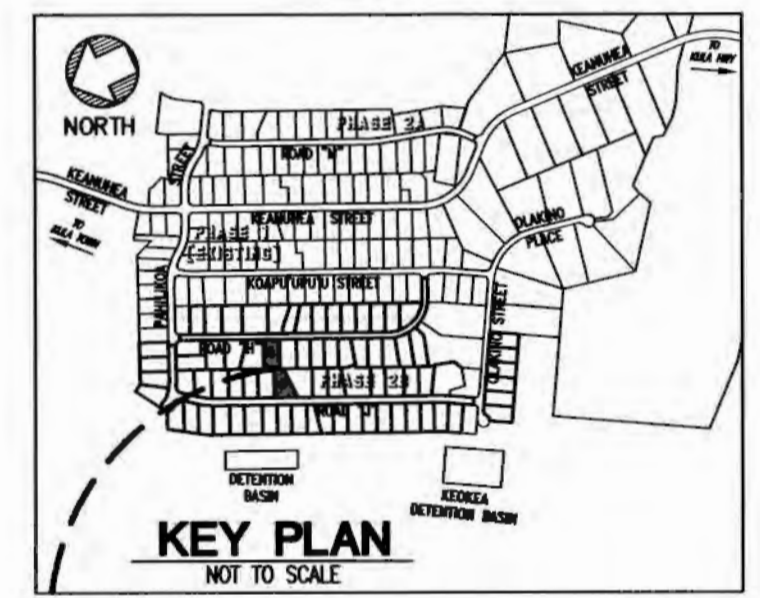
PROFILE - SWALE NO. 236

SCALES: HORIZ. 1"=20'
VERT. 1"=4'

- LEGEND**
- LIMITS OF GRADING
 - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



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REVISION DATE: _____ DESCRIPTION: _____ MADE BY: _____ APPROVED: _____

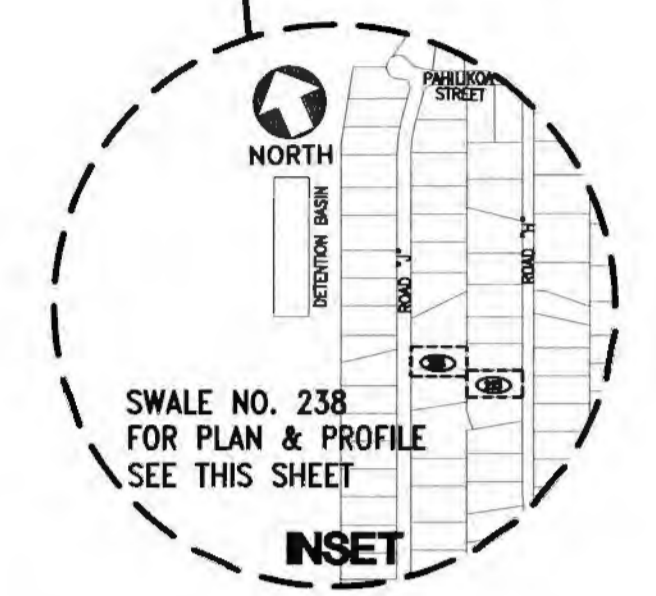
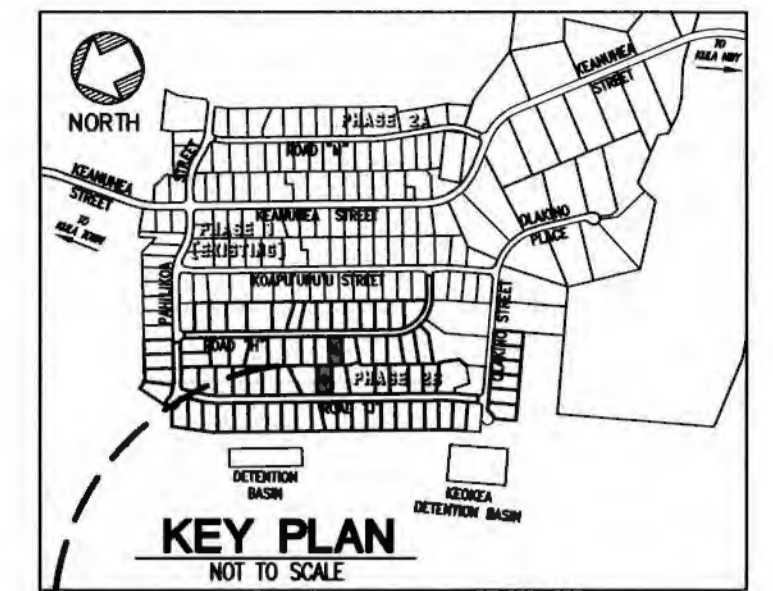
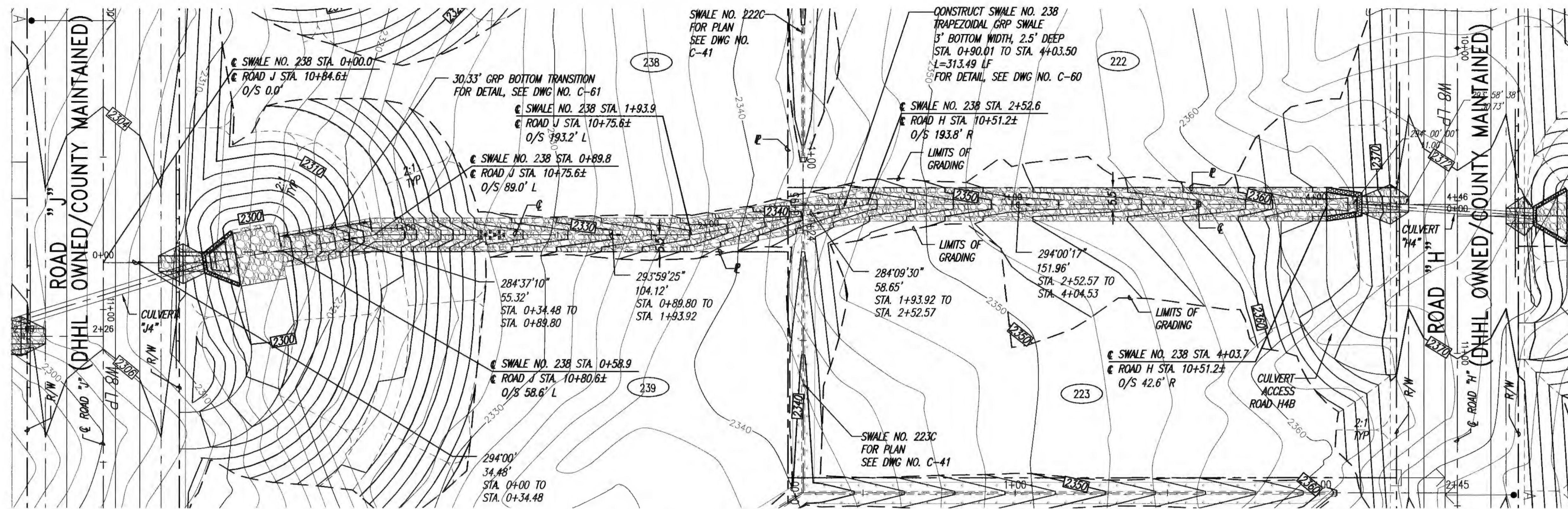
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

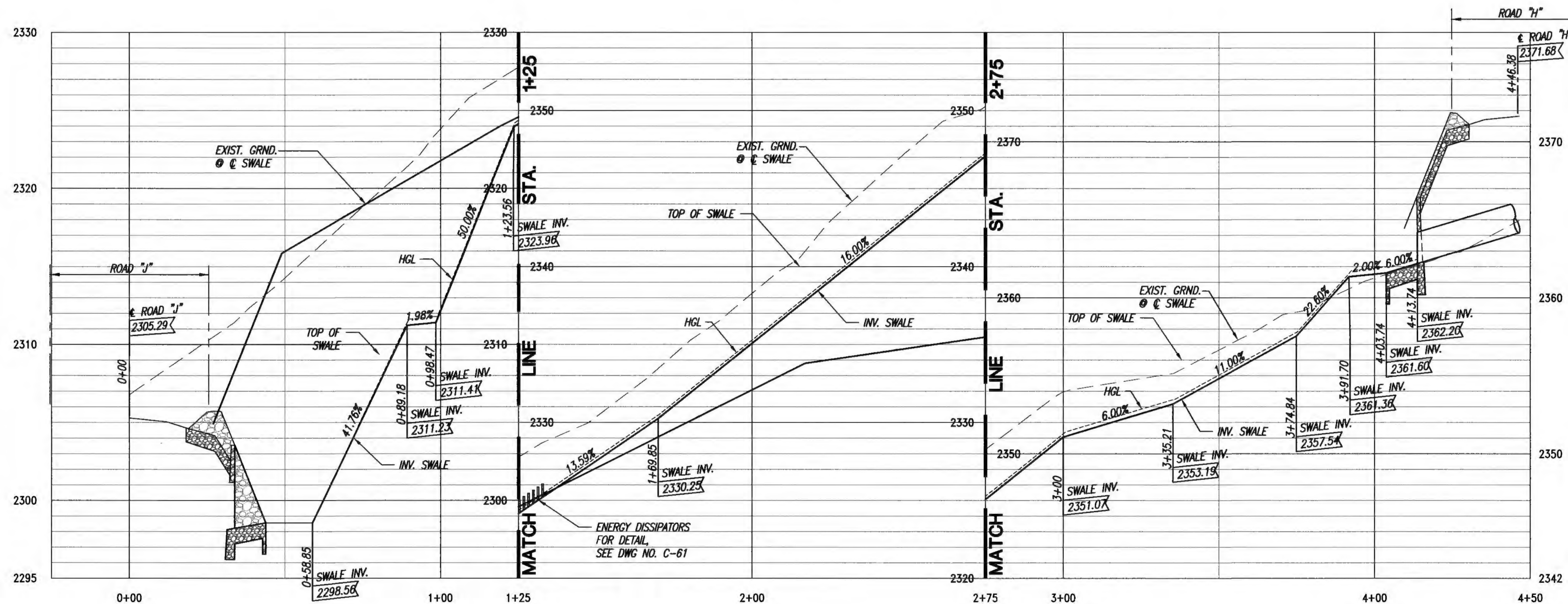
PLAN AND PROFILE SWALE NO. 236

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM

FILE: _____ FOLDER: _____ NO.: _____

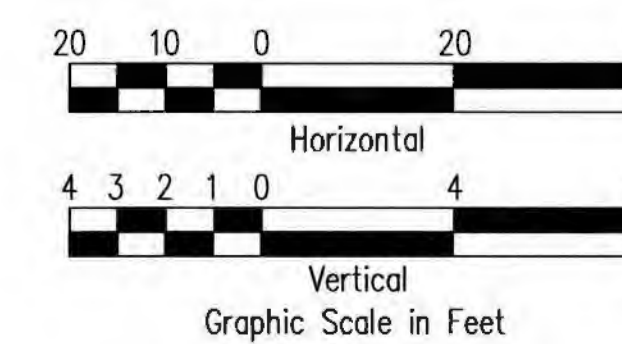


PLAN - SWALE NO. 238
SCALE: 1"=20'



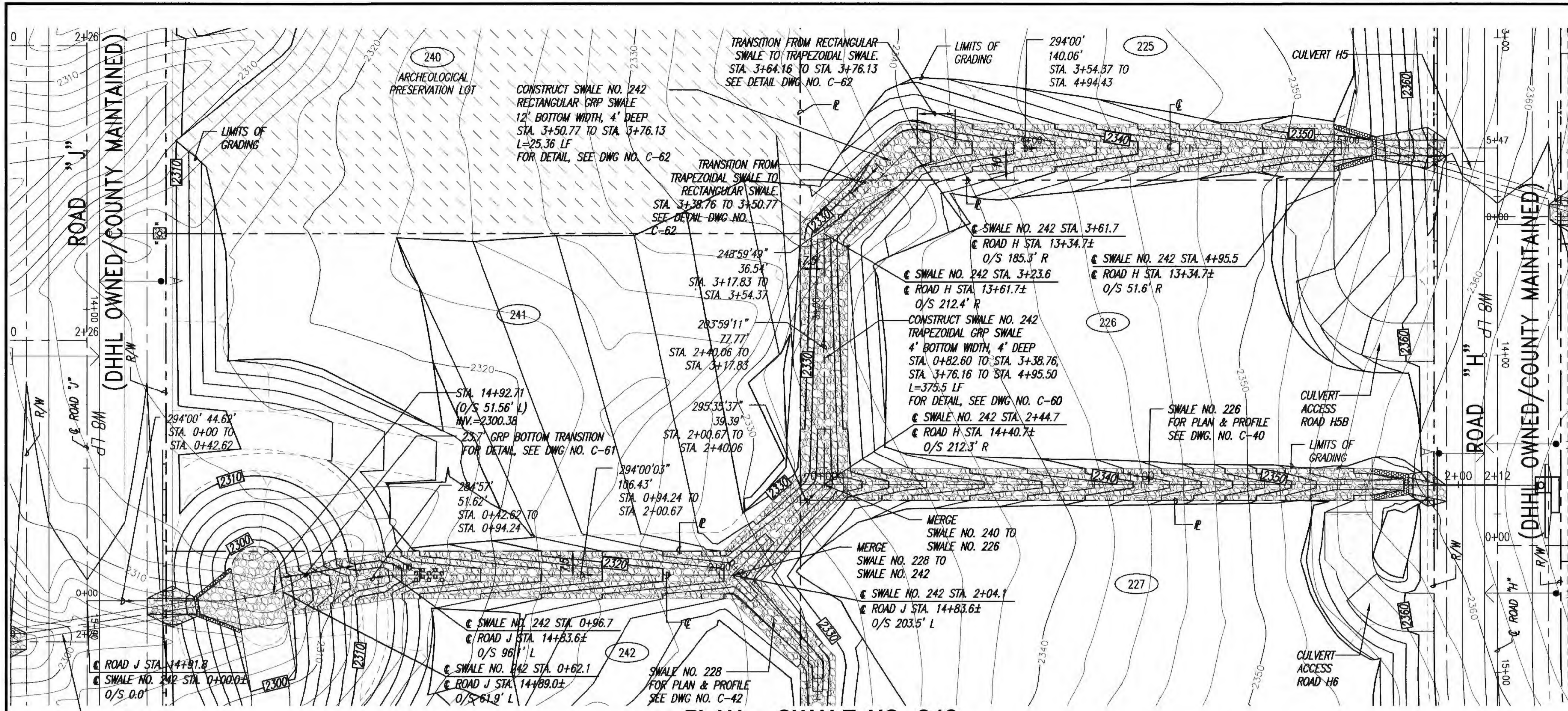
PROFILE - SWALE NO. 238
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002:014



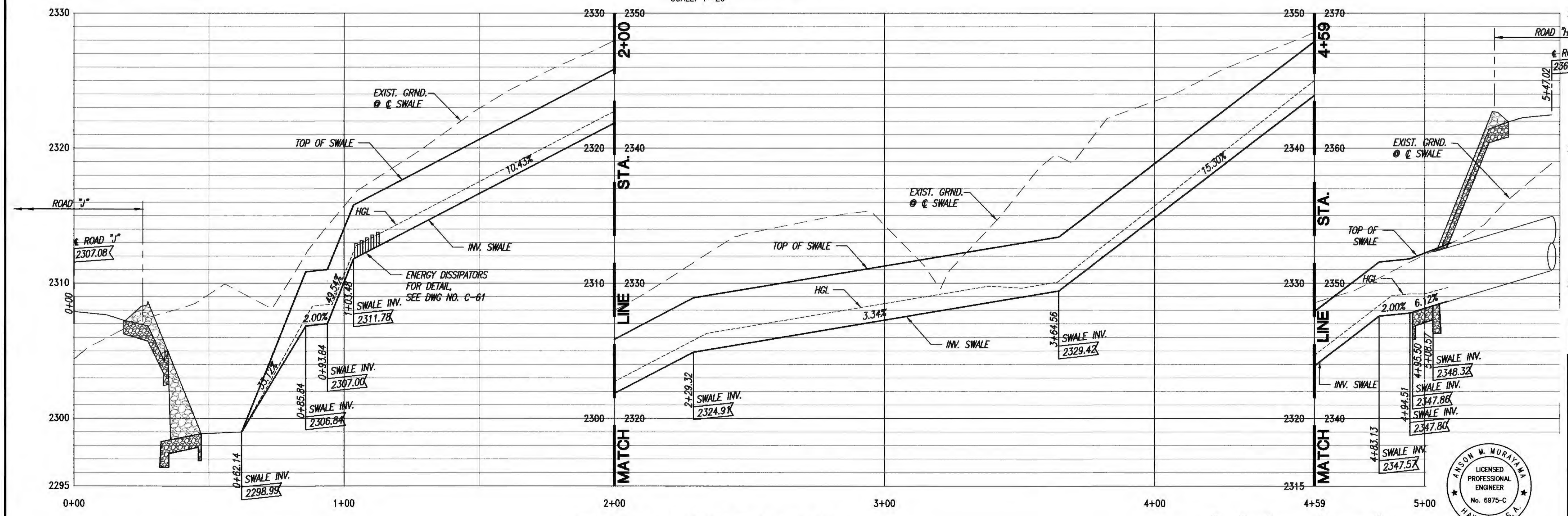
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p>			
<p>PLAN AND PROFILE SWALE NO. 238</p>			
DRAWN BY: HWH, CO		ENGINEER: HWH, FJC	CHECKED BY: AMM
FILE	POCKET	FOLDER	NO.



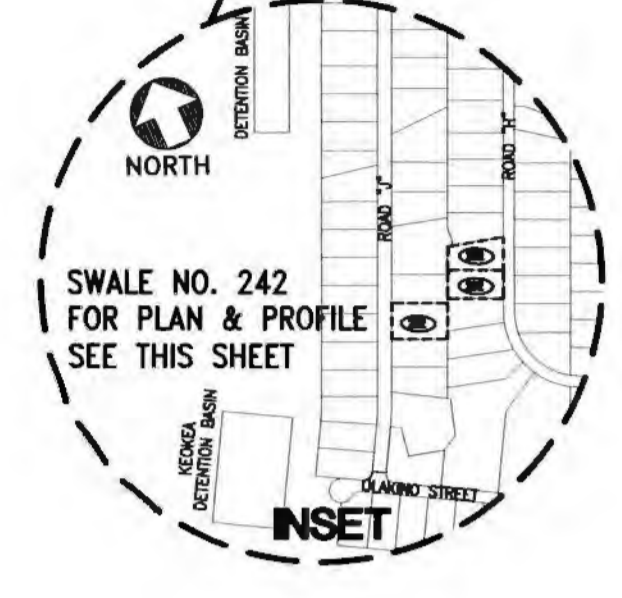
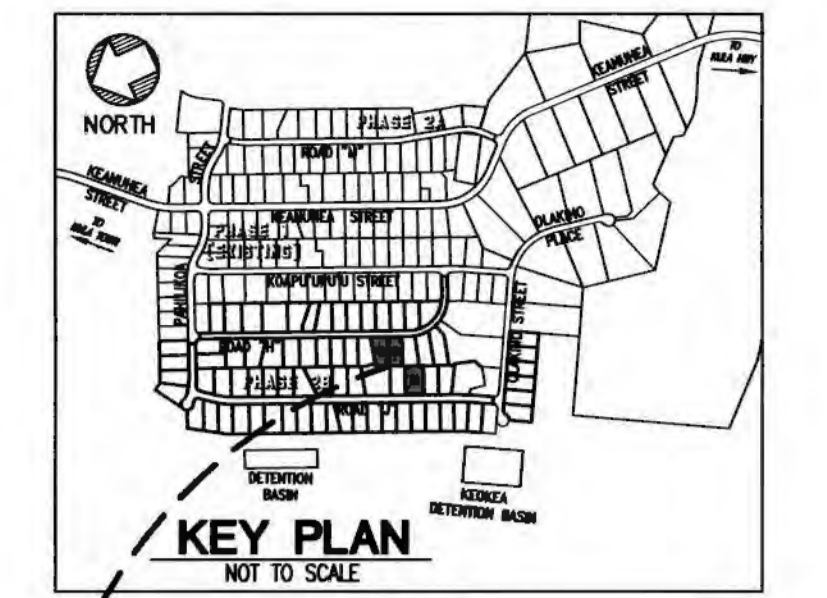
PLAN - SWALE NO. 242

SCALE: 1"=20'



PROFILE - SWALE NO. 242

SCALE: HORIZ. 1"=20'
VERT. 1"=4'



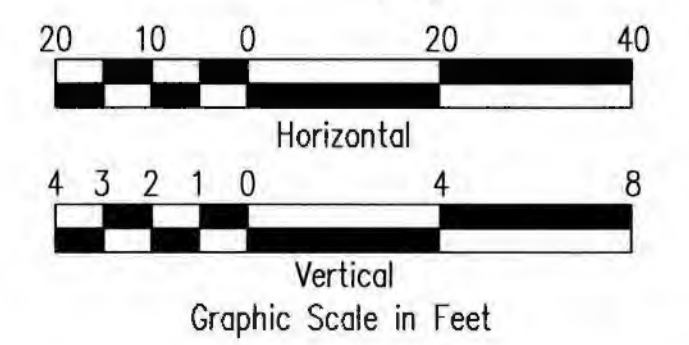
- LEGEND**
- LIMITS OF GRADING
 - - - - EXISTING GROUND CONTOUR
 - 2450 FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014

Community Planning and Engineering, Inc.
 Engineering Design | Construction Management | Infrastructure Planning
 1256 Queen Emma Street, Third Floor Honolulu, Hawaii

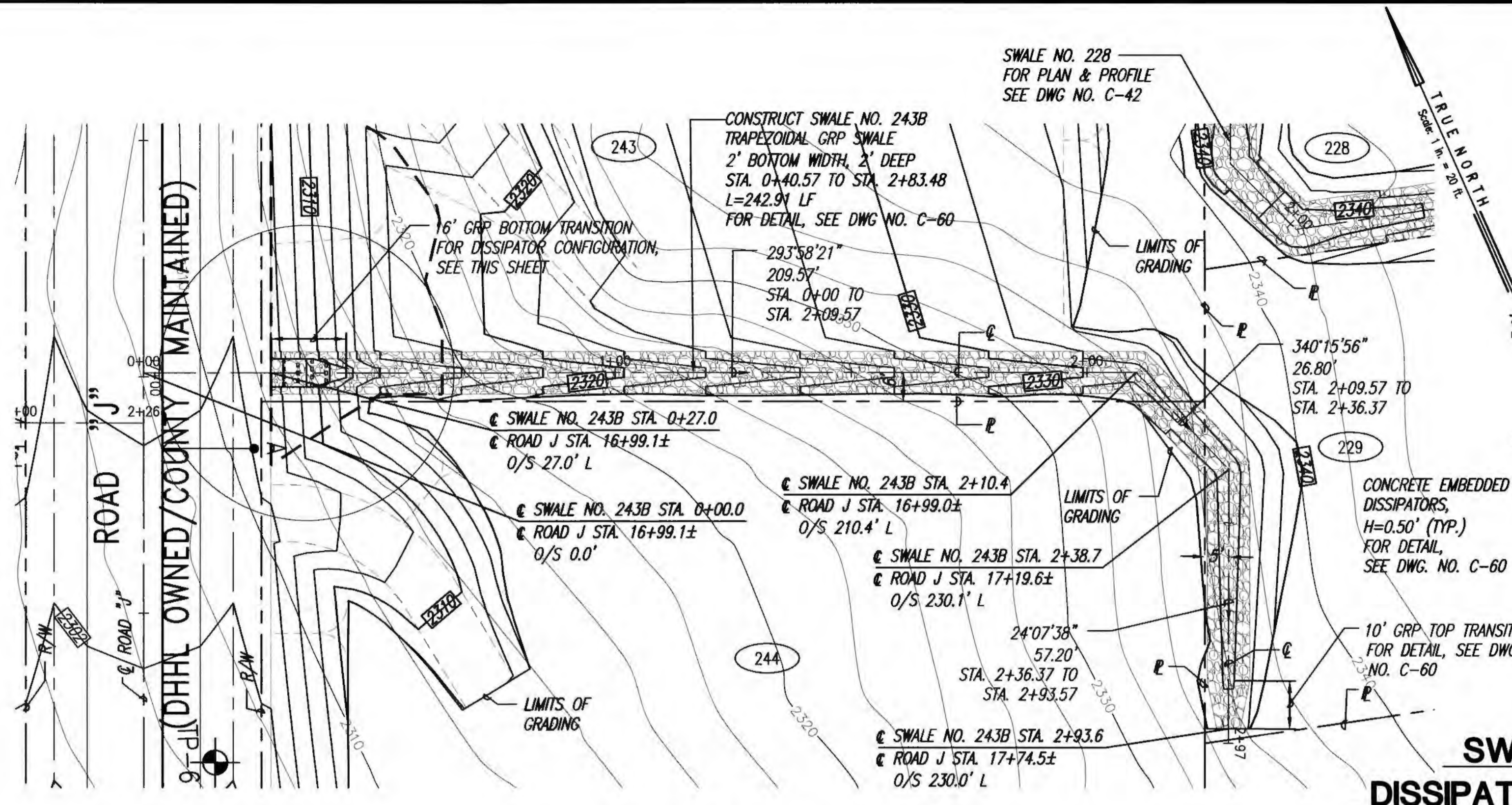
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023



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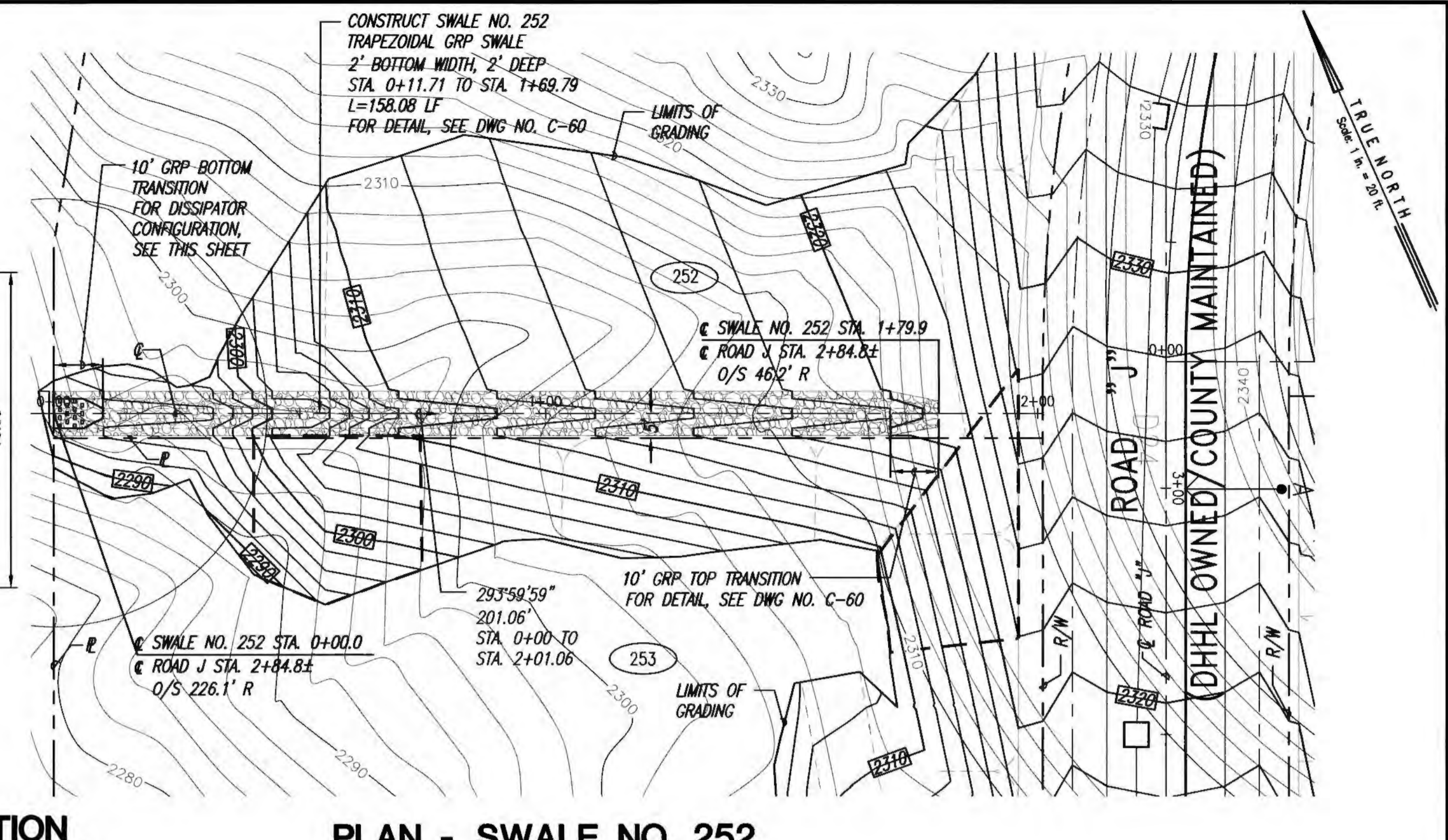


DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM

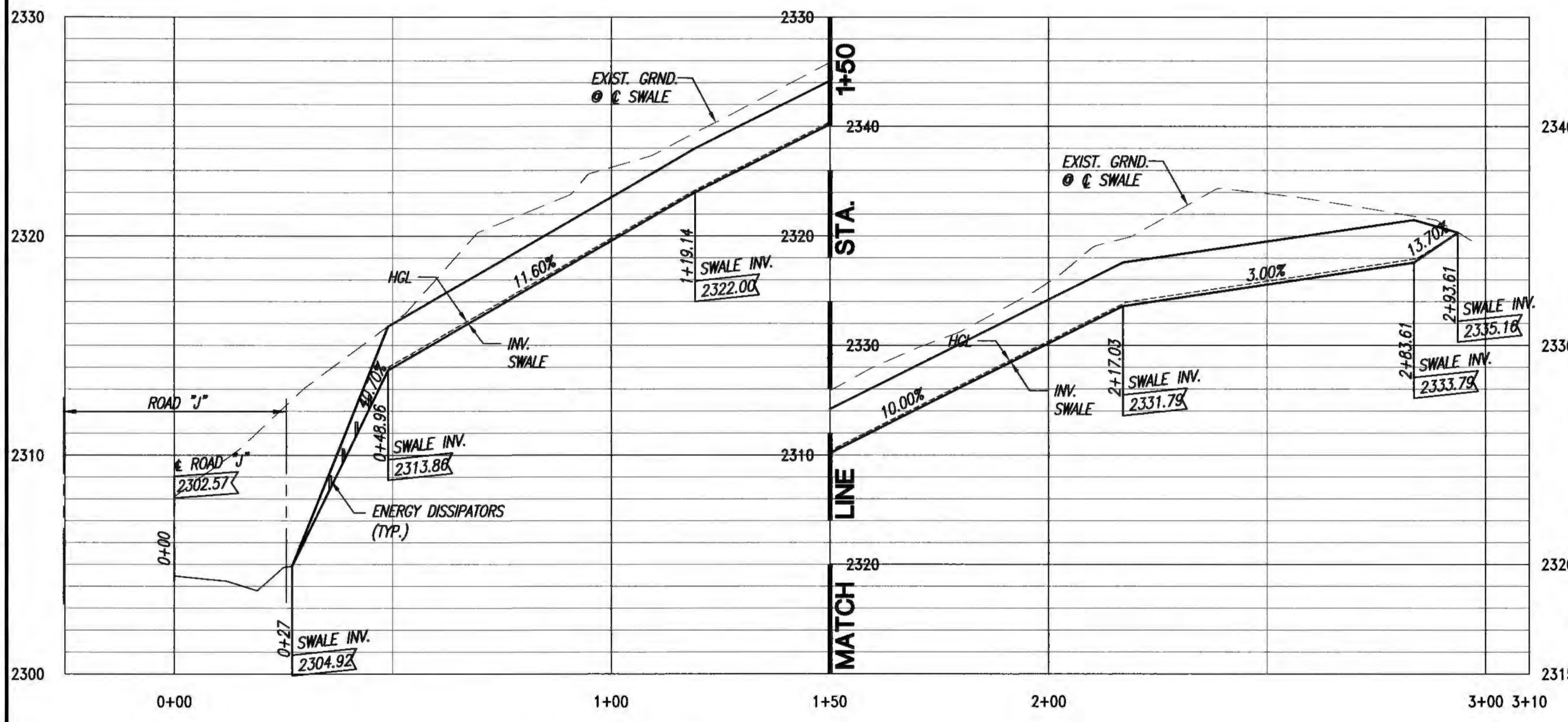


PLAN - SWALE NO. 243B
SCALE: 1"=20'

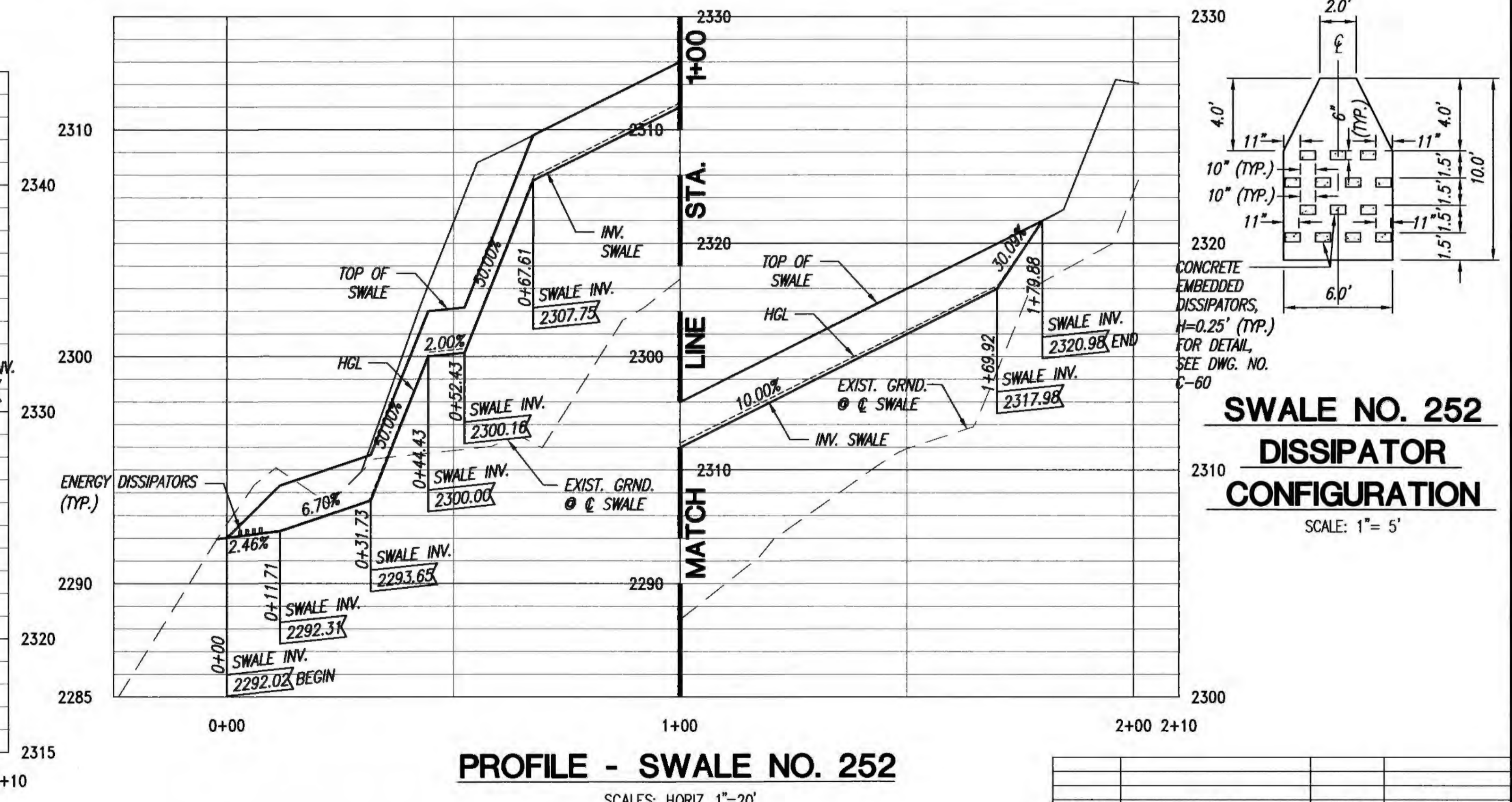
**SWALE NO. 243B
DISSIPATOR CONFIGURATION**
SCALE: 1"= 5'



PLAN - SWALE NO. 252
SCALE: 1"=20'



PROFILE - SWALE NO. 243B
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'

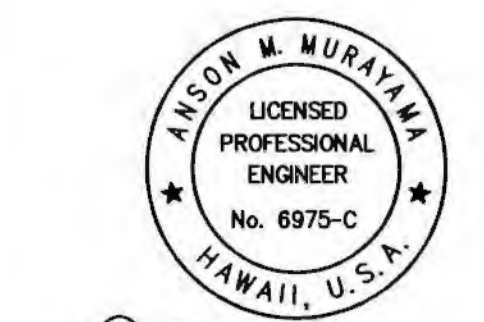
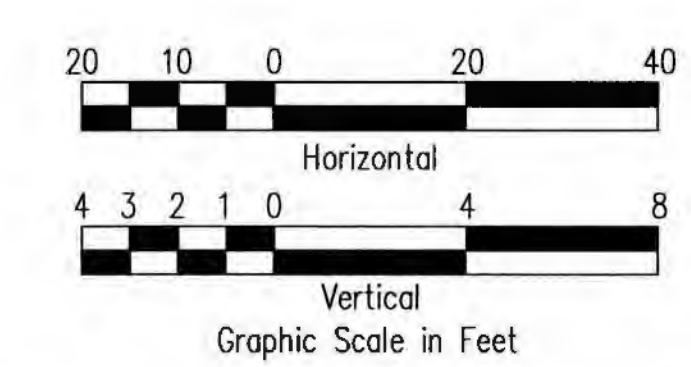
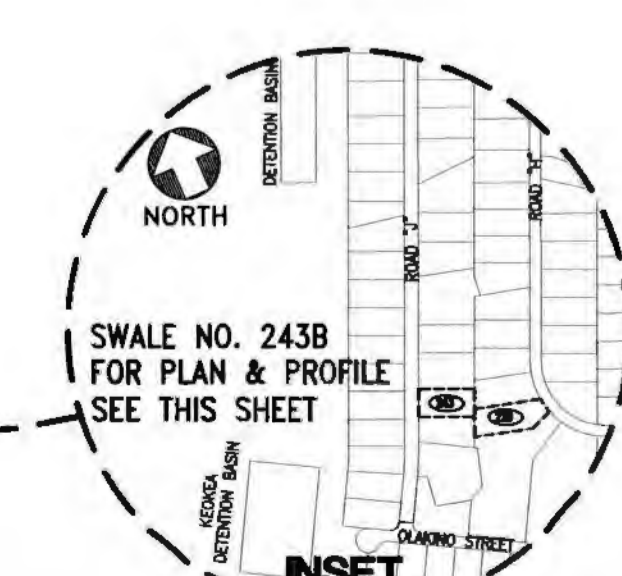
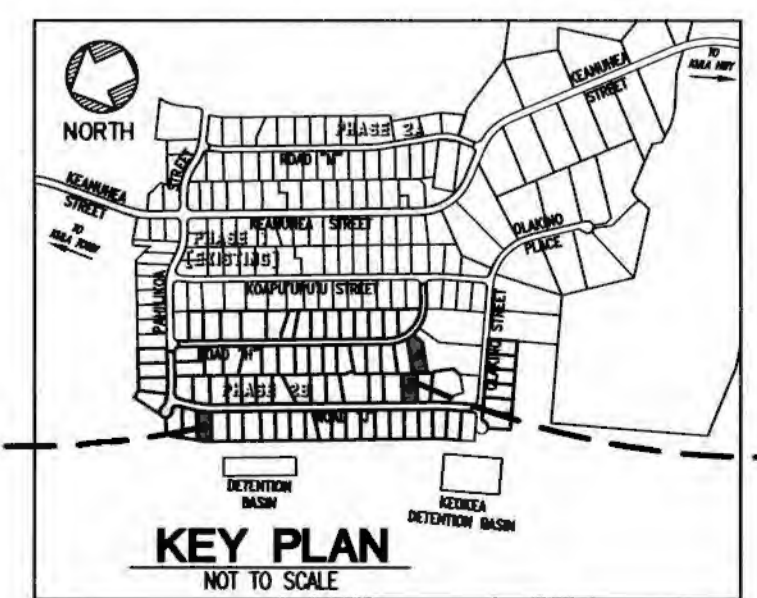
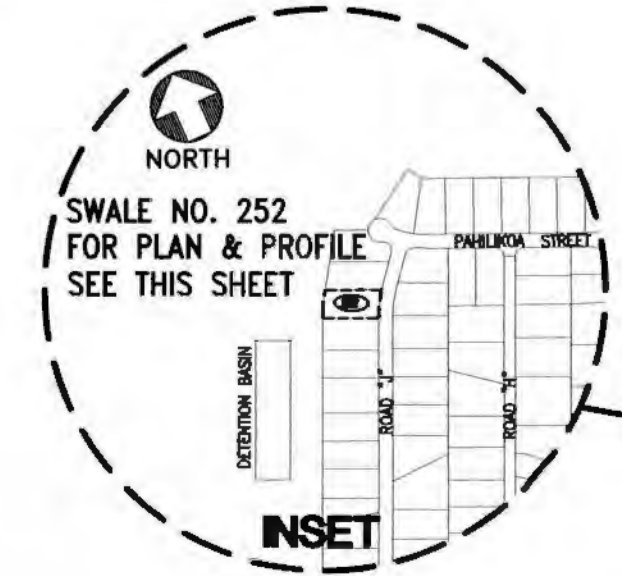


PROFILE - SWALE NO. 252
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'

**SWALE NO. 252
DISSIPATOR
CONFIGURATION**
SCALE: 1"= 5'

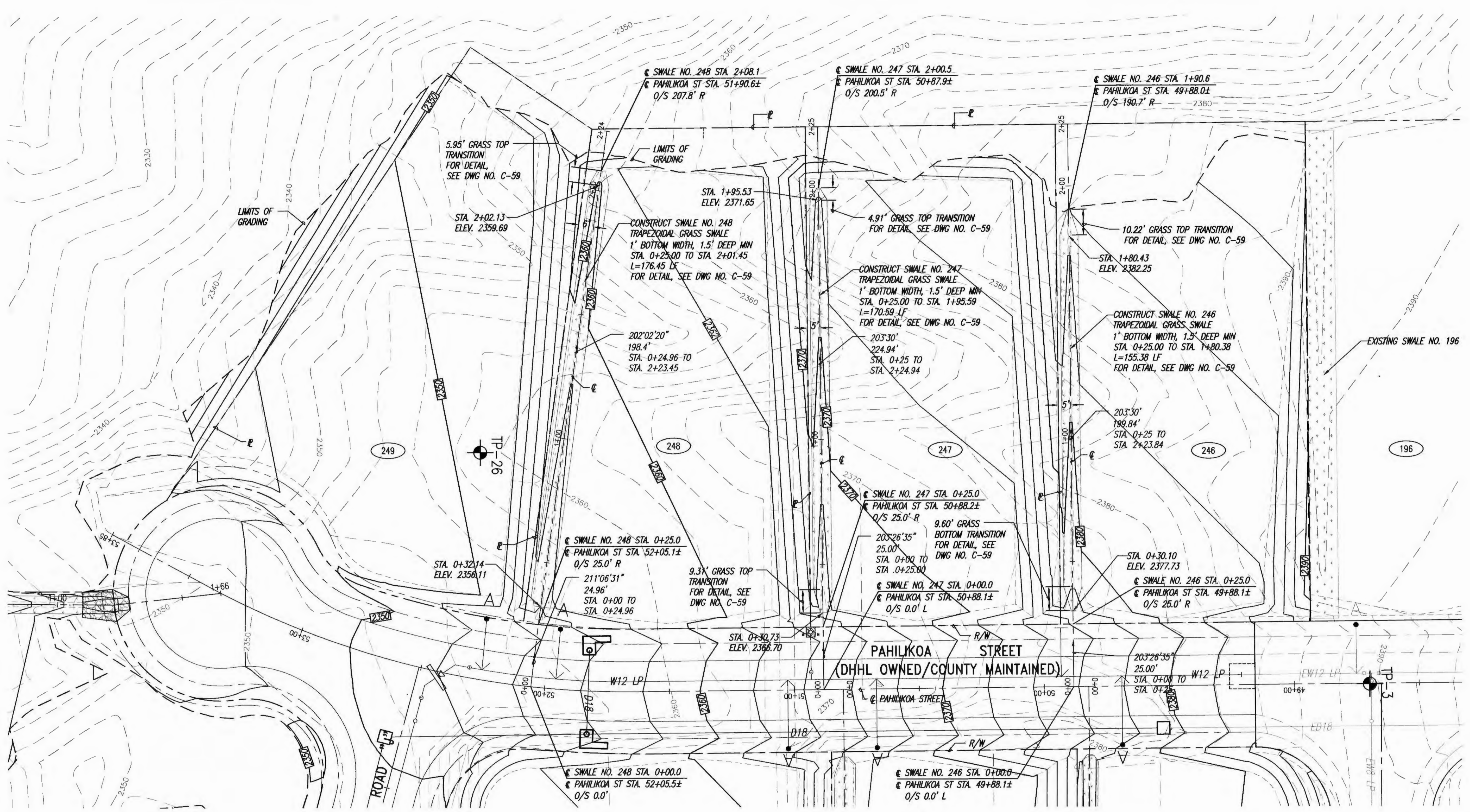
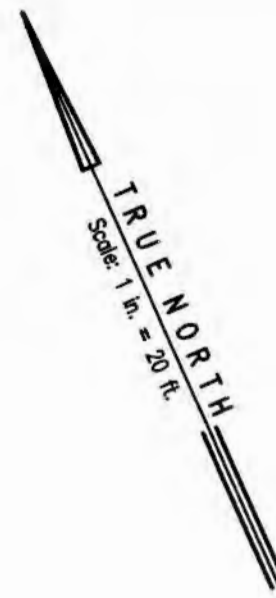
LEGEND

- LIMITS OF GRADING
- - - 2500 EXISTING GROUND CONTOUR
- - - 2450 FINISH GRADE CONTOUR
- - - PROPERTY LINE
- (140) LOT NUMBER
- (165) EXISTING LOT NUMBER
- TMK 2-2-002.014



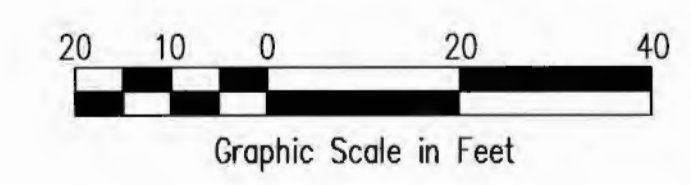
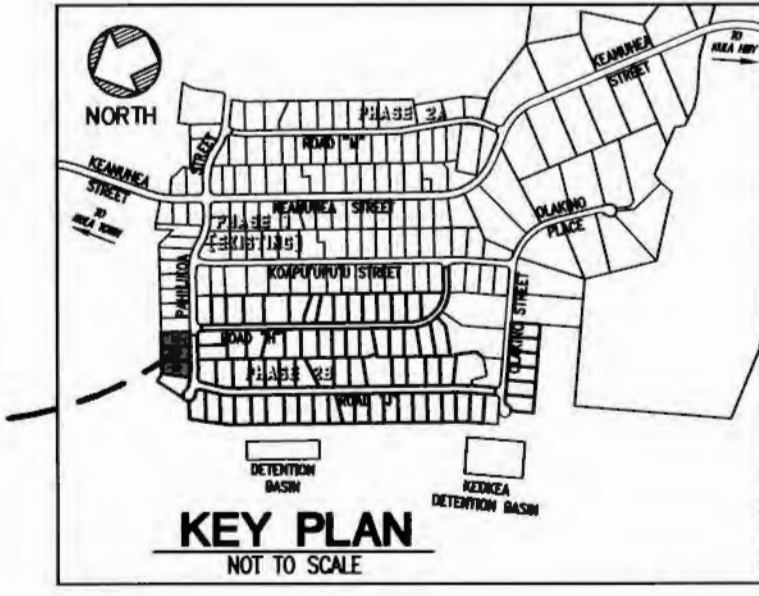
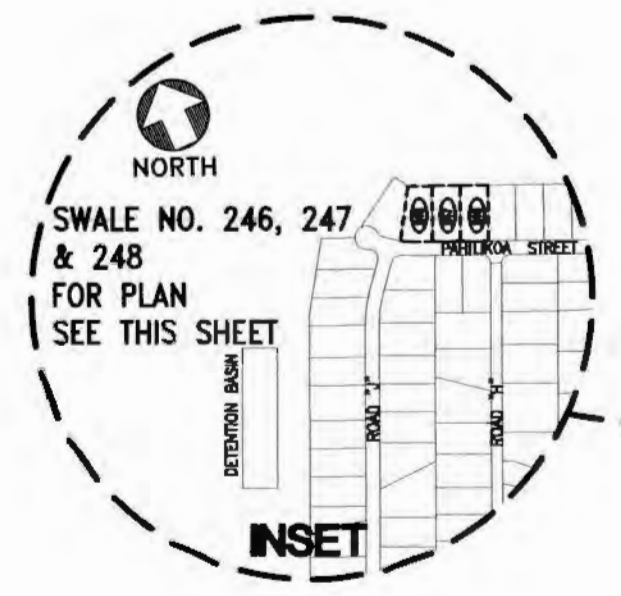
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ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/26

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002.014 AND (2) 2-2-033.023</p>			
<p>PLAN AND PROFILE SWALE NO. 243B & 252</p>			
DRAWN BY: HW1, CO		ENGINEER: HW1, FJC	
CHECKED BY: AMM			
FILE	POCKET	FOLDER	NO.



PLAN - SWALE NO. 246, 247 & 248
SCALE: 1"=20'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 FINISH GRADE CONTOUR
 - PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002:014



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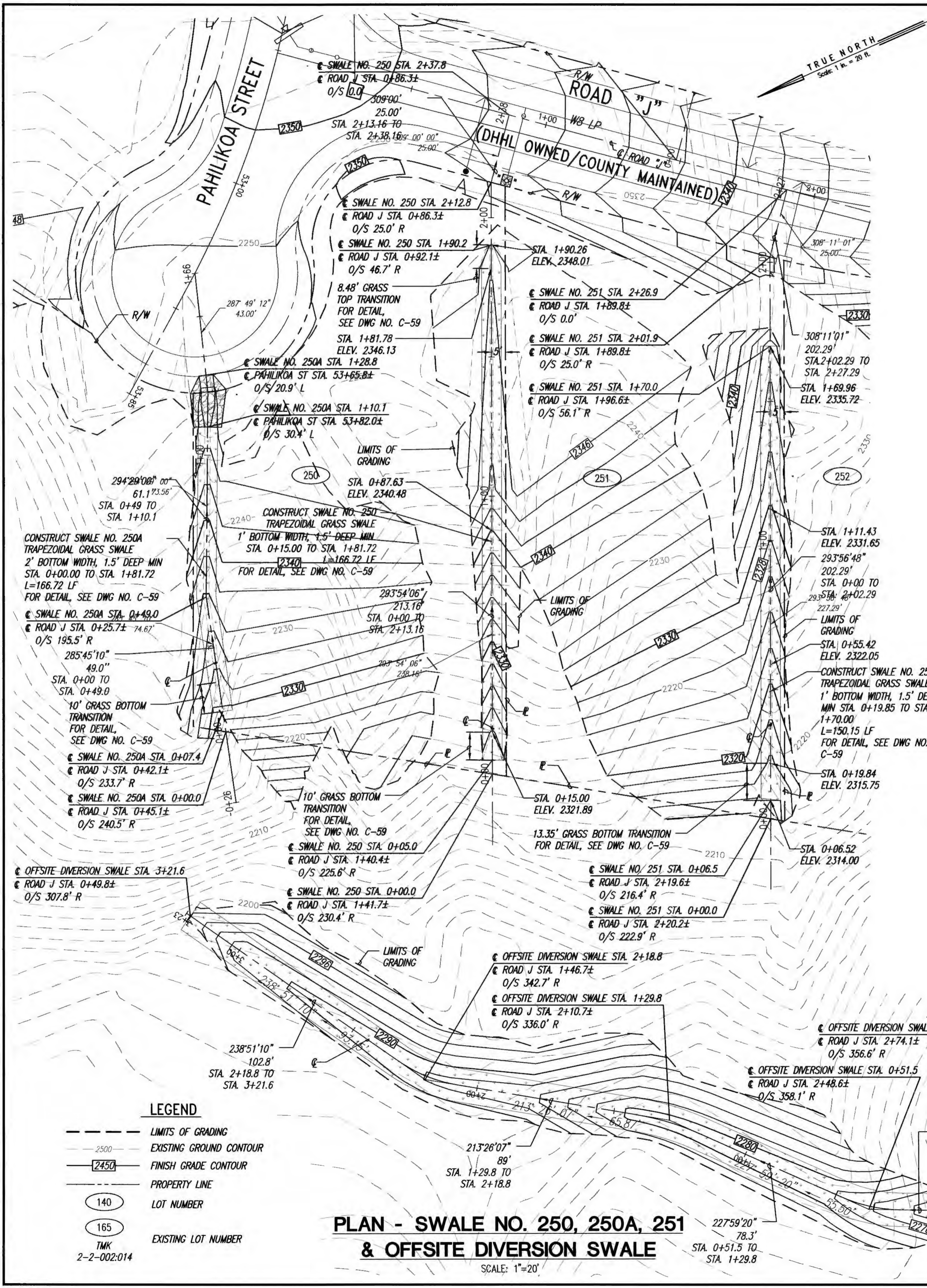
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

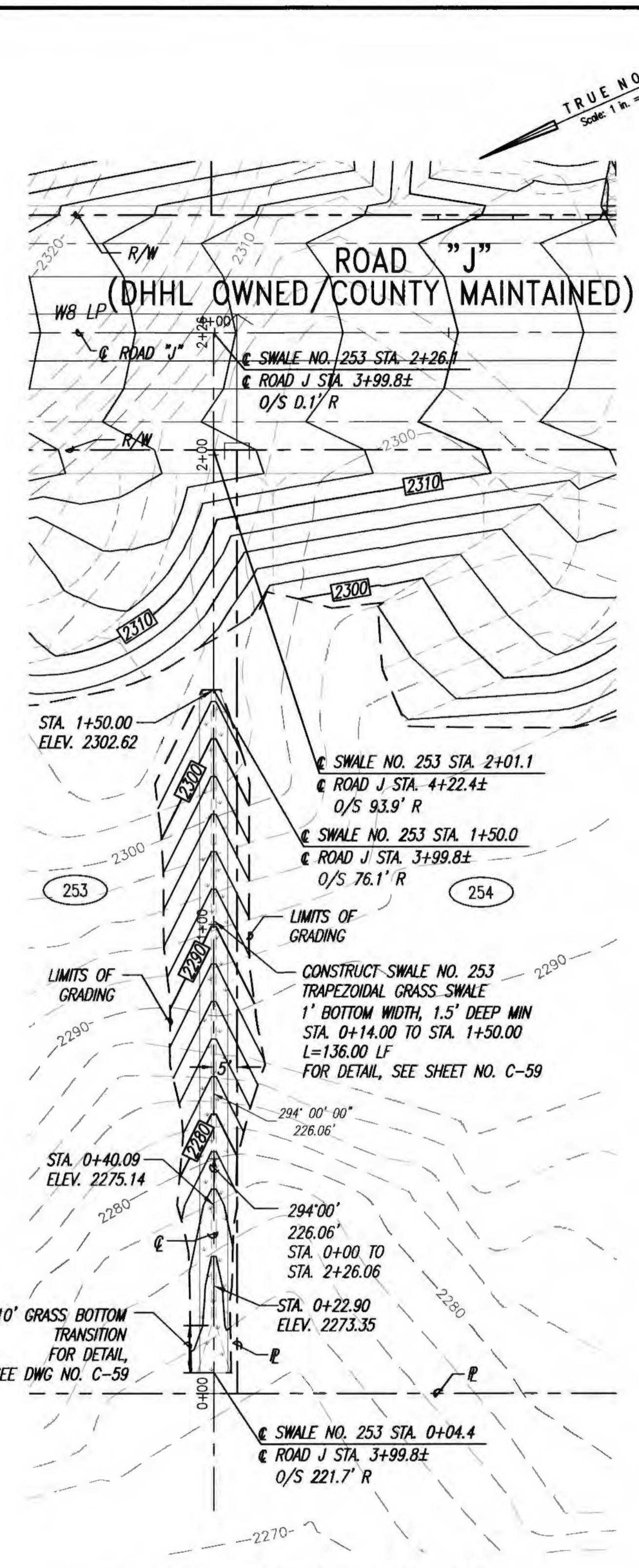
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN SWALE NO. 246, 247 & 248

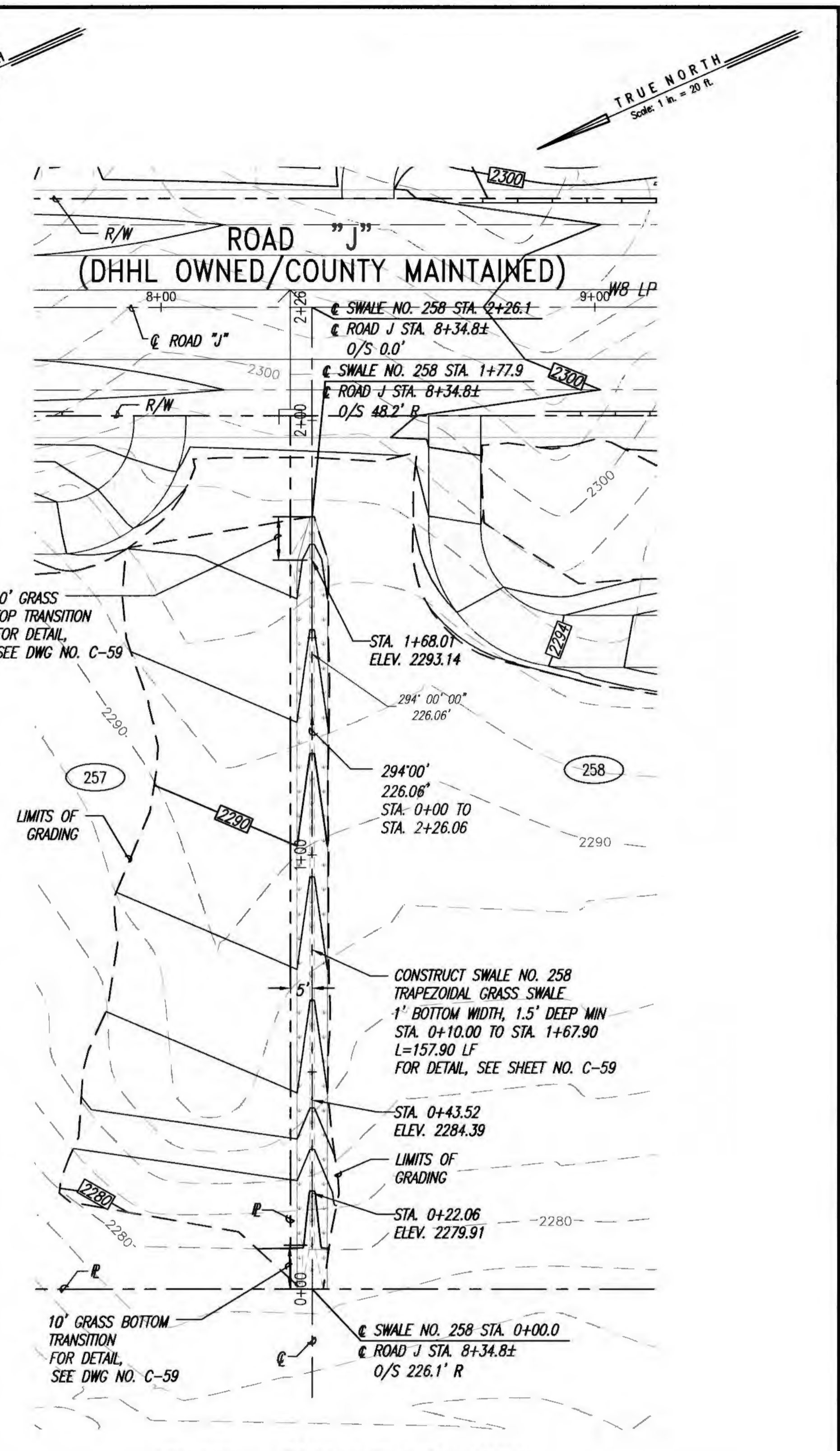
DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



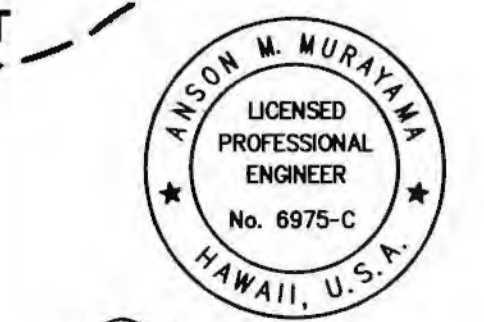
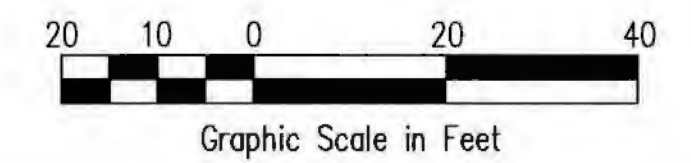
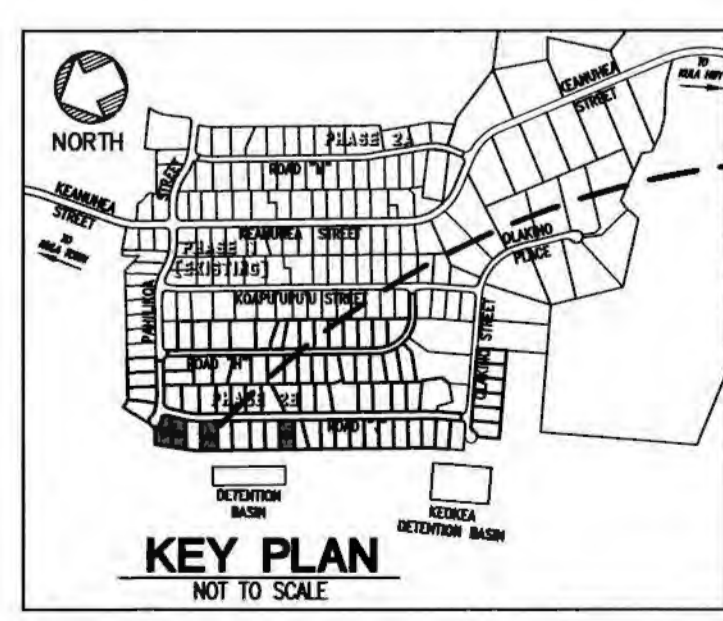
PLAN - SWALE NO. 250, 250A, 251 & OFFSITE DIVERSION SWALE
SCALE: 1"=20'



PLAN - SWALE NO. 253
SCALE: 1"=20'



PLAN - SWALE NO. 258
SCALE: 1"=20'



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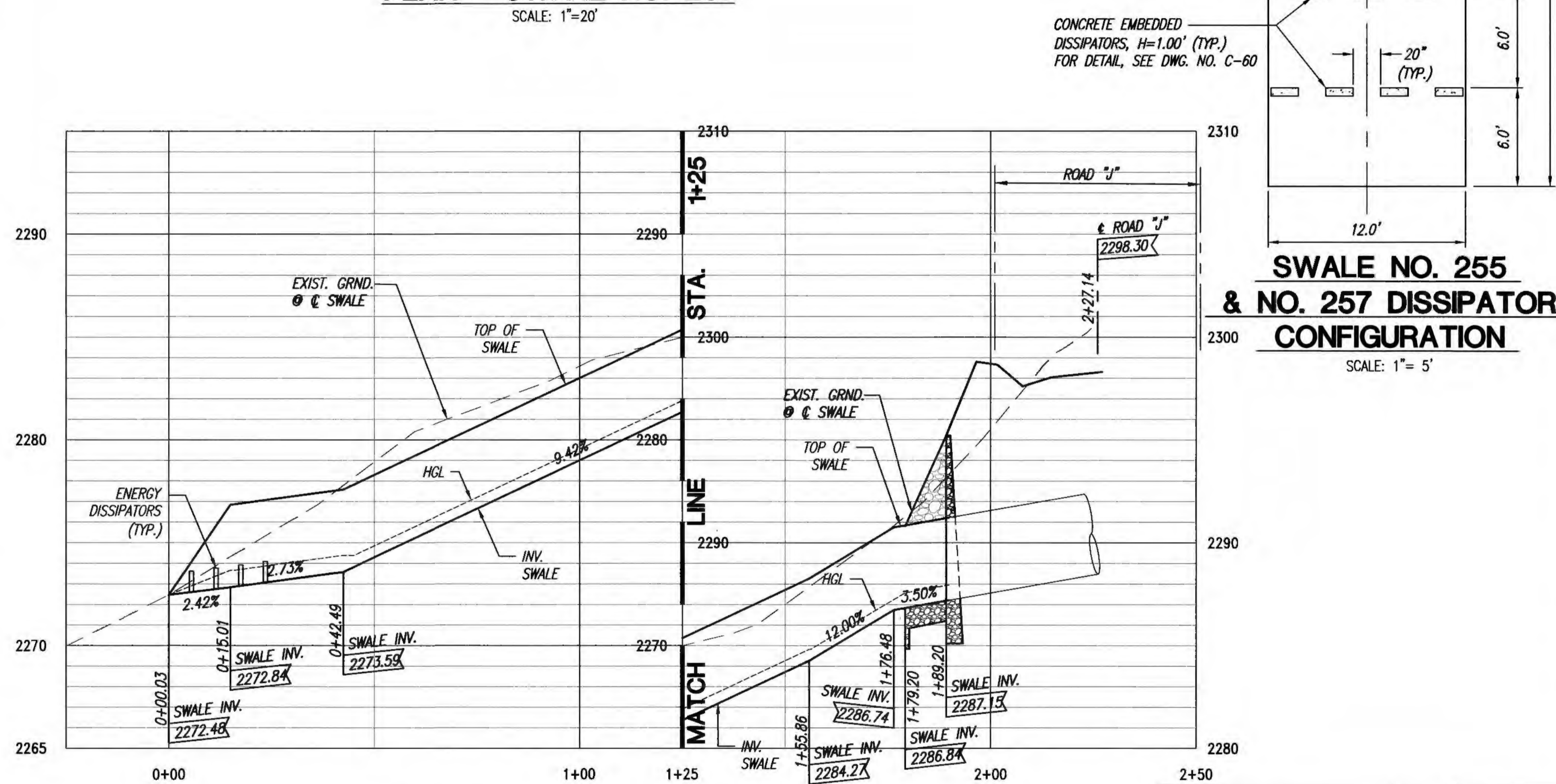
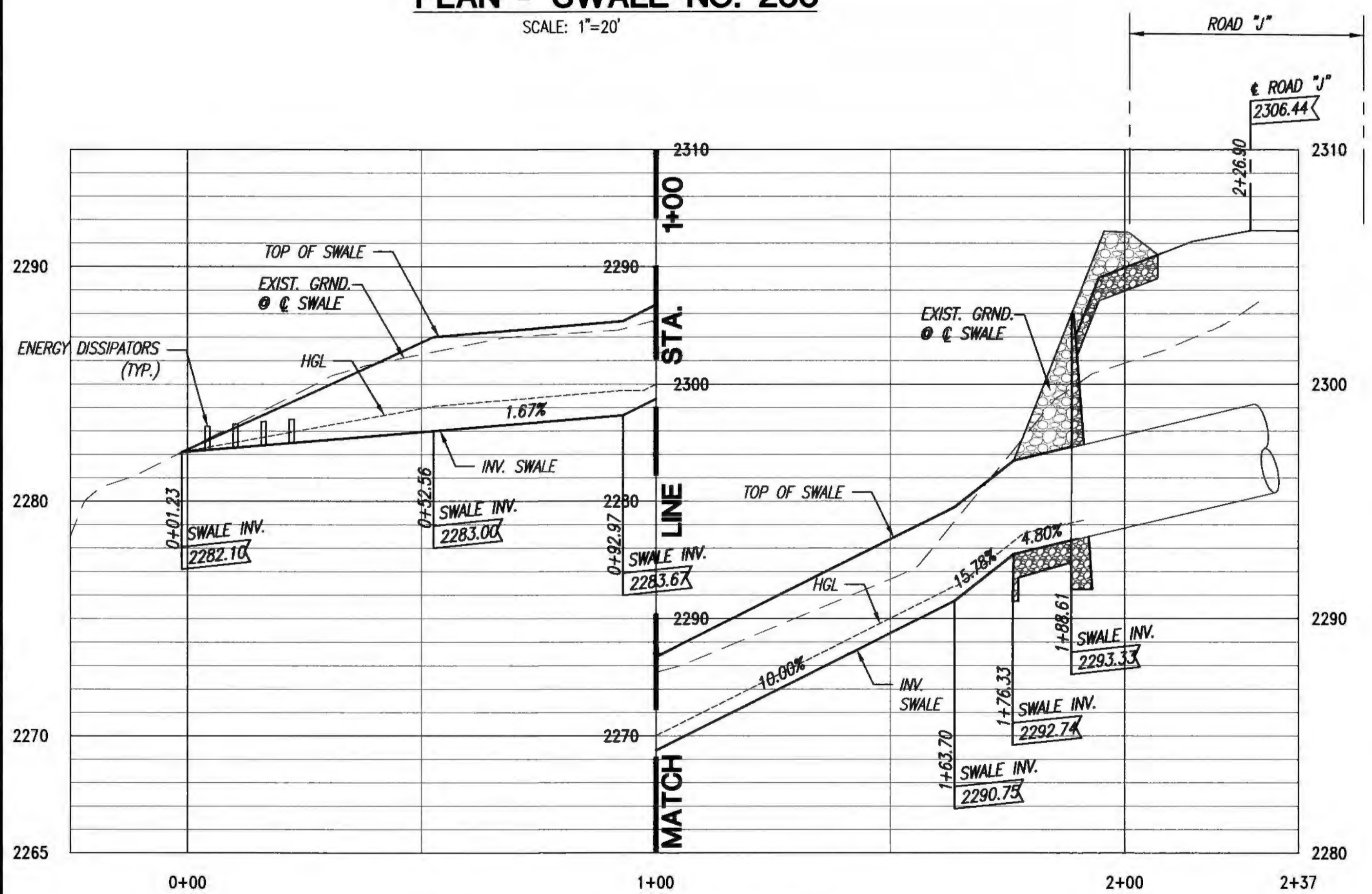
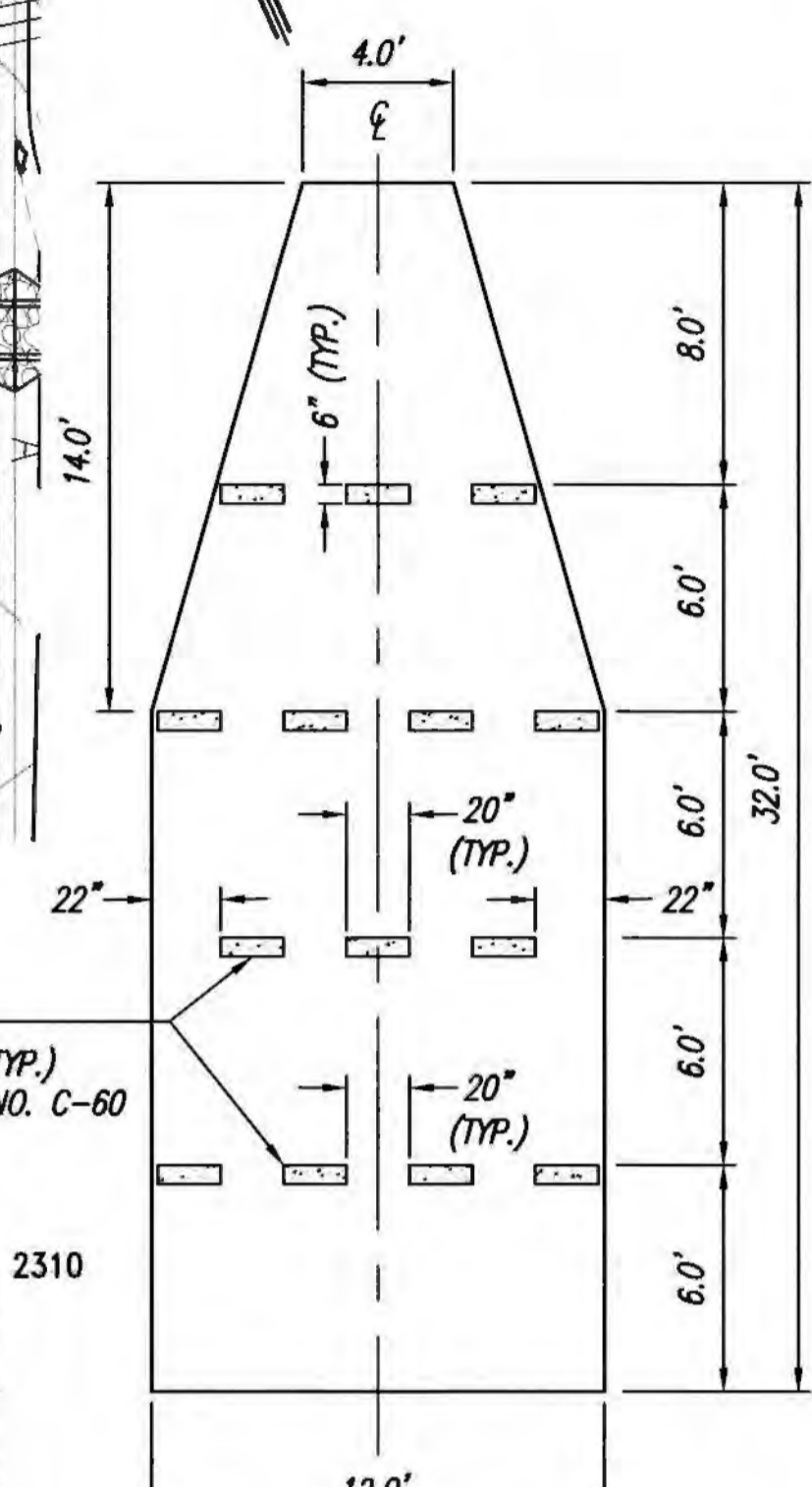
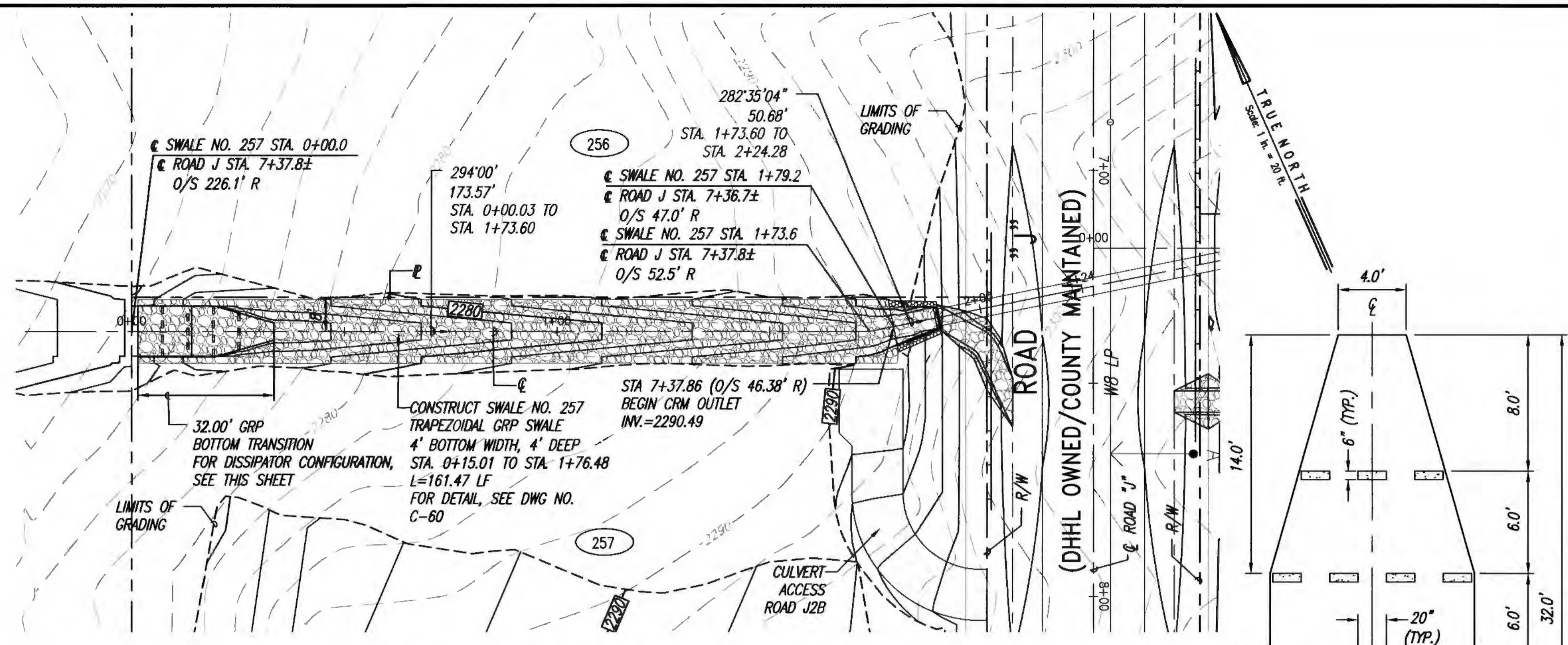
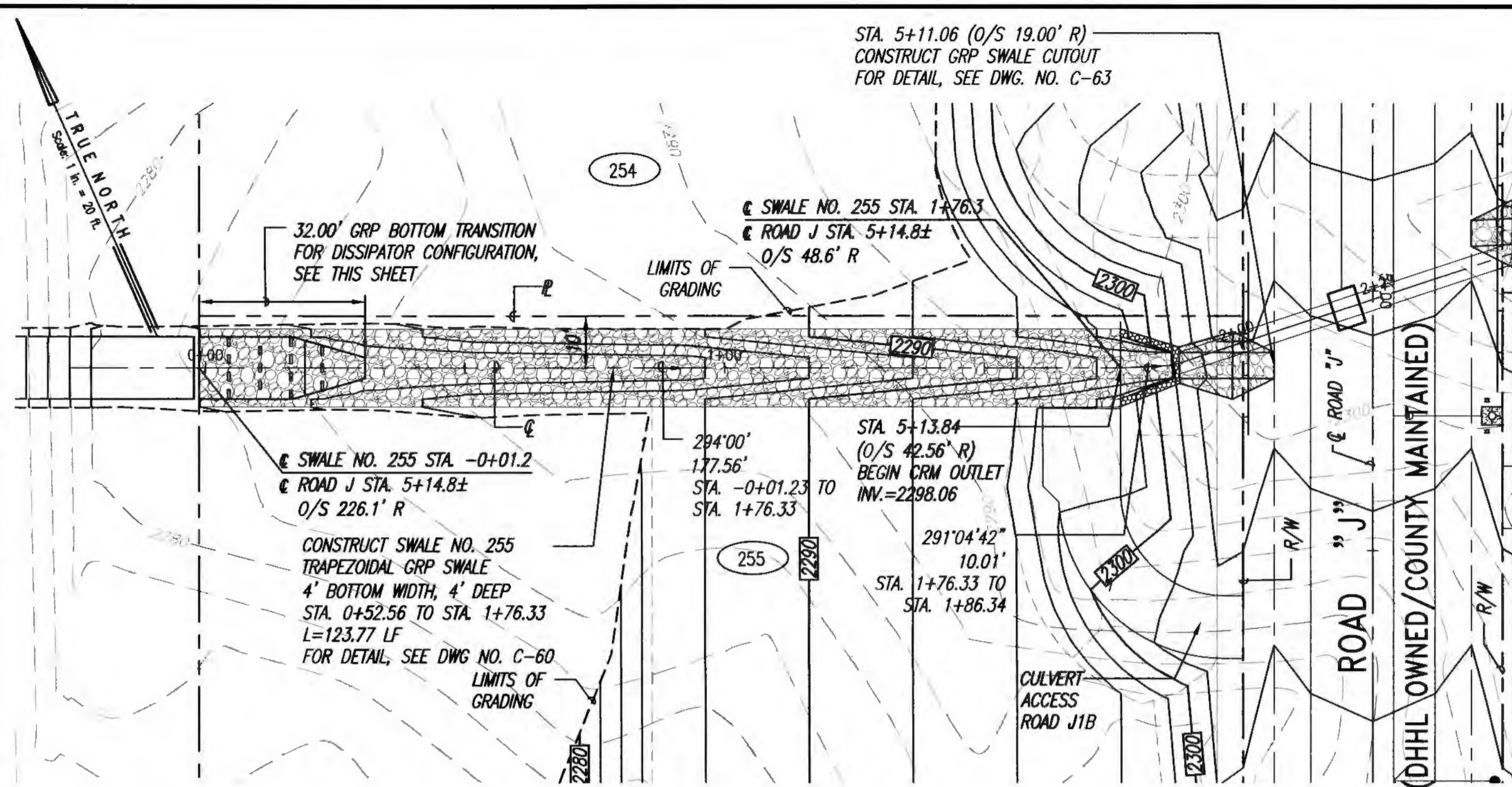
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1206 Queen Emma Street, Third Floor, Honolulu, Hawaii

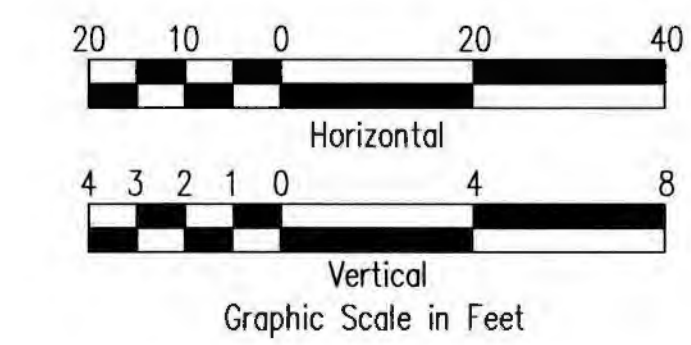
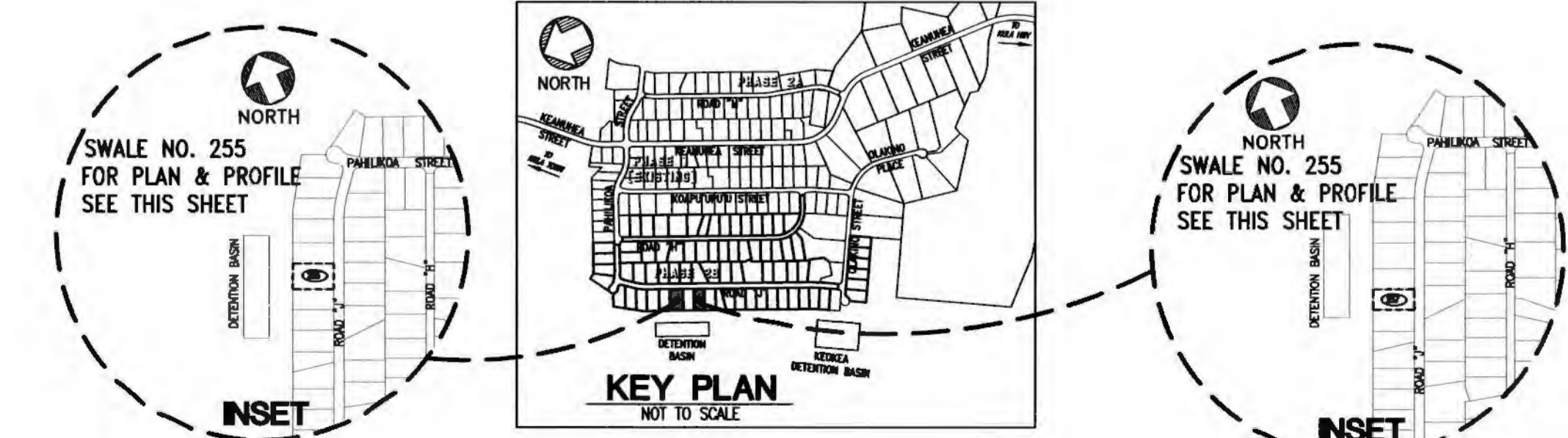
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

PLAN SWALE NO. 250, 250A, 251, 253, 258 & OFFSITE DIVERSION SWALE

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



- LEGEND**
- LIMITS OF GRADING
 - 2500- EXISTING GROUND CONTOUR
 - 2450- FINISH GRADE CONTOUR
 - PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002-014



ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

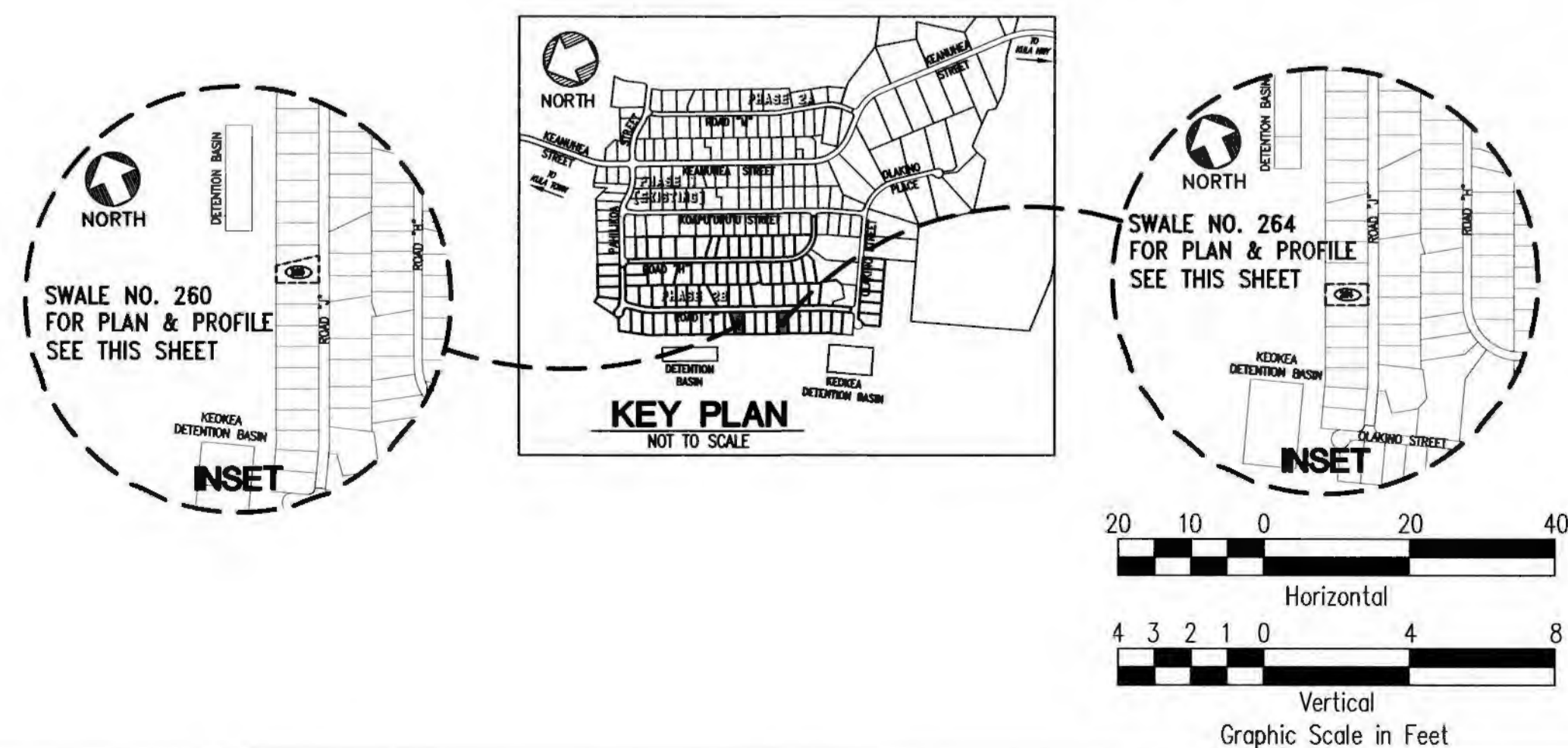
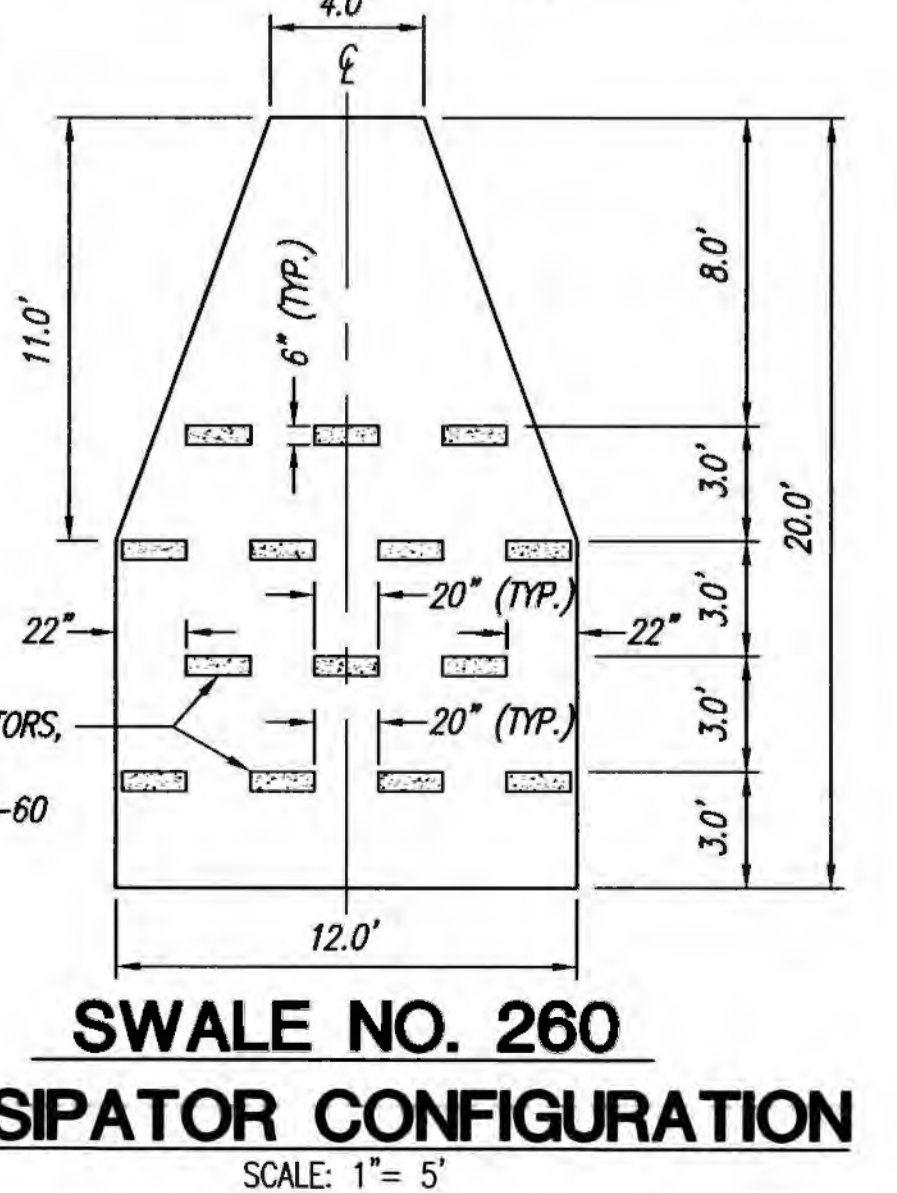
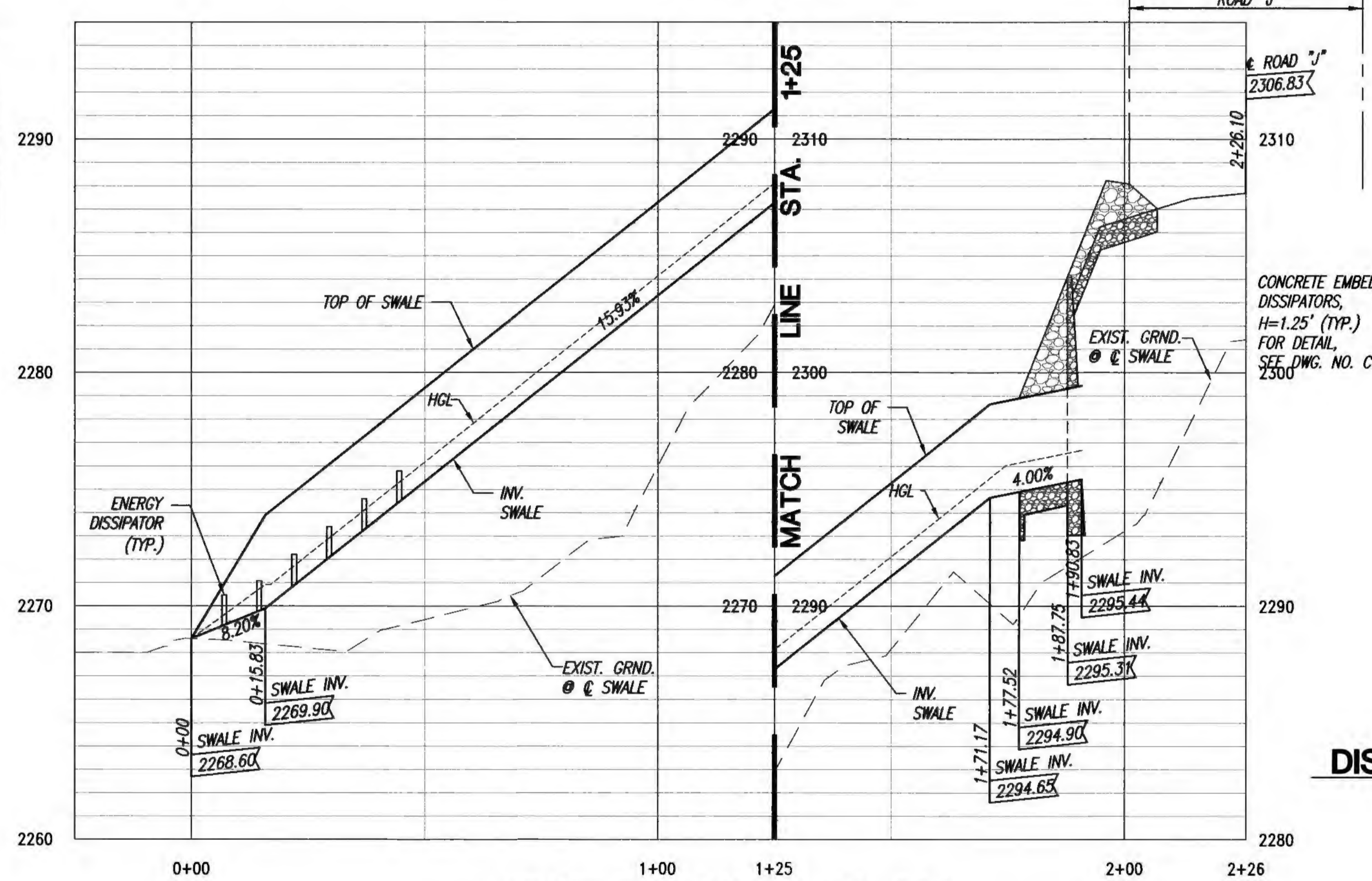
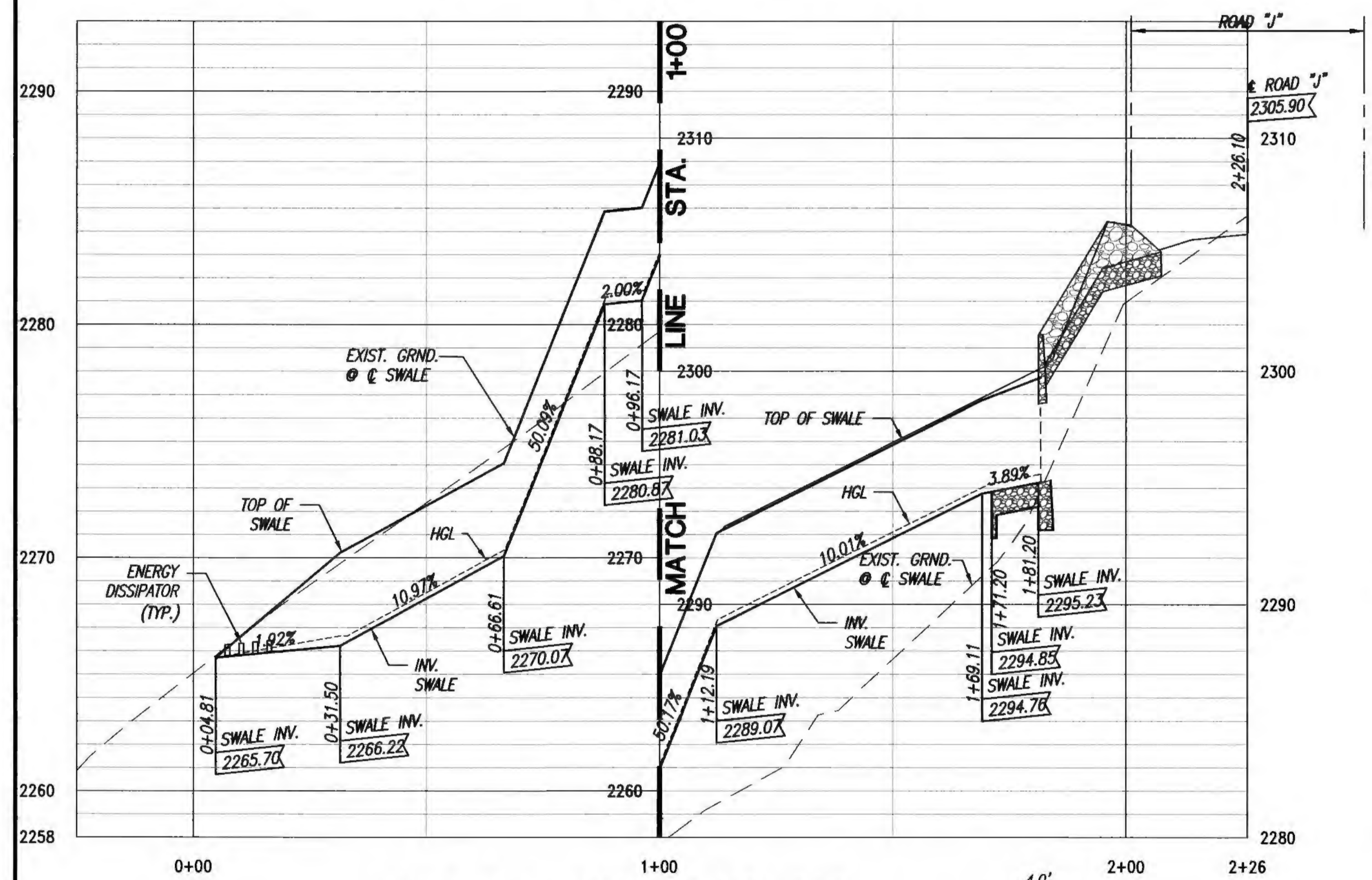
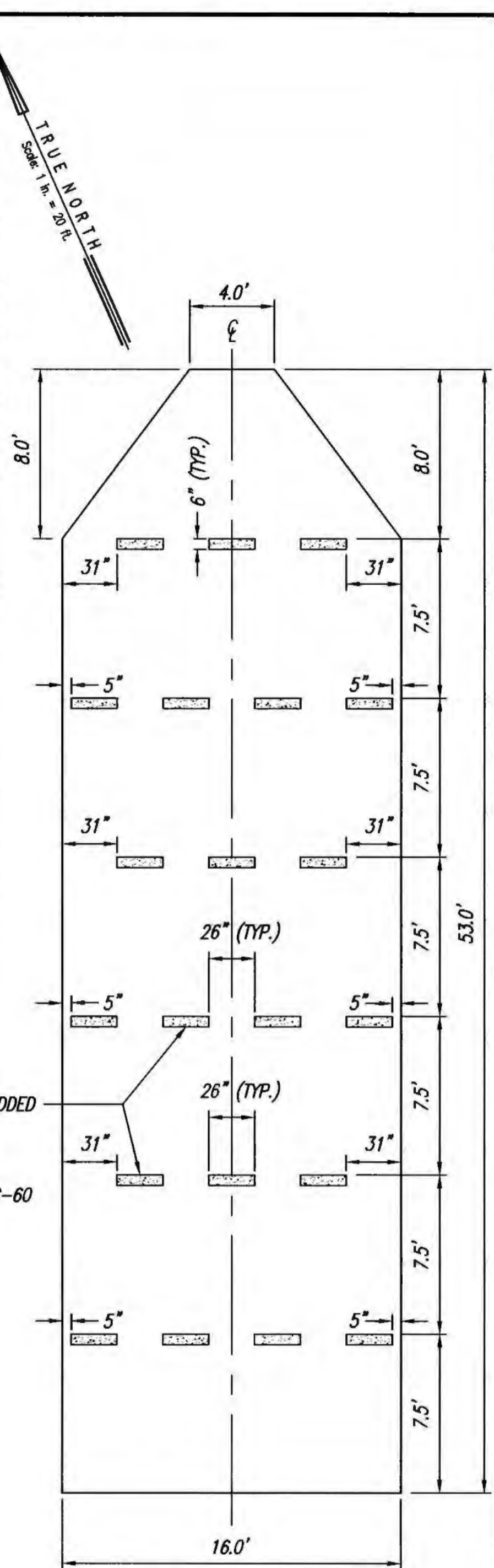
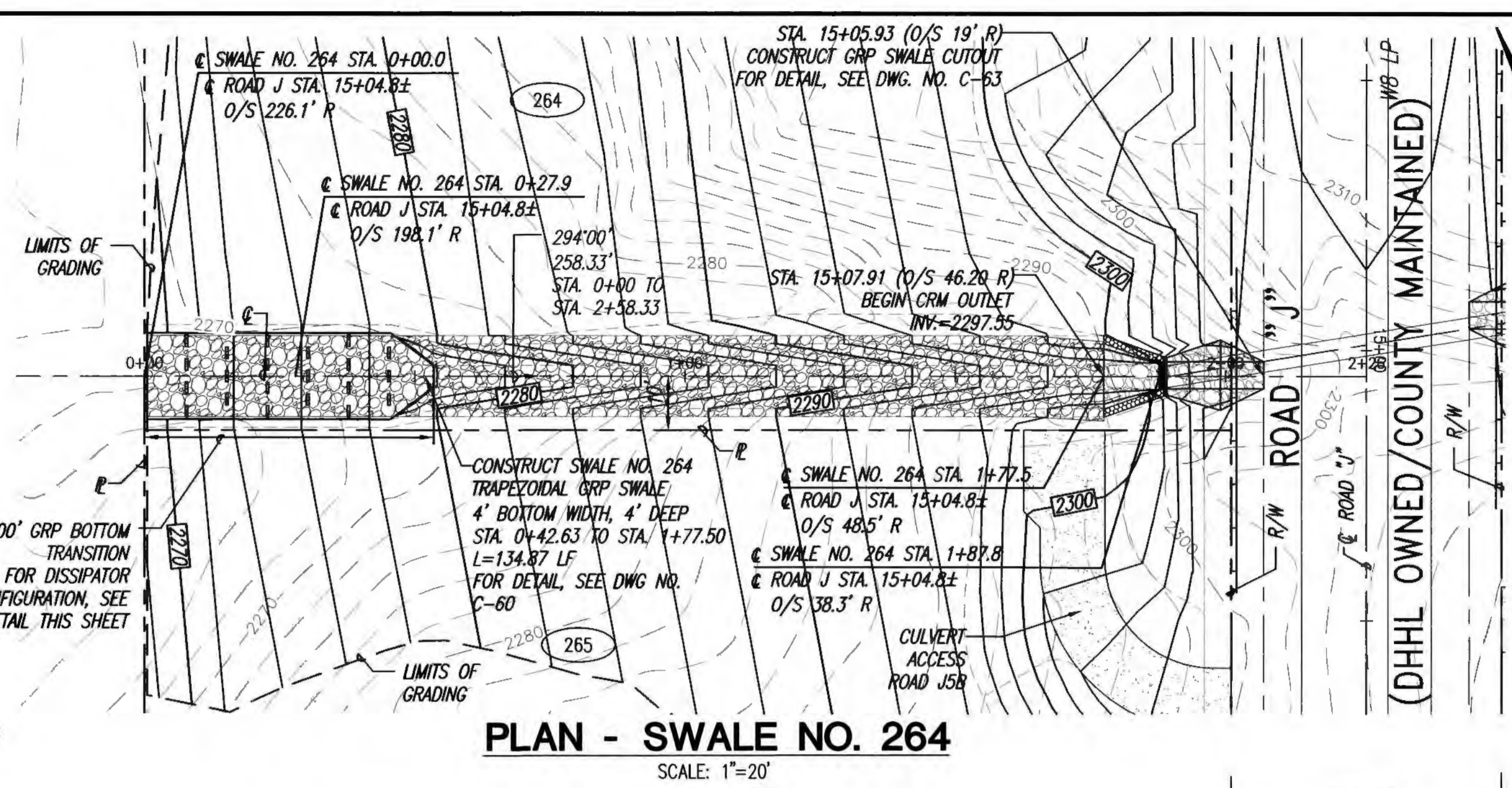
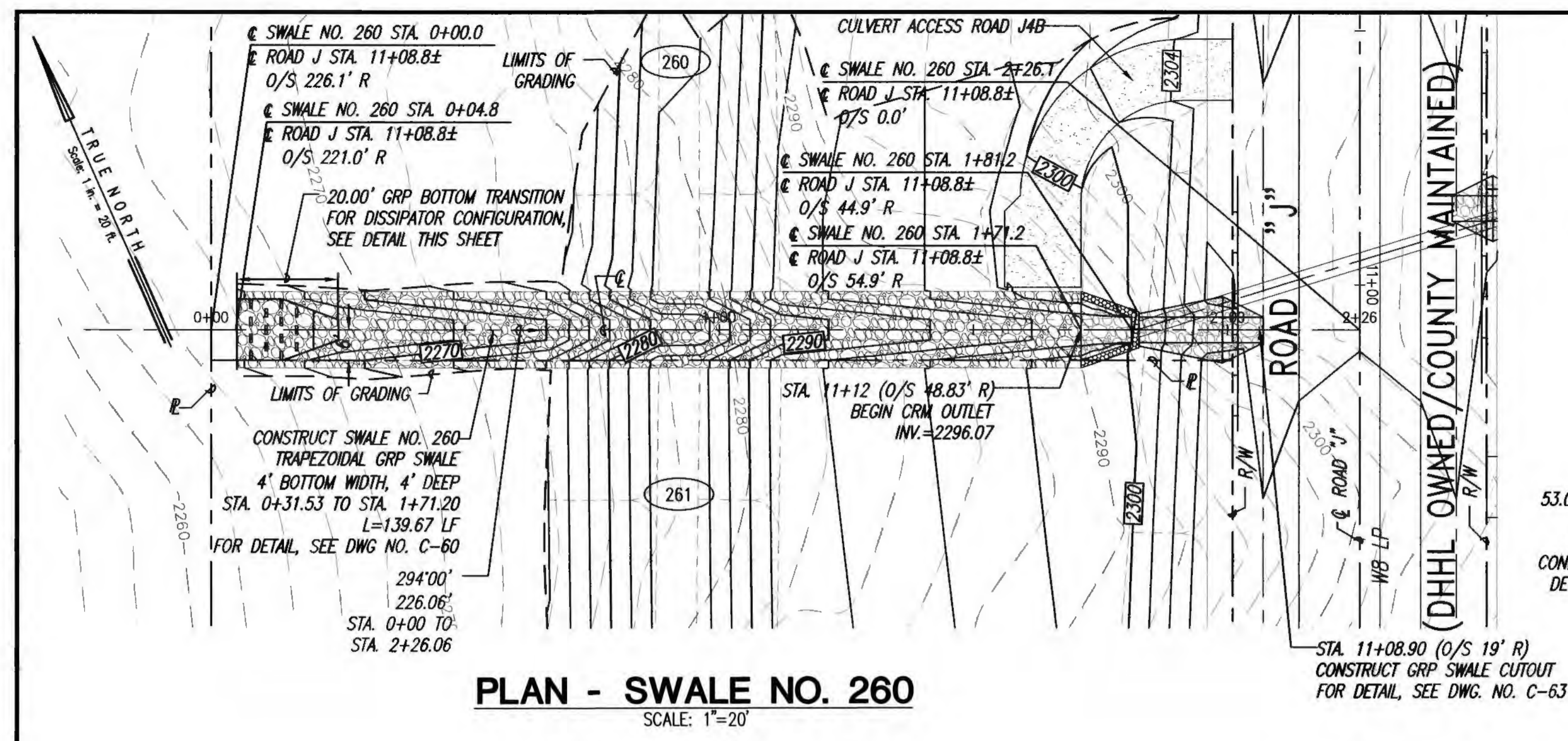
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Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

PLAN AND PROFILE SWALE NO. 255 & 257

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM



- LEGEND**
- LIMITS OF GRADING
 - - - 2500 EXISTING GROUND CONTOUR
 - - - 2450 FINISH GRADE CONTOUR
 - PROPERTY LINE
 - 140 LOT NUMBER
 - 165 EXISTING LOT NUMBER
 - TMK 2-2-002:014

ANSON W. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

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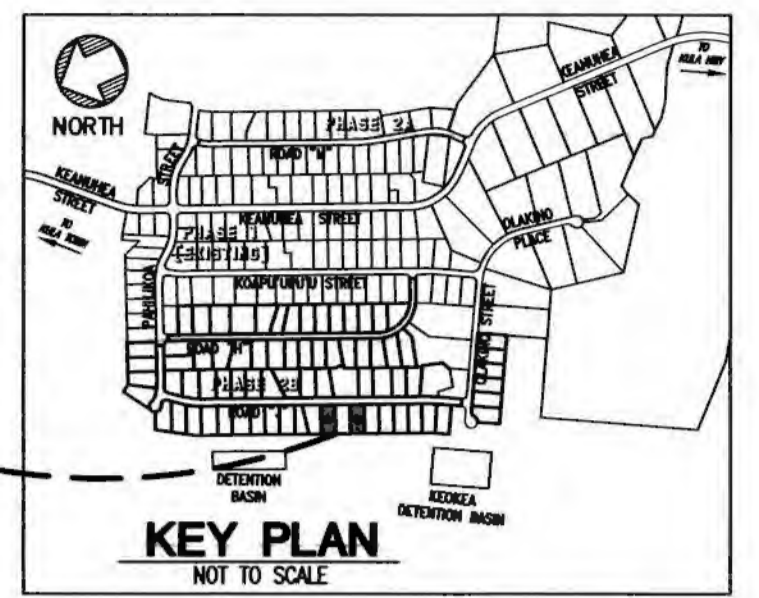
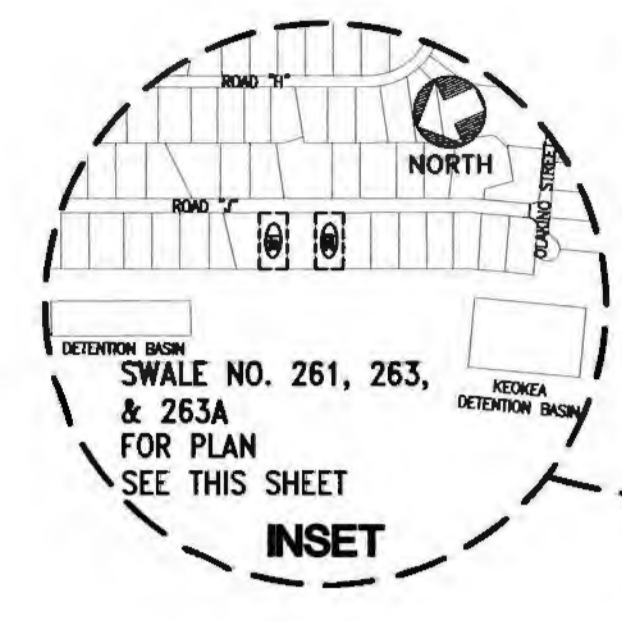
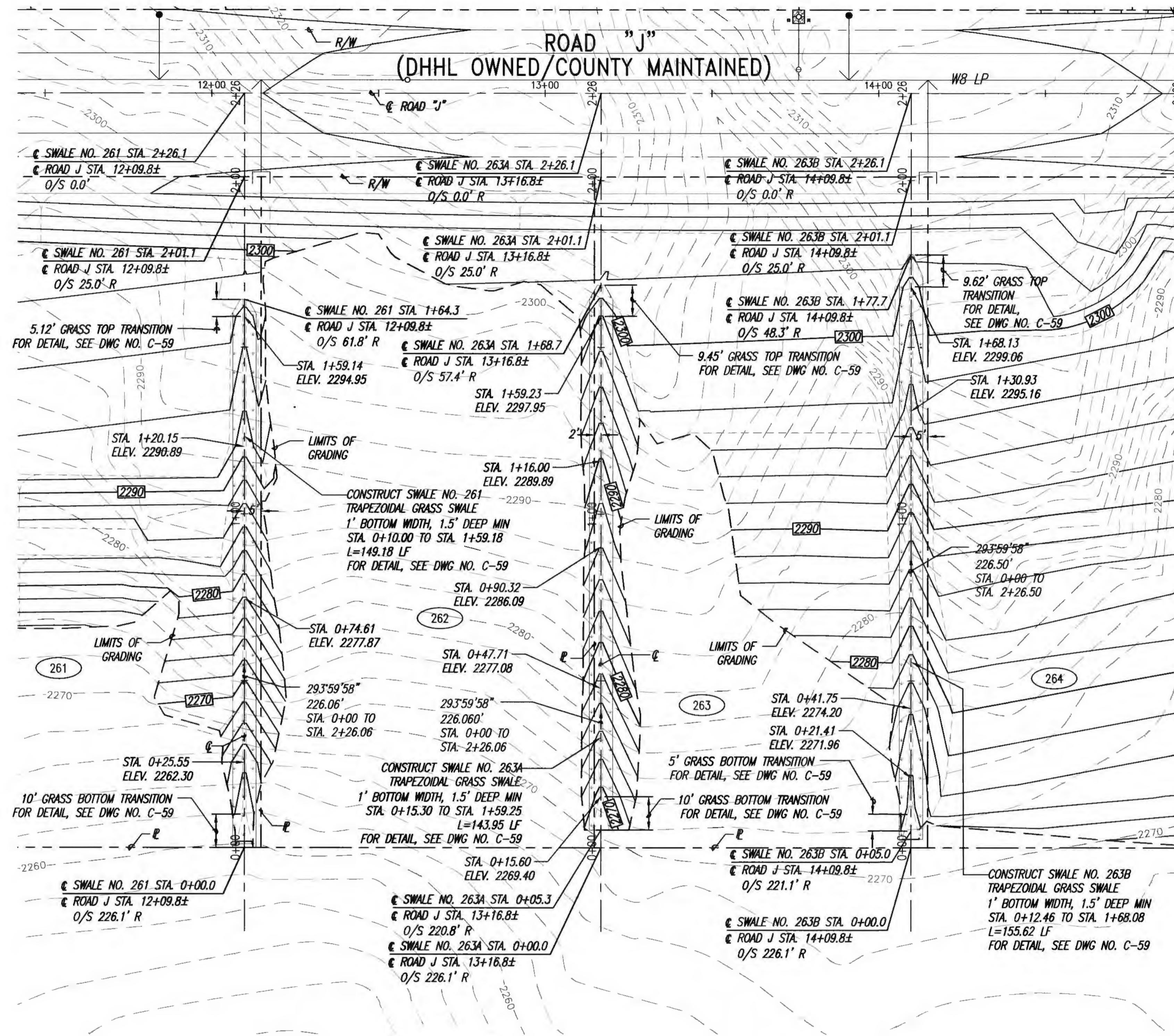
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
2298 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN AND PROFILE SWALE NO. 260 & 264

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM

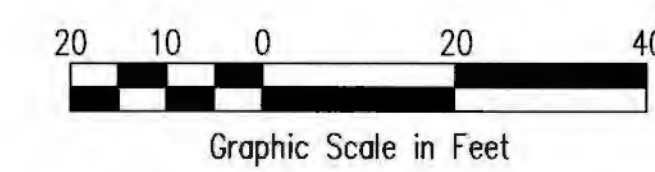
DWG. NO. C-51 SHEET 52 OF 79 SHEETS



PLAN - SWALE NO. 261, 263, & 263A

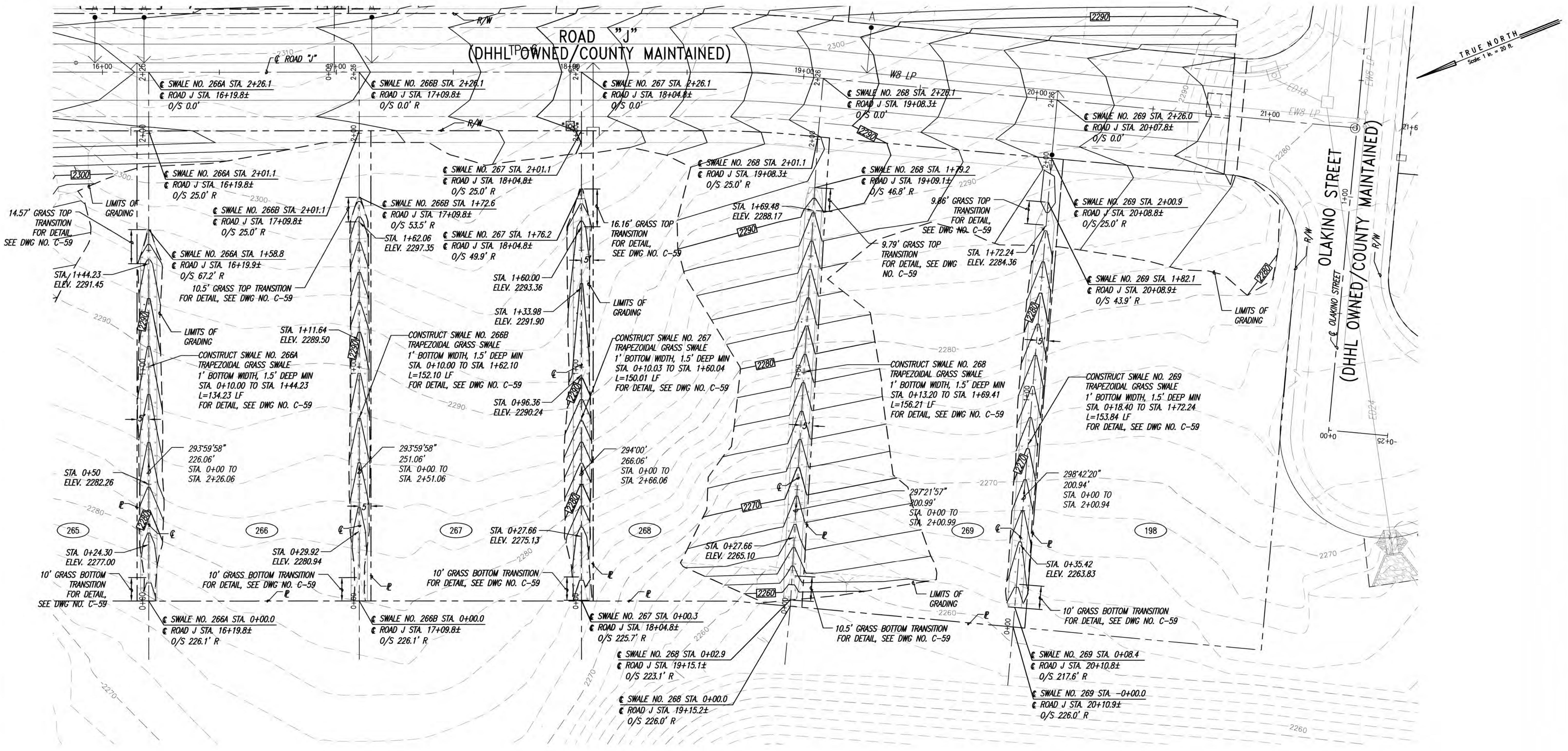
SCALE: 1"=20'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



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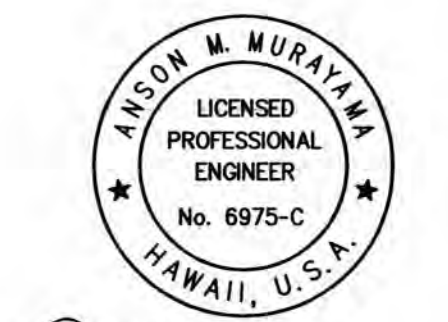
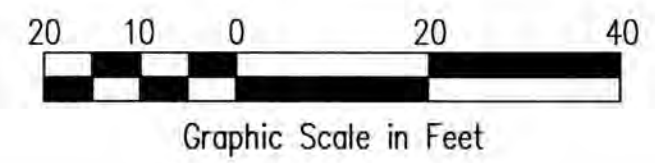
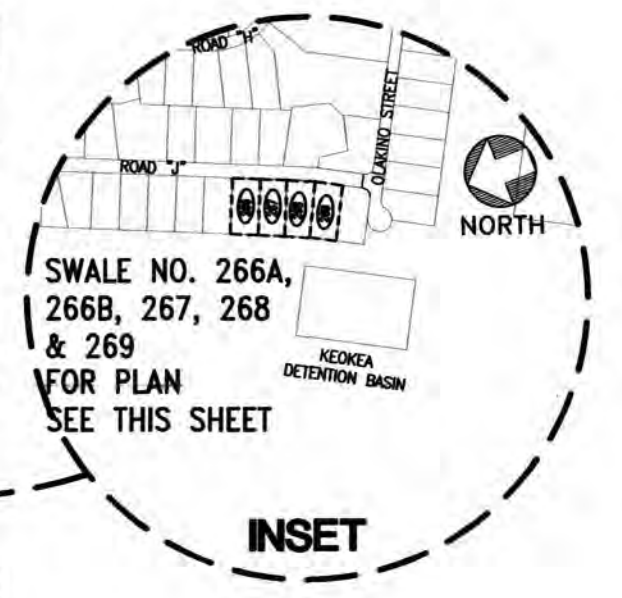
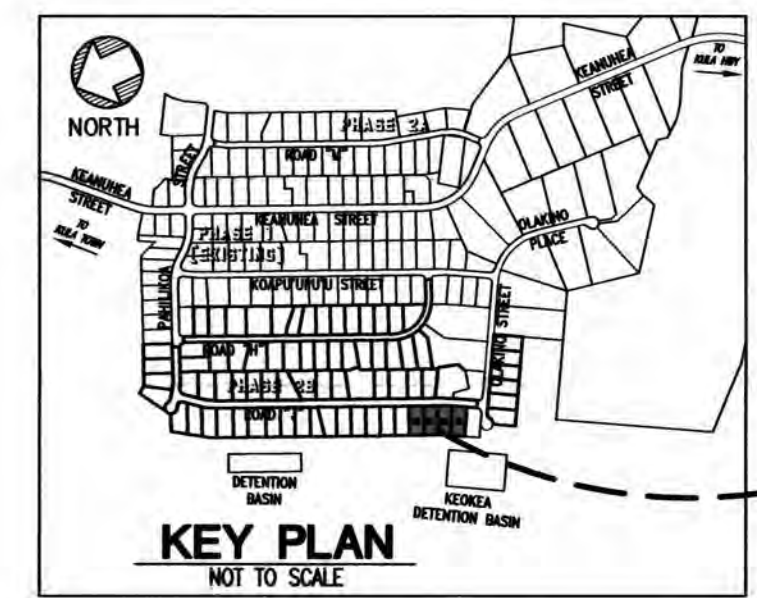
REVISION DATE	DESCRIPTION	MADE BY	APPROVED				
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1256 Queen Emma Street, Third Floor Honolulu, Hawaii							
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023							
PLAN SWALE NO. 261, 263A & 263B							
DRAWN BY: HWH, CO	ENGINEER: HWH, FJC	CHECKED BY: AMM					
<table border="1" style="width: 100%;"> <tr> <td>FILE</td> <td>POCKET</td> <td>FOLDER</td> <td>NO.</td> </tr> </table>				FILE	POCKET	FOLDER	NO.
FILE	POCKET	FOLDER	NO.				



PLAN - SWALE NO. 266A, 266B, 267, 268 & 269

SCALE: 1"=20'

- LEGEND**
- LIMITS OF GRADING
 - - - - EXISTING GROUND CONTOUR
 - 2450 — FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

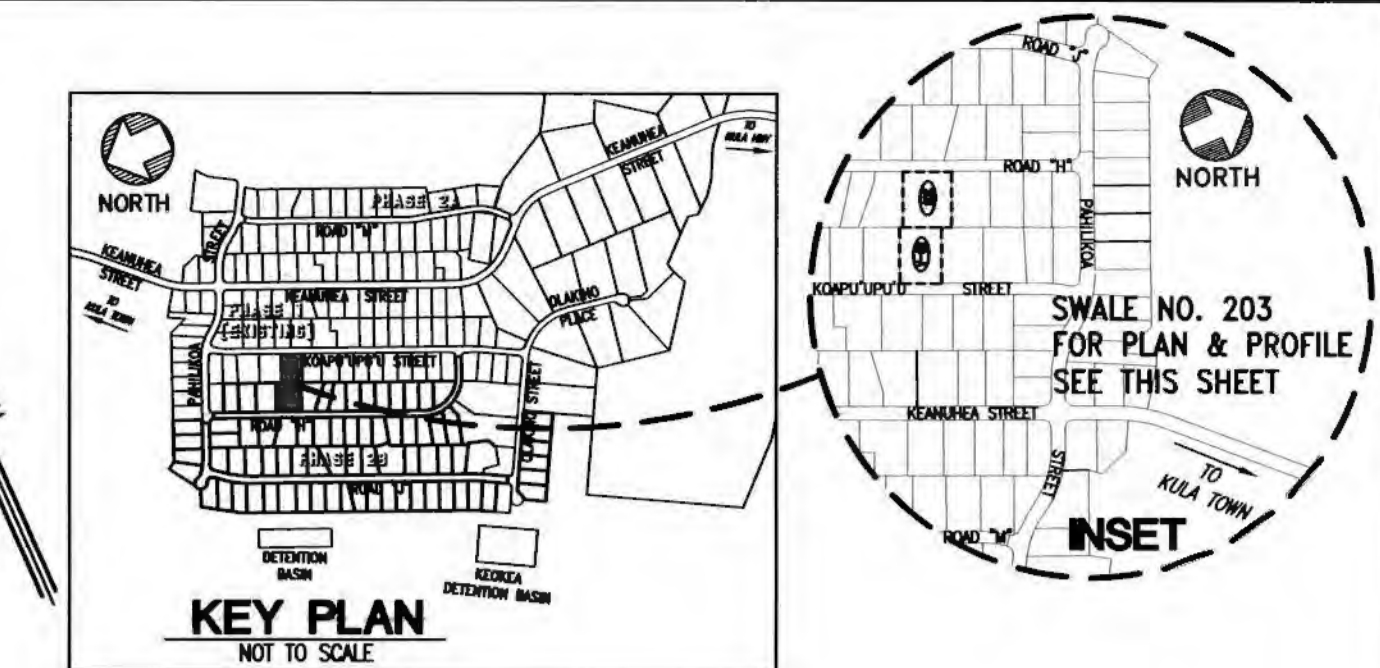
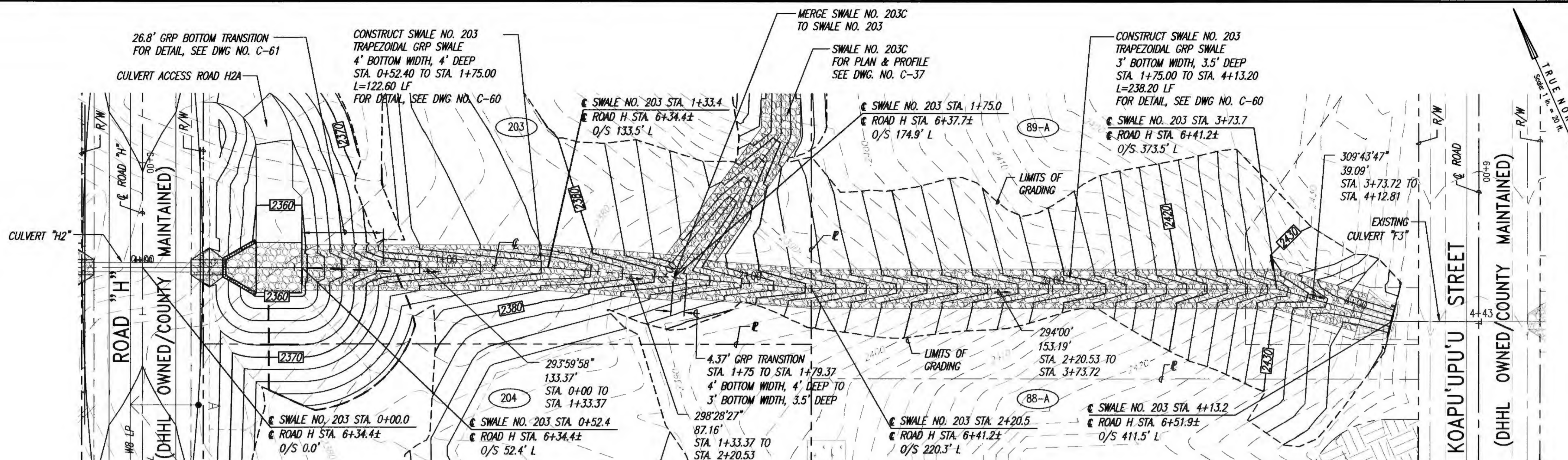
Community Planning and Engineering, Inc.
 Engineering Design | Construction Management | Infrastructure Planning
 2288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

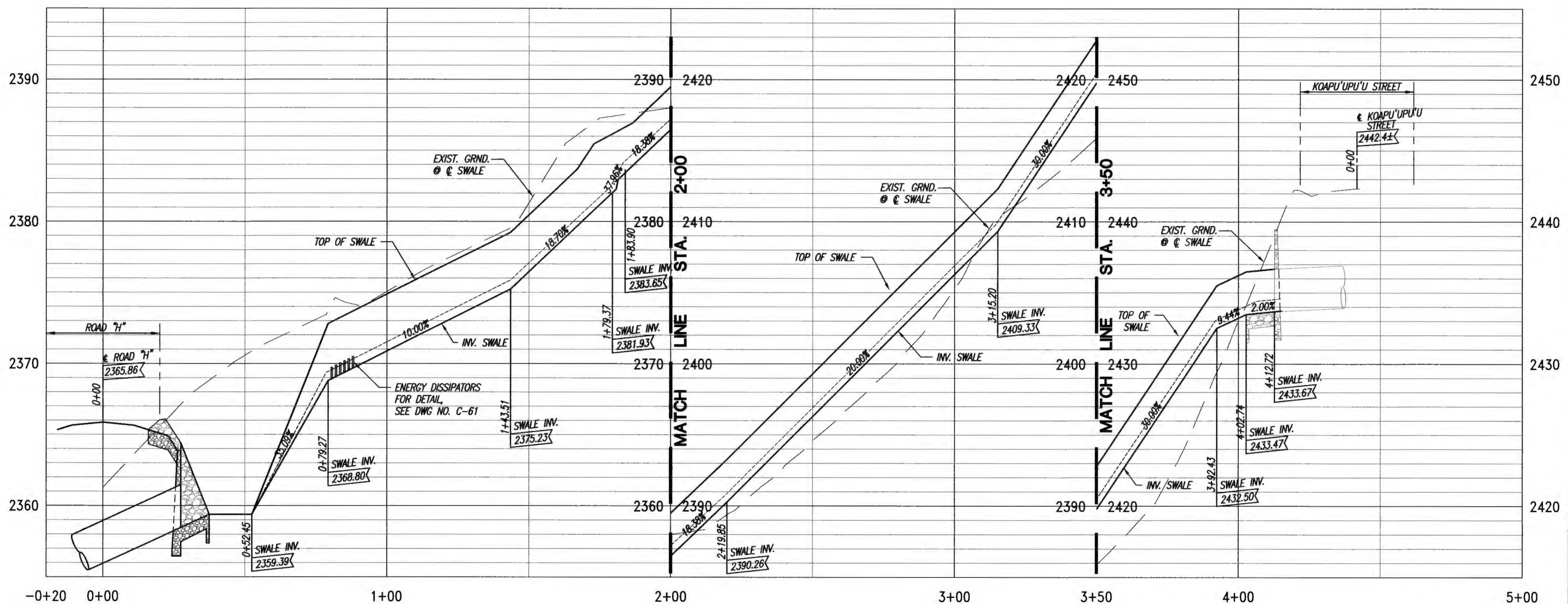
PLAN
SWALE NO. 266A, 266B, 267, 268 & 269

DRAWN BY: HWH, CO ENGINEER: HWH, FJC CHECKED BY: AMM

DWG. NO. **C-53** SHEET 54 OF 79 SHEETS

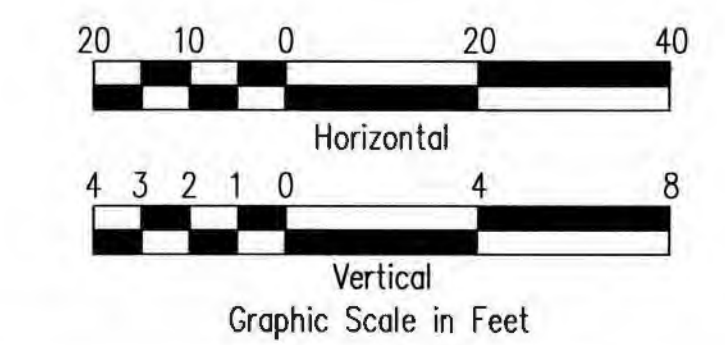


PLAN - SWALE NO. 203
SCALE: 1"=20'



PROFILE - SWALE NO. 203
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

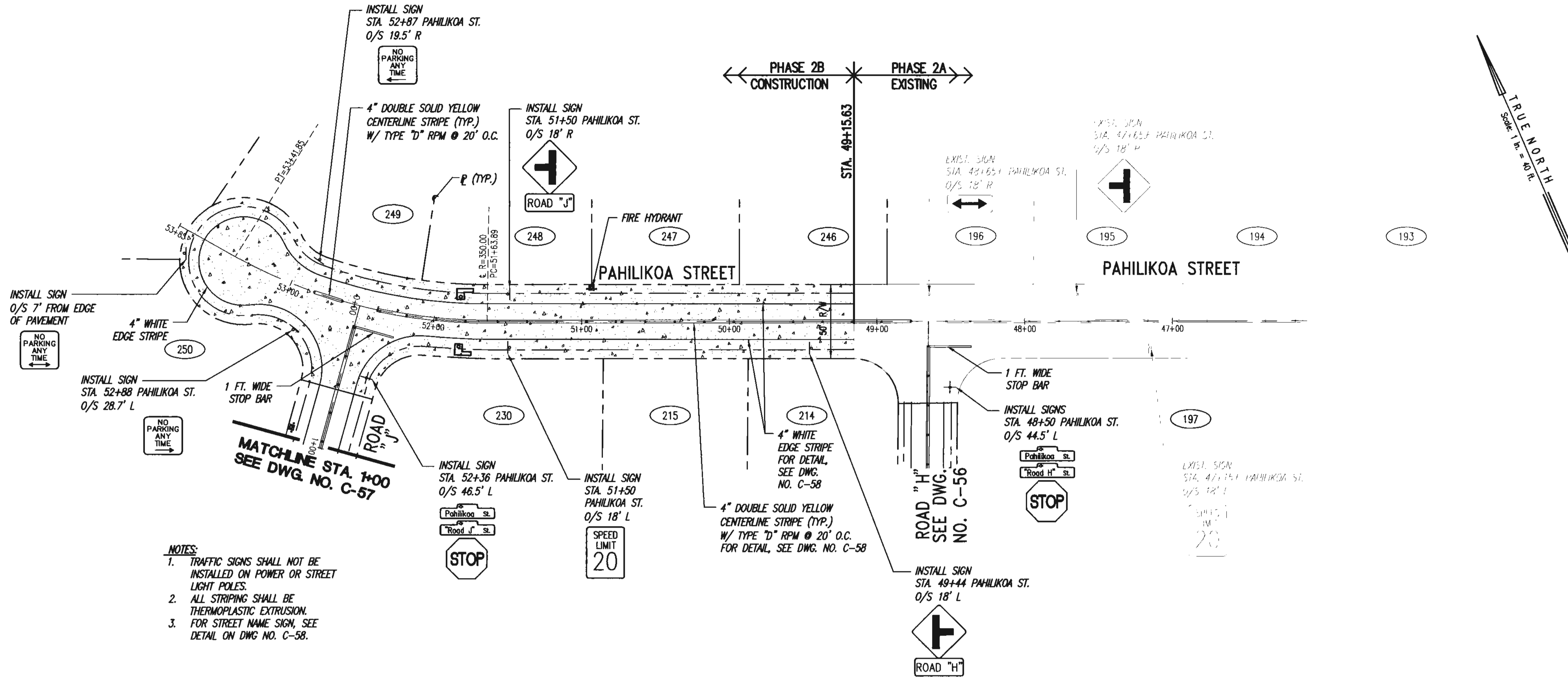
- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 — FINISH GRADE CONTOUR
 - PROPERTY LINE
 - (140) LOT NUMBER
 - (165) EXISTING LOT NUMBER
 - TMK 2-2-002:014



ANSON M. MURAYAMA
LICENSED PROFESSIONAL ENGINEER
No. 6975-C
HAWAII, U.S.A.

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p>			
<p>PLAN AND PROFILE SWALE NO. 203</p>			
DRAWN BY: HWH, CO	ENGINEER: HWH, FJC	CHECKED BY: AMM	

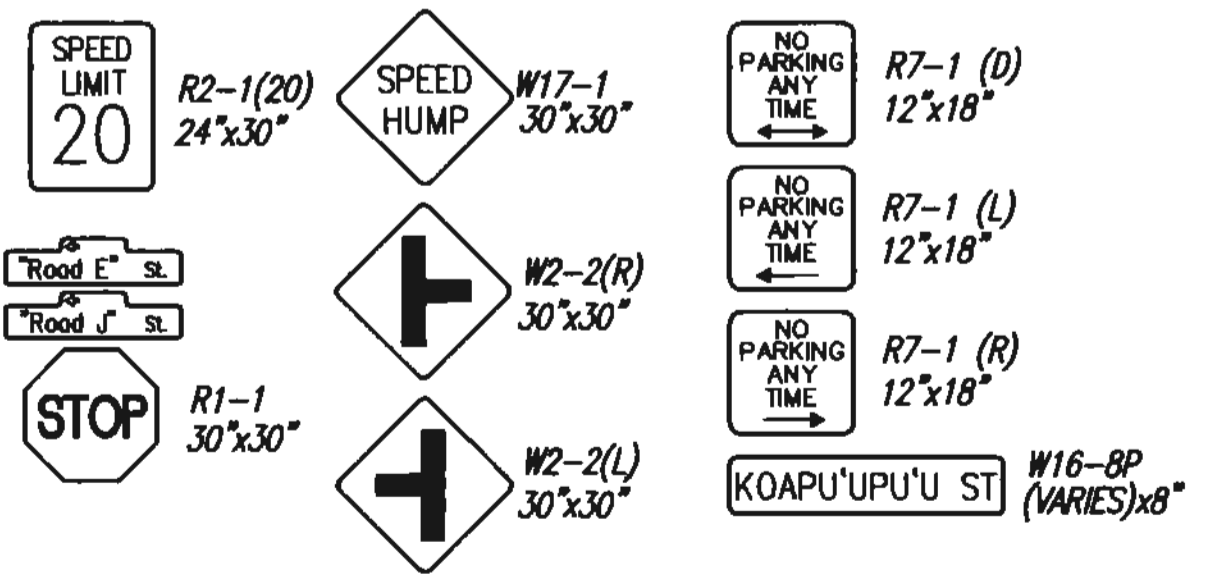


- NOTES:**
1. TRAFFIC SIGNS SHALL NOT BE INSTALLED ON POWER OR STREET LIGHT POLES.
 2. ALL STRIPING SHALL BE THERMOPLASTIC EXTRUSION.
 3. FOR STREET NAME SIGN, SEE DETAIL ON DWG NO. C-58.

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN

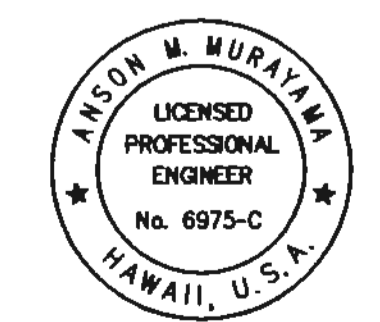
SCALE: 1" = 40'

SIGN SCHEDULE

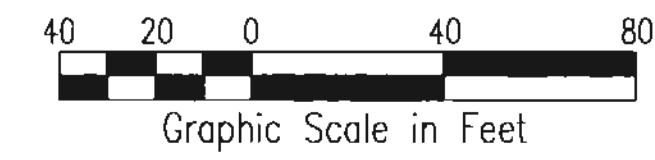


LEGEND

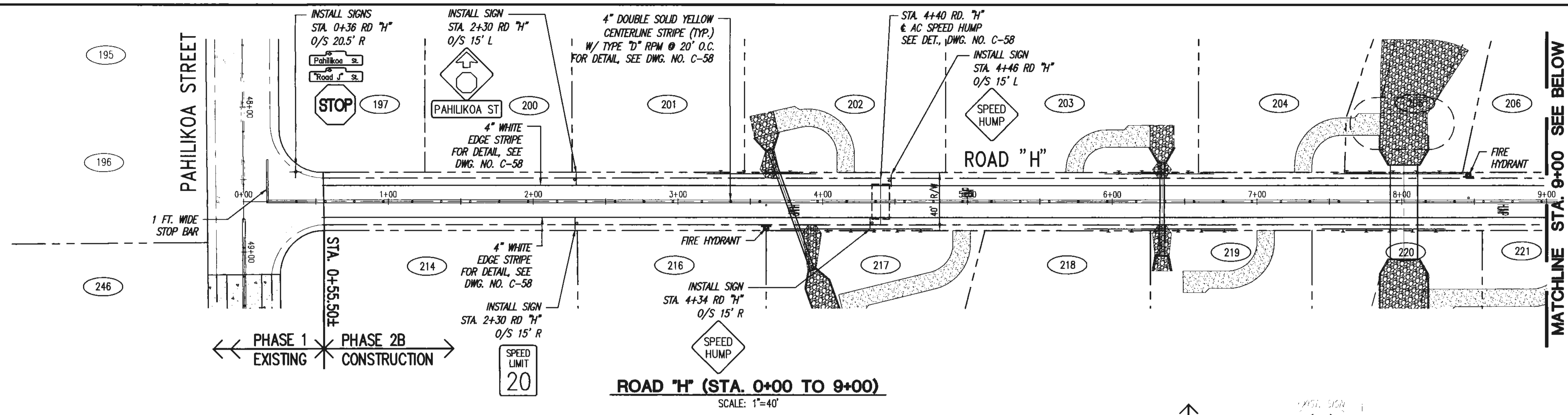
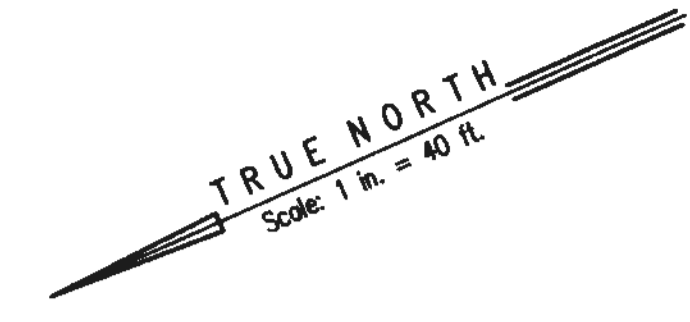
- PP POWER POLE
- SL STREET LIGHT
- † TRAFFIC SIGN W/ POST
- SIGN POST ONLY (AS NOTED)
- AC SPEED HUMPS



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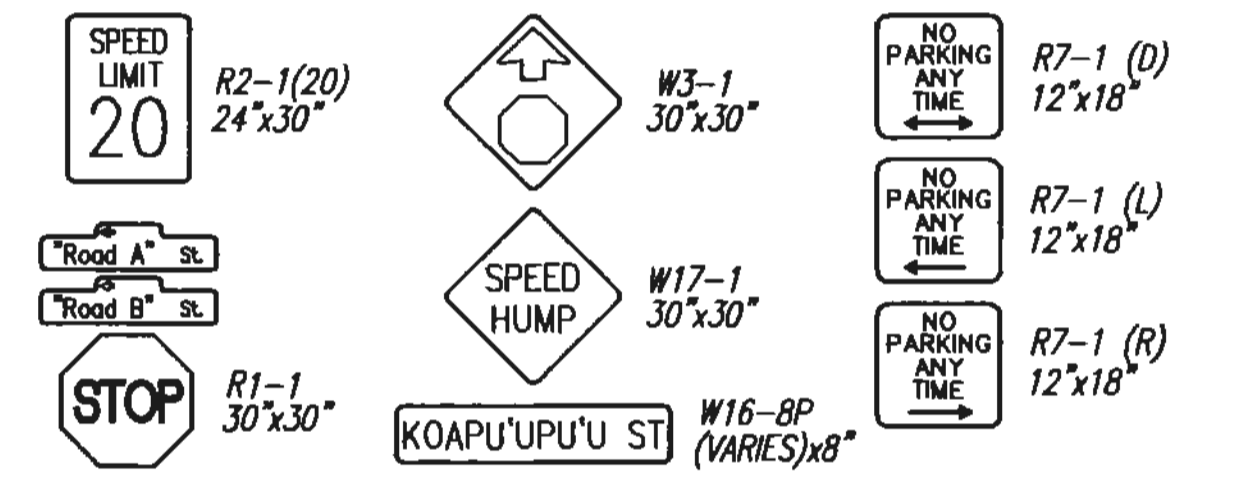
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii			
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023			
TRAFFIC SIGNS AND PAVEMENT MARKING PLAN-ROAD E			
DRAWN BY: HWH, CO	ENGINEER: HWH, FJC	CHECKED BY: AMM	



← PHASE 1 EXISTING →
 ← PHASE 2B CONSTRUCTION →

ROAD 'H' (STA. 0+00 TO 9+00)
 SCALE: 1"=40'

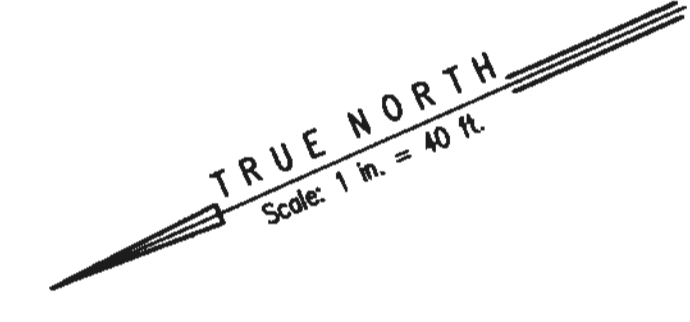
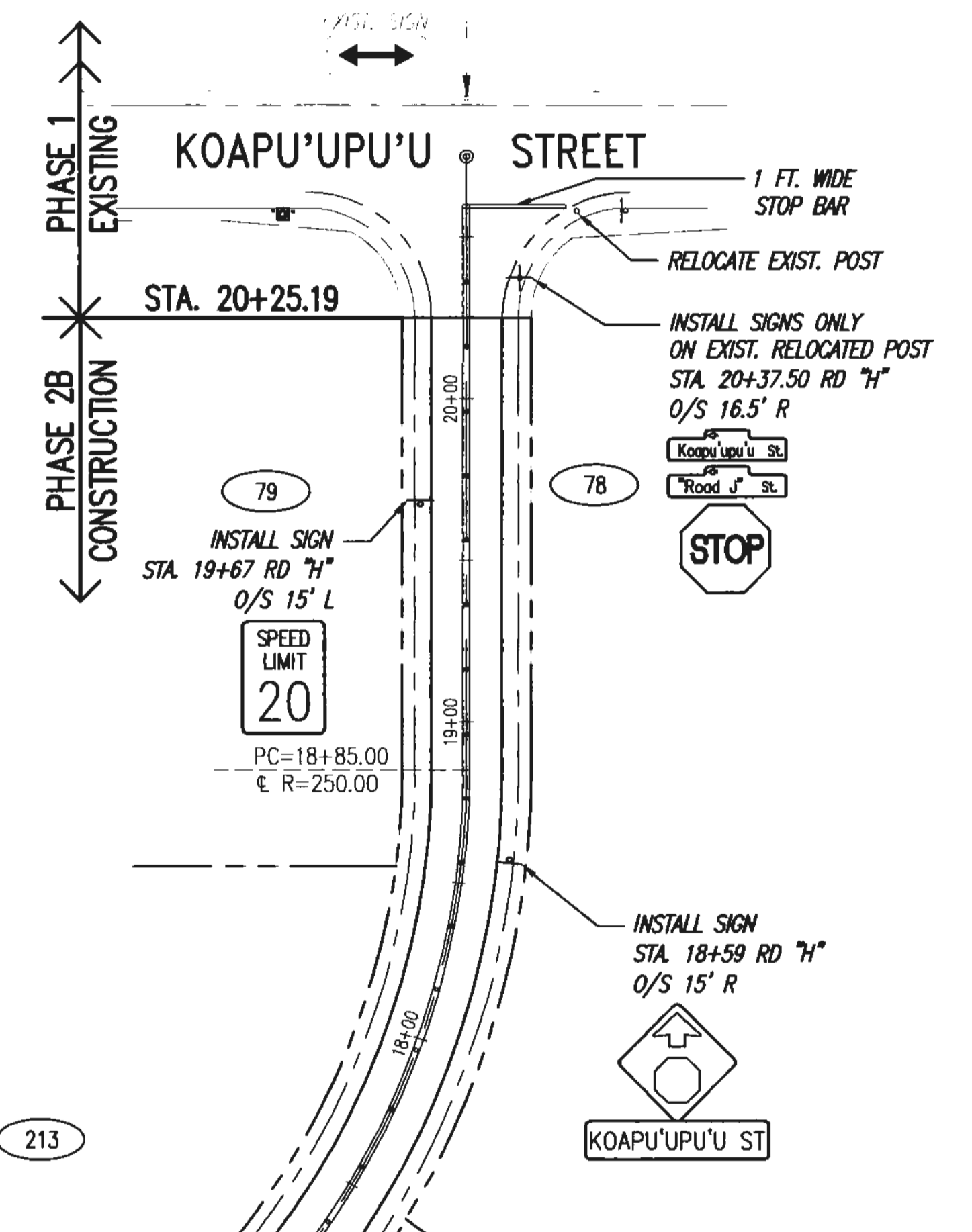
SIGN SCHEDULE



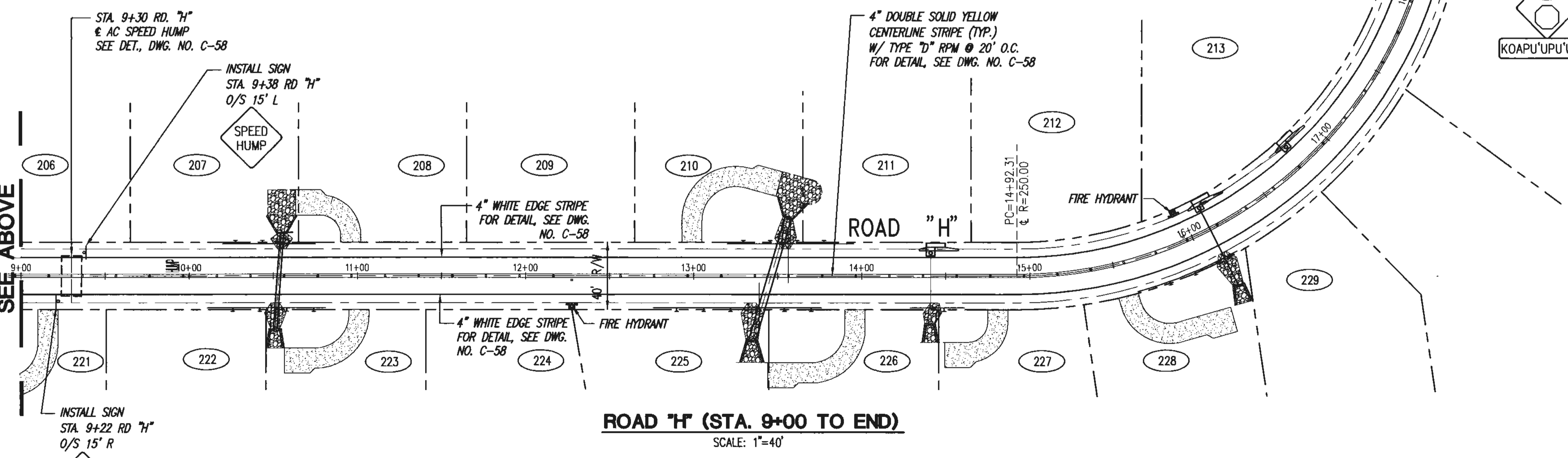
LEGEND

- PP POWER POLE
- SL STREET LIGHT
- T TRAFFIC SIGN W/ POST
- SIGN POST ONLY (AS NOTED)
- AC SPEED HUMP

- NOTES:**
1. TRAFFIC SIGNS SHALL NOT BE INSTALLED ON POWER OR STREET LIGHT POLES.
 2. ALL STRIPING SHALL BE THERMOPLASTIC EXTRUSION.
 3. FOR STREET NAME SIGN, SEE DETAIL ON DWG NO. C-58.

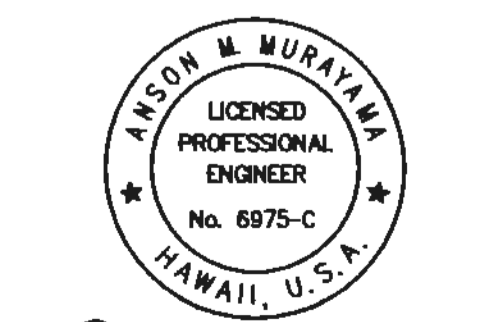
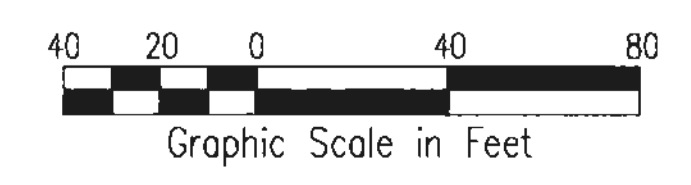


MATCHLINE STA. 9+00 SEE ABOVE



ROAD 'H' (STA. 9+00 TO END)
 SCALE: 1"=40'

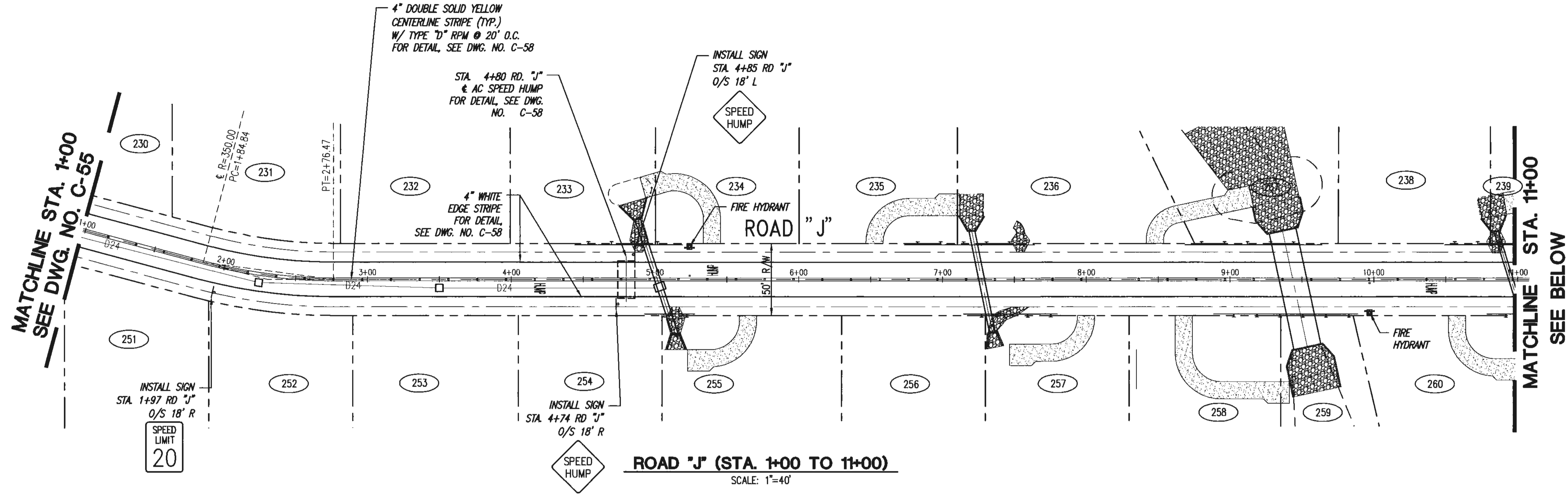
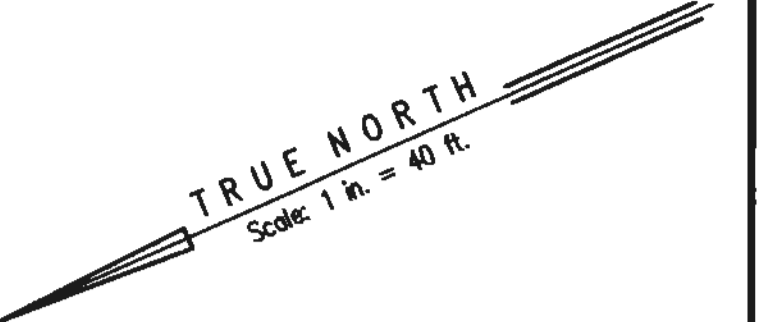
TRAFFIC SIGNS AND PAVEMENT MARKING PLAN



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 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1226 Queen Emma Street, Third Floor Honolulu, Hawaii			
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023			
TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - ROAD H			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	

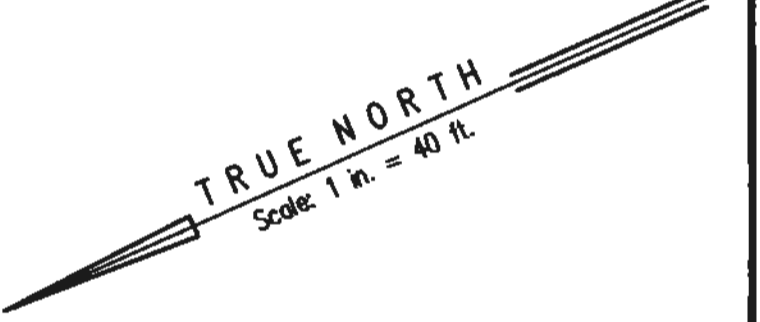
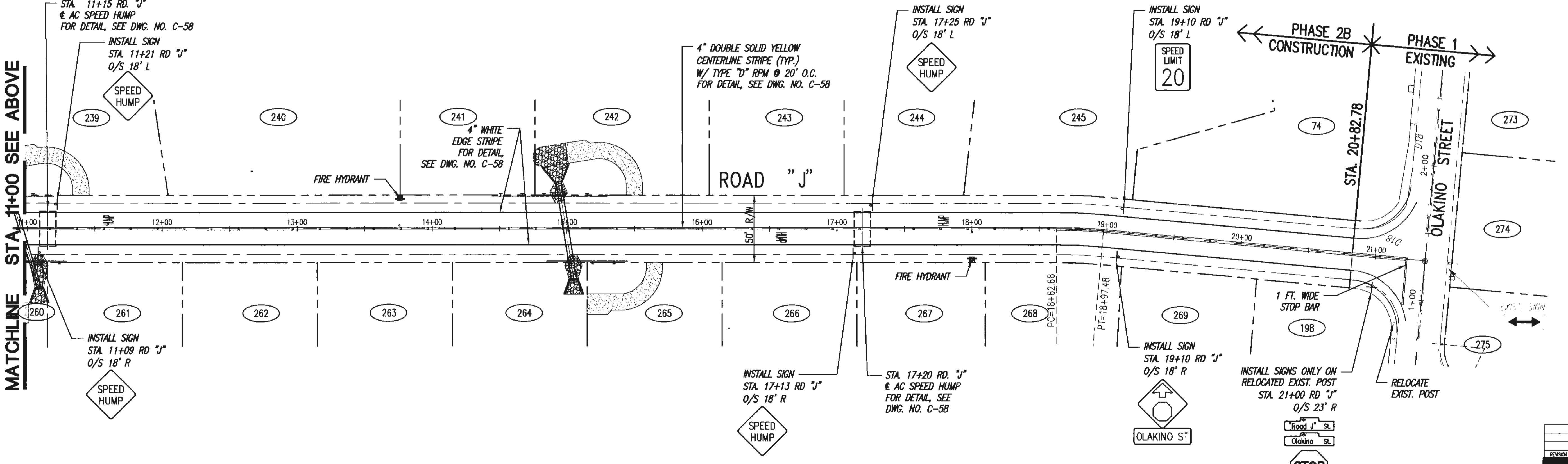
P:\Land Projects\DHHL\Keokea Ph 1B, 2 & 3A\DWG\Phase 2B\Government Review\2156 C-55 TSPM Plan Road H.dwg, 3/11/2024 2:25:03 PM



MATCHLINE STA. 11+00
SEE DWG. NO. C-55

MATCHLINE STA. 1+00
SEE DWG. NO. C-55

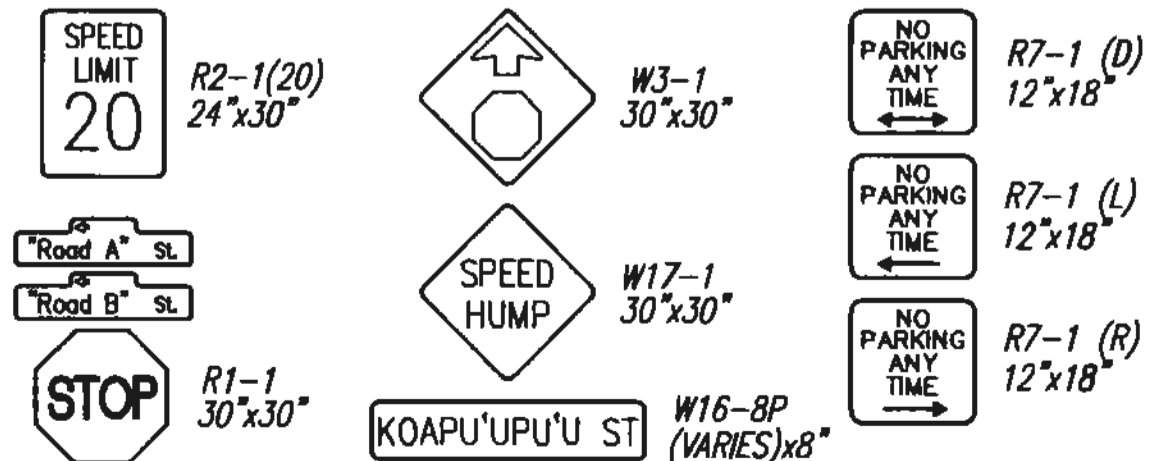
ROAD "J" (STA. 1+00 TO 11+00)
SCALE: 1"=40'



ROAD "J" (STA. 11+00 TO END)
SCALE: 1"=40'

- NOTES:**
1. TRAFFIC SIGNS SHALL NOT BE INSTALLED ON POWER OR STREET LIGHT POLES.
 2. ALL STRIPING SHALL BE THERMOPLASTIC EXTRUSION.
 3. FOR STREET NAME SIGN, SEE DETAIL ON DWG. NO. C-58.

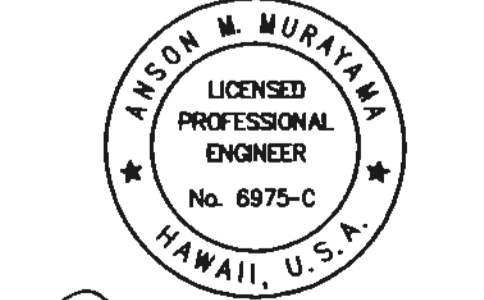
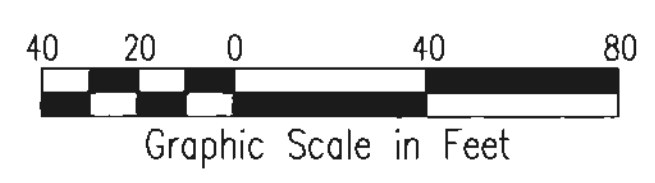
SIGN SCHEDULE



LEGEND

- PP POWER POLE
- SL STREET LIGHT
- T TRAFFIC SIGN W/ POST
- SIGN POST ONLY (AS NOTED)
- AC AC SPEED HUMP

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN



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Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii			

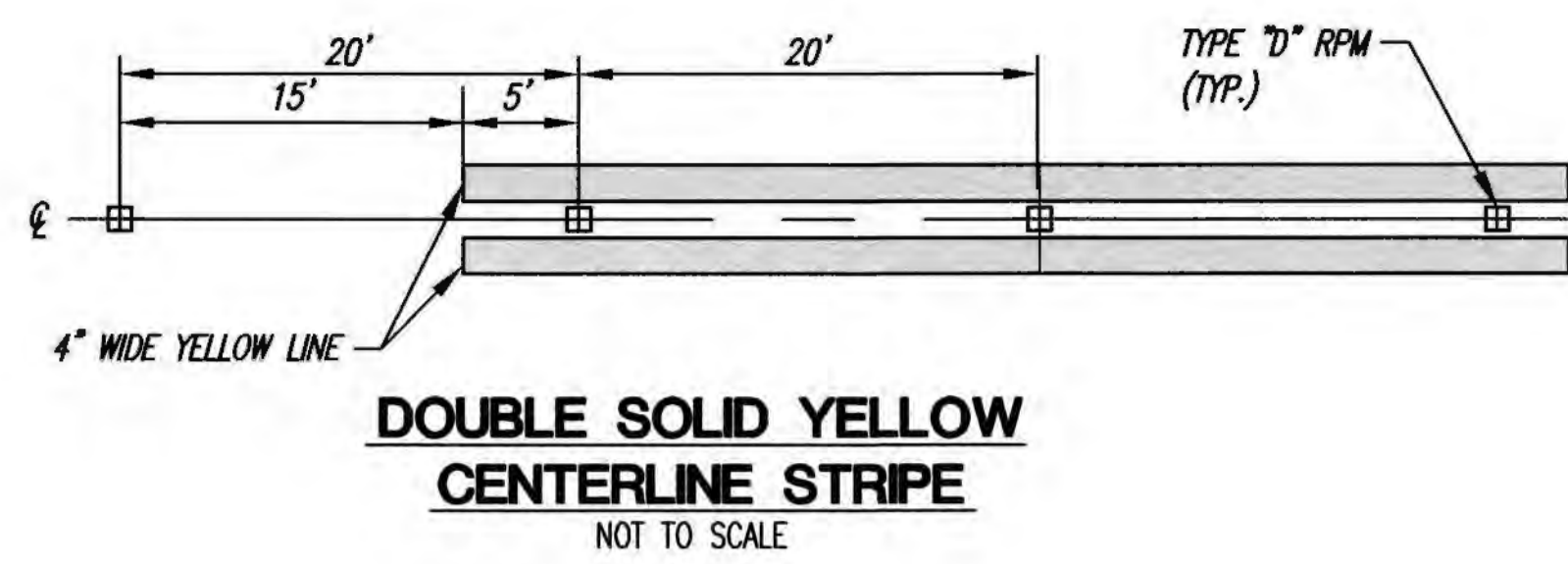
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - ROAD J

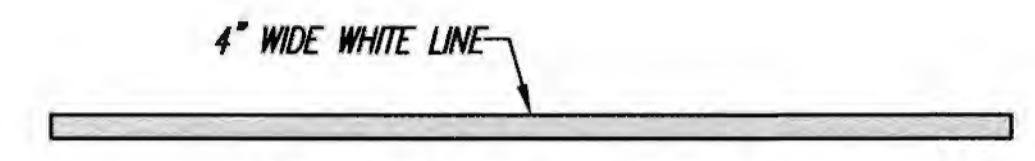
DRAWN BY: HW1, CD ENGINEER: HW1, FJC CHECKED BY: AMM

FILE	POCKET	FOLDER	NO.
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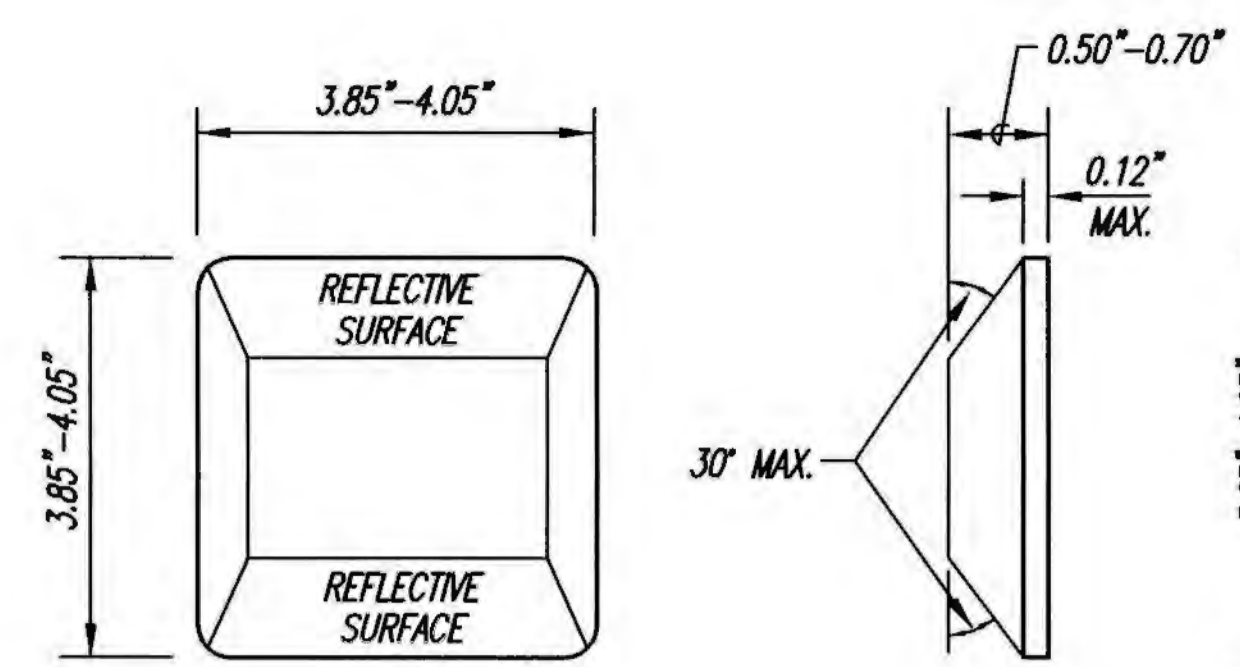
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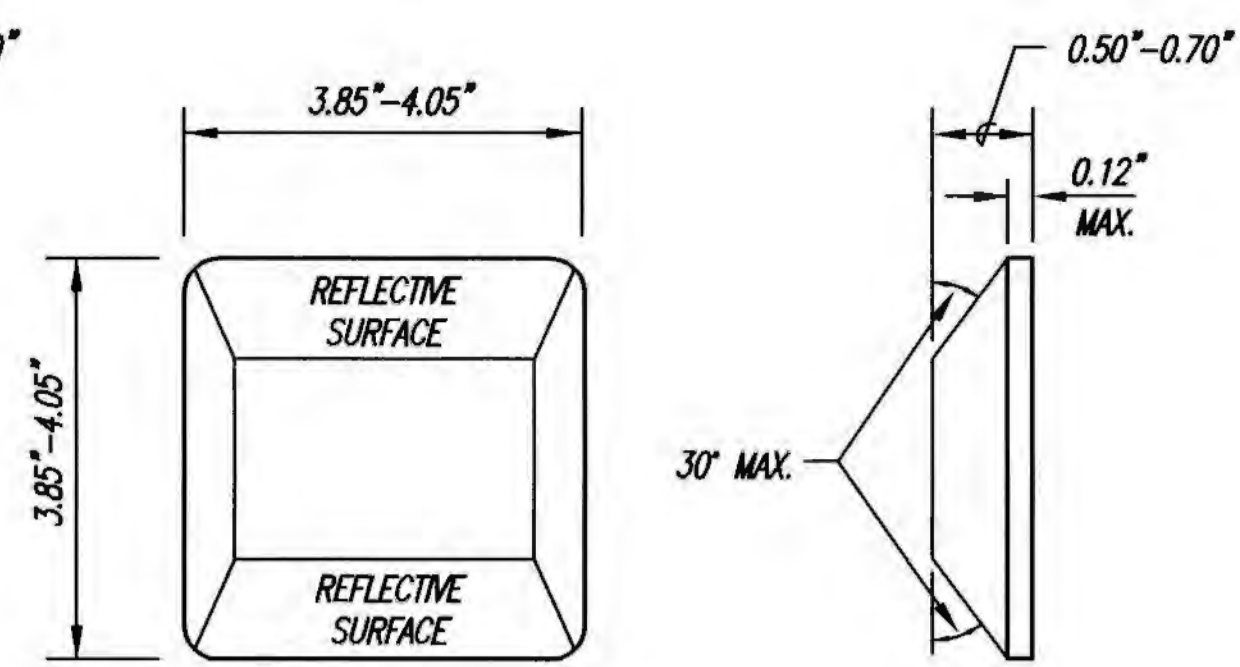
DOUBLE SOLID YELLOW CENTERLINE STRIPE
NOT TO SCALE



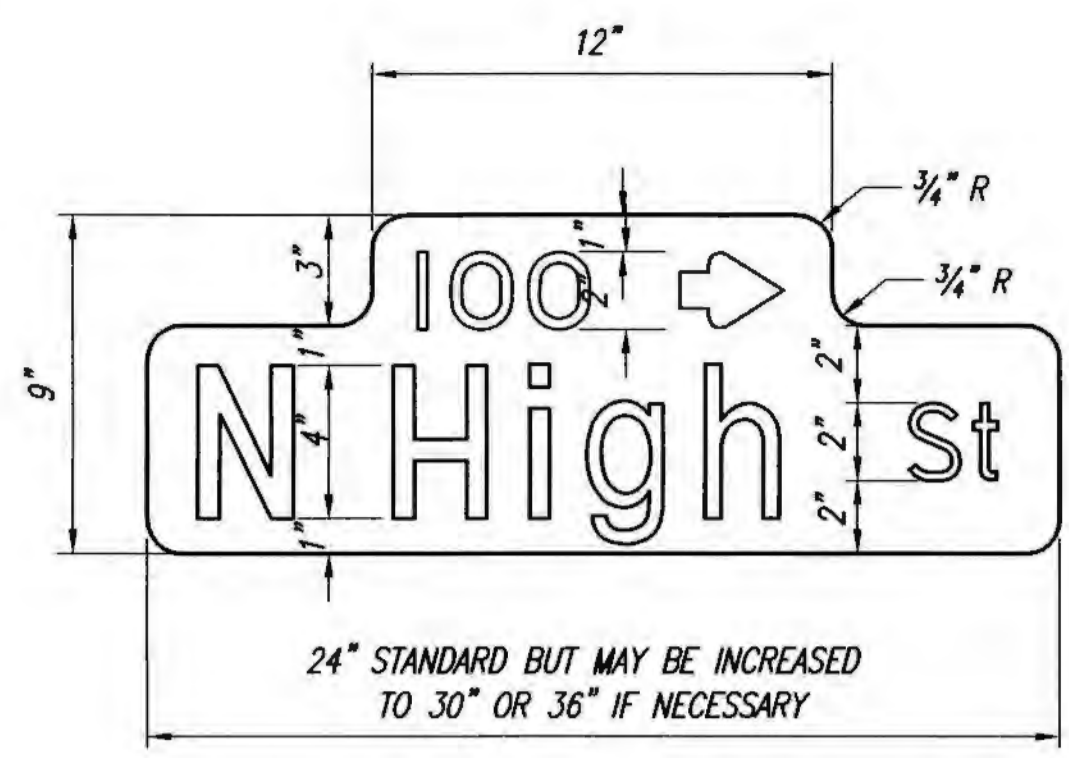
WHITE EDGE STRIPE
NOT TO SCALE



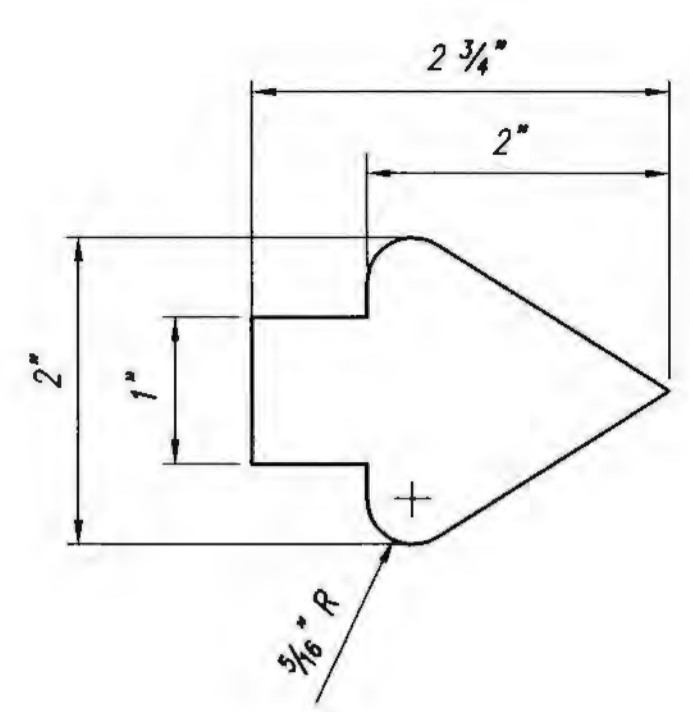
TYPE DB
TWO-WAY BLUE REFLECTIVE MARKER
NOT TO SCALE



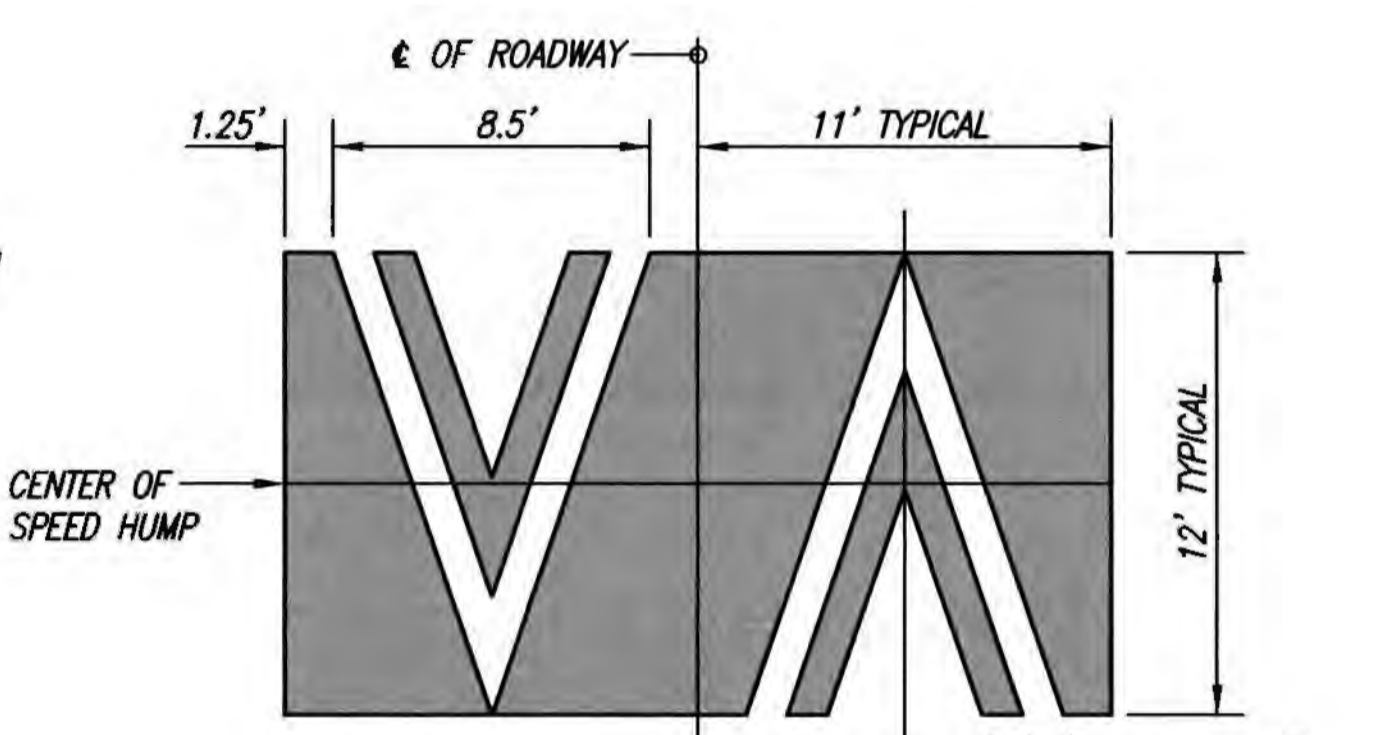
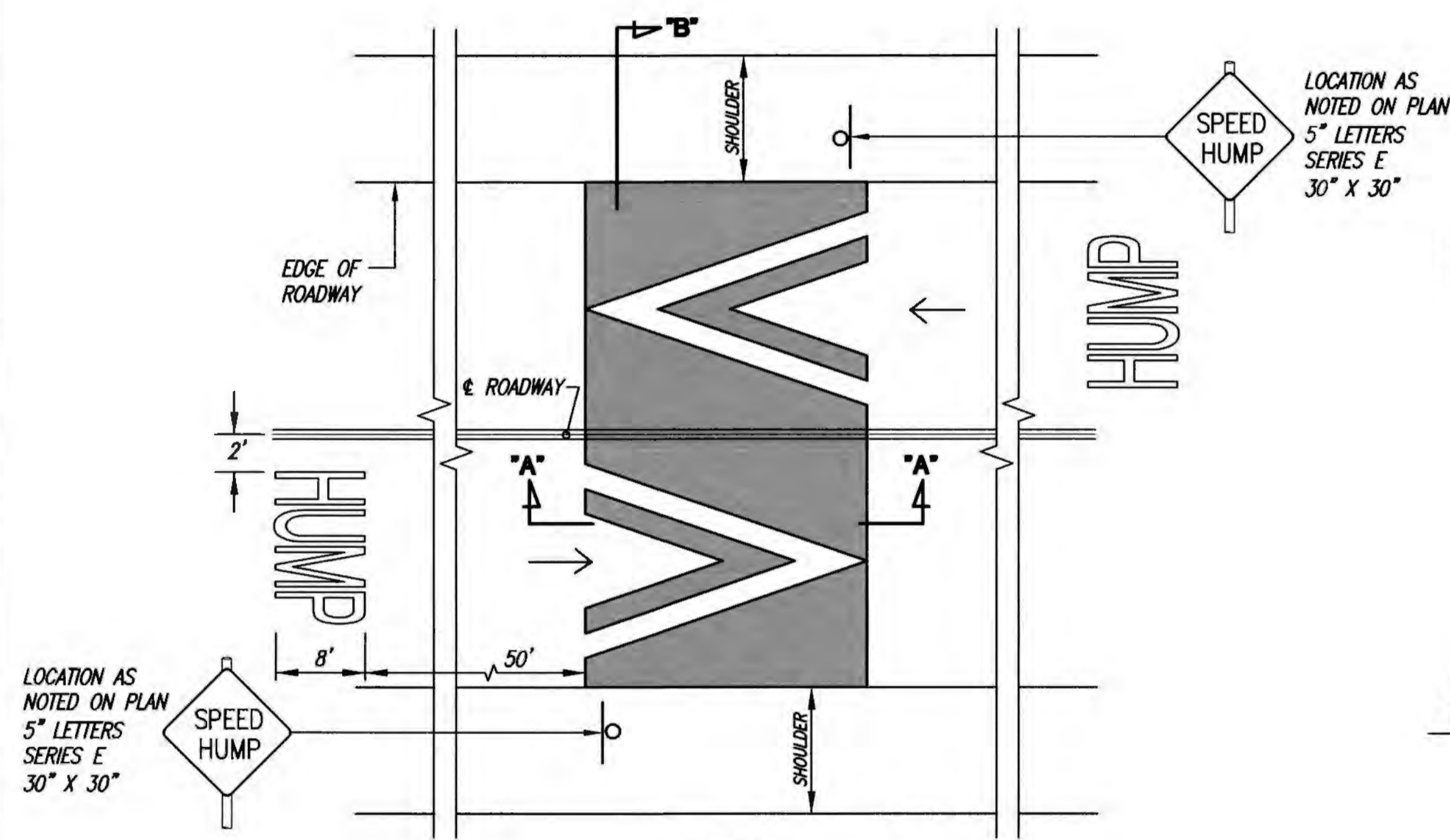
TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER
NOT TO SCALE



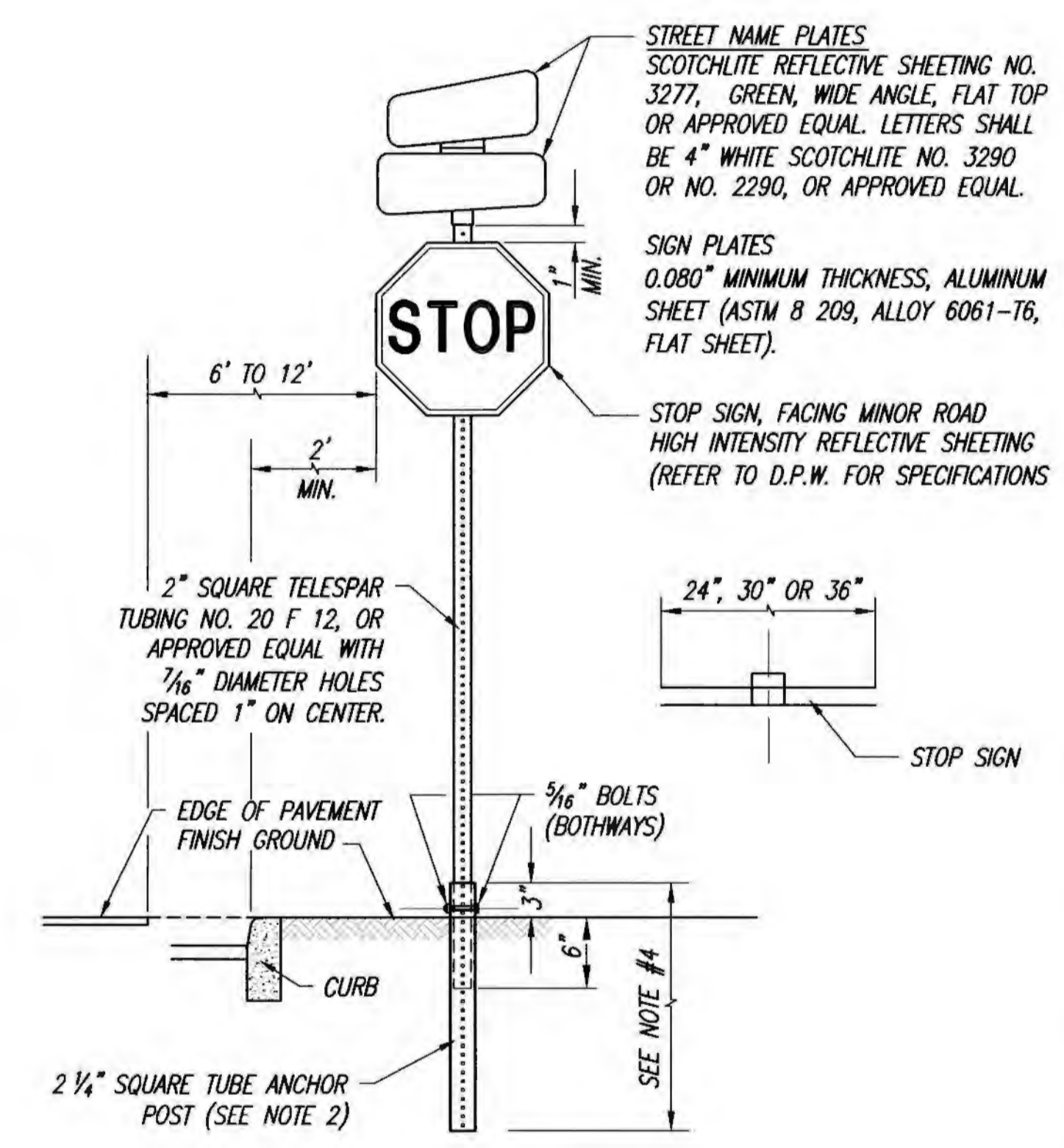
STANDARD STREET NAME SIGN
NOT TO SCALE



- NOTES:
- SIGNS SHALL BE 0.080" MIN. THICKNESS ALUM. SHEET (ASTM: B-209 ALLOY 6061-T6 AS AMENDED FLATSHEET).
 - REFLECTIVE SHEETS SHALL BE SCOTCHLITE SHEETING #3277 GREEN FOR FACE AND SCOTCHLITE #2270 SILVER FOR LETTERS AND NUMBERS OR EQUAL.

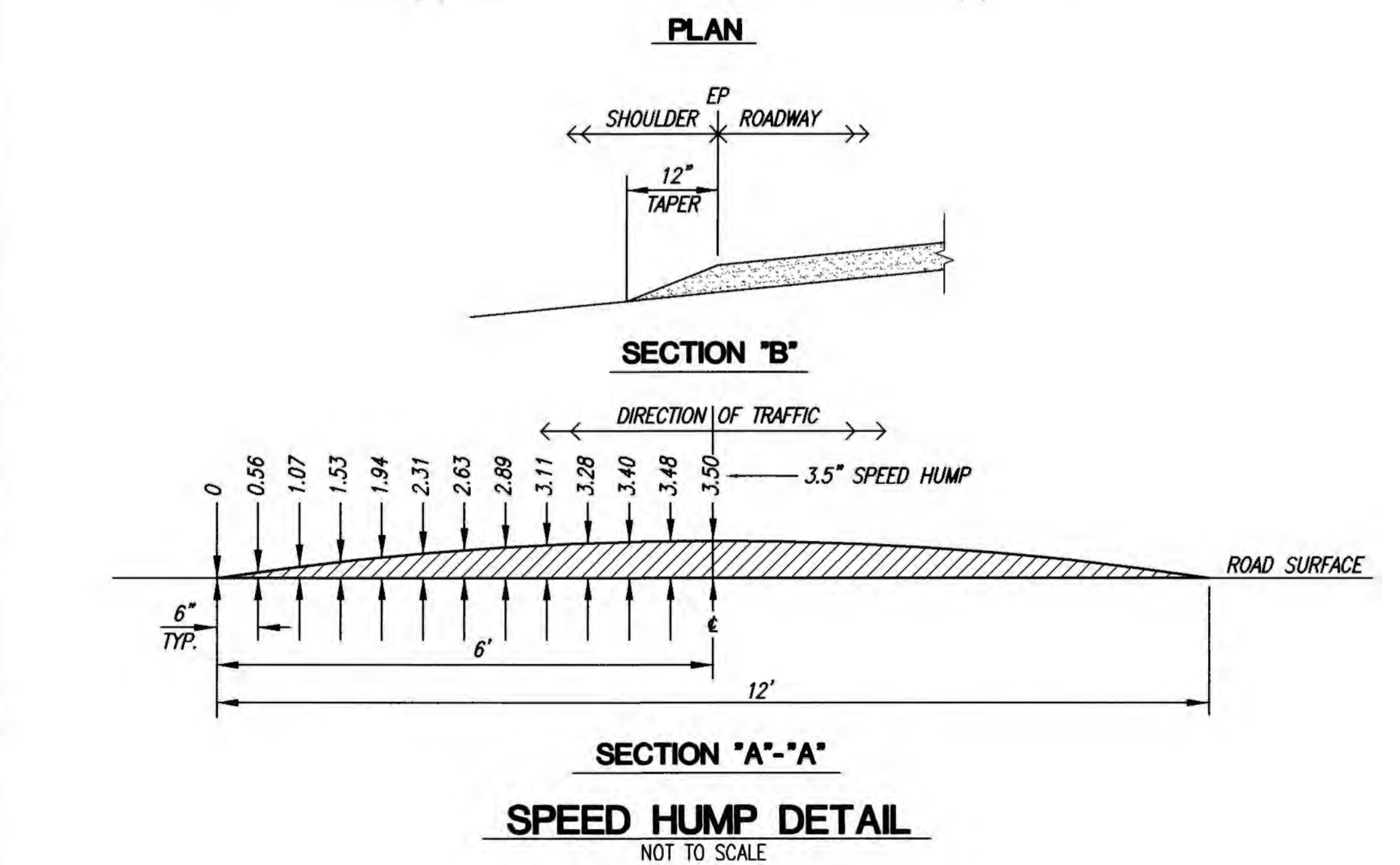


PAVEMENT MARKINGS FOR SPEED HUMPS
NOT TO SCALE



STREET NAME AND STOP SIGN DETAILS
NOT TO SCALE

- NOTES:
- THE INSIDE OF THE 2 1/4" ANCHOR POST MUST BE KEPT FREE OF IMPEDIMENTS TO ASSURE EASY INSERTS OF THE 2" SIGN POST.
 - SQUARE TUBE POSTS SHALL BE TELESCOPING PERFORATED TELESPAR TUBING OR APPROVED EQUAL.
 - THE EXACT SIGN DIMENSION WILL BE IN CONFORMANCE WITH THE CURRENT MUTCO, AS AMENDED, OR AS DESIGNATED ON THE PLANS OR BY THE MANAGER.
 - THE 2 1/4" ANCHOR POST SHALL BE 4' LONG FOR NORMAL OR POOR GROUND CONDITIONS AND 30" FOR ROCKY CONDITIONS.
 - FLANGED CHANNEL POST APPROVED BY THE STATE HIGHWAYS DIVISION IS ACCEPTABLE AS APPROVED EQUAL FOR 2" SQUARE TUBING.
 - SIGN POST MUST BE FIRM AND NOT SHAKY, OTHERWISE CONCRETE MUST BE USED TO STABILIZE THE ANCHOR POST.



SECTION 'A'-A'
SPEED HUMP DETAIL
NOT TO SCALE

GENERAL NOTES

- SIGNS SHALL CONFORM TO THE LATEST EDITIONS OF FHWA PUBLICATIONS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," "STANDARD ALPHABETS FOR HIGHWAY SIGNS," AND "STANDARD HIGHWAY SIGNS," AND AS AMENDED.
- ALL SIGNS SHALL BE MADE OF HIGH INTENSITY REFLECTIVE SHEETING MATERIALS.
- INSTALL WARNING SIGNS AT EACH APPROACH OF A SPEED HUMP OR SERIES OF SPEED HUMPS WITHIN A STREET BLOCK. WORDING FOR SIGNS APPROACHING A SINGLE HUMP SHALL READ "SPEED HUMP" AND WORDING FOR A SERIES OF HUMPS SHALL READ IN THE PLURAL FORM "SPEED HUMPS".
- PAVEMENT WORK SHALL CONFORM TO, DOT STANDARD PLAN TE-35.
- ALL WORK AND MATERIALS REQUIRED TO COMPLETE THE AC PAVING, SIGNS, AND MARKINGS SHALL CONFORM TO THE REQUIREMENTS THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION 2005".
- PRIOR TO ACCEPTANCE, THE COUNTY INSPECTOR WILL TEST THE SURFACE OF THE HUMP USING A PARABOLIC TEMPLATE AT THE MIDPOINT. THE VARIATION OF THE SURFACE FROM THE TESTING EDGE BETWEEN TWO CONTACTS WITH THE SURFACE SHALL NOT EXCEED ONE-QUARTER (1/4) INCH.
- CONTACT ANY OTHER APPLICABLE UTILITY COMPANIES FOR THE LOCATION OF UNDERGROUND LINES PRIOR TO INSTALLING SIGNS IN THE SHOULDER AREAS.



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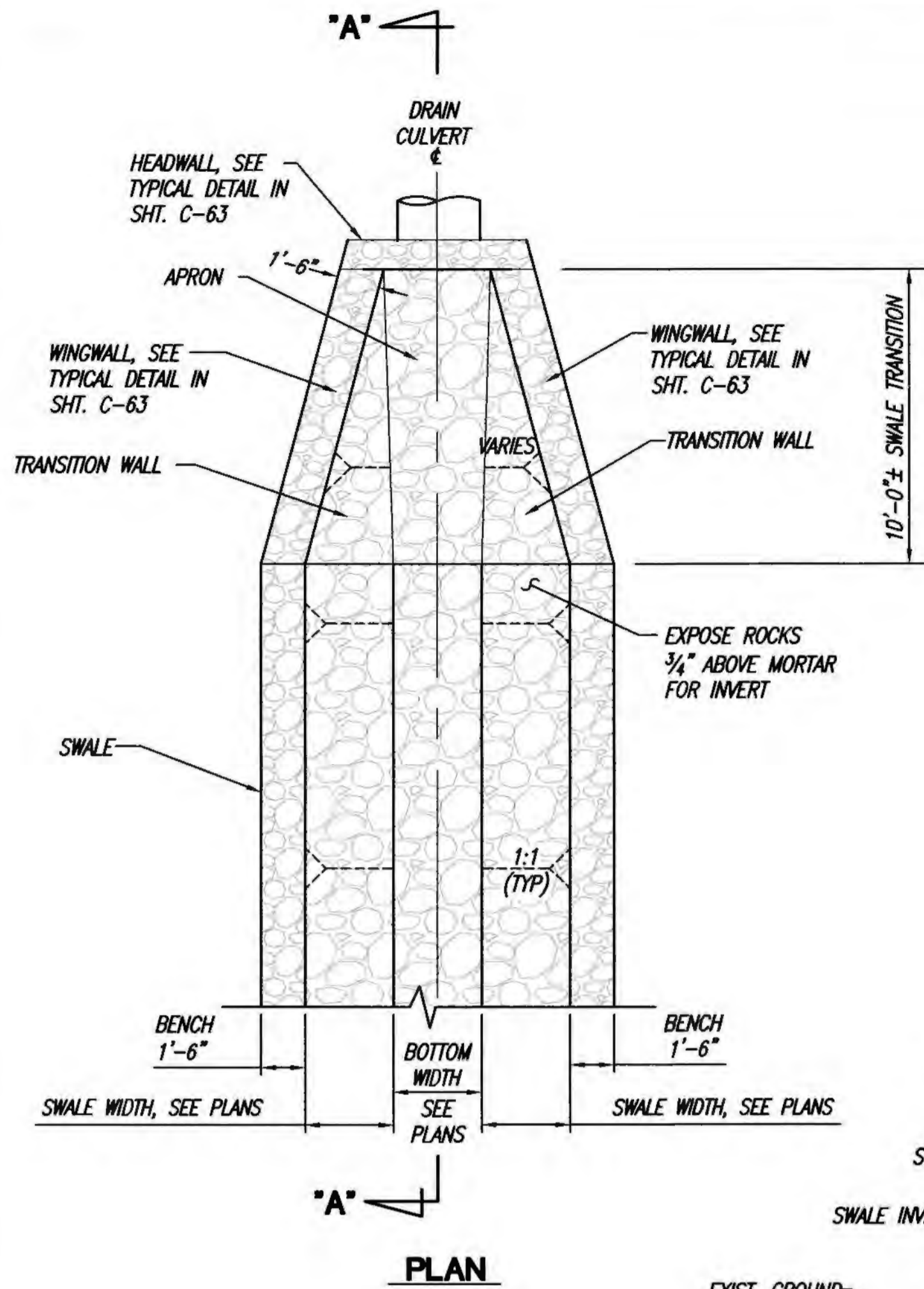
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1206 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

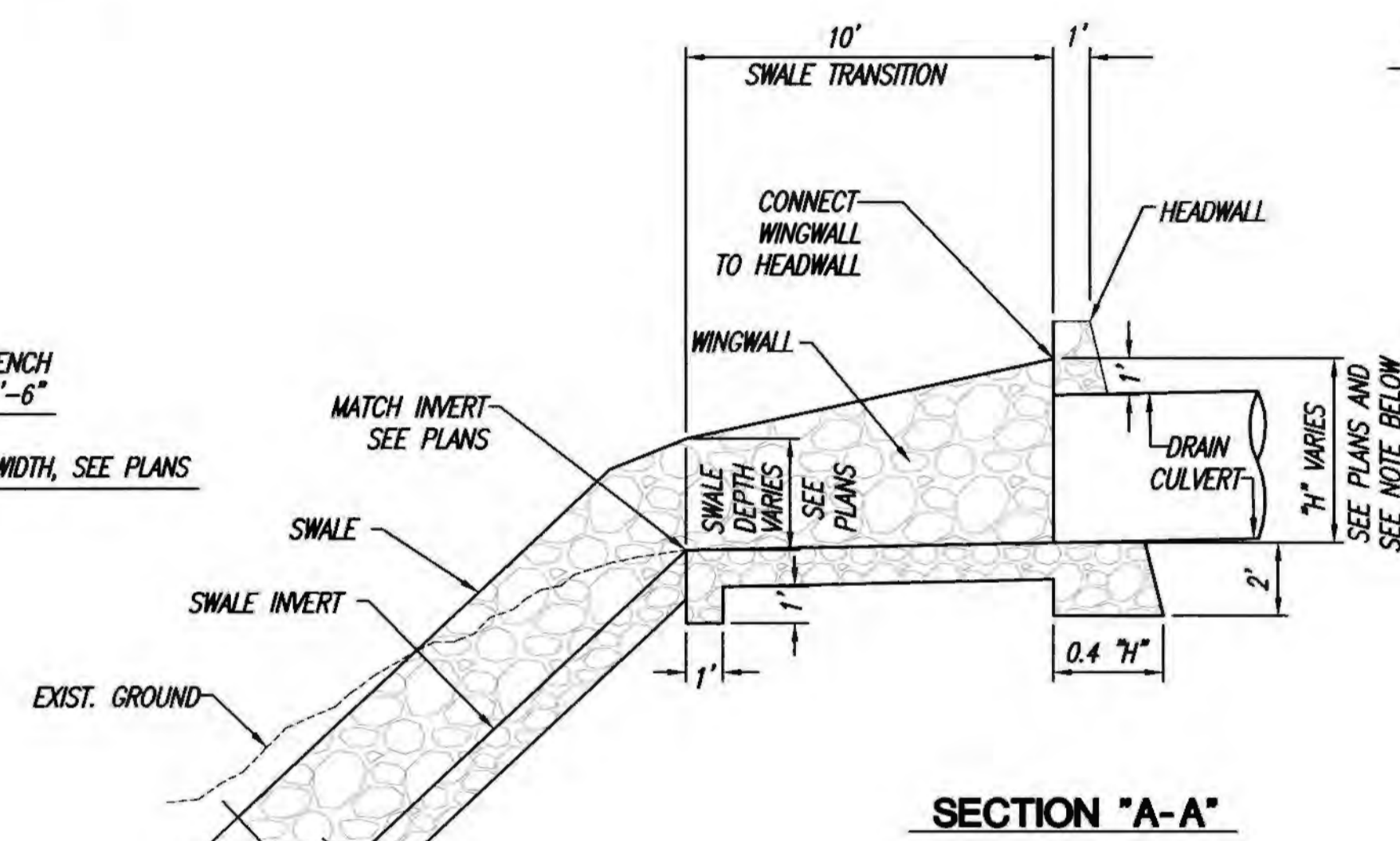
TSPM DETAILS

DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM
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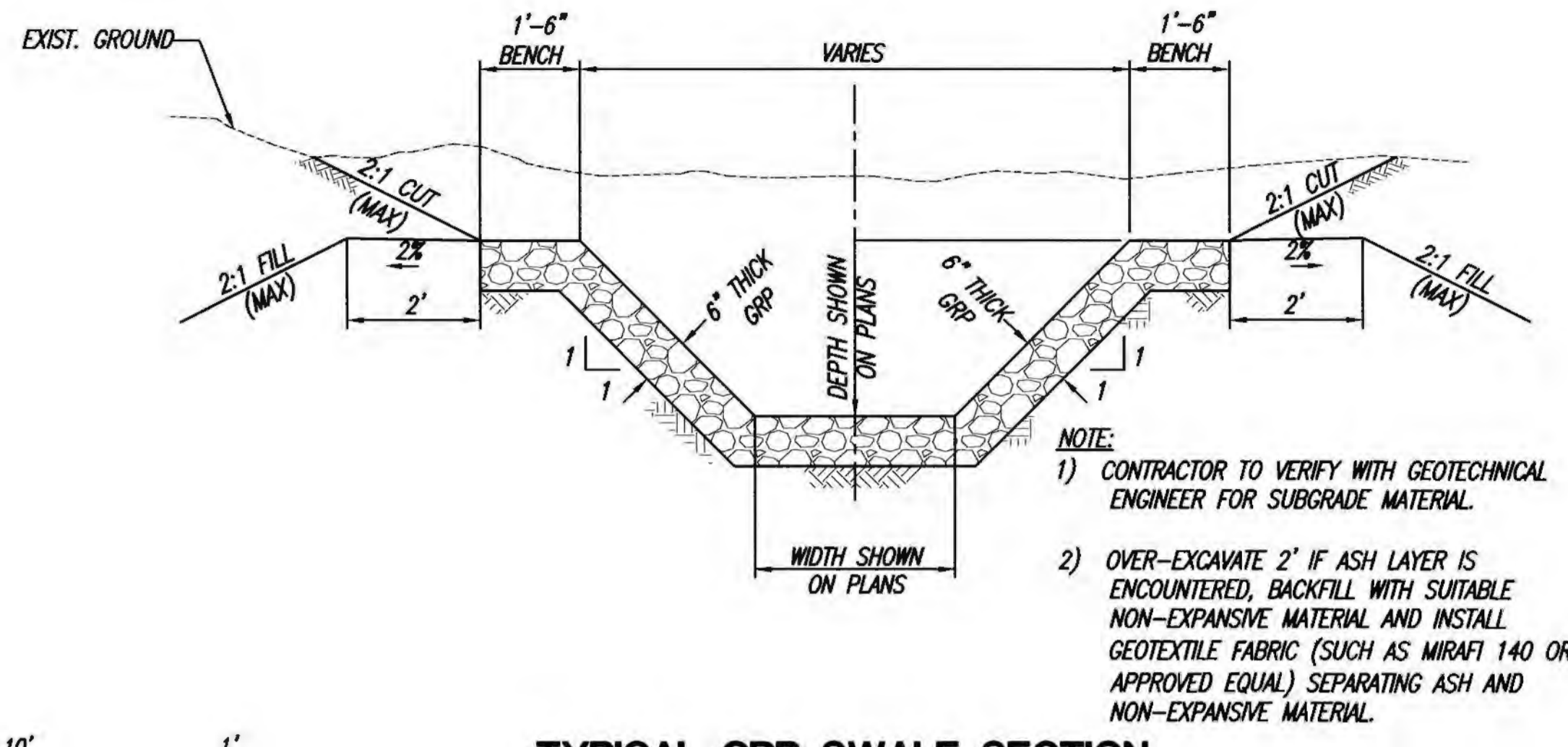
PLAN



SECTION "A-A"

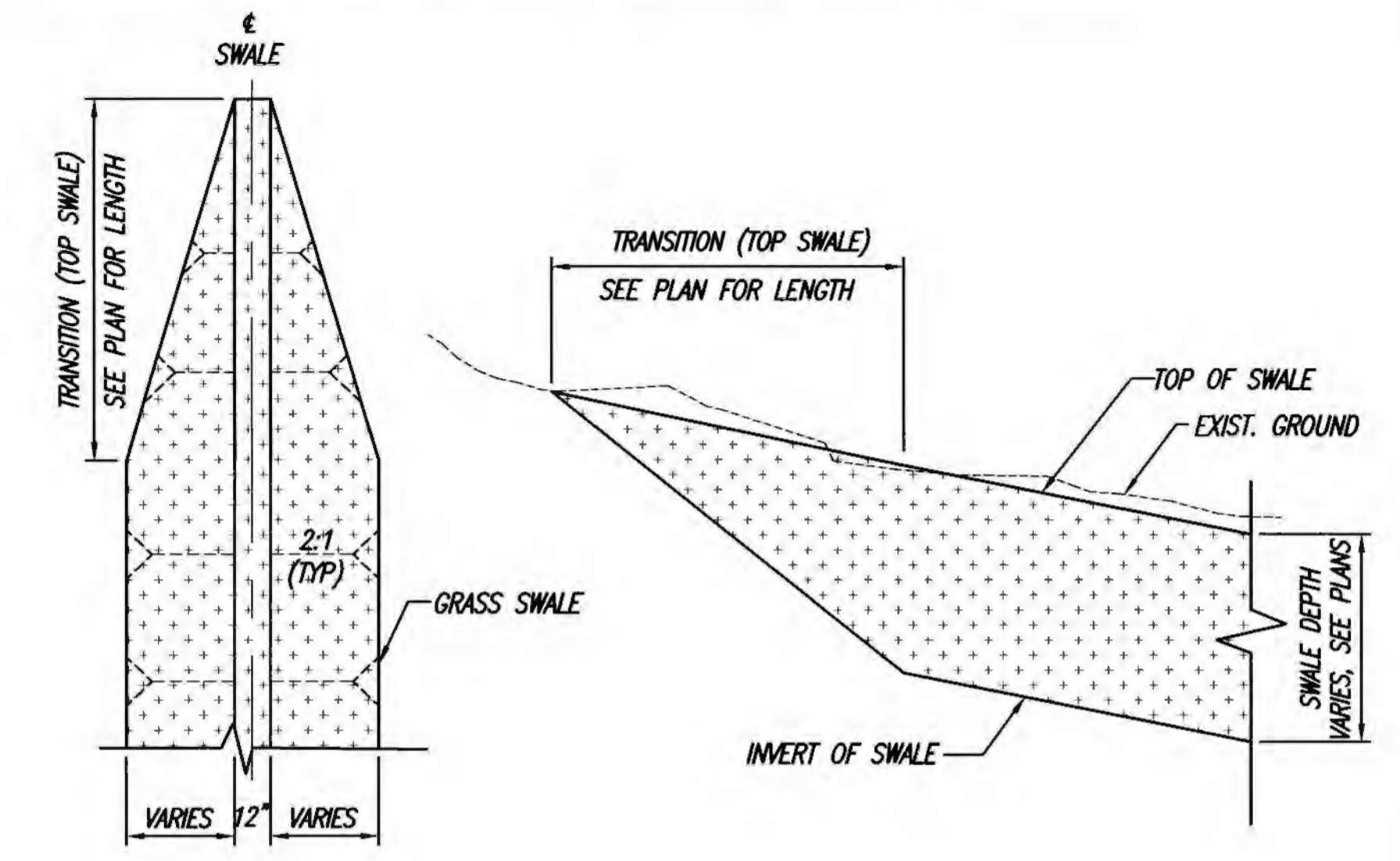
NOTE:
 H = PIPE DIA. PLUS 1 FEET OR HEIGHT OF EXIST. HEADWALL WHICHEVER IS GREATER

SWALE CONNECTION TO CULVERT DETAIL WITH WINGWALL
 NOT TO SCALE

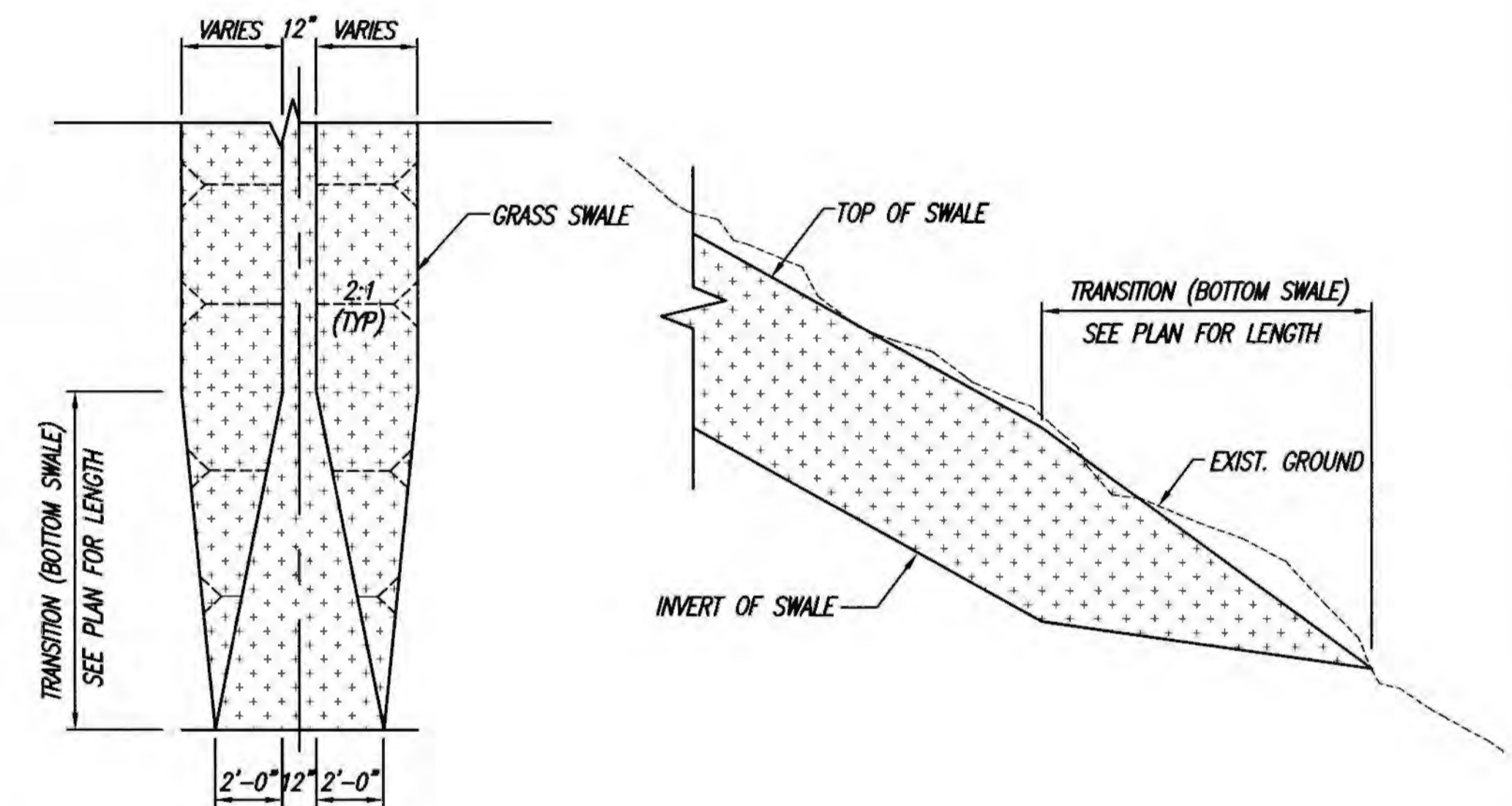


TYPICAL GRP SWALE SECTION
 NOT TO SCALE

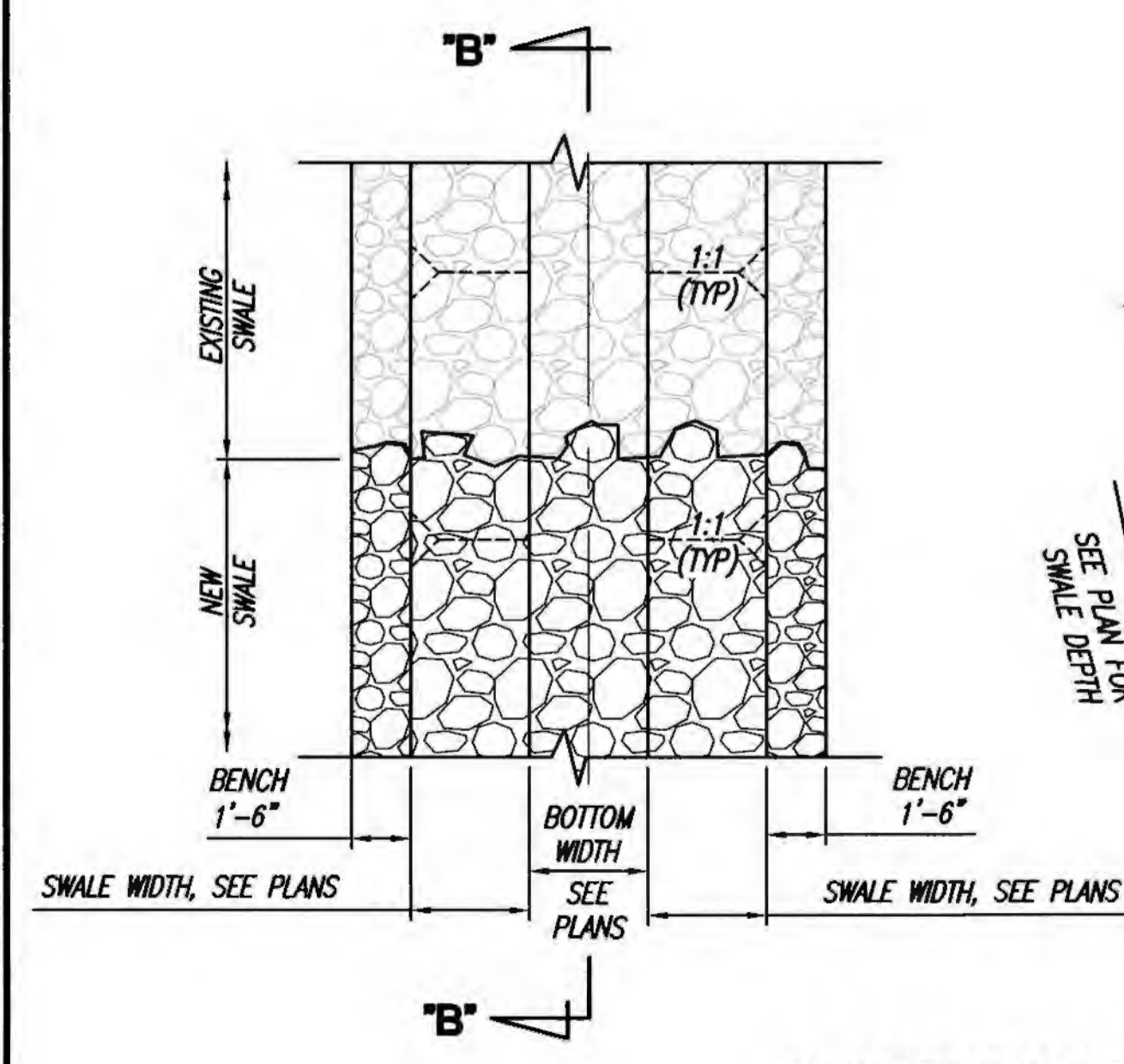
NOTE:
 1) CONTRACTOR TO VERIFY WITH GEOTECHNICAL ENGINEER FOR SUBGRADE MATERIAL.
 2) OVER-EXCAVATE 2' IF ASH LAYER IS ENCOUNTERED, BACKFILL WITH SUITABLE NON-EXPANSIVE MATERIAL AND INSTALL GEOTEXTILE FABRIC (SUCH AS MIRAFI 140 OR APPROVED EQUAL) SEPARATING ASH AND NON-EXPANSIVE MATERIAL.



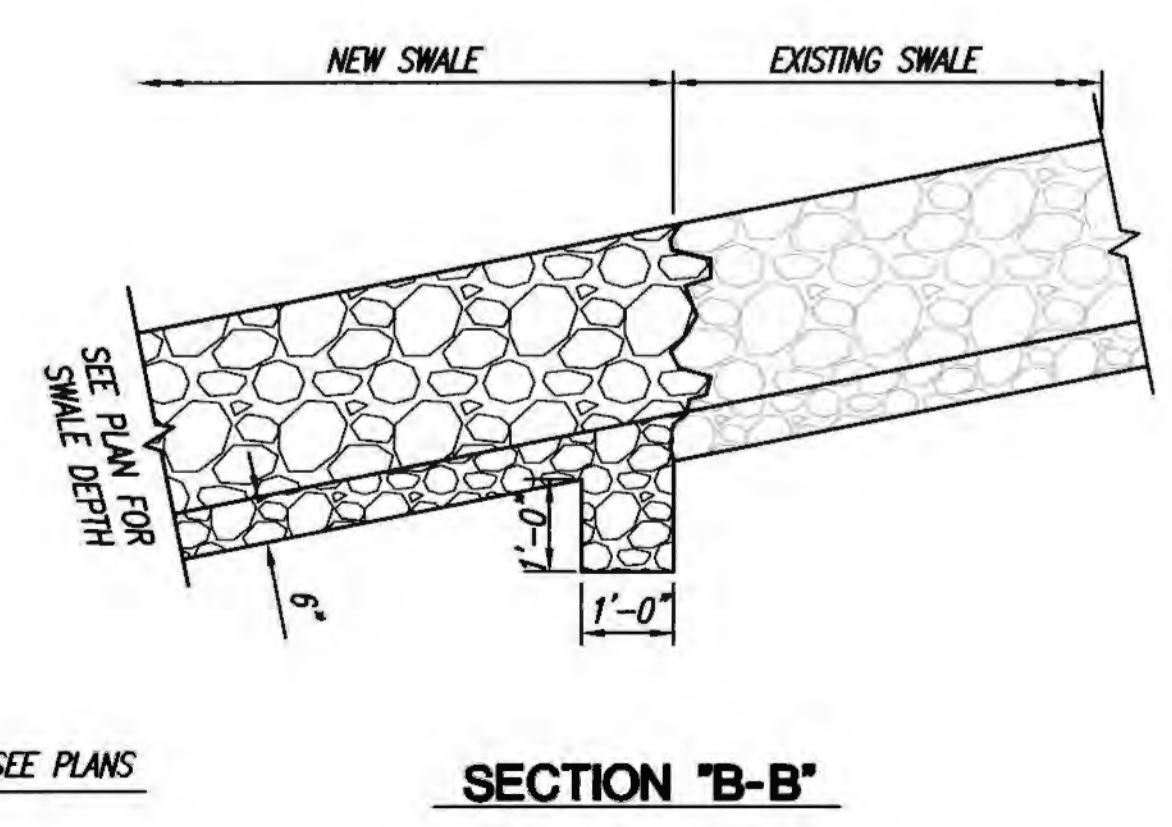
GRASS SWALE TOP TRANSITION DETAILS
 NOT TO SCALE



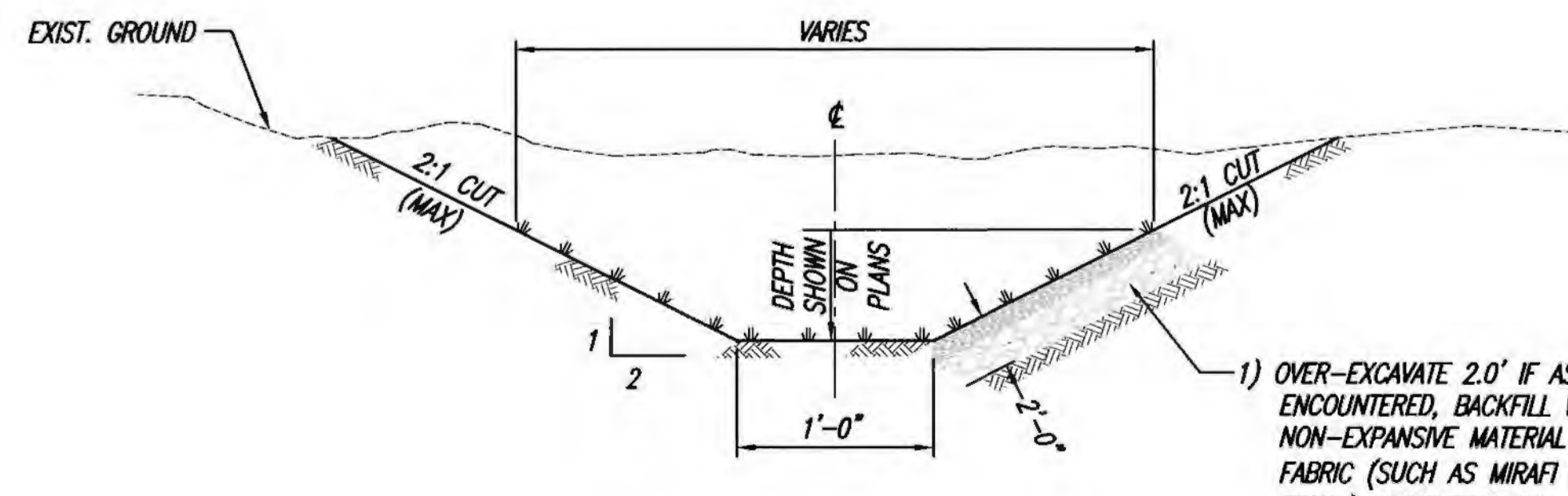
GRASS SWALE BOTTOM TRANSITION DETAILS
 NOT TO SCALE



CONNECTION EXISTING SWALE TO NEW SWALE EXTENSION
 NOT TO SCALE



SECTION "B-B"



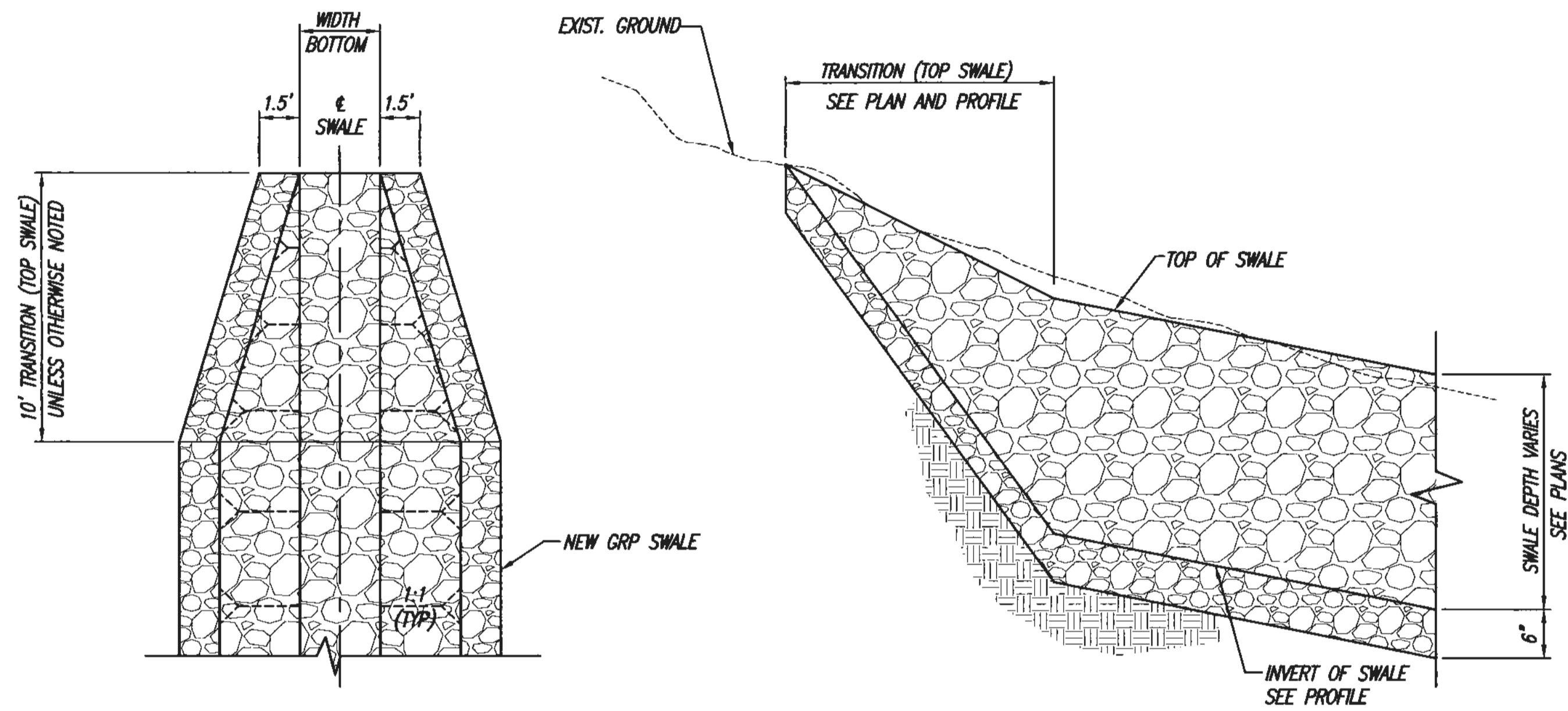
TYPICAL GRASS SWALE SECTION
 NOT TO SCALE

1) OVER-EXCAVATE 2.0' IF ASH LAYER IS ENCOUNTERED, BACKFILL WITH SUITABLE NON-EXPANSIVE MATERIAL AND INSTALL GEOTEXTILE FABRIC (SUCH AS MIRAFI 140 OR APPROVED EQUAL) SEPARATING ASH AND NON-EXPANSIVE MATERIAL.
 2) PLACE 4" TOP SOIL AND GRASS ALL EXPOSED AREA WITH HYDROSEED.

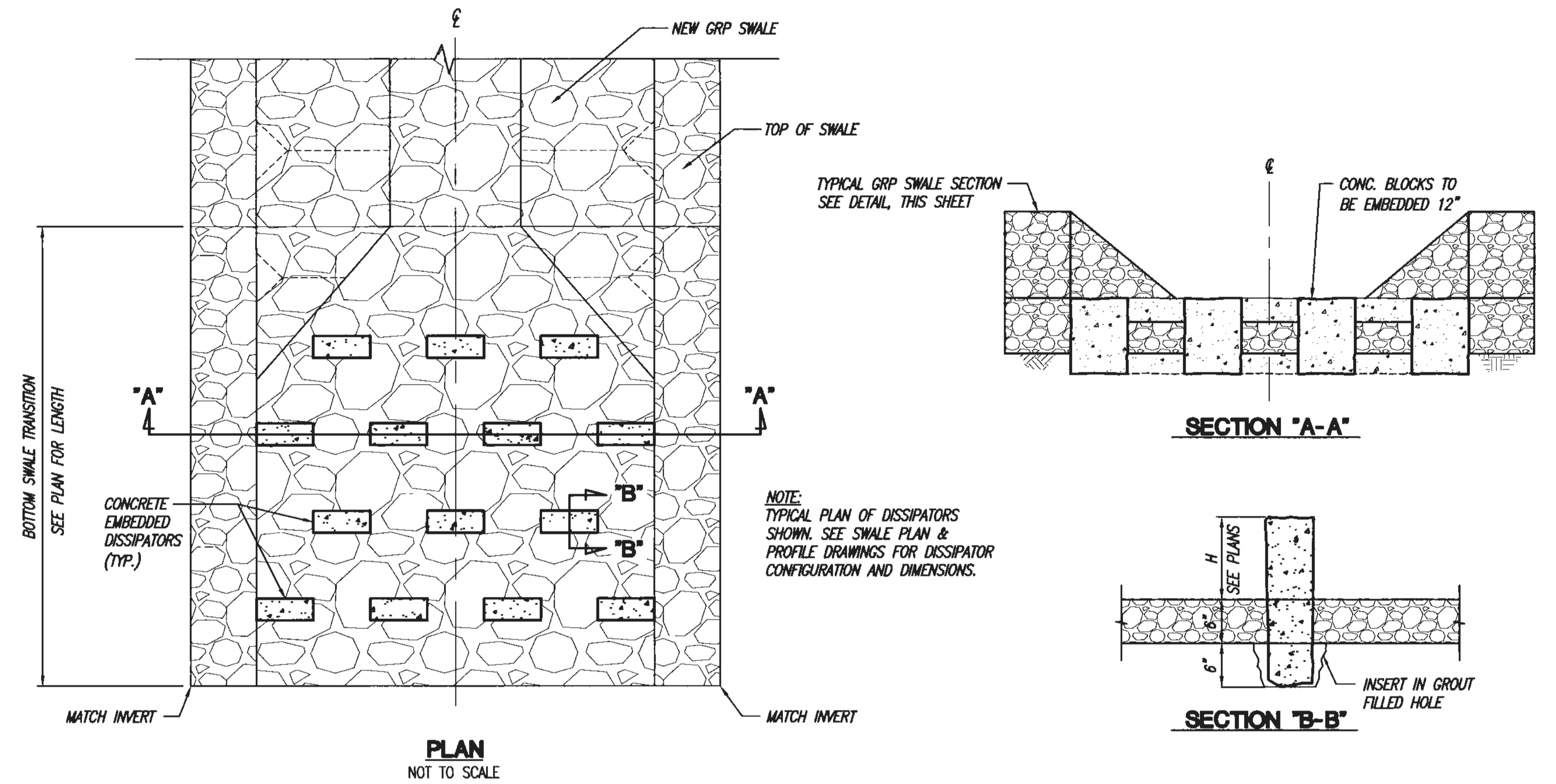


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<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1226 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002.014 AND (2) 2-2-033.023</p>			
<p>SWALE DETAIL - 1</p>			
DRAWN BY: CO	ENGINEER: CO	CHECKED BY: AMM	
<p>DWG. NO. C-59 SHEET 60 OF 79 SHEETS</p>			

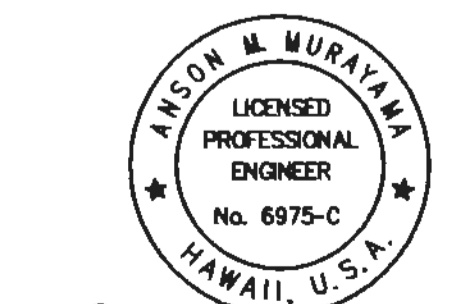


GRP SWALE TOP TRANSITION DETAILS
NOT TO SCALE



GRP SWALE BOTTOM DISSIPATORS TYPICAL DETAILS
NOT TO SCALE

P:\Land Projects\DHHL\Keokea Ph. 1B, 2 & 2A\DWG\Phase 2B\Government Review\2160 C-59 Swale Details - 2.dwg, 3/11/2024 3:14:01 PM



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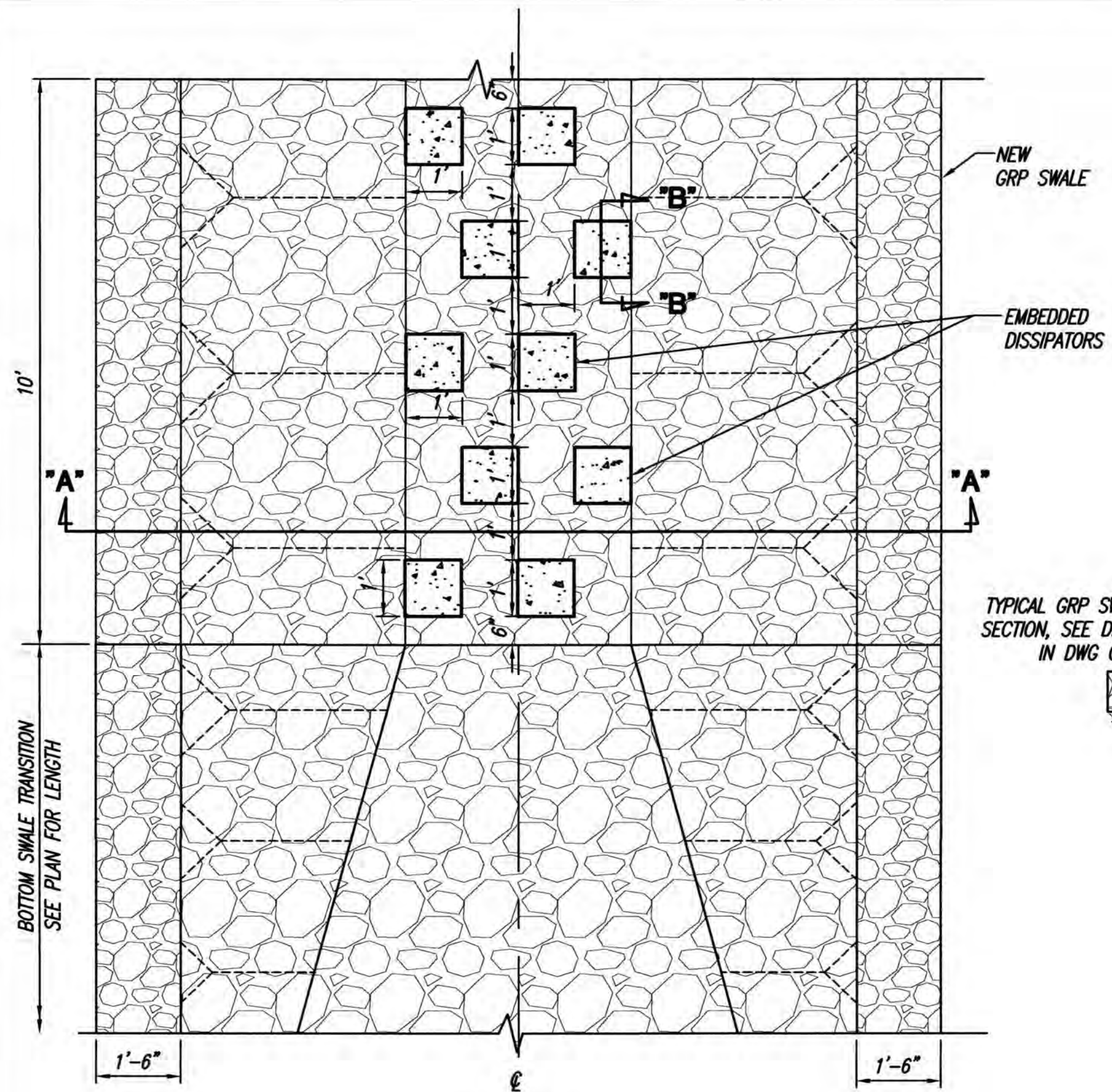
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1298 Queen Emma Street, Third Floor | Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

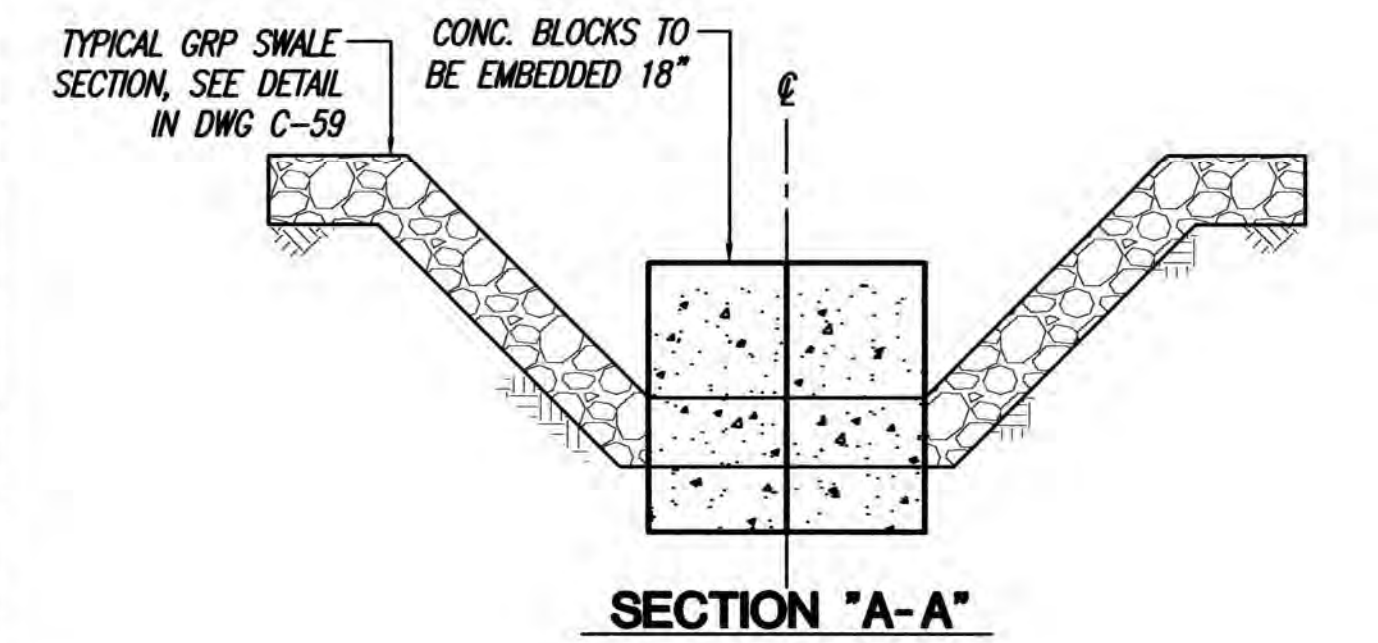
SWALE DETAIL - 2

DRAWN BY: CO ENGINEER: CO CHECKED BY: AMM

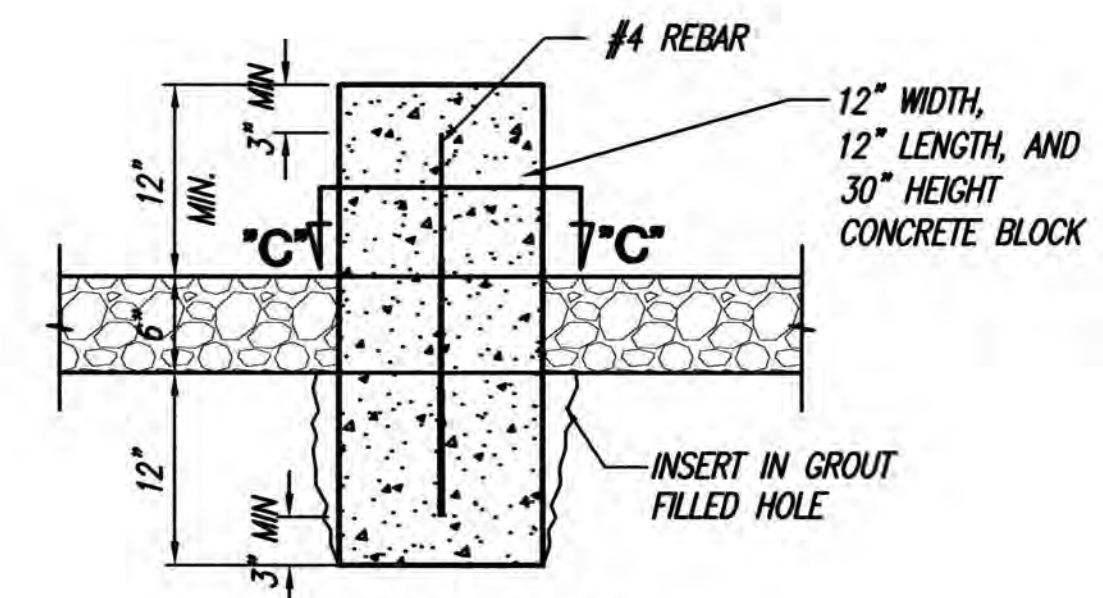
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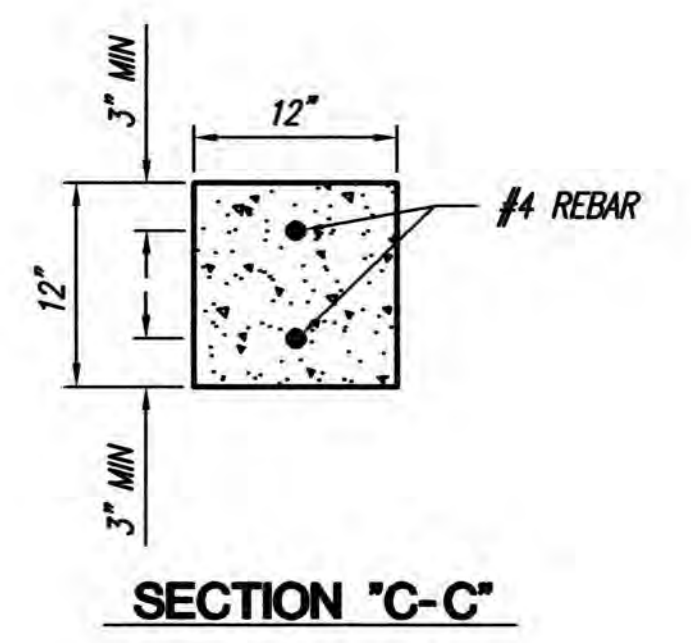
PLAN
NOT TO SCALE



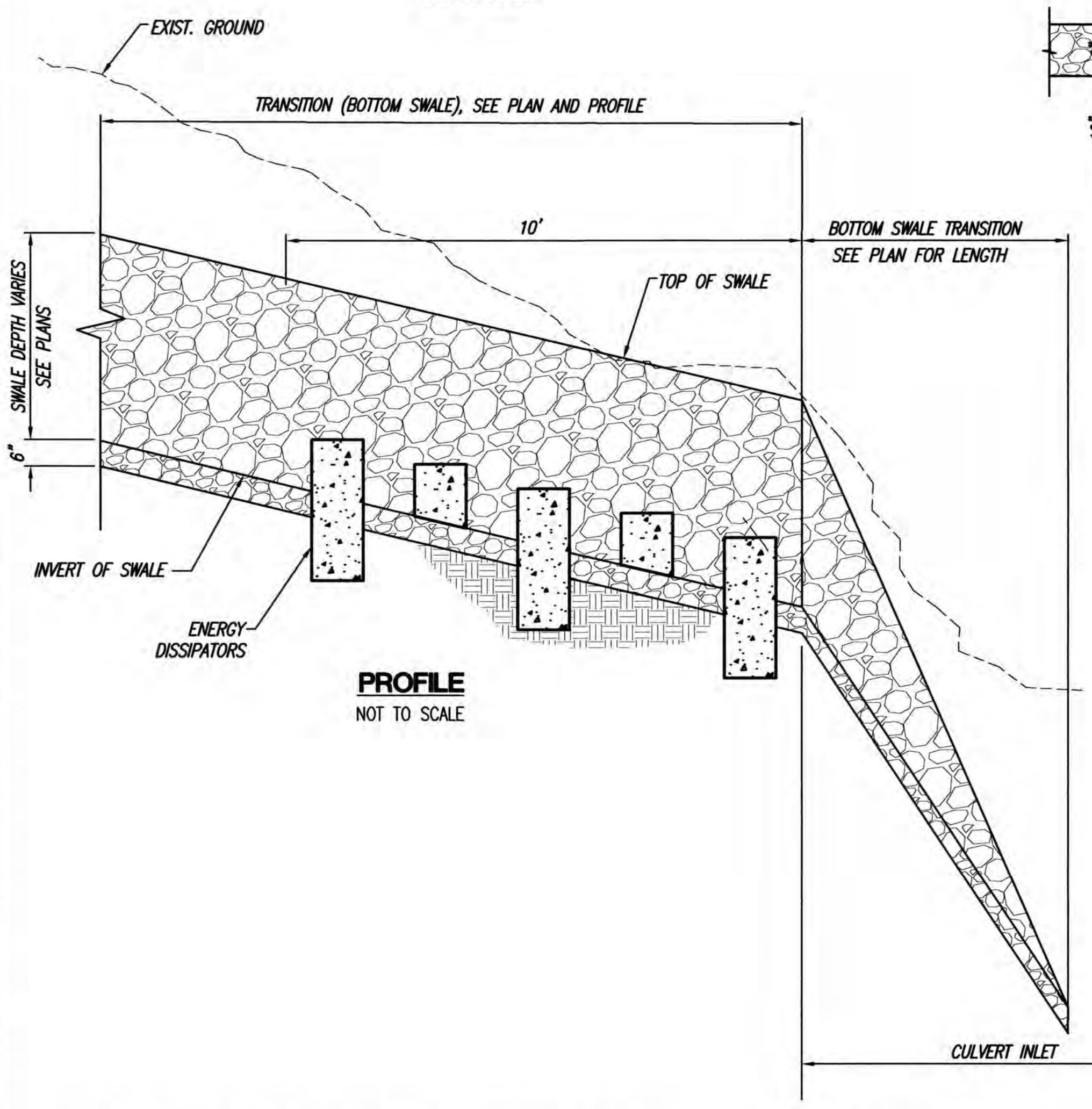
SECTION "A-A"



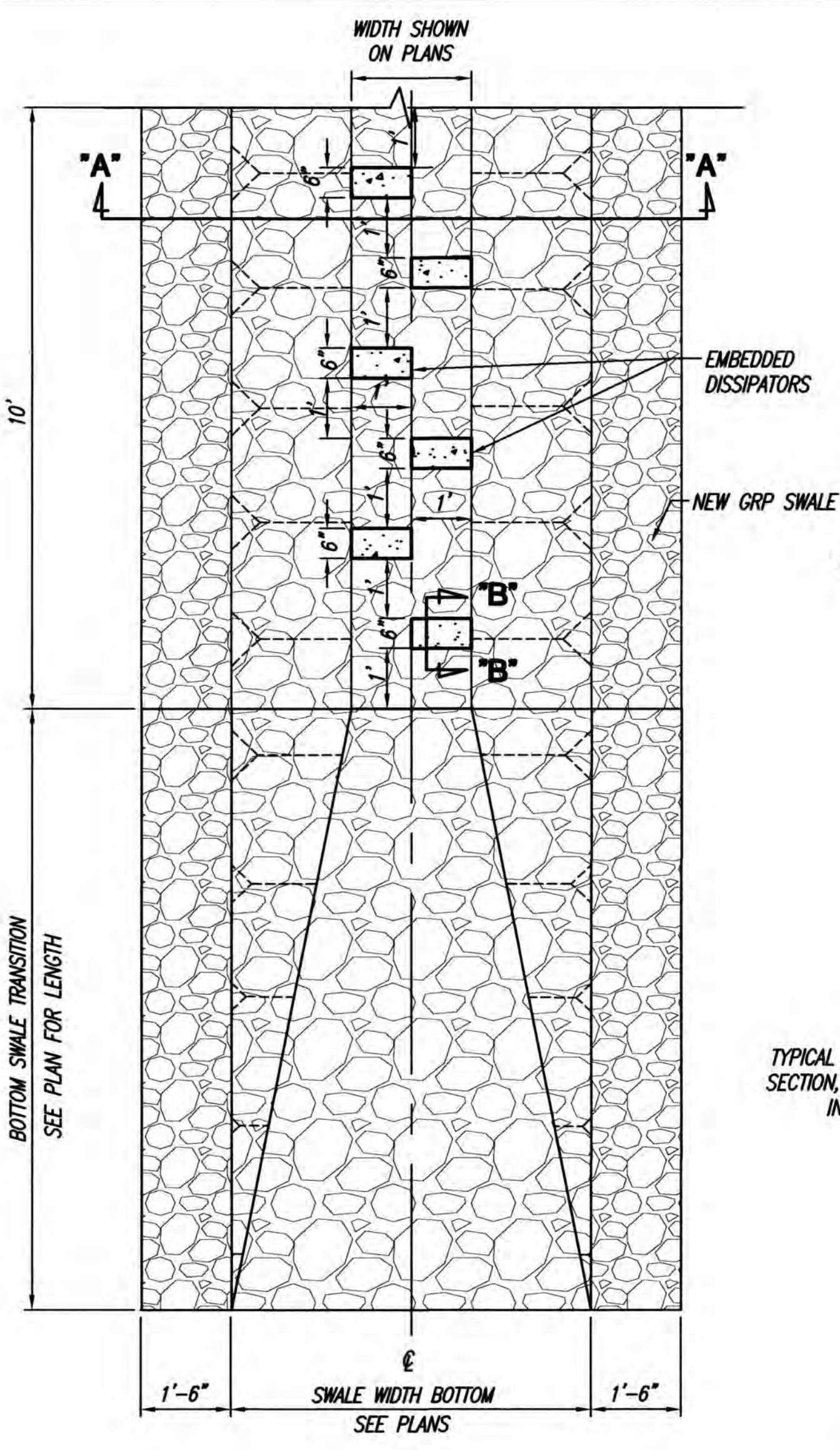
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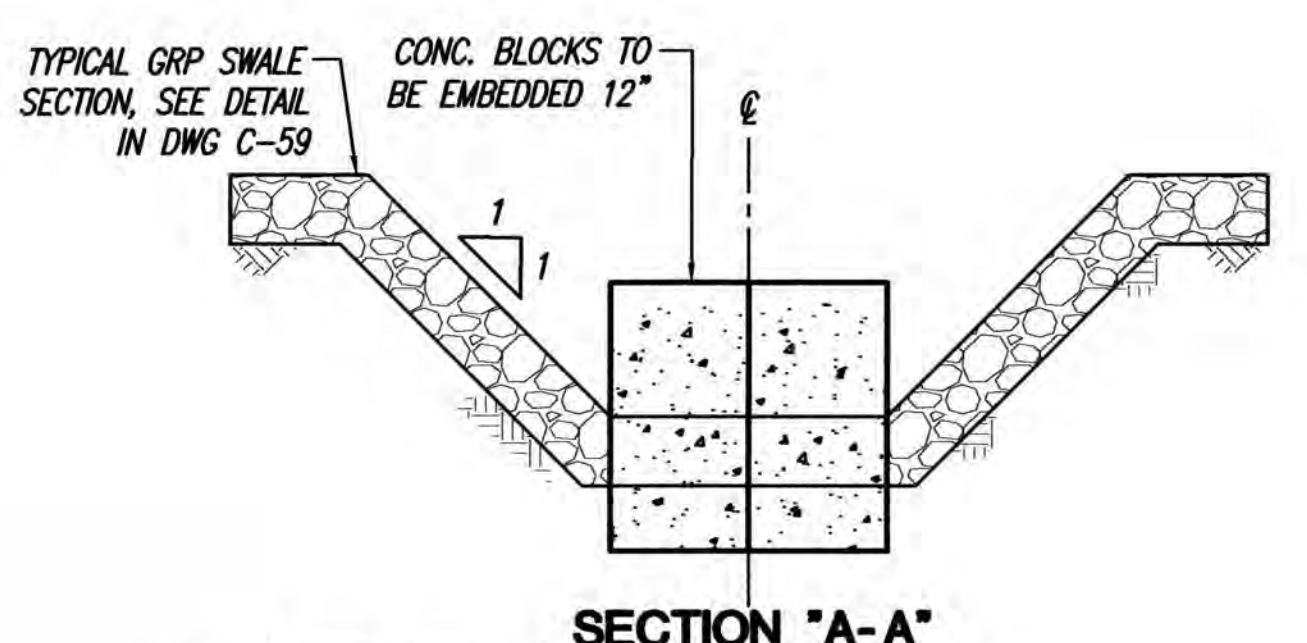
SECTION "C-C"



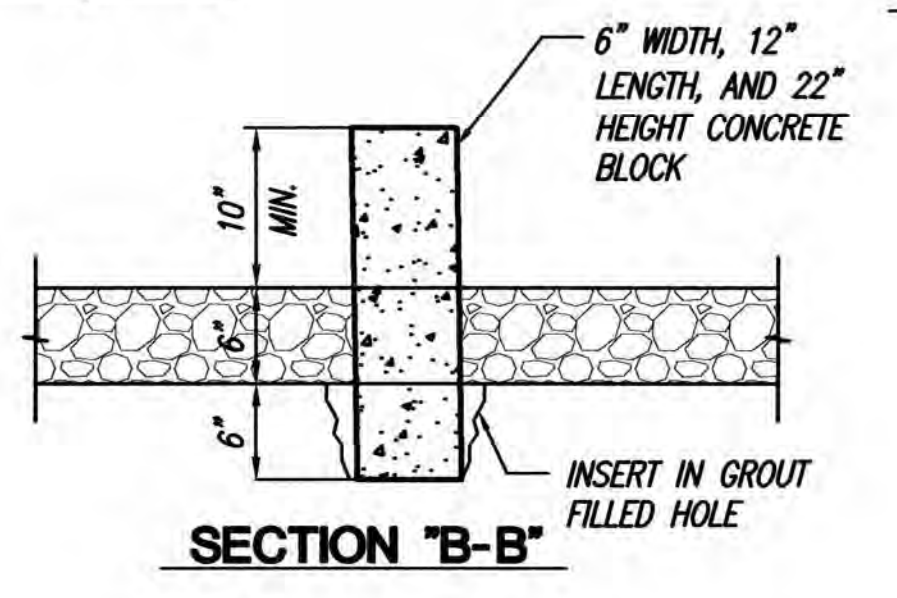
PROFILE
NOT TO SCALE



PLAN
NOT TO SCALE

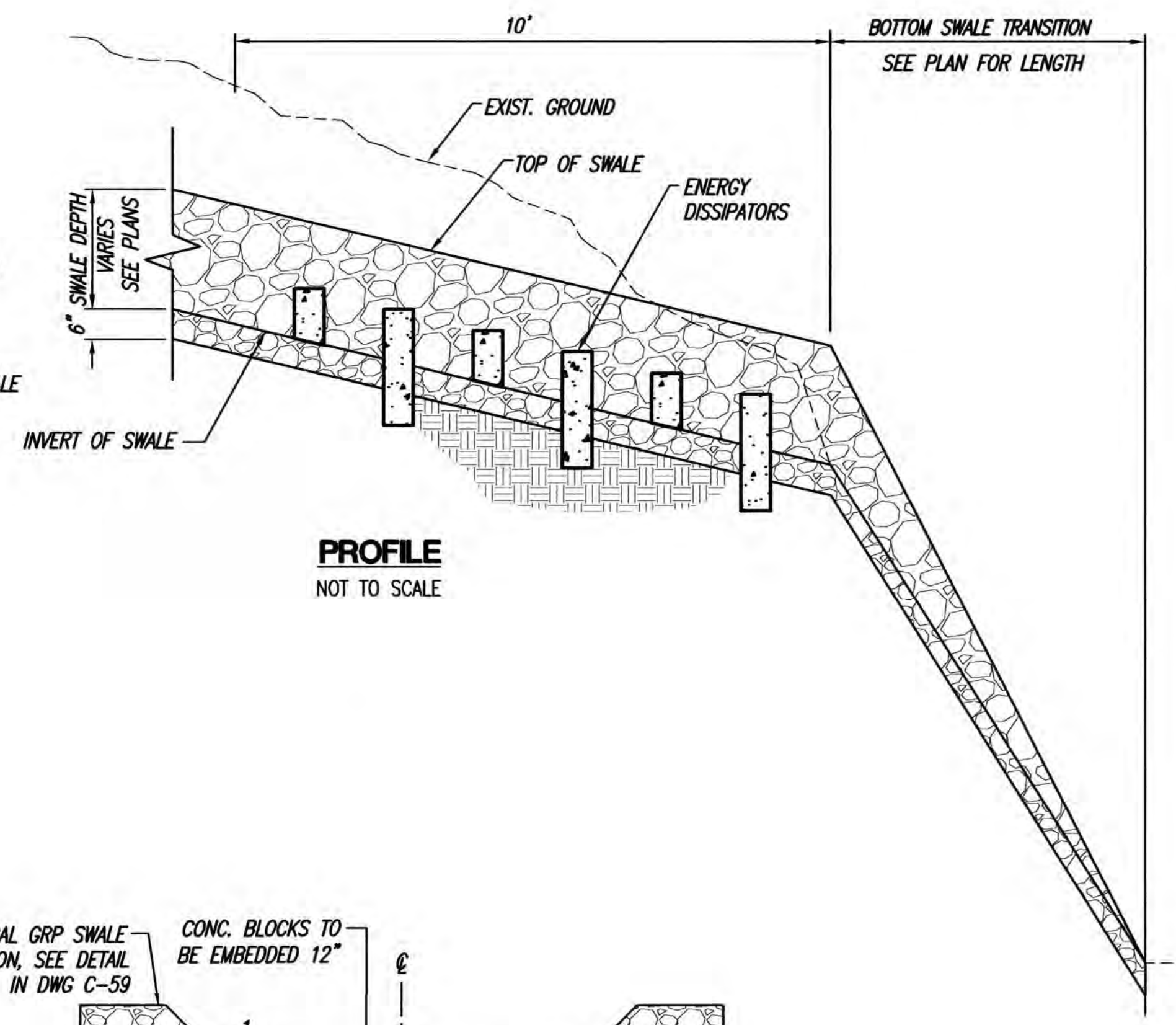


SECTION "A-A"



SECTION "B-B"

GRP SWALE BOTTOM TRANSITION DETAILS (AT CULVERT INLET)
NOT TO SCALE



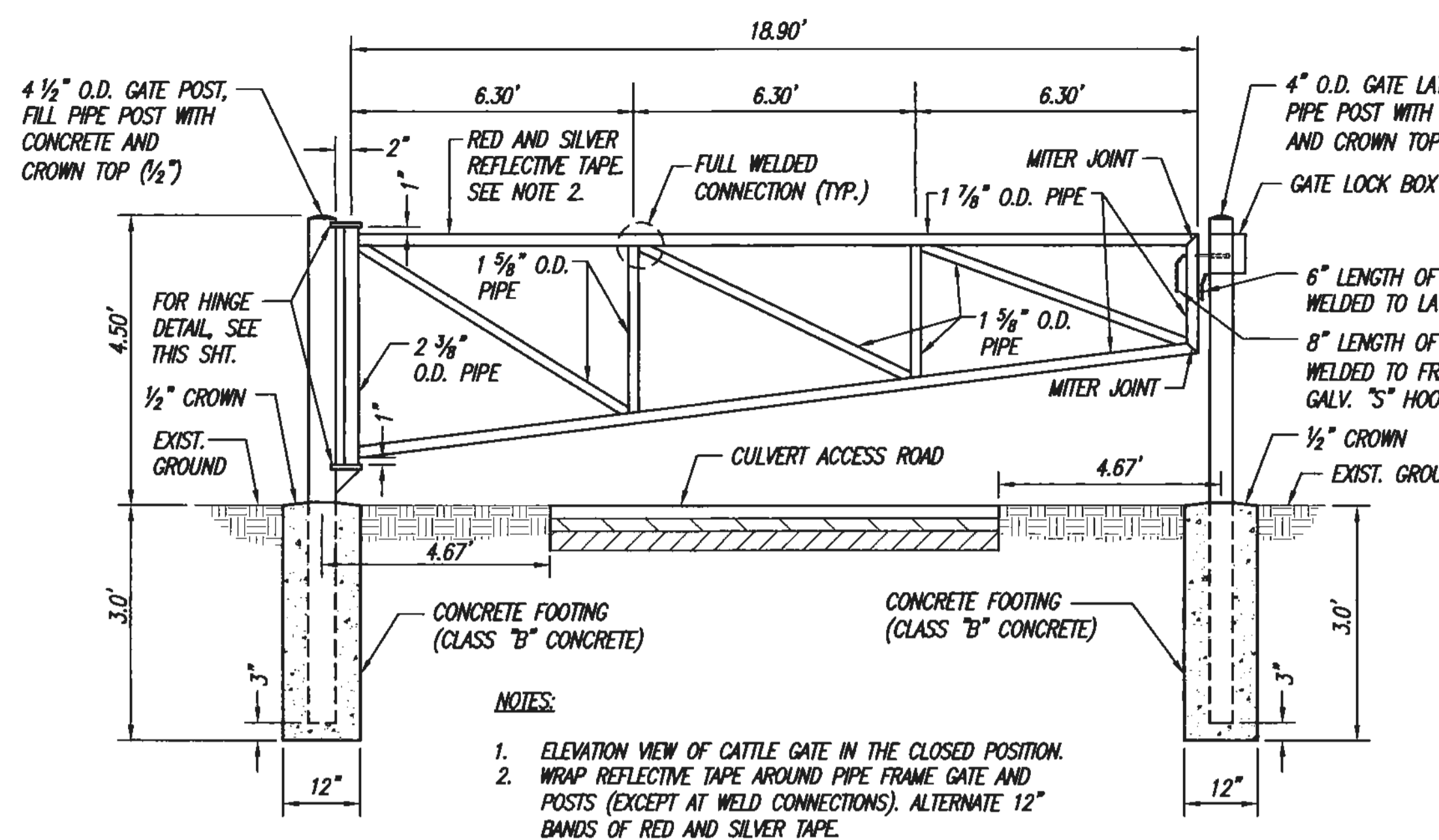
PROFILE
NOT TO SCALE

GRP SWALE BOTTOM TRANSITION DETAILS (AT CULVERT INLET)
FOR SWALES WITH 4' DEPTH AND 4' BOTTOM WIDTH
NOT TO SCALE



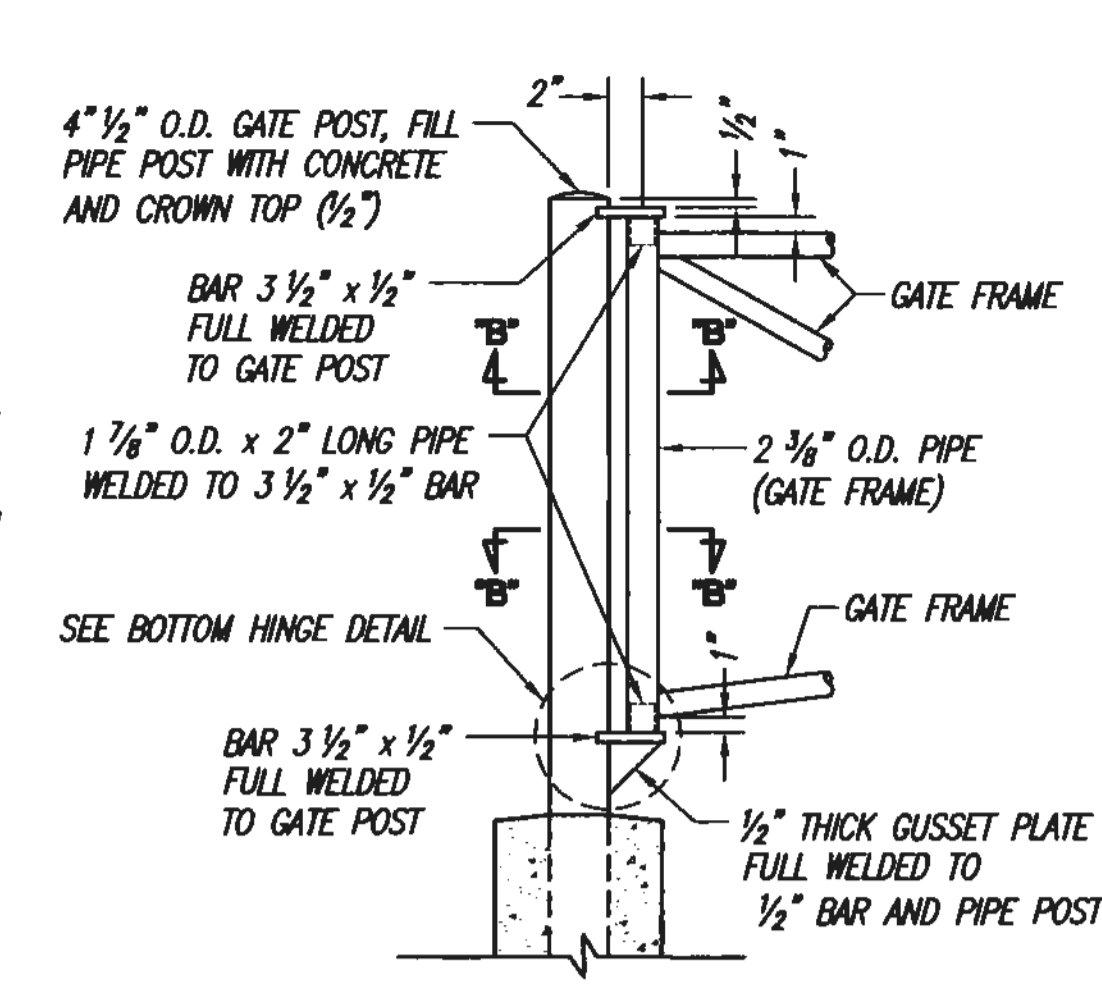
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p> <p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023</p>			
SWALE DETAIL - 3			
DRAWN BY: CO	ENGINEER: CO	CHECKED BY: AMM	



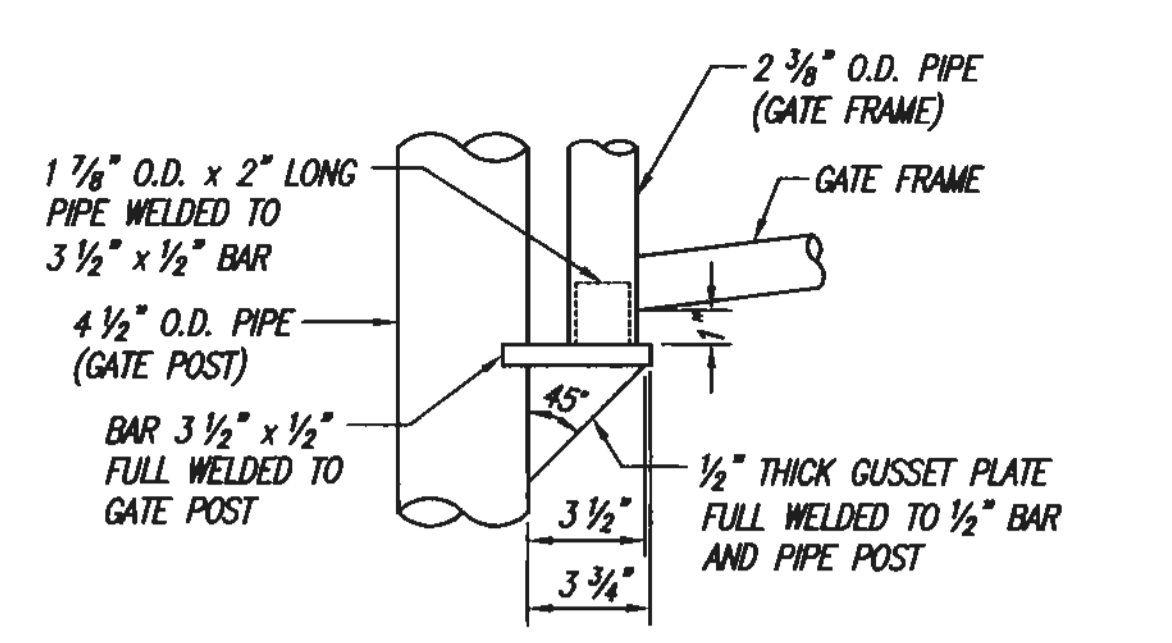
NOTES:
 1. ELEVATION VIEW OF CATTLE GATE IN THE CLOSED POSITION.
 2. WRAP REFLECTIVE TAPE AROUND PIPE FRAME GATE AND POSTS (EXCEPT AT WELD CONNECTIONS). ALTERNATE 12\"/>

ELEVATION
NOT TO SCALE

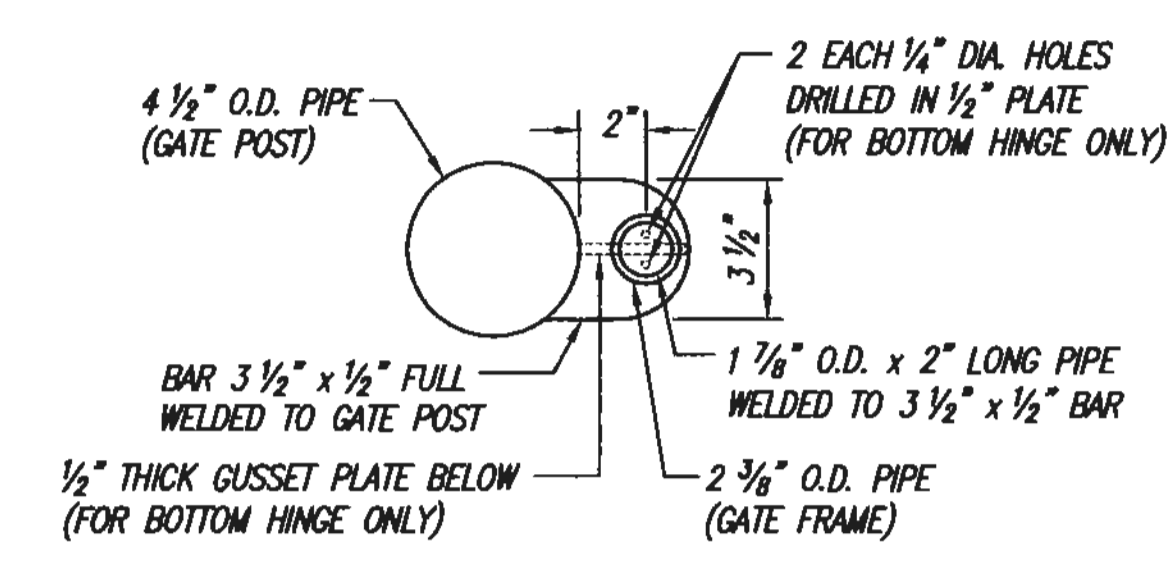


HINGE DETAIL
NOT TO SCALE

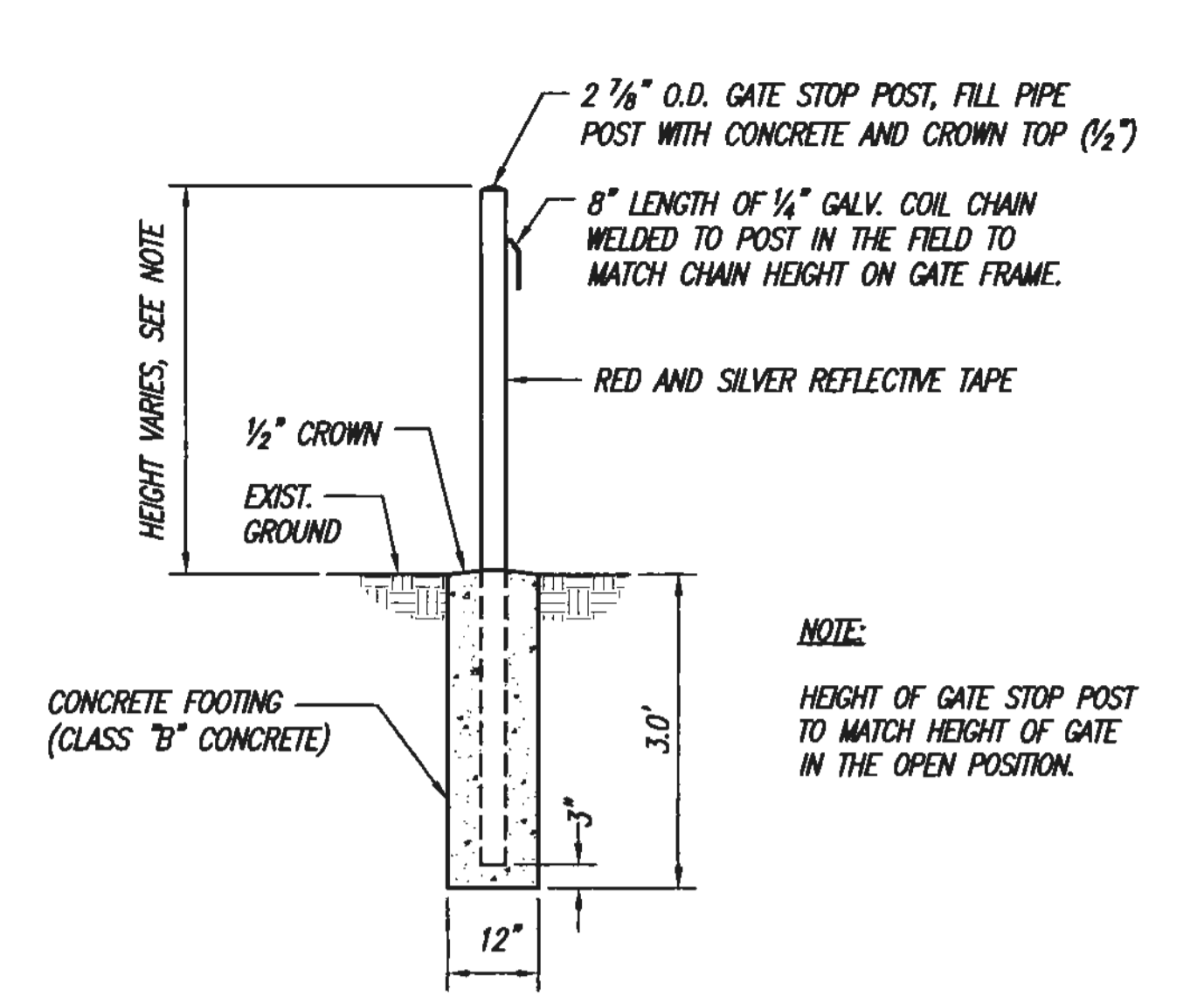
CATTLE GATE DETAIL
NOT TO SCALE



BOTTOM HINGE DETAIL
NOT TO SCALE

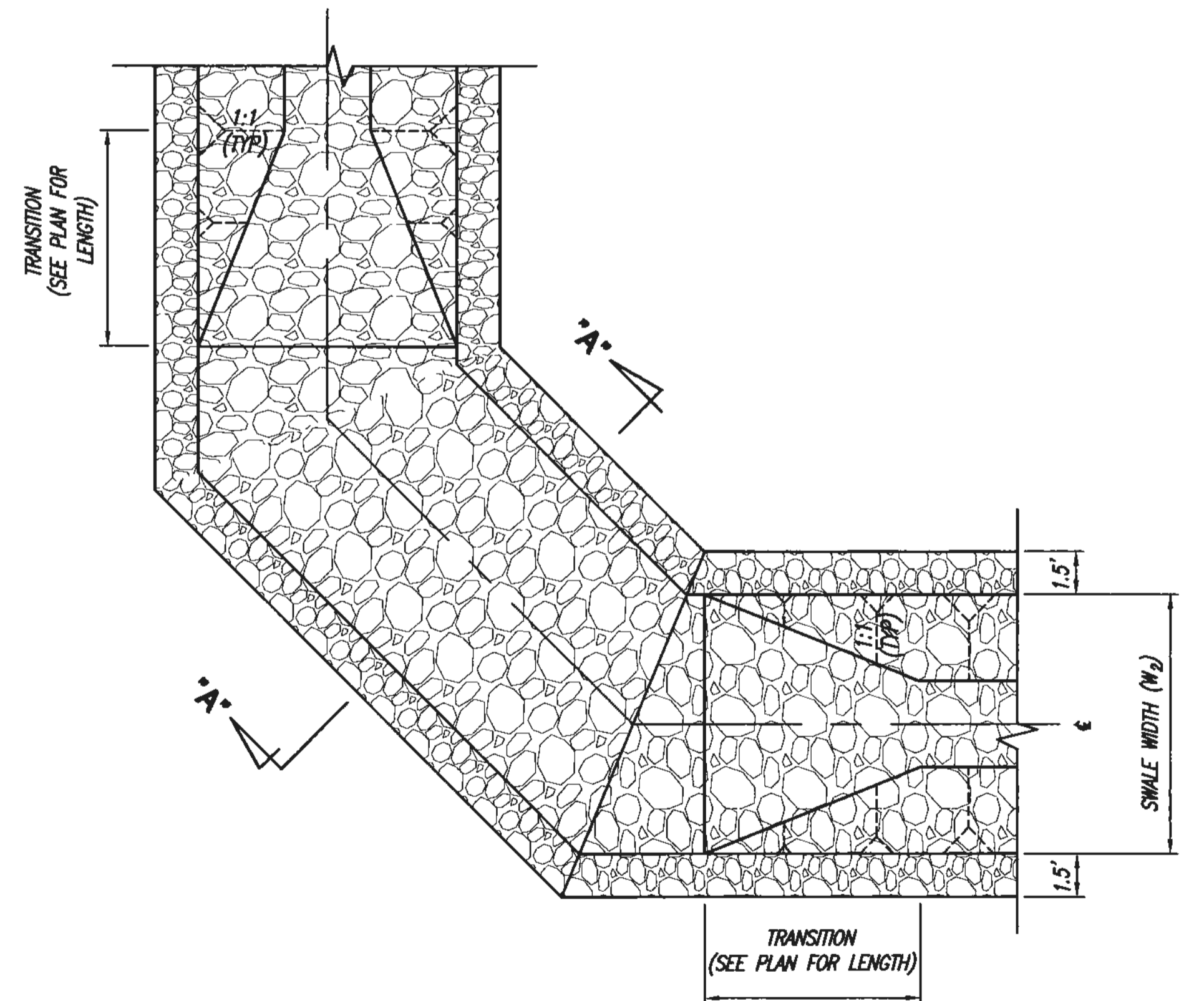


SECTION 'B-B'
NOT TO SCALE

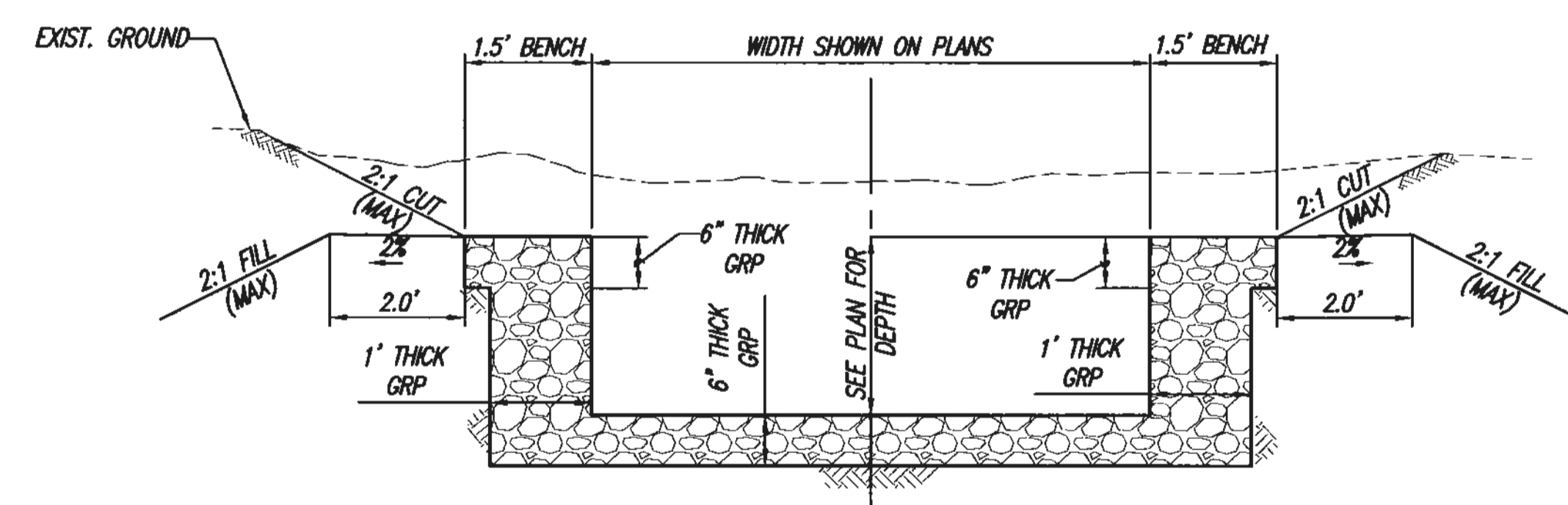


TYPICAL GATE STOP POST
NOT TO SCALE

NOTE:
HEIGHT OF GATE STOP POST TO MATCH HEIGHT OF GATE IN THE OPEN POSITION.



GRP SWALE TRAPEZOIDAL TO RECTANGULAR TRANSITION
NOT TO SCALE



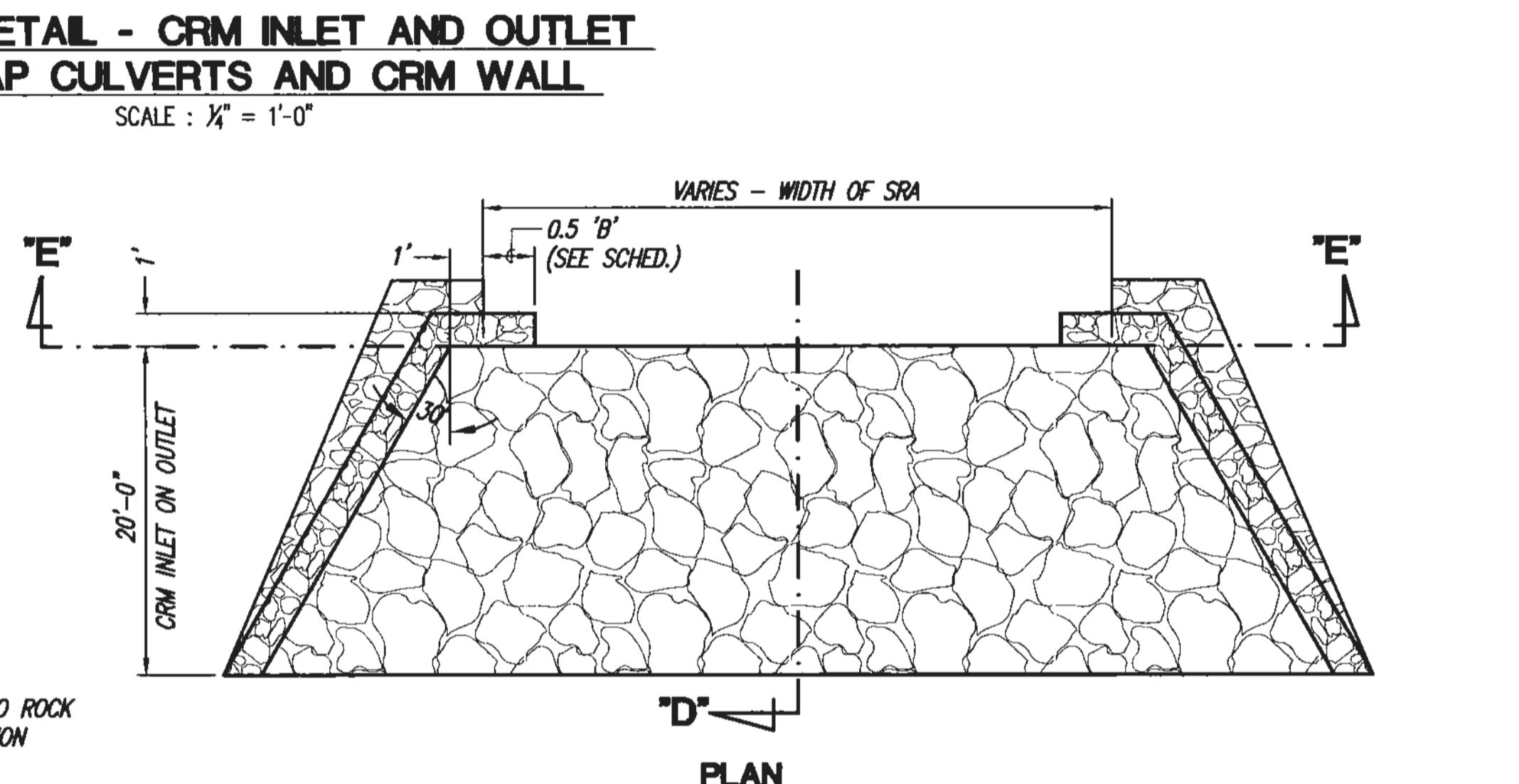
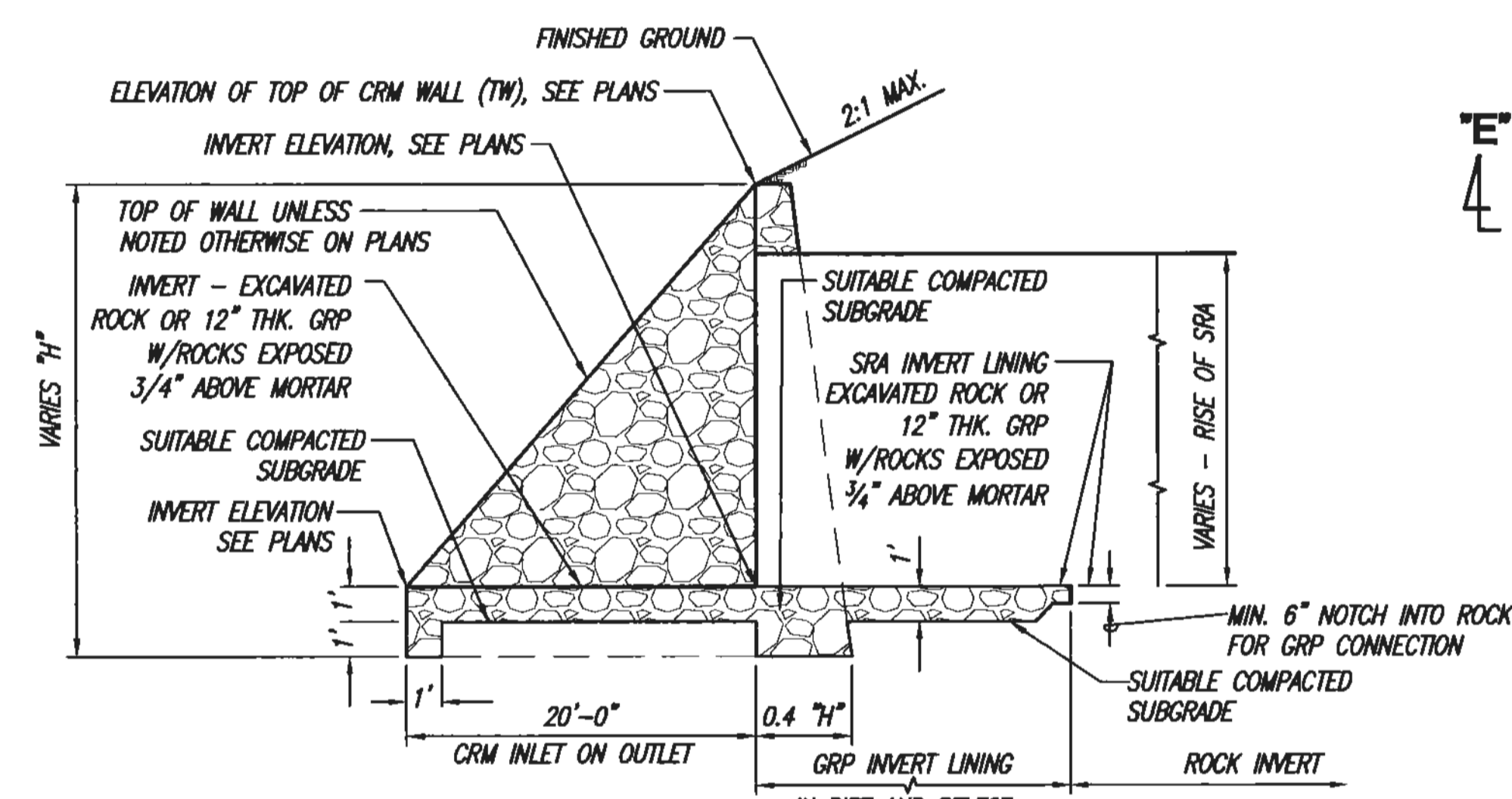
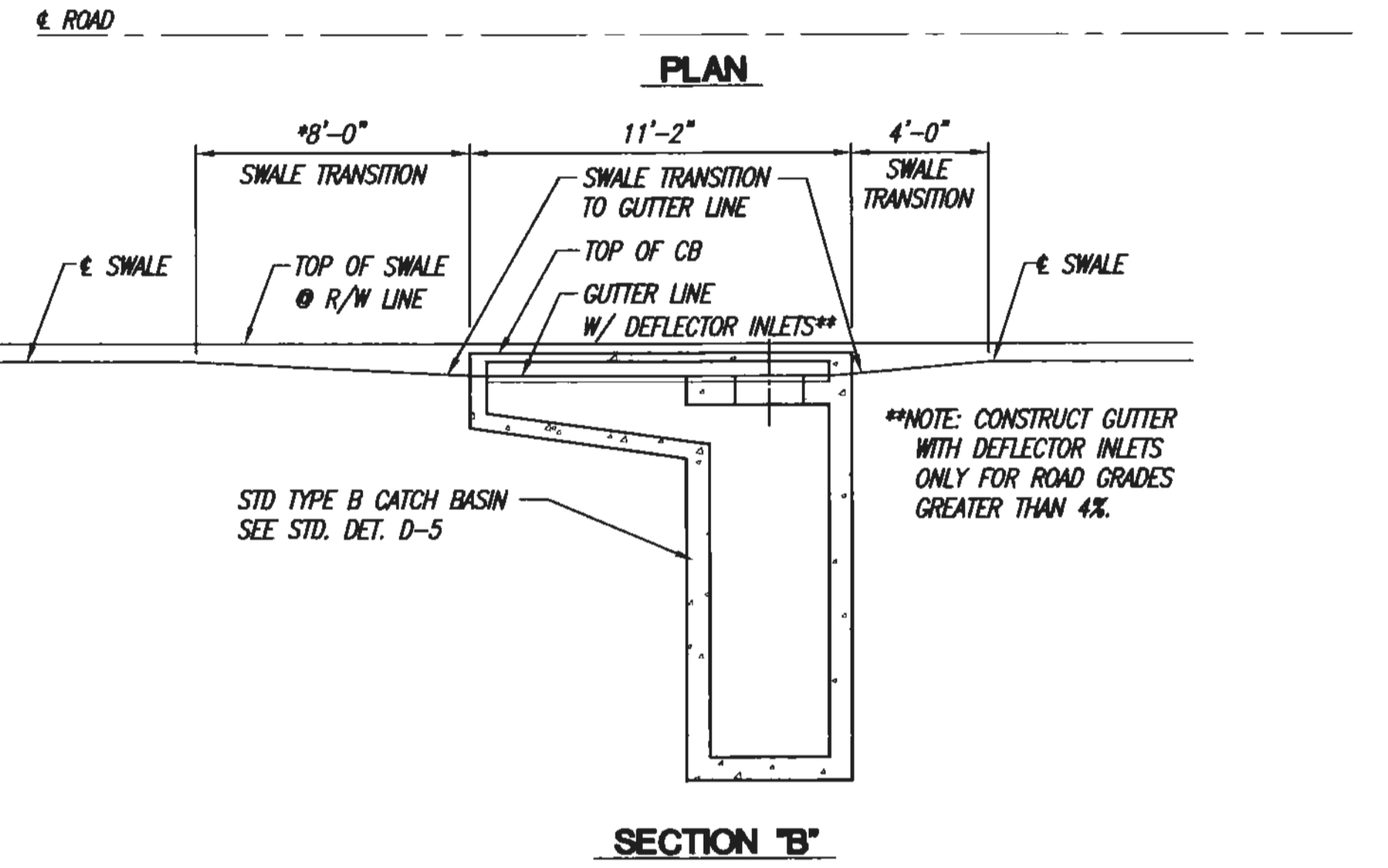
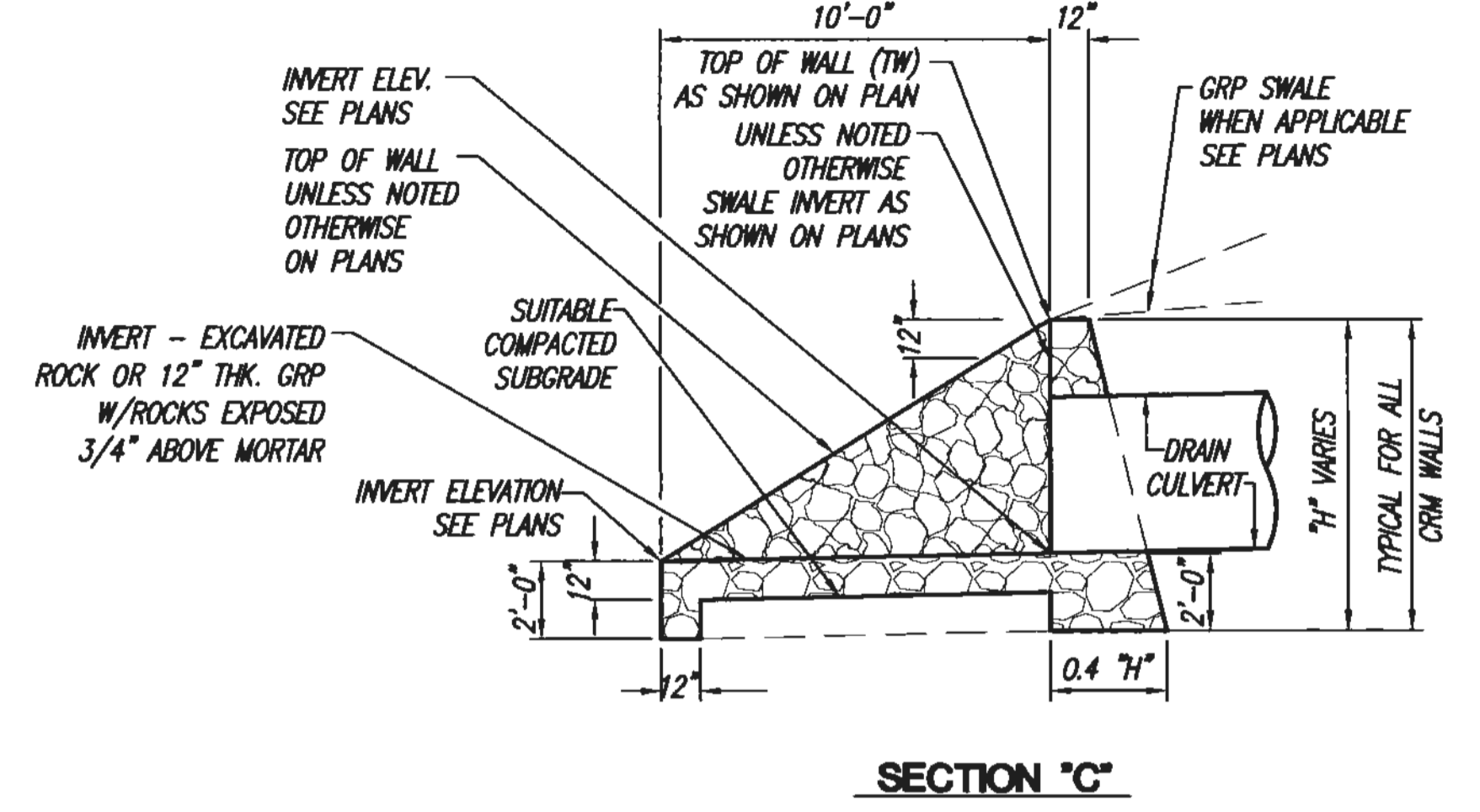
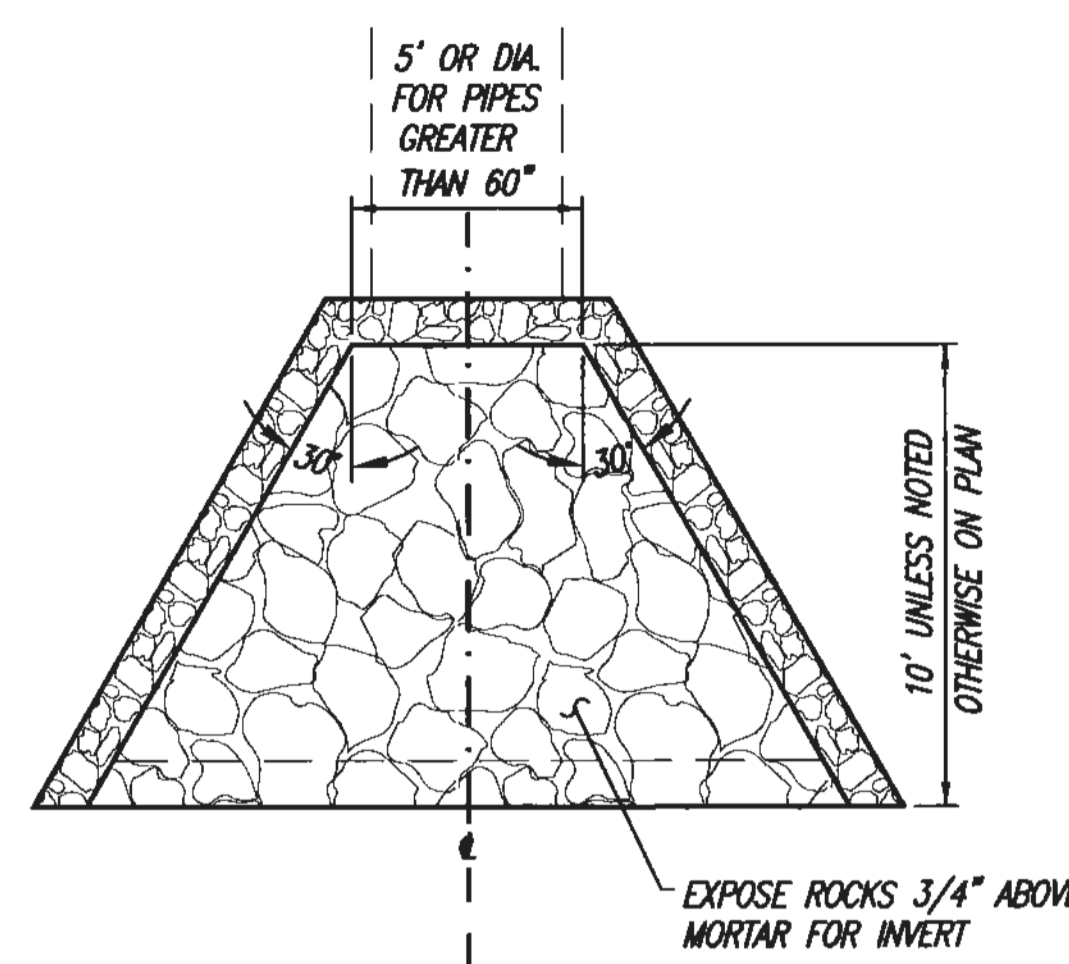
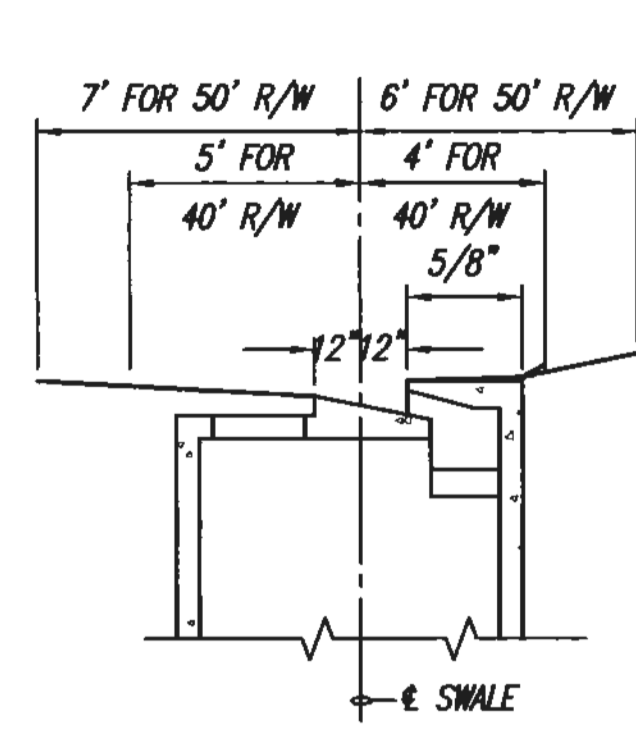
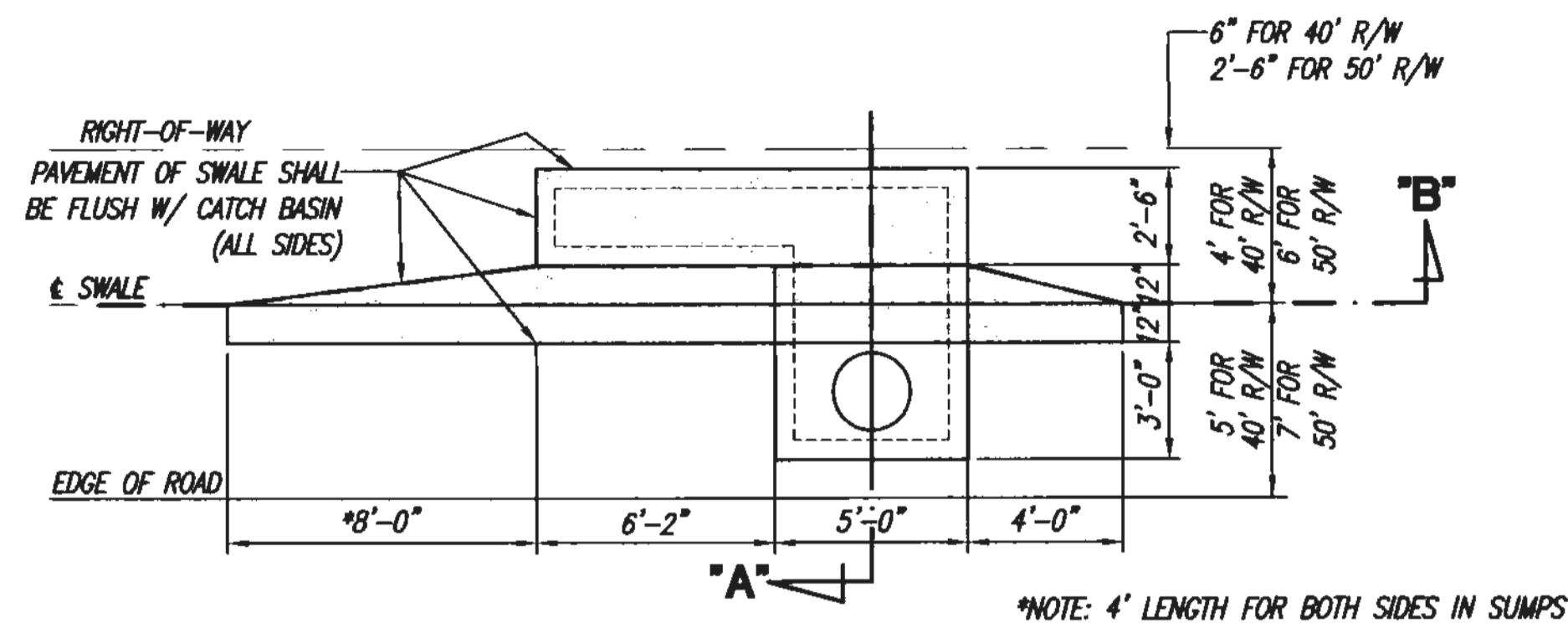
SECTION 'A-A'
NOT TO SCALE

P:\Land Projects\DHHL\Keokea Ph 1B, 2 & 2A\DWG\Phase 2B\Government Review 2\62-C-61 Swale Details - 4.dwg, 3/11/2024 3:25:37 PM



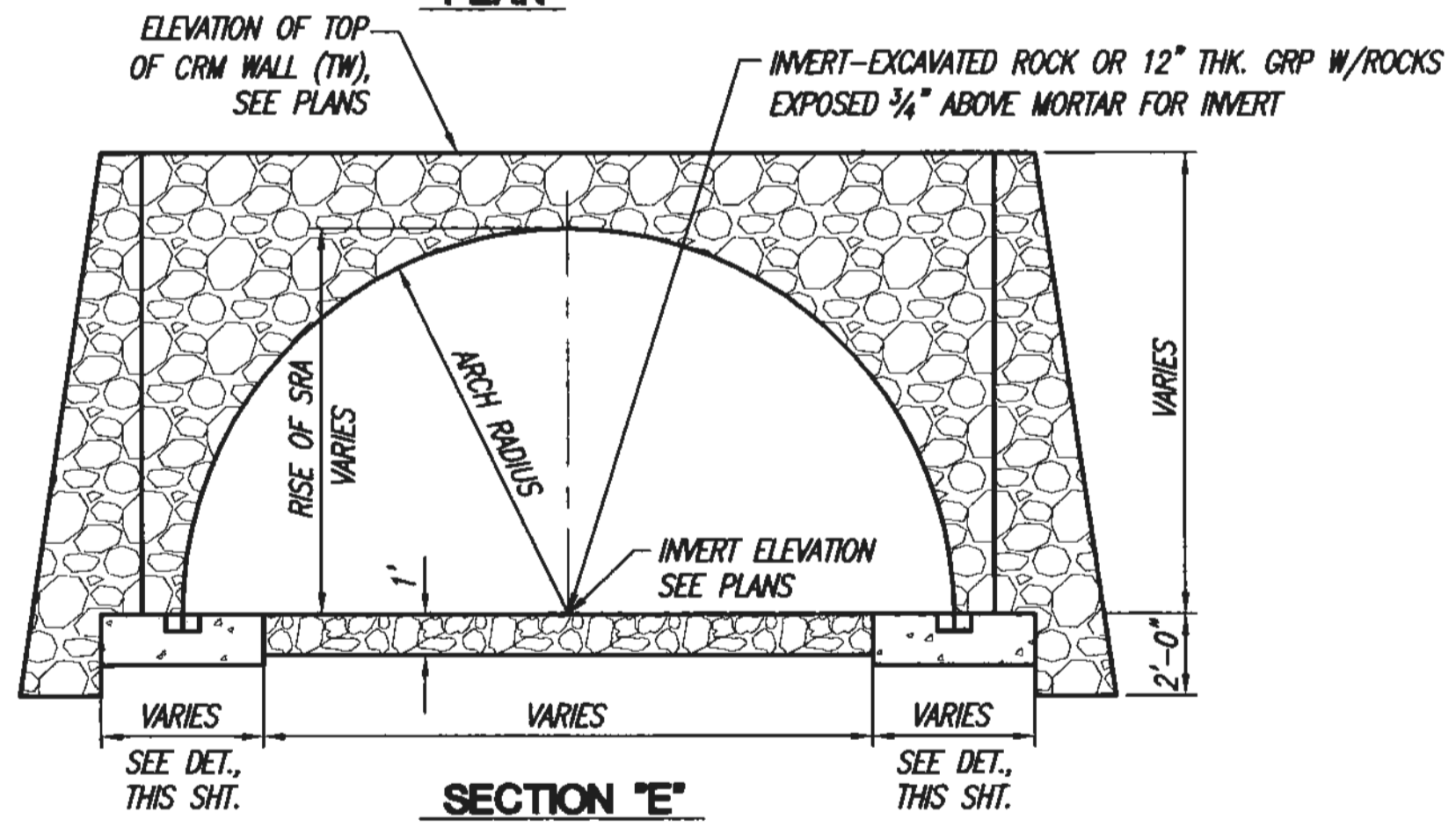
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023			
SWALE DETAIL - 4			
DRAWN BY: JSO, CO	ENGINEER: JO, HWH	CHECKED BY: AMM	

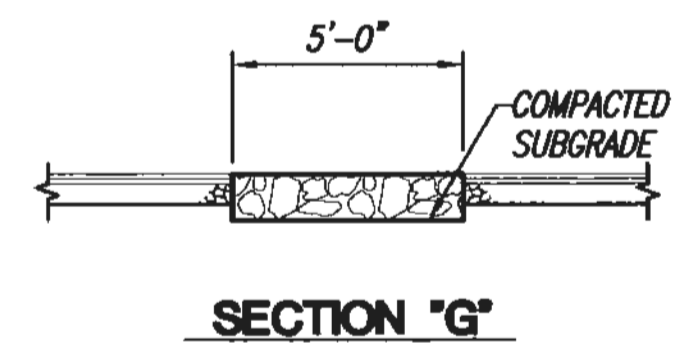
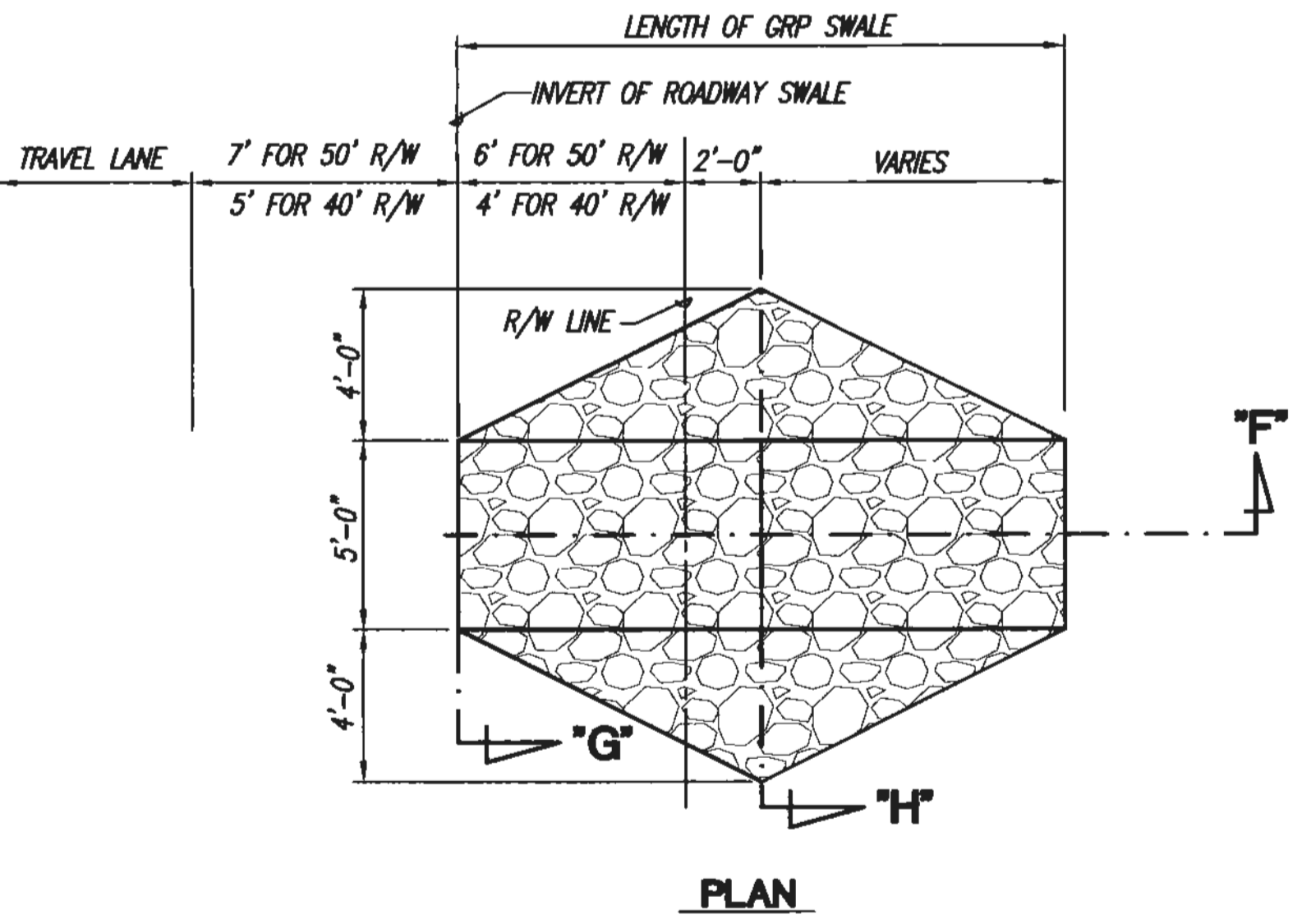


DETAIL - TRANSITION GUTTER FOR CATCH BASINS
SCALE: 1/4" = 1'-0"

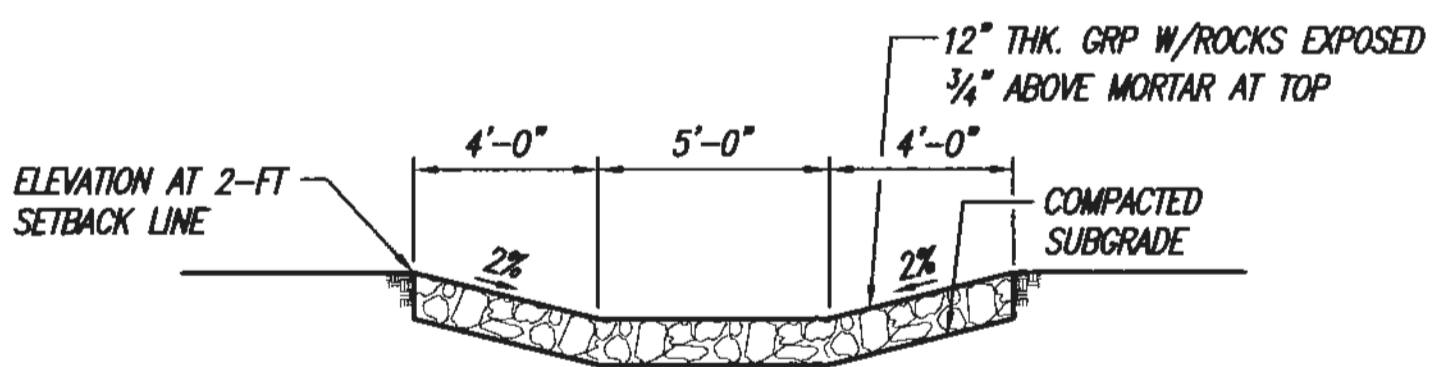
SECTION 'D'



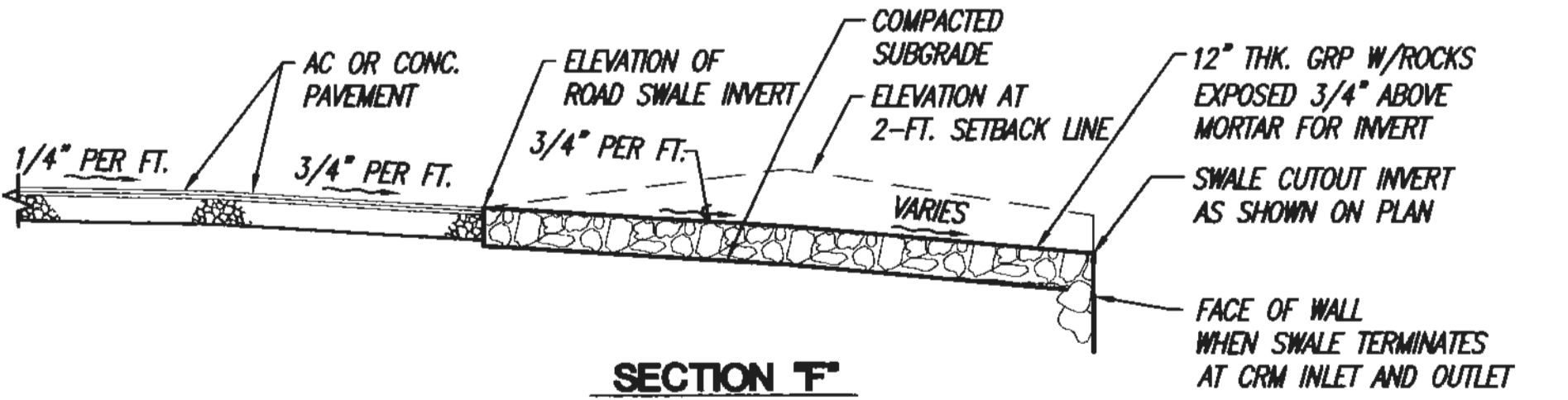
TYPICAL DETAIL - CRM INLET AND OUTLET AND INVERT LINING FOR SRA CULVERTS
SCALE: 1/4" = 1'-0"



SECTION 'G'



SECTION 'H'



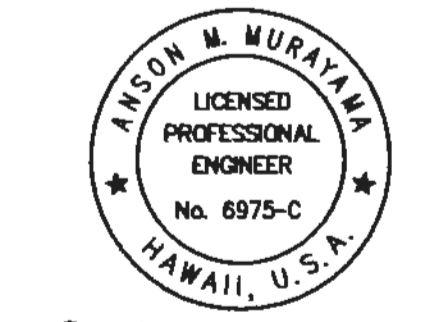
TYPICAL DETAIL - SWALE CUTOUTS
SCALE: 1/4" = 1'-0"

SPAN x RISE	FOOTING ON ENGINEERED FILL			FOOTING ON BASALTIC ROCK		
	'B'	REINF.	LONGIT. REINF.	'B'	REINF.	LONGIT. REINF.
19'-0" x 8'-3"	4'-6"	#5@12"O.C.	4-#5 CONT.	2'-6"	#5@12"O.C.	2-#5 CONT.

SRA FOOTING DETAIL AND SCHEDULE
NOT TO SCALE

SINGLE RADIUS ARCH CULVERTS:

- ALL WORK SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (1986).
- SINGLE RADIUS ARCH CULVERTS SHALL BE FURNISHED AND DESIGNED BY CONTECH CONSTRUCTION PRODUCTS, INC. OR APPROVED EQUAL.
- METAL CULVERTS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES. CULVERTS SHALL BE DESIGNED FOR AN HS-20-44 TRUCK.
- CONCRETE FOR FOOTINGS SHALL BE CLASS A, IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
- MINIMUM COVER IN INCHES FOR REBARS FOR CAST-IN-PLACE CONCRETE:
CONCRETE CAST AGAINST EARTH 3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER 2"
- UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOWEL EXTENSIONS AND EMBEDMENTS SHALL BE 40 BAR DIAMETERS.

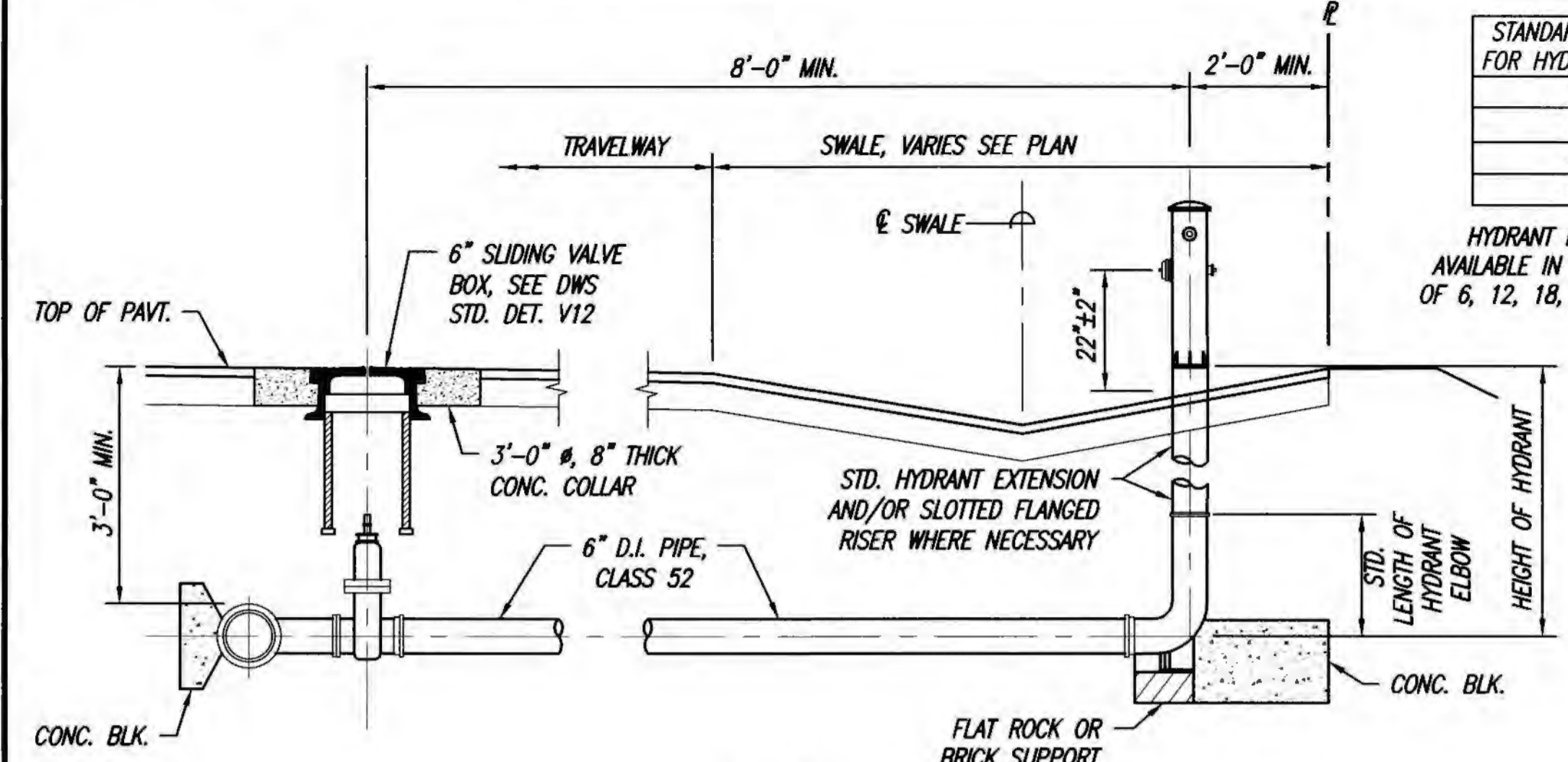


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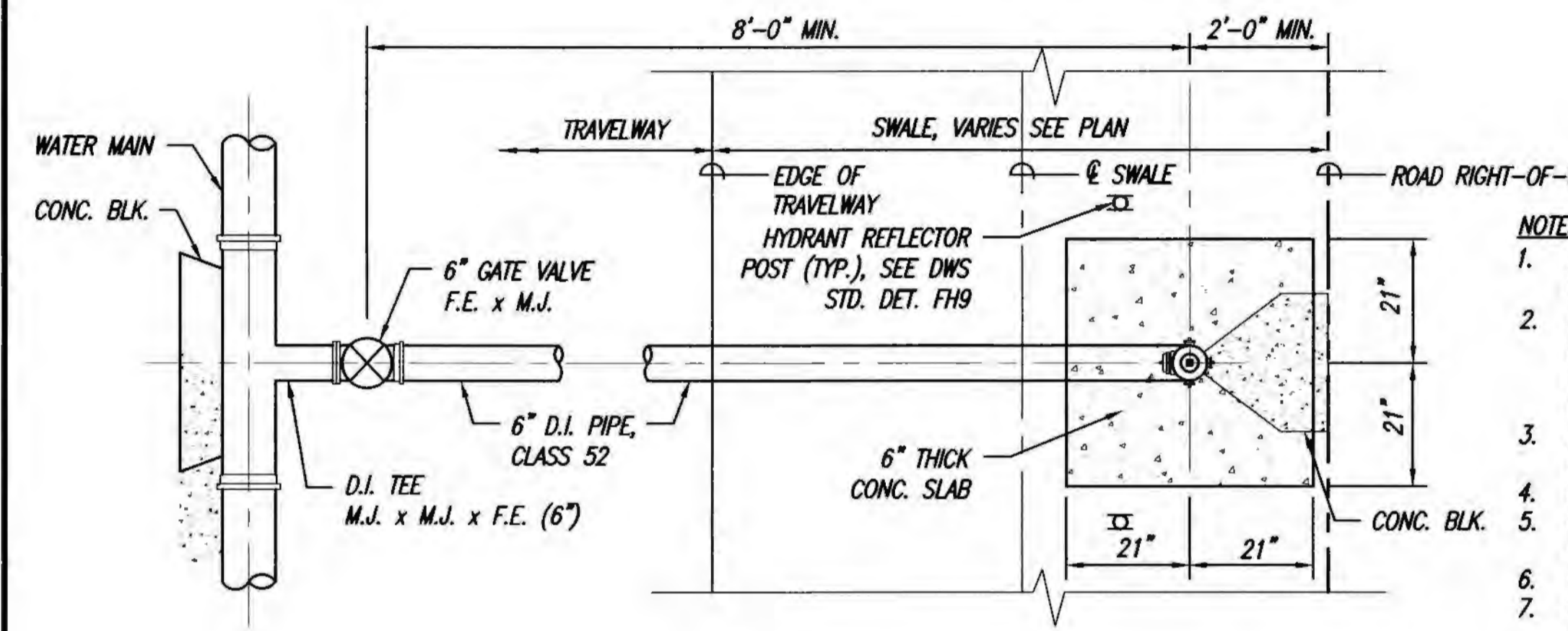
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1208 Queen Emma Street, Third Floor Honolulu, Hawaii</p> <p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p> <p>DRAINAGE DETAILS</p>			
DRAWN BY: CO	ENGINEER: FJC	CHECKED BY: AMM	

STANDARD LENGTHS FOR HYDRANT ELBOW	
30"	
36"	
42"	
48"	

HYDRANT EXTENSIONS ARE AVAILABLE IN STANDARD LENGTHS OF 6, 12, 18, 24, AND 30 INCHES.



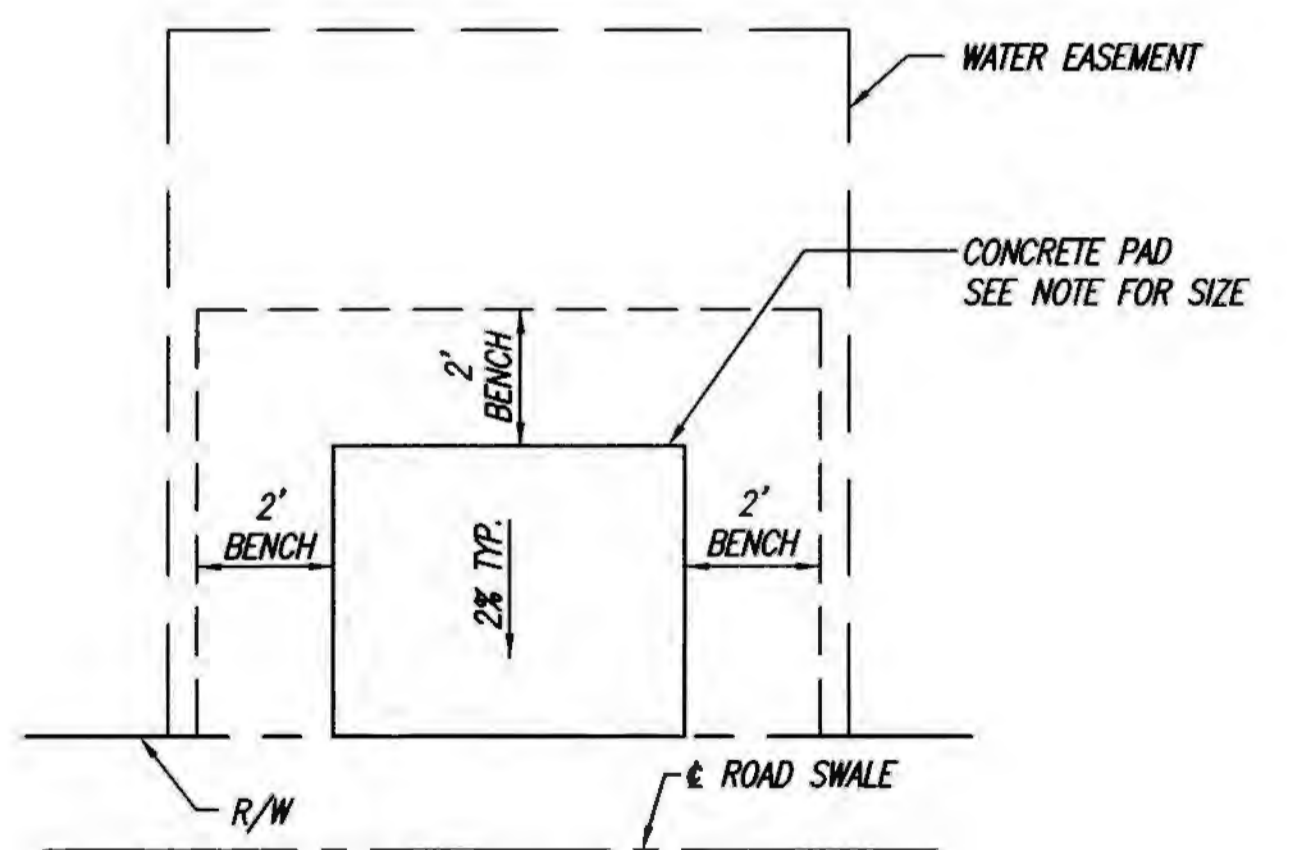
SECTION
NOT TO SCALE



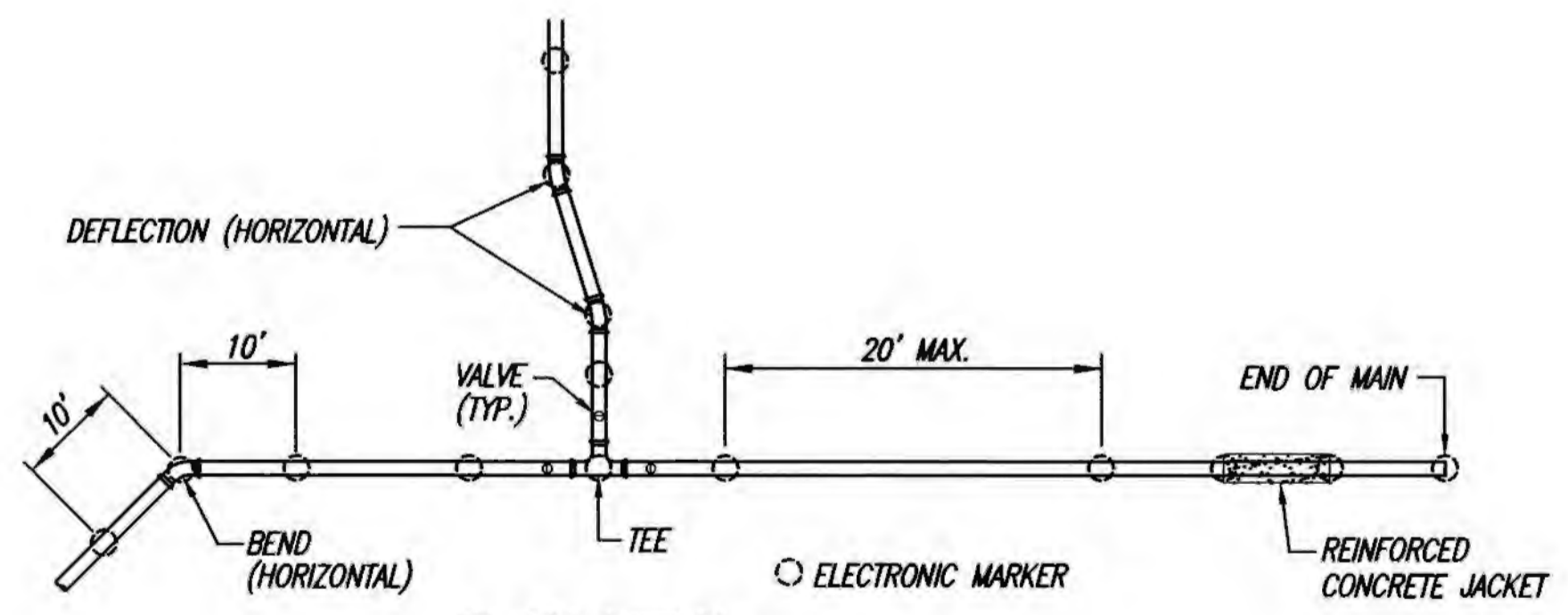
PLAN
NOT TO SCALE

- NOTES:**
- GASKETS FOR FLANGED JOINTS SHALL BE 1/4" DUCK-INSERTED RUBBER PACKING GARLOCK NO. 19 OR APPROVED EQUAL.
 - BOLTS SHALL BE BREAK-OFF TYPE, 3/8" DIA. x 3" LONG MACHINE BOLTS WITH CUT THREADS, AMERICAN STANDARD COARSE HEXAGON HEADS, STAINLESS STEEL OR SILICON BRONZE. INSTALL BOLT WITH THREADS FACING DOWN.
 - NUTS SHALL BE AMERICAN STANDARD HEAVY COLD PUNCHED HEXAGON NUTS, STAINLESS STEEL OR SILICON BRONZE.
 - CONCRETE SHALL BE DWS 2500.
 - REFER TO PLATE FH9 FOR FIRE HYDRANT INSTALLATION WHERE NO STREET CURBING.
 - FLANGED OUTLET FOR THE TEE IS MANDATORY FOR MAUI.
 - TAPPING SLEEVE WITH TAPPING VALVE ASSEMBLY MAY BE USED FOR CONNECTION TO EXIST. MAIN.
 - LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
 - PROVIDE SLOTTED FLANGED RISER FOR HYDRANT AS NEEDED TO ALIGN 4-1/2" NOZZLE PERPENDICULAR TO CURB.
 - INSTALL BLUE REFLECTIVE PAVEMENT HYDRANT MARKERS. SEE PLATES FH12 AND FH13. FOR DETAIL, SEE DWG. NO. C-58. FOR PAVEMENT MARKINGS PLAN, SEE DWG. NOS. C-55 TO C-57.

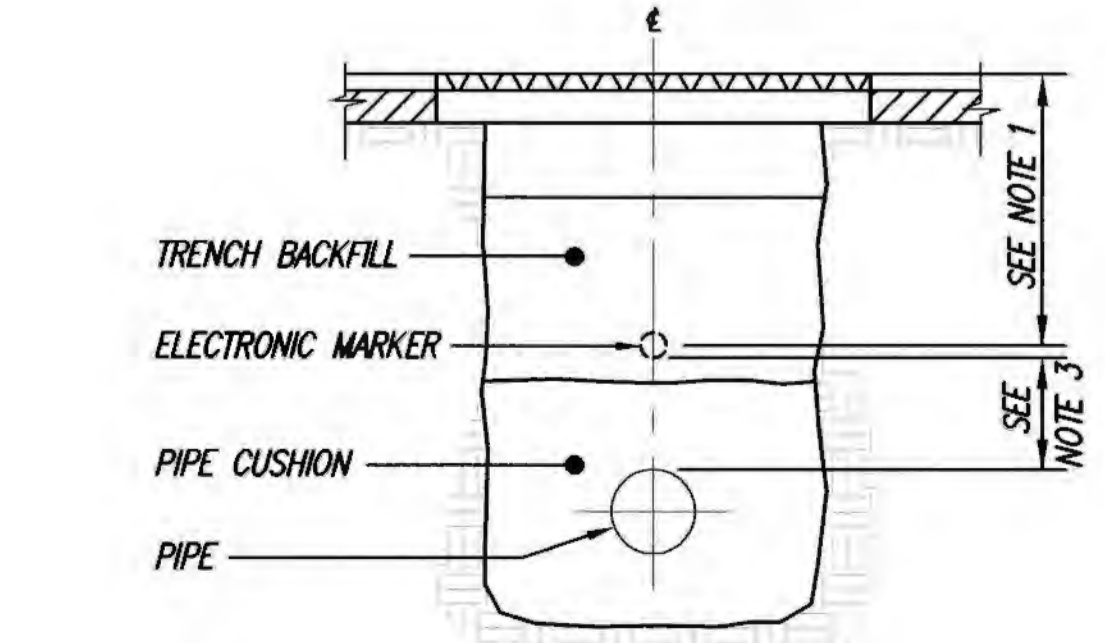
HYDRANT CONNECTION DETAIL
NOT TO SCALE



PLAN VIEW



PLAN VIEW

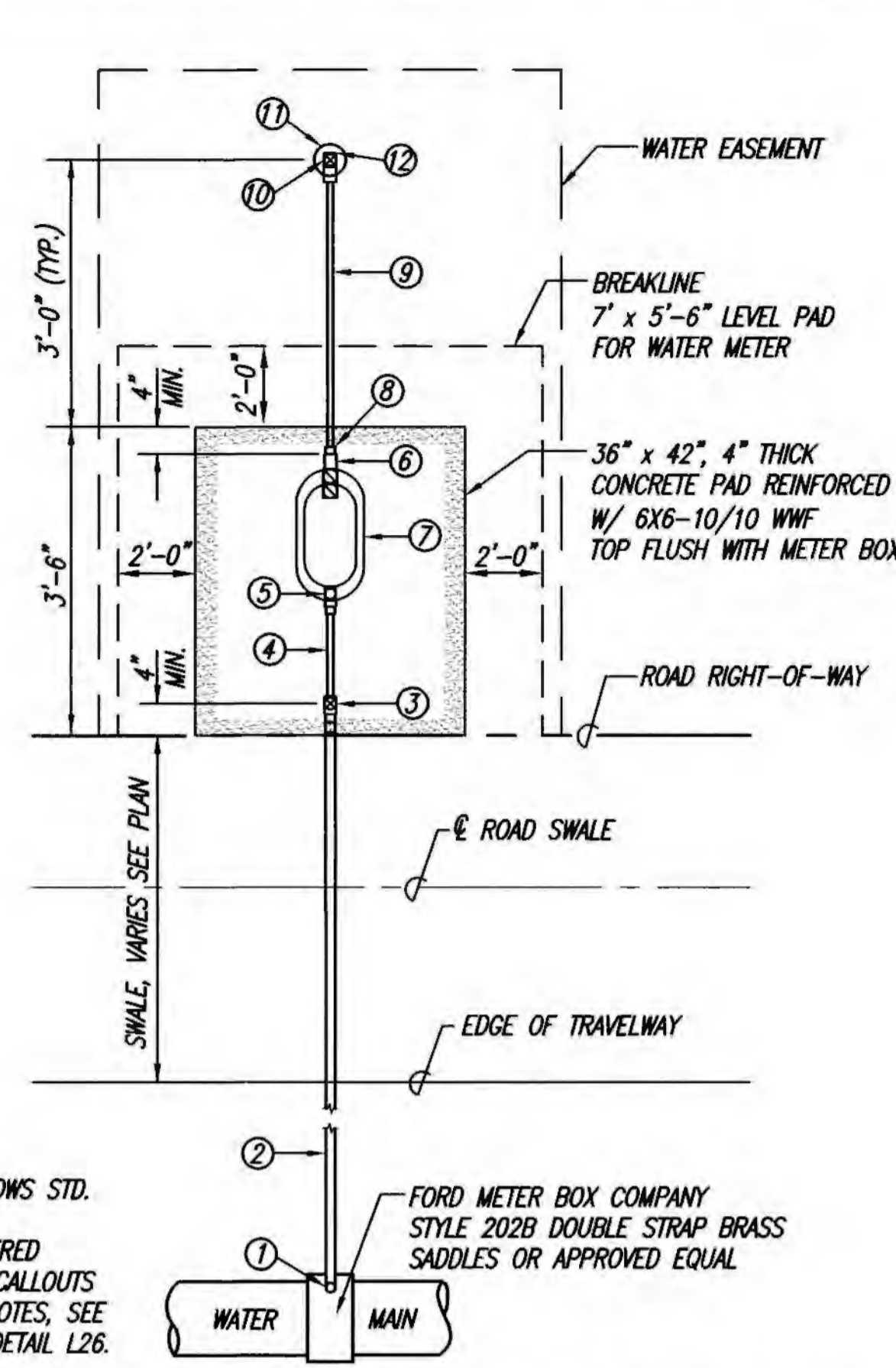


SECTION VIEW

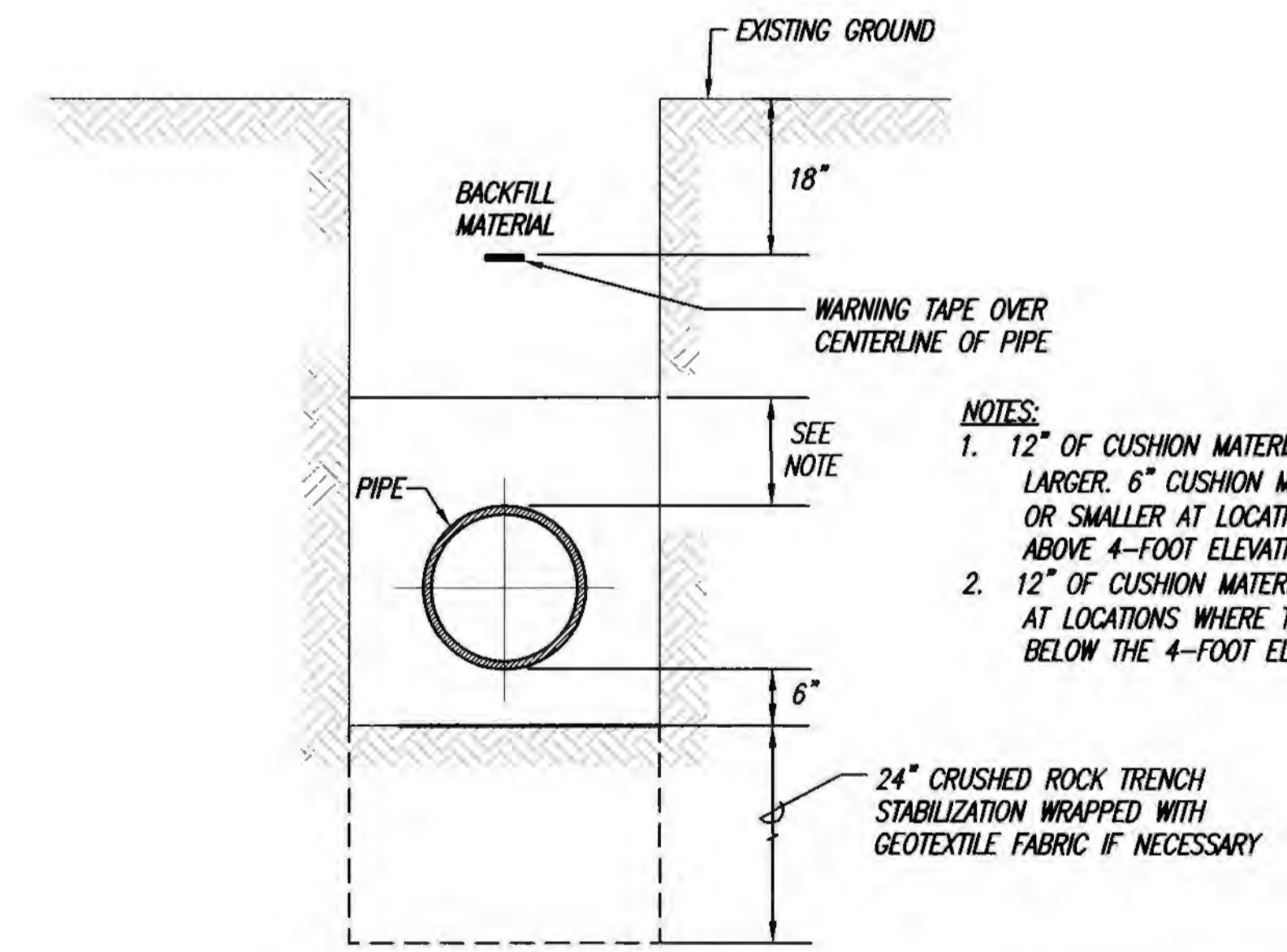
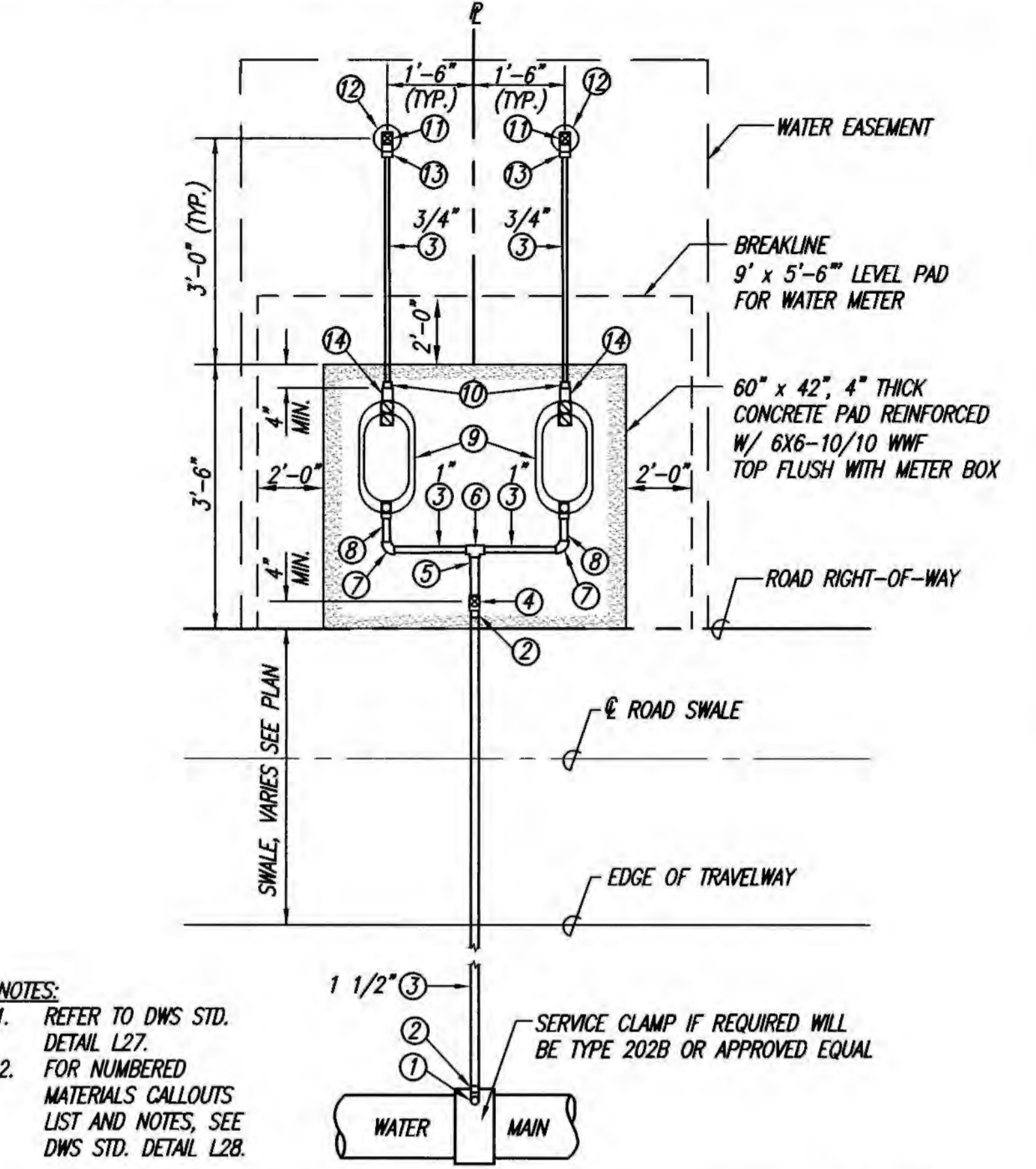
- NOTES:**
- INSTALL ELECTRONIC MARKER OVER CENTERLINE OF PIPE AT A MINIMUM DEPTH OF 2 FEET AND A MAXIMUM DEPTH OF 3 FEET FROM FINISH GRADE.
 - INSTALL TRENCH BACKFILL AND PIPE CUSHION MATERIAL IN ACCORDANCE TO THE PLANS AND SPECIFICATIONS.
 - INSTALL ELECTRONIC MARKER AT A MINIMUM CLEARANCE OF 6-INCHES ABOVE THE PIPE OR CONCRETE JACKET.

TYPICAL ELECTRONIC MARKER INSTALLATION
NOT TO SCALE

**SINGLE SERVICE LATERAL TYPE "A",
5/8" & 3/4" METERS**
NOT TO SCALE

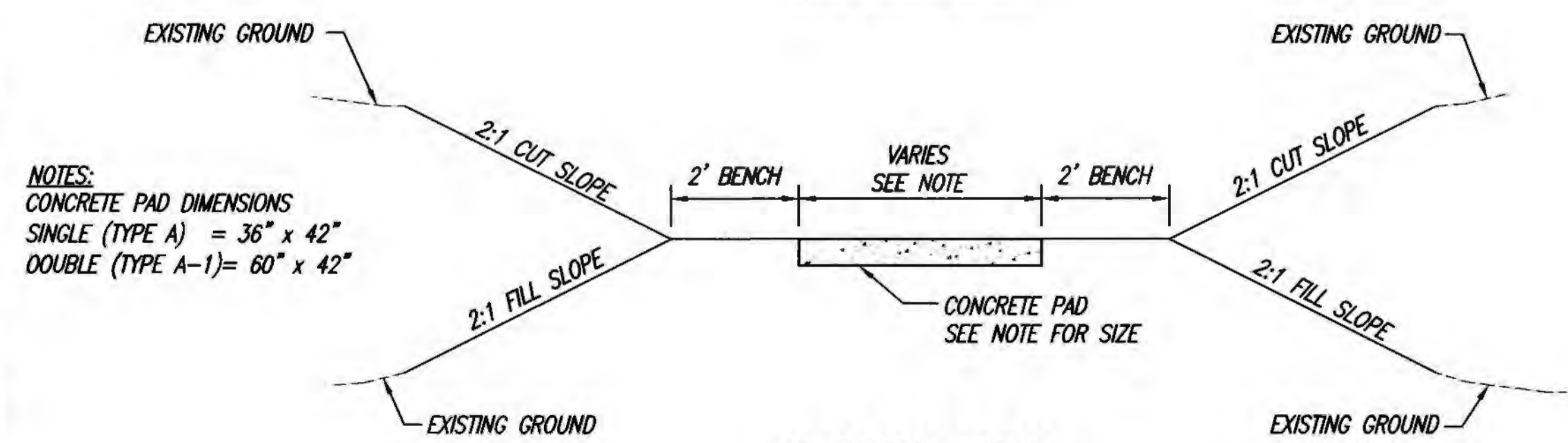


**DOUBLE SERVICE LATERAL TYPE "A-1",
5/8" & 3/4" METERS**
NOT TO SCALE



TRENCH BACKFILL
NOT TO SCALE

- NOTES:**
- 12" OF CUSHION MATERIAL FOR PIPES 16" OR LARGER. 6" CUSHION MATERIAL FOR PIPES 12" OR SMALLER AT LOCATIONS WHERE INVERT IS ABOVE 4-FOOT ELEVATION.
 - 12" OF CUSHION MATERIAL FOR ALL PIPE SIZES AT LOCATIONS WHERE THE INVERT IS AT OR BELOW THE 4-FOOT ELEVATION.



WATER METER CONCRETE PAD GRADING DETAILS
NOT TO SCALE



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DRAWN BY: JSO	ENGINEER: JSO	CHECKED BY: AMM	

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GENERAL

- WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE CITY AND COUNTY OF HONOLULU DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS/DETAILS AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020. HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS, THE MORE STRINGENT SHALL APPLY.
- THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
- CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.
- DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.

DESIGN CRITERIA

- DESIGN LIVE LOADS: ----- AASHTO HL-93

FOUNDATION

- FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL ENGINEERING EXPLORATION, KEOKEA-WAIOHULI DEVELOPMENT PROJECT, KULA, KEOKEA, MAUI, HAWAII BY PSC CONSULTANTS, LLC, DATED MARCH, 2005, AND THE GEOTECHNICAL ENGINEERING EXPLORATION, KEOKEA-WAIOHULI SUBDIVISION PHASES 1,2, AND 4A, KULA, MAKAWAO, MAUI, HAWAII BY PSC CONSULTANTS, LLC, DATED APRIL, 2013.
- CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATION FROM SURFACE WATER, GROUND WATER OR SEEPAGE.
- EXCAVATIONS FOR ANY PURPOSE SHALL NOT REMOVE LATERAL SUPPORT FROM ANY FOOTING OR FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOOTING OR FOUNDATION AGAINST SETTLEMENT OR LATERAL TRANSLATION.
- THE EXISTING UPPER SILT/VOLCANIC ASH SOILS DO NOT CONTAIN, OR HAVE VERY LITTLE PERCENTAGE OF COARSE MATERIAL AND ARE NOT SUITABLE FOR SUPPORT AND SHOULD BE OVER EXCAVATED AND REPLACED WITH SELECT ONSITE GRANULAR SOILS OR BORROW. THE SILT/VOLCANIC ASH SHOULD BE OVER EXCAVATED DOWN TO AT LEAST 2 FEET OR UNTIL STIFF TO VERY STIFF OR DENSE GRAVELLY MATERIALS ARE ENCOUNTERED, AND REPLACED WITH SELECT GRANULAR MATERIALS.
- FILL SHOULD BE PLACED IN LEVEL LIFTS WITH A MAXIMUM LOOSE THICKNESS OF 8-INCHES AND COMPACTED TO A MINIMUM OF 90 PERCENT. EACH LAYER SHOULD BE SPREAD UNIFORMLY AND PROCESSED TO ATTAIN UNIFORMITY OF THE MATERIAL AND WATER CONTENT. ADDITIONAL FILL MATERIAL SHOULD NOT BE PLACED ON ANY FILL LAYER WHICH HAS NOT BEEN PROPERLY COMPACTED AND TESTED. LAVA TUBES, IF ENCOUNTERED, SHOULD BE FILLED WITH SELECT GRANULAR MATERIAL.
- SLABS SHALL BEAR ON A 8" THICK LAYER OF SELECT GRANULAR FILL MATERIAL COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION. BOTTOM OF FOOTINGS SHALL BE COMPACTED TO PROVIDE A RELATIVELY FIRM AND SMOOTH BEARING SURFACE PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE. PRIOR TO PLACING THE SELECT GRANULAR FILL MATERIAL, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF ABOUT 12", MOISTURE CONDITIONED TO BETWEEN 2 AND 4 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT, AND RECOMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.
- UNLESS NOTED OTHERWISE, THE MINIMUM DEPTH OF FOOTINGS BELOW THE UNDISTURBED GROUND SURFACE SHALL BE 18 INCHES.
- EXCAVATIONS FOR FOUNDATIONS SHALL BE MONITORED AND APPROVED BY PSC PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING STEEL TO CONFIRM FOUNDATION BEARING CONDITIONS AND REQUIRED EMBEDMENT DEPTHS.
- CONTRACTOR SHALL BRACE OR PROTECT ALL WALLS BELOW GRADE FROM LATERAL LOADS UNTIL THEY HAVE ATTAINED THEIR FULL DESIGN STRENGTH.
- JOINTS IN WALLS AND FLOOR, JOINTS BETWEEN THE WALL AND FLOOR AND PENETRATIONS IN THE WALL AND FLOOR SHALL BE MADE WATERTIGHT UTILIZING APPROVED METHODS AND MATERIALS.

CONCRETE

- CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE ACI 318 AND CITY AND COUNTY OF HONOLULU DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS.
- CONCRETE SHALL BE NORMAL WEIGHT HARD ROCK CONCRETE WITH A MAXIMUM W/C RATIO OF 0.45 AND MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
- CONCRETE DELIVERY TICKETS SHALL RECORD ALL FREE WATER IN THE MIX: AT BATCHING BY PLANT, FOR CONSISTENCY BY DRIVER, AND ANY ADDITIONAL REQUEST BY CONTRACTOR IF PERMITTED BY THE MIX DESIGN.
- WATER USED IN MIXING CONCRETE SHALL BE CLEAN AND FREE FROM INJURIOUS AMOUNTS OF OILS, ACIDS, ALKALIS, SALTS, ORGANIC MATERIALS OR OTHER SUBSTANCES THAT ARE DELETERIOUS TO CONCRETE OR STEEL REINFORCEMENT.
- ALL INSERTS, ANCHOR BOLTS, PLATES, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE HOT-DIP GALVANIZED ACCORDING TO ASTM A153 UNLESS OTHERWISE NOTED.
- REINFORCING BARS, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE.
- ALL EXPOSED EDGES SHALL HAVE A CONTINUOUS 3/4" CHAMFER, UNLESS NOTED OTHERWISE.

PRECAST CONCRETE:

- PRECAST CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
- CONSTRUCTION OF PRECAST DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C913.
- ALL JOINTS SHALL BE CONSTRUCTED TRUE TO THE DIMENSIONS SHOWN ON THE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS FOR CONFORMANCE TO THE PLANS AND SPECIFICATIONS, CORRECT DETAILS AND PARTS FIT TOGETHER AS SPECIFIED AFTER ASSEMBLY.
- IF THE PERMISSIBLE VARIATIONS/TOLERANCES ARE EXCEEDED, THE PRECAST SECTIONS MAY BE ACCEPTABLE UPON RECEIPT OF A SIGNED AND STAMPED CERTIFICATION FROM THE DESIGN ENGINEER THAT:
 - EXCEEDING THE TOLERANCE/VARIATION DOES NOT AFFECT THE STRUCTURAL INTEGRITY OF THE UNIT.
 - THE UNIT CAN BE BROUGHT WITHIN TOLERANCE BY STRUCTURALLY SATISFACTORY MEANS; OR
 - THE TOTAL ERRECTED ASSEMBLY CAN BE MODIFIED TO MEET ALL STRUCTURAL REQUIREMENTS.
- LIFT ANCHORS EMBEDDED SIZE AND LOCATION IN CONCRETE TO BE DETERMINED BY PROVIDER SUBJECT TO REVIEW BY DESIGN ENGINEER.
- AT ALL CORNER EDGES EXPOSED AFTER THE FULL PRECAST CONSTRUCTION SHALL HAVE A CONTINUOUS 3/4" CHAMFER, UNLESS NOTED OTHERWISE.

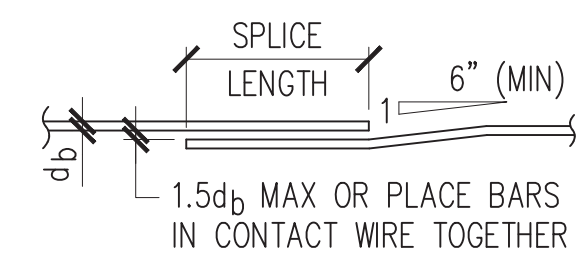
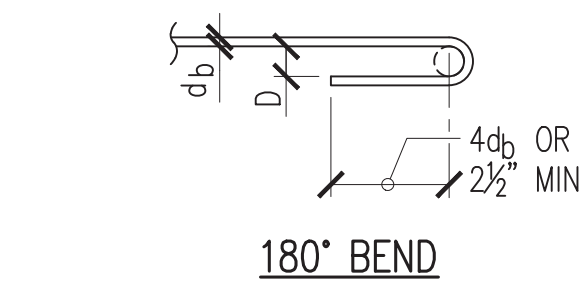
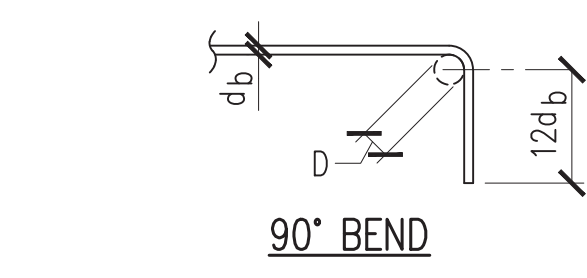
REINFORCING STEEL

- REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.
- EPOXY COATED REINFORCING SHALL CONFORM TO ASTM A775.
- CLEAR CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
 - CAST AGAINST AND EXPOSED TO EARTH: ----- 3"
 - FORMED AND EXPOSED TO EARTH OR WEATHER: ---- 2"
- REINFORCING STEEL SHALL BE SPLICED WHERE INDICATED ON PLANS. PROVIDE LAP SPlice LENGTH PER TYPICAL DETAILS AND SCHEDULE, UNLESS OTHERWISE NOTED.
- MECHANICAL SPlice CONNECTORS SHALL DEVELOP IN TENSION 125 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF REINFORCING BARS.
- STANDARD HOOKS ON REINFORCING BARS USED SHALL COMPLY WITH ACI 318, SECTION 7.1.
- MINIMUM REINFORCEMENT BEND DIAMETERS SHALL COMPLY WITH ACI 318, SECTION 7.2.
- BAR PLACEMENT SHALL CONFORM TO SECTION 48 "REINFORCING STEEL OF STANDARD SPECIFICATIONS".

BAR SIZE	LAP SPlice		DEVELOPMENT		
	TOP BARS	OTHER BARS	STRAIGHT		WITH STANDARD HOOK
			TOP BARS	OTHER BARS	
#3	26"	20"	20"	16"	8"
#4	34"	26"	26"	20"	10"
#5	42"	32"	32"	24"	12"
#6	50"	38"	38"	30"	16"

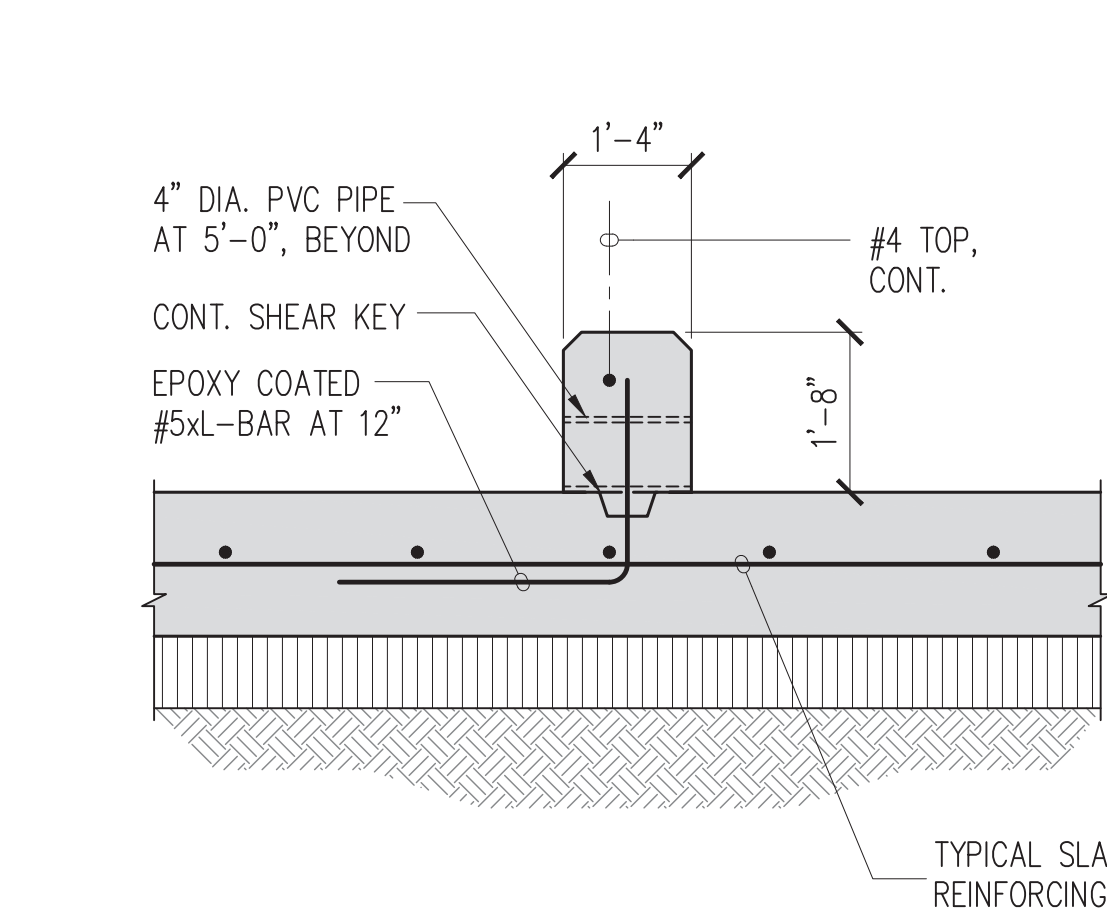
NOTES:

- LENGTHS ARE FOR CONCRETE WITH REBAR SPACED AT 6 BAR DIAMETERS MINIMUM. INCREASE LENGTHS BY 25% FOR BARS SPACED LESS THAN 6 BAR DIAMETERS.
- "TOP BARS" ARE HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE CAST BELOW.
- D = 6d_b.

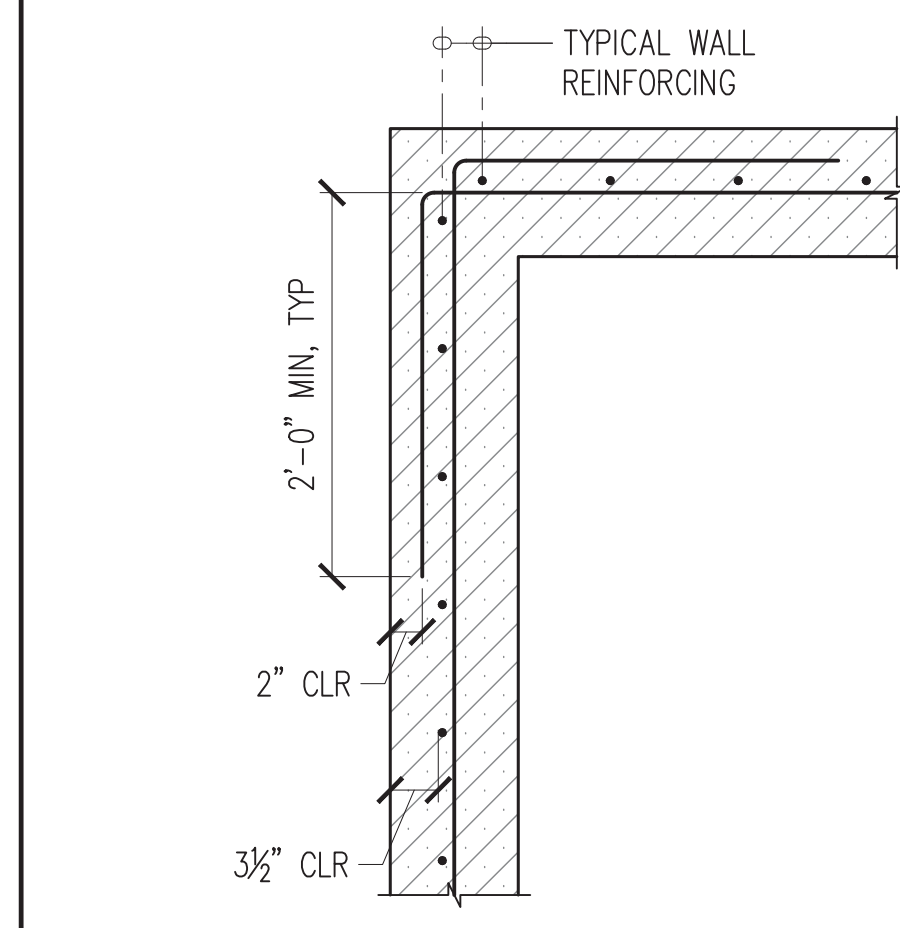


1 TYPICAL REBAR SPlice AND DEVELOPMENT LENGTH SCHEDULE

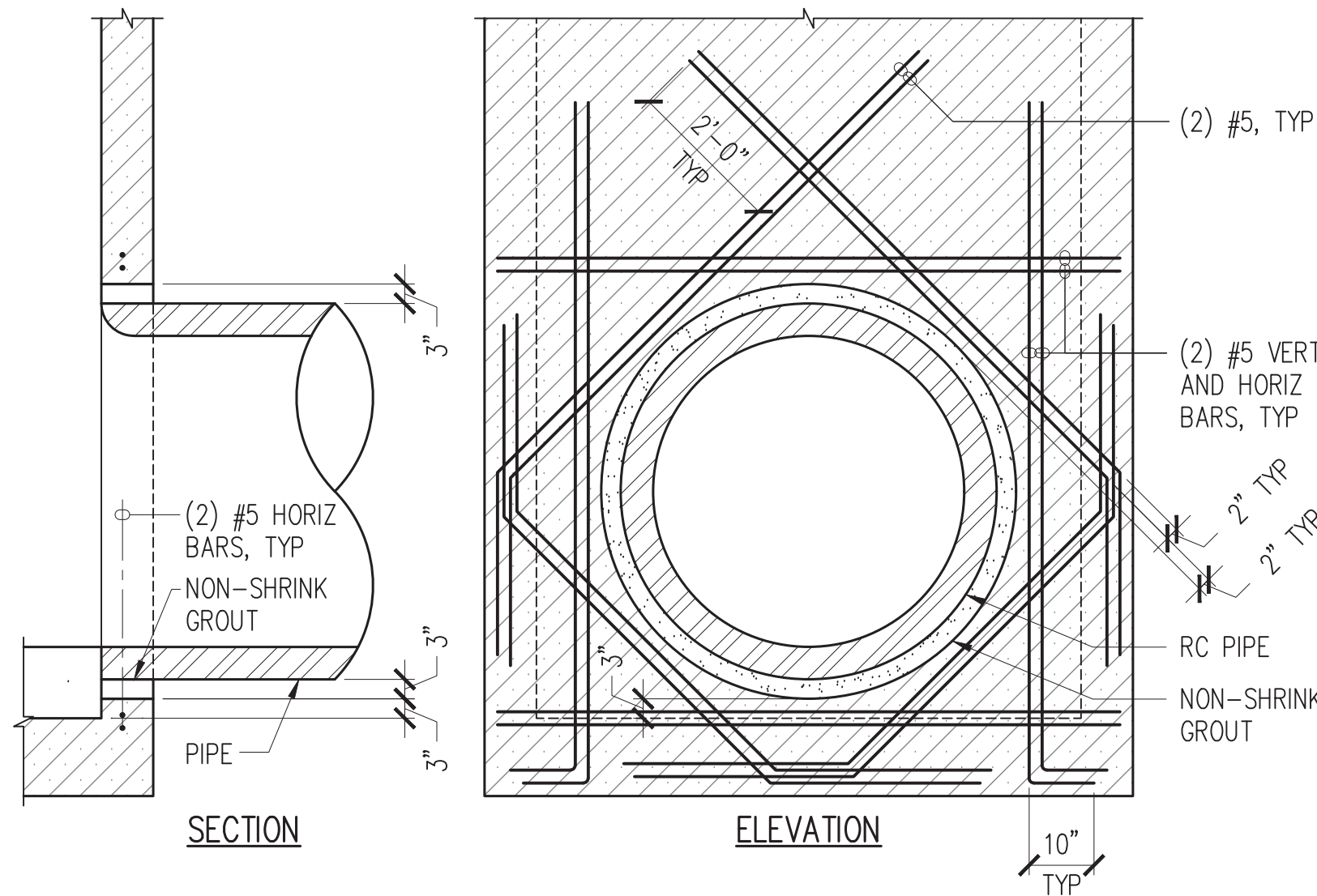
S-1 NOT TO SCALE



S-1 NOT TO SCALE

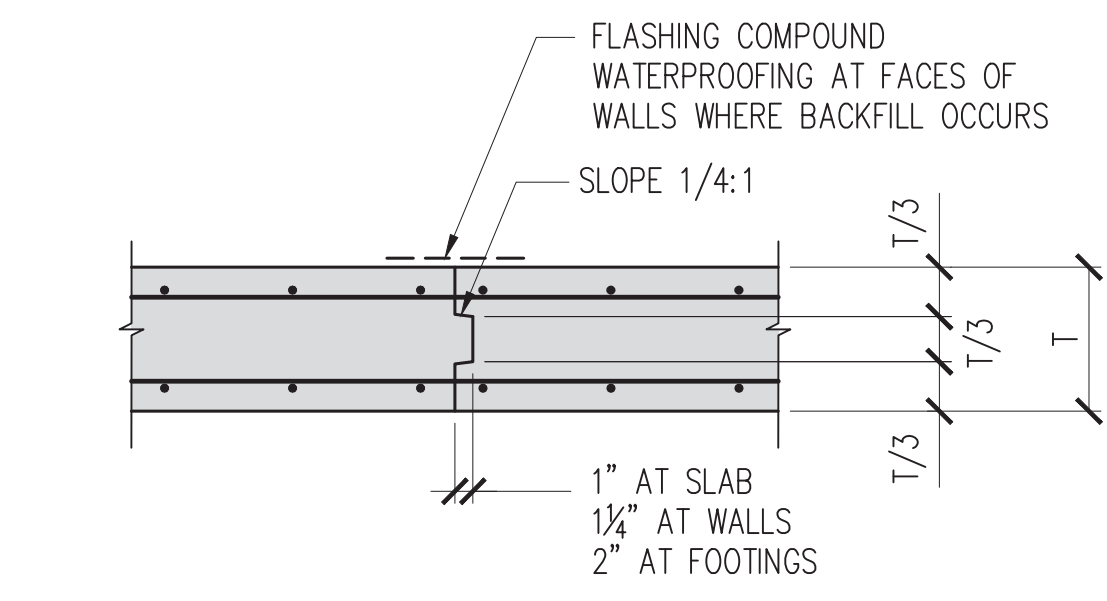


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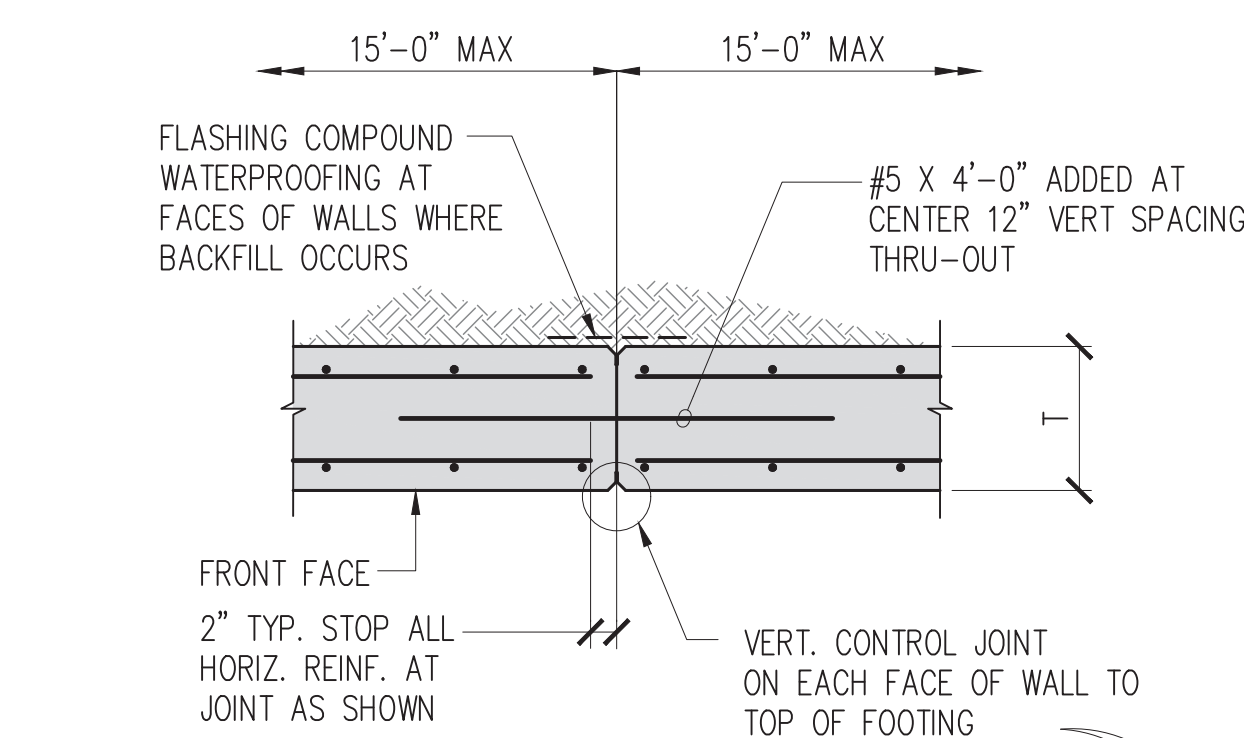


S-1 NOT TO SCALE

NOTE: ALL BARS LOCATED AT MID-DEPTH OF WALL.

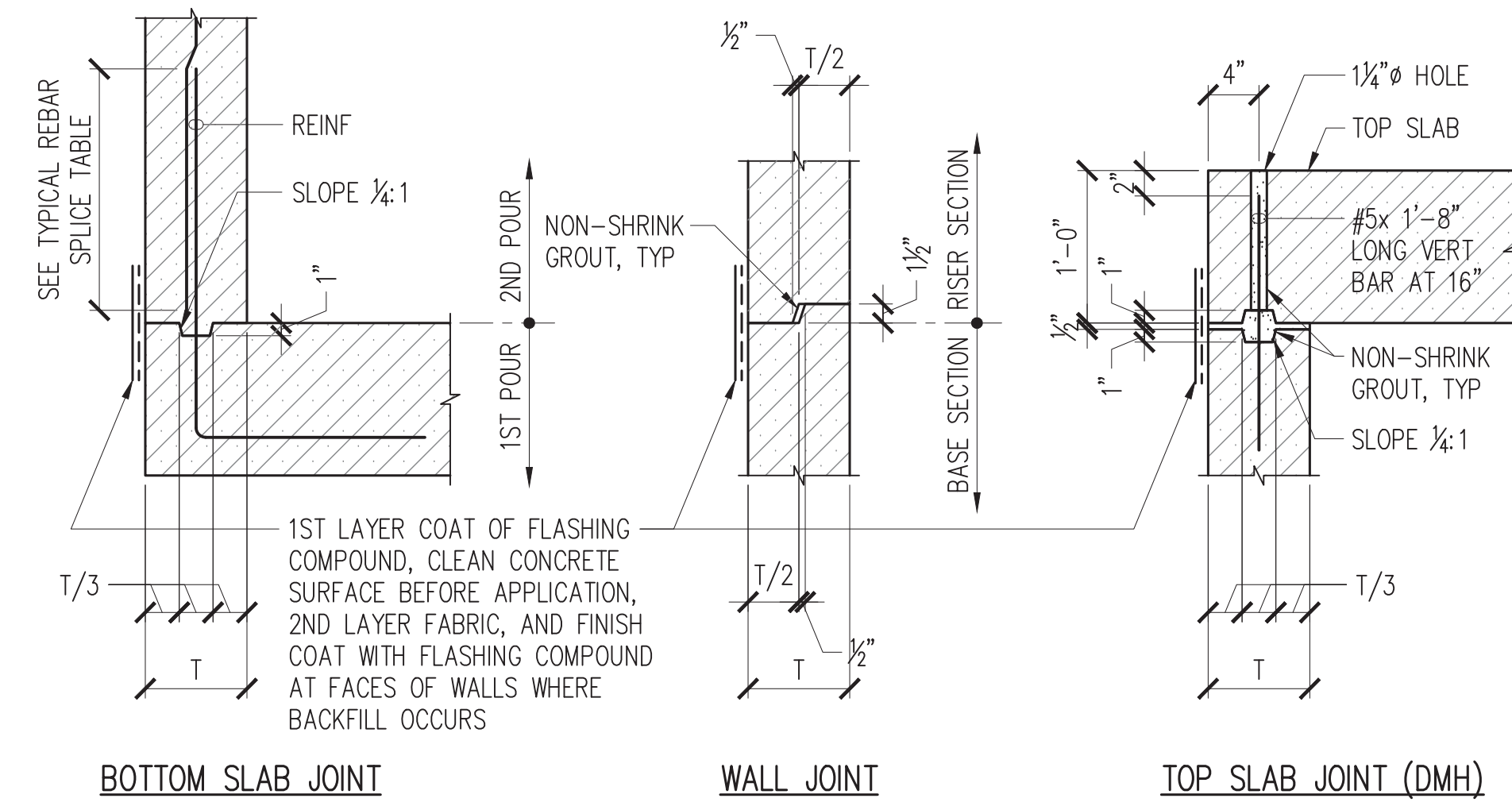


S-1 NOT TO SCALE



S-1 NOT TO SCALE

NOTE: CONTRACTION JOINTS PLACED PARALLEL TO WEIR WALL SHALL NOT BE LOCATED WITHIN 5'-0" OF WALL



S-1 NOT TO SCALE

JERRY S. FUJITA
LICENSED PROFESSIONAL ENGINEER
No. 11573-S
HAWAII, U.S.A.

(EXPIRES 4/30/2024)
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Jerry S. Fujita

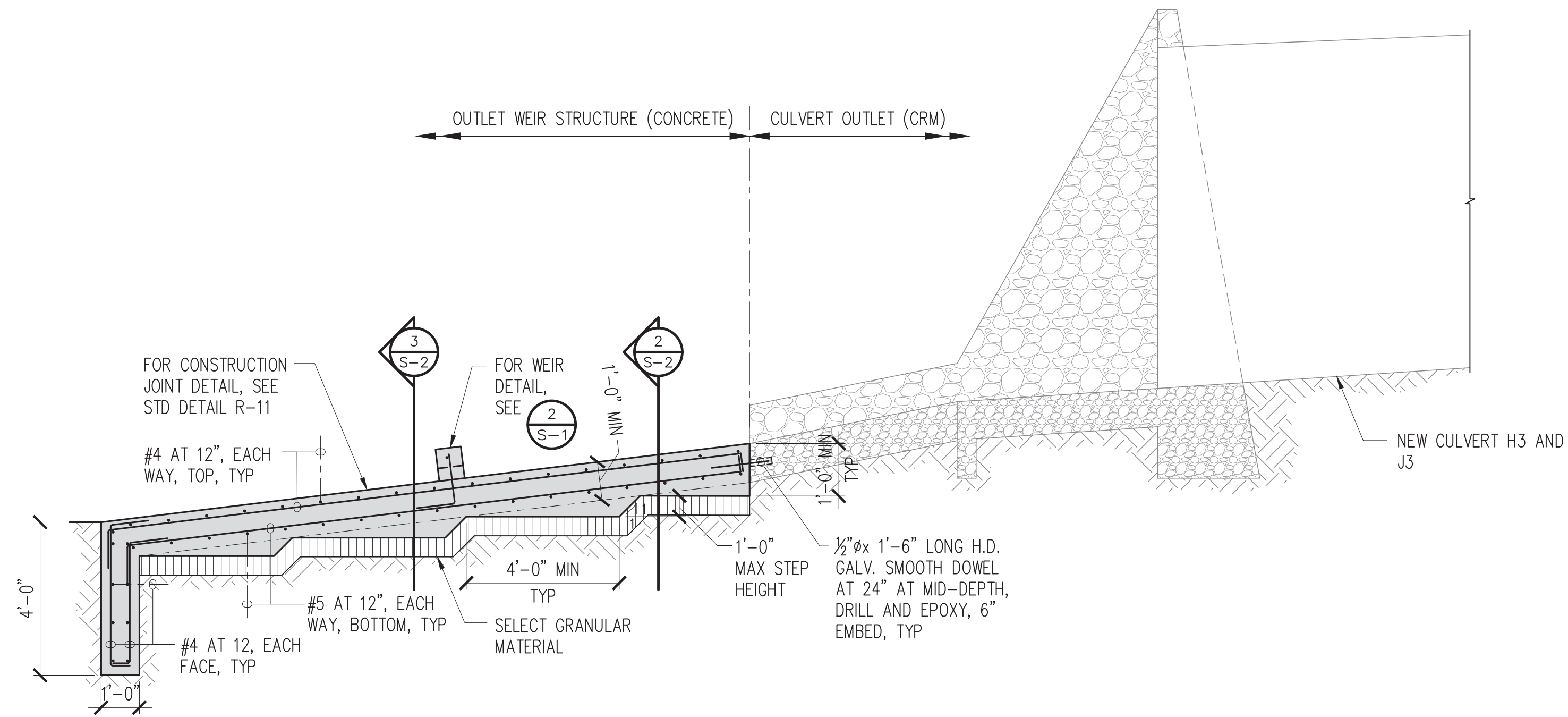
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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014, (2) 2-2-033: 007 to 008, 009 to 022, 025 to 027, 038 to 058, AND (2) 2-2-34: 016 to 026

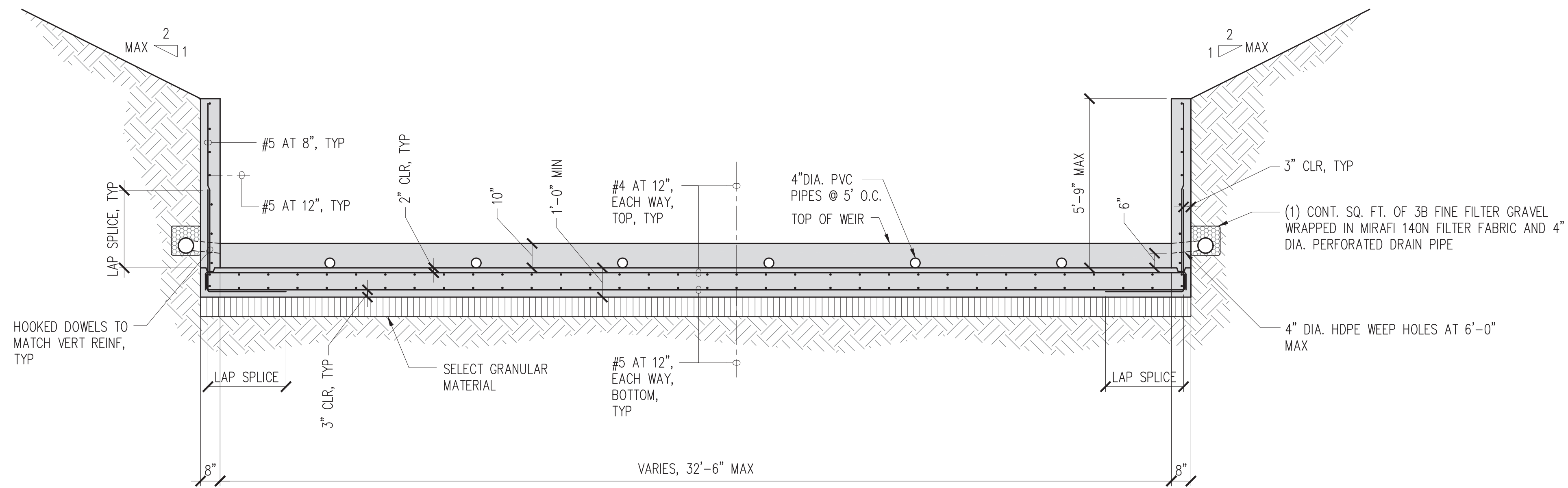
STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS

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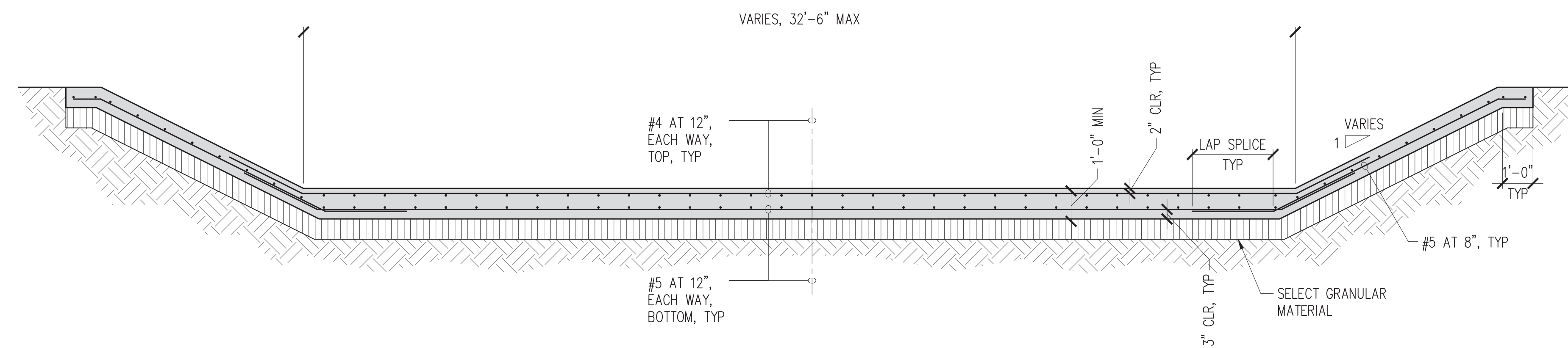
NOTE:
 1. FOR OUTLET WEIR STRUCTURE DIMENSIONS AND LOCATIONS, SEE CIVIL DWGS
 2. PROVIDE CONTRACTION JOINTS AT 15FT MAXIMUM. FOR DETAIL, SEE 3/S-1
 3. CHAMFERS NOT REQUIRED AT SLAB CONTRACTION JOINTS



1
 S-2
LONGITUDINAL SECTION
OUTLET WEIR STRUCTURE - H3 AND J3
 NOT TO SCALE



2
 S-2
SECTION
 SCALE: 3/8" = 1'-0"



3
 S-2
SECTION
 SCALE: 3/8" = 1'-0"

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WEIR STRUCTURE SECTIONS AND DETAILS

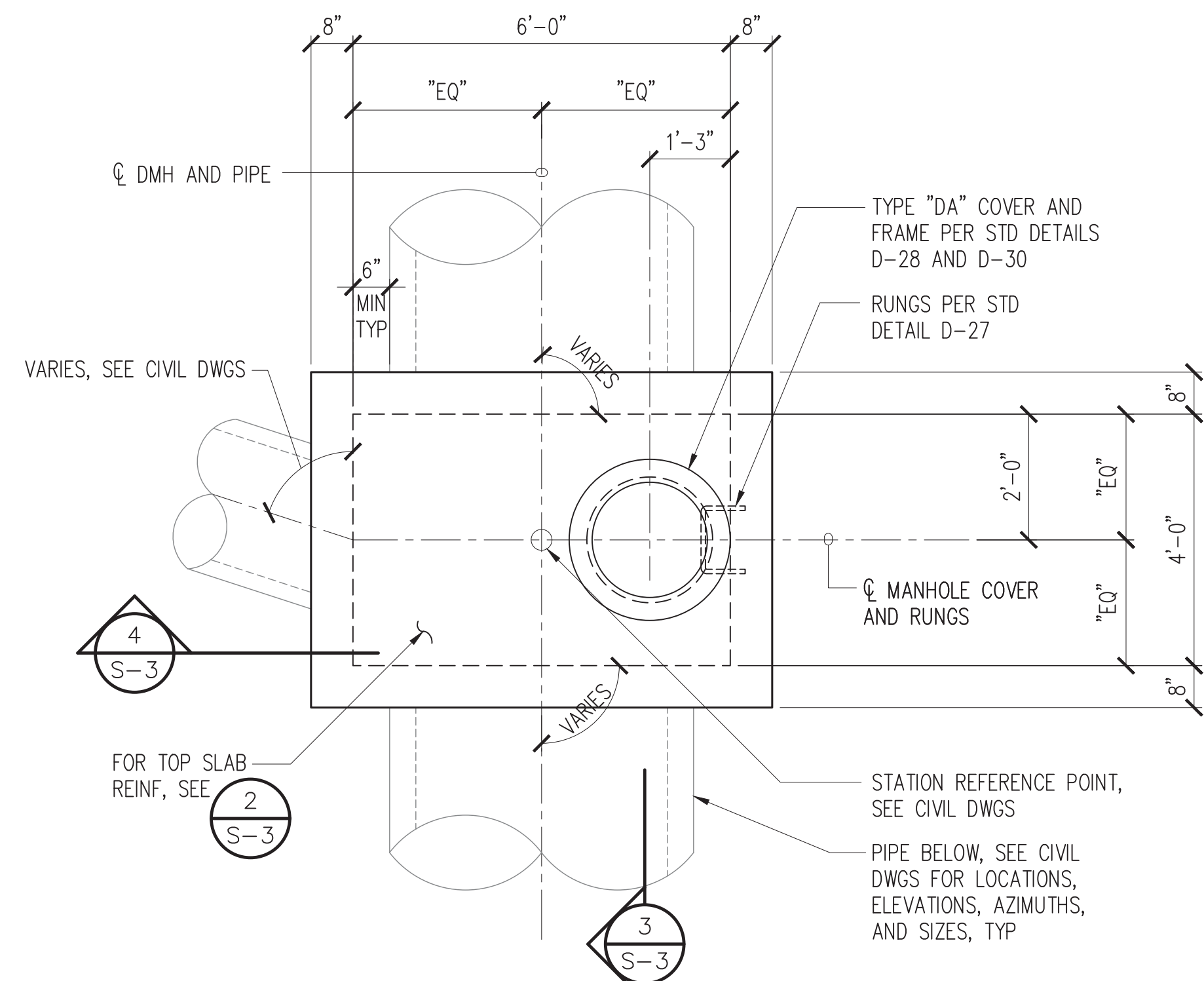
DRAWN BY: ENGINEER: CHECKED BY:

JERRY S. FUJITA
 LICENSED PROFESSIONAL ENGINEER
 No. 11573-S
 HAWAII, U.S.A.

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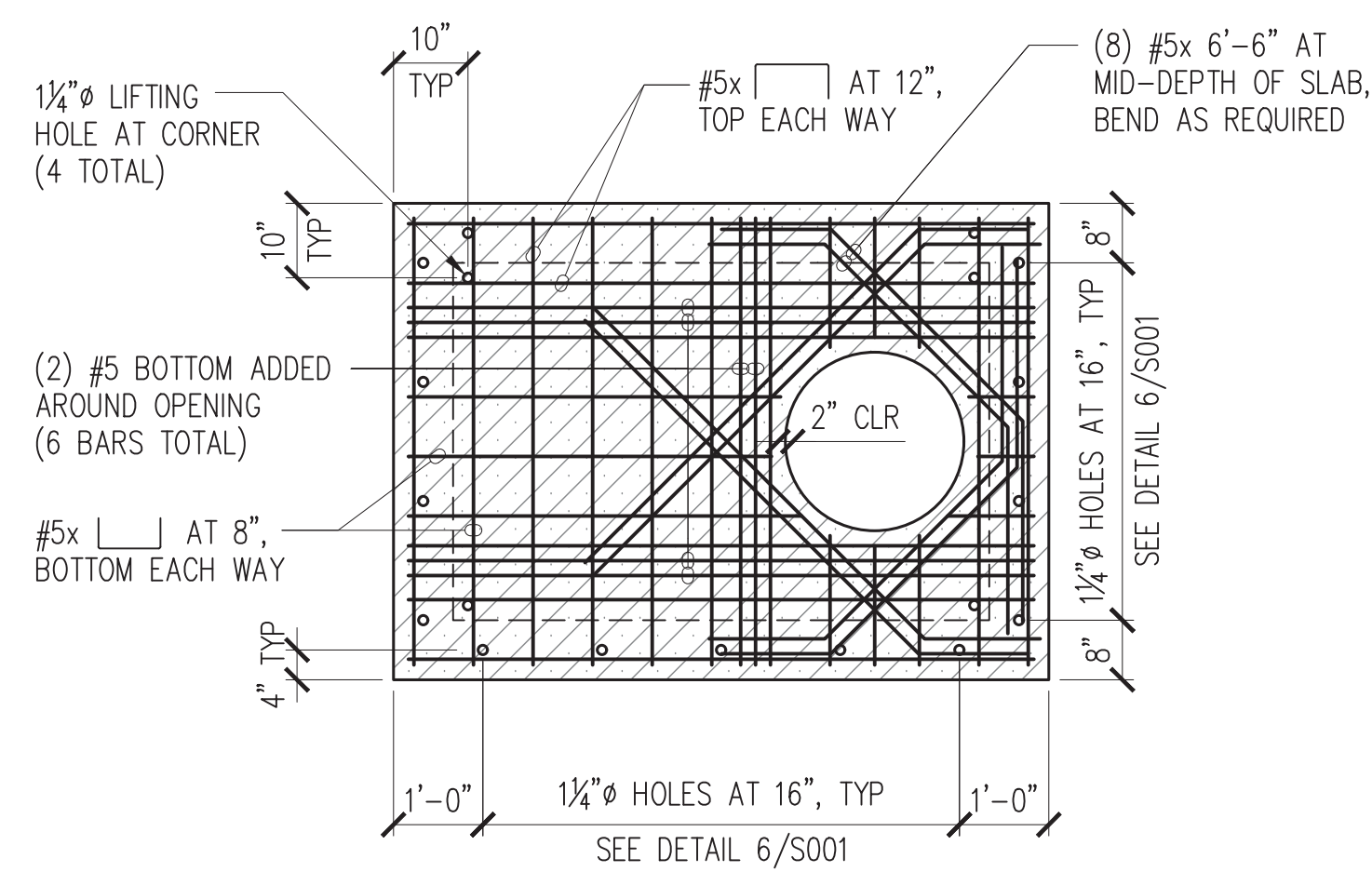
Jerry S. Fujita

P:\5801-5850\5832 DHHLL - Keokea-Waiohuli Development Phase 2A Weir Design\050 Drawings\Structural\AutoCAD_format\2022-08-15 - Phase 2B\Keokea Ph 2B - S2.dwg, 032, 9/19/2022 12:26:51 PM



1 PLAN VIEW - SPECIAL DRAIN MANHOLE DMH J1A

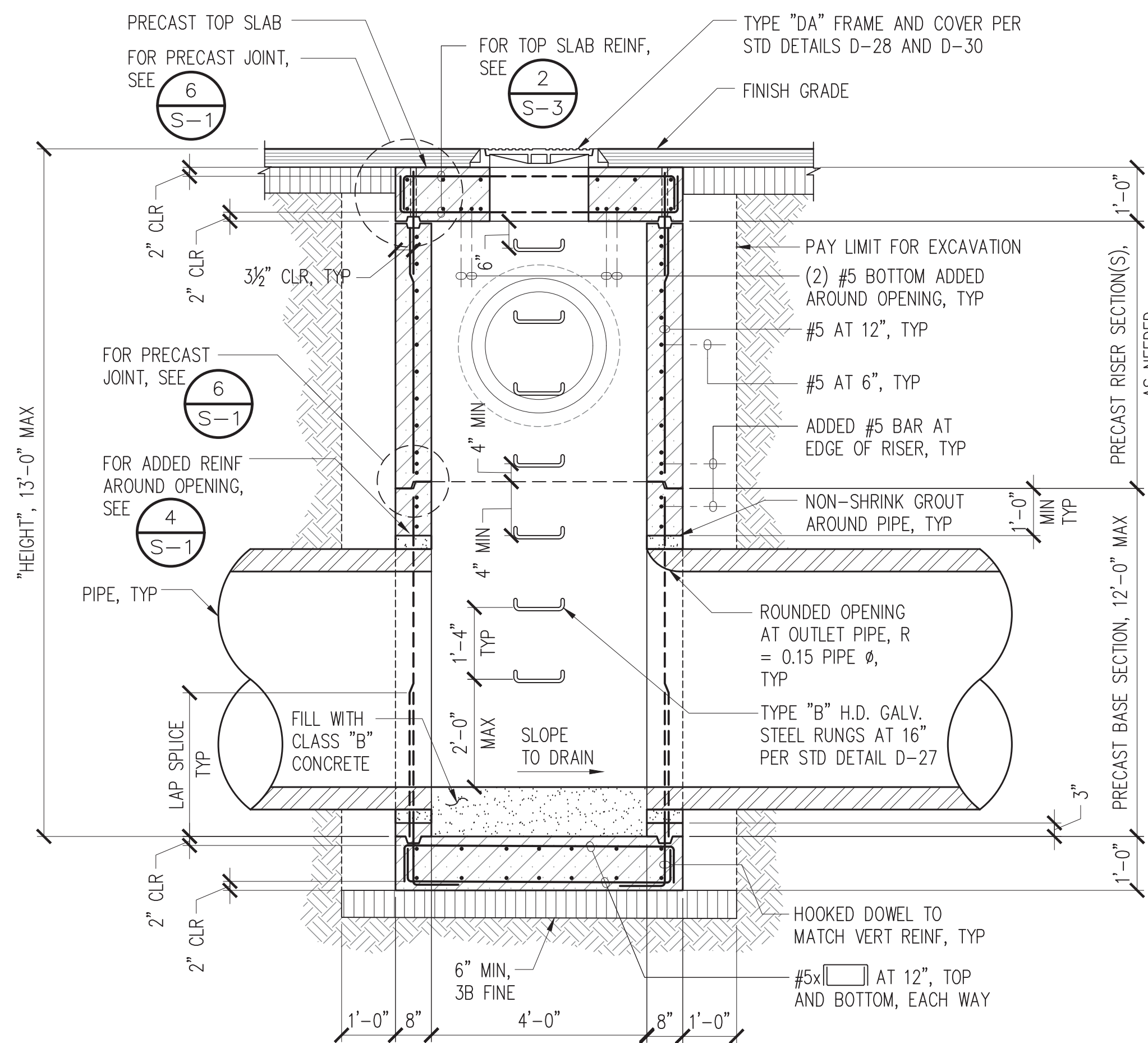
SCALE: 1/2" = 1'-0"



2 PLAN - TOP SLAB REINFORCING STEEL

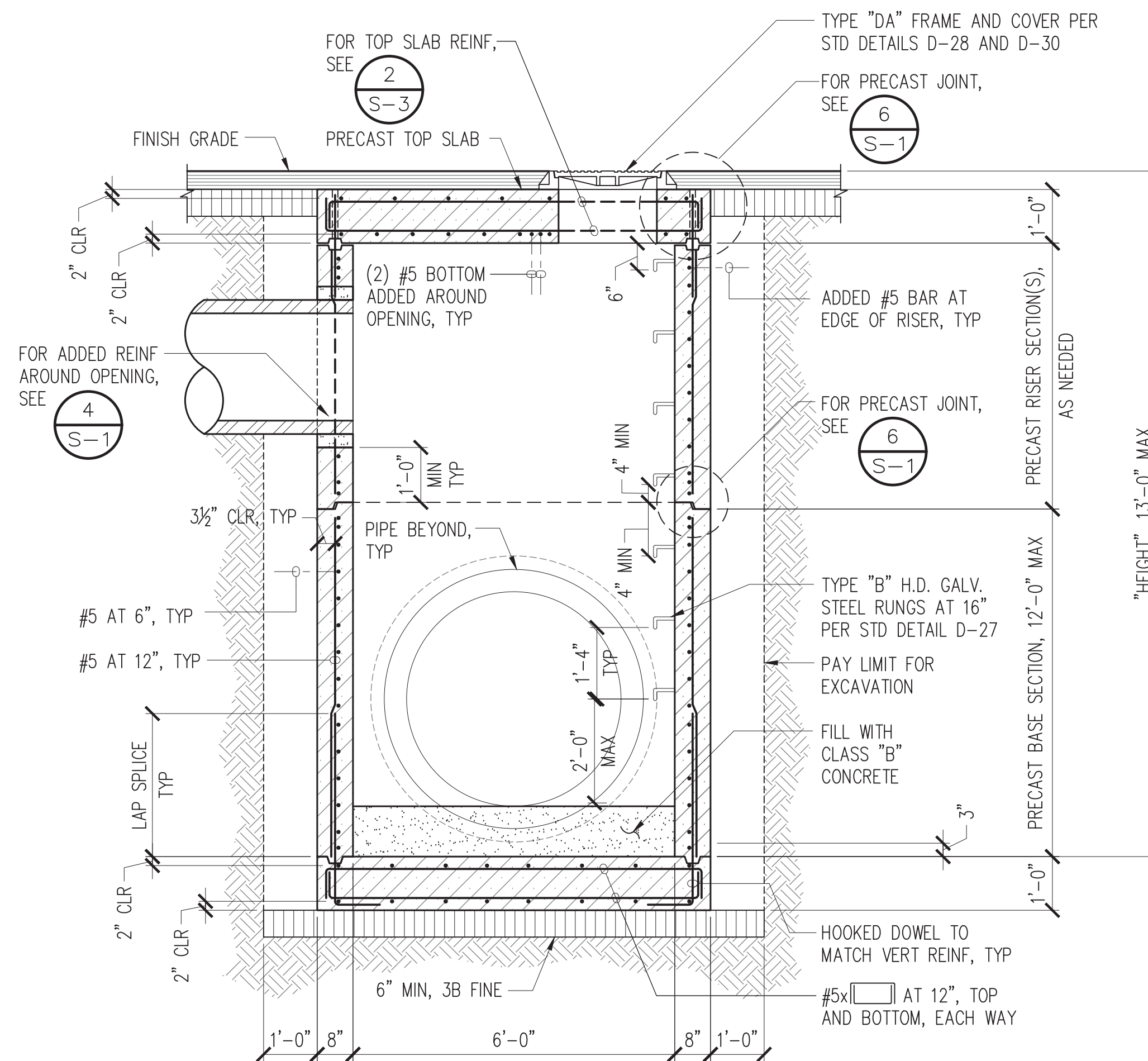
SCALE: 1/2" = 1'-0"

- NOTES:**
1. FOR DRAIN MANHOLE ELEVATIONS, SEE CIVIL DWGS
 2. TOP OF STRUCTURE ELEVATION IS BASED ON THE STATION REFERENCE POINT AT CENTER OF MANHOLE. THE CONTRACTOR SHALL SLOPE THE WALLS AND/OR THE TOP SLAB TO ADJUST TO THE ACTUAL SLOPE AS REQUIRED.
 3. WHERE RISER SECTIONS ARE NOT USED, THE BASE SECTIONS SHALL EXTEND UP TO THE BOTTOM OF THE TOP SLAB WITH THE TOP SLAB JOINT.
 4. ROUNDED OPENING AT OUTLET PIPE(S) MIN. RADIUS = 0.15 PIPE DIAM., TYP



3 SECTION

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



4 SECTION

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

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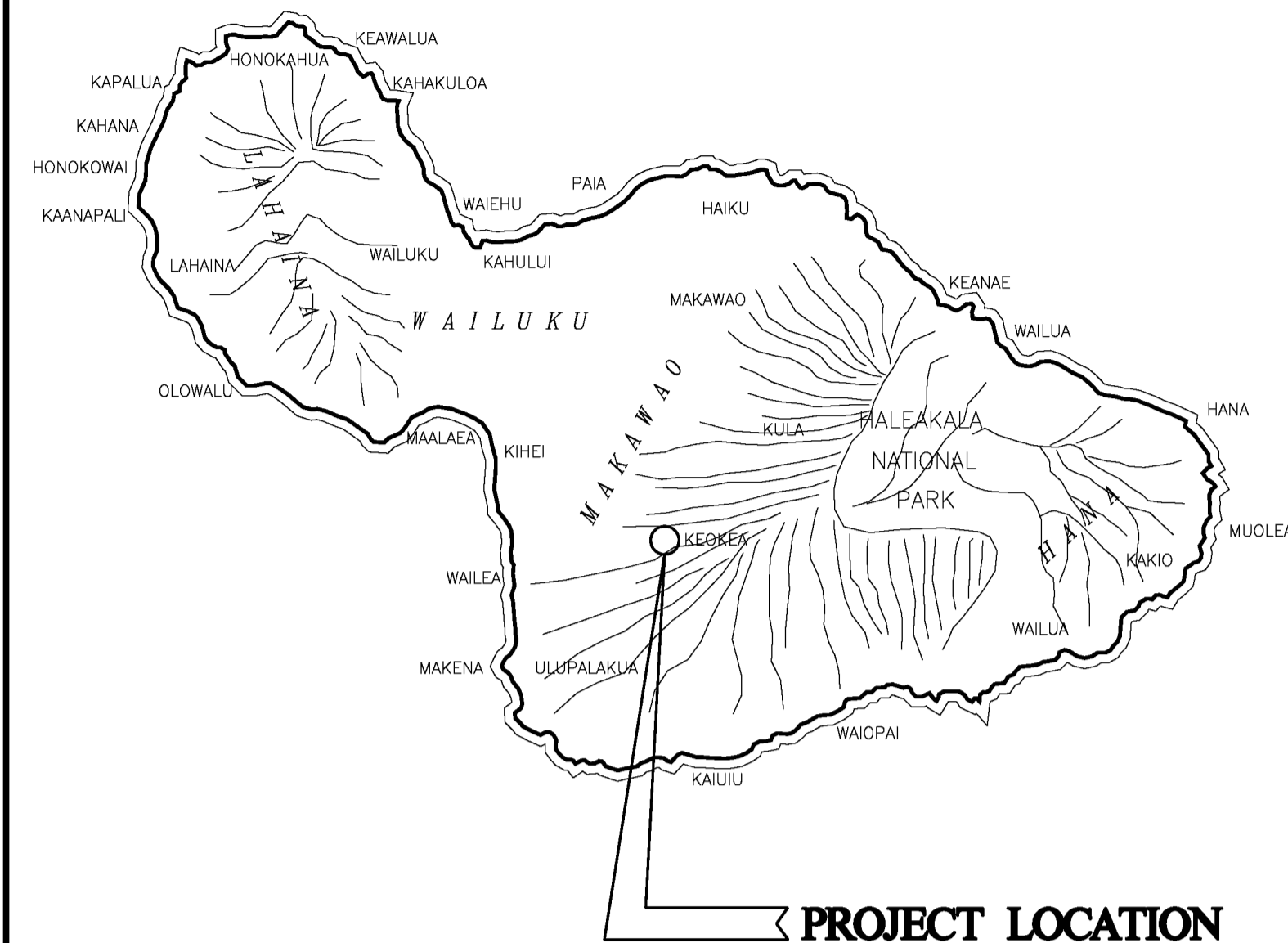
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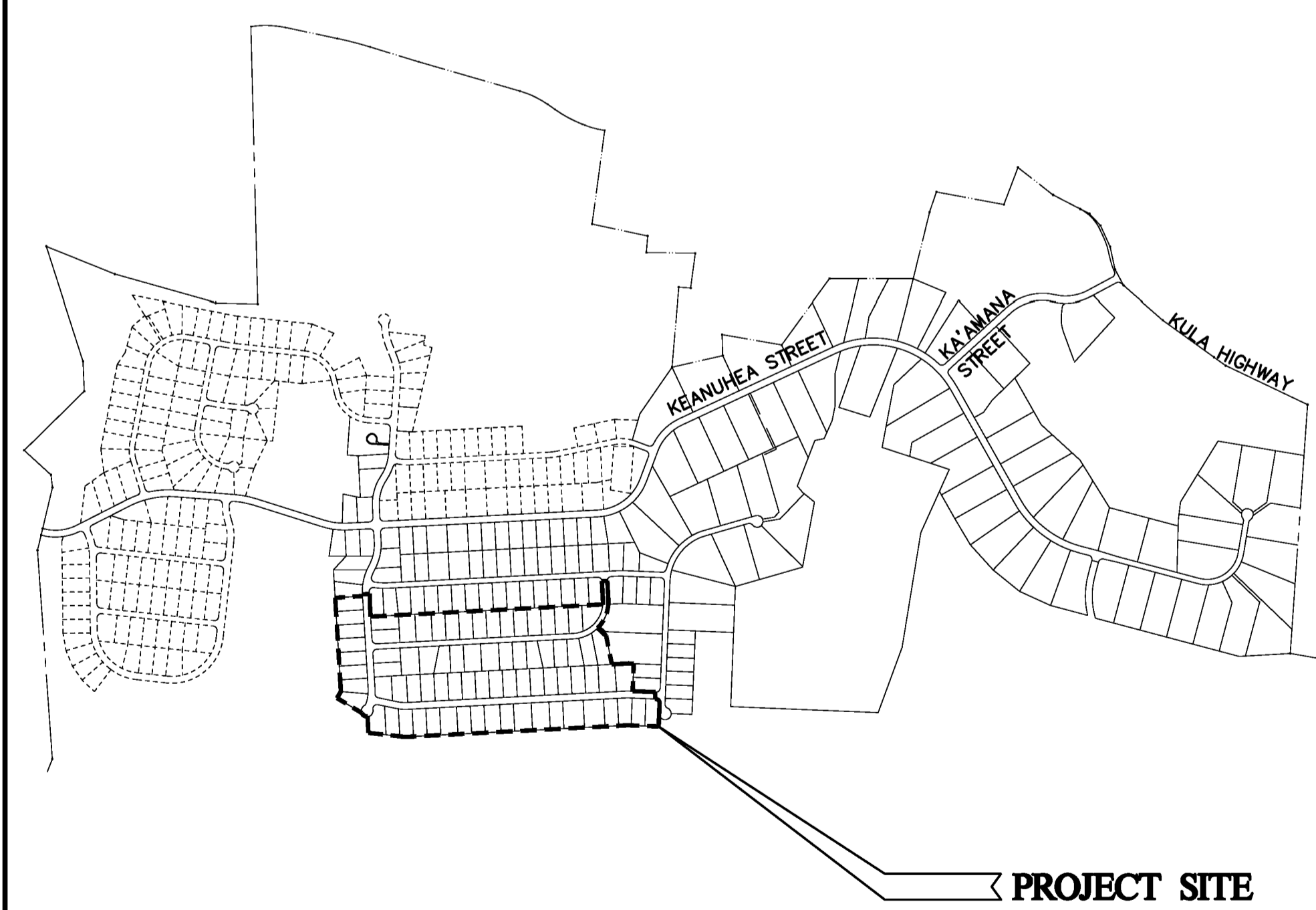
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PRECAST DRAIN MANHOLE PLANS AND SECTIONS

DRAWN BY:	ENGINEER:	CHECKED BY:



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

GENERAL NOTES:

1. PROVIDE 3' MINIMUM HORIZONTAL CLEAR & 6" VERTICAL CLEAR BETWEEN WATER LINES & ALL ELECTRICAL SYSTEMS.
2. CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE WITH THE GENERAL CONTRACTOR TO IDENTIFY THE LOCATIONS OF CIVIL SITE UTILITIES, DRIVEWAYS, ETC. PRIOR TO ELECTRICAL CONTRACTORS LAYOUT OF ELECTRIC, TELEPHONE, STREET LIGHT, TRAFFIC SIGNAL, AND CATV SYSTEMS.

NOTES FOR CONSTRUCTION

- a. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT UNDER ANY OVERHEAD LINES.
- b. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
- c. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- d. WHERE PEDESTRIAN WALKWAYS EXIST, SUCH WALKWAYS SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- e. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- f. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN BY THE ENGINEER TO EXIST FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

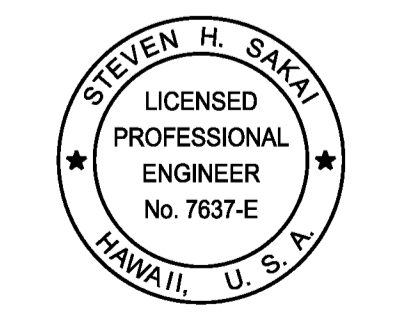
EQUIPMENT SCHEDULE

THE MAUI ELECTRIC Co., SANDWICH ISLES COMMUNICATIONS, INC., COMMUNITY ANTENNA TELEVISION & STREET LIGHTING PULLBOXES, HANDHOLE, TRANSFORMER PAD LOTS & SWITCHING EQUIPMENT PAD LOTS SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

TYPE	DESCRIPTION
13" X 24" COMMUNICATION PULLBOX	13" X 24" X 30" POLYMER CONCRETE BOX WITH NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVER, "SIC" INSCRIBED ON COVER. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC 13x24
30" X 48" COMMUNICATION HANDHOLE	2'-6" X 4'-0" X 33" FIBRE REINFORCED PLASTIC HANDHOLE WITH NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVERS, "SIC" INSCRIBED ON COVERS. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC 30x48. VERIFY DEPTH OF HANDHOLE.
3' X 5' COMMUNICATION HANDHOLE	3'-9" X 5'-9" X 3'-7" REINFORCED CONCRETE HANDHOLE WITH TRAFFIC RATED FRAME AND COVERS, PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC-35. VERIFY DEPTH OF HANDHOLE.
2' X 4' CATV PULLBOX	2'-0" X 4'-0" PRECAST CONCRETE PULLBOX WITH TWO PIECE POLYMER CONCRETE "SLIP-NOT" COVERS SIMILAR TO HTCO 2' X 4' PULLBOX, HTCO DRAWING NO. 34056, EXCEPT WITH "CATV" INSCRIBED ON COVER.
2' X 4' MECO HANDHOLE	2' X 4' PRECAST CONCRETE HANDHOLE WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH MECO STANDARD DRAWING NO. 30-2005

ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
	STREET LIGHT, 100W HIGH PRESSURE SODIUM LUMINAIRE & GALVANIZED STEEL BRACKET ARM PROVIDED BY MECO ON UTILITY POLE
	EXISTING STREET LIGHT & BRACKET ARM TO REMAIN
	REMOVE & RELOCATE EXISTING STREET LIGHT & BRACKET ARM, DEMOLISH EXST. CONC. BASE 2 FT. BELOW FINISH GRADE
	UTILITY POLE PROVIDED BY MECO
	FUTURE/EXISTING UTILITY POLE
	ANCHOR GUYING, PROVIDED BY RESPECTIVE UTILITY COMPANY
	FUTURE/EXISTING ANCHOR GUYING
	NOTE SYMBOL, SEE PLAN FOR NOTES
	GROUND ROD, 5/8" DIA. X 8'-0" (BMZ)
	BREAKLINE TO BEGIN & END DUCT SECTION TYPE
	ELECTRIC/COMM DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A" DUCT SECTION WITH "2-4S" DUCTS. SEE SHEET E-8 FOR DUCT SECTIONS AND CONDUIT SCHEDULES
	STUB, CAP, & MARK CONDUIT(S) WITH CONCRETE MARKER
	SAWCUT EXST. A.C. PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PRIOR TO TRENCH EXCAVATION. RESTORE SUBBASE, BASECOURSE, PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PER COUNTY REQUIREMENTS, THICKNESS SHALL MATCH EXST ROAD DESIGN
	ELEC OVERHEAD LINES PROVIDED BY MECO
	FUTURE ELEC OVERHEAD LINE
	EXST. UNDERGROUND DUCTLINE & WIRING
	EXST. UNDERGROUND TEL. CABLES
	EXISTING ELEC/COMM OVERHEAD LINE
	EXISTING ELEC/COMM OVERHEAD LINE TO BE REMOVED BY RESPECTIVE UTILITY CO.
	SIC COM 13" X 24" PULLBOX
	SIC COM 30" X 48" HANDHOLE
	SIC COM 3' X 5' HANDHOLE
	CATV 2' X 4' PULL BOX
	MECO 2' X 4' HANDHOLE
	CATV POWER SUPPLY EQUIP., 6' X 6' EASEMENT, SEE DETAIL A/E-11

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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: (2) 2-2-002:014			
ELEC SYMBOLS, LOCATION MAP, VICINITY MAP, EQUIPMENT SCHEDULE AND NOTES			
DRAWN BY: CAD	ENGINEER: GTN	CHECKED BY: SS	
APPROVED:			

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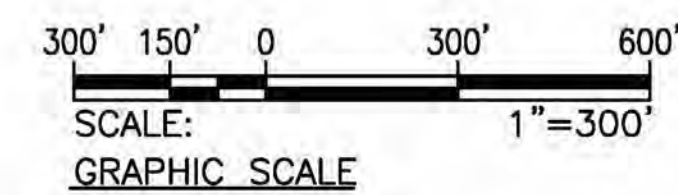
ELECTRICAL DISTRIBUTION
PARTIAL PLAN I
SEE SHEET E-5

ELECTRICAL DISTRIBUTION
PARTIAL PLAN II
SEE SHEET E-6

ELECTRICAL DISTRIBUTION
PARTIAL PLAN III
SEE SHEET E-7



ELECTRICAL SITE PLAN
SCALE: 1" = 300'



Steven H. Sakai
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**KEOKEA-WAIOHULI DEVELOPMENT
PHASE 2B**
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: (2) 2-2-002:014

ELECTRICAL SITE PLAN

DRAWN BY: CAD ENGINEER: GTN CHECKED BY: SS

APPROVED: _____

FILE	FOOT	FOLDER	NO.

MAUI ELECTRIC COMPANY (MECO) NOTES

1. LOCATION OF MECO FACILITIES

THE LOCATION OF MECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO MECO'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

3. EXCAVATION PERMIT

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM MECO TWO WEEKS PRIOR TO STARTING CONSTRUCTION. PLEASE REFER TO OUR REQUEST NUMBER AT THAT TIME.

4. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING MECO OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH MECO. ONLY MECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING MECO FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

5. OVERHEAD LINES

STATE LAW REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A MINIMUM RADIAL CLEARANCE OF 10 FEET WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES RATED 50KV AND BELOW. FOR EACH ADDITIONAL 1KV ABOVE 50KV, AN ADDITIONAL 0.4 INCH SHALL BE ADDED TO THE 10- FOOT CLEARANCE REQUIREMENT. THE PRECEDING INFORMATION ON LINE CLEARANCE REQUIREMENTS IS PROVIDED AS A CONVENIENCE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH ANY REVISIONS OR AMENDMENTS TO THE LAW.

SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCRoACH WITHIN THE MINIMUM REQUIRED CLEARANCE AT ANY TIME, THE CONTRACTOR SHALL NOTIFY MECO AT LEAST FOUR (4) WEEKS PRIOR TO THE PLANNED ENCRoACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE, DE- ENERGIZE, OR BLANKET MECO LINES) CAN BE PUT IN PLACE. MECO'S COST OF SAFEGUARDING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT MECO'S CUSTOMER INSTALLATIONS DEPARTMENT AT FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

REFER TO SECTION X OF MECO'S ELECTRIC SERVICE INSTALLATION MANUAL FOR ADDITIONAL GUIDELINES WHEN WORKING AROUND MECO'S FACILITIES. A COPY MAY BE OBTAINED FROM MECO'S CUSTOMER INSTALLATIONS DEPARTMENT.

6. POLE BRACING

A MINIMUM CLEARANCE OF 10 FEET MUST BE MAINTAINED WHEN EXCAVATING AROUND UTILITY POLES AND/OR THEIR ANCHOR SYSTEM TO PREVENT WEAKENING OR POLE SUPPORT FAILURE. SHOULD WORK REQUIRE EXCAVATING WITHIN 10 FEET OF A POLE AND/OR ITS ANCHOR SYSTEM, THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE, AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COSTS TO BRACE, REPAIR, OR STRAIGHTEN POLES. ALL MEANS OF STRUCTURAL SUPPORT FOR THE POLE PROPOSED BY THE CONTRACTOR SHALL FIRST BE REVIEWED BY MECO BEFORE IMPLEMENTATION. FOR POLE BRACING INSTRUCTIONS, THE CONTRACTOR SHALL CALL THE MECO CONSTRUCTION AND MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

7. UNDERGROUND LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. MECO'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY MECO PERSONNEL ARE TO BREAK INTO EXISTING MECO FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF MECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR.

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL MECO'S UNDERGROUND DIVISION A MINIMUM OF 72 HOURS IN ADVANCE.

FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL MECO'S CONSTRUCTION & MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

8. EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH MECO'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

- a) SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
b) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, OR UNDER-PINNINGS TO FULLY PROTECT IT FROM DAMAGE.
c) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DEPARTMENT FOR THERMAL BACKFILL SPECIFICATIONS).

9. RELOCATION OF MECO FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY MECO FACILITIES SHALL BE DONE BY MECO, OR BY THE CONTRACTOR UNDER MECO'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR MECO'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

10. CONFLICTS

ANY REDESIGN OR RELOCATION OF MECO'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT MECO IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF MECO'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, MECO SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

11. DAMAGE TO MECO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL MECO SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO MECO'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES TO MECO'S TROUBLE DISPATCHER. REPAIR WORK SHALL BE DONE BY MECO OR BY THE CONTRACTOR UNDER MECO'S SUPERVISION COSTS FOR DAMAGES TO MECO'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

12. MECO STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST MECO TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR MECO'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL THE MECO CONSTRUCTION AND MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT A MINIMUM OF 5 WORKING DAYS IN ADVANCE TO ARRANGE FOR MECO STAND-BY PERSONNEL.

13. CLEARANCES

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN MECO'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

Table with 2 columns: STRUCTURE TYPE and MINIMUM CLEARANCE(INCHES). Rows include WATER LINES, PARALLEL (36 (A)), WATER LINES, CROSSING (12 (B)), SEWER LINES, PARALLEL (36 (C)), SEWER LINES, CROSSING (24 (D)), DRAIN LINES, PARALLEL (12), DRAIN LINES, CROSSING (6 (E)), ELECTRICAL AND GAS LINES, PARALLEL (12), ELECTRICAL AND GAS LINES, CROSSING (12), TELEPHONE LINES, PARALLEL (6 (E)), TELEPHONE LINES, CROSSING (6 (E)), CHEVRON OIL LINES, PARALLEL (36), CHEVRON OIL LINES, CROSSING (48 BELOW OIL LINE (F)).

- A. THE MINIMUM HORIZONTAL CLEARANCES TO WATER LINES PARALLEL TO ELECTRICAL DUCTLINES MUST BE INCREASED TO 60 INCHES IF THE WATER LINE IS GREATER THAN 16 INCHES IN DIAMETER.
B. THE MINIMUM VERTICAL CLEARANCES TO WATER LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 6 INCHES IF THE ELECTRICAL DUCTLINE STRUCTURE IS CONCRETE ENCASED AND IS BELOW THE WATER LINE AND THE WATER LINE IS LESS THAN 16 INCHES IN DIAMETER.
C. A MINIMUM HORIZONTAL CLERANCE OF 36 INCHES IS REQUIRED BETWEEN NEW HANDHOLES AND EXISTING SEWER LATERALS.
D. THE MINIMUM VERTICAL CLEARANCES TO SEWER PIPES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 12 INCHES IF THE SEWER PIPE IS JACKETED IN CONCRETE.
E. THE MINIMUM CLEARANCES SHALL BE INCREASED TO 12 INCHES IF THE ELECTRICAL DUCTLINE IS DIRECT BURIED.
F. THE MINIMUM VERTICAL CLEARANCES TO OIL LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 24 INCHES BELOW OIL LINES IF THE CROSSINGS ARE ENCASED IN 6 INCHES OF CONCRETE.
G. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & MECO OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

14. INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS MECO FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF MECO.

15. SCHEDULE

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE ___ WORKING DAYS PRIOR TO STARTING WORK ON MECO FACILITIES. CONTRACTOR SHALL GIVE MECO, IN WRITING ___ WORKING DAYS NOTICE TO PROCEED WITH MECO'S PORTION OF WORK.

16. AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

17. SPECIFICATIONS

CONSTRUCTION OF MECO'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF MECO SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE MECO STANDARDS.

18. CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY MECO PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY MECO'S INSPECTION DIVISION AT 543-4356 AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO MECO'S EXISTING ELECTRICAL FACILITIES WITH MECO'S UNDERGROUND DIVISION AT 543-7871 AT LEAST 10 WORKING DAYS IN ADVANCE.

19. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED MECO FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY MECO BEFORE PROCEEDING WITH MECO WORK.

21. DUCTLINES

ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF MECO'S INSPECTOR USING MECO'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL A 1/8" POLYOLEFIN PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

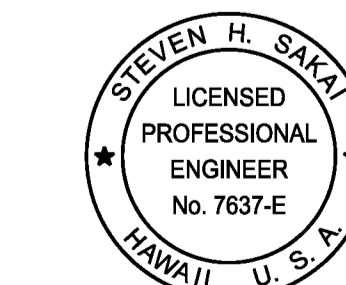
22. JOINT POLE REMOVAL

THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE MECO WITH TWO SETS OF AS-BUILT REPRODUCIBLE TRACINGS SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

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1208 Queen Emma Street, Third Floor Honolulu, Hawaii
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: (2) 2-2-002:014
MECO NOTES
DRAWN BY: CAD ENGINEER: GTN CHECKED BY: SS
APPROVED:

SANDWICH ISLES COMMUNICATIONS CONSTRUCTION NOTES
(REVISED 01/17/19)

GENERAL

- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS AND REQUIREMENTS OF THE RURAL UTILITIES SERVICES (RUS) AND SANDWICH ISLES COMMUNICATIONS (SIC), WHICH COMPLIES WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL REQUIREMENTS.
- ALL MATERIALS USED MUST BE APPROVED AND (OR) ACCEPTED BY SANDWICH ISLES COMMUNICATIONS, INC.
- CONTRACTOR MAY REFER TO THE RUS WEBSITE (HTTPS://WWW.RD.USDA.GOV/PUBLICATIONS/REGULATIONS-GUIDELINES) FOR REGULATIONS, BULLETINS, FORMS, ETC.
- CONTACT THE HAWAII ONE CALL CENTER AT (866) 423-7287 FOR LOCATING EXISTING UNDERGROUND FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.
- THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY FOR PROSECUTION OF THE WORK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WORK SCHEDULES WITH ALL UTILITY COMPANIES, COUNTY, OR STATE AGENCIES REQUIRED FOR THIS PROJECT. THIS IS TO INCLUDE COORDINATION OF ANY INSPECTION AND SPECIFICATIONS BY THOSE UTILITY COMPANIES, COUNTY, OR STATE AGENCIES.
- THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS RELATING TO THIS PROJECT BEFORE COMMENCING THE REQUIRED WORK.
- THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES AND/OR CONDITIONS WHICH WOULD PREVENT HIM FROM FULFILLING THE TERMS OF THIS CONTRACT.
- ALL SIC PULLBOXES THAT THE CONTRACTOR ENTERS FOR INSTALLATION OF FACILITIES MUST BE CLEARED OF STANDING WATER AND DEBRIS. CONTRACTOR SHALL ORGANIZE EXISTING CABLE FACILITIES, TO INCLUDE ADDING CABLE RACKS AND TYING DOWN EXISTING CABLE, IN ORDER TO ACCOMMODATE NEW FACILITIES BEING PLACED. CLEANING AND ORGANIZING OF PULLBOXES SHALL BE DONE TO THE SATISFACTION OF THE PROJECT MANAGER.
- THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS TO THE OWNER AT COMPLETION OF THE PROJECT. AS-BUILT DRAWINGS REFER TO DOCUMENTS MAINTAINED AND ANNOTATED BY THE CONTRACTOR DURING CONSTRUCTION AND INCLUDE ANY CHANGES OR NEW INFORMATION FOUND OR ADDED THROUGHOUT CONSTRUCTION OF THE PROJECT.

CONDUITS

- ALL UNDERGROUND PVC CONDUITS, SWEEPS, COUPLINGS, ADAPTERS AND BELL ENDS SHALL BE SCHEDULE 40, UNLESS OTHERWISE SPECIFIED.
- ALL HIGH DENSITY POLYETHYLENE CONDUITS SHALL BE SDR 11. TYPICAL 3-PACK UNIT INCLUDES THREE 1.5-INCH SDR 11 RATED CONDUITS IN THE COLORS OF BLACK, RED, AND ORANGE, UNLESS OTHERWISE SPECIFIED. ALL CONDUITS TO BE PRESSURE TESTED AT 120 PSI FOR TWO MINUTES EACH. FUSION SPLICING OF THE CONDUIT SHALL BE ACCEPTABLE ONLY WHEN PULLING JOINTS THROUGH BORES. ALL COUPLINGS SHALL BE DOUBLE "E-LOC" MANUFACTURED BY ETOC SPECIALTY PRODUCTS, INC.
- MAIN CONDUIT RUNS, EXCEPT RISER CONDUITS, SHALL BE CONSTRUCTED WITH MINIMUM 6-FOOT RADIUS CURVES, UNLESS OTHERWISE APPROVED BY THE PROJECT MANAGER.
- AFTER THE CONDUITS ARE INSTALLED, A ROUND SOLID MANDREL NOT LESS THAN 12-INCHES IN LENGTH AND HAVING A DIAMETER OF 1/4-INCH LESS THAN THE INSIDE DIAMETER OF THE CONDUIT SHALL BE PULLED THROUGH EACH CONDUIT. THE SIC PROJECT MANAGER SHALL BE PRESENT DURING ALL MANDREL TESTING. SUFFIXES USED IN RUS 515B FOR CONDUITS ARE ACCEPTABLE.
- INSTALL MULETAPE IN ALL PVC CONDUITS TWO (2) INCH DIAMETER AND LARGER. THE NEPTCO MULETAPE (OR APPROVED EQUAL) IS AVAILABLE IN 3000 FT., 6500 FT., AND 10,000 FT. REELS FROM WESTINGHOUSE ELECTRIC SUPPLY COMPANY (WESCO), THE NEPTCO MULETAPE IS PRE-LUBRICATED AND PRINTED WITH SEQUENTIAL FOOTAGE MARKINGS. PVC CONDUITS WITH A DIAMETER OF 1.5-INCH OR LESS SHALL HAVE A POLY-LINE (P-LINE) INSTALLED. ALL DUCTS SHALL BE SEALED AFTER MULETAPE/P-LINE HAS BEEN INSTALLED, FOLLOWING THE SPECIFICATIONS BELOW.
- ALL CONDUITS AND DUCTS SHALL BE PROPERLY SEALED USING COMMSCOPE, JACKMOON DUCT SEALS, APPLICABLE BUSHING SLEEVES AND BLANK DUCT PLUGS. THE CONDUIT DIAMETER, INSIDE DIAMETER AND CABLE SIZE(S) SHALL BE TAKEN INTO CONSIDERATION WHEN ORDERING AND INSTALLING "JACKMOON" DUCT SEALS.
COMMSCOPE JACKMOON SEALS SHALL BE:
2-INCH CONDUIT TRIPLEX DUCT SEALS SERIES 70
3-INCH CONDUIT TRIPLEX DUCT SEALS SERIES 136
3.5-INCH AND LARGER CONDUIT QUADRUPLEX DUCT SEALS, SERIES 136
ALL OTHER DUCTS SHALL HAVE COMMSCOPE, BLANK JACKMOON PLUGS TO KEEP THEM FREE OF WATER AND DEBRIS.
- CONDUIT STUBS FROM HANDHOLES TO INDIVIDUAL RESIDENTIAL LOTS SHALL BE SCHEDULE 40 PVC, 1-INCH DIAMETER AND EXTENDED 5-FEET BEYOND PROPERTY LINE. CAP AND SEAL END AND MARK LOCATIONS WITH ABOVE GROUND MARKER.
- ALL CONDUITS SHALL ENTER MANHOLES AT 90 DEGREE ANGLE AND SHALL EXTEND INTO THE MANHOLE AS FOLLOWS: CONDUITS DESIGNATED FOR FIBER SHALL EXTEND 12-INCHES INTO THE MANHOLE. ALL OTHER CONDUITS SHALL BE FLUSH WITH THE INSIDE WALL AND INCLUDE BELL ENDS. ANY EXCEPTIONS SHALL ONLY BE PERMITTED WHEN SPECIFIED BY THE PROJECT MANAGER.
- ALL CONDUITS ENTERING MANHOLES OR HANDHOLES SHALL BE GROUTED BETWEEN THE CONDUITS AND SIDEWALL, INSIDE AND OUT. ALL CONDUITS WILL ENTER THE MANHOLES AND HANDHOLES ON THE PROPERTY SIDE AT ALL TIMES UNLESS OTHERWISE SPECIFIED BY THE PROJECT MANAGER.
- BACKFILL AND COMPACTION FOR DUCTLINE TRENCHES, MANHOLES AND HANDHOLES SHALL BE IN ACCORDANCE WITH:
A. STATE HIGHWAY DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH LATEST AMENDMENTS, IF CONSTRUCTION IS LOCATED UNDER A STATE STREET OR ROAD, OR LOCATED IN PRIVATE PROPERTY.
B. THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION, DATED 1994, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, WITH LATEST AMENDMENTS; COUNTY OF KAUAI, MAUI, OR HAWAII, AS THE CASE MAY BE, IF CONSTRUCTION IS LOCATED UNDER COUNTY STREETS AND ROADS.

- BACKFILLING SHALL BE SUBJECT TO THE APPROVAL OF THE SIC PROJECT MANAGER, THE AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION, STATE OF HAWAII AND/OR DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, COUNTY OF KAUAI, HONOLULU, COUNTY OF KAUAI, MAUI OR HAWAII, AS THE CASE MAY BE.
- A THIRD PARTY GEOTECHNICAL ENGINEER, LICENSED AND INSURED IN THE STATE OF HAWAII MUST CERTIFY THAT THE EXCAVATED AREA MEETS THE GOVERNING AGENCIES AND/OR OWNERS STANDARDS FOR BACKFILL AND COMPACTION.
- EXCAVATED MATERIAL MAY BE REUSED AS BACKFILL, PROVIDING THAT IT CONFORMS TO REQUIREMENTS OF TYPE "A" AND TYPE "B" BACKFILL, AS REQUIRED WITHIN THE STANDARD SPECIFICATIONS. A WRITTEN SOILS REPORT OF CONFORMANCE BY A LICENSED THIRD PARTY GEOTECHNICAL ENGINEER IS NEEDED PRIOR TO BACKFILL USING THE EXCAVATED MATERIAL.
A. TYPE A BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1-INCH AND MIXTURE SHALL NOT CONTAIN MORE THAN 20% BY VOLUME OF ROCK PARTICLES.
B. TYPE B BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1/2-INCH AND MIXTURE SHALL NOT CONTAIN MORE THAN 20% BY VOLUME OF ROCK PARTICLES.
- ALL CONDUIT RUNS SHALL HAVE A 3-INCH NON-METALLIC WARNING TAPE PLACED 12-INCHES ABOVE THE CONDUIT RUN. THE TAPE SHALL READ "CAUTION BURIED FIBER OPTIC CABLE BELOW".

MANHOLES AND HANDHOLES:

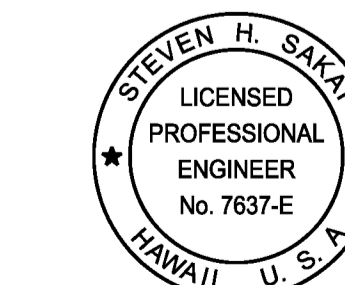
- ALL MANHOLES SHALL HAVE HS20-44 TRAFFIC LOADING COVERS (UNLESS OTHERWISE NOTED). HANDHOLES SHALL HAVE 20K TRAFFIC LOAD RATED COVERS.
- ALL MANHOLE AND HANDHOLE COVERS SHALL HAVE COVER LOGO TO READ "SIC".
- ALL HANDHOLE AND MANHOLE COVER BOLTS SHALL BE STAINLESS STEEL 3/4-INCH PENTAHEAD, UNLESS OTHERWISE NOTED.
- ALL MANHOLES AND HANDHOLES ARE SPECIFIED AS FOLLOWS:
A. UM35 AND UM46 MANHOLE - CONSISTS OF A REINFORCED CONCRETE MANHOLE WITH CAST IRON LID AND RISERS (IF REQUIRED). ALL MANHOLES ARE UNDER MASTER PURCHASE AGREEMENT WITH HAWAII PRECAST, INC. LOCATED IN CAPTAIN COOK, HAWAII (808 326-7730)
B. UH35 AND UH46 HANDHOLE - CONSISTS OF A REINFORCED CONCRETE HANDHOLE WITH TRAFFIC RATED HINGED COVERS (UH35) OR SIX TRAFFIC RATED SLIP-NOT COVERS (UH46) AND RISERS (IF REQUIRED). ALL HANDHOLES ARE UNDER MASTER PURCHASE AGREEMENT WITH HAWAIIAN PRECAST, INC. LOCATED IN CAPTAIN COOK, HAWAII (808 326-7730).
C. UHC30X48X33 HANDHOLE (PULLBOX) - CONSISTS OF A TWO-TIER ARMORCAST POLYMER CONCRETE BOX & COVER ASSEMBLY. PART NUMBER (A6001430TA-SIC4).
D. UHC13X24X30 HANDHOLE (PULLBOX) - CONSISTS OF AN ARMORCAST POLYMER CONCRETE BOX AND COVER ASSEMBLY. PART NUMBER (A6001946TA-SIC1).
- ALL MANHOLES AND HANDHOLES TO BE ORDERED WITH ALL HARDWARE, INCLUDING CABLE RACKS, STEPS AND LOCKS.
- SET MANHOLE OR HANDHOLE ON A LEVEL AREA, IN THE BOTTOM OF THE EXCAVATION, ON A 4-INCH LAYER OF CRUSHED ROCK, FOR DRAINAGE PURPOSES.
- THE BASE OF ALL MANHOLES AND HANDHOLES WILL BE PLACED LEVEL. SOME MANHOLES HAVE ADJUSTABLE FRAMES. ALL VOIDS CREATED DURING INSTALLATION MUST BE FILLED WITH MORTAR MIX OR CONCRETE. THIS IS ESPECIALLY TRUE FOR MANHOLES AND HANDHOLES SET IN ROADWAYS.
- BEFORE BACKFILLING AND COMPACTION, MAKE SURE COVERS ARE IN PLACE AND SECURE. LAYER 6-INCHES TO 8-INCHES OF BACKFILL MATERIAL AROUND THE MANHOLE OR HANDHOLE. TAMP EACH INDIVIDUAL LAYER OF BACKFILL MATERIAL. CONTINUE THE LAYERING AND "TAMPING" UNTIL FINAL GRADE IS ACHIEVED.
- THE TOPS OF ALL MANHOLES AND HANDHOLES SHALL BE FLUSH TO GRADE IN PAVED AREAS OR 1-INCH ABOVE FINISH GRADE IN NON-PAVED AREAS, UNLESS OTHERWISE SPECIFIED BY PROJECT MANAGER.
- PROVIDE A 5/8-INCH DIAMETER X 8-FOOT COPPER CLAD GROUND ROD AT HANDHOLES AND MANHOLES AS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE PROJECT MANAGER.
- FIELD MODIFICATIONS ARE ACCOMPLISHED BY USING A FINE TOOTHED SAW RACKS OR OR OTHER EQUIPMENT MAY BE SECURED TO THE SIDE OF THE VAULT BY USE OF TOGGLE BOLTS, MOLLY BOLTS, ETC. AND MUST BE APPROVED BY THE PROJECT MANAGER.

UTILITY POLE INSTALLATION:

- ALL AERIAL WORK SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS AND REQUIREMENTS OF THE RURAL UTILITIES SERVICES (RUS) BULLETIN 1753F-152.
- UTILITY POLES SHALL BE PRESERVED UTILIZING THE PENTACHLOROPHENOL (PENTA) TYPE TREATMENT.
- UTILITY POLES SHALL BE TERMITE PROTECTED UTILIZING TERMIMESH POLESOCKS OR EQUIVALENT. POLESOCKS SHALL EXTEND NO MORE THAN EIGHT INCHES ABOVE GROUND AND BE SECURED WITH STAINLESS STRAPPING. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
- THE POLE HOLE SHALL BE OF SUFFICIENT DIAMETER TO PERMIT THE POLE TO SETTLE FREELY TO THE BOTTOM OF THE HOLE WITHOUT TRIMMING THE BUTT AND STILL HAVE SUFFICIENT SPACE BETWEEN THE POLE AND THE SIDE OF THE HOLE TO PERMIT PROPER TAMPING OF THE BACKFILL AT EVERY POINT AROUND THE POLE, AND THROUGHOUT THE ENTIRE DEPTH OF THE HOLE.
- THE POLE HOLE SHALL NOT EXCEED TWO TIMES THE DIAMETER OF THE POLES BUTT DIAMETER.
- BACKFILL SHALL BE THOROUGHLY TAMPED THE FULL DEPTH OF THE POLE HOLE. EARTH MUST BE BANKED AROUND THE POLE TO A MINIMUM HEIGHT OF SIX INCHES ABOVE GROUND LEVEL.

- POLES SHALL BE SET PLUMB EXCEPT AT CORNERS WHERE THEY SHALL BE SET AND RAKED AGAINST THE LOAD SO THAT THE POLE TOP WILL BE IN LINE AFTER THE LOAD IS APPLIED. THE RAKE POLE SHALL NOT EXCEED SIX INCHES FOR EACH TEN FEET TO POLE LENGTH AFTER THE CONDUCTORS ARE INSTALLED AT THE REQUIRED TENSION. DEADEND SHALL BE SET SO AS TO BE PLUMB AND IN LINE AFTER THE LOAD IS APPLIED.
- POLE LIGHTNING PROTECTION SHALL BE A #6 AWG BARE COPPER WIRE IN ACCORDANCE WITH SIC/RUS CONSTRUCTION PRACTICES.
- SUSPENSION STRAND/HARDWARE SHALL BE CLASS C GALVANIZED STEEL UTILITY GRADE FOR CORROSION AREAS.
- GUY GUARDS YELLOW IN COLOR SHALL BE PLACED ON ALL DOWN GUYS.

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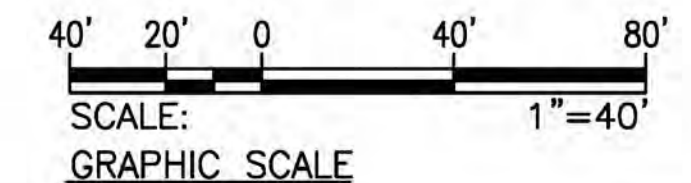
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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: (2) 2-2-002:014			
SANDWICH ISLES COMMUNICATIONS NOTES			
DRAWN BY: CAD	ENGINEER: GTN	CHECKED BY: SS	
APPROVED:			

FILE	POCKET	FOLDER	NO.

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ELECTRICAL DISTRIBUTION PLAN I
 SCALE: 1" = 40'



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 Engineering Design | Construction Management | Infrastructure Planning
 1255 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: (2) 2-2-002:014

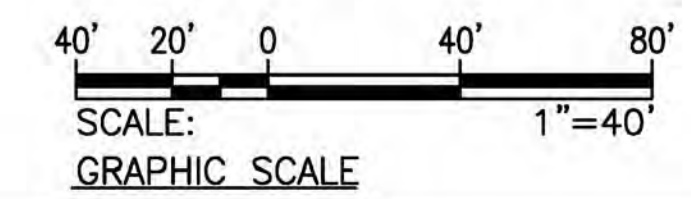
ELECTRICAL DISTRIBUTION PARTIAL PLAN I

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ELECTRICAL DISTRIBUTION PLAN II
 SCALE: 1" = 40'



STEVEN H. SAKAI
 LICENSED PROFESSIONAL ENGINEER
 No. 7637-E
 HAWAII, U.S.A.
Steven H. Sakai
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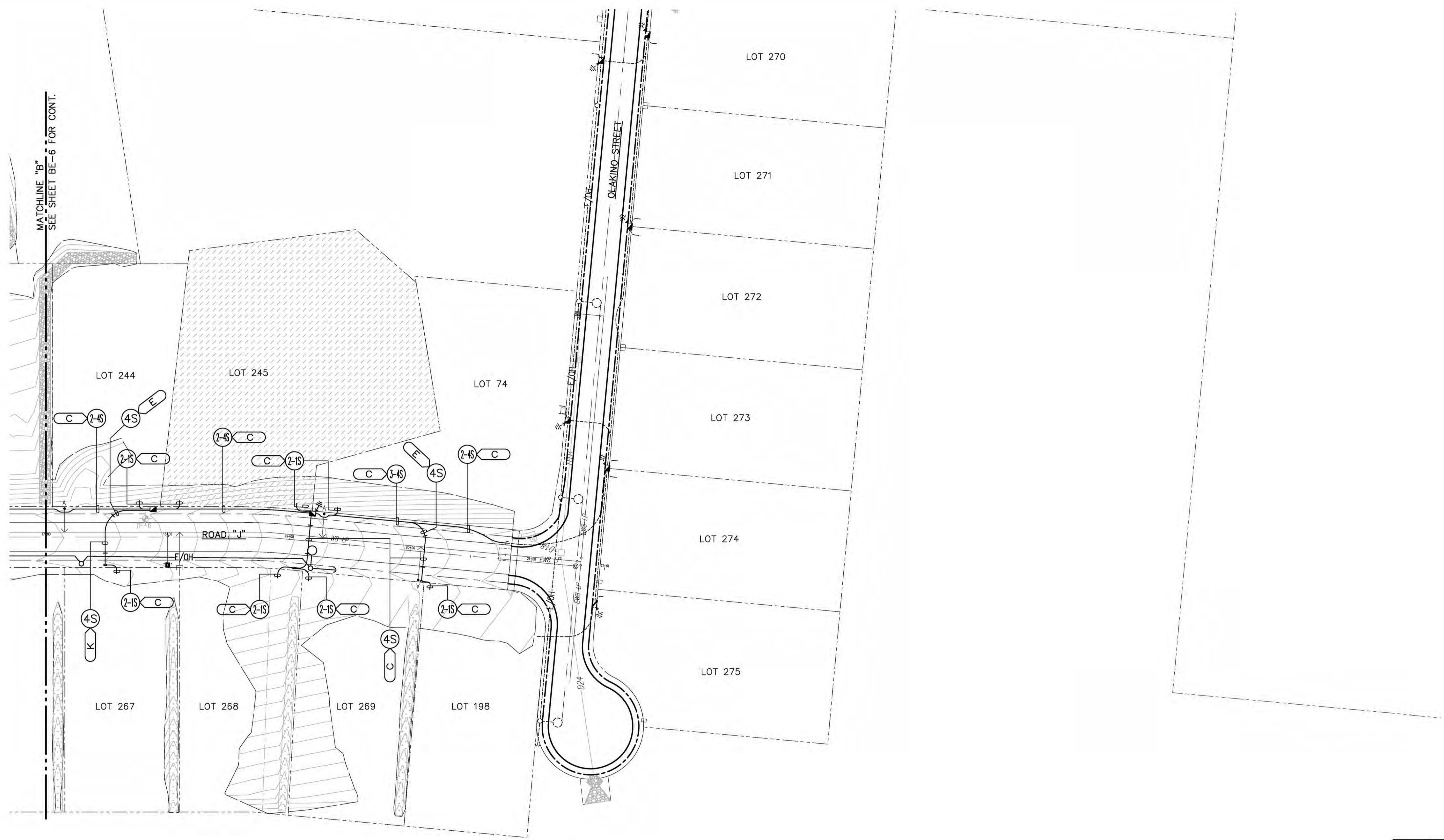
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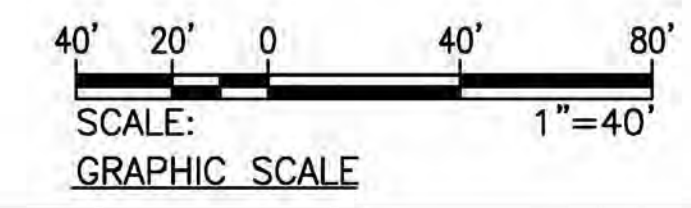
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: (2) 2-2-002:014

ELECTRICAL DISTRIBUTION PARTIAL PLAN II

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ELECTRICAL DISTRIBUTION PLAN III
 SCALE: 1" = 40'



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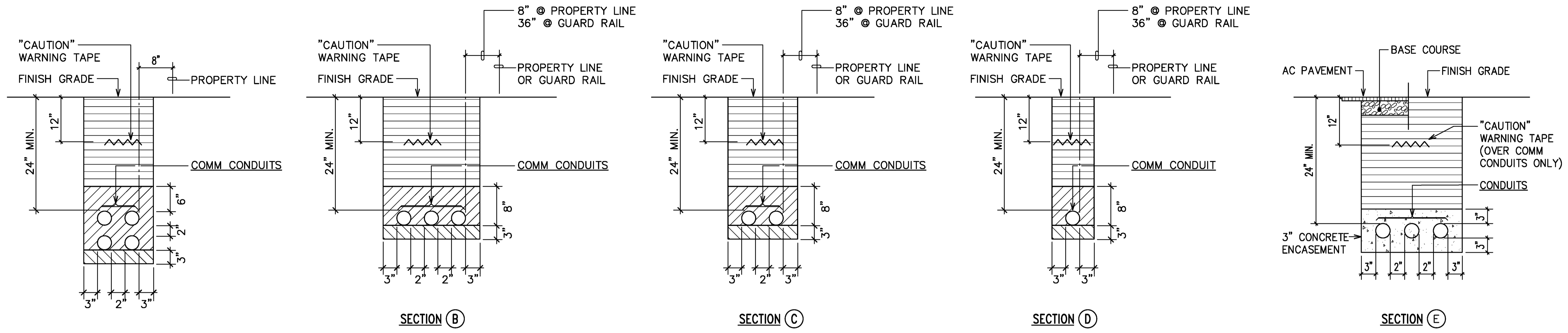
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 1288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
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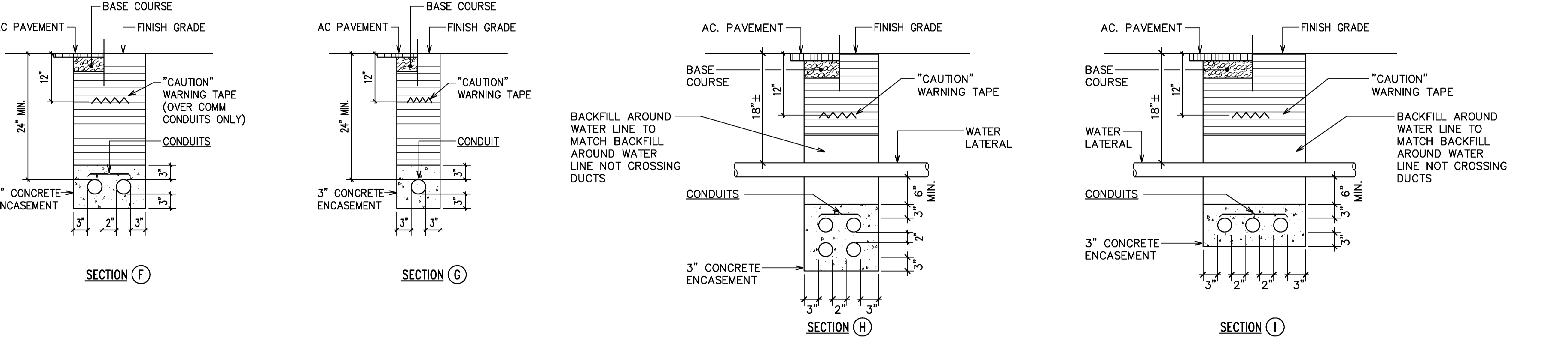
ELECTRICAL DISTRIBUTION PARTIAL PLAN III

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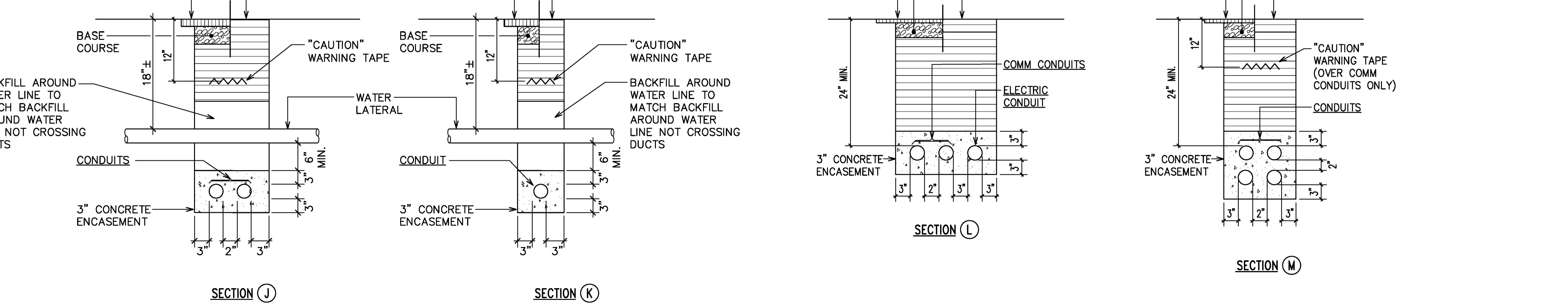
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SECTION (A) SECTION (B) SECTION (C) SECTION (D)



SECTION (E) SECTION (F) SECTION (G) SECTION (H)



SECTION (I) SECTION (J) SECTION (K) SECTION (L) SECTION (M)

- NOTES:**
1. ELECTRIC WARNING TAPE—HEAVY GAUGE 4 MIL, RED WITH BLACK LETTERING, 3" WIDE, "BURIED ELECTRIC LINE BELOW—CAUTION" @ DIRECT BURIED CONDUITS.
 2. "CAUTION" WARNING TAPE REQUIRED OVER ENTIRE LENGTH OF ALL CONDUITS.
 3. 3" SEPARATION REQUIRED BETWEEN ELECTRICAL AND COMM. CONDUITS WITHIN CONCRETE ENCASUREMENT.

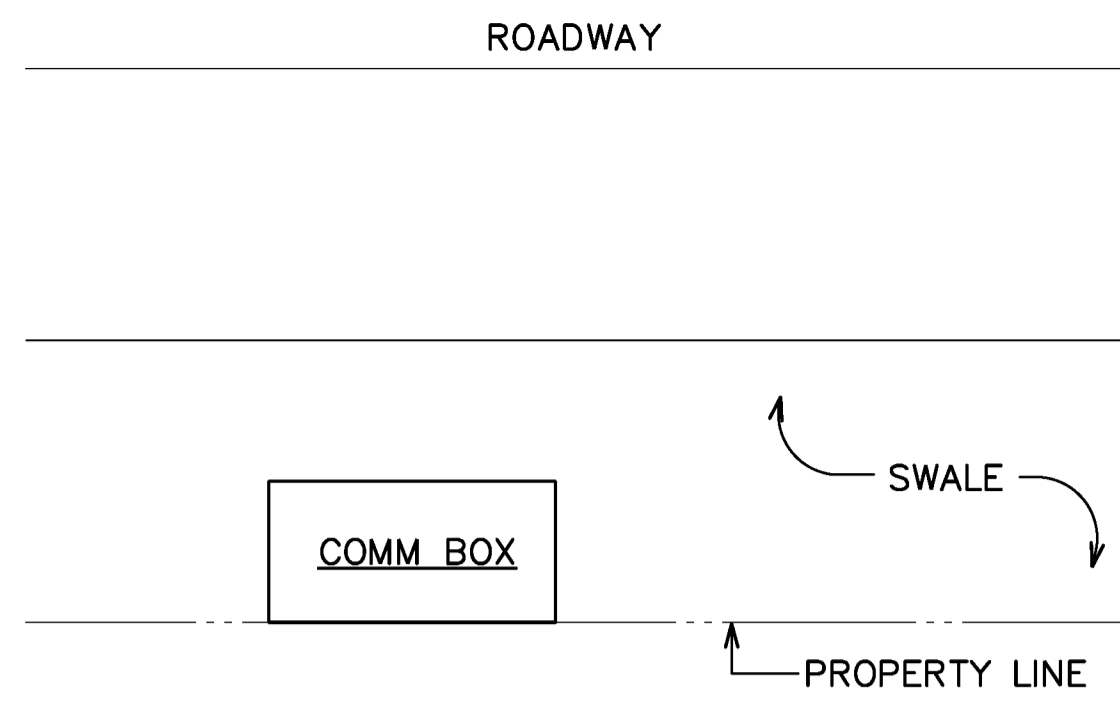
TYPICAL DUCT SECTIONS
NOT TO SCALE

CONDUIT SCHEDULE	
ITEM	DESCRIPTION
(2E)	MAUI ELECTRIC CO. 1-2°C
(2-2E)	MAUI ELECTRIC CO. 2-2°C
(3-2E)	MAUI ELECTRIC CO. 3-2°C
(3E)	MAUI ELECTRIC CO. 1-3°C
(2-3E)	MAUI ELECTRIC CO. 2-3°C
(2-1S)	SANDWICH ISLES COMM UD(2x1-1")
(2S)	SANDWICH ISLES COMM UD(1x1-2")
(4S)	SANDWICH ISLES COMM UD(1x1-4")
(2-4S)	SANDWICH ISLES COMM UD(2x1-4")
(3-4S)	SANDWICH ISLES COMM UD(3x1-4")
(4-4S)	SANDWICH ISLES COMM UD(2x2-4")
(4V)	CATV 4°C

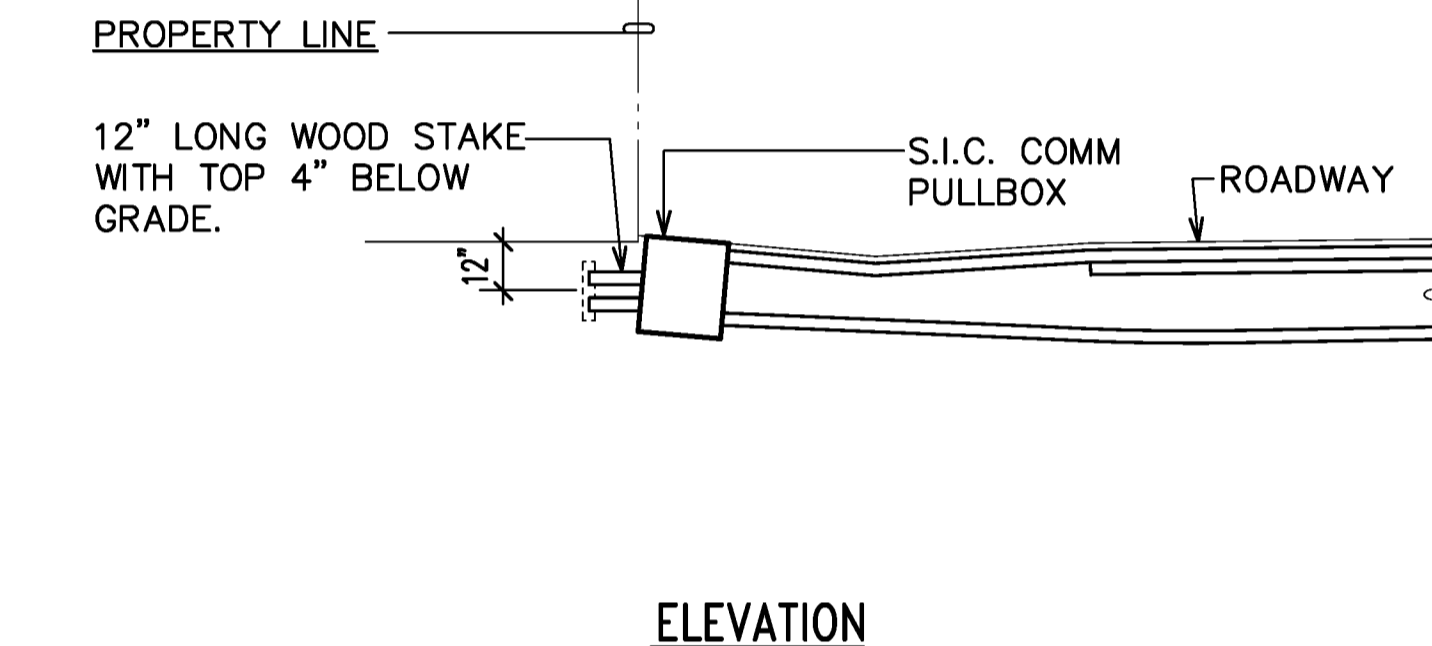
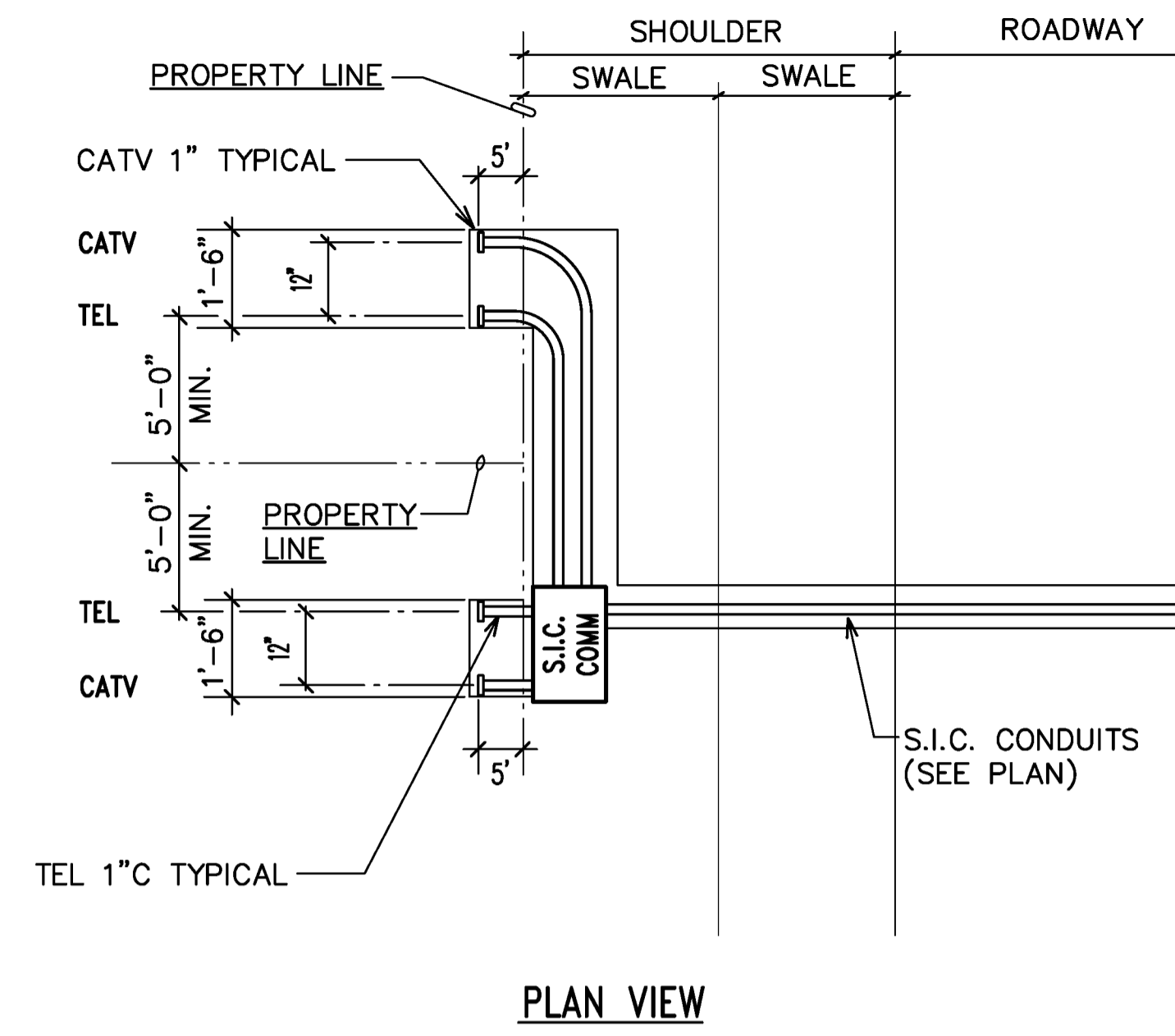
- BACKFILL NOTES:**
- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
 - TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
 - NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
 - CONCRETE - 3" ENCASUREMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: (2) 2-2-002:014</p>			
<p>TYPICAL DUCT SECTIONS</p>			
DRAWN BY: CAD	ENGINEER: GTN	CHECKED BY: SS	APPROVED:
<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/24</p>			

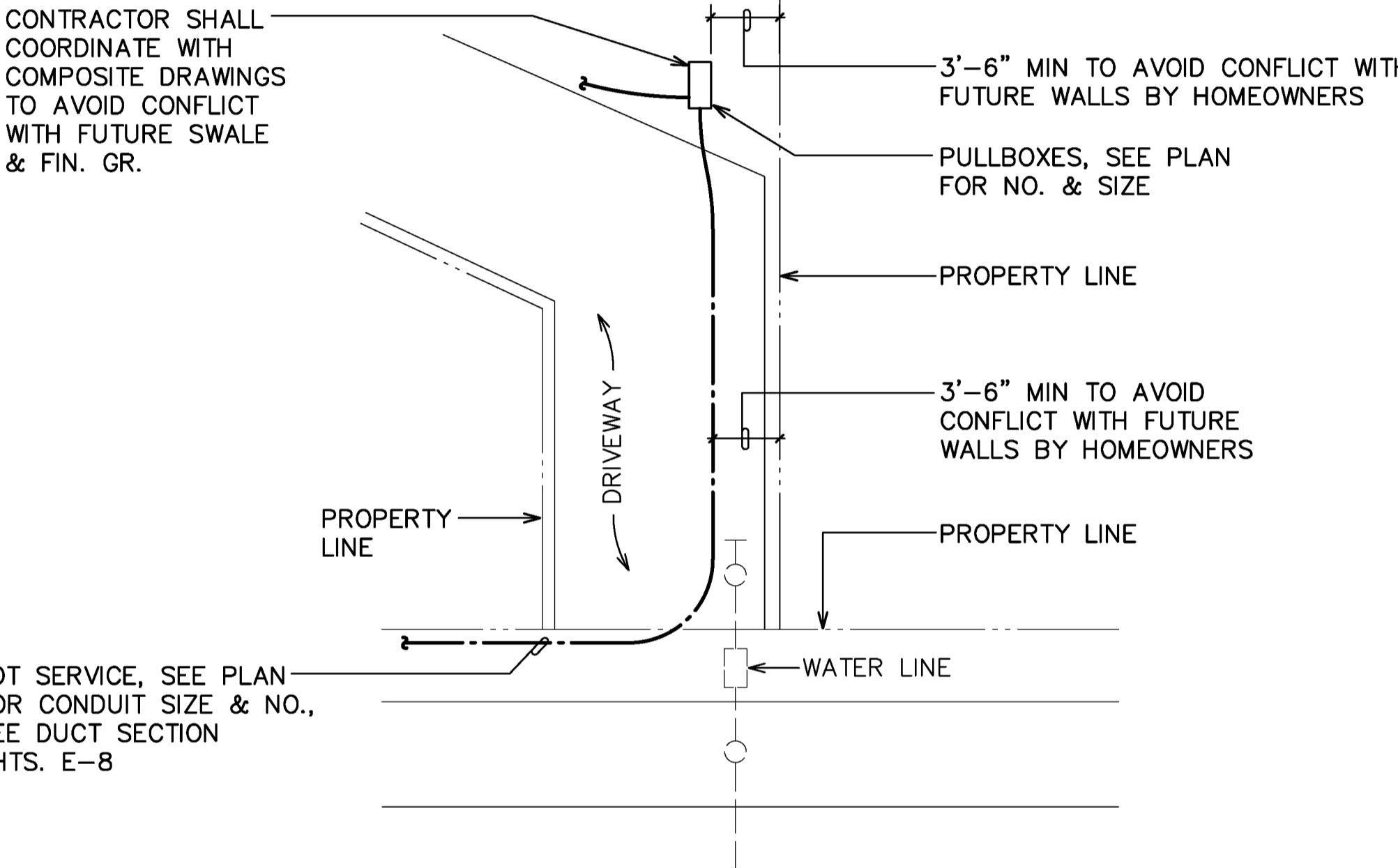
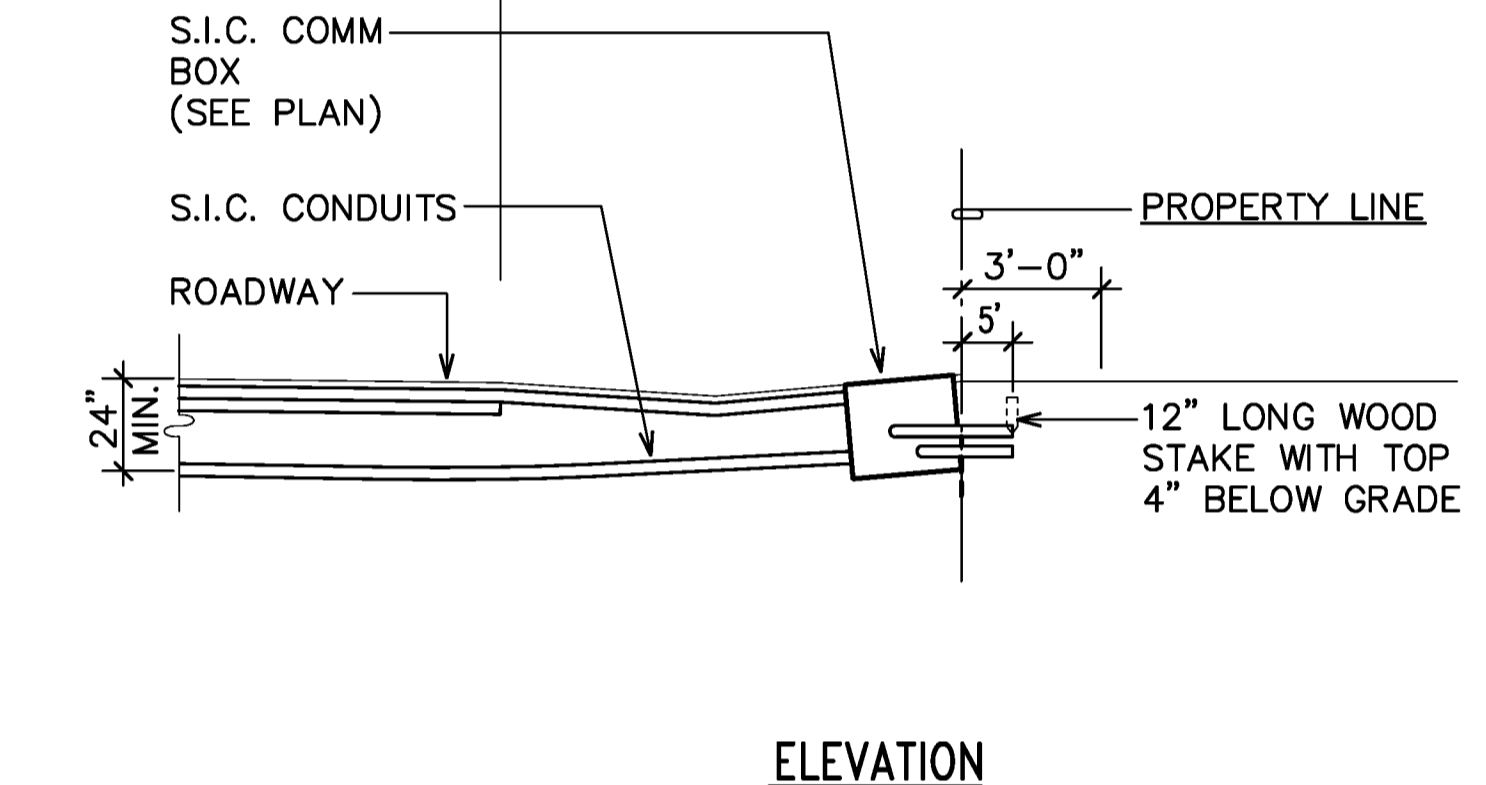
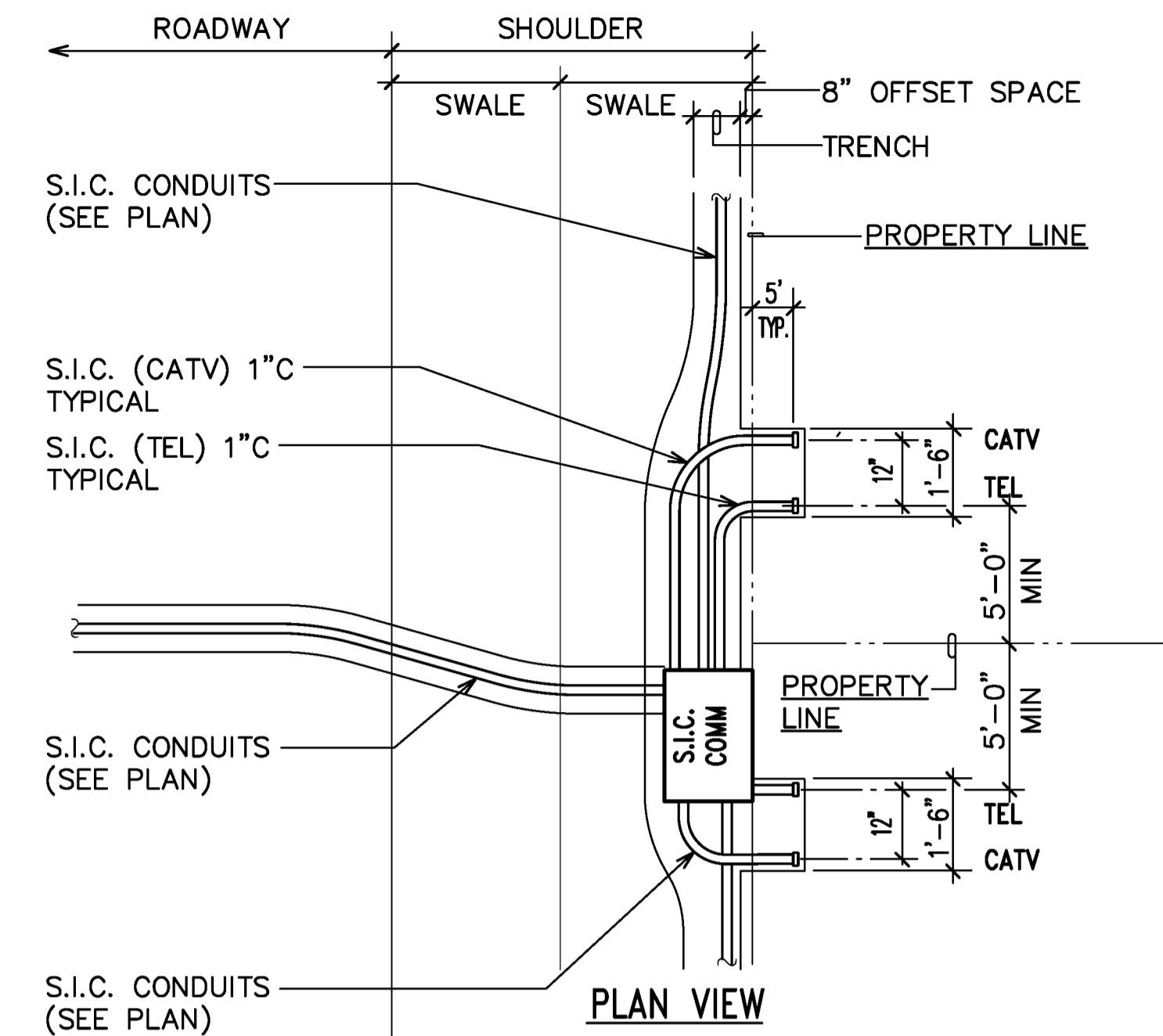
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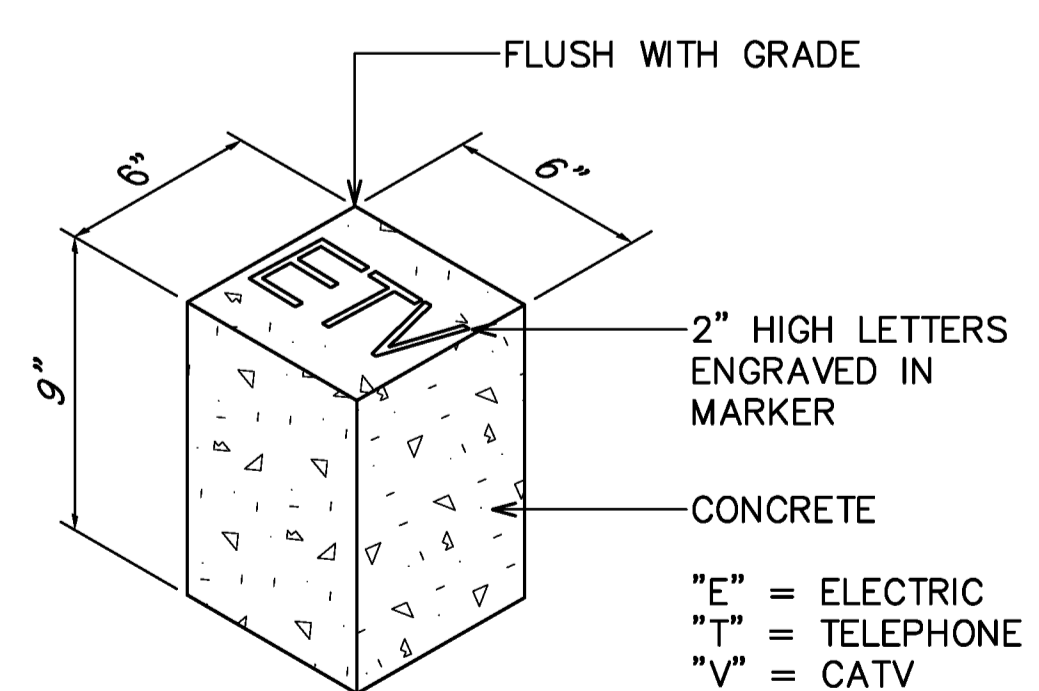
A TYPICAL HANDHOLE GROUP ARRANGEMENT
E-9 NOT TO SCALE



D TYPICAL LOT SERVICE
E-9 NOT TO SCALE



B SERVICE CONDUITS @ FLAGLOTS
E-9 NOT TO SCALE



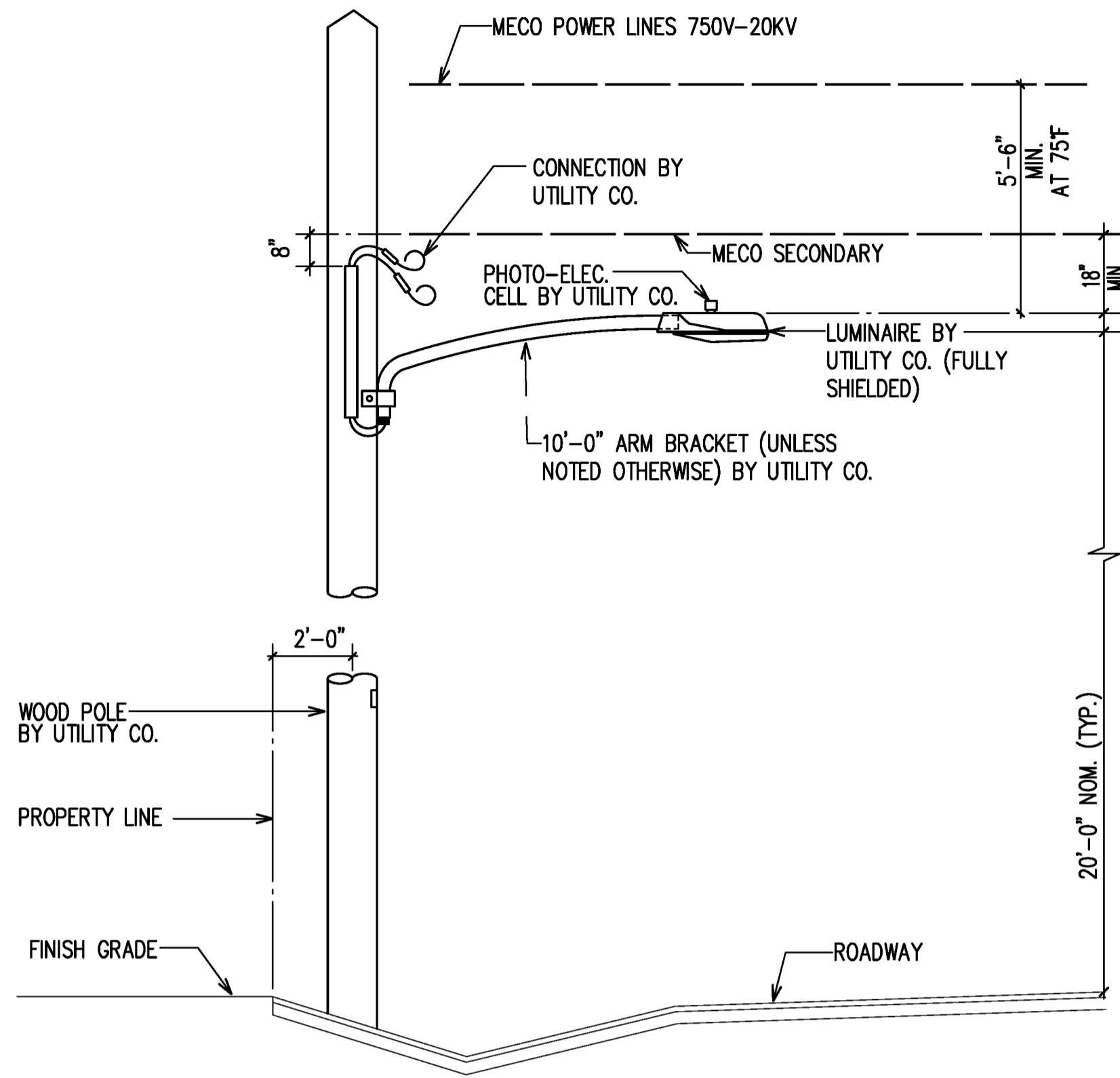
C CONCRETE CONDUIT STUB-OUT MARKER
E-9 NOT TO SCALE



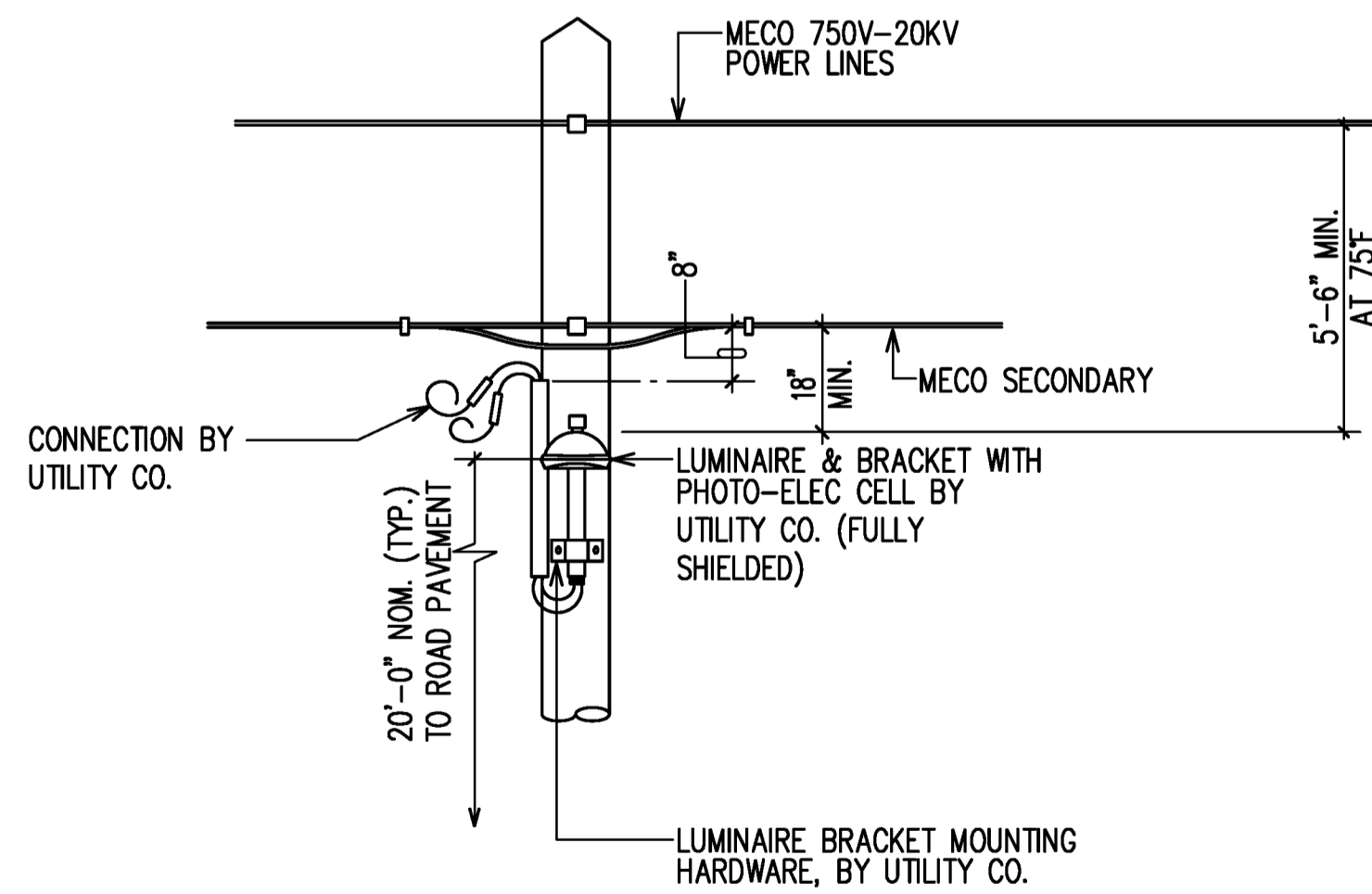
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street, Third Floor Honolulu, Hawaii</p> <p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: (2) 2-2-002:014</p>			
TYPICAL LOT SERVICE DETAILS			
DRAWN BY: CAD	ENGINEER: GTN	CHECKED BY: SS	
APPROVED:			

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A STREET LIGHT DEAD END INSTALLATION
E-10 NOT TO SCALE



B STREET LIGHT TANGENT INSTALLATION
E-10 NOT TO SCALE

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Steven H. Sakai
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
288 Queen Emma Street, Third Floor Honolulu, Hawaii

KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: (2) 2-2-002:014

MISCELLANEOUS DETAILS

DRAWN BY: CAD	ENGINEER: GTN	CHECKED BY: SS
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APPROVED: