

CONSTRUCTION PLANS
FOR
**KEOKEA-WAIOHULI DEVELOPMENT
PHASE 2B**

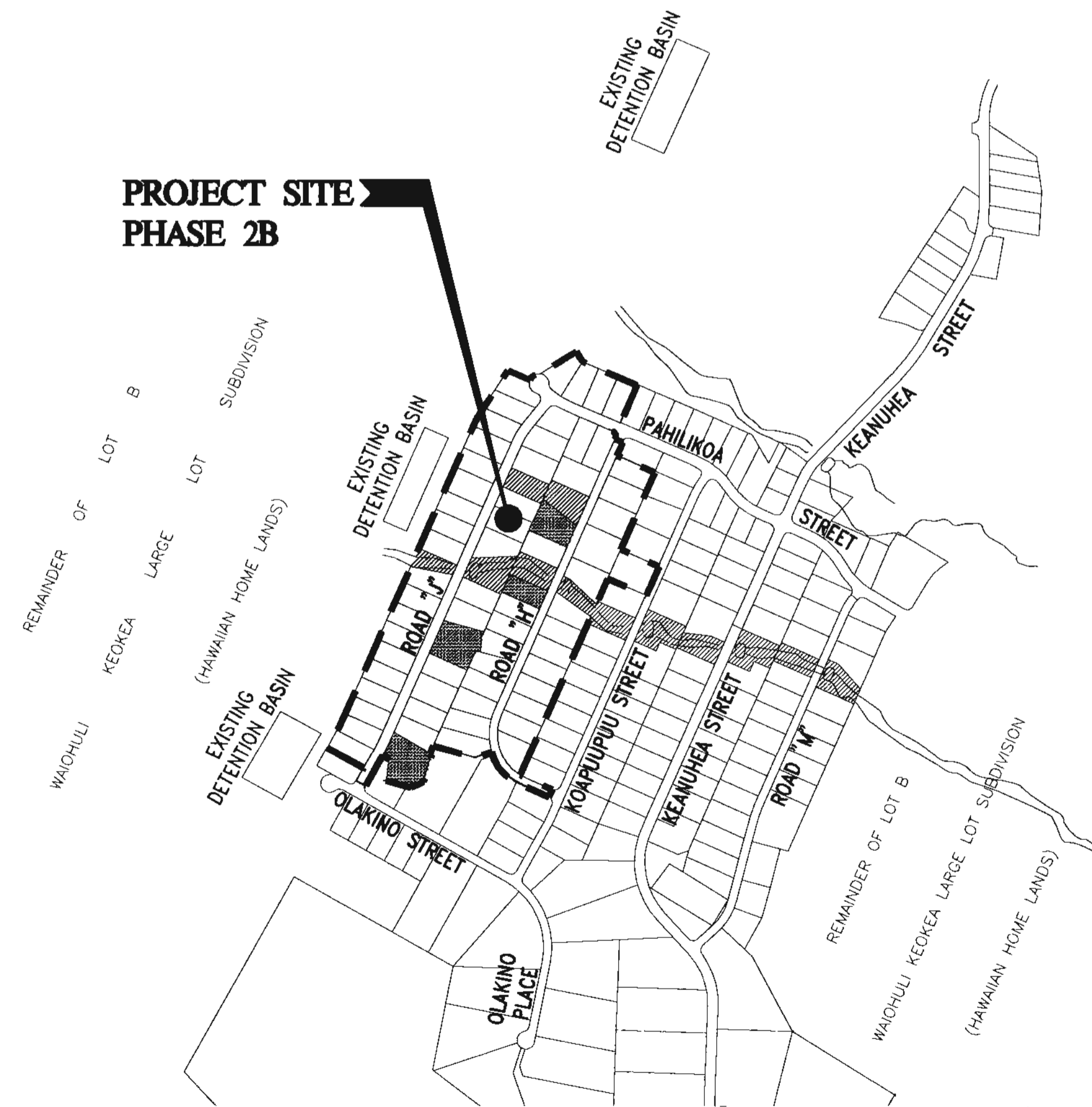
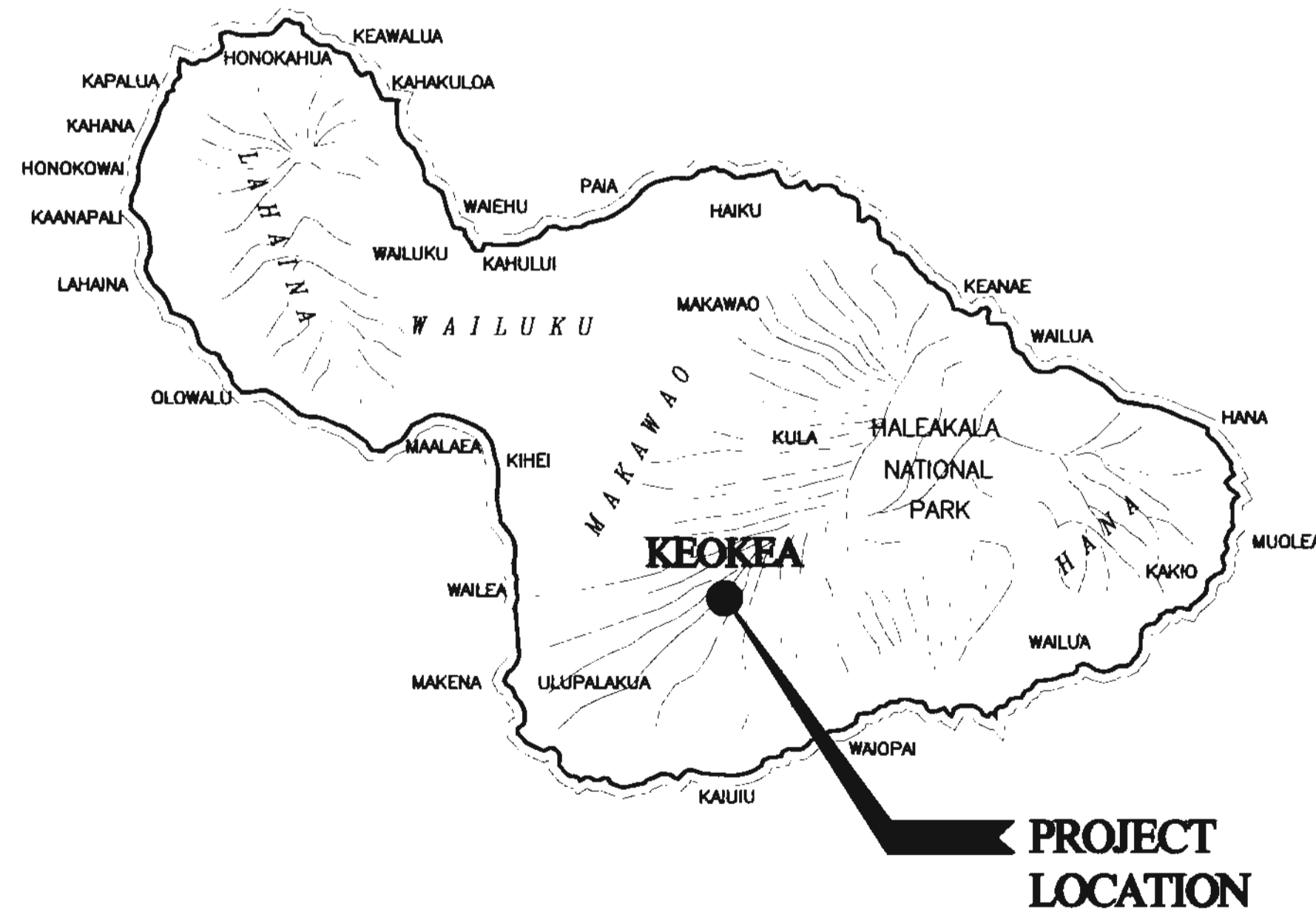
KEOKEA & WAIOHULI, MAKAWAO, MAUI

OWNER AND DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

DSA SUBDIVISION FILE NO. 2.3392

DWS FILE NO. SD 20-032



APPROVED

CHAIRMAN, HAWAIIAN HOMES COMMISSION
DEPARTMENT OF HAWAIIAN HOME LANDS
STATE OF HAWAII

DATE

DIRECTOR, DEPARTMENT OF PUBLIC WORKS
COUNTY OF MAUI

DATE

CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION
DEPARTMENT OF HEALTH, STATE OF HAWAII

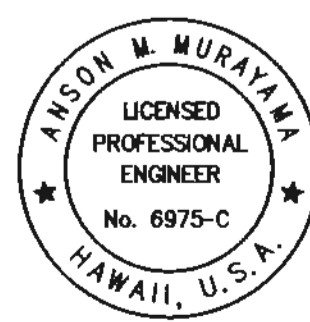
DATE


DIRECTOR, DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
(APPROVAL LIMITED TO IMPROVEMENTS WHICH WILL BE
DEDICATED TO THE DEPARTMENT OF WATER SUPPLY)

DATE

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 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
 Community Planning and Engineering, Inc. <small>Engineering Design Construction Management Infrastructure Planning</small> <small>1288 Queen Emma Street, Third Floor Honolulu, Hawaii</small>			
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI <small>OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS</small> <small>TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</small>			
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DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	
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GENERAL NOTES

- 1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON AVAILABLE "AS-BUILT" OR RECORD CONSTRUCTION PLANS AND ARE APPROXIMATE ONLY AND THEIR ACCURACY IS NOT GUARANTEED.
2. EXISTING CONTOURS AND FEATURES ARE BASED ON TOPOGRAPHIC SURVEY OF KEOKEA PHASE 2" PREPARED BY CONTROL POINT SURVEYING, INC. DATED SEPTEMBER 2019.
3. EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED WITH THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN THE CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.

DEPARTMENT OF WATER SUPPLY NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. IF CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS WILL AFFECT DWS CONSUMERS, CONTRACTOR SHALL NOTIFY CUSTOMERS BY RADIO/NEWSPAPER TWO (2) DAYS BEFORE AND ON DAY OF CONNECTION. CONTRACTOR SHALL NOTIFY CONSUMERS HOUSE-TO-HOUSE ONE (1) DAY BEFORE CONNECTION WORK.
3. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF DWS STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS WATER SYSTEM STANDARDS BEFORE COMMENCING CONSTRUCTION.

DEPARTMENT OF WATER SUPPLY NOTES (CONT.)

- E. PRIOR TO PAVEMENT RESURFACING/RESTORATION WORK, THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH DWS.
9. ANY SLIDING VALVE BOX ASSEMBLY, MANHOLE COVER, OR CONCRETE COLLAR, WHETHER DISCOVERED DAMAGED OR NOT SPECIFIED ON THE PLANS TO BE ADJUSTED OR REPLACED, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL UTILITIES (I.E., WATER SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
11. CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, SHOULDER DRESSING, STRIPING, AND SPEED BUMPS.

DEPARTMENT OF WATER SUPPLY NOTES (CONT.)

- 27. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
28. DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
29. THE CONTRACTOR SHALL SUBMIT ONE (1) SET OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN PDF FORMAT AT FULL PAGE SIZE (24"x36") SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY

- 1. CONTRACTOR SHALL OBTAIN A ROADWAY PERMIT TO PERFORM WORK WITHIN THE COUNTY RIGHT-OF-WAY FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
2. STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
3. ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY (CONT.)

- 10. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
11. THE CONTRACTOR SHALL SUBMIT A PDF OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.

GRADING NOTES

- 1. FINISH SPOT ELEVATIONS AND FINISH CONTOURS, AS SHOWN ON PLAN REPRESENTS FINISH GRADING. THE SITEWORK CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE CONTRACTOR THE LOCATION AND DEPTH OF TOPSOIL. THE FINISH SUBGRADE SHALL REFLECT THE FINISH GRADE LESS SPECIFIED TOPSOIL DEPTH.
2. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE MEASURES OF THE BEST MANAGEMENT PRACTICE (BMP) PLAN. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS.
3. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.

GRADING NOTES (CONT.)

- D. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
E. STATION WATER TRUCK ON-SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION AREAS (WEEKENDS AND HOLIDAYS INCLUDED).
F. USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION. IMPLEMENT AND MAINTAIN THE MEASURES OF THE BMP PLAN.
G. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
H. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

DEPARTMENT OF HEALTH NOTES

- 1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE DEPARTMENT OF HEALTH SHALL BE PAYABLE BY THE CONTRACTOR.
2. THE CONTRACTOR, AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
3. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL."

- THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:
1. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND
2. DISCHARGES OF HYDROTESTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

- IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT <http://health.hawaii.gov/cwb>. THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS REQUIRED BY LAW.

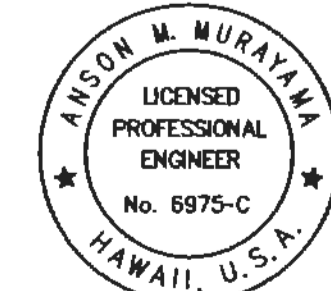
- 4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL REQUIREMENTS OF THE GRADING ORDINANCES.
6. THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF THE BEST MANAGEMENT PRACTICE PLAN AND GENERAL PERMIT COVERING DISCHARGE OF STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND HYDROTESTING WATER.

DEPARTMENT OF PUBLIC WORKS NOTES

- 1. THE CONTRACTOR SHALL ALLOW FOUR WEEKS TO OBTAIN A GRADING PERMIT FROM THE DSA PRIOR TO COMMENCEMENT OF ANY CLEARING AND GRUBBING. A SATISFACTORY DRAINAGE AND EROSION CONTROL PLAN SHALL BE SUBMITTED IN THE EVENT THE GRUBBING AREA EXCEEDS ONE ACRE OR THE PROPOSED CUT OR FILL IS GREATER THAN 15 FEET IN HEIGHT. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL BEST MANAGEMENT PRACTICE MEASURES.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC AND IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2009." THE CONTRACTOR SHALL PREPARE AND OBTAIN NECESSARY APPROVALS OF TRAFFIC CONTROL PLANS IF REQUIRED BY THE DSA.

DISABILITY AND COMMUNICATION ACCESS BOARD (DCAB) REQUIREMENTS

- 1. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED. TEMPORARY PEDESTRIAN PASSAGES SHALL BE ACCESSIBLE PER ADAAG 201.3 AND SHALL COMPLY W/ADAAG 206.1.



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

Community Planning and Engineering, Inc. KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B. KEOKEA & WAIHOLI, MAKAWAO, MAUI. OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS. TAX MAP KEYS: (2)-2-2-002-014 AND (2)-2-2-033-023. GENERAL NOTES - 1. DRAWN BY: HWH, ENGINEER: HWH, FJC, CHECKED BY: AMM.

STOCKPILING

1. ALL STOCKPILING WORK SHALL BE DONE IN ACCORDANCE WITH THE SOILS REPORT BY PSC DATED MARCH 2005 AND APRIL 2013.
2. NO CONTRACTOR SHALL PERFORM ANY STOCKPILING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL."
4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW 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.
5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OF THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS THE FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL STOCKPILING WORK HAS BEEN COMPLETE. STOCKPILING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
7. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
8. THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE BORROW SITE FOR THE PROJECT WHEN THE APPLICATION FOR A STOCKPILING PERMIT IS MADE. THE BORROW SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO STOCKPILING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DPHL, PROVIDED SUCH STOCKPILING WORK IS ALSO IN CONFORMANCE WITH COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL."
10. THE LIMITS OF THE AREA TO BE STOCKPILED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE STOCKPILING WORK.
11. ALL STOCKPILING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS" AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY STOCKPILING WORK IS INITIATED.
13. TEMPORARY EROSION CONTROL SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
14. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR STOCKPILING PERMIT.
15. IF THE STOCKPILING WORK INVOLVES CONTAMINATED SOIL, THEN ALL STOCKPILING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. THE CONTRACTOR SHALL NOTIFY THE DEVELOPMENT SERVICES ADMINISTRATION, DEPT. OF PUBLIC WORKS TO ARRANGE FOR INSPECTORIAL SERVICES AND SUBMIT THREE (3) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
17. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECT TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

BEST MANAGEMENT PRACTICES NOTES

1. ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY HYDOMULCHING EXPOSED AREAS AS SOON AS GRADES ARE ATTAINED.
2. ALL TEMPORARY EROSION CONTROL MEASURES, SUCH AS SILT FENCES, STABILIZED CONSTRUCTION ENTRANCE, AND HYDOMULCHING SHALL BE INSTALLED AND MAINTAINED UNTIL SUCH TIME PERMANENT EROSION CONTROL MEASURES ARE ESTABLISHED.
3. HYDOMULCHING AREAS SHALL BE MAINTAINED UNTIL GRASS HAS BEEN ESTABLISHED.

GRUBBING

1. ALL GRUBBING WORK SHALL BE DONE IN ACCORDANCE WITH THE SOILS REPORTS BY PSC DATED MARCH 2005 AND APRIL 2013.
2. NO CONTRACTOR SHALL PERFORM ANY GRUBBING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, CHAPTER 11-60, "AIR POLLUTION CONTROL."
4. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
5. ALL GRUBBED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER THE GRUBBING WORK HAS BEEN COMPLETED.
6. THE COUNTY SHALL BE INFORMED OF THE LOCATION OF THE DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRUBBING PERMIT IS MADE. THE DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
7. NO GRUBBING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, DPHL, PROVIDED SUCH GRUBBING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, CHAPTER 11-43, "COMMUNITY NOISE CONTROL FOR OAHU."
8. THE LIMITS OF THE AREA TO BE GRUBBED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRUBBING WORK.
9. ALL GRUBBING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54, "WATER QUALITY STANDARDS" AND CHAPTER 11-55, "WATER POLLUTION CONTROL", AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
10. WHERE APPLICABLE AND FEASIBLE, THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY GRUBBING WORK IS INITIATED.
11. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
12. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRUBBING PERMIT.
13. IF THE GRUBBING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRUBBING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
14. THE CONTRACTOR SHALL NOTIFY THE DEVELOPMENT SERVICES ADMINISTRATION DEPT. OF PUBLIC WORKS TO ARRANGE FOR INSPECTORIAL SERVICES AND SUBMIT THREE (3) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
15. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECT TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

DUST CONTROL

1. THE COUNTY INSPECTOR AND/OR THE OWNERS ENGINEER SHALL DIRECT THE CONTRACTOR ON WHERE DUST SCREENS SHALL BE INSTALLED. THE COUNTY INSPECTOR SHALL BE INFORMED OF THESE LOCATIONS.
2. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE PROPERTY OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
3. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL CONTROL DUST EMISSIONS TO THE MAXIMUM EXTENT PRACTICAL THROUGH THE APPLICATION OF BMPs. THAT MAY INCLUDE WATERING WITH TRUCKS OR SPRINKLERS, ERECTION OF DUST FENCES LIMITING THE AREA OF DISTURBANCE AND TIMELY GRASSING OF FINISHED AREAS.

CONSTRUCTION BMPs

1. THE FOLLOWING SPECIAL CONDITIONS APPLY TO ALL LAND DISTURBANCE WORK CONDUCTED UNDER THE GENERAL PERMIT:
 - A. CONSTRUCTION MANAGEMENT TECHNIQUES INCLUDE:
 1. CLEARING AND GRUBBING SHALL BE HELD TO THE MINIMUM NECESSARY FOR GRADING AND EQUIPMENT OPERATION.
 2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN AND SHALL BE CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. TEMPORARY MEASURES MAY BE REMOVED AT THE BEGINNING OF THE WORK DAY, BUT SHALL BE REPLACED AT THE END OF THE WORK DAY.
 3. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED, AS NECESSARY, WEEKLY IN DRY PERIODS AND WITHIN 24-HOUR PERIOD DURING PROLONGED RAINFALL, DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.

CONSTRUCTION BMPs (CONT.)

4. A SPECIAL INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT SITE.
5. THE CONTRACTOR SHALL HAVE PERSONNEL INSPECT, REPAIR AND MAINTAIN THE INGRESS/EGRESS FILTER BERM FOR THE DURATION OF THE PROJECT. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ANY SWEEPING OF GRAVEL, SAND AND DUST THAT MAY DISPERSE FROM THE BERM WITH AN INSPECTION AT BEGINNING OF THE DAY AND A FINAL INSPECTION AT THE END OF THE DAY.
- B. VEGETATION CONTROLS INCLUDE:
 1. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 20 CALENDAR DAYS PRIOR TO SITE DISTURBANCE.
 2. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN 30 CALENDAR DAYS.
 3. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER FINAL GRADING.
- C. STRUCTURAL CONTROLS INCLUDE:
 1. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING BERMS, CHANNELS, SEDIMENT TRAPS, AND OTHER APPROPRIATE CONTROL MEASURES, AS PRACTICAL.
 2. EROSION CONTROL MEASURES SHALL BE DESIGNED ACCORDING TO THE SIZE OF DISTURBED OR DRAINAGE AREAS, TO DETAIN RUNOFF AND TRAP SEDIMENT.
 3. WATER MUST BE DISCHARGED THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION.
 4. MUDDY WATER TO BE PUMPED FROM EXCAVATION AND WORK AREAS MUST BE HELD IN SETTLING BASINS OR TREATED BY FILTRATION OR OTHER APPROPRIATE MEASURES PRIOR TO ITS DISCHARGE INTO STATE WATERS. WATER MUST BE DISCHARGED THROUGH A PIPE OR LINED CHANNEL SO THAT THE DISCHARGE DOES NOT CAUSE EROSION AND SEDIMENTATION.
 5. STORM DRAIN INLET PROTECTION.
 1. REMOVAL OF TEMPORARY SILT FENCE OR FILTER BERM SHALL BE DONE AFTER PERMANENT VEGETATIVE GROUND COVER HAS BEEN ACCEPTED BY THE GOVERNING AGENCY.
- D. REMOVAL OF TEMPORARY SILT FENCE OR FILTER BERM:

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITTEE SHALL INSTALL A FLASHING ARROW SIGNAL.
7. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
10. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION. EXISTING FADED OR OBLITERATED PAVEMENT MARKINGS THAT ARE NECESSARY FOR SAFE TRAFFIC FLOW IN THE CONSTRUCTION AREA SHALL BE REPLACED WITH TEMPORARY OR PERMANENT MARKINGS BEFORE OPENING THE ROADWAY TO PUBLIC TRAFFIC EACH DAY.
11. PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL BE REPLACED UPON COMPLETION OF EACH PHASE OF WORK.
12. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THE RIGHT-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY. FURTHER, THE PERMITTEE SHALL CONTROL TRAFFIC GOING IN AND OUT OF DRIVEWAYS.

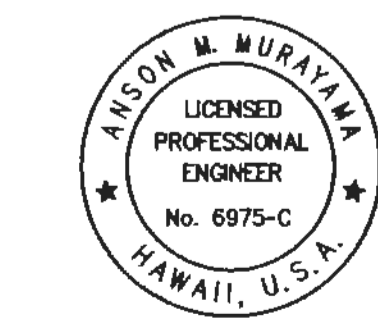
GENERAL NOTES FOR TRAFFIC CONTROL PLAN (CONT.)

13. ONE LANE ROAD (CW20-4) AND FLAGGER AHEAD (CW20-7) SIGNS SHALL BE REMOVED AND COVERED WHEN NO WORK IS BEING PERFORMED AND LANE IS NOT CLOSED.
14. SHOULDER TAPER: WHEN PAVED SHOULDERS HAVING A WIDTH OF 8-FT. OR MORE ARE CLOSED, CHANNELIZING DEVICES SHOULD BE USED TO CLOSE THE SHOULDER IN ADVANCE OF THE MERGING TAPER TO DIRECT VEHICULAR TRAFFIC TO REMAIN WITHIN THE TRAVELED WAY.
15. IF THE TANGENT DISTANCE ALONG THE TEMPORARY DIVERSION IS MORE THAN 600 FT. A REVERSE CURVE (CW1-4(L)) SIGN AND A REVERSE CURVE (CW1-4(R)) SIGN SHALL BE USED INSTEAD OF THE DOUBLE REVERSE CURVE (CW2-1A(L)) SIGN.
16. BUFFER ZONE REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER.
17. ALL CONES SPACED @ 10' O.C.

STANDARD TRAFFIC AND SIGNAGE NOTES

1. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AS AMENDED, AND APPLICABLE SECTIONS OF PART V OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" DATED SEPTEMBER 1984, AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION), UNLESS OTHERWISE SPECIFIED ON THE PLANS, SPECIFICATIONS, OR THE STANDARD TRAFFIC NOTES.
2. THE CONTRACTOR SHALL INSTALL PERMANENT OR TEMPORARY PAVEMENT MARKERS, STRIPING AND MARKINGS AS REQUIRED BY SECTION 629 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION). THE TEMPORARY STRIPING MUST BE INSTALLED AS CLOSE AS POSSIBLE TO THE FINAL LOCATION TO ENSURE PROPER LANE WIDTHS AND SAFE FLOW OF TRAFFIC, BUT NOT IN THE WAY OF PAVEMENT MARKING LAYOUT OPERATIONS.

THE CONTRACTOR SHALL COORDINATE AND HIRE SPECIAL DUTY POLICE OFFICER(S) AS NEEDED TO PROVIDE TRAFFIC CONTROL WHILE WORKING WITHIN THE COUNTY RIGHT OF WAY.
3. THE CONTRACTOR SHALL INFORM THE TRAFFIC DIVISION AT LEAST SIX (6) WORKING DAYS PRIOR TO ANY WORK ON PAVEMENT MARKING OPERATIONS AND/OR SIGN INSTALLATIONS TO SCHEDULE A REVIEW AND APPROVAL OF THE STRIPING AND/OR SIGNING PLANS.
4. THE APPROVED STRIPING PLAN SHALL BE LAID OUT USING THINNED-OUT PAINT OR OTHER APPROVED METHODS. FIELD ADJUSTMENTS SHALL BE MADE AS DIRECTED BY THE ENGINEER BEFORE THE FINAL MARKINGS ARE APPLIED.
5. ALL PAVEMENT MARKINGS THAT BECOME INAPPLICABLE SHALL BE REMOVED BY THE CONTRACTOR AT HIS OWN EXPENSE. REMOVAL SHALL BE BY ERADICATION OR BY OTHER METHODS APPROVED BY THE ENGINEER BEFORE THE NEW PAVEMENT MARKINGS ARE APPLIED. EXCESSIVE COUING OF THE PAVEMENT IS NOT ACCEPTABLE AND SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
6. ALL PAVEMENT STRIPING SHALL BE WITH REFLECTIVE THERMOPLASTIC COMPOUND PAVEMENT MARKING AS SPECIFIED IN SECTIONS 629 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (2005 EDITION) ON ALL ROADWAYS. THE CONTRACTOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE THERMOPLASTIC MATERIAL TO BE USED MEETS THE CURRENT STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
7. HEAT APPLIED PRE-FORMED THERMOPLASTIC PAVEMENT MARKING TAPE WITH VISIBLE TEMPERATURE INDICATORS, OR AN EQUAL PAVEMENT MARKING TAPE THAT IS APPROVED BY THE TRAFFIC DIVISION MAY BE USED FOR CROSSWALKS, STOPLINES, PAVEMENT ARROWS, ALPHABETS, & SYMBOLS IN LIEU OF THERMOPLASTIC COMPOUND.
8. REFLECTORIZED RAISED PAVEMENT MARKERS SHALL BE THE REGULAR SIZED MARKERS WITH APPROXIMATE DIMENSIONS OF 4" BY 4" BY 0.7". THE CONTRACTOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE CERTIFYING THAT THE RAISED PAVEMENT MARKERS TO BE USED MEETS AND OR EXCEEDS THE CURRENT STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
9. UPON COMPLETION OF THE CONSTRUCTION WORK, THE CONTRACTOR SHALL RESTRIPE ALL PAVEMENT MARKINGS WITHIN THE CONSTRUCTION WORK AREA AND ADJACENT ROADWAY PAVEMENTS UP TO 300 FEET BEYOND THE CONSTRUCTION AREA IN ACCORDANCE WITH ITEM 6 OF THE CURRENT STANDARD TRAFFIC NOTES. ALL TRAFFIC SIGNS AND POSTS WITHIN THE CONSTRUCTION AREA AND ADJACENT AREAS THAT HAVE BEEN DAMAGED, REMOVED, OR ADVERSELY AFFECTED BY THE CONSTRUCTION WORK SHALL BE REPLACED BY THE CONTRACTOR.



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 1250 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>GENERAL NOTES - 2</p>			
DRAWN BY: HW1	ENGINEER: HW1, FJC	CHECKED BY: AMM	
<p>FILE _____ POCKET _____ FOLDER _____ NO. _____</p>			

WATER POLLUTION AND EROSION CONTROL NOTES

1. GENERAL:

- A. SEE SPECIAL PROVISION SECTION 209 – WATER POLLUTION AND EROSION CONTROL. SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE ENGINEER; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT. IN ADDITION, APPENDIX A LISTS POTENTIAL POLLUTANT SOURCES AND CORRESPONDING BMPs USED TO MITIGATE THE POLLUTANTS.
- B. FOLLOW THE GUIDELINES IN THE CURRENT HDOT CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT. FOR ANY CONFLICTING REQUIREMENTS BETWEEN THE MANUAL AND APPLICABLE BID DOCUMENTS, THE APPLICABLE BID DOCUMENTS WILL GOVERN. SHOULD A REQUIREMENT NOT BE CLEARLY DESCRIBED WITHIN THE APPLICABLE BID DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INTERPRETATION. FOR THE PURPOSES OF CLARIFICATION UNDER NOTE A.2, "APPLICABLE BID DOCUMENTS" INCLUDE THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, PERMITS, AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WHEN APPLICABLE.
- C. FOLLOW THE GUIDELINES IN THE HONOLULU'S CITY & COUNTY "RULES RELATING TO SOIL EROSION STANDARDS AND GUIDELINES" ALONG WITH APPLICABLE SOIL EROSION GUIDELINES FOR PROJECTS ON MAUI, MOLOKAI, KAUAI, AND HAWAII.
- D. THE ENGINEER MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$27,500 FOR NON-COMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209 AND SPECIAL PROVISIONS, FOR EVERY DAY OF NON-COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT OF ASSESSED PER DAY.
- E. THE ENGINEER WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NON-COMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE.
- F. IF NECESSARY, INSTALL A RAIN GAGE PRIOR TO ANY FIELD WORK INCLUDING THE INSTALLATION OF ANY SITE-SPECIFIC BEST MANAGEMENT PRACTICES. THE RAIN GAGE SHALL HAVE A TOLERANCE OF AT LEAST 0.05 INCHES OF RAINFALL. INSTALL THE RAIN GAGE ON THE PROJECT SITE IN AN AREA THAT WILL NOT DETER RAINFALL FROM ENTERING THE GAGE OPENING. DO NOT INSTALL IN A LOCATION WHERE RAIN WATER MAY SPLASH INTO RAIN GAGE. THE RAIN GAGE INSTALLATION SHALL BE STABLE AND PLUMBED. DO NOT BEGIN FIELD WORK UNTIL THE RAIN GAGE IS INSTALLED AND SITE-SPECIFIC BEST MANAGEMENT PRACTICES ARE IN-PLACE.
- G. SUBMIT SITE-SPECIFIC BMP PLAN TO THE ENGINEER ALONG WITH A COMPLETED SITE-SPECIFIC BMP REVIEW CHECKLIST WITHIN 30 CALENDAR DAYS OF CONTRACT EXECUTION. THE SITE-SPECIFIC BMP REVIEW CHECKLIST MAY BE OBTAINED FROM [HTTP://WWW.STORMWATERHAWAII.COM](http://www.stormwaterhawaii.com).

2. WASTE DISPOSAL:

A. WASTE MATERIALS:

COLLECT AND STORE ALL WASTE MATERIALS IN A SECURELY LIDDED METAL DUMPSTER OR ROLL OFF CONTAINER WITH COVER TO KEEP RAIN OUT OR LOSS OF WASTE DURING WINDY CONDITIONS. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. DEPOSIT ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE IN THE DUMPSTER. EMPTY THE DUMPSTER WEEKLY OR WHEN THE CONTAINER IS TWO-THIRDS FULL, WHICHEVER IS SOONER. DO NOT BURY CONSTRUCTION WASTE MATERIALS ON-SITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. POST NOTICES STATING THESE PRACTICES IN THE OFFICE TRAILER, ON A WEATHERPROOF BULLETIN BOARD, OR OTHER ACCESSIBLE LOCATION ACCEPTABLE TO THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. SUBMIT THE SOLID WASTE DISCLOSURE FORM FOR CONSTRUCTION SITES TO THE ENGINEER WITHIN 30 CALENDAR DAYS OF CONTRACT EXECUTION. PROVIDE A COPY OF ALL THE DISPOSAL RECEIPTS FROM THE FACILITY PERMITTED BY THE DEPARTMENT OF HEALTH TO RECEIVE SOLID WASTE TO THE ENGINEER MONTHLY. THIS SHOULD ALSO INCLUDE DOCUMENTATION FROM ANY INTERMEDIARY FACILITY WHERE SOLID WASTE IS HANDLED OR PROCESSED.

B. HAZARDOUS WASTE:

DISPOSE ALL HAZARDOUS WASTE MATERIALS IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS AND BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

C. SANITARY WASTE:

COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED. POSITION SANITARY FACILITIES WHERE THEY ARE SECURE AND WILL NOT BE TIPPED OVER OR KNOCKED DOWN.

3. EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES:

- A. FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, INSPECT AT THE FOLLOWING INTERVALS. FOR CONSTRUCTION AREAS DISCHARGING TO NUTRIENT OR SEDIMENT IMPAIRED WATERS, INSPECT ALL CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF ANY RAINFALL EVENT OF 0.25 INCHES OR GREATER WITHIN A 24 HOUR PERIOD. FOR CONSTRUCTION AREAS DISCHARGING TO WATERS NOT IMPAIRED FOR NUTRIENT OR SEDIMENTS, INSPECT ALL CONTROL MEASURES WEEKLY. INSPECTIONS ARE ONLY REQUIRED DURING THE PROJECT'S NORMAL WORKING HOURS. THE DISCHARGE POINT WATER CLASSIFICATION MAY BE FOUND IN THE SWPPP.
- B. MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES PER SPECIFICATION SECTIONS 3.02 FIELD QUALITY CONTROL AND 3.03 INSPECTIONS. IF REPAIR IS NECESSARY, INITIATE REPAIR IMMEDIATELY AND COMPLETE BY THE CLOSE OF THE NEXT WORK DAY IF THE PROBLEM DOES NOT REQUIRE SIGNIFICANT REPAIR OR REPLACEMENT, OR IF THE PROBLEM CAN BE CORRECTED THROUGH ROUTINE MAINTENANCE. WHEN INSTALLATION OF A NEW EROSION OR SEDIMENT CONTROL OR A SIGNIFICANT REPAIR IS NEEDED, INSTALL THE NEW OR MODIFIED CONTROL OR COMPLETE THE REPAIR NO LATER THAN 7 CALENDAR DAYS FROM THE TIME OF DISCOVERY. "IMMEDIATELY" MEANS THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE OR PREVENT DISCHARGE OF POLLUTANTS UNTIL A PERMANENT SOLUTION IS INSTALLED AND MADE OPERATIONAL. IF A PROBLEM IS IDENTIFIED AT A TIME IN THE DAY IN WHICH IT IS TOO LATE TO INITIATE REPAIR, INITIATION OF REPAIR SHALL BEGIN ON THE FOLLOWING WORK DAY.
- C. REMOVE BUILT-UP SEDIMENT FROM THE SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. REMOVE SEDIMENT FROM THE OTHER PERIMETER SEDIMENT CONTROL DEVICES WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE DEVICE.
- D. INSPECT SILT SCREEN OR FENCE FOR DEPTH OF SEDIMENT, TEARS, TO VERIFY THAT THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS OR CONCRETE SLAB AND TO VERIFY THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. INSPECT AND VERIFY THE BOTTOM OF THE SILT SCREEN IS BURIED A MINIMUM OF 6 INCHES BELOW THE EXISTING GROUND.
- E. INSPECT TEMPORARY AND PERMANENT SEEDING AND PLANTING FOR BARE SPOTS, WASHOUTS AND HEALTHY GROWTH.
- F. COMPLETE AND SUBMIT TO THE ENGINEER A MAINTENANCE INSPECTION REPORT WITHIN 24 HOURS AFTER EACH INSPECTION.
- G. PROVIDE A STABILIZED CONSTRUCTION ENTRANCE AT ALL POINTS OF EXIT ONTO PAVED ROADS TO REDUCE VEHICLE TRACKING OF SEDIMENTS. INCLUDE STABILIZED CONSTRUCTION ENTRANCE IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS. MINIMUM LENGTH SHOULD BE 50 FEET. MINIMUM WIDTH SHOULD BE 30 FEET. MINIMUM DEPTH SHOULD BE 12 INCHES OR AS RECOMMENDED BY THE SOILS ENGINEER AND UNDERLAIN WITH GEO-TEXTILE FABRIC. IF MINIMUM DIMENSIONS CANNOT BE MET, PROVIDE OTHER STABILIZATION TECHNIQUES THAT REMOVE SEDIMENT PRIOR TO EXIT. CLEAN THE PAVED STREET ADJACENT TO THE SITE ENTRANCE DAILY OR AS REQUIRED TO REMOVE ANY EXCESS MUD, COLD-PLAINED MATERIALS, DIRT OR ROCK TRACKED FROM THE SITE. DO NOT HOSE DOWN THE STREET WITHOUT CONTAINING OR VACUUMING WASH WATER. COVER DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WITH A TARPAULIN. REMOVE SEDIMENT TRACKED ONTO THE STREET, SIDEWALK, OR OTHER PAVED AREA BY THE END OF THE DAY IN WHICH THE TRACK-OUT OCCURS.
- H. INCLUDE DESIGNATED CONCRETE WASHOUT AREA(S) IN THE WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS.
- I. SUBMIT THE NAME OF A SPECIFIC INDIVIDUAL DESIGNATED RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES AND FILING OUT THE INSPECTION AND MAINTENANCE REPORT.
- J. PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL RECEIVE TRAINING FROM THE CONTRACTOR. THEY SHALL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ON-SITE IN GOOD WORKING ORDER.
- K. CONTAIN, REMOVE, AND DISPOSE SLURRY GENERATED FROM SAW CUTTING OF PAVEMENT IN ACCORDANCE WITH APPROVED BMP PRACTICES. DO NOT ALLOW DISCHARGE INTO THE DRAINAGE SYSTEM OR STATE WATERS.
- L. FOR PROJECTS WITH AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, IMMEDIATELY INITIATE STABILIZING EXPOSED SOIL AREAS UPON COMPLETION OF EARTH-DISTURBING ACTIVITIES FOR AREAS WHERE EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED. EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED WHEN CLEARING AND EXCAVATION WITHIN ANY AREA OF THE CONSTRUCTION SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES HAS BEEN COMPLETED. EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY CEASED WHEN CLEARING, GRADING, AND EXCAVATION WITHIN ANY AREA OF THE SITE THAT WILL NOT INCLUDE PERMANENT STRUCTURES WILL NOT RESUME (I.E., THE LAND WILL BE IDLE) FOR A PERIOD OF 14 OR MORE CALENDAR DAYS, BUT SUCH ACTIVITIES WILL RESUME IN THE FUTURE. FOR CONSTRUCTION AREAS DISCHARGING INTO WATERS NOT IMPAIRED FOR NUTRIENTS SEDIMENTS, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. FOR CONSTRUCTION AREAS DISCHARGING INTO NUTRIENT OR SEDIMENT IMPAIRED WATERS, COMPLETE INITIAL STABILIZATION WITHIN 7 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES. CLASSIFICATION OF WATER AT THE DISCHARGE POINT MAY BE FOUND IN THE SWPPP.
- M. FOR PROJECTS WITHOUT AN NPDES PERMIT FOR CONSTRUCTION ACTIVITIES, COMPLETE INITIAL STABILIZATION WITHIN 14 CALENDAR DAYS AFTER THE TEMPORARY OR PERMANENT CESSATION OF EARTH-DISTURBING ACTIVITIES.

4. GOOD HOUSEKEEPING, BEST MANAGEMENT PRACTICES:

A. MATERIALS POLLUTION PREVENTION PLAN

- I. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ON-SITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY.
 - CONCRETE
 - CLEANING SOLVENTS
 - WOOD
 - DETERGENTS
 - MASONRY BLOCK
 - PAINTS (ENAMEL AND LATEX)
 - HERBICIDES AND PESTICIDES
 - METAL STUDS
 - FERTILIZERS
 - CURING COMPOUNDS
 - PETROLEUM BASED PRODUCTS
 - ADHESIVES
- II. USE MATERIAL MANAGEMENT PRACTICES TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. MAKE AN EFFORT TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.
- III. STORE ALL MATERIALS STORED ON-SITE IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- IV. KEEP PRODUCTS IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- V. DO NOT MIX SUBSTANCES WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- VI. WHENEVER POSSIBLE, USE A PRODUCT UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.
- VII. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL.
- VIII. CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE.

B. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN

- I. KEEP PRODUCTS IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- II. RETAIN ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (SDS) FORMERLY MATERIAL SAFETY DATA SHEETS (MSDS).
- III. DISPOSE OF SURPLUS PRODUCTS ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND LOCAL AND STATE REGULATIONS.

C. ON-SITE AND OFF-SITE PRODUCT SPECIFIC PLAN

THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON-SITE:

- I. PETROLEUM BASED PRODUCTS: MONITOR ALL ON-SITE VEHICLES FOR LEAKS AND PERFORM REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. STORE PETROLEUM PRODUCTS IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. APPLY ASPHALT SUBSTANCES USED ON-SITE ACCORDING TO THE MANUFACTURER'S RECOMMENDATION.
- II. FERTILIZERS: APPLY FERTILIZERS USED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER AND FEDERAL, STATE, AND LOCAL REQUIREMENTS. AVOID APPLYING JUST BEFORE A HEAVY RAIN EVENT. APPLY AT THE APPROPRIATE TIME OF YEAR FOR THE LOCATION, AND PREFERABLY TIMED TO COINCIDE AS CLOSELY AS POSSIBLE TO THE PERIOD OF MAXIMUM VEGETATION UPTAKE AND GROWTH. ONCE APPLIED, WORK FERTILIZER INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. DO NOT APPLY TO STORM CONVEYANCE CHANNELS WITH FLOWING WATER. STORAGE SHALL BE IN A COVERED SHED OR IN AND AREA WHERE FERTILIZER WILL NOT COME INTO CONTACT WITH PRECIPITATION OR STORMWATER. TRANSFER THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
- III. PAINTS: SEAL AND STORE ALL CONTAINERS WHEN NOT REQUIRED FOR USE. DO NOT DISCHARGE EXCESS PAINT TO THE DRAINAGE SYSTEM, SANITARY SEWER SYSTEM, OR STATE WATERS. DISPOSE PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND STATE AND LOCAL REGULATIONS.
- IV. CONCRETE TRUCKS: WASHOUT OR DISCHARGE CONCRETE TRUCK DRUM WASH WATER ONLY AT A DESIGNATED SITE AS FAR AS PRACTICABLE FROM STORM DRAIN INLETS OR STATE WATERS. DO NOT DISCHARGE WATER IN THE DRAINAGE SYSTEM OR STATE WATERS. CLEAN DISPOSAL SITE AS REQUIRED OR AS REQUESTED BY THE ENGINEER.
- D. SPILL CONTROL PLAN
 - I. POST A SPILL PREVENTION PLAN TO INCLUDE MEASURES TO PREVENT AND CLEAN UP EACH SPILL.
 - II. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. POST THE NAMES OF RESPONSIBLE SPILL PERSONNEL IN THE MATERIAL STORAGE AREA ON A WEATHERPROOF BULLETIN BOARD OR OTHER ACCESSIBLE LOCATION ACCEPTABLE TO THE ENGINEER AND IN THE OFFICE TRAILER ON-SITE.
 - III. CLEARLY POST MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP. MAKE SITE PERSONNEL AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

4. GOOD HOUSEKEEPING, BEST MANAGEMENT PRACTICES (CONT.):

- IV. KEEP AMPLE MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP IN THE MATERIAL STORAGE AREA ON-SITE.
- V. CLEAN UP ALL SPILLS IMMEDIATELY AFTER DISCOVERY.
- VI. KEEP THE SPILL AREA WELL VENTILATED. PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- VII. REPORT SPILLS OF TOXIC HAZARDOUS MATERIAL TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. WHERE A LEAK, SPILL, OR OTHER RELEASE CONTAINING A HAZARDOUS SUBSTANCE OR OIL IN AN AMOUNT EQUAL TO OR IN EXCESS OF A REPORTABLE QUANTITY ESTABLISHED UNDER EITHER 40 CFR PART 110, 40 CFR PART 117, OR 40 CFR PART 302 OCCURS DURING A 24-HOUR PERIOD, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS THE CONTRACTOR HAS KNOWLEDGE OF THE DISCHARGE. THE ENGINEER SHALL NOTIFY THE NATIONAL RESPONSE CENTER (NRC) AT (800) 424-8802, THE CLEAN WATER BRANCH DURING REGULAR BUSINESS HOURS AT 586-4309, AND THE HAWAII STATE HOSPITAL OPERATOR AT 247-2191 AND THE CLEAN WATER BRANCH (DQH-CWB) VIA EMAIL AT CleanWaterBranch@doh.hawaii.gov DURING NON-BUSINESS HOURS IMMEDIATELY. THE CONTRACTOR SHALL ALSO PROVIDE TO THE ENGINEER, WITHIN 7 CALENDAR DAYS OF KNOWLEDGE OF THE RELEASE, A DESCRIPTION OF THE RELEASE, THE CIRCUMSTANCES LEADING TO THE RELEASE, AND DATE OF THE RELEASE. THE ENGINEER WILL PROVIDE THIS INFORMATION TO THE DQH-CWB. THE ENGINEER WILL PROVIDE INFORMATION TO THE NRC IF REQUESTED.

5. PERMIT REQUIREMENTS:

- A. A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR CONSTRUCTION ACTIVITIES OF ONE ACRE OR MORE OF DISTURBED AREA IS REQUIRED FOR THIS PROJECT. IF THE CONTRACTOR REQUIRES EXTRA LAND DISTURBANCE, INCLUDING STAGING AND STORAGE AREAS, THAT IS NOT COVERED BY THE NPDES PERMIT OBTAINED BY THE STATE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE REQUIRED NPDES CONSTRUCTION ACTIVITIES PERMIT TO COVER THIS ADDITIONAL DISTURBED AREA. SEE HAWAII ADMINISTRATIVE RULES CHAPTER 11-55, APPENDIX C FOR DEFINITION OF LAND DISTURBANCE. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE APPLICABLE NPDES PERMIT DOCUMENTS ON THE BID PACKAGE COMPACT DISC.
- B. COMPLY WITH ALL APPLICABLE STATE AND FEDERAL PERMIT CONDITIONS. PERMITS MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
 - I. NPDES PERMIT FOR CONSTRUCTION ACTIVITIES
 - II. NPDES PERMIT FOR CONSTRUCTION DEMATERING
 - III. NPDES PERMIT FOR HYDROTESTING WATERS
 - IV. WATER QUALITY CERTIFICATION
 - V. STREAM CHANNEL ALTERATION PERMIT
 - VI. SECTION 404 ARMY CORPS OF ENGINEER PERMIT

6. SITE-SPECIFIC BMP REQUIREMENTS:

EACH BMP BELOW IS REFERENCED TO THE CORRESPONDING SECTION OF THE CURRENT HDOT CONSTRUCTION BEST MANAGEMENT PRACTICES FIELD MANUAL AND APPROPRIATE SUPPLEMENTAL SHEETS. THE MANUAL MAY BE OBTAINED FROM THE HDOT STATEWIDE STORMWATER MANAGEMENT PROGRAM WEBSITE AT <http://www.stormwaterhawaii.com/resources/under-construction-best-management-practices-field-manual-supplemental-bmp-sheets-are-located-at> http://stormwaterhawaii.com/resources/contractors/contractors_bmpmanual.aspx UNDER CONCRETE CURING AND IRRIGATION WATER.

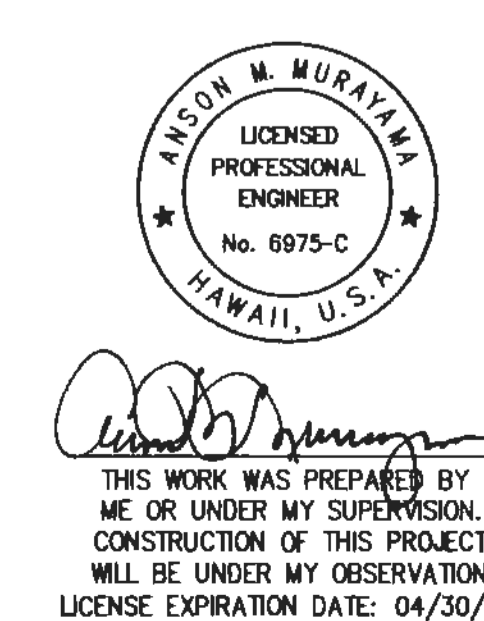
THE REQUIREMENTS FOR WATER POLLUTION, DUST, AND EROSION CONTROL SUBMITTALS ARE INCLUDED IN SECTION 209 OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2005 AND APPLICABLE SPECIAL PROVISIONS. A LIST OF POLLUTANT SOURCES AND CORRESPONDING BMP USED TO MITIGATE THE POLLUTANTS ARE INCLUDED IN SECTION 209 OF THE SPECIAL PROVISIONS UNDER APPENDIX A.

FOLLOW THE REQUIREMENTS BELOW:

- A. PROTECT ALL DRAINAGE INLETS RECEIVING RUNOFF FROM DISTURBED AREAS (SC-2).
- B. CONTAIN ON-SITE RUNOFF USING PERIMETER SEDIMENT CONTROLS
 - I. SC-1 SILT FENCE
 - II. SC-5 VEGETATED FILTER STRIPS AND BUFFERS
 - III. SC-8 COMPOST FILTER BERM
 - IV. SC-13 SANDBAG BARRIER
 - V. SC-14 BRUSH OR ROCK FILTER
- C. CONTROL OFF-SITE RUNOFF FROM ENTERING CONSTRUCTION AREA
 - I. EC-8 RUN-ON DIVERSION
 - II. SC-6 EARTH DIKE
 - III. SC-7 TEMPORARY DRAINS AND SWALES
- D. INCORPORATE APPLICABLE SITE MANAGEMENT BMP
 - I. SM-1 EMPLOYEE TRAINING
 - II. SM-2 MATERIAL DELIVERY AND STORAGE
 - III. SM-3 MATERIAL USE
 - IV. SM-4 PROTECTION OF STOCKPILES
 - V. SM-6 SOLID WASTE MANAGEMENT
 - VI. SM-7 SANITARY/SEPTIC WASTE MANAGEMENT
 - VII. SM-9 HAZARDOUS WASTE MANAGEMENT
 - VIII. SM-10 SPILL PREVENTION AND CONTROL
 - IX. SM-11 VEHICLE AND EQUIPMENT CLEANING
 - X. SM-12 VEHICLE AND EQUIPMENT MAINTENANCE
 - XI. SM-13 VEHICLE AND EQUIPMENT REFUELING
 - XII. SM-14 SCHEDULING
 - XIII. SM-15 LOCATION OF POTENTIAL SOURCES OF SEDIMENT
 - XIV. SM-16 PRESERVATION OF EXISTING VEGETATION
 - XV. SM-18 DUST CONTROL

6. SITE-SPECIFIC BMP REQUIREMENTS (CONT.):

- E. CONTAIN POLLUTANTS WITHIN THE CONSTRUCTION STAGING/STORAGE AREA BMP WITH APPLICABLE PERIMETER SEDIMENT CONTROLS AND SITE MANAGEMENT BMP. INCLUDE A STABILIZED CONSTRUCTION ENTRANCE/EXIT (EC-2) FOR ALL AREAS WHICH EXIT ONTO A PAVED STREET. RESTRICT VEHICLE ACCESS TO THESE POINTS.
- F. MANAGE CONCRETE WASTE INCLUDING INSTALLING A CONCRETE WASHOUT AREA (SM-5) AND PROPERLY DISPOSING OF CONCRETE CURING WATER (CALIFORNIA STORMWATER BMP HANDBOOK NS-12 CONCRETE CURING.)
- G. REMOVE SAW CUT SLURRY AND HYDRODEMOLITION WATER FROM THE SITE BY VACUUMING. PROVIDE STORM DRAIN PROTECTION AND/OR PERIMETER SEDIMENT CONTROLS DURING SAW CUTTING AND HYDRODEMOLITION WORK.



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<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>GENERAL NOTES - 3</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	
DWG. NO. C-4 SHEET 05 OF 79 SHEETS			
FILE	PROJECT	FOLDER	NO.

BENCHMARK
STREET SURVEY MON.
ELEV. = 2444.72

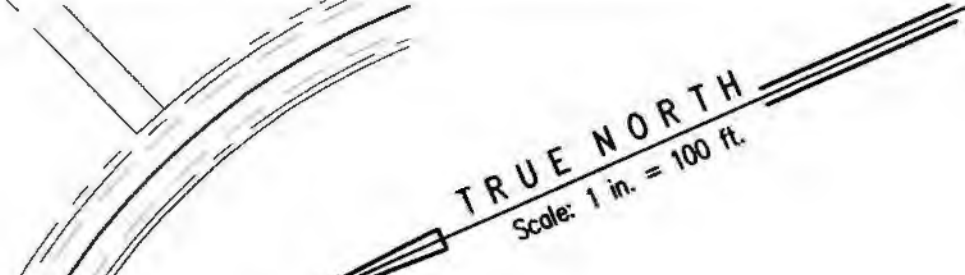
BENCHMARK
STREET SURVEY MON.
PI STA. 1+19.17 O/S 6+31
ELEV. = 2442.82

BENCHMARK
STREET SURVEY MON.
ELEV. = 2386.09

BENCHMARK
STREET SURVEY MON.
PI STA. 18+38.13 O/S 0+07
ELEV. = 2378.50

BENCHMARK
STREET SURVEY MON.
ELEV. = 2354.13

BENCHMARK
STREET SURVEY MON.
ELEV. = 2352.16

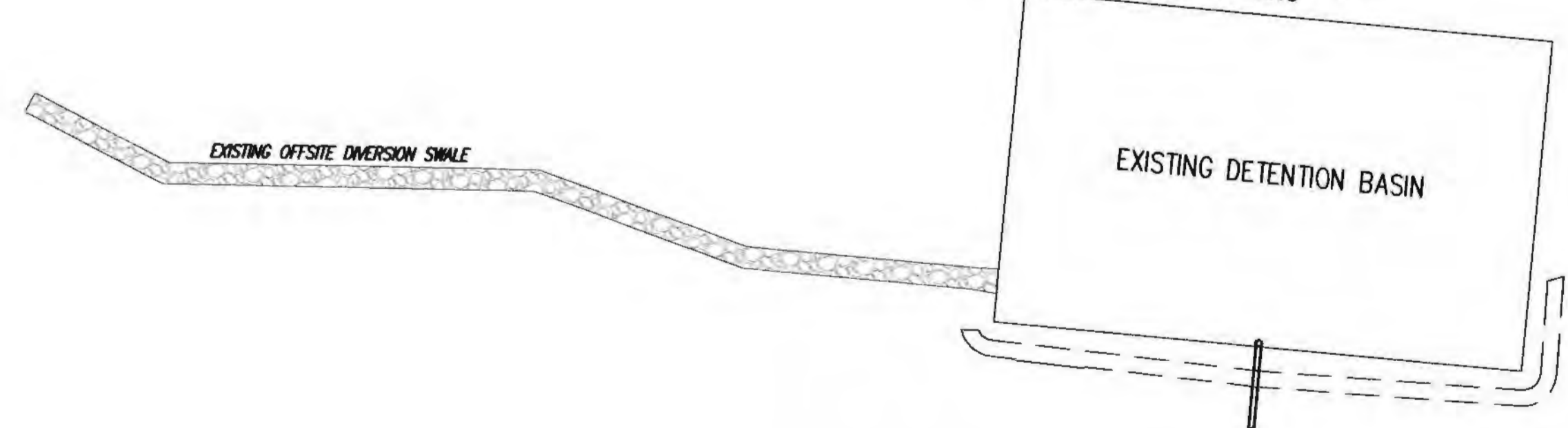
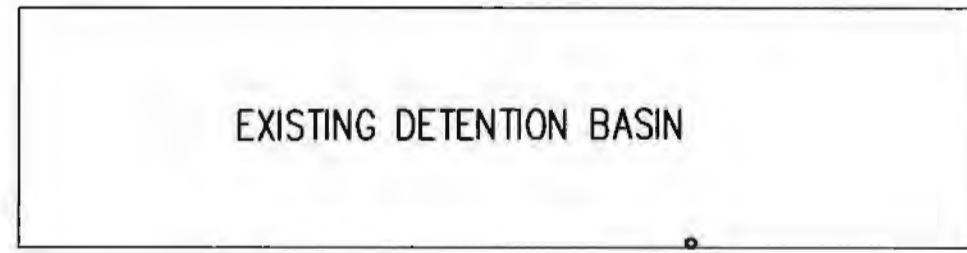
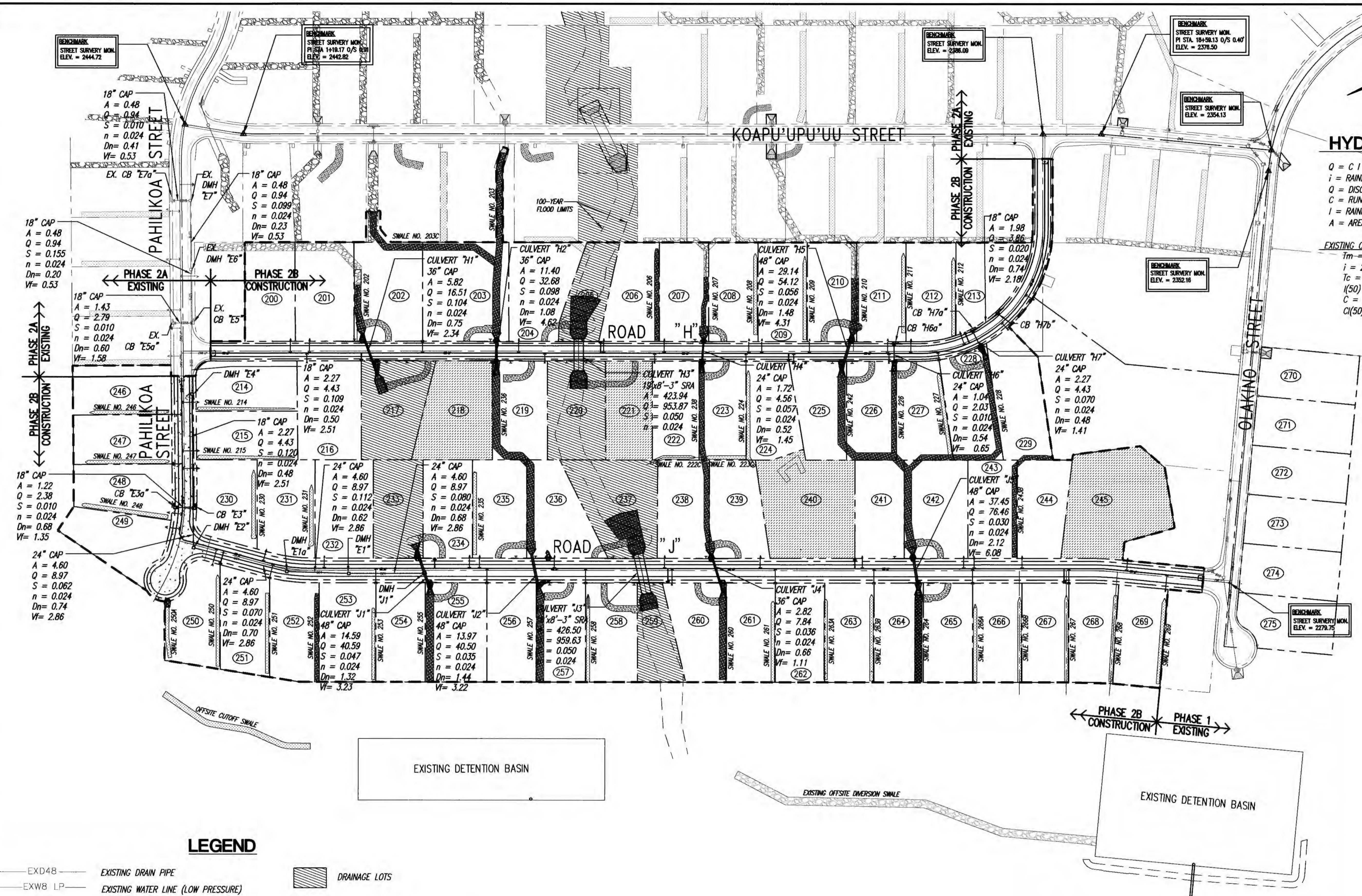


HYDROLOGIC DESIGN DATA

$Q = C I A$
 i = RAINFALL INTENSITY FOR 1 HR. (IN./HR.)
 Q = DISCHARGE QUANTITY (CFS)
 C = RUNOFF COEFFICIENT
 I = RAINFALL INTENSITY FOR T_c DURATION (IN./HR.)
 A = AREA IN ACRES (AC)

EXISTING OR PREDEVELOPMENT CONDITIONS WAIHOLI RESIDENTIAL LOTS (20,000 MIN.)
 T_m = 50 YRS T_m = 50 YRS
 i = 2.9 IN./HR i = 2.9 IN./HR
 T_c = 35 MINS. T_c = 9 MINS.
 $I(50)$ = 3.75 IN./HR. $I(50)$ = 6.8 IN./HR.
 C = 0.28 C = 0.39
 $C I(50)$ = 1.05 CFS/AC. $C I(50)$ = 2.65 CFS/AC.

NOTE:
1. LOTS 218, 221, 240 AND 245 ARE DESIGNATED AS ARCHAEOLOGICAL PRESERVATION LOTS. THESE LOTS WILL NOT BE DEVELOPED AND WATER SERVICE LATERALS WILL NOT BE INSTALLED FOR THE LOTS.

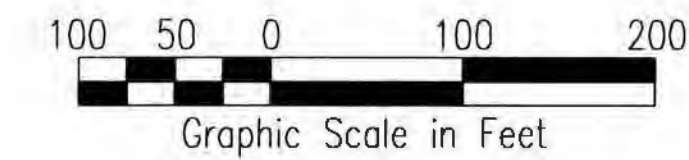


LEGEND

- EXD48— EXISTING DRAIN PIPE
- EXW8 LP— EXISTING WATER LINE (LOW PRESSURE)
- D48— NEW DRAIN PIPE
- WB LP— NEW WATER LINE (LOW PRESSURE)
- - - - - LIMITS OF 100-YR STORM
- - - - - PROPERTY LINE
- CAP CORRUGATED ALUMINUM PIPE
- HDPPE HIGH DENSITY POLYETHYLENE PIPE
- SRA SINGLE RADIUS ARCH CULVERT
- CB DRAIN CATCH BASIN
- DMH DRAIN MANHOLE
- A AREA, ACS
- Q DRAIN RUNOFF, CFS
- S SLOPE OF PIPE, FT/FT
- Dn NORMAL DEPTH OF FLOW, FT
- Vf FULL FLOW VELOCITY, FPS
- (180) LOT NUMBER
- [Hatched Box] DRAINAGE LOTS
- [Dotted Box] ARCHAEOLOGICAL PRESERVATION LOTS
- [Stippled Box] CONCRETE PAVEMENT
- [Cross-hatched Box] CULVERT ACCESS ROAD
- [Grass Pattern Box] GRP SWALE
- [Solid Grey Box] GRASS SWALE

GENERAL LAYOUT PLAN

SCALE: 1"=100'



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

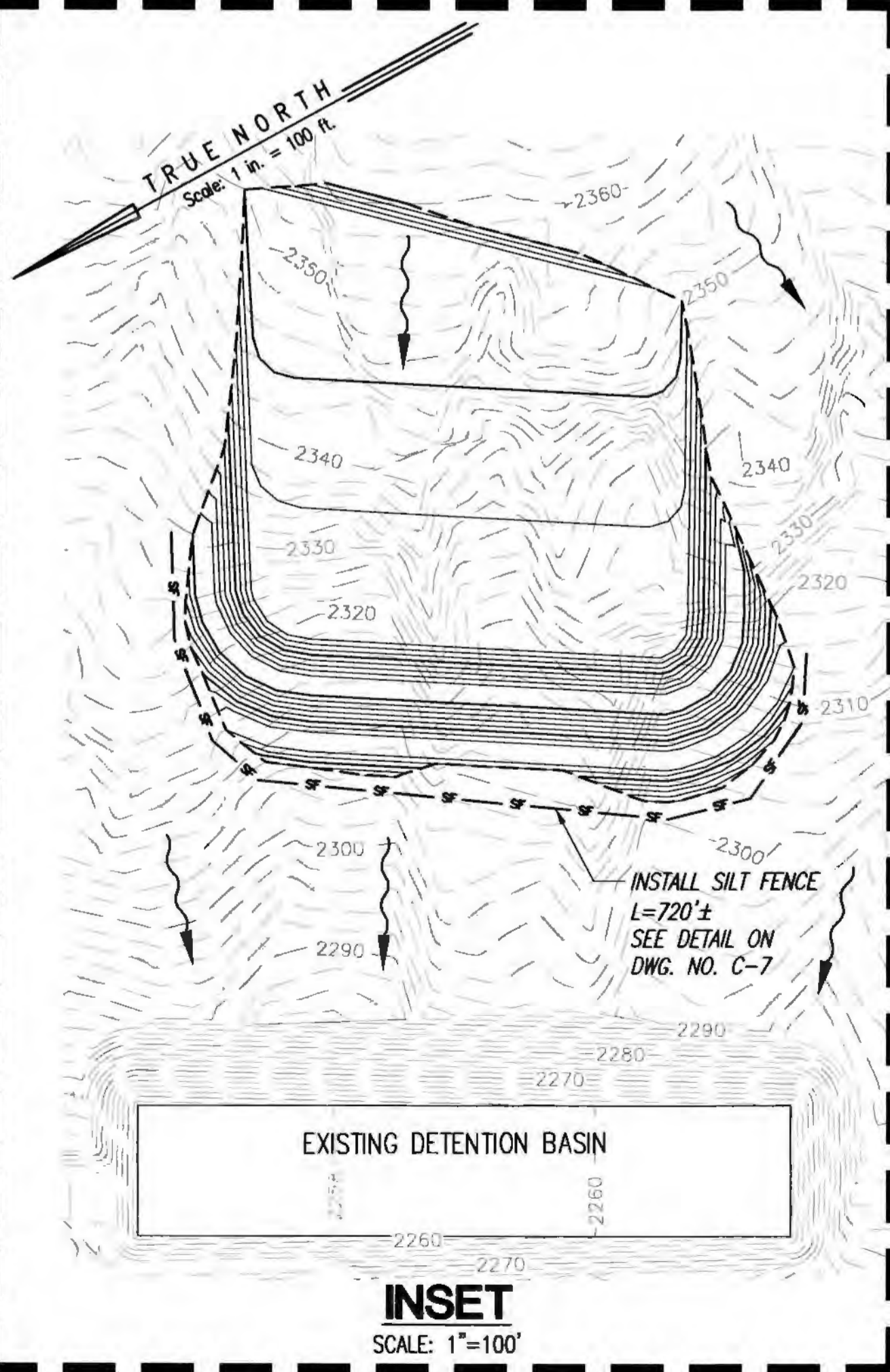
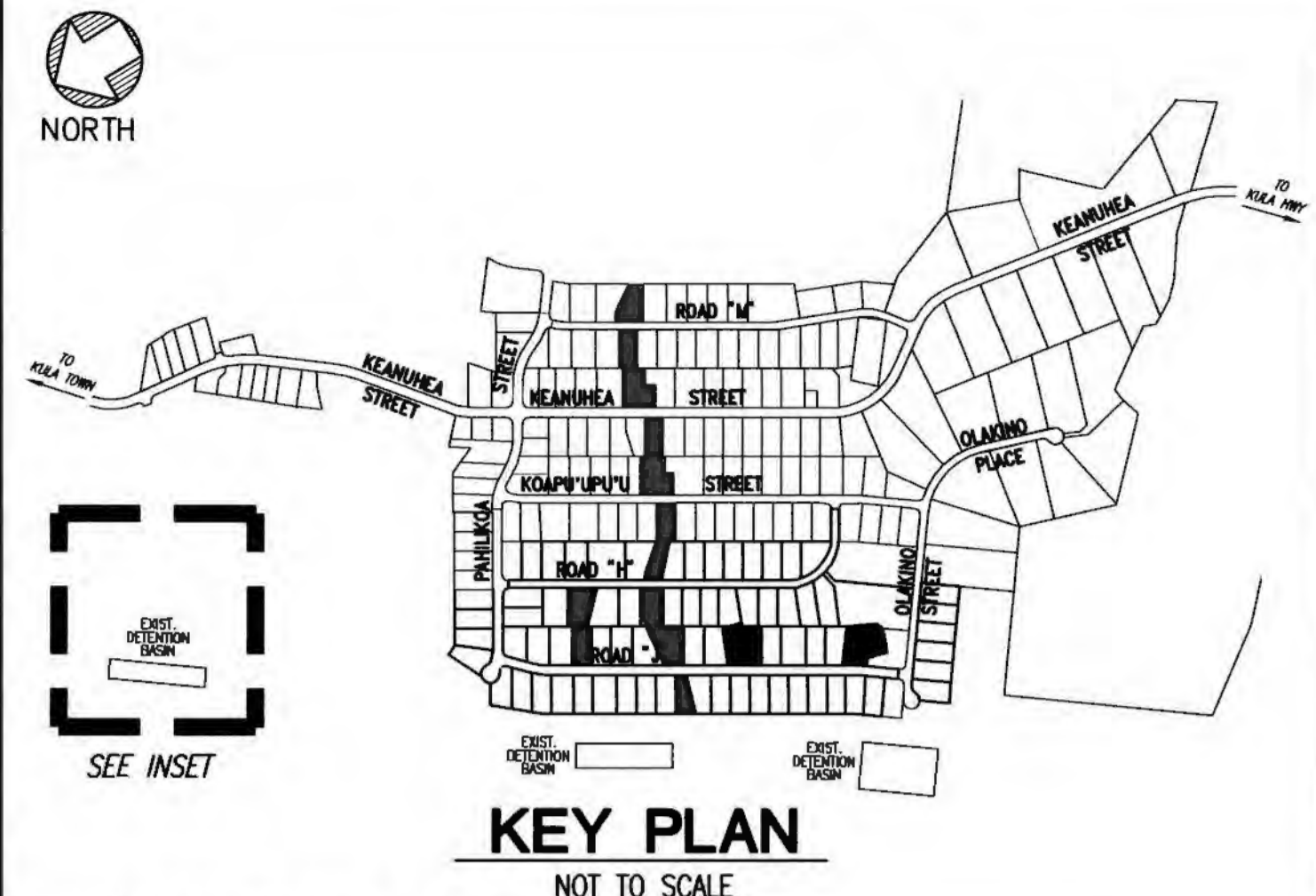
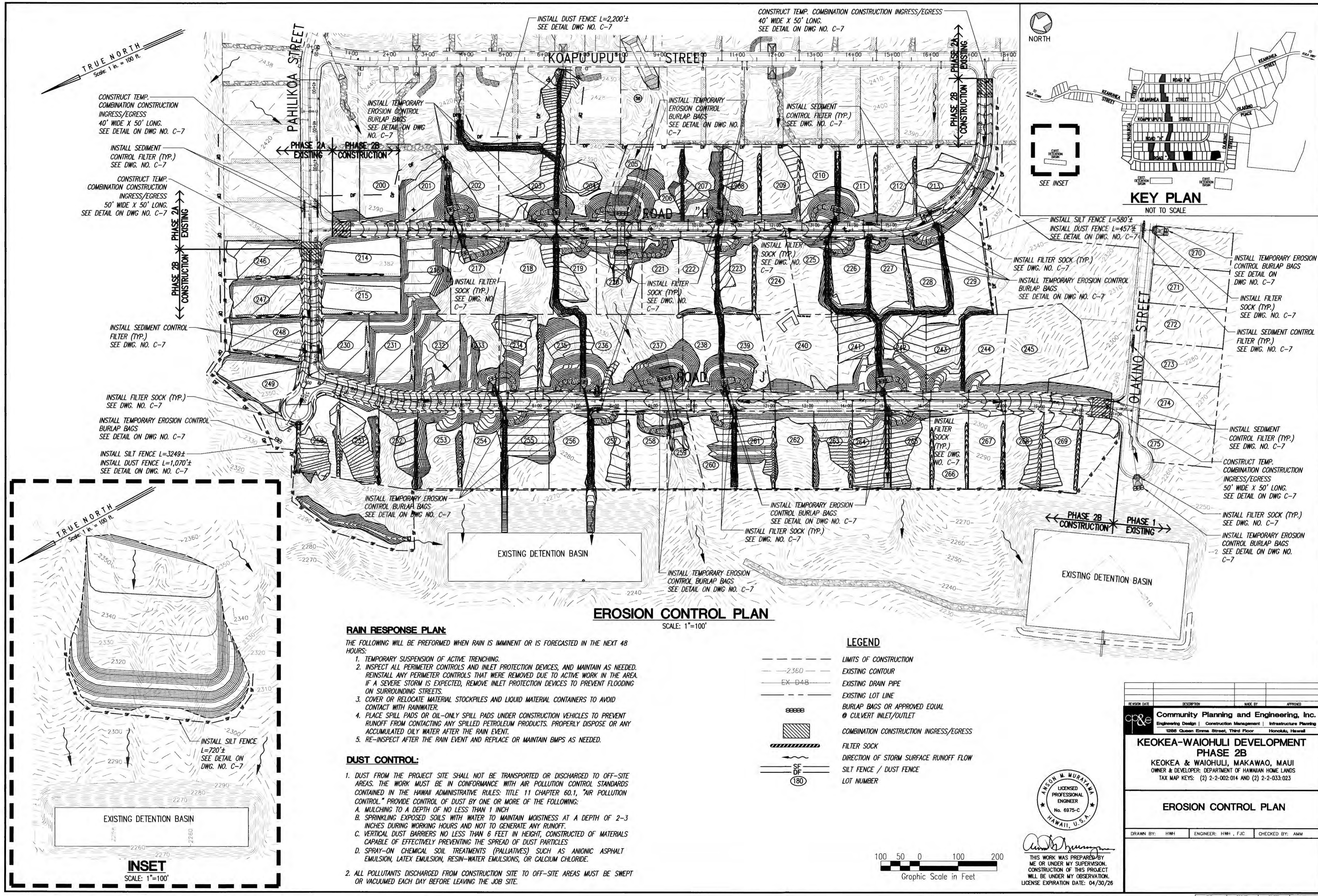
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Engineering Design | Construction Management | Infrastructure Planning
1256 Queen Emma Street, Third Floor Honolulu, Hawaii

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

GENERAL LAYOUT PLAN

DRAWN BY: HWI ENGINEER: HWI, FJC CHECKED BY: AMM

FILE	POCKET	FOLDER	NO.



RAIN RESPONSE PLAN:

- THE FOLLOWING WILL BE PERFORMED WHEN RAIN IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:
1. TEMPORARY SUSPENSION OF ACTIVE TRENCHING.
 2. INSPECT ALL PERIMETER CONTROLS AND INLET PROTECTION DEVICES, AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
 3. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
 4. PLACE SPILL PADS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OR ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
 5. RE-INSPECT AFTER THE RAIN EVENT AND REPLACE OR MAINTAIN BMPs AS NEEDED.

DUST CONTROL:

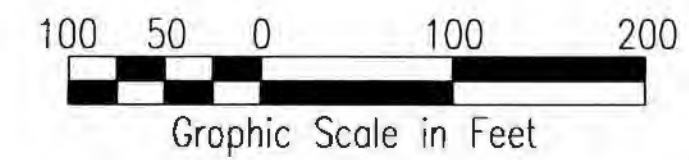
1. DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS. THE WORK MUST BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES: TITLE 11 CHAPTER 60.1, "AIR POLLUTION CONTROL." PROVIDE CONTROL OF DUST BY ONE OR MORE OF THE FOLLOWING:
 - A. MULCHING TO A DEPTH OF NO LESS THAN 1 INCH
 - B. SPRINKLING EXPOSED SOILS WITH WATER TO MAINTAIN MOISTNESS AT A DEPTH OF 2-3 INCHES DURING WORKING HOURS AND NOT TO GENERATE ANY RUNOFF.
 - C. VERTICAL DUST BARRIERS NO LESS THAN 6 FEET IN HEIGHT, CONSTRUCTED OF MATERIALS CAPABLE OF EFFECTIVELY PREVENTING THE SPREAD OF DUST PARTICLES
 - D. SPRAY-ON CHEMICAL SOIL TREATMENTS (PALLIATIVES) SUCH AS ANIONIC ASPHALT EMULSION, LATEX EMULSION, RESIN-WATER EMULSIONS, OR CALCIUM CHLORIDE.
2. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEEPED OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.

EROSION CONTROL PLAN

SCALE: 1"=100'

LEGEND

	LIMITS OF CONSTRUCTION
	EXISTING CONTOUR
	EXISTING DRAIN PIPE
	EXISTING LOT LINE
	BURLAP BAGS OR APPROVED EQUAL
	CULVERT INLET/OUTLET
	COMBINATION CONSTRUCTION INGRESS/EGRESS
	FILTER SOCK
	DIRECTION OF STORM SURFACE RUNOFF FLOW
	SILT FENCE / DUST FENCE
	LOT NUMBER



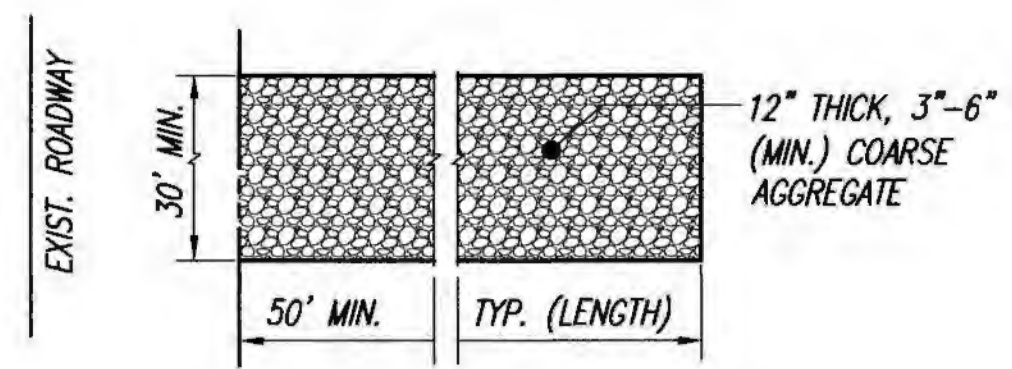
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KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

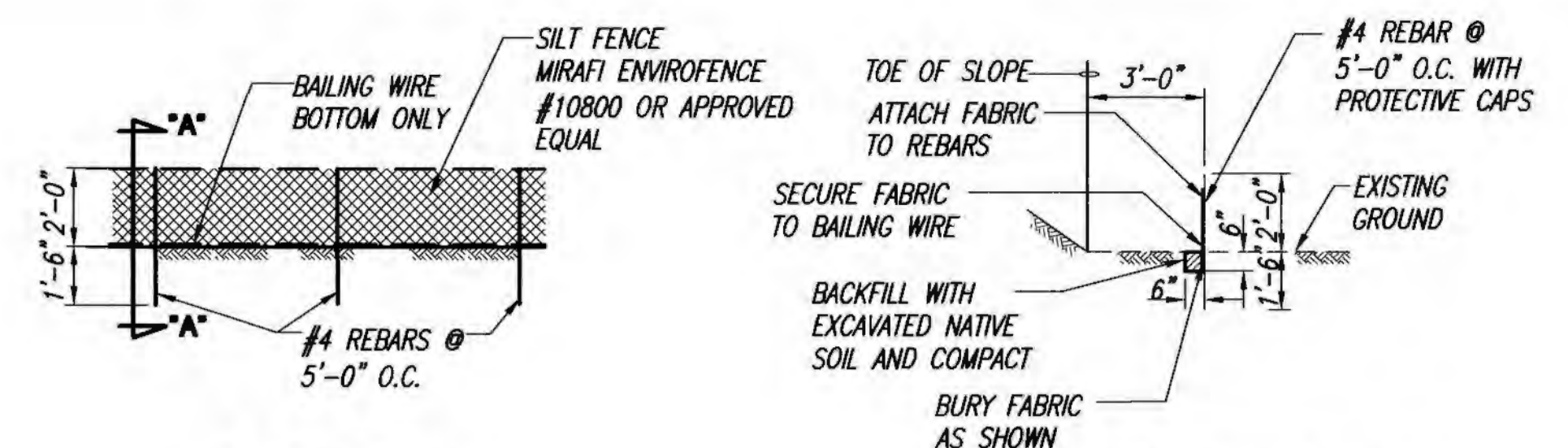
EROSION CONTROL PLAN

DRAWN BY: HW1 ENGINEER: HW1, FJC CHECKED BY: ANM

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PLAN

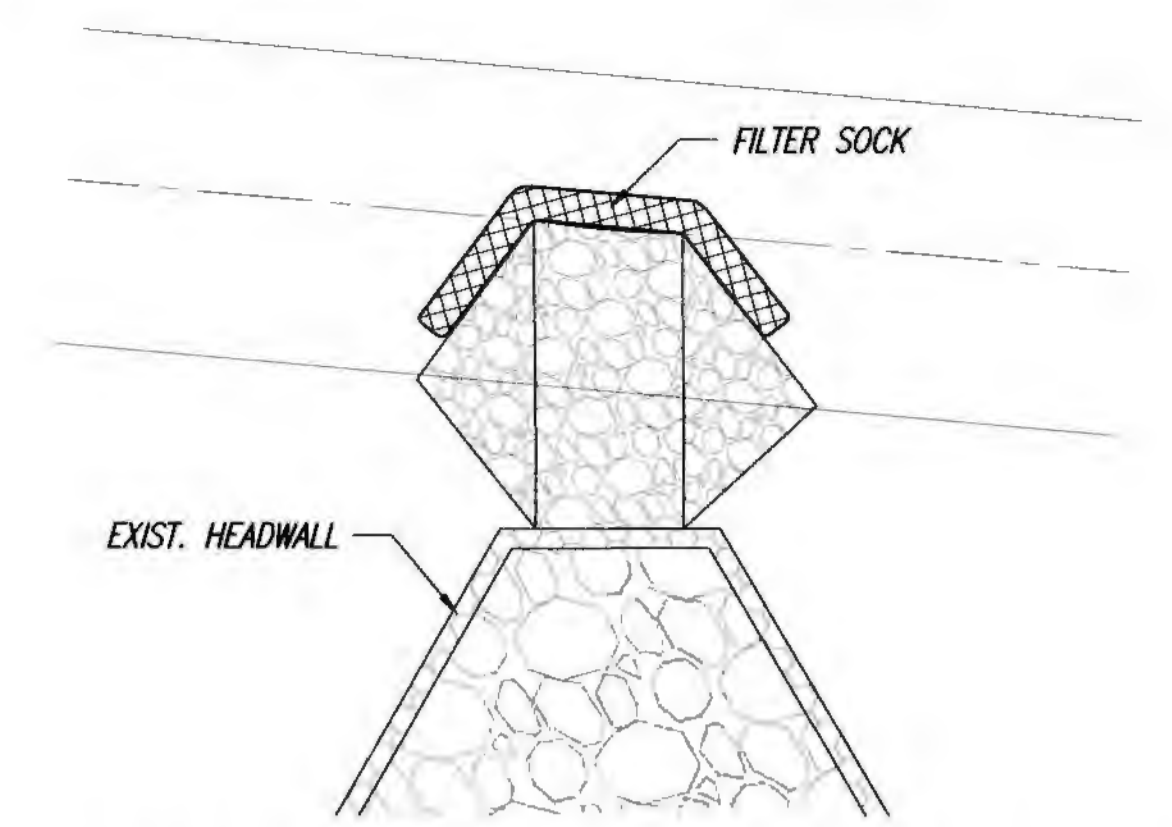


ELEVATION

SECTION 'A-A'

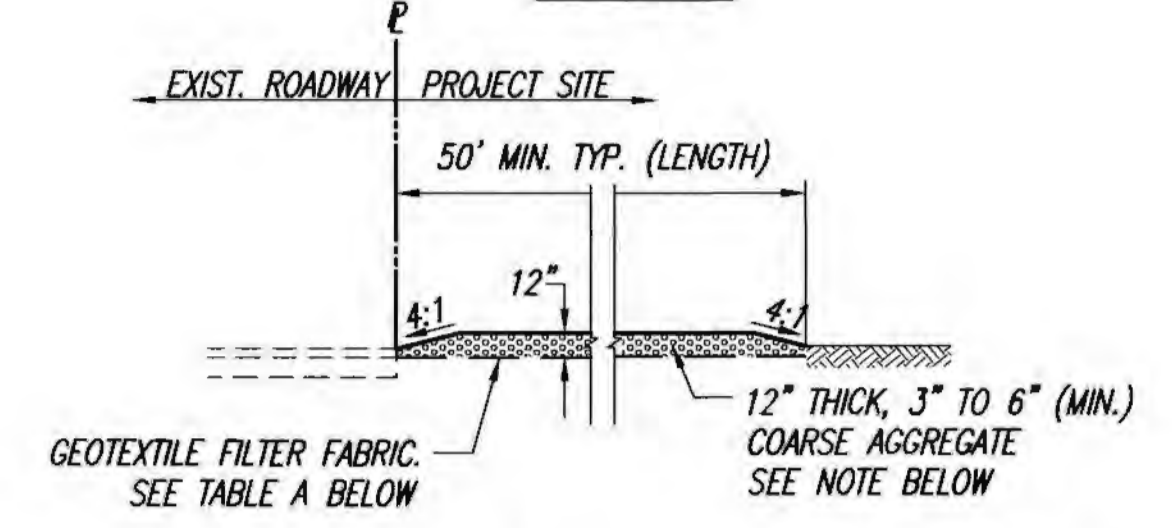
TYPICAL SILT FENCE

SCALE : 3 IN. = 1 FT.



TEMPORARY EROSION CONTROL @ GRP SWALE CUTOUT

SCALE : 3 IN. = 1 FT.



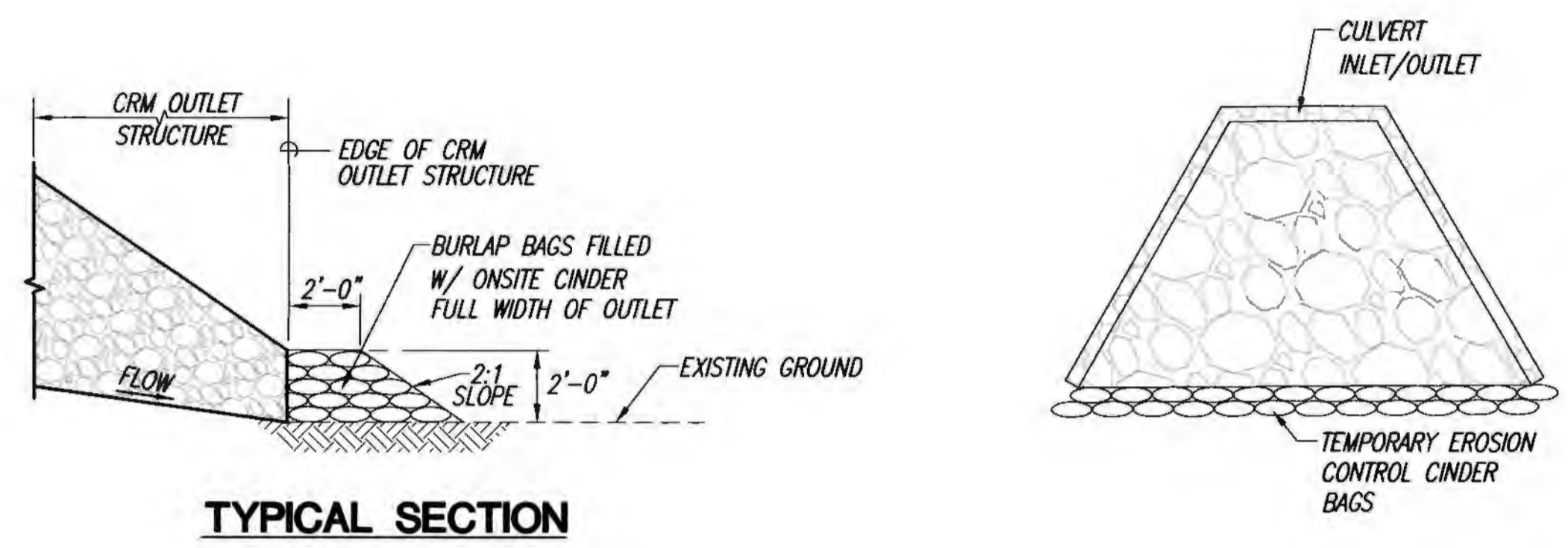
SECTION - COMBINATION INGRESS/EGRESS

NOTE:
12" COARSE AGGREGATE LAYER SHALL BE REMOVED IMMEDIATELY PRIOR TO INSTALLATION OF ROADWAY BASE COARSE

TABLE A		GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY		REQUIREMENTS	
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)		
ELONGATION FAILURE	60% (ASTM D1682)		
MULLEN BURST STRENGTH	430 LB (ASTM D3768)		
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)		
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)		

CONSTRUCTION INGRESS/EGRESS DETAILS

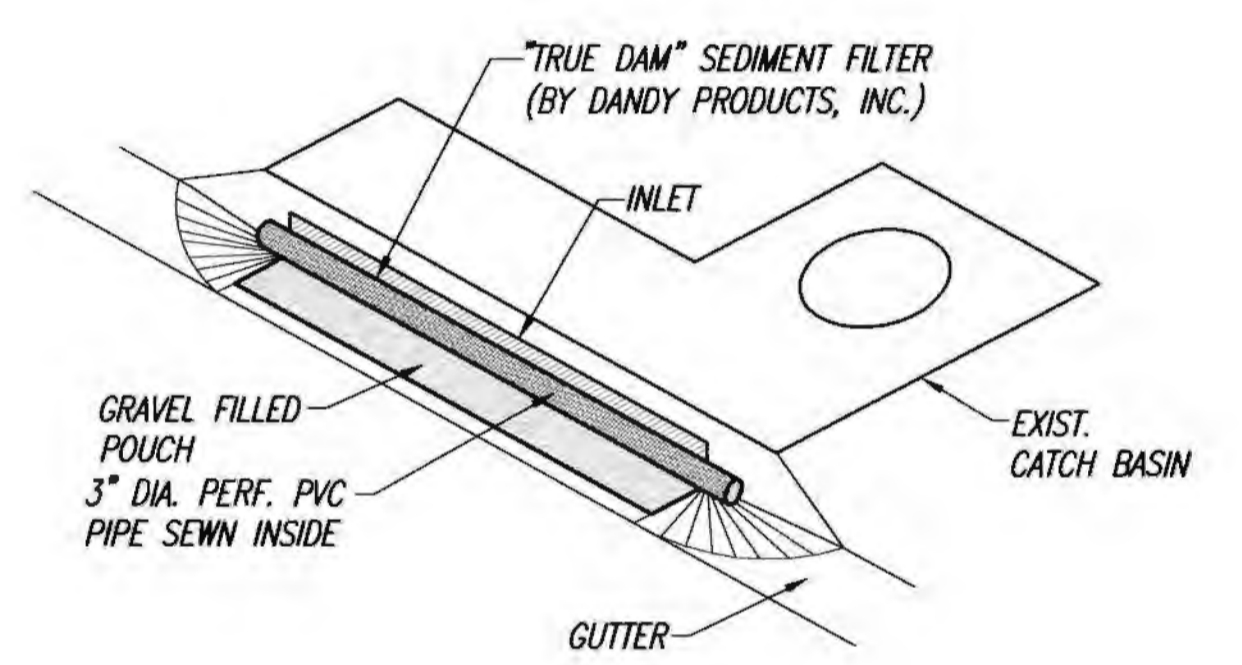
SCALE : 1 1/2 IN. = 1 FT.



TYPICAL SECTION

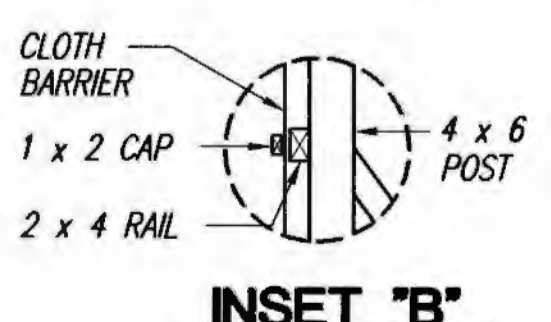
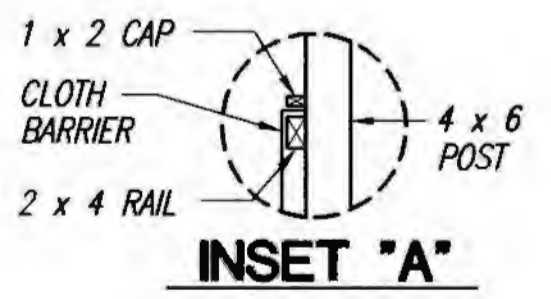
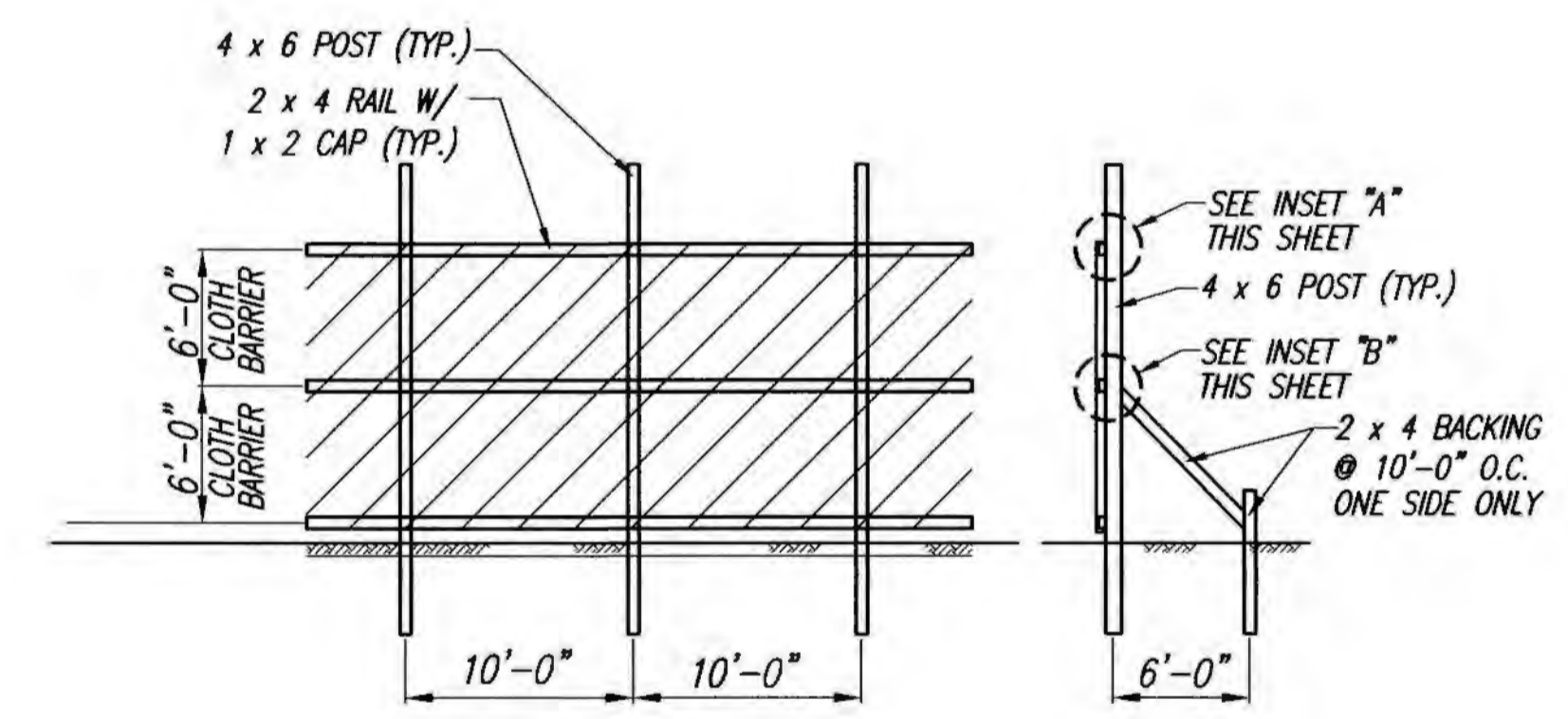
TEMPORARY EROSION CONTROL @ CULVERT OUTLETS

SCALE : 3 IN. = 1 FT.



TYPICAL SEDIMENT CONTROL FILTER AT CATCH BASIN

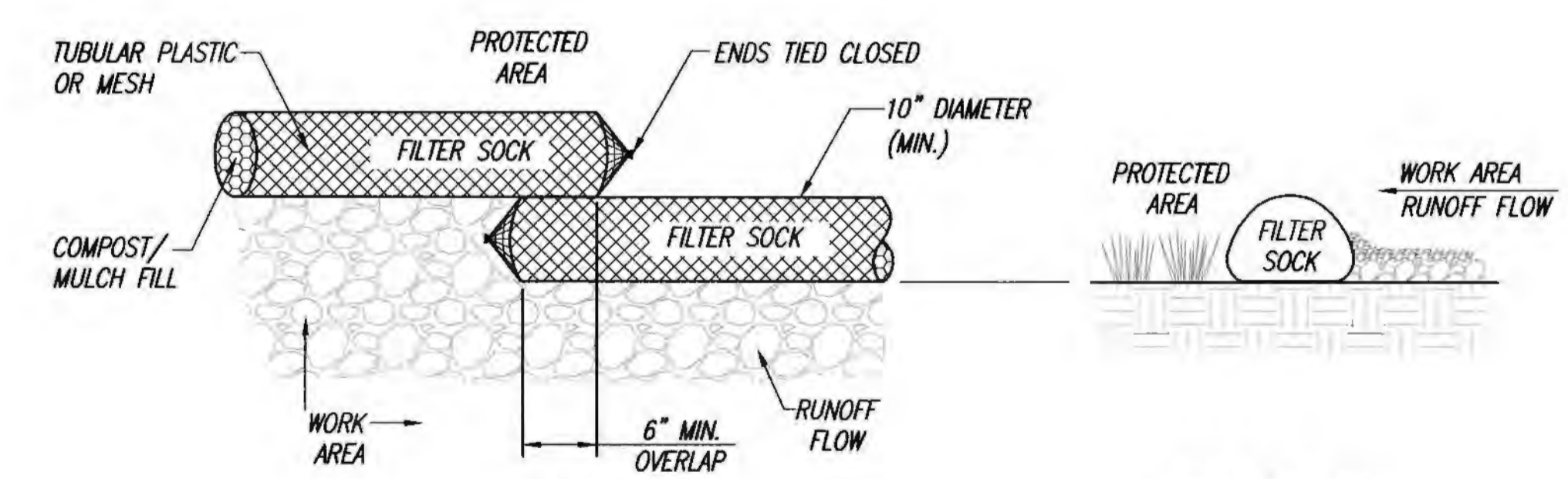
SCALE : 3 IN. = 1 FT.



TYPICAL DUST FENCE

SCALE : 1 1/2 IN. = 1 FT.

- NOTES:**
1. CLOTH BARRIER TO BE MIRAFI 140N OR APPROVED EQUAL.
 2. LUMBER SIZES ARE NOMINAL INCHES.
 3. 1 x 2 CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
 4. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
 5. CLOTH TO HAVE NO HORIZONTAL SEAMS.
 6. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
 7. ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
 8. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.



PLAN

SECTION

TYPICAL FILTER BARRIER DETAIL

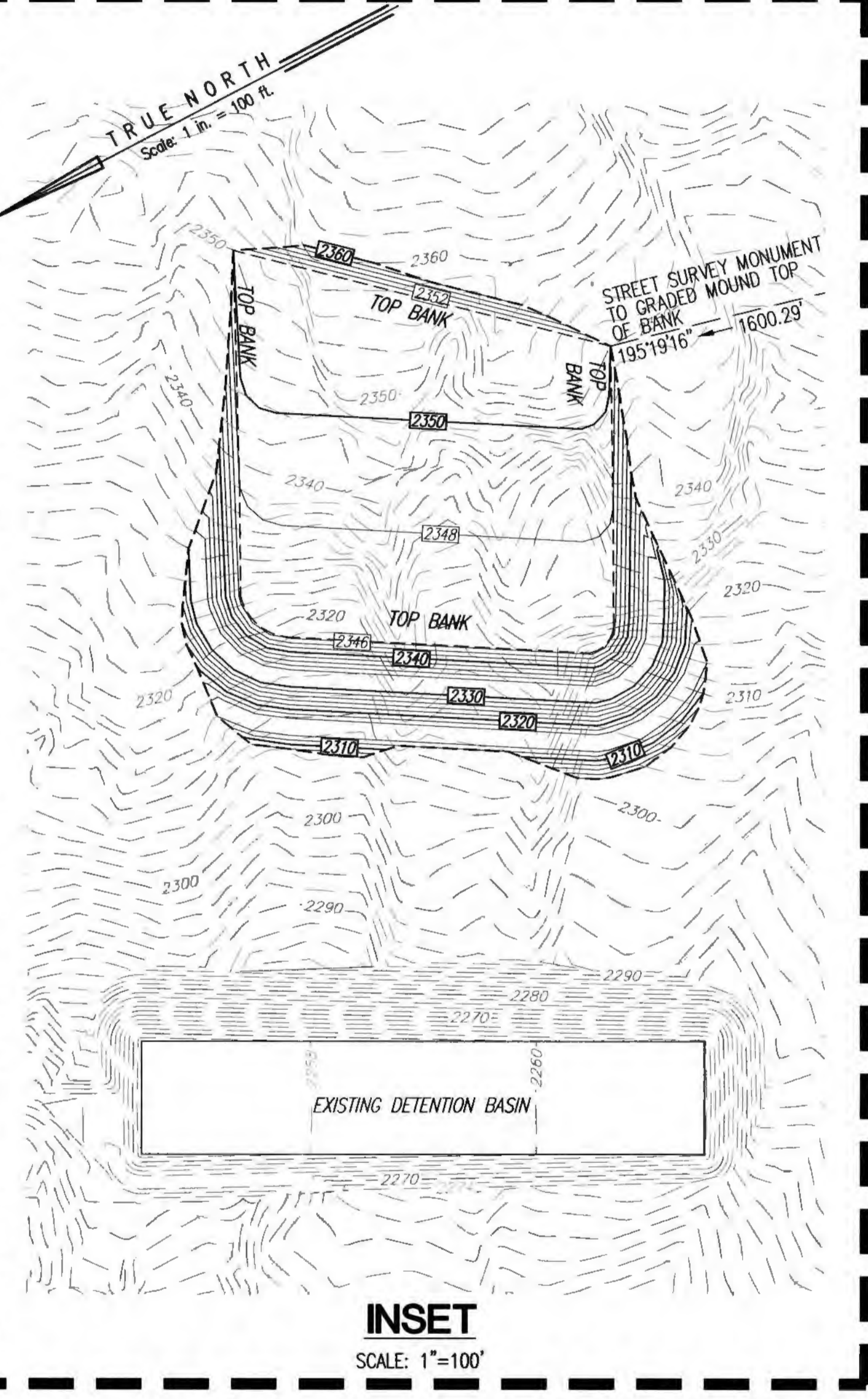
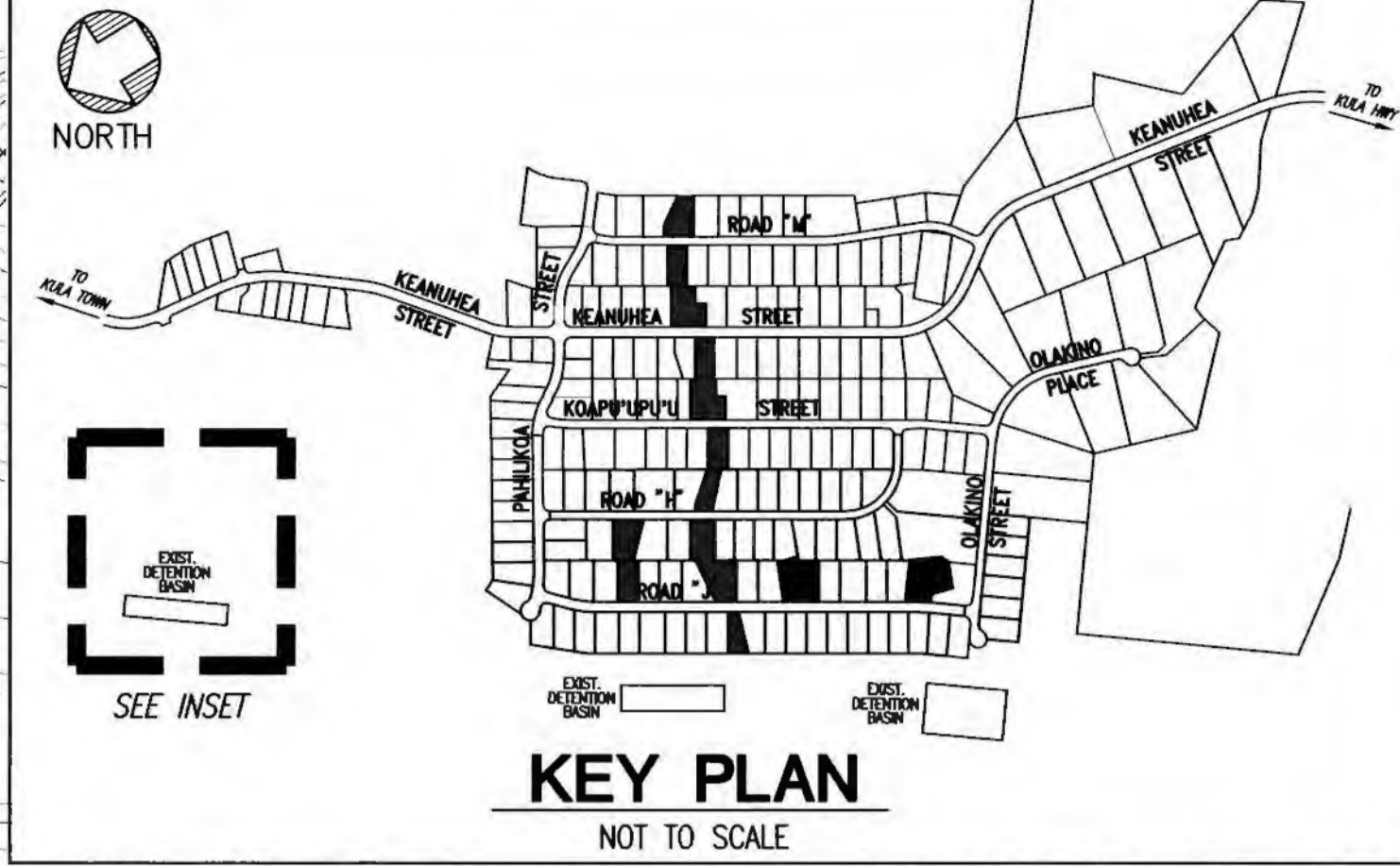
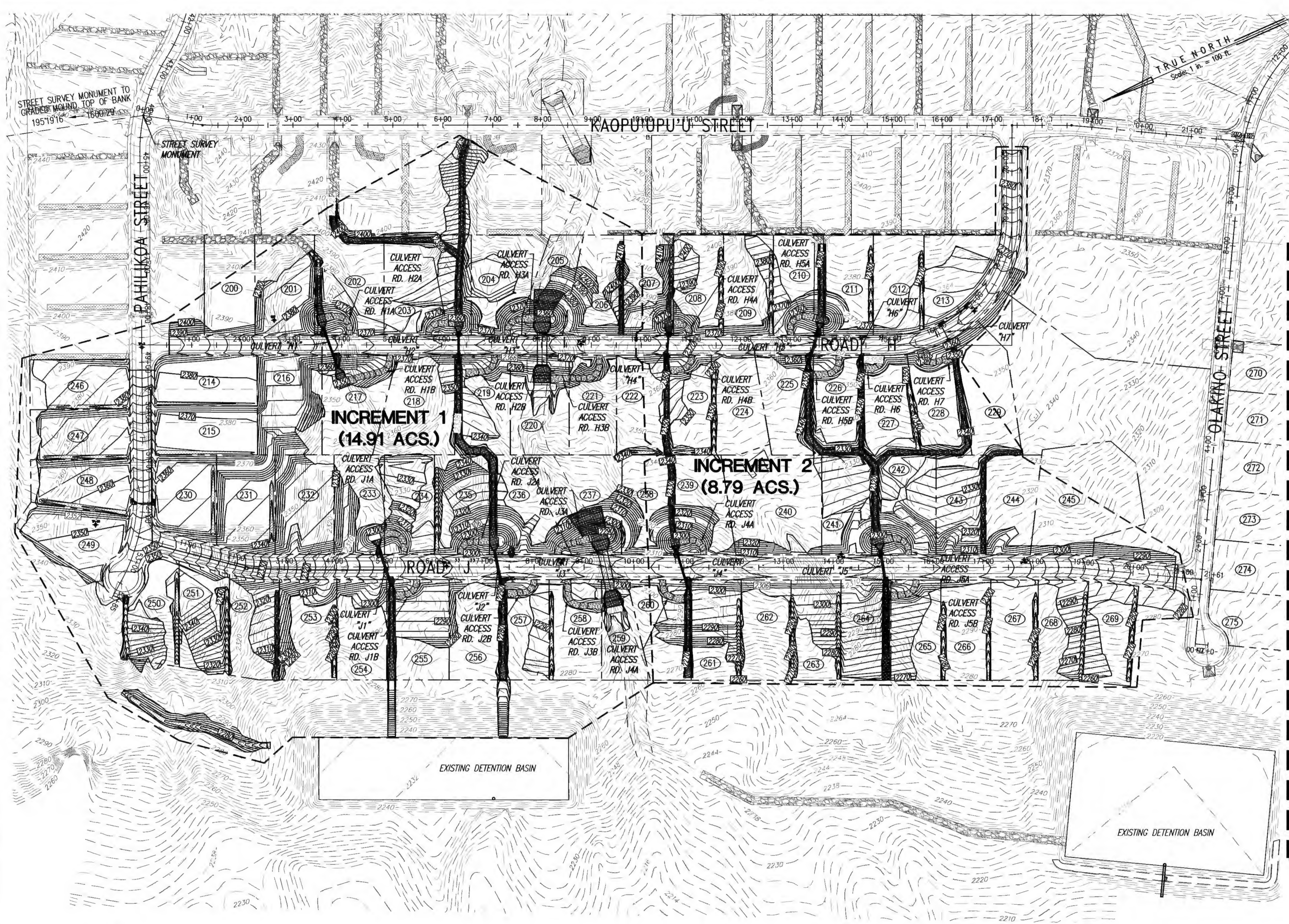
SCALE : 1'-0" = 1'-0"

- NOTES:**
1. SEDIMENT AND DEBRIS AT THE SEDIMENT CONTROL FILTER AT CATCH BASINS SHALL BE CLEANED AND REMOVED WEEKLY IN DRY PERIODS AND WITHIN 24 HR PERIOD DURING RAINFALL. DAILY CHECKING IS NECESSARY. THE PERMITTEE SHALL MAINTAIN RECORDS OF CHECKS AND REMOVAL OF SEDIMENT AND DEBRIS.
 2. DURING AN EVENT OF ABOVE NORMAL RAINFALL, THE CONTRACTOR SHALL REMOVE SEDIMENT FILTER AND REPLACE AFTER EVENT HAS PASSED.
 3. SEDIMENT CONTROL FILTERS AT EXISTING CATCH BASINS SHALL BE IN PLACE AND FUNCTIONAL BEFORE CONSTRUCTION OPERATIONS BEGIN AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 4. SEDIMENT CONTROL FILTERS AT NEW CATCH BASINS SHALL BE INSTALLED IMMEDIATELY AFTER THE CONSTRUCTION OF THE CATCH BASIN AND SHALL BE MAINTAINED THROUGHOUT THE REMAINING DURATION OF CONSTRUCTION.



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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>EROSION CONTROL DETAILS</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	



LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- — EXISTING LOT LINE
- (180) LOT NUMBER
- - - LIMITS OF GRADING
- TP-3 BORING LOG

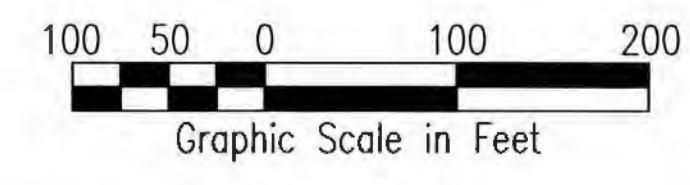
GENERAL GRADING PLAN

SCALE: 1"=100'

EARTHWORK QUANTITIES

(FOR PERMIT PURPOSES ONLY)

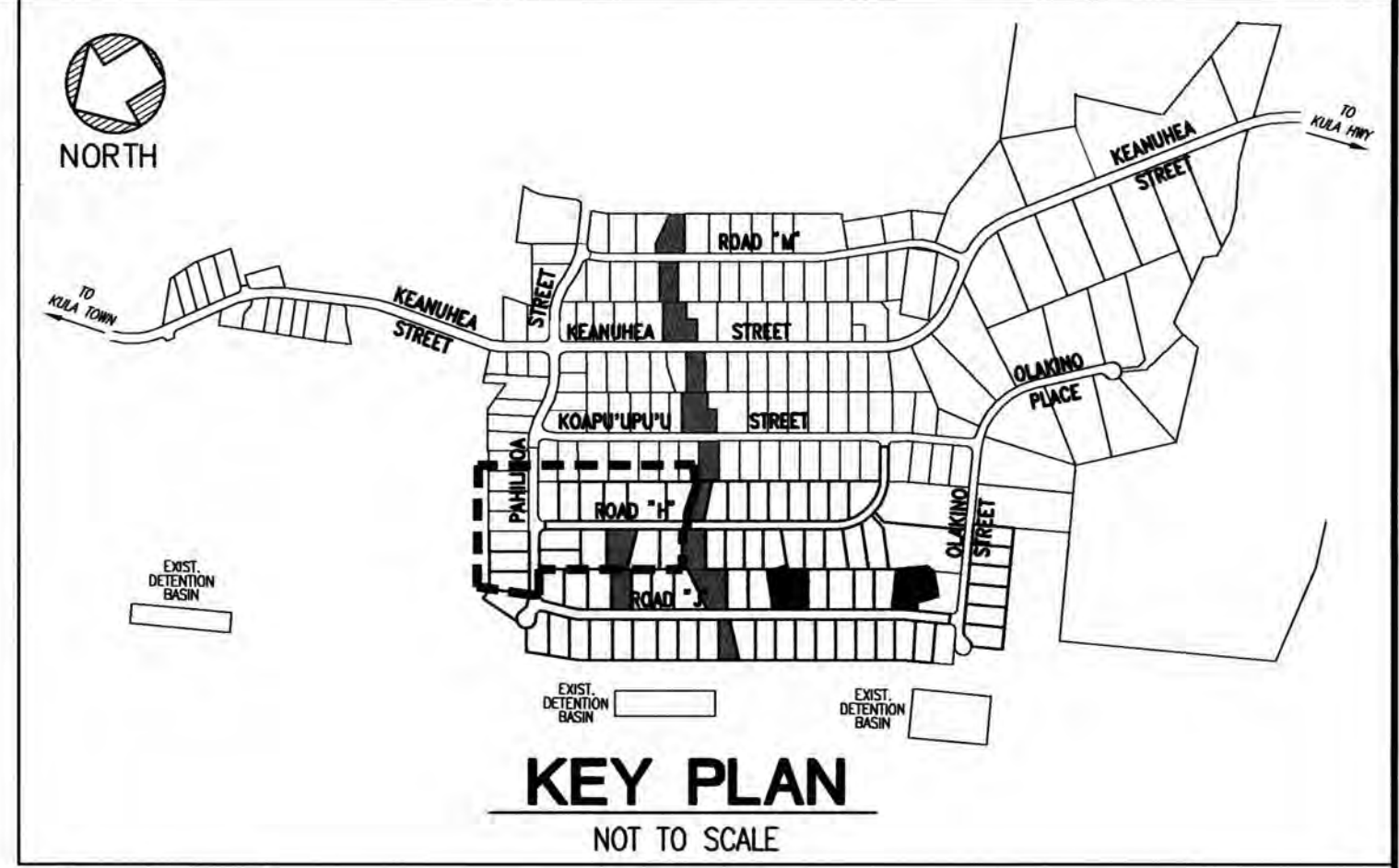
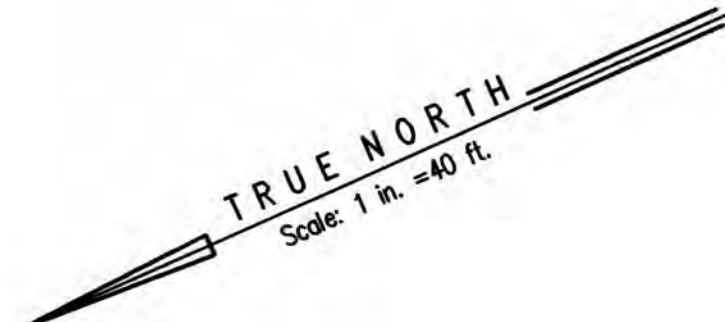
AREA TO BE GRADED	27.50	ACS.
EXCAVATION	118,400	CY
EMBANKMENT	118,400	CY



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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 KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023</p>			
<p>GENERAL GRADING PLAN</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	

6+00 7+00
KOAPU'UPU'U ST.



SWALE NO. 203
STA. 0+52 TO 1+75
(TRAPEZOIDAL GRP SWALE, 4 FT
BOTTOM WIDTH, 4 FT DEEP)
STA. 1+75 TO END
(TRAPEZOIDAL GRP SWALE, 3 FT
BOTTOM WIDTH, 3.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-54

SWALE NO. 203C
(TRAPEZOIDAL
GRP SWALE
3 FT BOTTOM WIDTH,
3.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-37

SWALE NO. 202
(TRAPEZOIDAL
GRP SWALE
4 FT BOTTOM WIDTH,
4 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-37

CULVERT ACCESS RD. H1A
FOR PLAN AND PROFILE
SEE DWG. NO. C-20

CULVERT ACCESS RD. H2A
FOR PLAN AND PROFILE
SEE DWG. NO. C-21

204
CULVERT ACCESS RD. H3A
FOR PLAN AND PROFILE
SEE DWG. NO. C-22

SEE DWG. NO. C-10

MATCHLINE

SEE DWG. NO. C-11

MATCHLINE

GRADING PLAN - 1

SCALE: 1"=40'

SWALE NO. 246
(TRAPEZOIDAL
GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-48

SWALE NO. 247
(TRAPEZOIDAL
GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-48

SWALE NO. 214
FOR PLAN
SEE DWG. NO. C-39

SWALE NO. 215
FOR PLAN
SEE DWG. NO. C-39

CULVERT ACCESS RD. H1B
FOR PLAN AND PROFILE
SEE DWG. NO. C-20

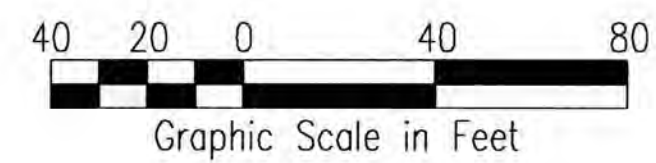
CULVERT ACCESS RD. H2B
FOR PLAN AND PROFILE
SEE DWG. NO. C-21

SWALE NO. 236
(TRAPEZOIDAL GRP SWALE
3 FT BOTTOM WIDTH, 3 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-44

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- — EXISTING LOT LINE
- (180) LOT NUMBER
- - - LIMITS OF GRADING
- TP-3 BORING LOG

SWALE NO. 248
(TRAPEZOIDAL
GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-48



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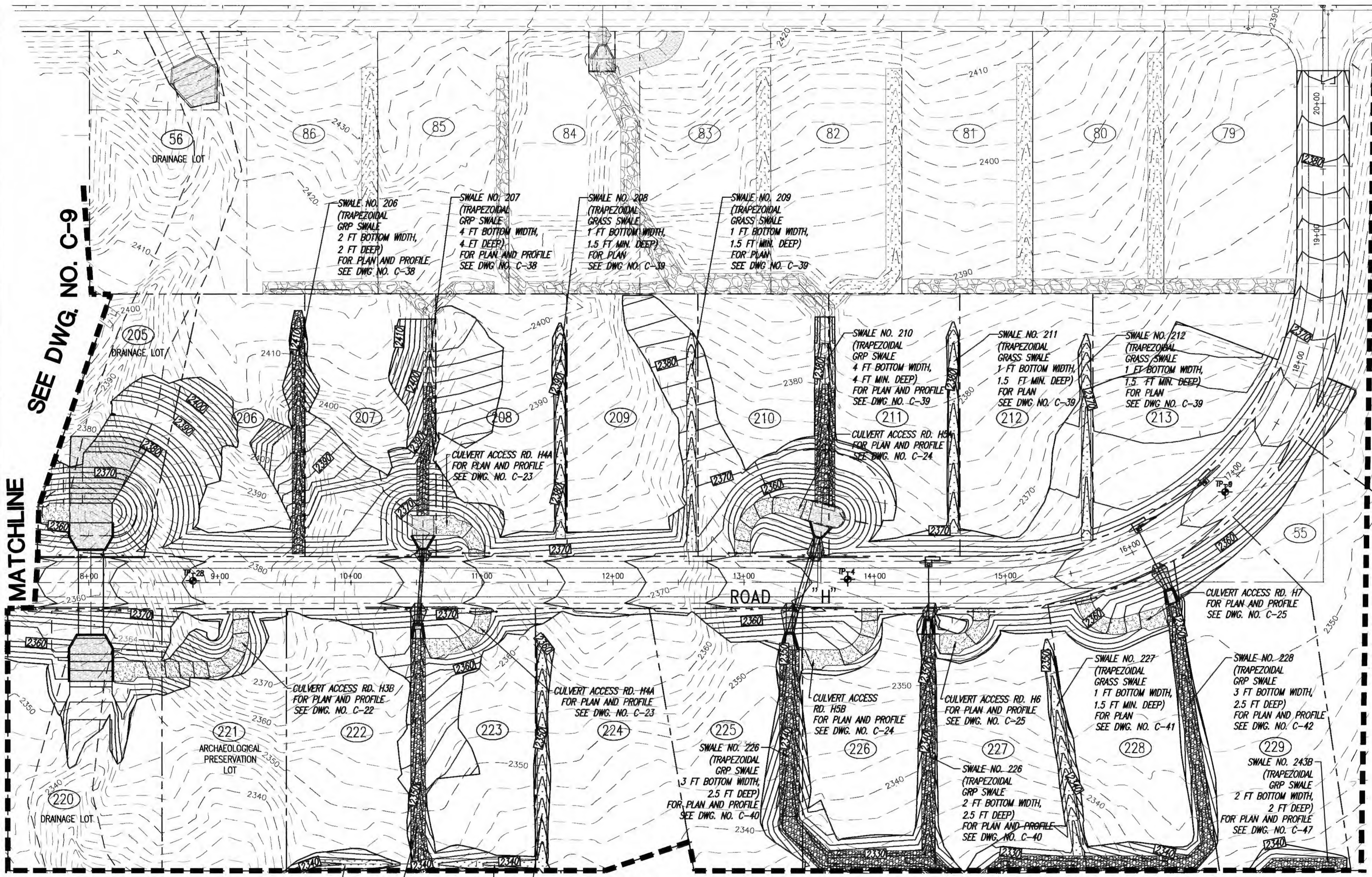
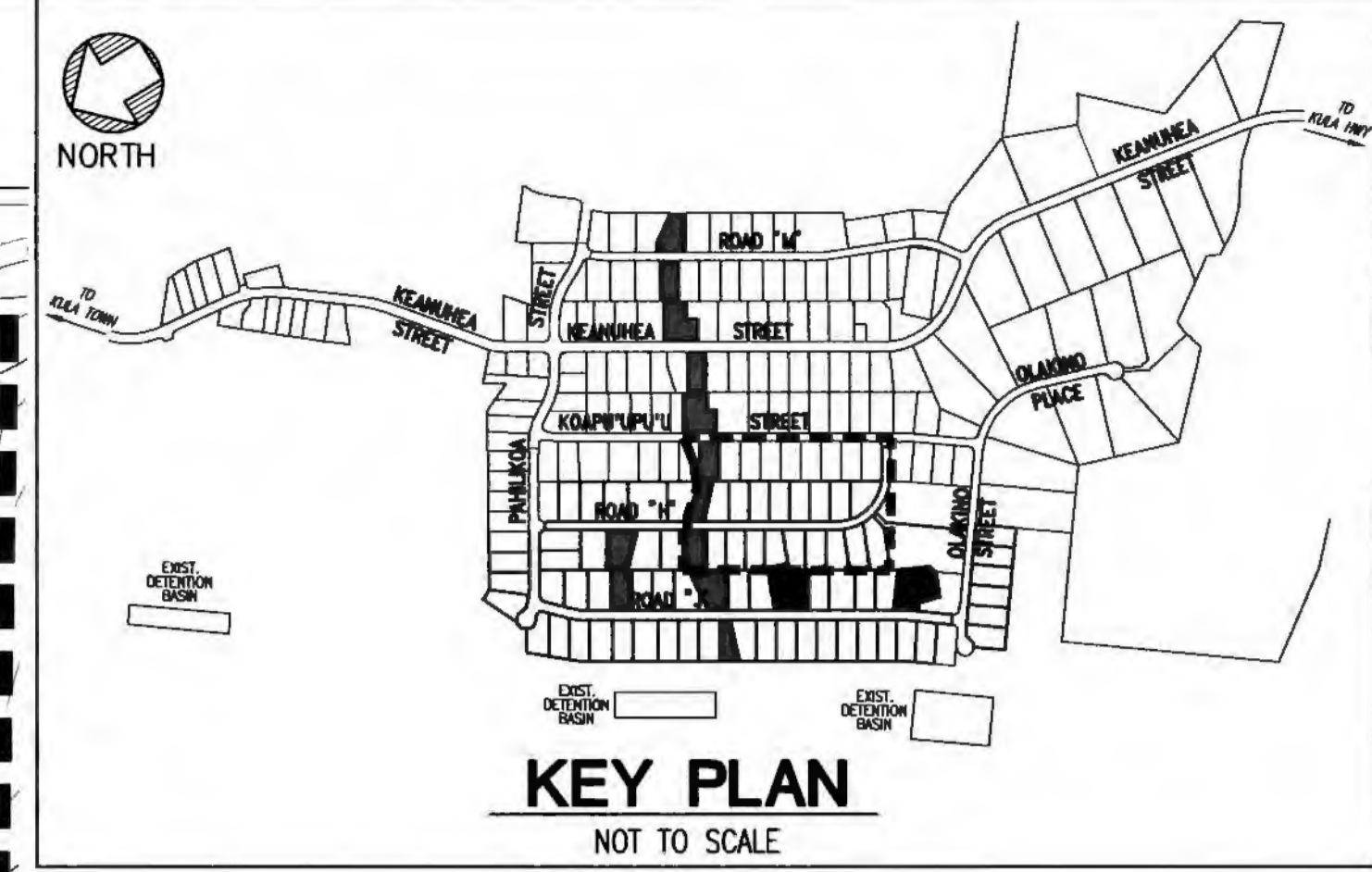
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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

GRADING PLAN - 1

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



SEE DWG. NO. C-9

MATCHLINE

MATCHLINE

SEE DWG. NO. C-12

GRADING PLAN-2

SCALE: 1"=40'

LEGEND

- 2360 --- EXISTING CONTOUR
- EX D48 --- EXISTING DRAIN PIPE
- D48 --- DRAIN PIPE
- --- EXISTING LOT LINE
- (180) LOT NUMBER
- - - - - LIMITS OF GRADING
- TP-3 BORING LOG

SWALE NO. 222C
(TRAPEZOIDAL GRP SWALE
2 FT BOTTOM WIDTH,
2 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-41

SWALE NO. 238
(TRAPEZOIDAL GRP SWALE
3 FT BOTTOM WIDTH,
2.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-45

SWALE NO. 223C
(TRAPEZOIDAL GRP SWALE
2 FT BOTTOM WIDTH,
2 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-41

SWALE NO. 224
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT DEEP)
FOR PLAN
SEE DWG. NO. C-41

CULVERT ACCESS RD. H3B
FOR PLAN AND PROFILE
SEE DWG. NO. C-22

CULVERT ACCESS RD. H4A
FOR PLAN AND PROFILE
SEE DWG. NO. C-23

SWALE NO. 226
(TRAPEZOIDAL GRP SWALE
3 FT BOTTOM WIDTH,
2.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-40

CULVERT ACCESS RD. H5B
FOR PLAN AND PROFILE
SEE DWG. NO. C-24

CULVERT ACCESS RD. H6
FOR PLAN AND PROFILE
SEE DWG. NO. C-25

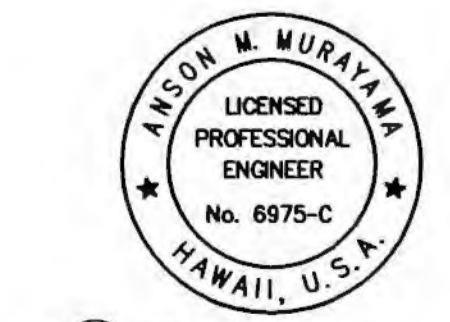
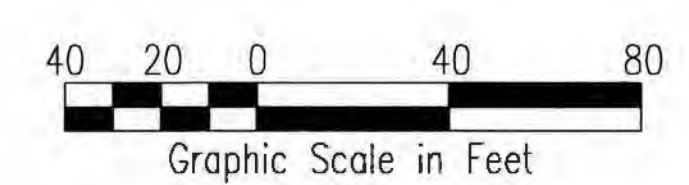
SWALE NO. 226
(TRAPEZOIDAL GRP SWALE
2 FT BOTTOM WIDTH,
2.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-40

SWALE NO. 227
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-41

CULVERT ACCESS RD. H7
FOR PLAN AND PROFILE
SEE DWG. NO. C-25

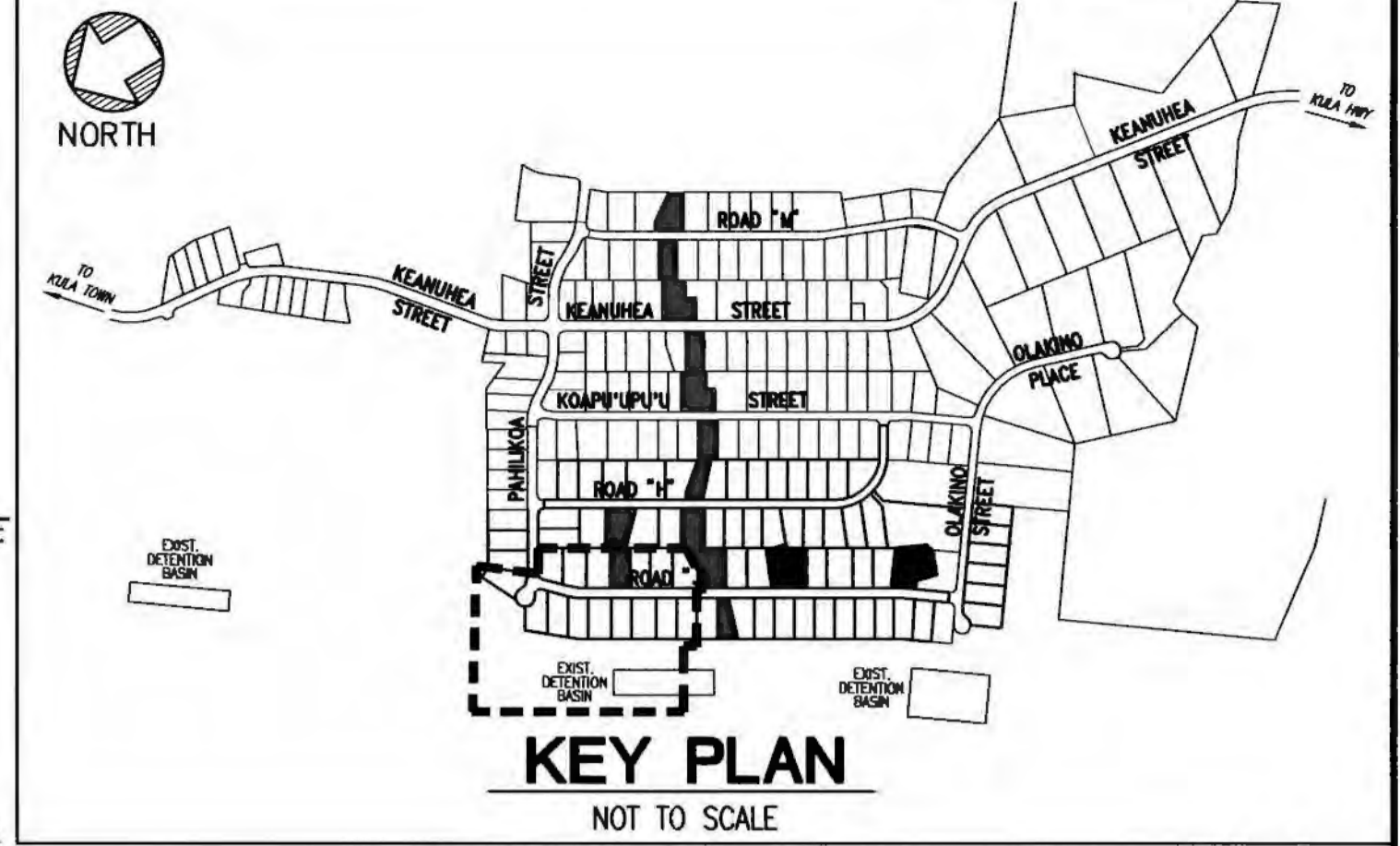
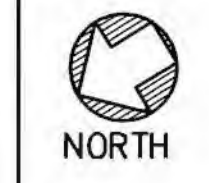
SWALE NO. 228
(TRAPEZOIDAL GRP SWALE
3 FT BOTTOM WIDTH,
2.5 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-42

SWALE NO. 243B
(TRAPEZOIDAL GRP SWALE
2 FT BOTTOM WIDTH,
2 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-47



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<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1256 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>GRADING PLAN-2</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: ANM	
FILE	PROJECT	FOLDER	NO.



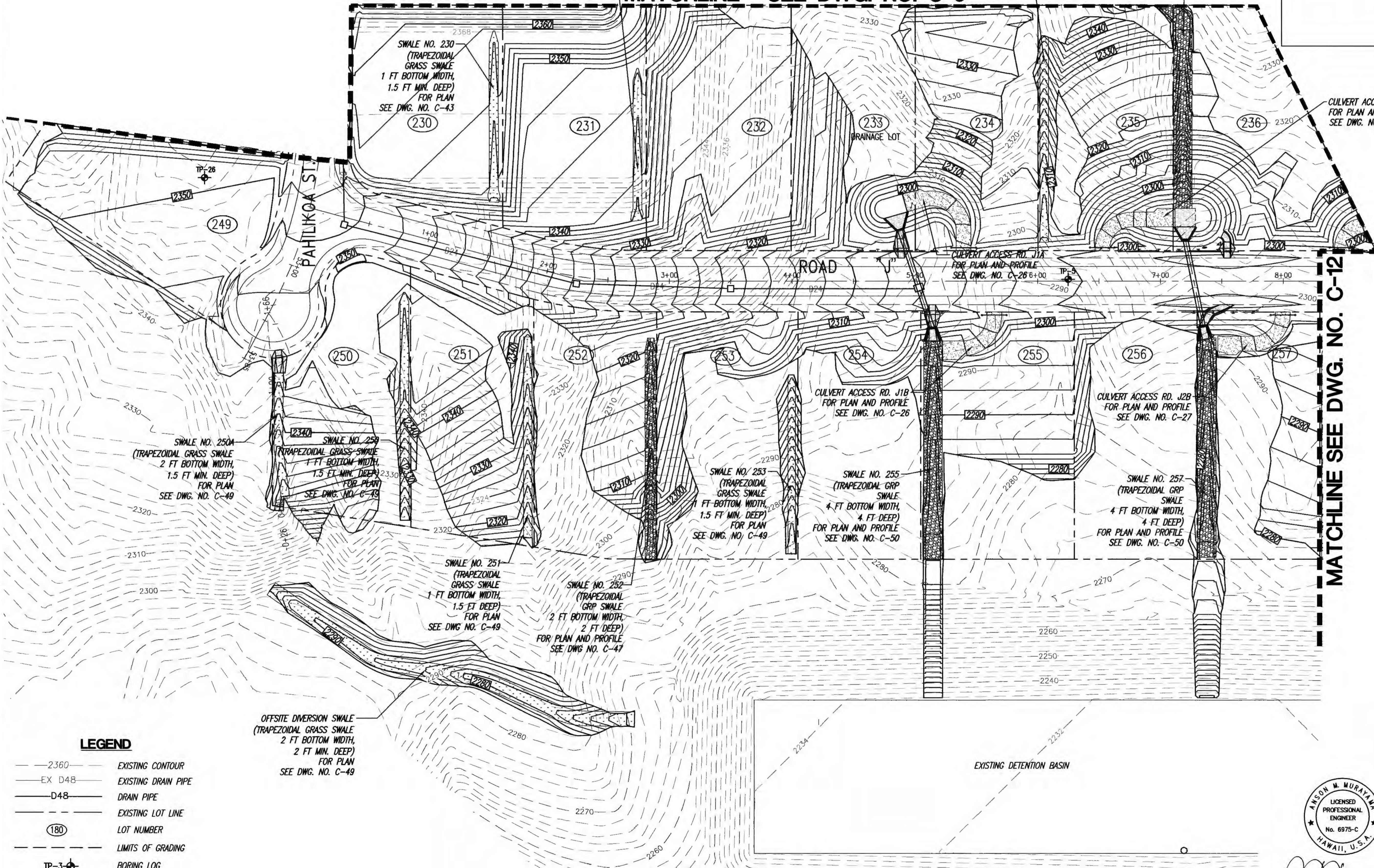
SWALE NO. 231
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT DEEP)
FOR PLAN
SEE DWG. NO. C-43

SWALE NO. 235
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT DEEP)
FOR PLAN
SEE DWG. NO. C-43

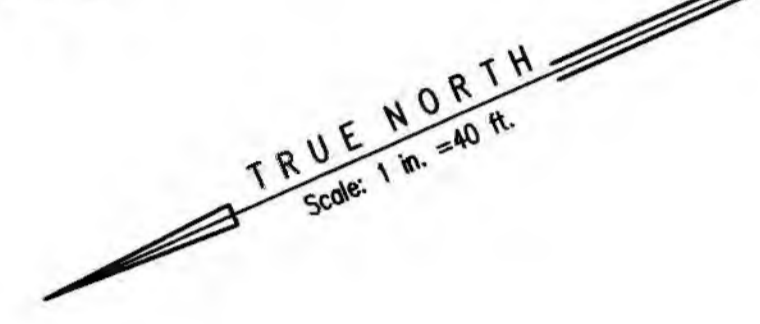
SWALE NO. 236
(TRAPEZOIDAL GRASS SWALE
4 FT BOTTOM WIDTH,
4 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-44

MATCHLINE SEE DWG. NO. C-9

SWALE NO. 230
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-43



CULVERT ACCESS RD. J2A
FOR PLAN AND PROFILE
SEE DWG. NO. C-27



MATCHLINE SEE DWG. NO. C-12

SWALE NO. 250A
(TRAPEZOIDAL GRASS SWALE
2 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-49

SWALE NO. 251
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-49

SWALE NO. 253
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-49

SWALE NO. 255
(TRAPEZOIDAL GRASS SWALE
4 FT BOTTOM WIDTH,
4 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-50

SWALE NO. 257
(TRAPEZOIDAL GRASS SWALE
4 FT BOTTOM WIDTH,
4 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-50

SWALE NO. 251
(TRAPEZOIDAL GRASS SWALE
1 FT BOTTOM WIDTH,
1.5 FT DEEP)
FOR PLAN
SEE DWG. NO. C-49

SWALE NO. 252
(TRAPEZOIDAL GRASS SWALE
2 FT BOTTOM WIDTH,
2 FT DEEP)
FOR PLAN AND PROFILE
SEE DWG. NO. C-47

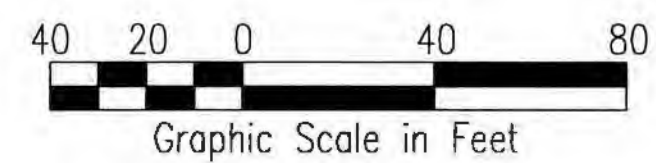
OFFSITE DIVERSION SWALE
(TRAPEZOIDAL GRASS SWALE
2 FT BOTTOM WIDTH,
2 FT MIN. DEEP)
FOR PLAN
SEE DWG. NO. C-49

LEGEND

- 2360 — EXISTING CONTOUR
- EX D48 — EXISTING DRAIN PIPE
- D48 — DRAIN PIPE
- — EXISTING LOT LINE
- (180) LOT NUMBER
- LIMITS OF GRADING
- TP-3 BORING LOG
- DRAINAGE LOT
- ARCHAEOLOGICAL PRESERVATION LOT

GRADING PLAN - 3

SCALE: 1"=40'



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

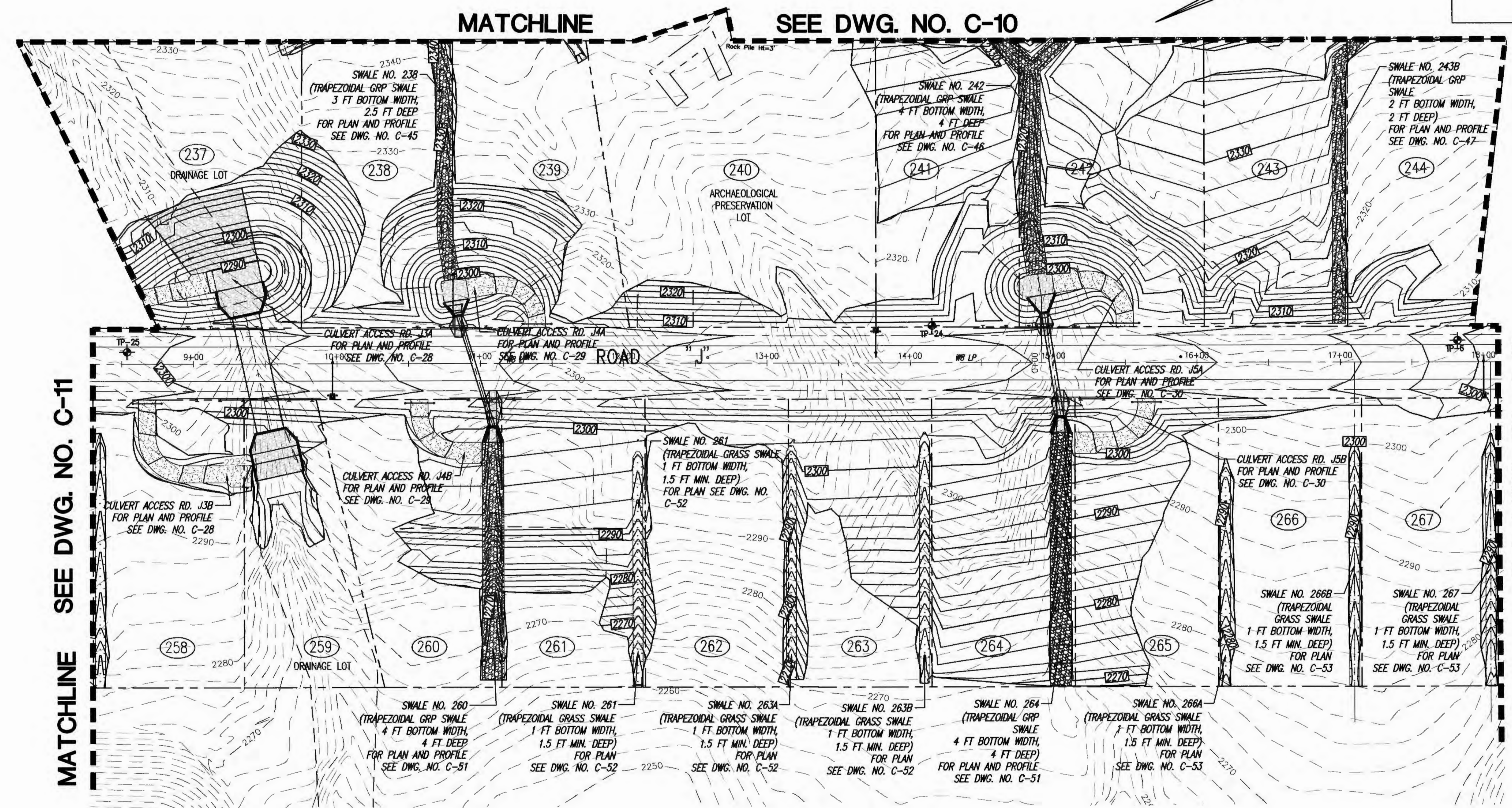
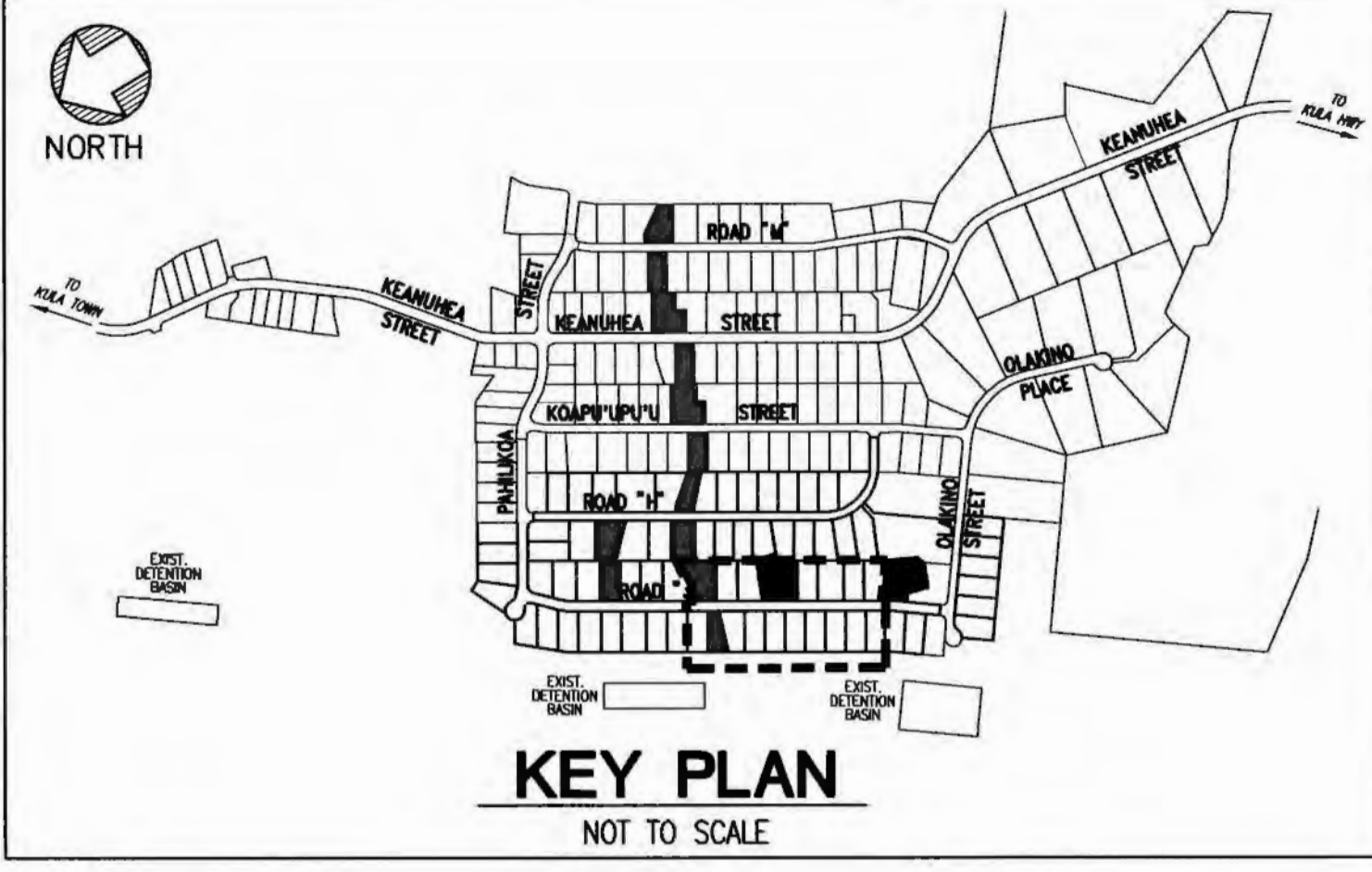
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1226 Queen Emma Street, Third Floor Honolulu, Hawaii

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

GRADING PLAN - 3

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

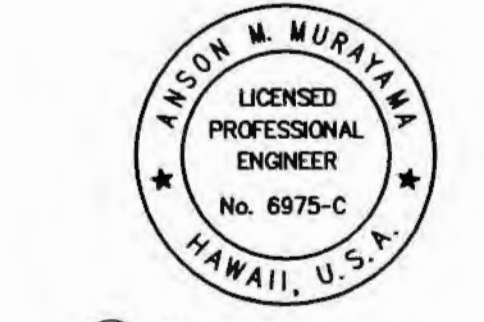
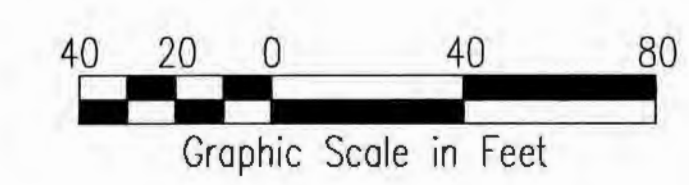
FILE	POCKET	FOLDER	NO.



GRADING PLAN - 4
SCALE: 1"=40'

LEGEND

- 2360— EXISTING CONTOUR
- EX D48— EXISTING DRAIN PIPE
- D48— DRAIN PIPE
- — — EXISTING LOT LINE
- (180) LOT NUMBER
- - - - - LIMITS OF GRADING
- TP-3 BORING LOG



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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

GRADING PLAN - 4

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

MATCHLINE SEE DWG. NO. C-13

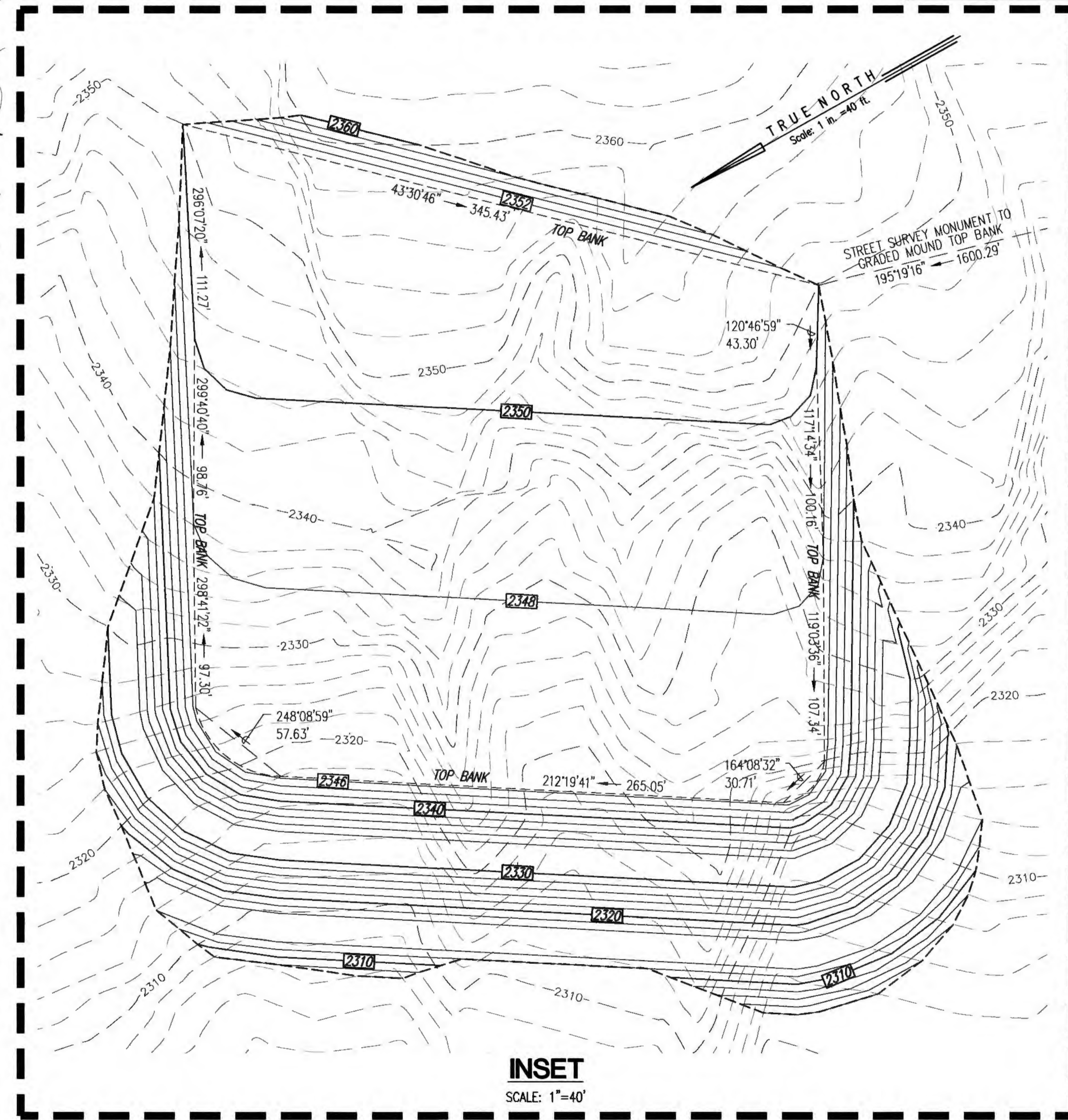
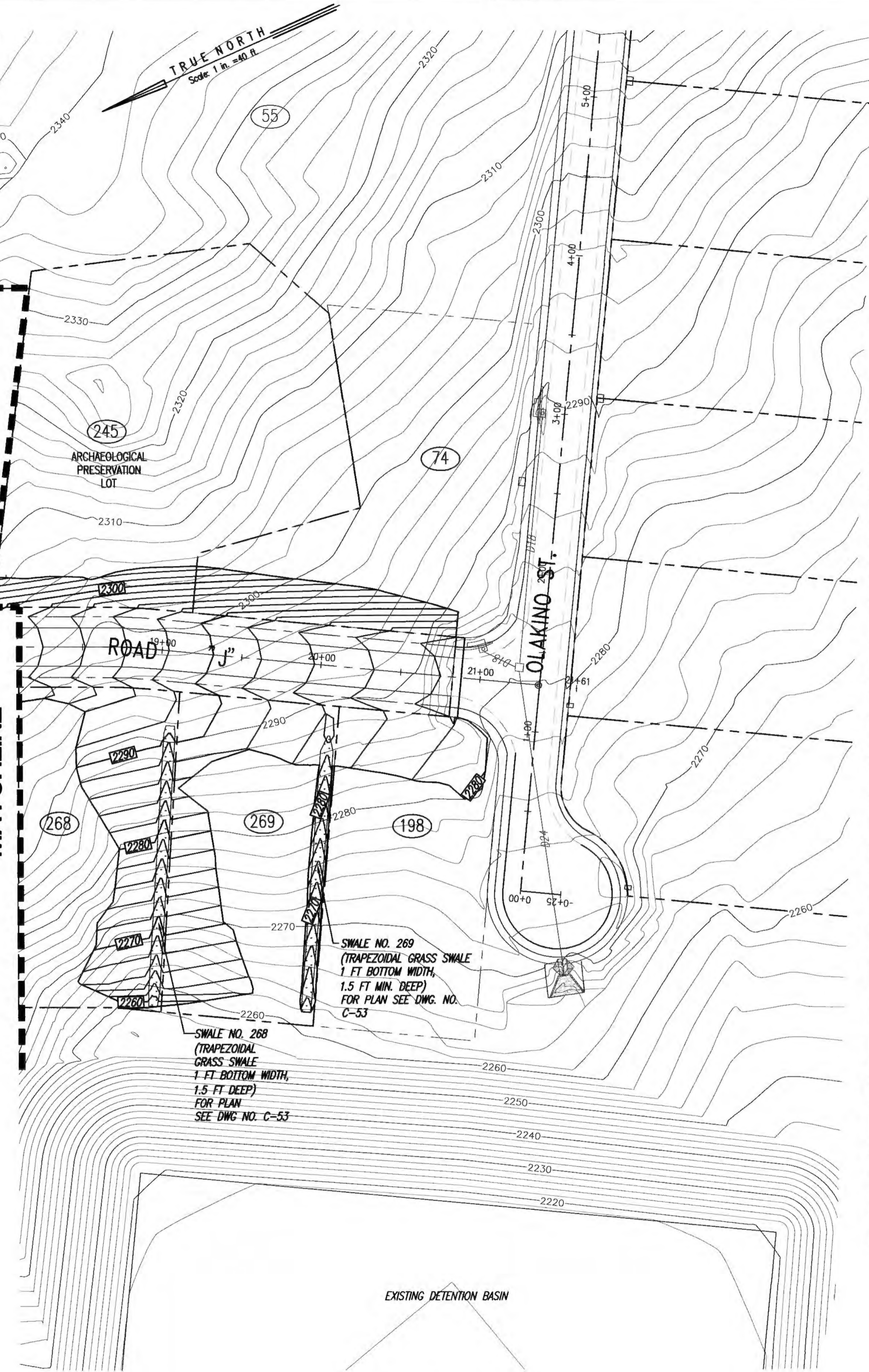
MATCHLINE SEE DWG. NO. C-11

MATCHLINE SEE DWG. NO. C-10

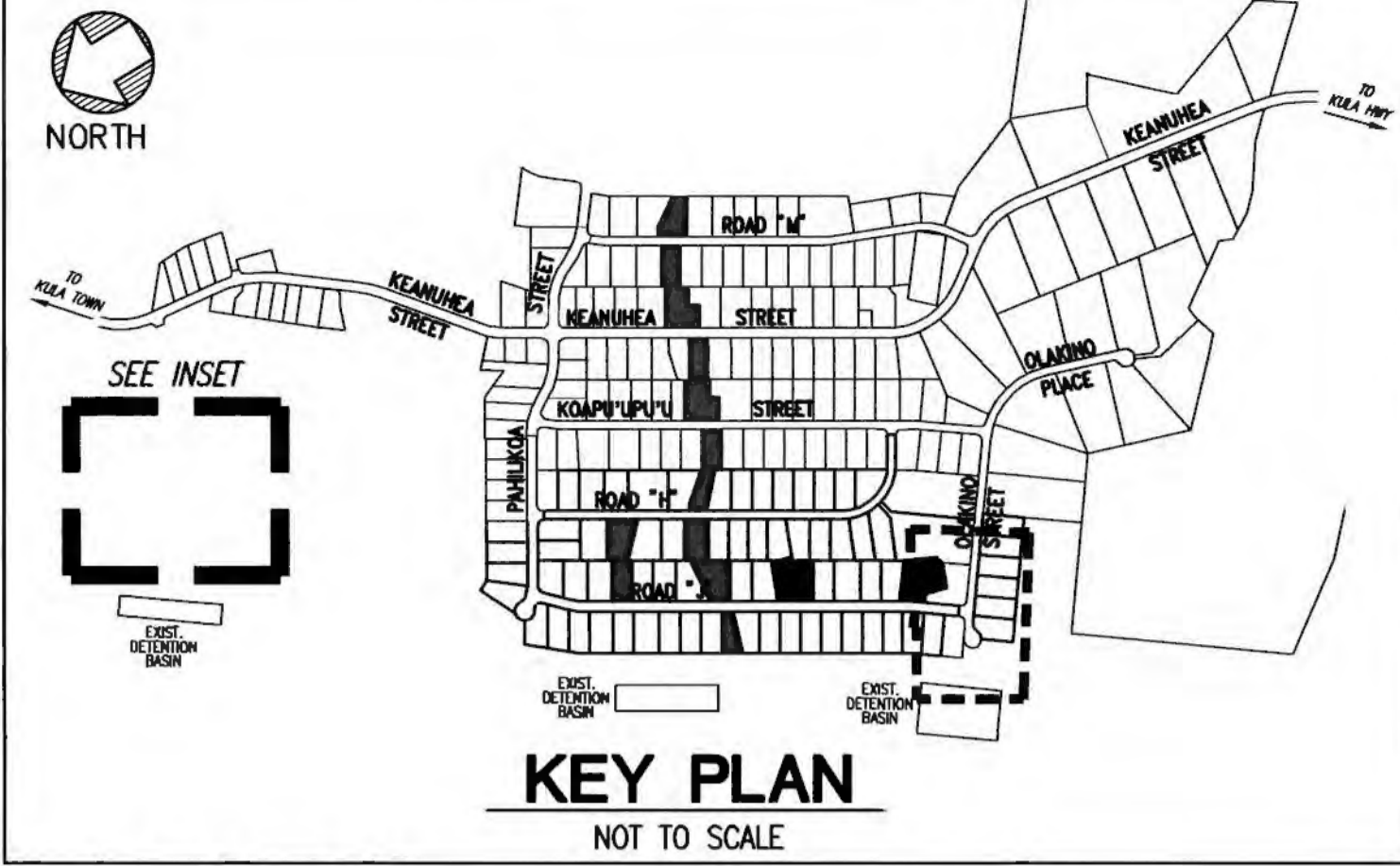
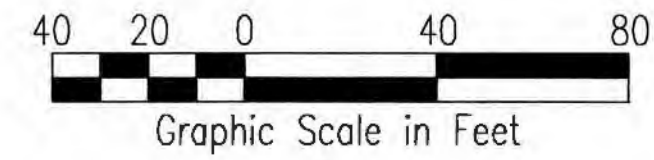
KEY PLAN
NOT TO SCALE

SEE DWG. NO. C-12

MATCHLINE



NOTE:
TIE TO CORNER OF GRADED MOUND TOP BANK
IS FROM STREET SURVEY MONUMENT AT THE
INTERSECTION OF PAHILOKOA STREET AND
KOAPU'UPU'U STREET, SEE DWG. NO. C-8



LEGEND

- 2360 — EXISTING CONTOUR
- EX D48- EXISTING DRAIN PIPE
- D48- DRAIN PIPE
- - - EXISTING LOT LINE
- (180) LOT NUMBER
- - - LIMITS OF GRADING
- TP-3 BORING LOG

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1228 Queen Emma Street, Third Floor Honolulu, Hawaii

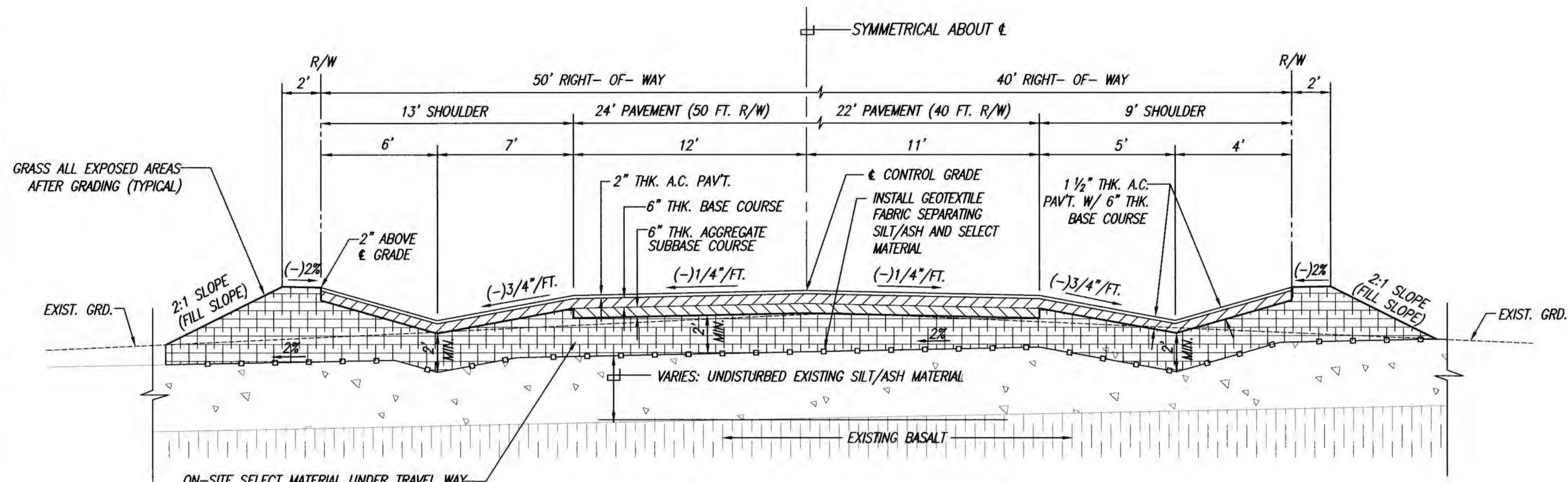
**KEOKEA-WAIOHULI DEVELOPMENT
PHASE 2B**
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

GRADING PLAN-5

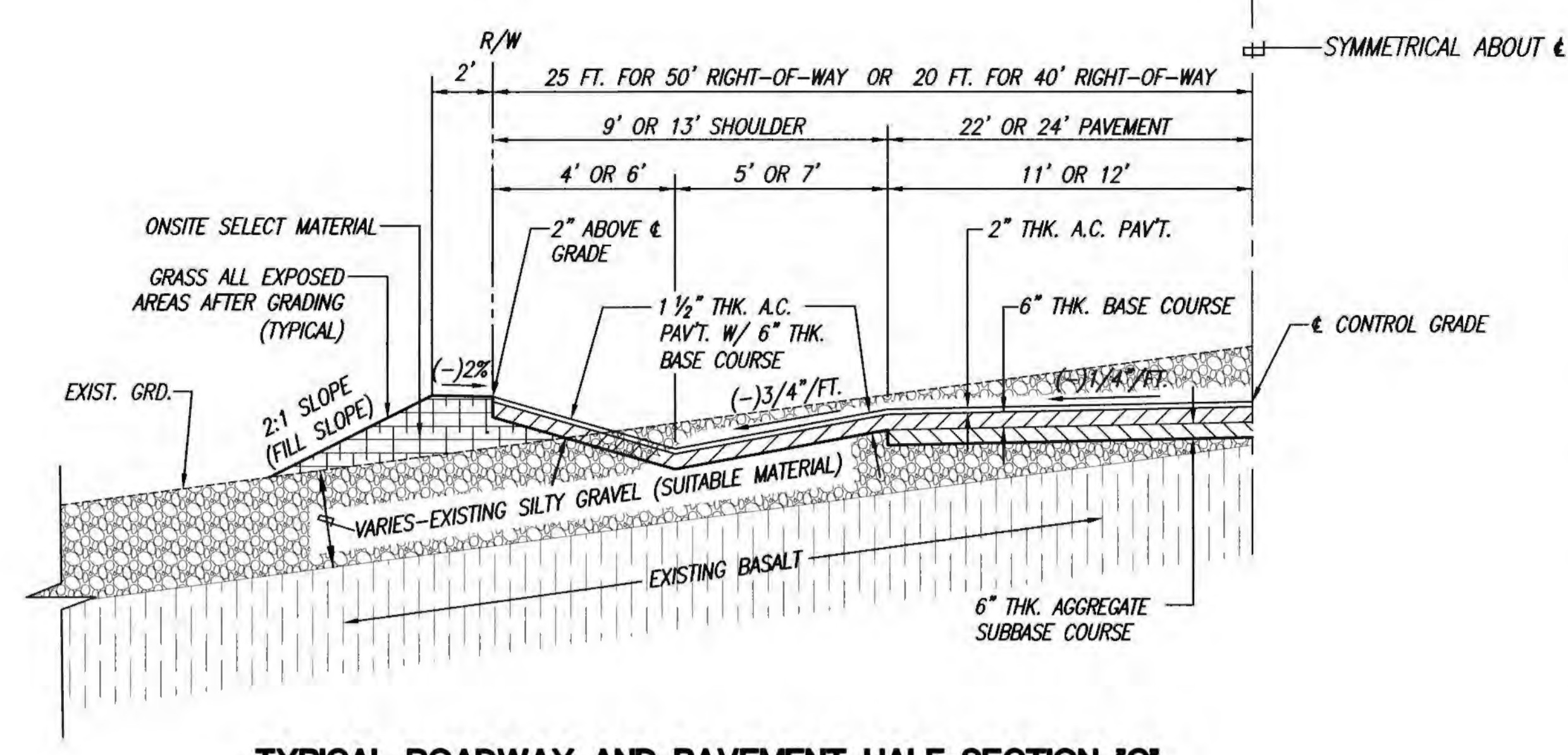
DRAWN BY: HW1 ENGINEER: HW1, FJC CHECKED BY: AMM



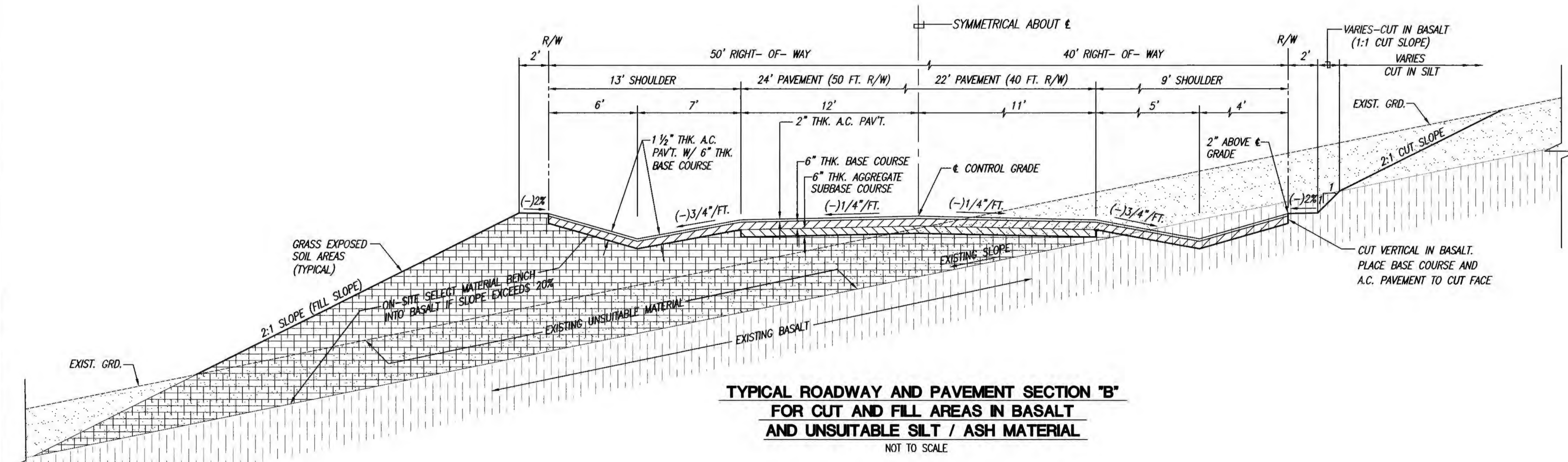
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ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/26



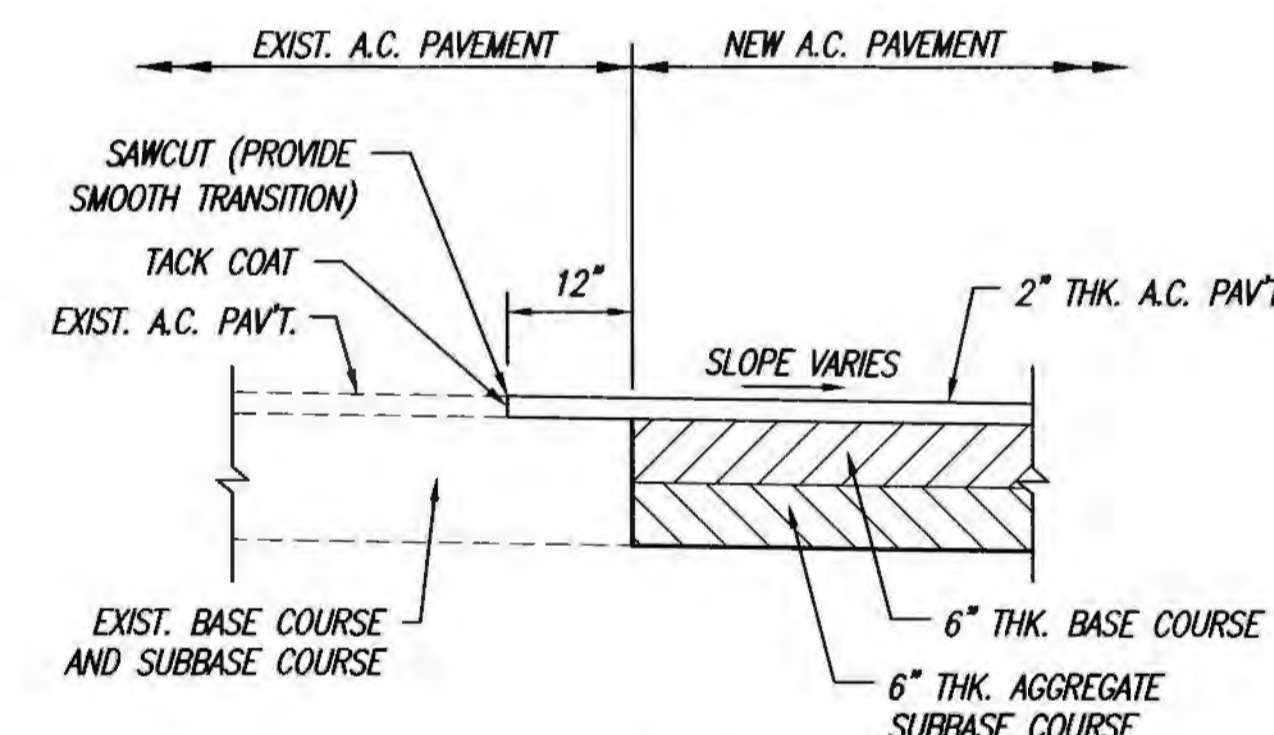
TYPICAL ROADWAY AND PAVEMENT SECTION "A"
FOR CUT AND FILL AREAS
IN EXISTING UNSUITABLE SILT SOILS
 NOT TO SCALE



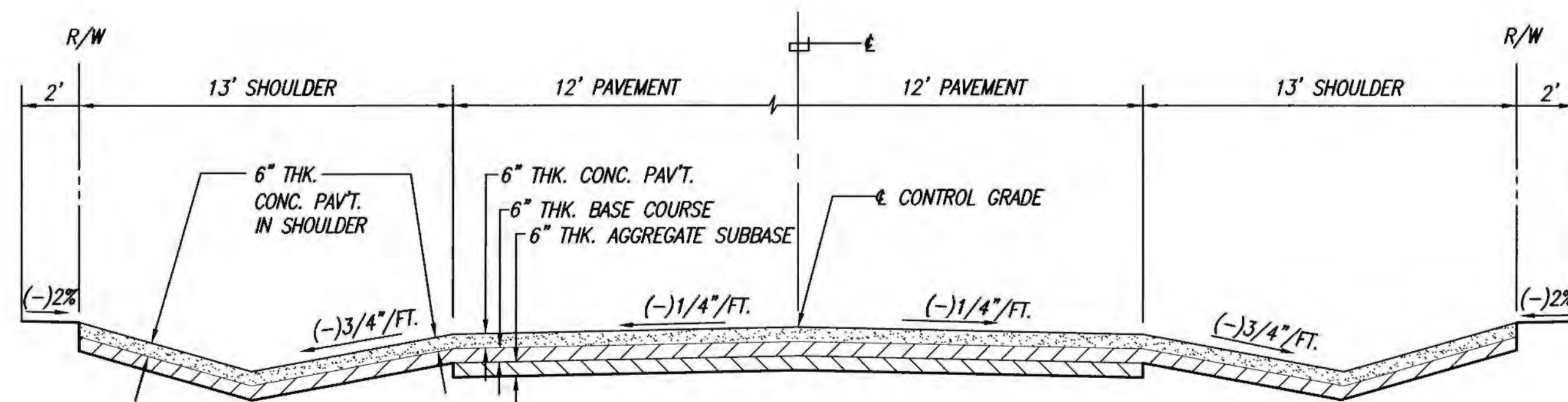
TYPICAL ROADWAY AND PAVEMENT HALF-SECTION "C"
FOR CUT AND FILL AREAS IN
EXISTING SUITABLE SILTY GRAVEL SOILS
 NOT TO SCALE



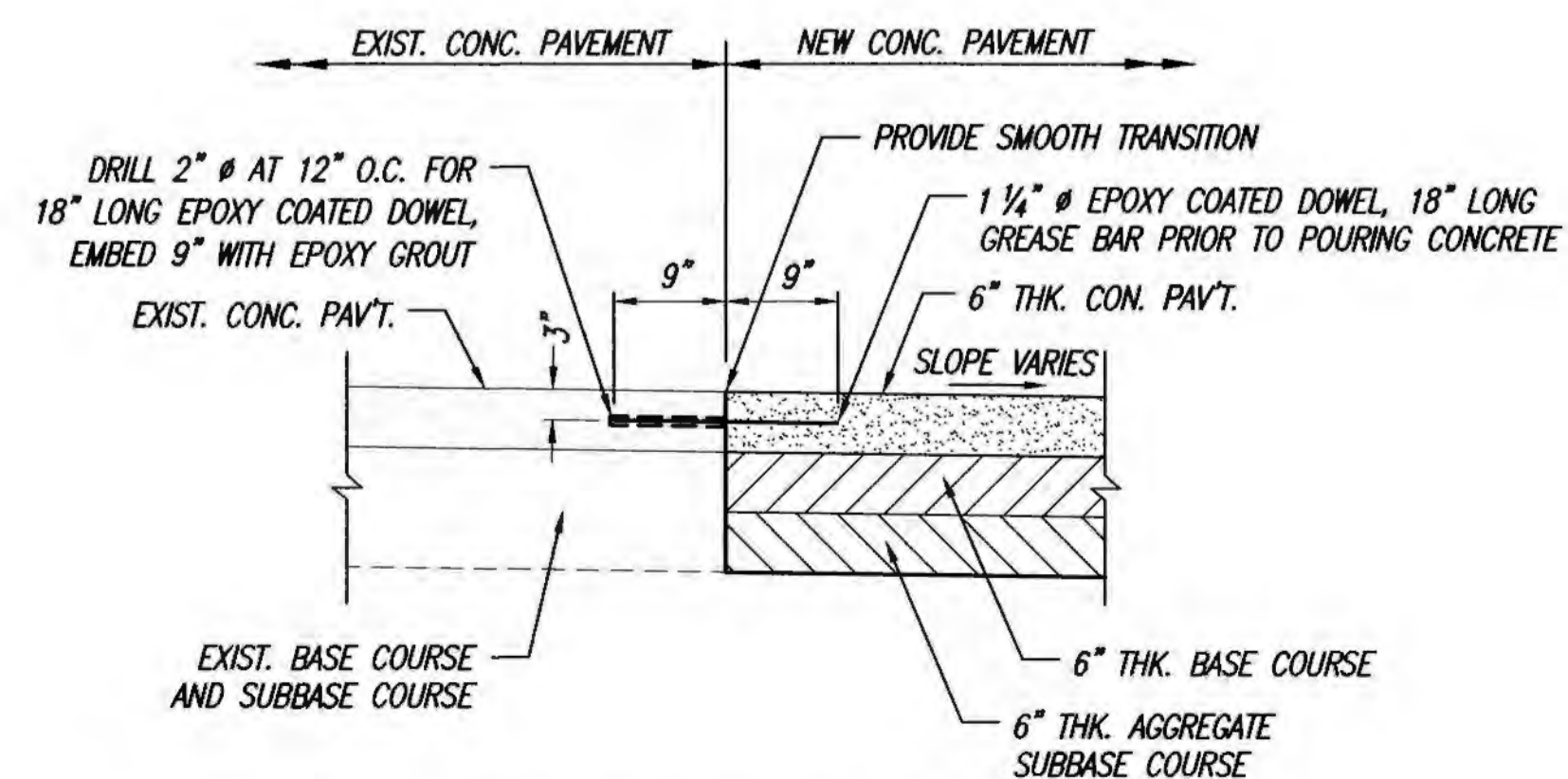
TYPICAL ROADWAY AND PAVEMENT SECTION "B"
FOR CUT AND FILL AREAS IN BASALT
AND UNSUITABLE SILT / ASH MATERIAL
 NOT TO SCALE



A.C. PAVEMENT TRANSITION DETAIL
 NOT TO SCALE



TYPICAL CONCRETE ROADWAY PAVEMENT SECTION
FOR PAHUKOA STREET EXTENSION
 NOT TO SCALE

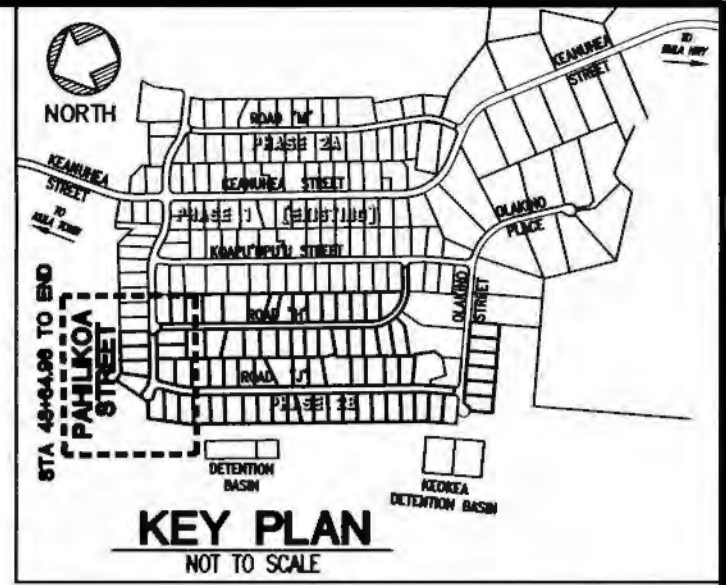


CONCRETE PAVEMENT TRANSITION DETAIL
 NOT TO SCALE

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

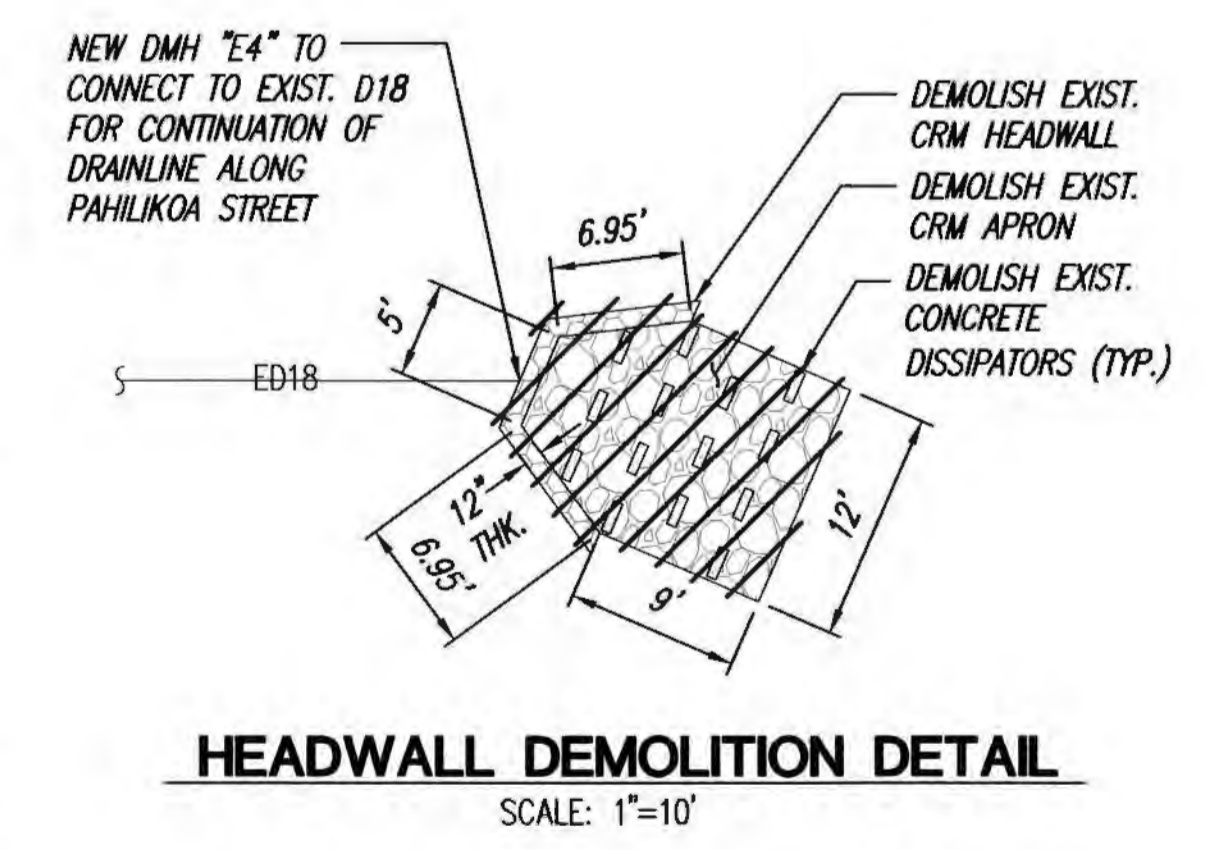
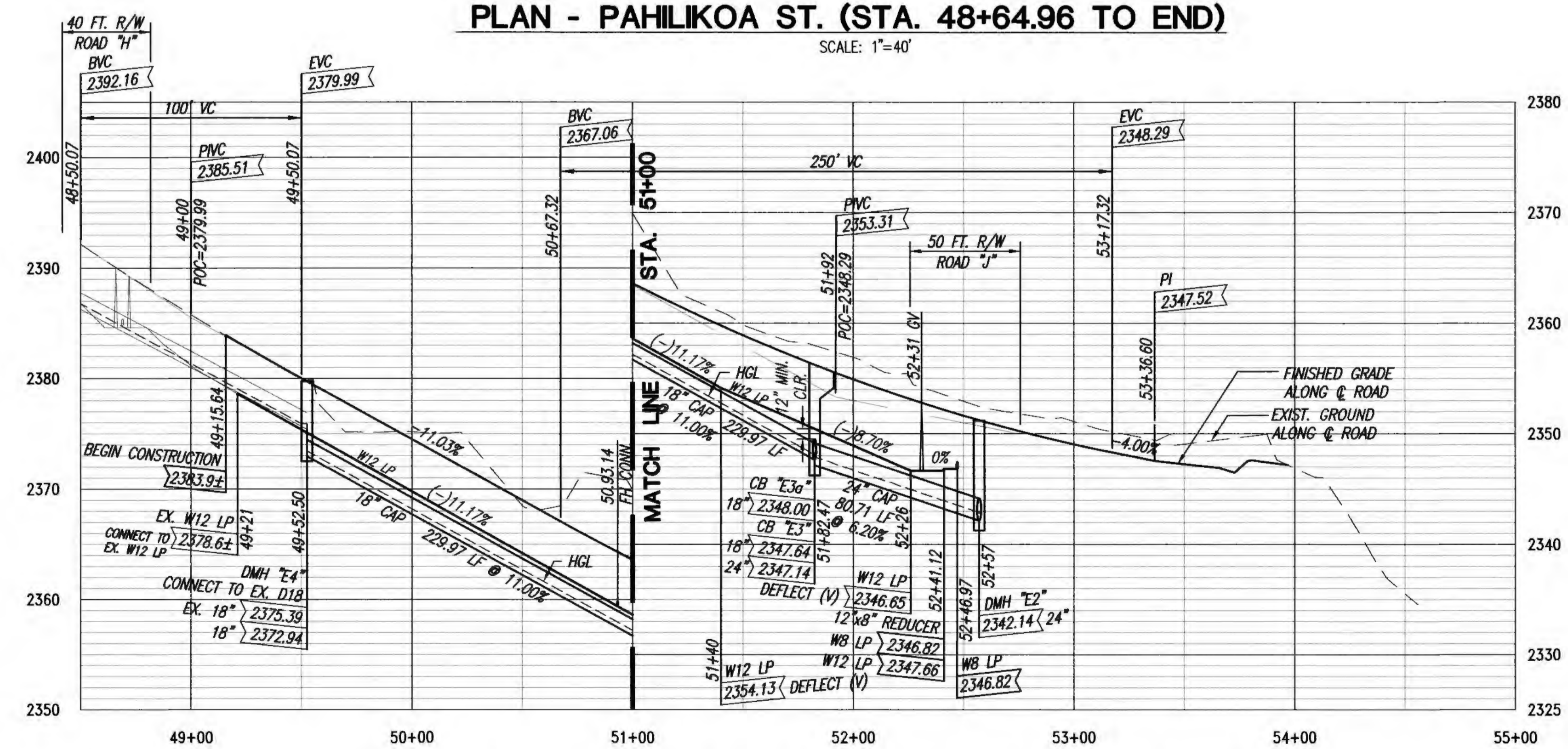
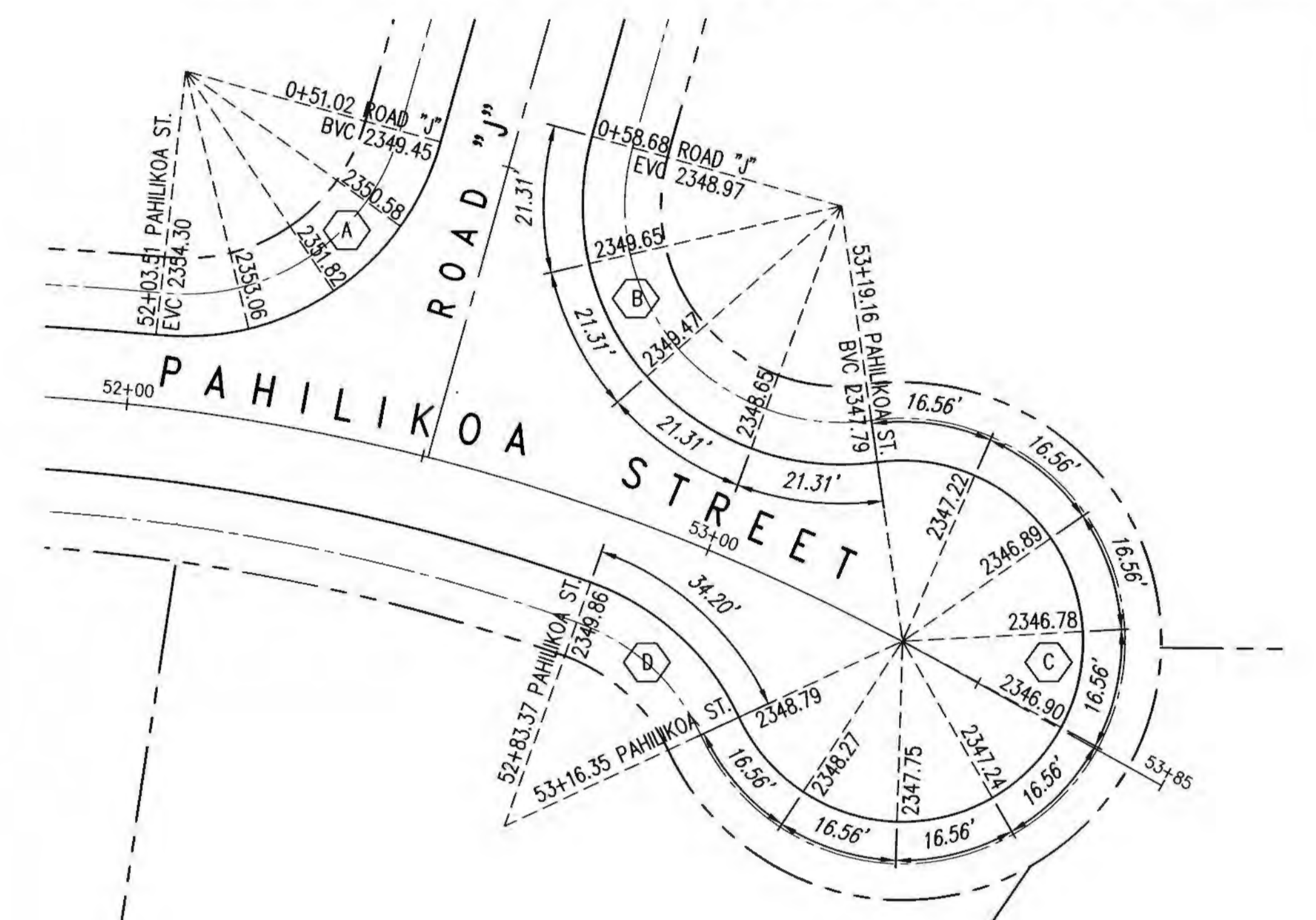
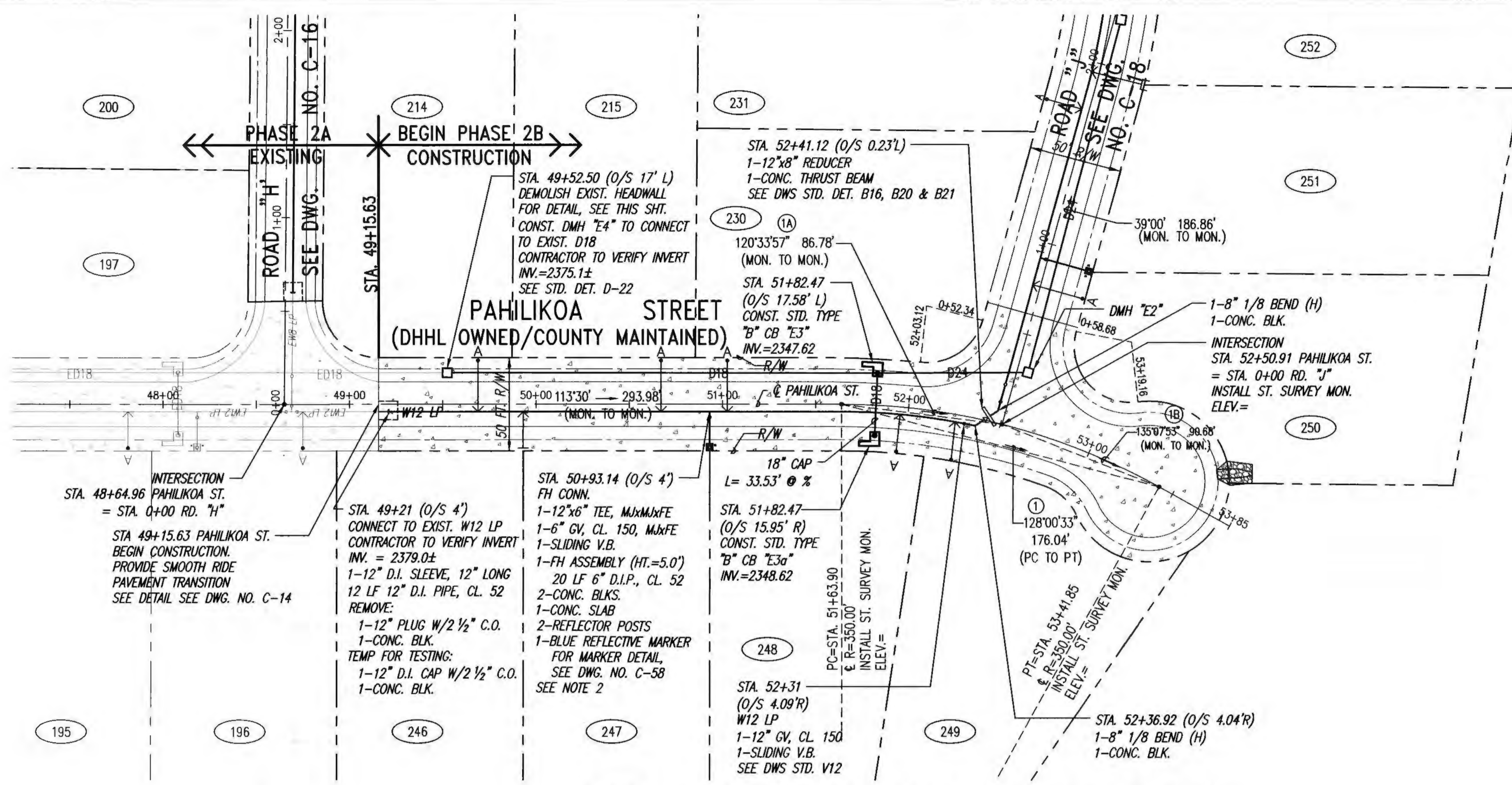
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/26

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<p>TYPICAL ROAD SECTIONS</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	



CURVE	(1)	(1A)	(1B)
Δ	29°07'49"	14°14'41"	14°53'13"
Δ/2	14°33'54.7"	7°07'20.3"	7°26'36.4"
R	350.00'	350.00'	350.00'
T	90.94'	43.73'	45.72'
C	176.04'	86.78'	90.68'
L	177.95'	87.01'	90.93'

CURVE	(A)	(B)	(C)	(D)	CURVE
Δ	80° 41' 39"	113° 33' 18"	253° 04' 26"	45° 34' 30"	Δ
Δ/2	40° 20' 50"	56° 46' 39"	126° 32' 13"	22° 47' 15"	Δ/2
R	44.00'	43.00'	30.00'	43.00'	R
T	37.38'	65.65'	40.49'	18.06'	T
C	56.97'	71.94'	48.21'	33.31'	C
L	61.97'	85.22'	132.51'	34.20'	L



LEGEND

- PROPERTY LINE
- (260) LOT NUMBER
- GUARD RAIL
- EX D18 EXISTING DRAINLINE
- D18 NEW DRAINLINE
- EX WB EXISTING WATERLINE
- WB LP NEW WATERLINE (LOW PRESSURE)
- TYPE "A" SERVICE LATERAL
- TYPE "A-1" SERVICE LATERAL
- CAP CORRUGATED ALUMINUM PIPE
- V.B. VALVE BOX
- SRA SINGLE RADIUS ARCH
- 199 BORING TEST PIT LOCATION

PROFILE - PAHILIKOA ST. (STA. 48+64.96 TO END)

SCALES: HORIZ. 1"=40'
VERT. 1"= 8'

NOTES:

- FOR TYPE "A" AND "A-1" WATER SERVICE LATERAL, SEE DWG. NO. C-64 AND DWS STD. DET. L24, L25 & L26 FOR TYPE "A" AND L24, L27 & L28 FOR TYPE "A-1".
- FOR FH CONN. SEE DWS STD. DET. FH6, FH8 & FH9.
- MAINTAIN 3 FT MINIMUM CLEARANCE BETWEEN WATER SERVICE LATERAL TAPS INTO NEW WATER MAIN.
- WATER EASEMENTS REQUIRED FOR WATER METER BOXES WITHIN THE LOTS.
- DWS TO INSTALL NEW 3/4" METER IN NEW METER BOXES WHEN APPLICABLE.
- FINISH GRADES SHOWN ARE ALONG THE CENTER OF ROAD PAVEMENT.

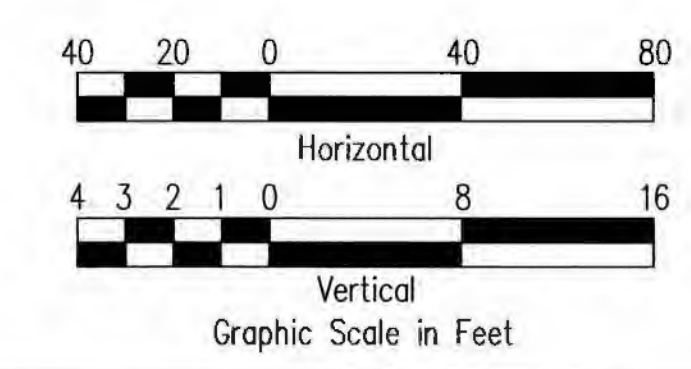
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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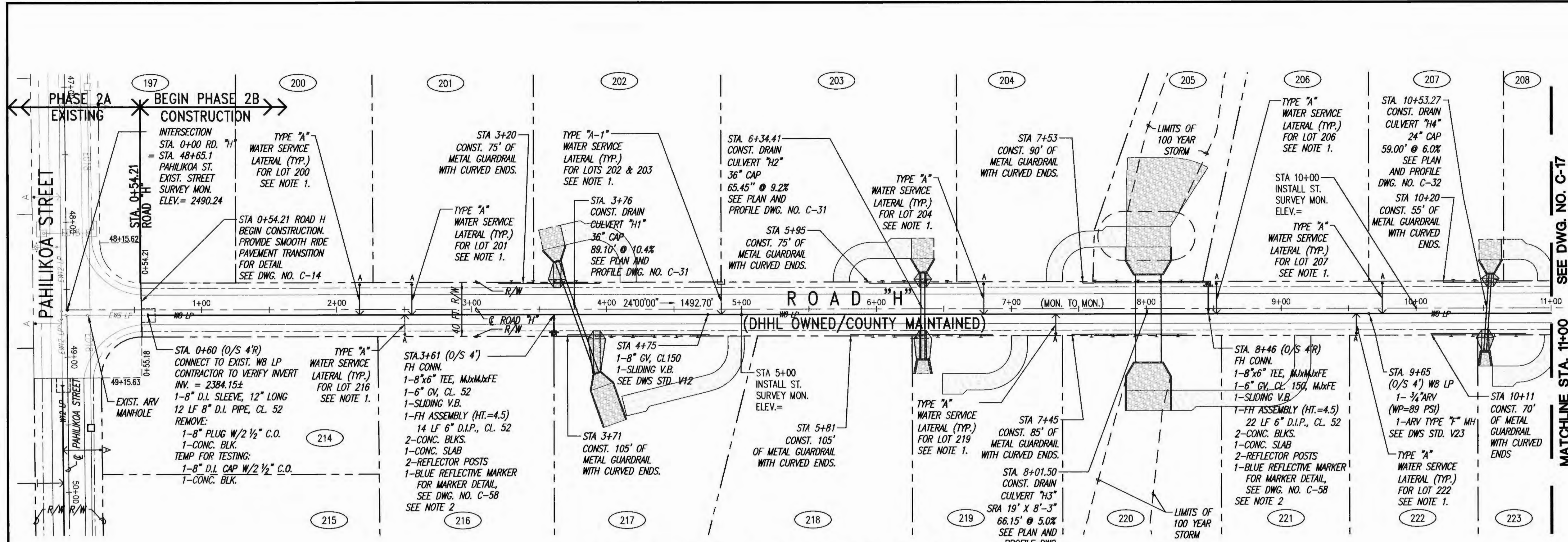
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002-014 AND (2) 2-2-033-023

PLAN AND PROFILE PAHILIKOA ST. STA. 50+00 TO END

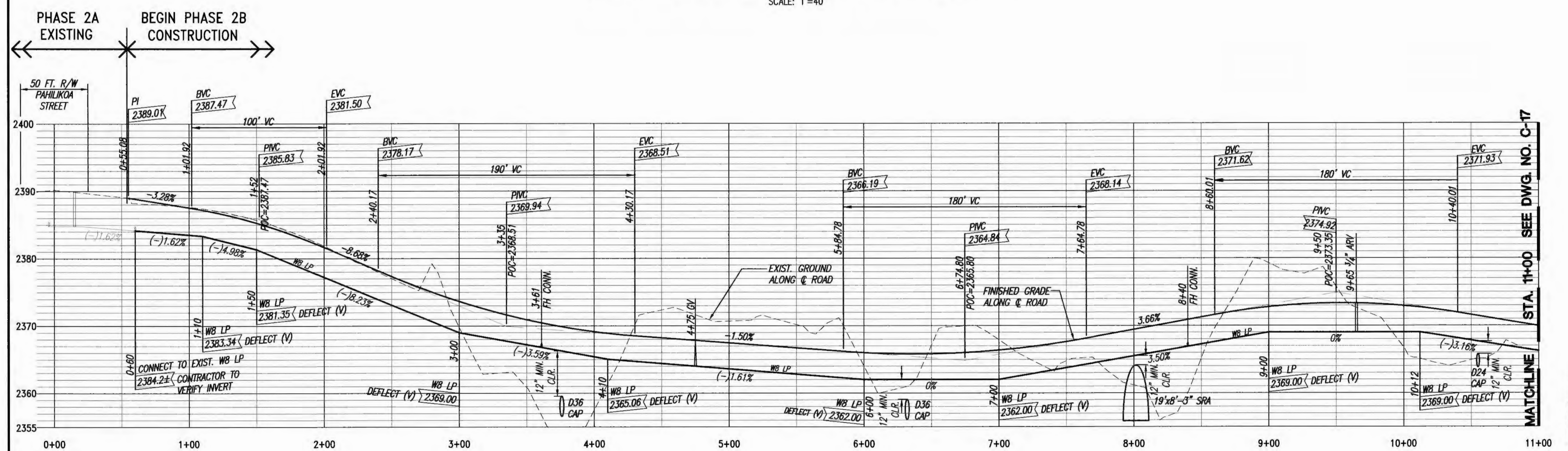
DRAWN BY: HWH ENGINEER: HWH, FJC CHECKED BY: AMM



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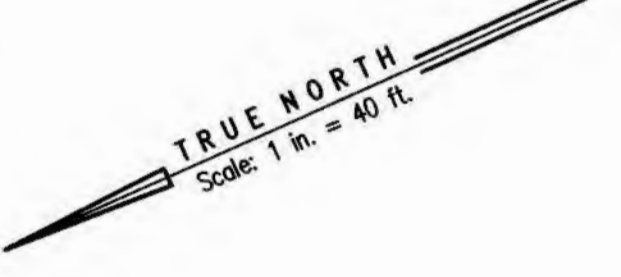
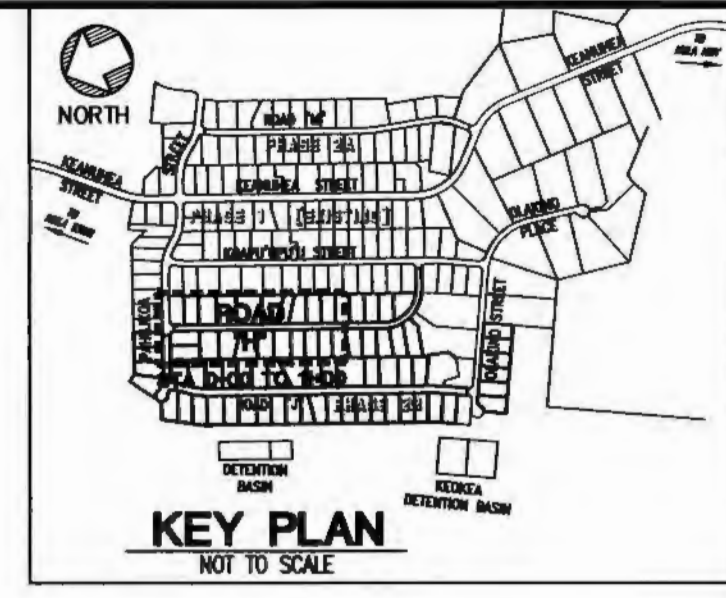
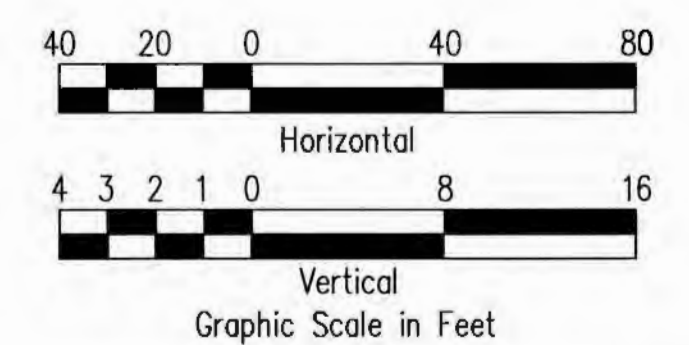


SCALE: 1"=40'



PROFILE - ROAD 'H' (STA. 0+00 TO 11+00)

SCALES: HORIZ. 1"=40'
VERT. 1"= 8'



MATCHLINE STA. 11+00 SEE DWG. NO. C-17

MATCHLINE STA. 11+00 SEE DWG. NO. C-17

LEGEND

- PROPERTY LINE
- (260) LOT NUMBER
- GUARD RAIL
- EX D18 --- EXISTING DRAINLINE
- D18 --- NEW DRAINLINE
- EX WB --- EXISTING WATERLINE
- WB LP --- NEW WATERLINE (LOW PRESSURE)
- TYPE 'A' SERVICE LATERAL
- TYPE 'A-1' SERVICE LATERAL
- CAP CORRUGATED ALUMINUM PIPE
- V.B. VALVE BOX
- SRA SINGLE RADIUS ARCH

- NOTES:**
- FOR TYPE "A" AND "A-1" WATER SERVICE LATERAL, SEE DWG. NO. C-64 AND DWS STD. DET. L24, L25 & L26 FOR TYPE "A" AND L24, L27 & L28 FOR TYPE "A-1".
 - FOR FH CONN. SEE DWS STD. DET. FH6, FH8 & FH9.
 - MAINTAIN 3 FT MINIMUM CLEARANCE BETWEEN WATER SERVICE LATERAL TAPS INTO NEW WATER MAIN.
 - WATER EASEMENTS REQUIRED FOR WATER METER BOXES WITHIN THE LOTS.
 - DWS TO INSTALL NEW 3/8" METER IN NEW METER BOXES WHEN APPLICABLE.
 - FOR GUARDRAIL, SEE STD DET. R22, R23 AND R24.
 - FINISH GRADES SHOWN ARE ALONG THE CENTER OF ROAD PAVEMENT.

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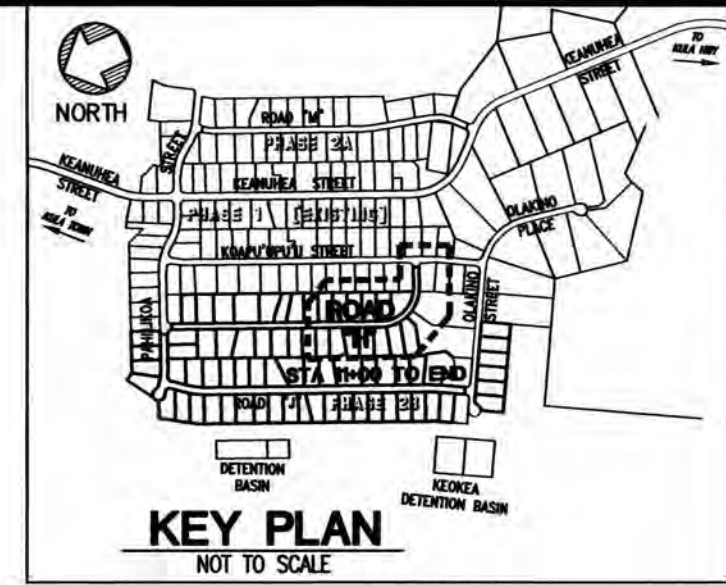
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023



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PLAN AND PROFILE ROAD 'H' STA. 0+00 TO STA. 11+00

DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM
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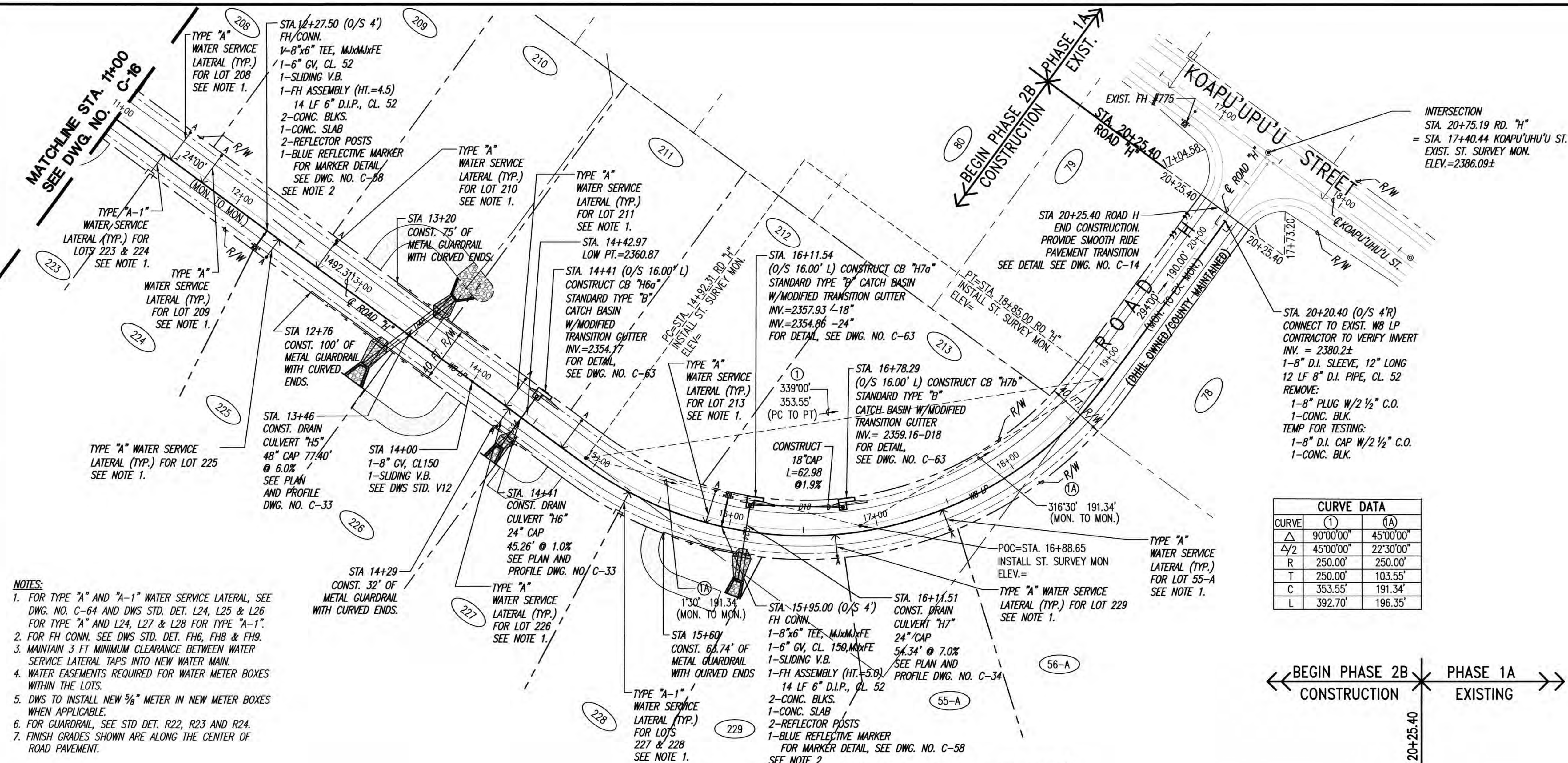
INTERSECTION
 STA. 20+75.19 RD. "H"
 = STA. 17+40.44 KOAPU'UHUU ST.
 EXIST. ST. SURVEY MON.
 ELEV.=2386.09±

LEGEND

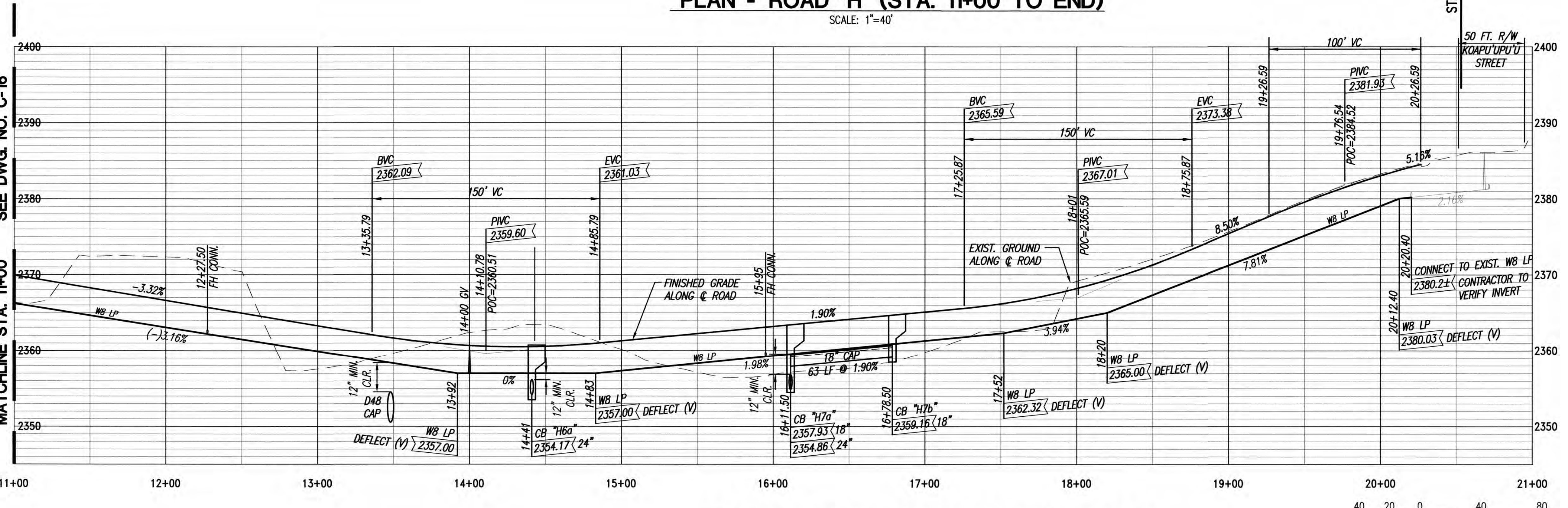
- PROPERTY LINE
- (260) LOT NUMBER
- GUARD RAIL
- EX D18 EXISTING DRAINLINE
- D18 NEW DRAINLINE
- EX WB EXISTING WATERLINE
- WB LP NEW WATERLINE (LOW PRESSURE)
- TYPE "A" SERVICE LATERAL
- TYPE "A-1" SERVICE LATERAL
- CAP CORRUGATED ALUMINUM PIPE
- V.B. VALVE BOX
- SRA SINGLE RADIUS ARCH
- 199 BORING TEST PIT LOCATION

CURVE DATA

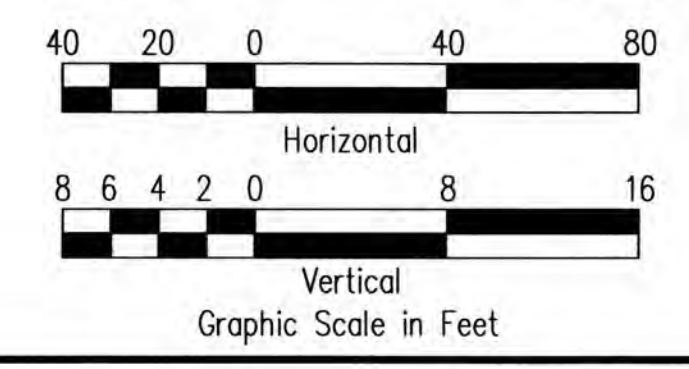
CURVE	(1)	(1A)
Δ	90°00'00"	45°00'00"
Δ/2	45°00'00"	22°30'00"
R	250.00'	250.00'
T	250.00'	103.55'
C	353.55'	191.34'
L	392.70'	196.35'



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



PROFILE - ROAD "H" (STA. 11+00 TO END)
 SCALES: HORIZ. 1"=40'
 VERT. 1"= 8'



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- NOTES:**
- FOR TYPE "A" AND "A-1" WATER SERVICE LATERAL, SEE DWG. NO. C-64 AND DWS STD. DET. L24, L25 & L26 FOR TYPE "A" AND L24, L27 & L28 FOR TYPE "A-1".
 - FOR FH CONN. SEE DWS STD. DET. FH6, FH8 & FH9.
 - MAINTAIN 3 FT MINIMUM CLEARANCE BETWEEN WATER SERVICE LATERAL TAPS INTO NEW WATER MAIN.
 - WATER EASEMENTS REQUIRED FOR WATER METER BOXES WITHIN THE LOTS.
 - DWS TO INSTALL NEW 3/8" METER IN NEW METER BOXES WHEN APPLICABLE.
 - FOR GUARDRAIL, SEE STD DET. R22, R23 AND R24.
 - FINISH GRADES SHOWN ARE ALONG THE CENTER OF ROAD PAVEMENT.

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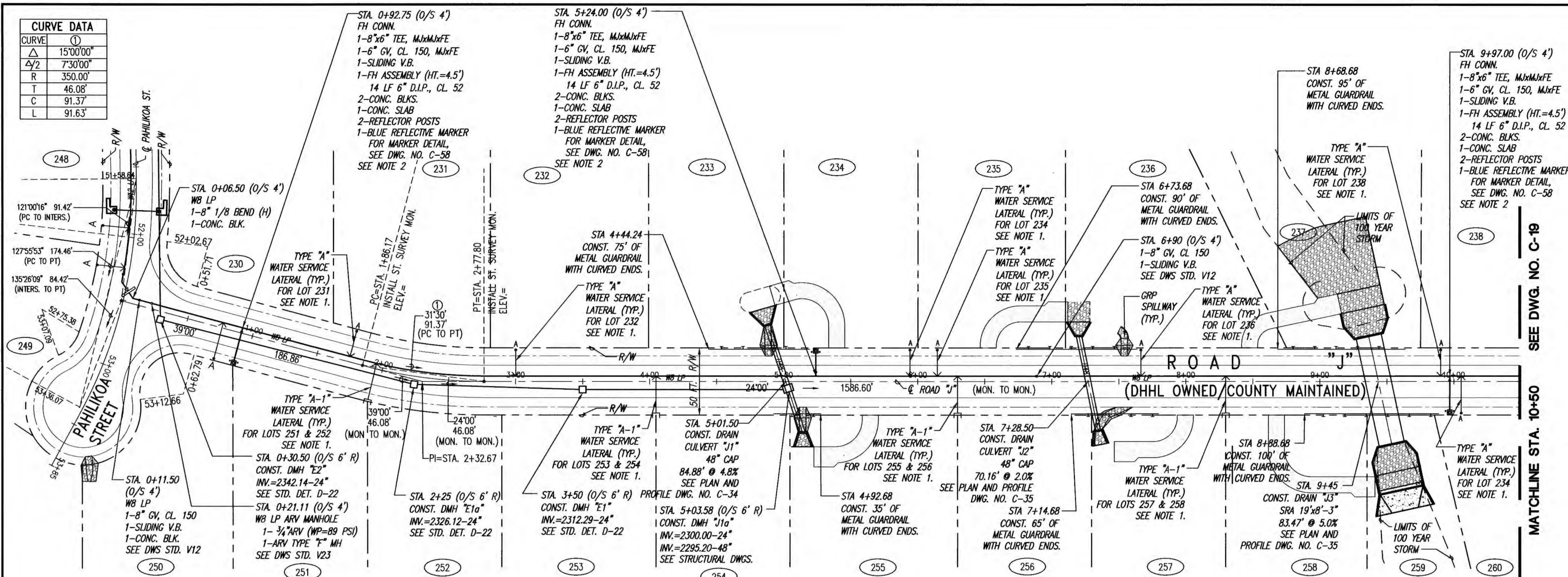
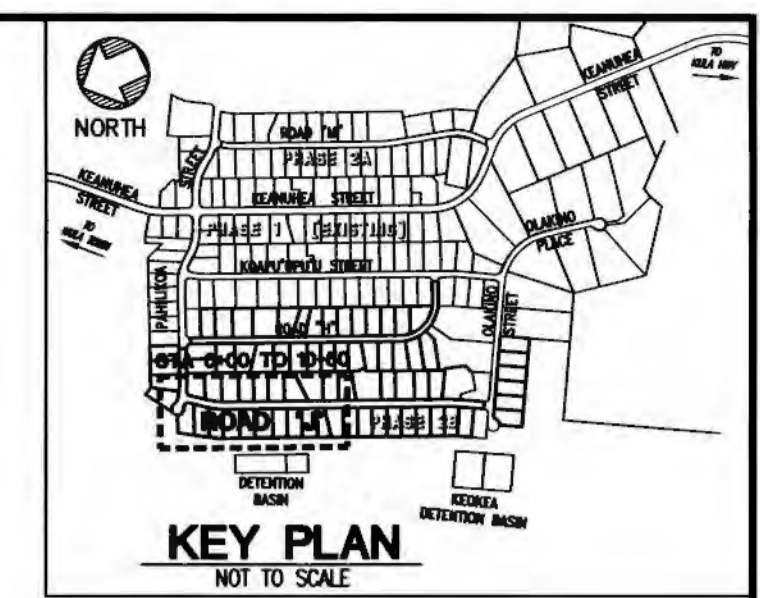
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
 KEOKEA & WAIOHULI, MAKAWAO, MAUI
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN AND PROFILE ROAD "H" STA. 11+00 TO END

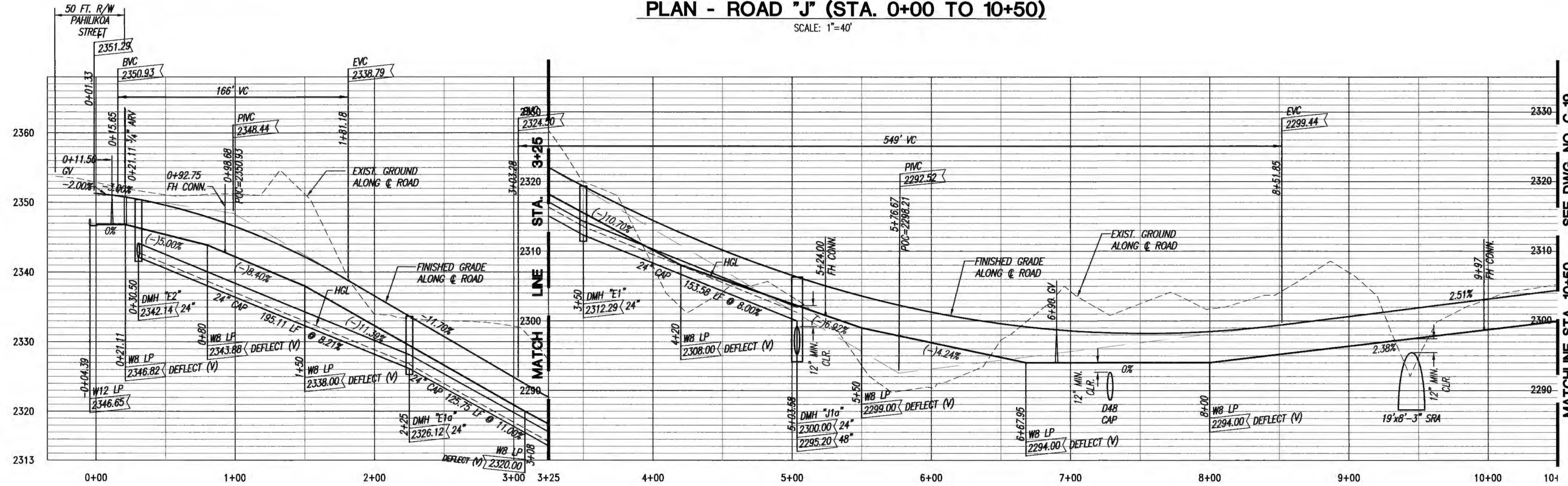
DRAWN BY: HWH ENGINEER: HWH, FJC CHECKED BY: AMM

FILE POCKET FOLDER NO.

CURVE DATA	
CURVE	①
Δ	15°00'00"
Δ/2	7°30'00"
R	350.00'
T	46.08'
C	91.37'
L	91.63'



PLAN - ROAD "J" (STA. 0+00 TO 10+50)
SCALE: 1"=40'



PROFILE - ROAD "J" (STA. 0+00 TO 10+50)
SCALES: HORIZ. 1"=40'
VERT. 1"= 8'

LEGEND

- PROPERTY LINE
- (260) LOT NUMBER
- GUARD RAIL
- - - EX D18 - - - EXISTING DRAINLINE
- - - D18 - - - NEW DRAINLINE
- - - EX W8 - - - EXISTING WATERLINE
- - - W8 LP - - - NEW WATERLINE (LOW PRESSURE)
- ← TYPE "A" SERVICE LATERAL
- TYPE "A-1" SERVICE LATERAL
- CAP CORRUGATED ALUMINUM PIPE
- V.B. VALVE BOX
- SRA SINGLE RADIUS ARCH
- 199 BORING TEST PIT LOCATION

- NOTES:**
- FOR TYPE "A" AND "A-1" WATER SERVICE LATERAL, SEE DWG. NO. C-64 AND DWS STD. DET. L24, L25 & L26 FOR TYPE "A" AND L24, L27 & L28 FOR TYPE "A-1".
 - FOR FH CONN. SEE DWS STD. DET. FH6, FH8 & FH9.
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 - WATER EASEMENTS REQUIRED FOR WATER METER BOXES WITHIN THE LOTS.
 - DWS TO INSTALL NEW 3/4" METER IN NEW METER BOXES WHEN APPLICABLE.
 - FOR GUARDRAIL, SEE STD. DET. R22, R23 AND R24.
 - FINISH GRADES SHOWN ARE ALONG THE CENTER OF ROAD PAVEMENT.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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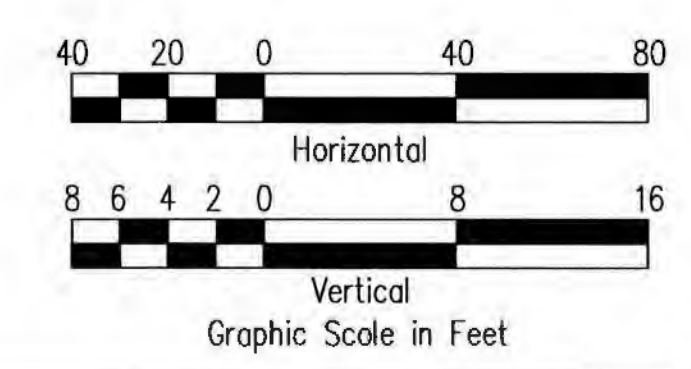
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

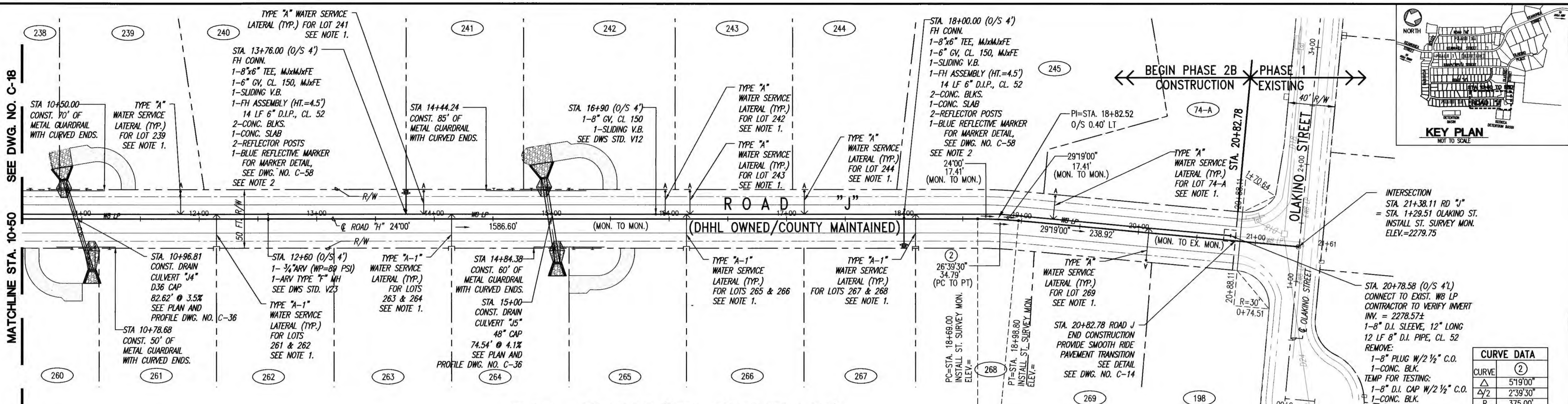
PLAN AND PROFILE ROAD "J" STA. 0+00 TO STA. 10+50

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

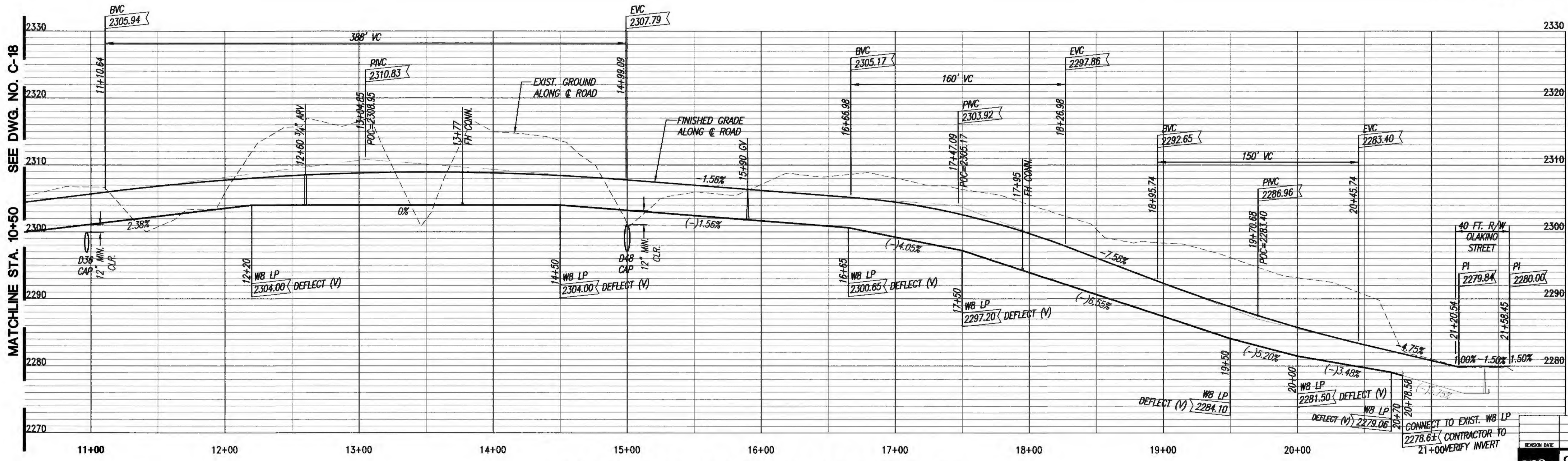


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PLAN - ROAD "J" (STA. 10+50 TO END)
SCALE: 1"=40'

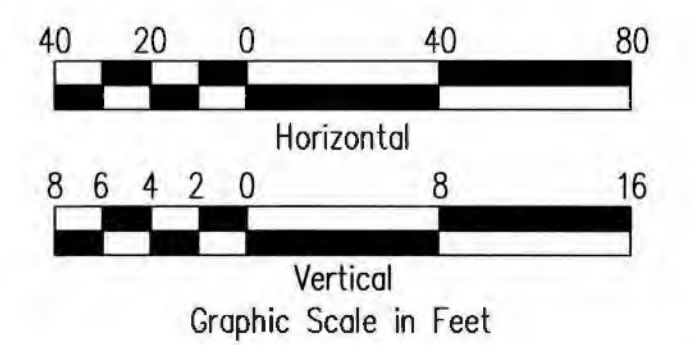


PROFILE - ROAD "J" (STA. 10+50 TO END)
SCALES: HORIZ. 1"=40'
VERT. 1"=8'

- NOTES:**
- FOR TYPE "A" AND "A-1" WATER SERVICE LATERAL, SEE DWG. NO. C-64 AND DWS STD. DET. L24, L25 & L26 FOR TYPE "A" AND L24, L27 & L28 FOR TYPE "A-1".
 - FOR FH CONN. SEE DWS STD. DET. FH6, FH8 & FH9.
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 - WATER EASEMENTS REQUIRED FOR WATER METER BOXES WITHIN IN LOTS.
 - DWS TO INSTALL NEW 3/8" METER IN NEW METER BOXES WHEN APPLICABLE.
 - FOR GUARDRAIL, SEE STD DET. R22, R23 AND R24.
 - FINISH GRADES SHOWN ARE ALONG THE CENTER OF ROAD PAVEMENT.

LEGEND

---	PROPERTY LINE	←→	TYPE "A" SERVICE LATERAL
(260)	LOT NUMBER	→	TYPE "A-1" SERVICE LATERAL
---	GUARD RAIL	CAP	CORRUGATED ALUMINUM PIPE
-EX D18-	EXISTING DRAINLINE	V.B.	VALVE BOX
-D18-	NEW DRAINLINE	SRA	SINGLE RADIUS ARCH
-EX WB-	EXISTING WATERLINE	199	BORING TEST PIT LOCATION
-WB LP-	NEW WATERLINE (LOW PRESSURE)		



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

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 LICENSE EXPIRATION DATE: 04/30/26

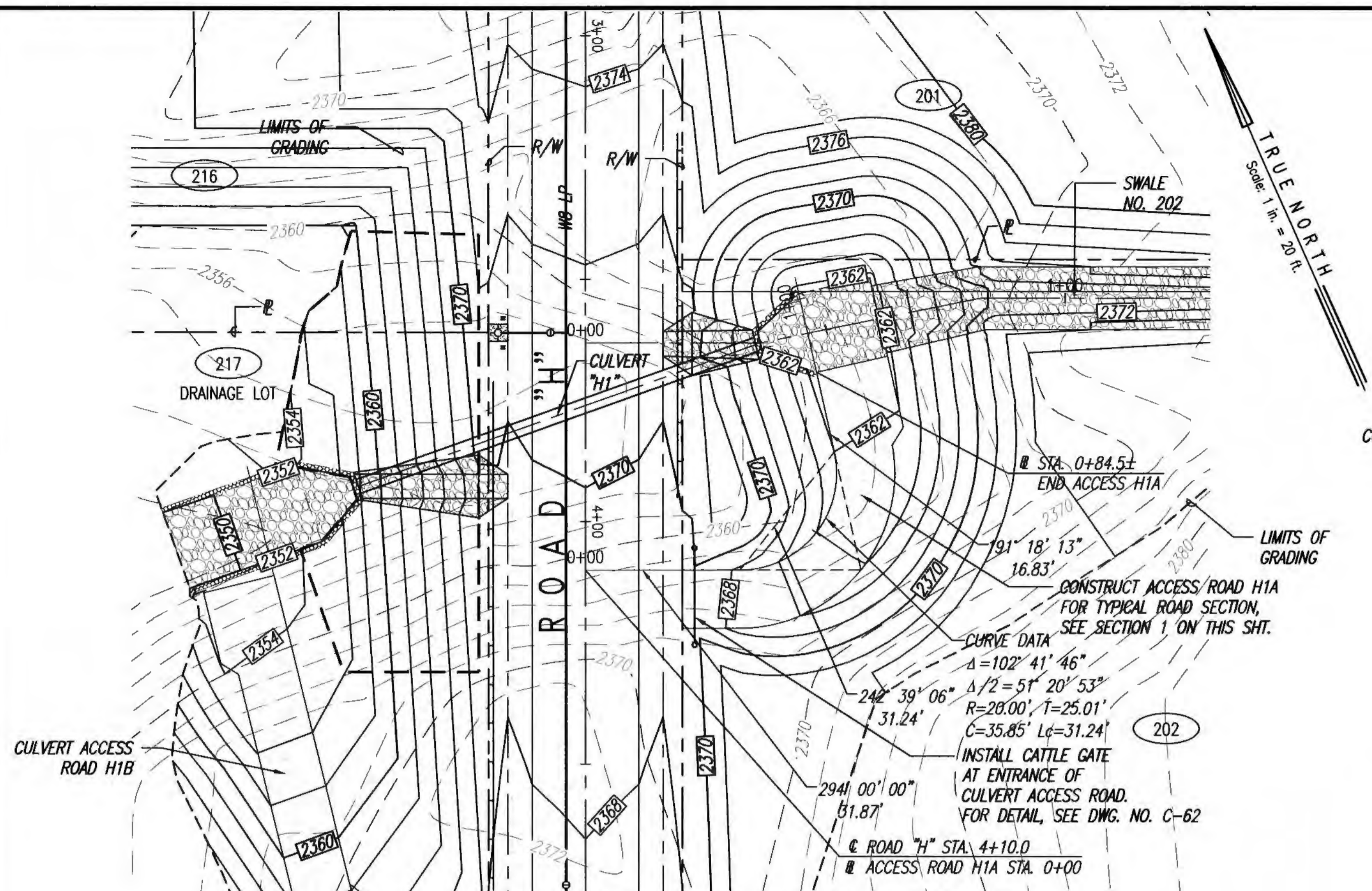
REVISION DATE: _____ DESCRIPTION: _____ MADE BY: _____ APPROVED: _____
Community Planning and Engineering, Inc.
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 2296 Queen Emma Street, Third Floor Honolulu, Hawaii

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 ROAD "J" STA. 10+50 TO END

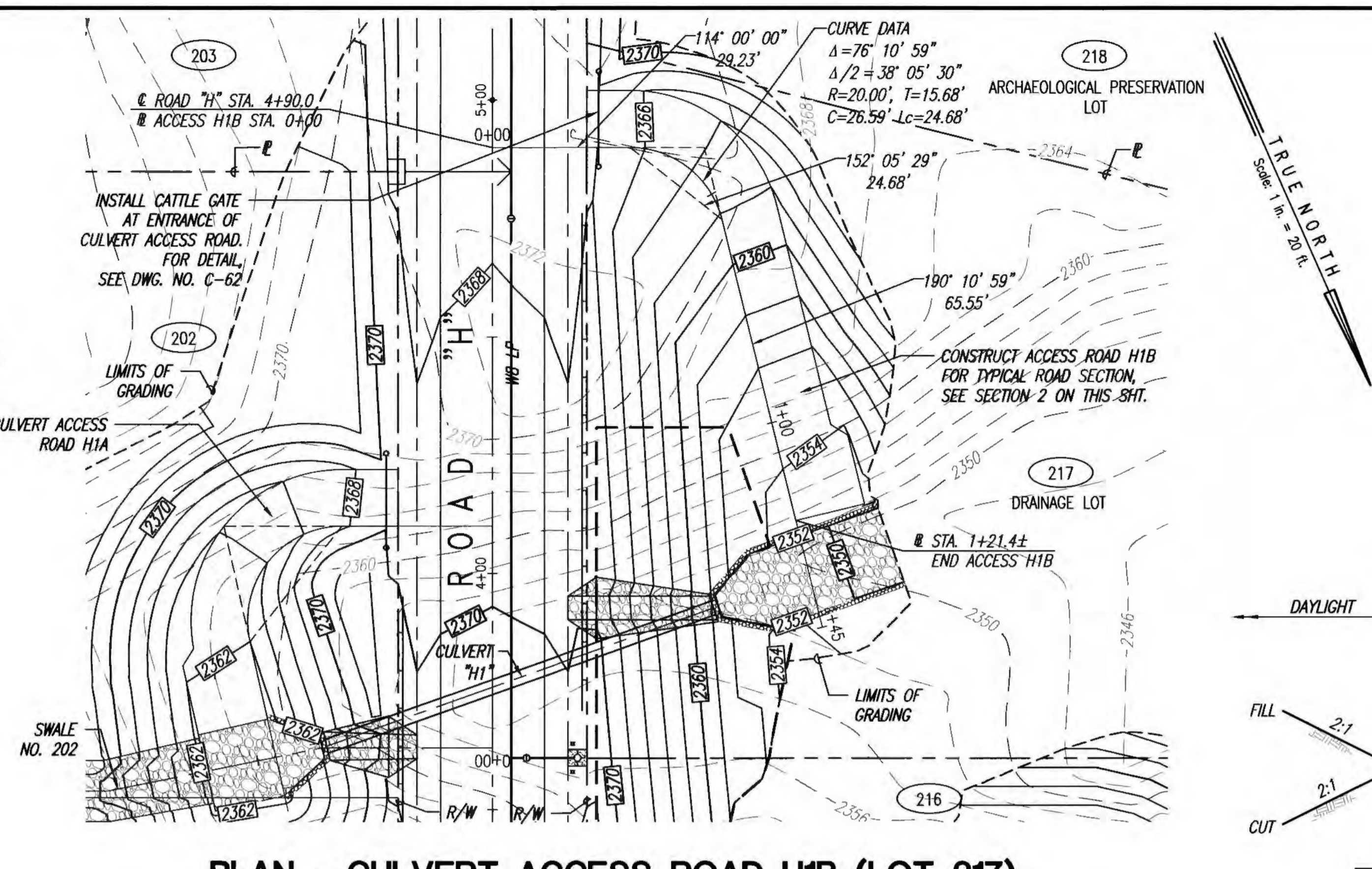
DRAWN BY: HWH ENGINEER: HWH, FJC CHECKED BY: AMM

FILE	POCKET	FOLDER	NO.
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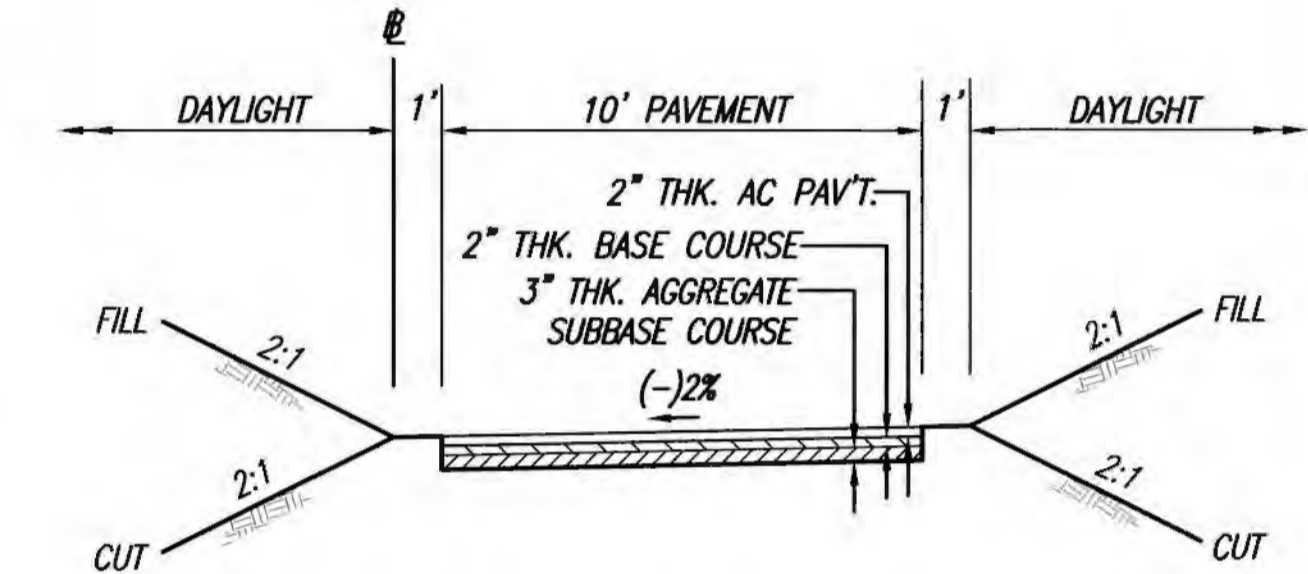
PLAN - CULVERT ACCESS ROAD H1A (LOT 202)

SCALE: 1"=20'



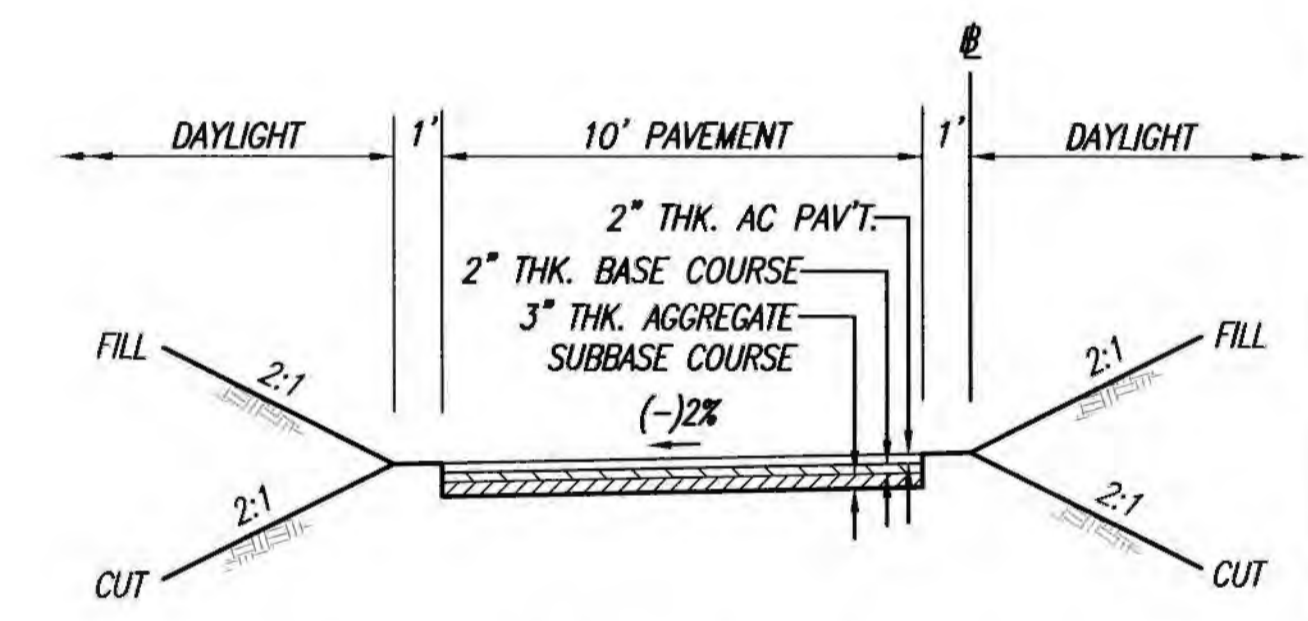
PLAN - CULVERT ACCESS ROAD H1B (LOT 217)

SCALE: 1"=20'



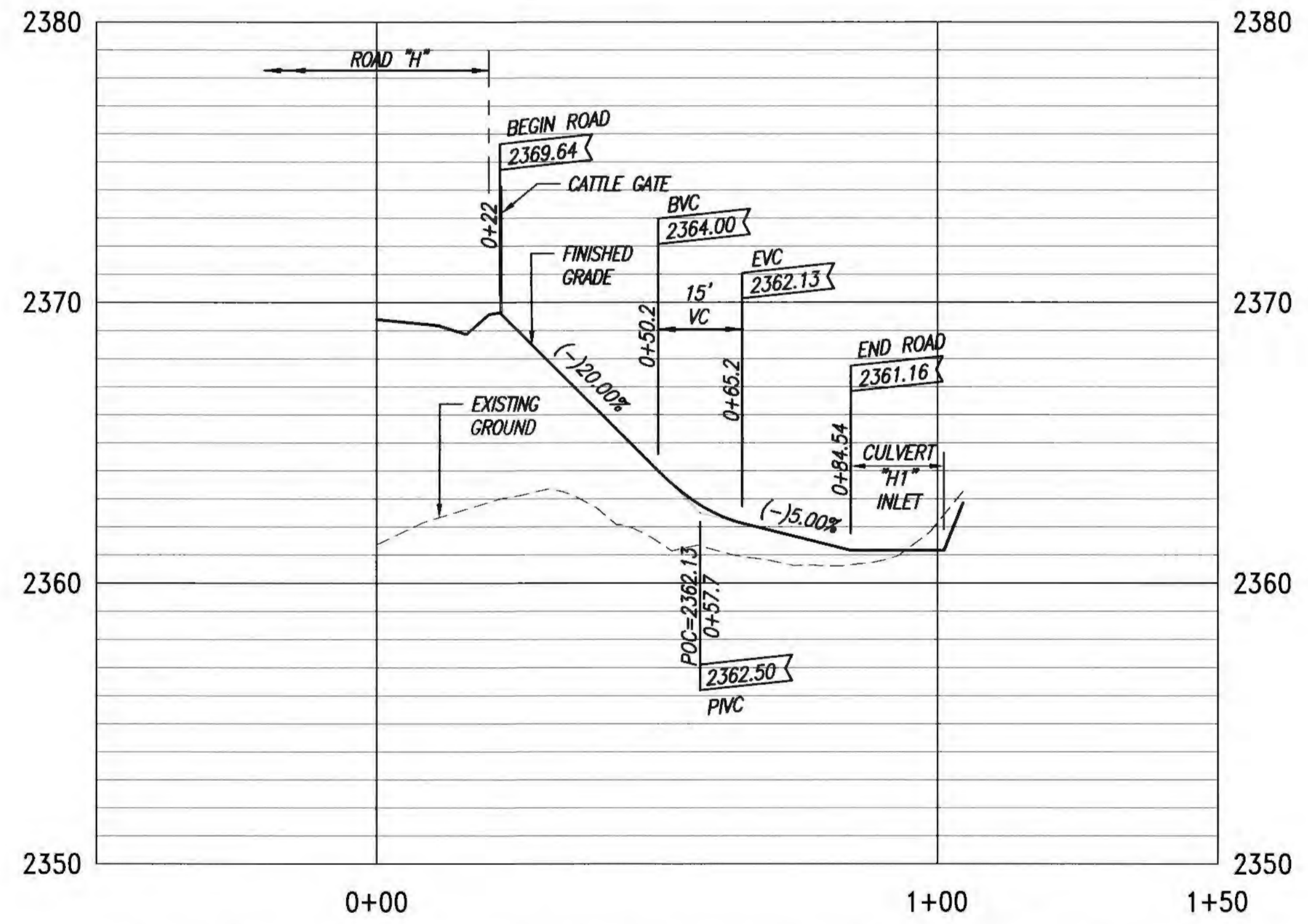
TYPICAL ACCESS ROAD SECTION 1

NOT TO SCALE



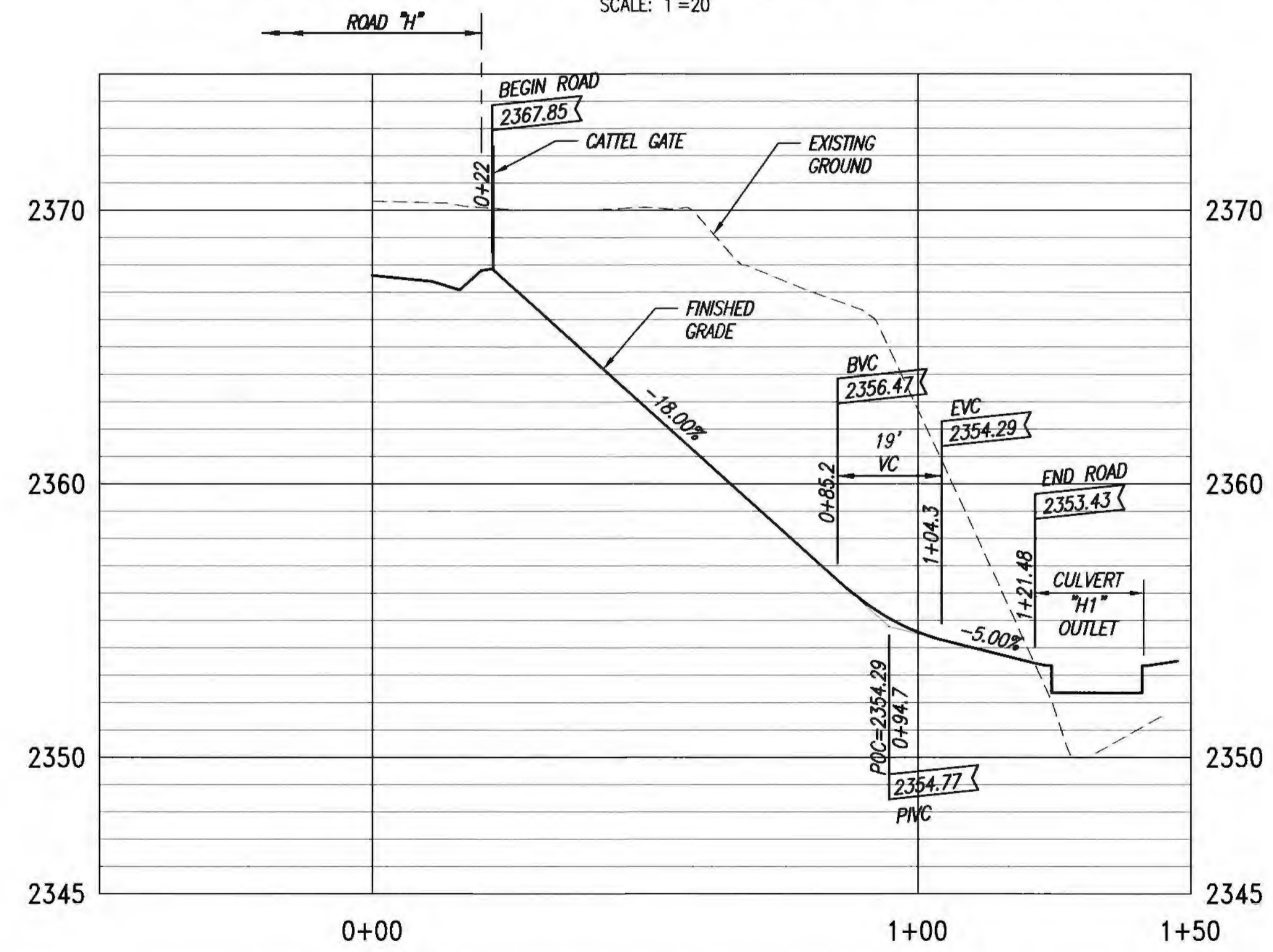
TYPICAL ACCESS ROAD SECTION 2

NOT TO SCALE



PROFILE - CULVERT ACCESS ROAD H1A (LOT 202)

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

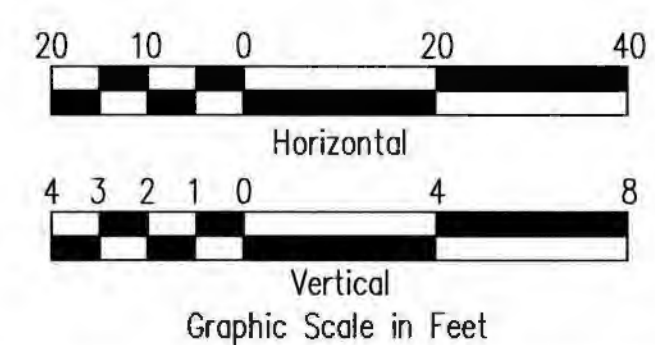


PROFILE - CULVERT ACCESS ROAD H1B (LOT 217)

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

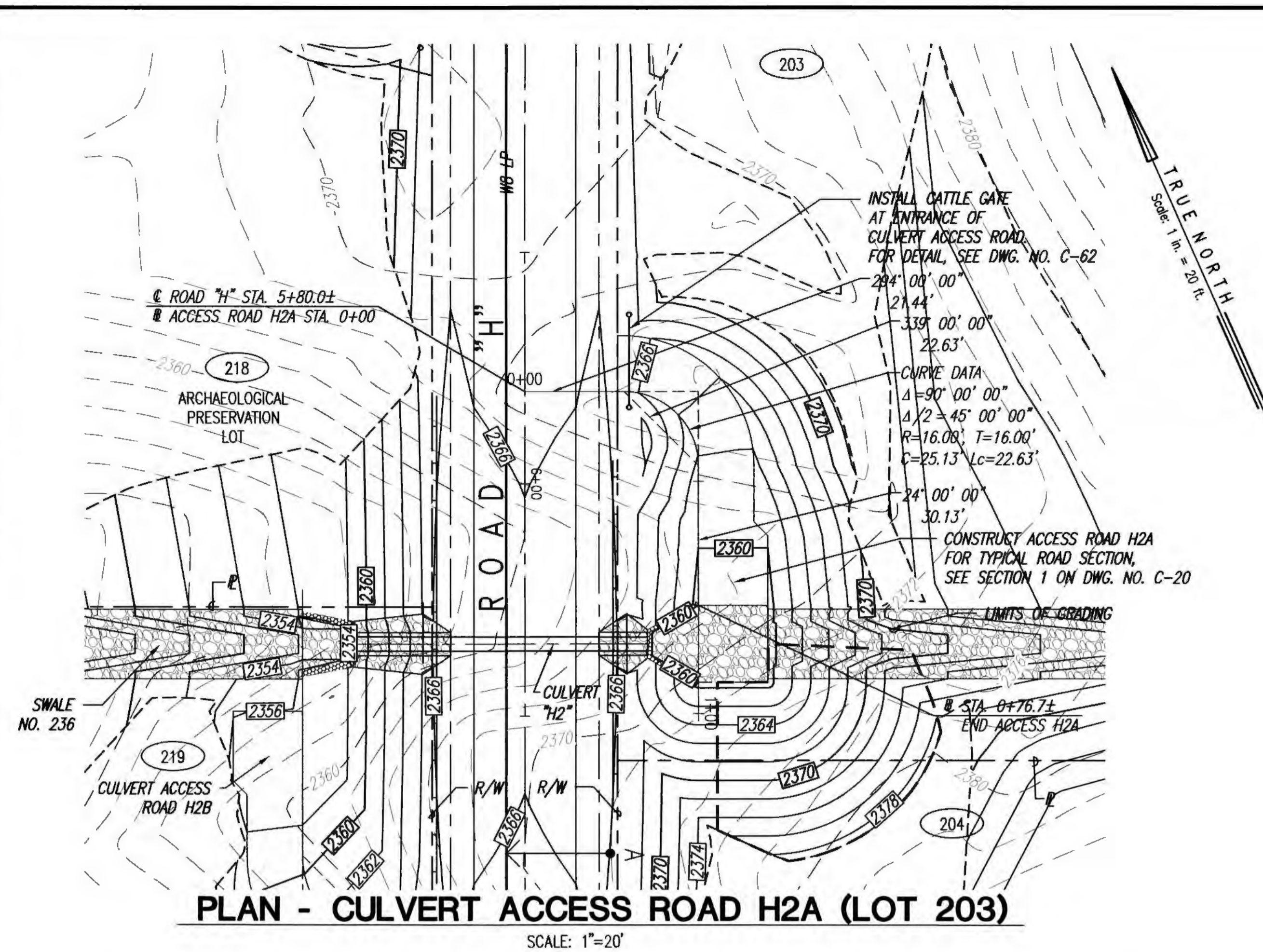
LEGEND

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



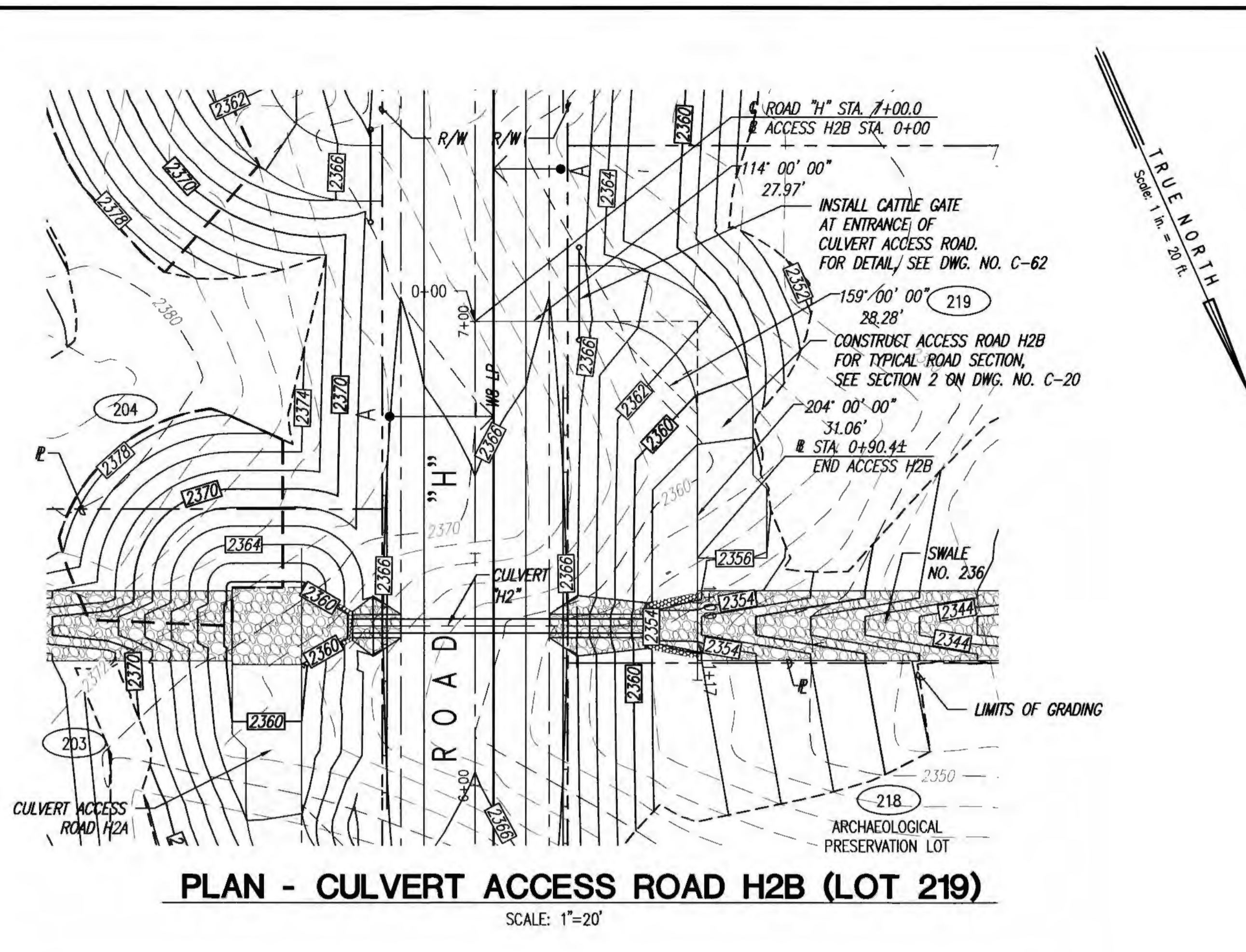
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1226 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B 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 CULVERT ACCESS ROAD "H" (A & B)</p>			
DRAWN BY: JSO	ENGINEER: JSO, FJC	CHECKED BY: AMM	
FILE	POCKET	FOLDER	NO.



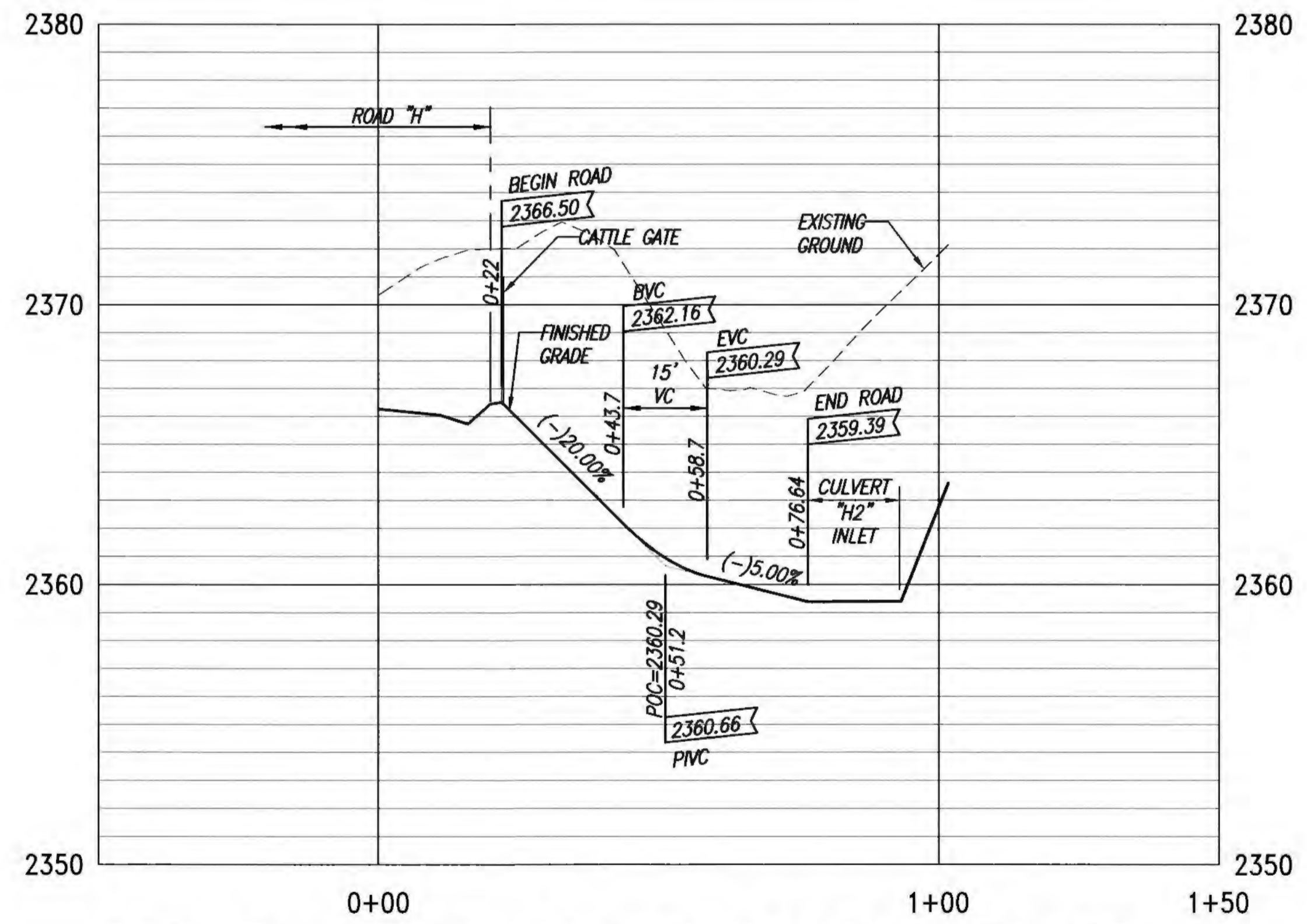
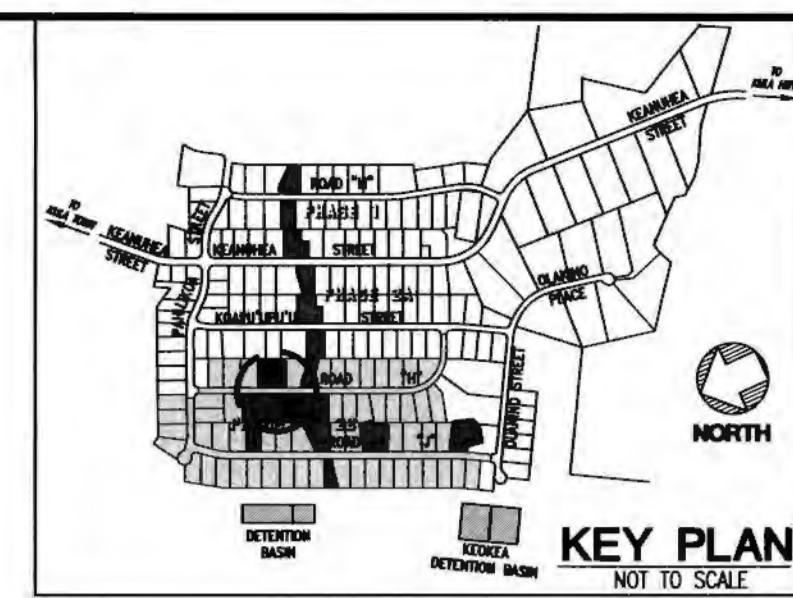
PLAN - CULVERT ACCESS ROAD H2A (LOT 203)

SCALE: 1"=20'



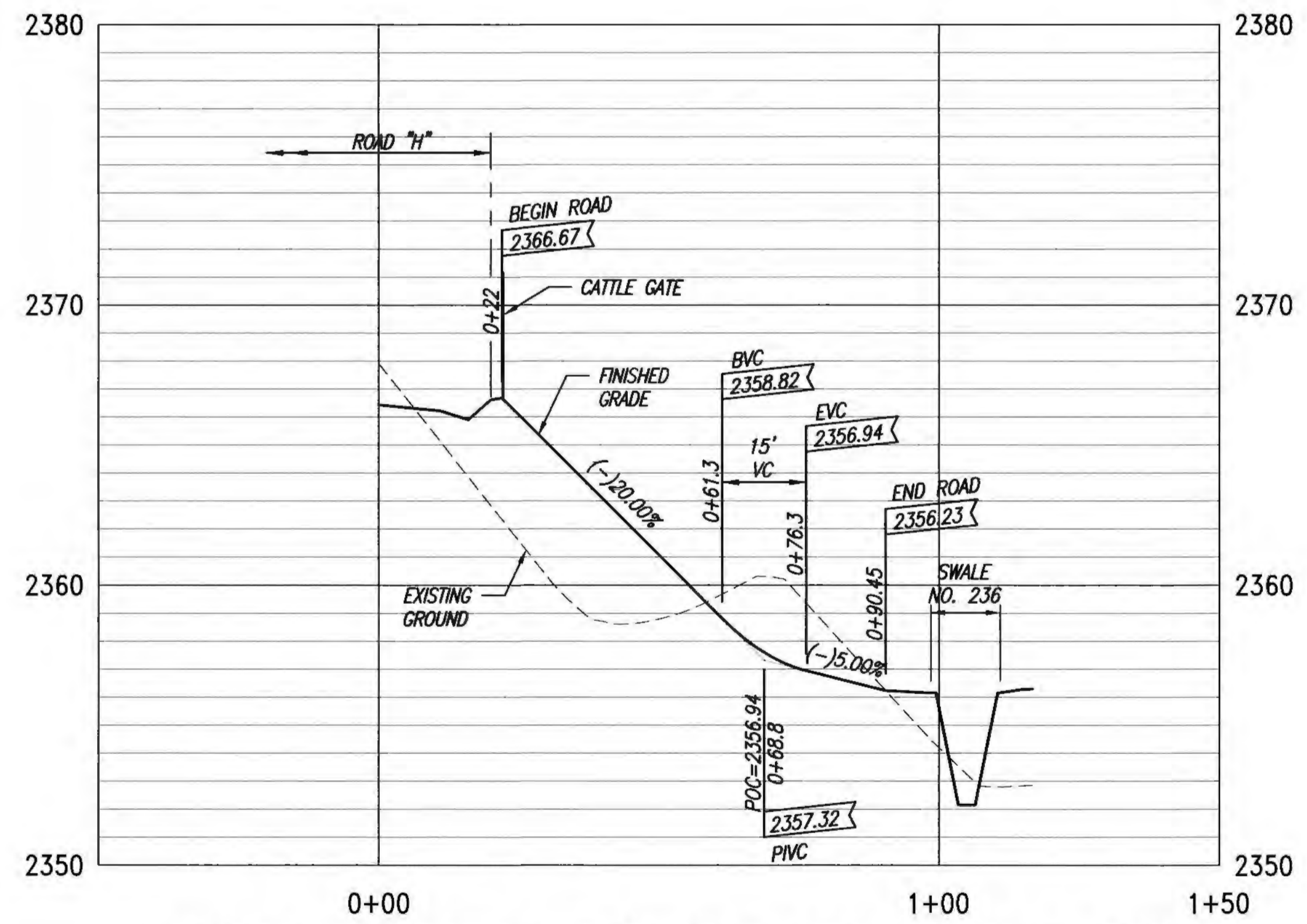
PLAN - CULVERT ACCESS ROAD H2B (LOT 219)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD H2A (LOT 203)

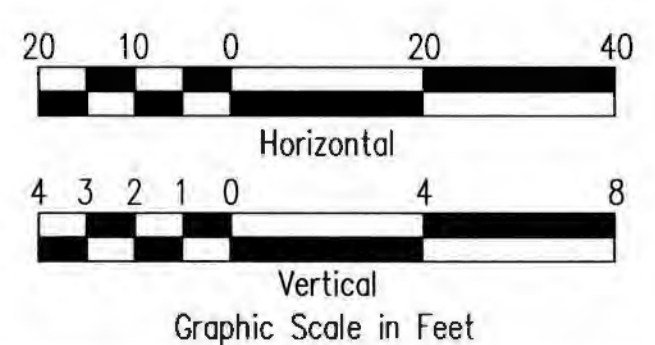
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD H2B (LOT 219)

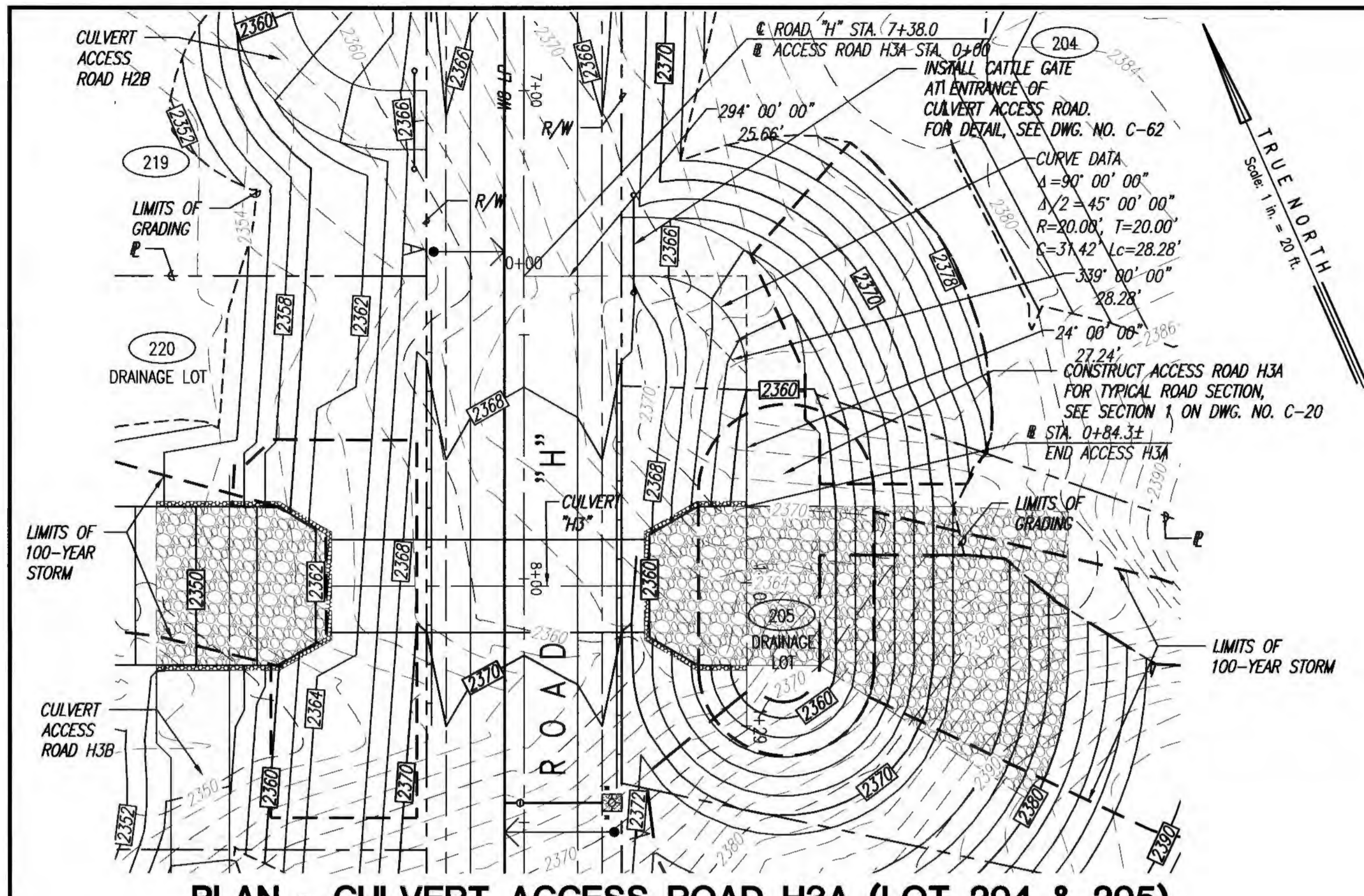
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - - - - - PROPERTY LINE
 - - - - - GUARDRAIL
 - CATTLE GATE
 - NB NEW WATER LINE
 - ←— TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - 216 LOT NUMBER



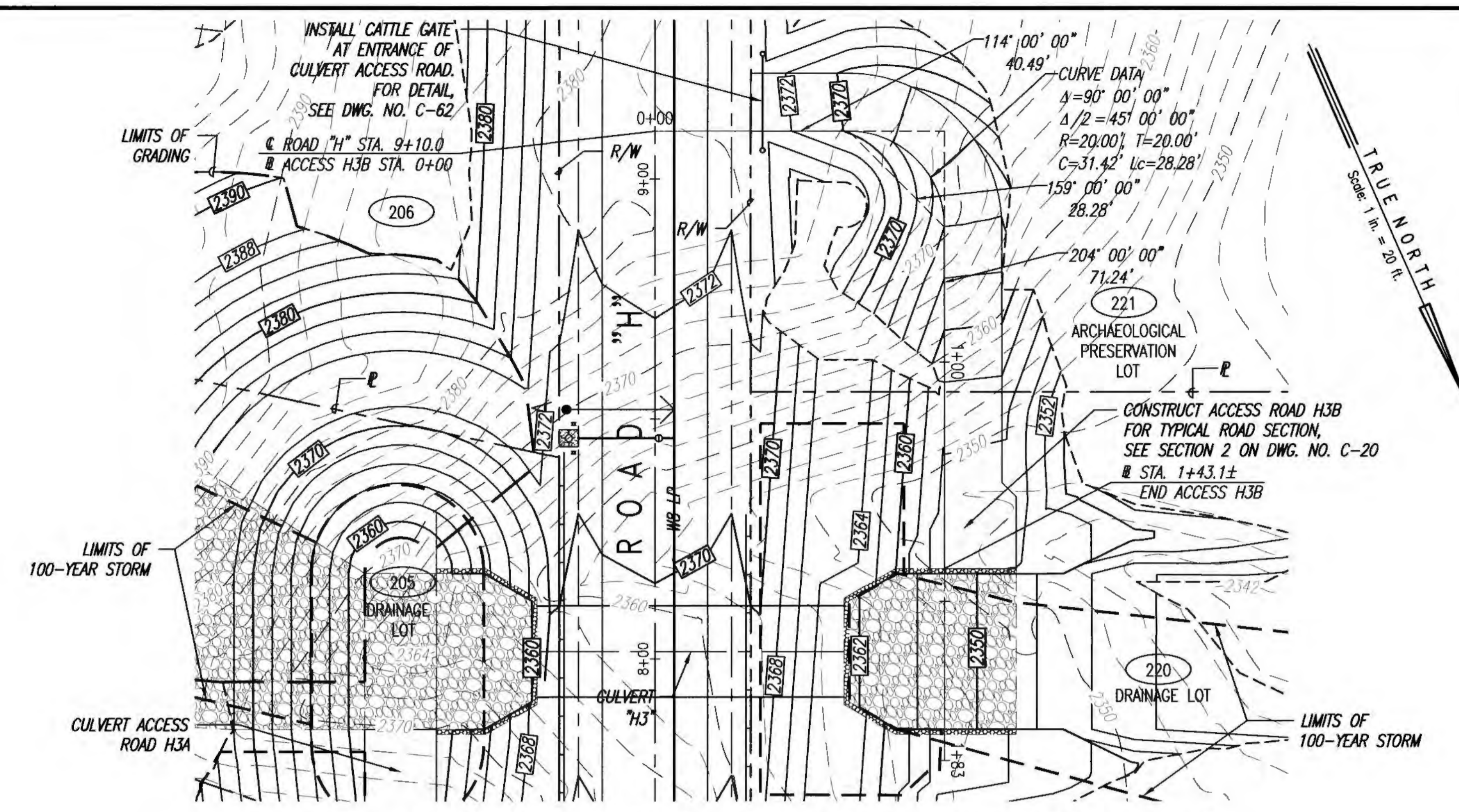
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii</p>			
<p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 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 CULVERT ACCESS ROAD "H2" (A & B)</p>			
DRAWN BY: JSO	ENGINEER: JSO, FJC	CHECKED BY: AMM	
FILE	POCKET	FOLDER	NO.

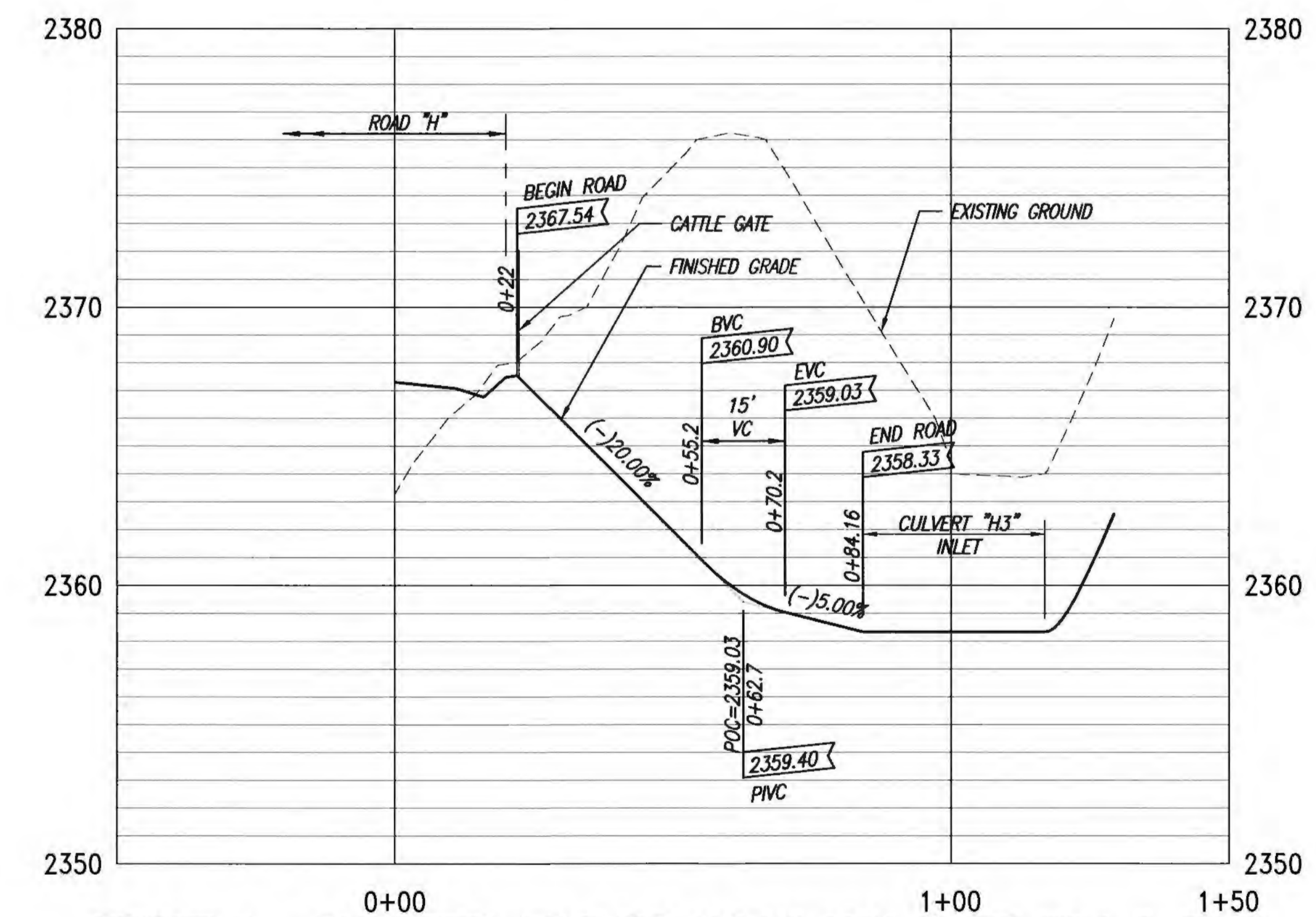


PLAN - CULVERT ACCESS ROAD H3A (LOT 204 & 205)

SCALE: 1"=20'

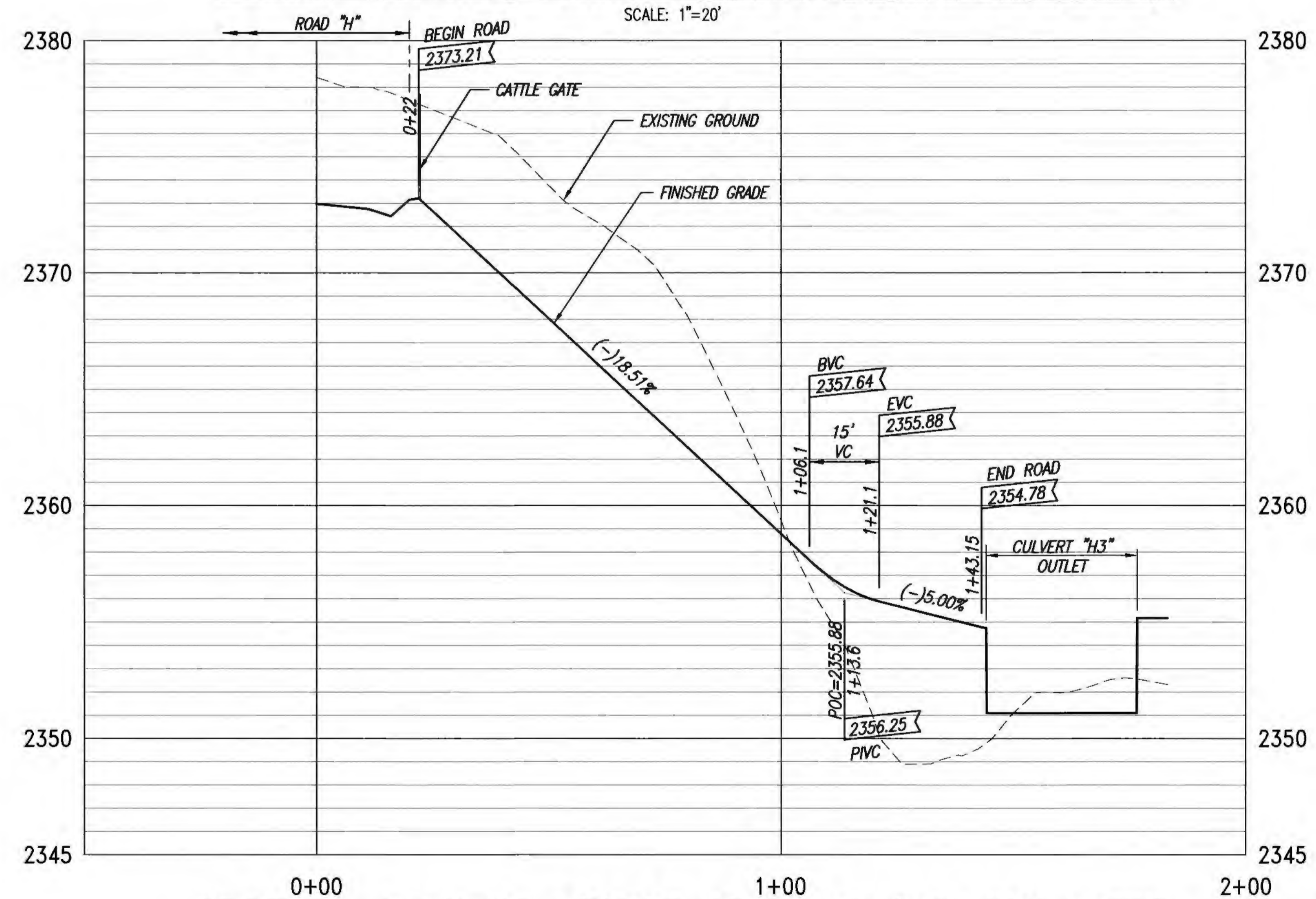


PLAN - CULVERT ACCESS ROAD H3B (LOT 220 & 221)



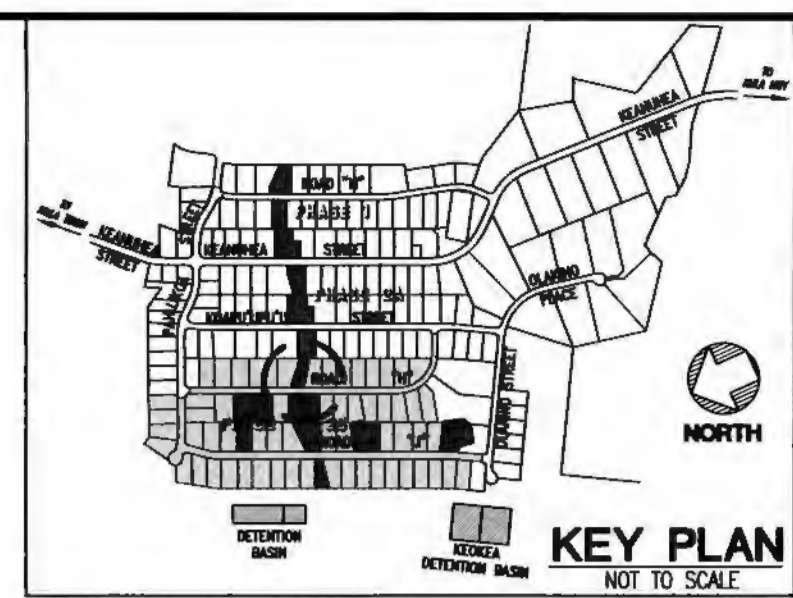
PROFILE - CULVERT ACCESS ROAD H3A (LOT 204 & 205)

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

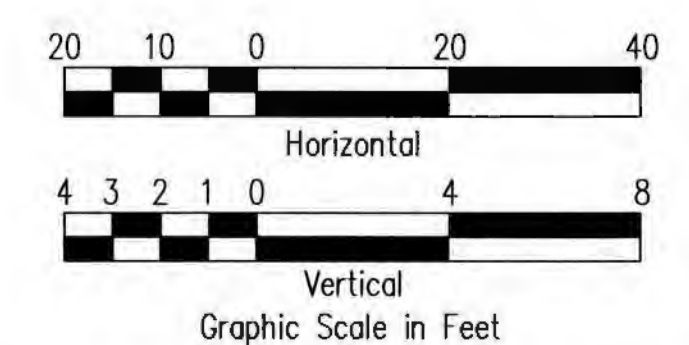


PROFILE - CULVERT ACCESS ROAD H3B (LOT 220 & 221)

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



- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 --- FINISH GRADE CONTOUR
 - 2450 --- PROPERTY LINE
 - - - - - LIMITS OF 100-YEAR STORM GUARDRAIL
 - CATTLE GATE
 - NEW WATER LINE
 - TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - (216) LOT NUMBER



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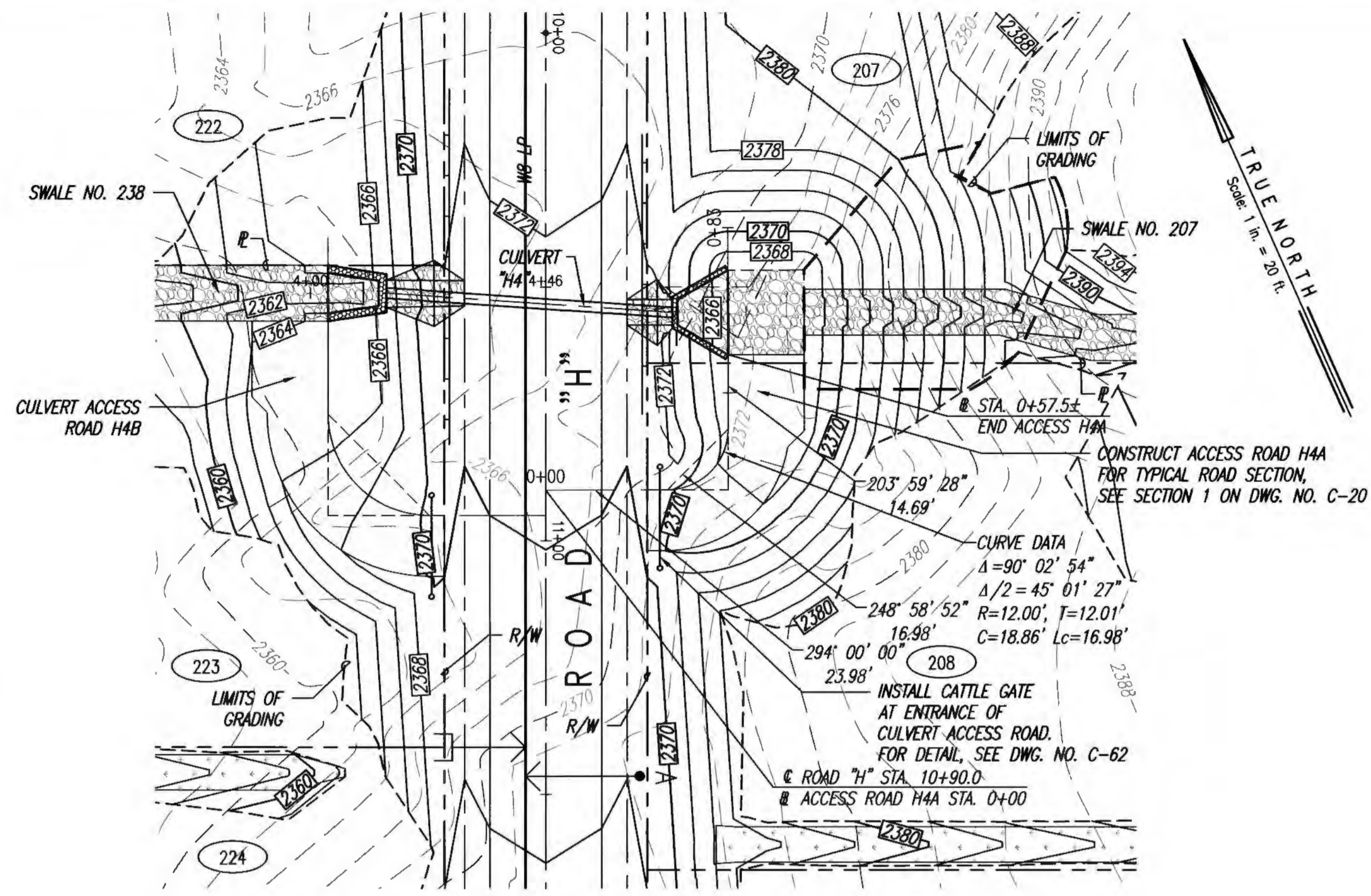
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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Engineering Design | Construction Management | Infrastructure Planning
1296 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

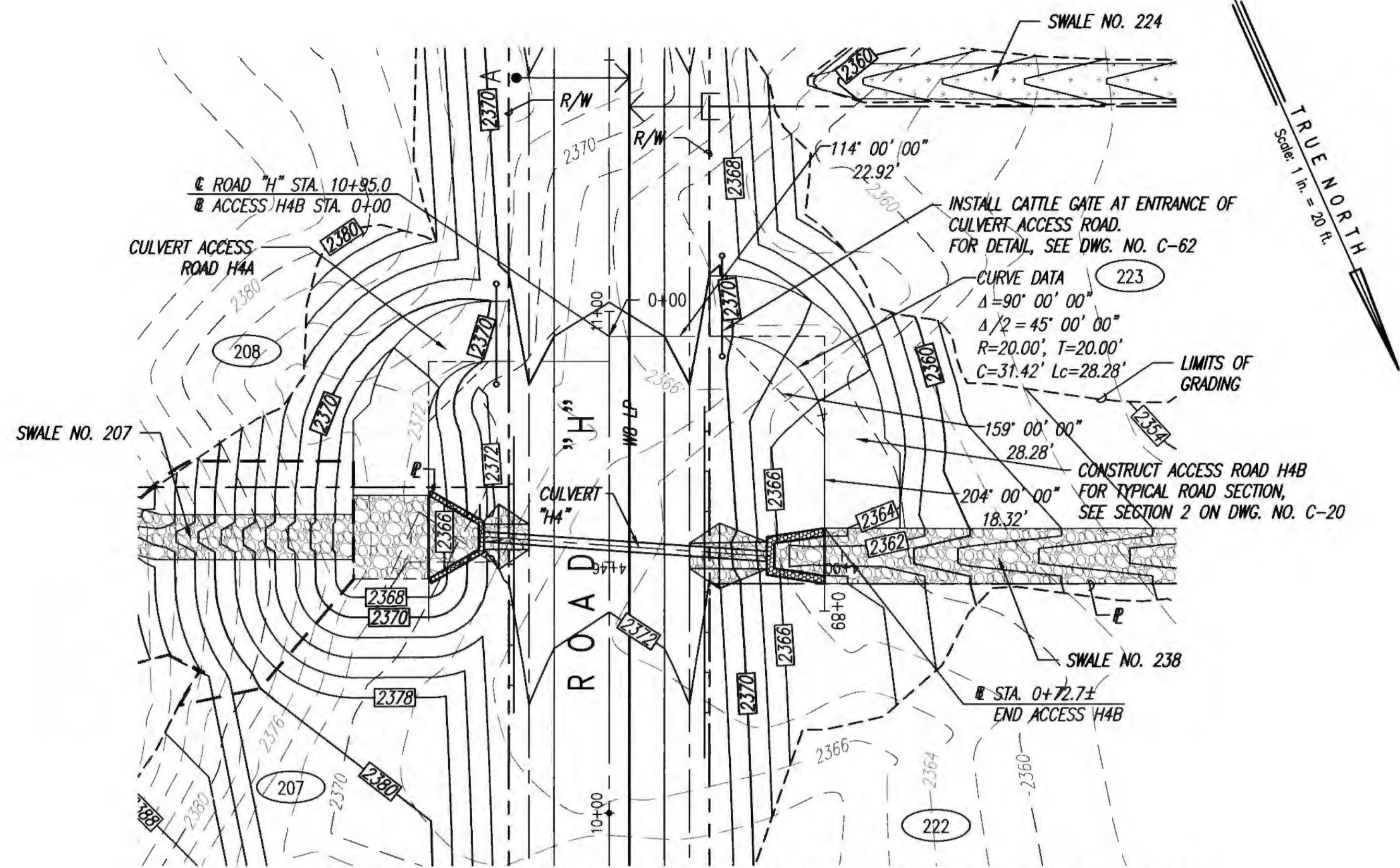
PLAN AND PROFILE CULVERT ACCESS ROAD "H3" (A & B)

DRAWN BY: JSO ENGINEER: JSO, FJC CHECKED BY: AMM



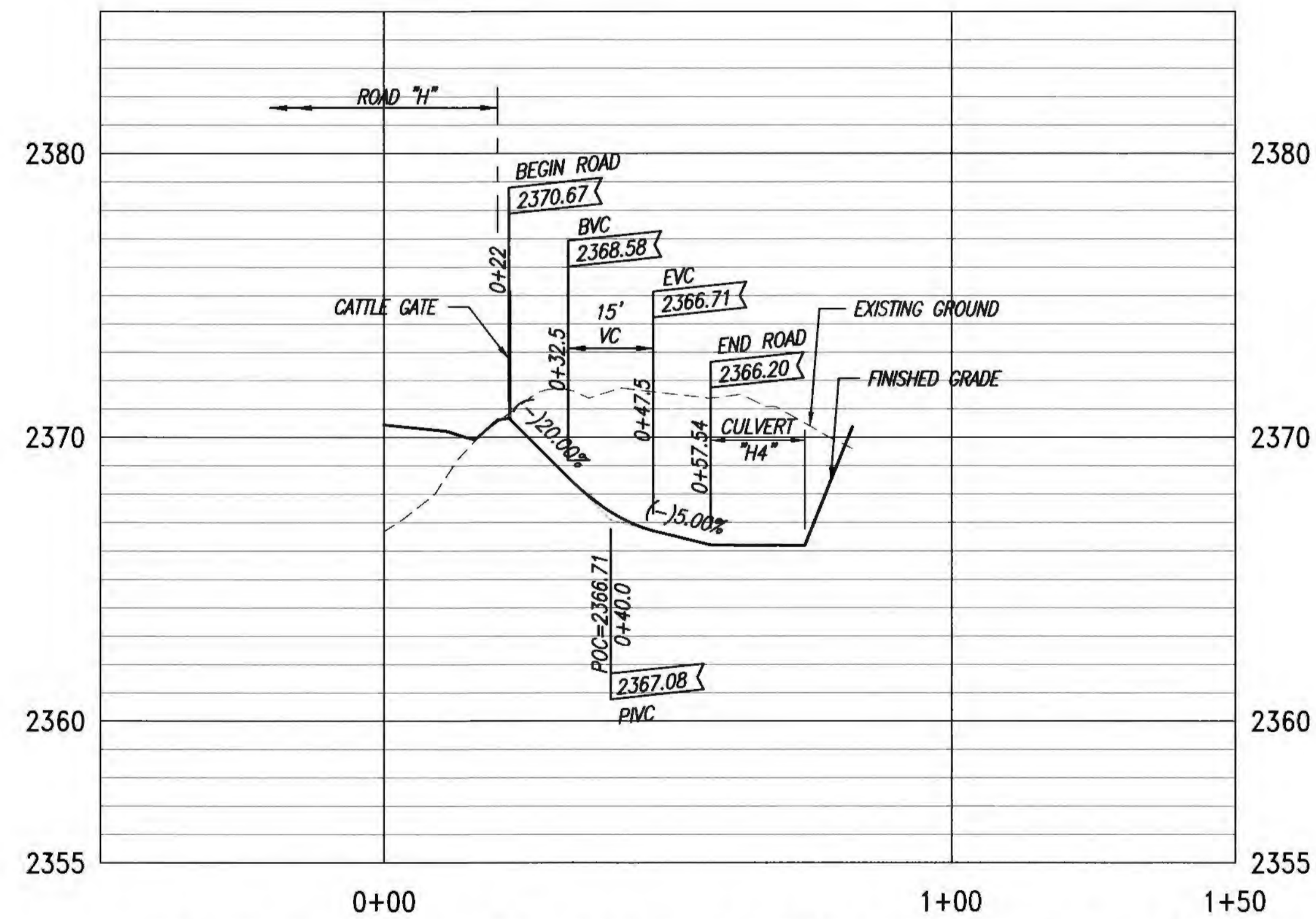
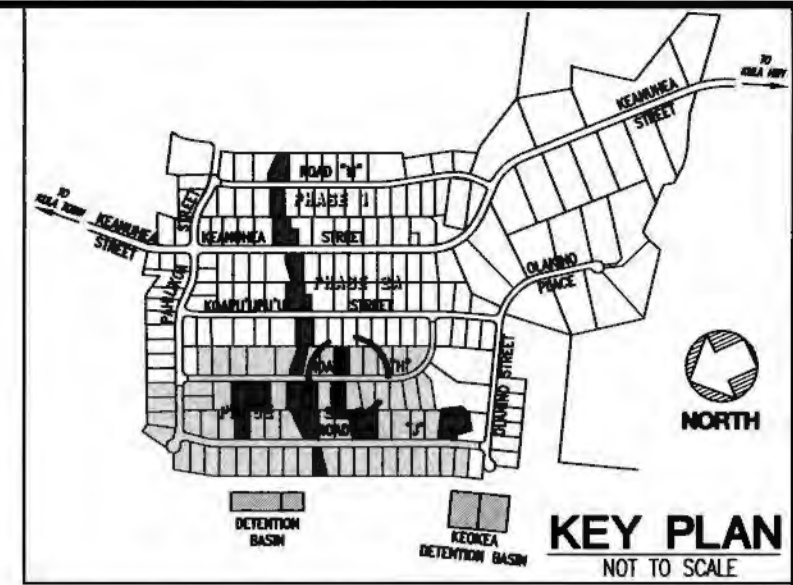
PLAN - CULVERT ACCESS ROAD H4A (LOT 208)

SCALE: 1"=20'



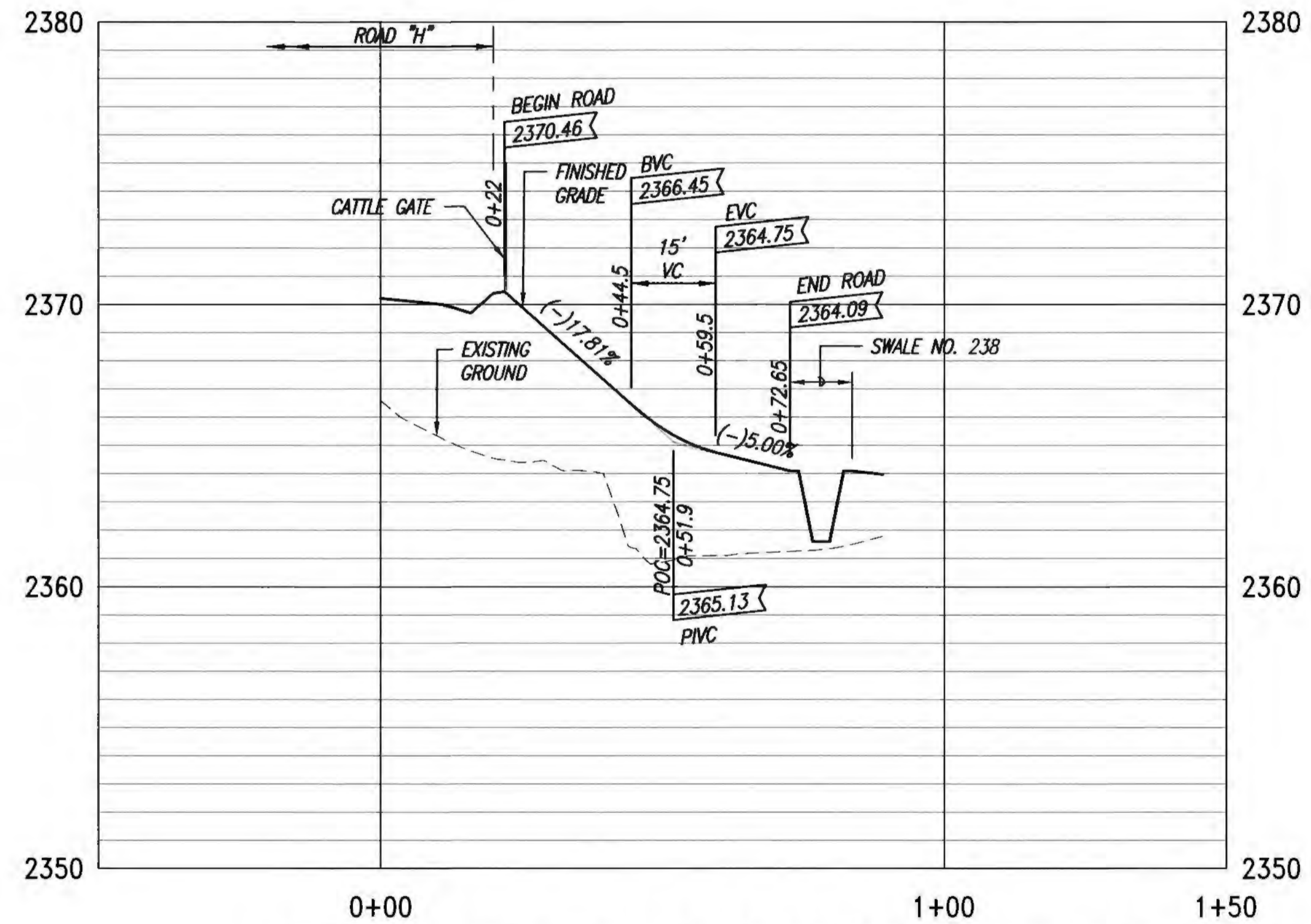
PLAN - CULVERT ACCESS ROAD H4B (LOT 223)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD H4A (LOT 208)

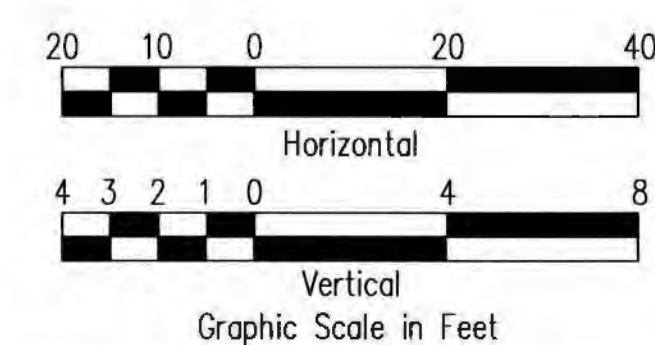
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD H4B (LOT 223)

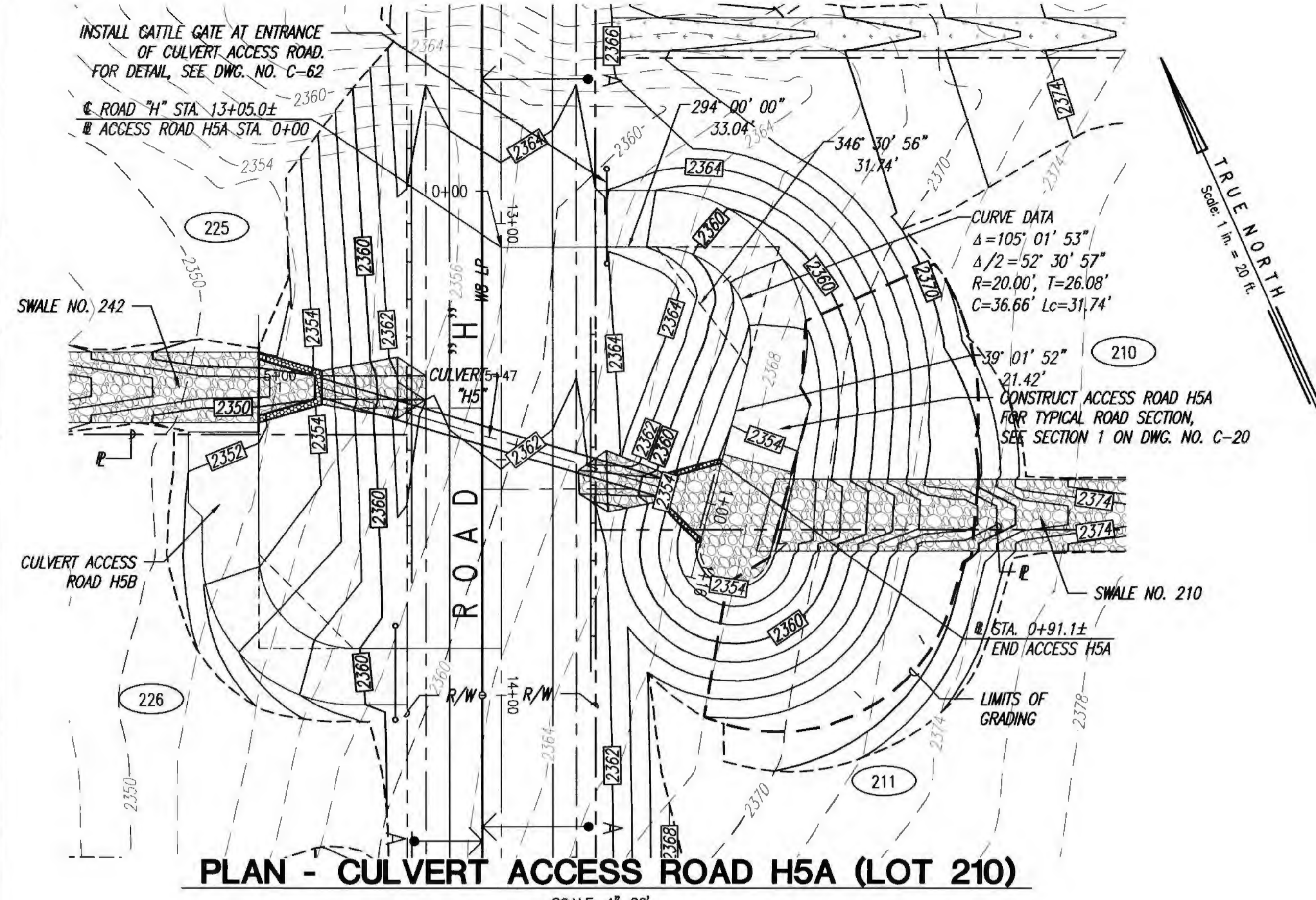
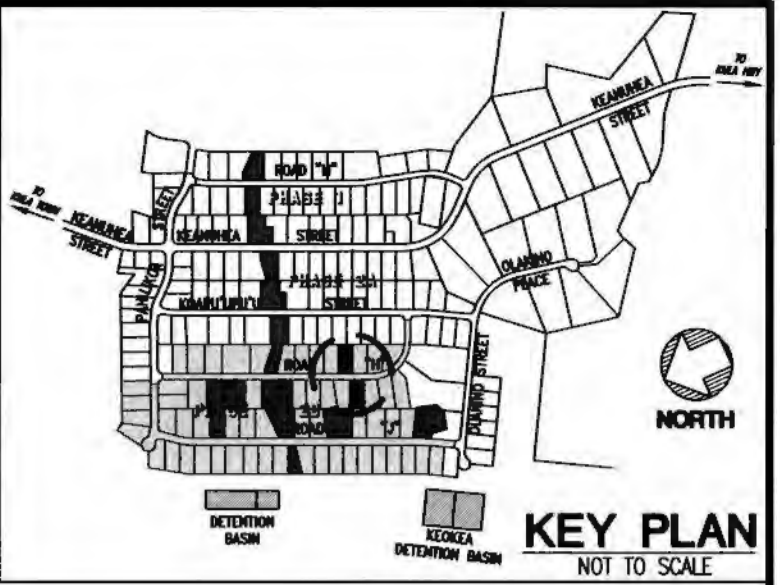
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - [2350] — FINISH GRADE CONTOUR
 - — — — — PROPERTY LINE
 - + + + — GUARDRAIL
 - — ○ CATTLE GATE
 - WB — NEW WATER LINE
 - ◁ — ▷ TYPE "A" SERVICE LATERAL
 - ↳ — ↳ TYPE "A-1" SERVICE LATERAL
 - ① 216 ① LOT NUMBER



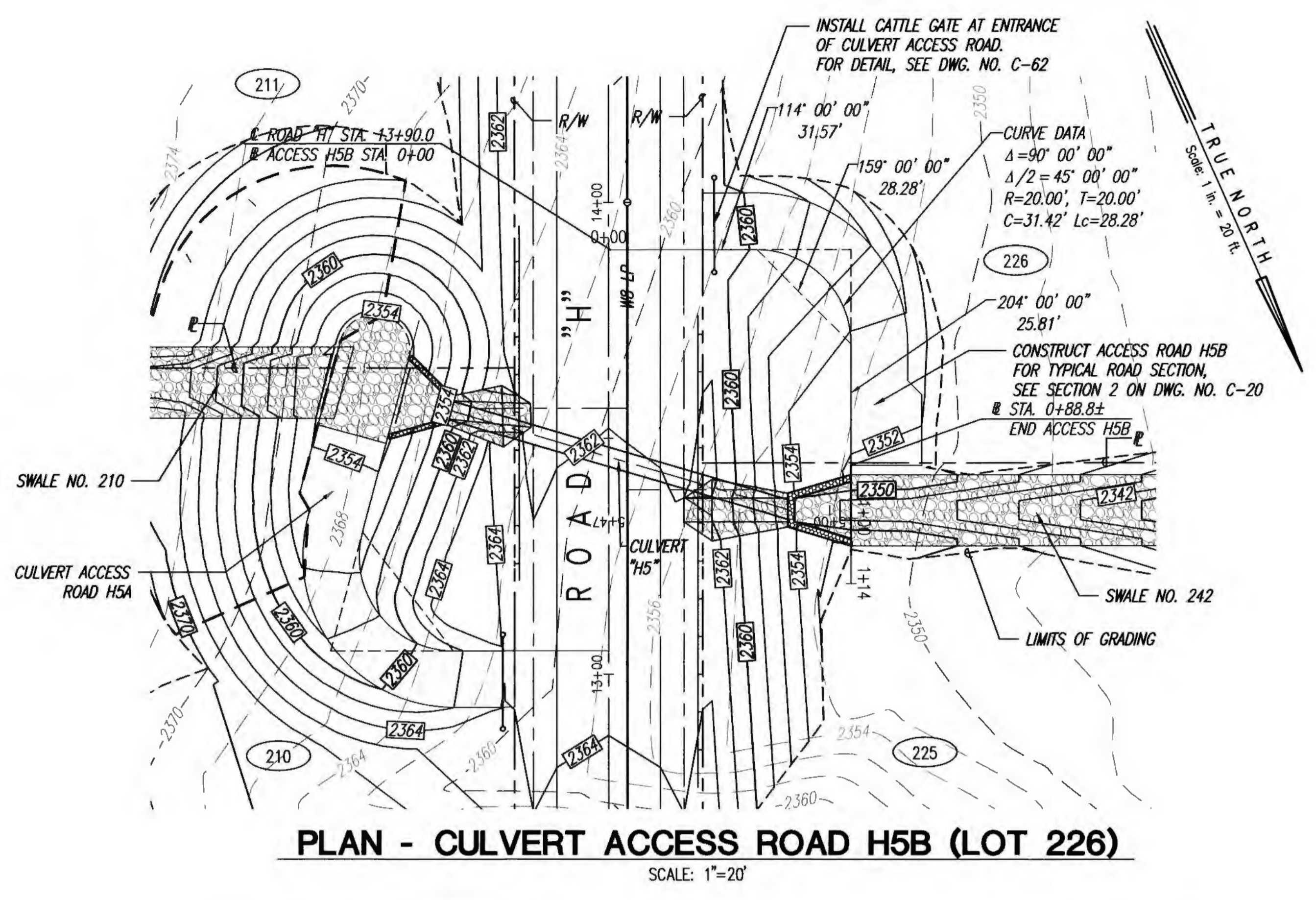
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street, Third Floor Honolulu, Hawaii			
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & 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 CULVERT ACCESS ROAD "H" (A & B)			
DRAWN BY: J50	ENGINEER: J50, FJC	CHECKED BY: AMM	



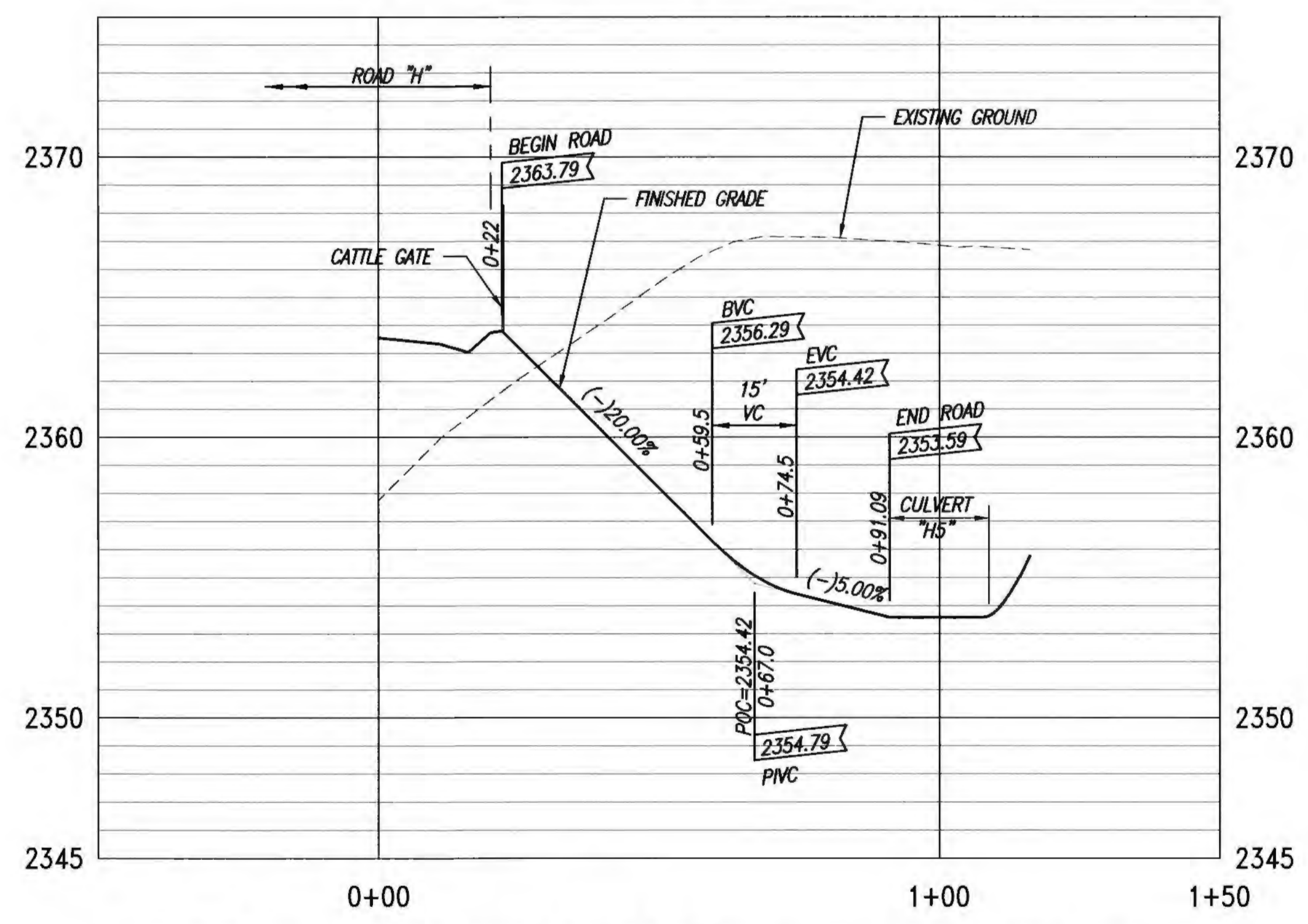
PLAN - CULVERT ACCESS ROAD H5A (LOT 210)

SCALE: 1"=20'



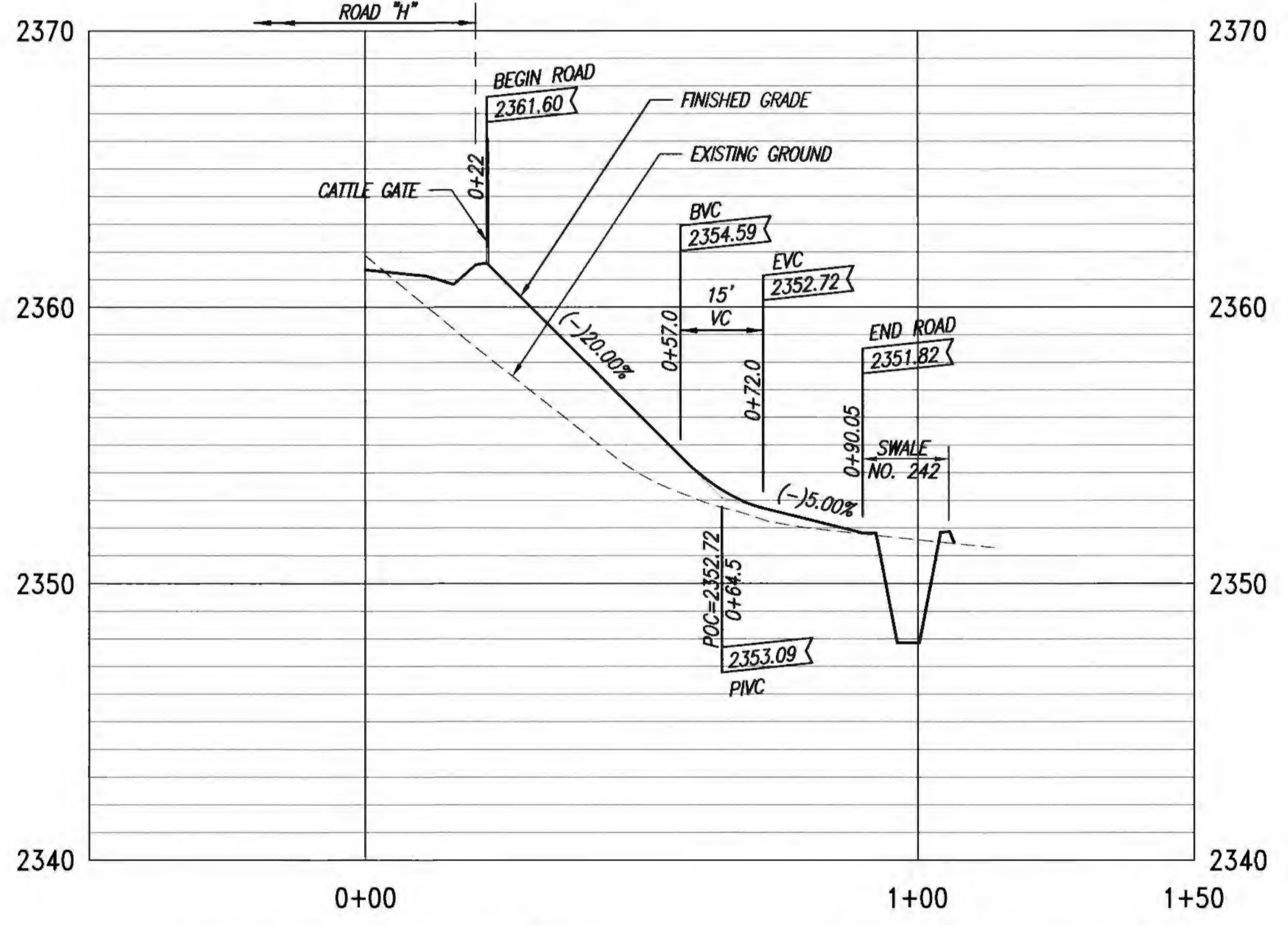
PLAN - CULVERT ACCESS ROAD H5B (LOT 226)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD H5A (LOT 210)

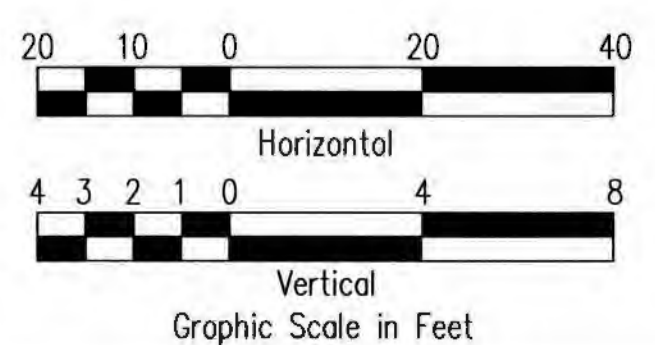
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD H5B (LOT 226)

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

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - - - - - GUARDRAIL
 - CATTLE GATE
 - NEW WATER LINE
 - TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - LOT NUMBER



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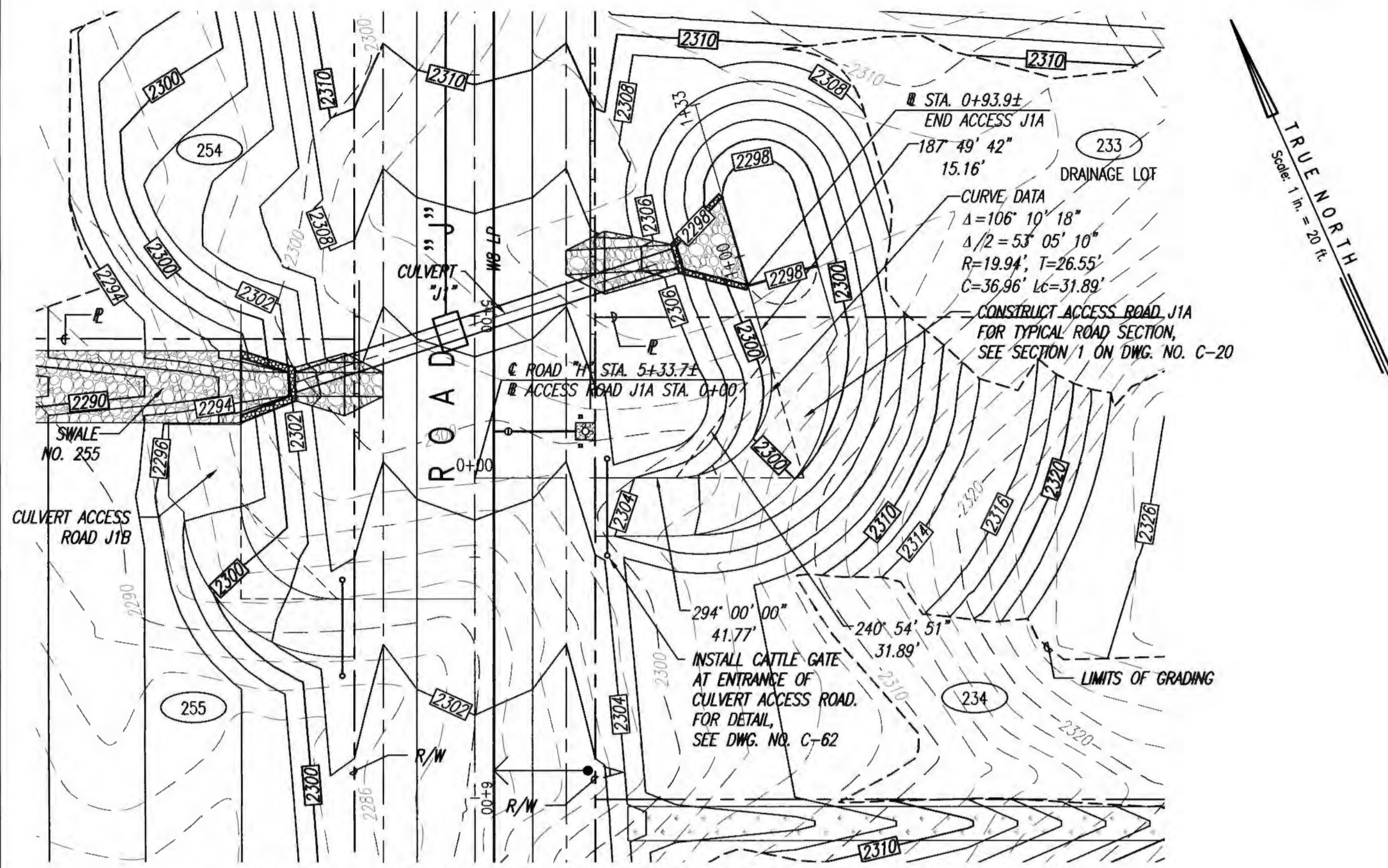
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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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

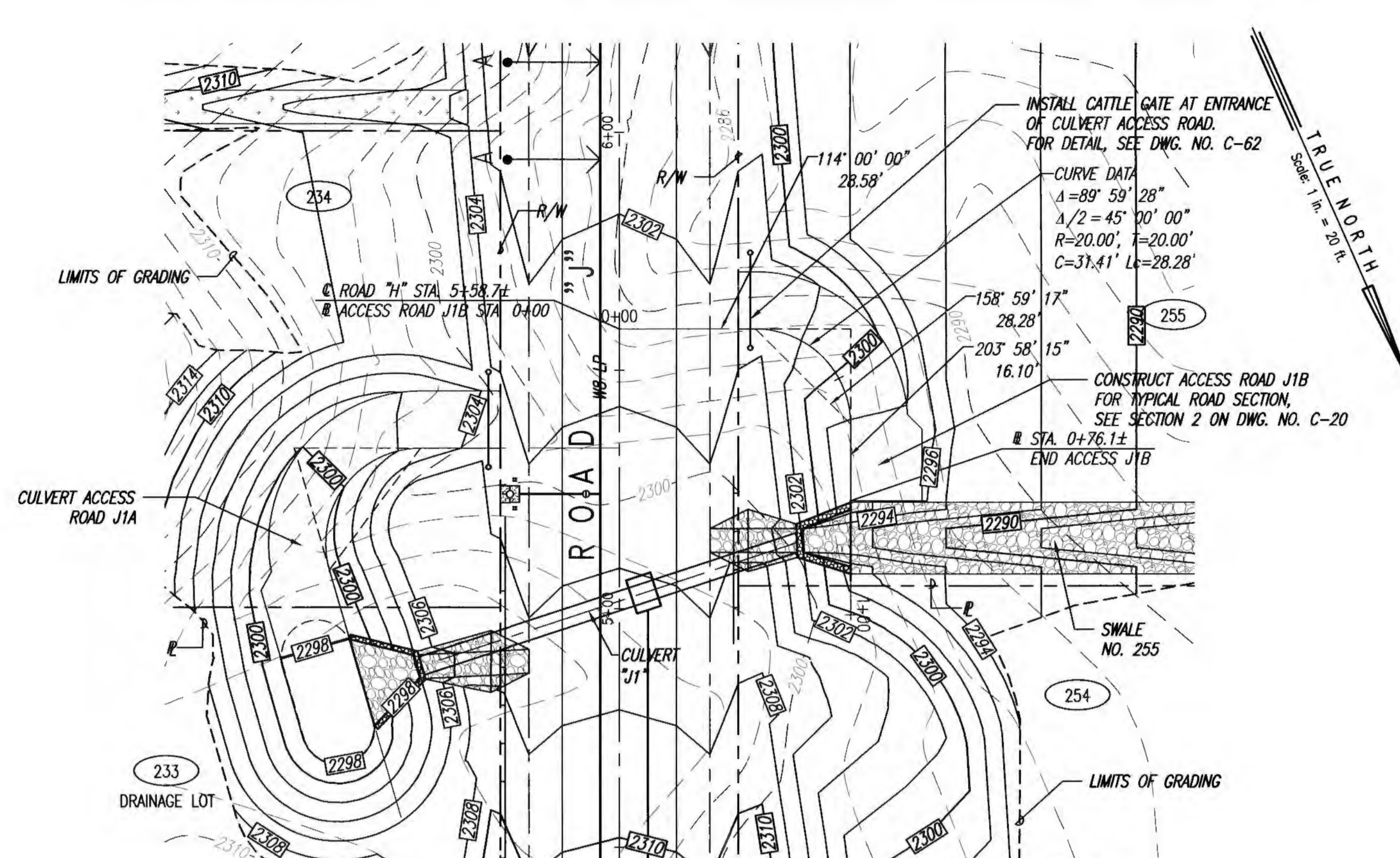
PLAN AND PROFILE CULVERT ACCESS ROAD "H5" (A & B)

DRAWN BY: JSO	ENGINEER: JSO, FJC	CHECKED BY: AMM
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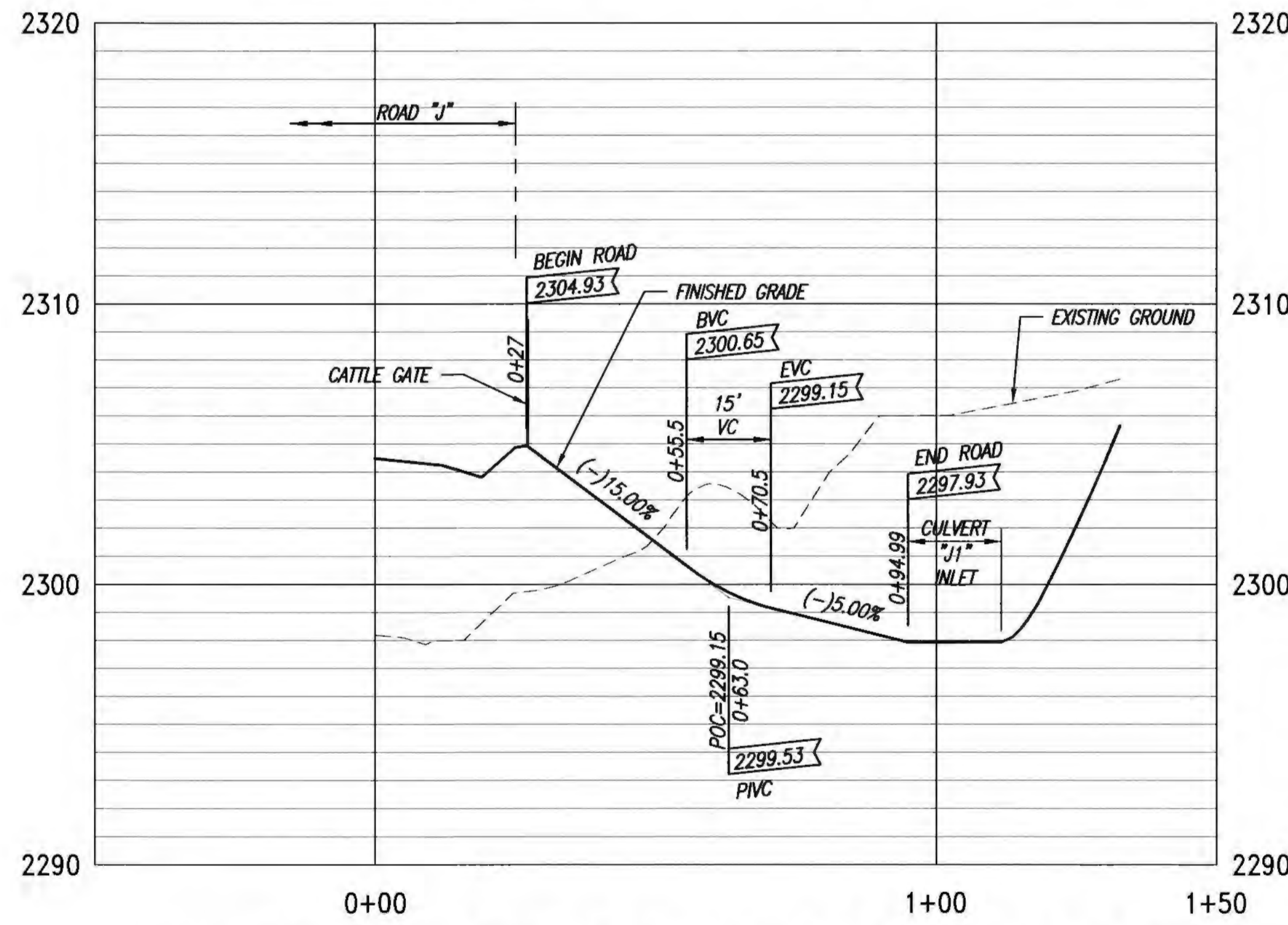
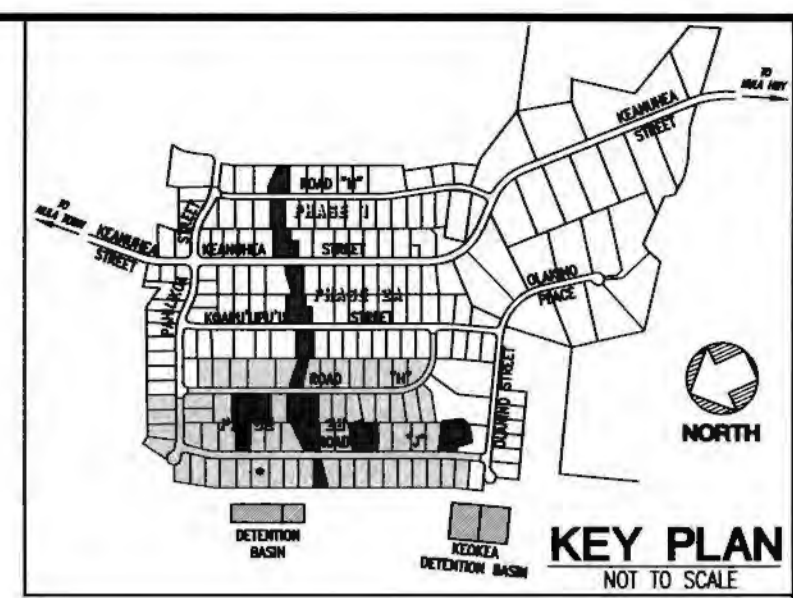
PLAN - CULVERT ACCESS ROAD J1A (LOT 234)

SCALE: 1"=20'



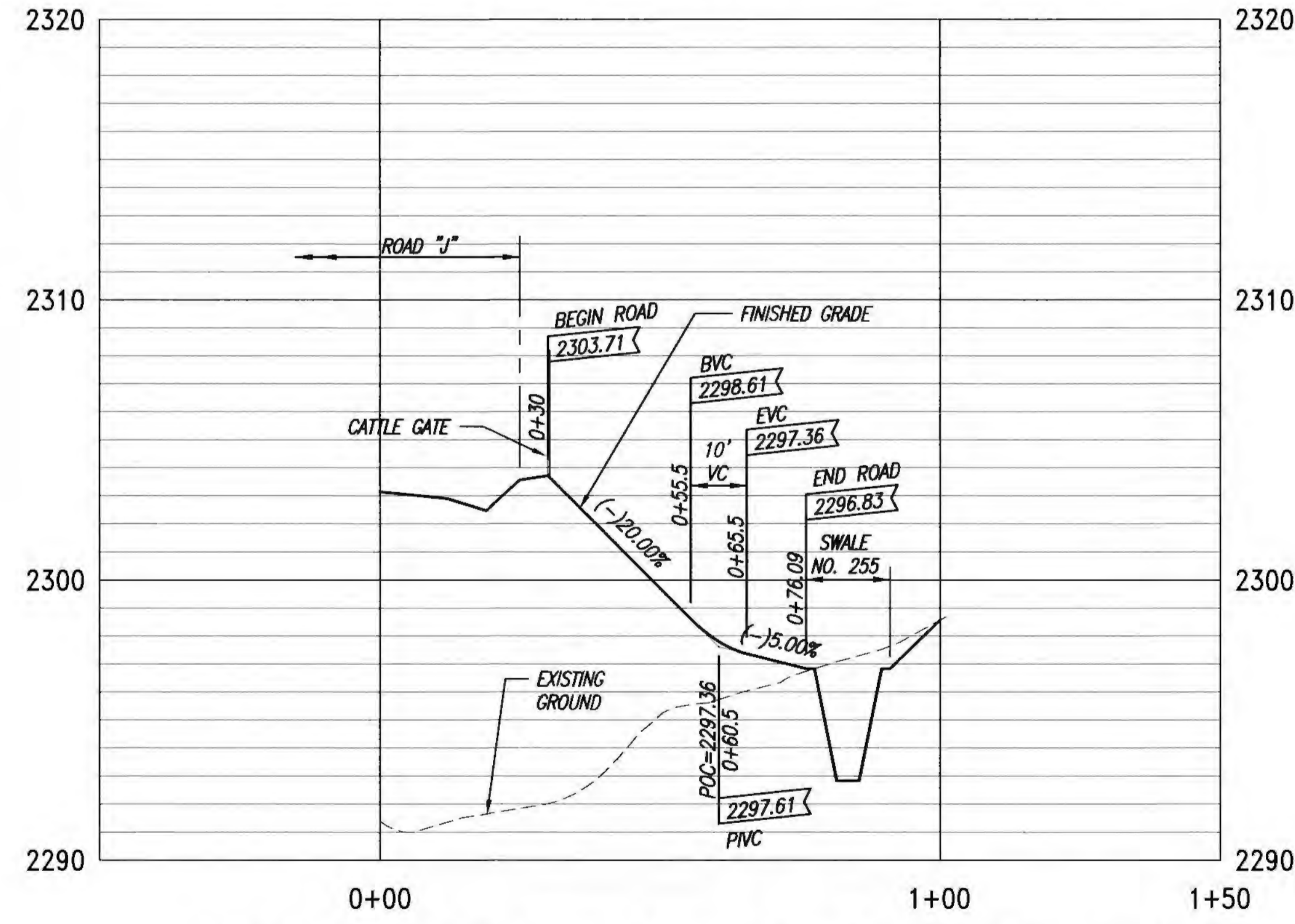
PLAN - CULVERT ACCESS ROAD J1B (LOT 255)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD J1A (LOT 234)

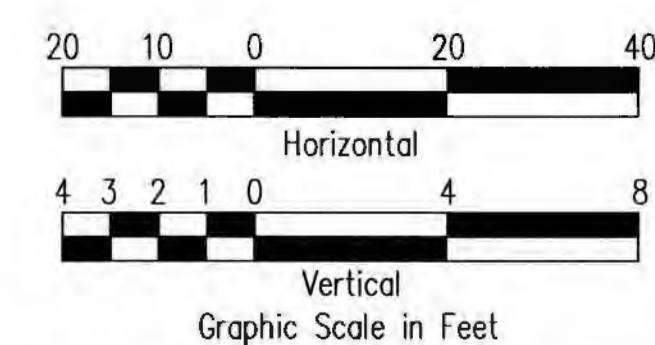
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD J1B (LOT 255)

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

- LEGEND**
- LIMITS OF GRADING
 - - - 2500 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



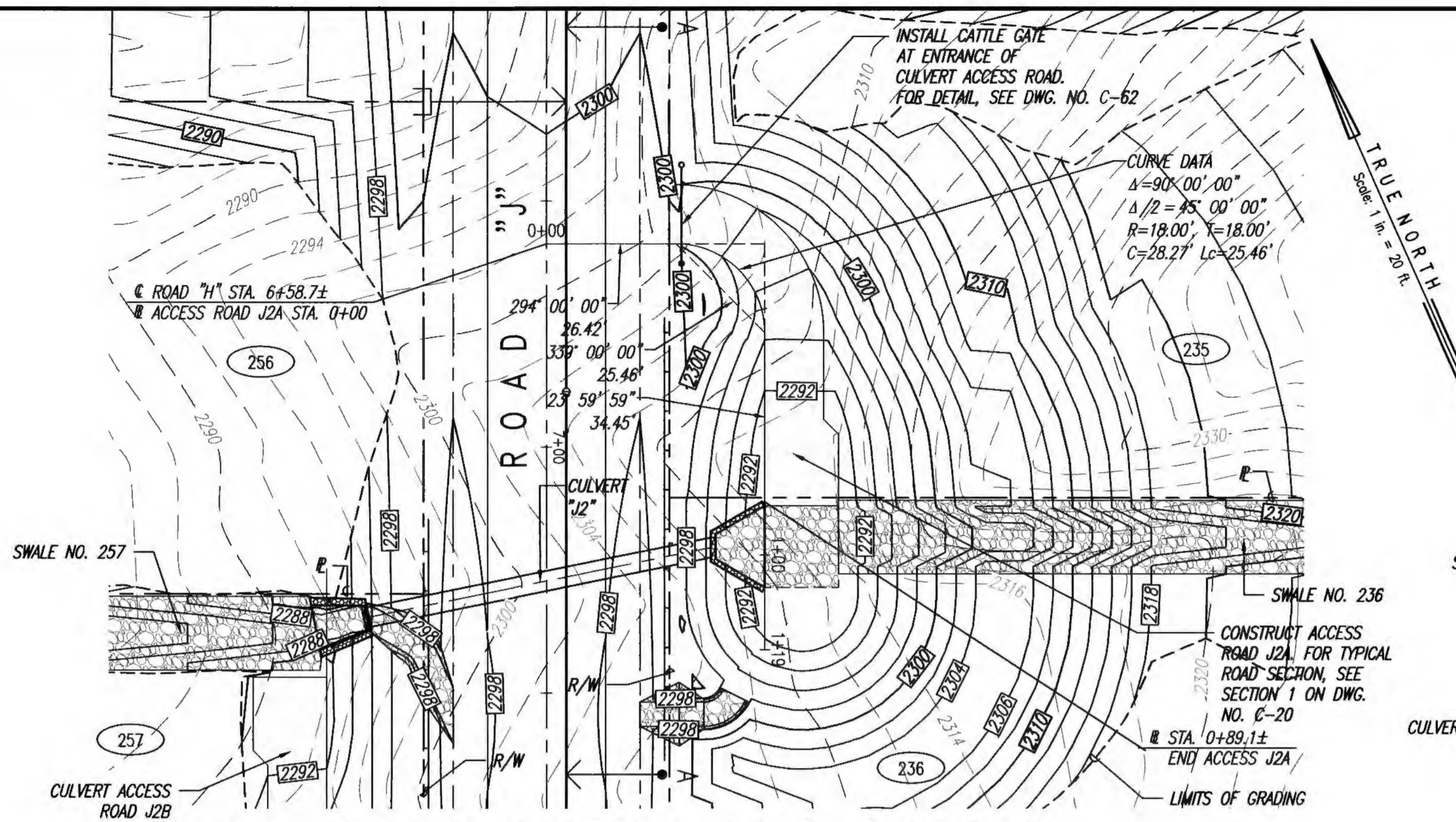
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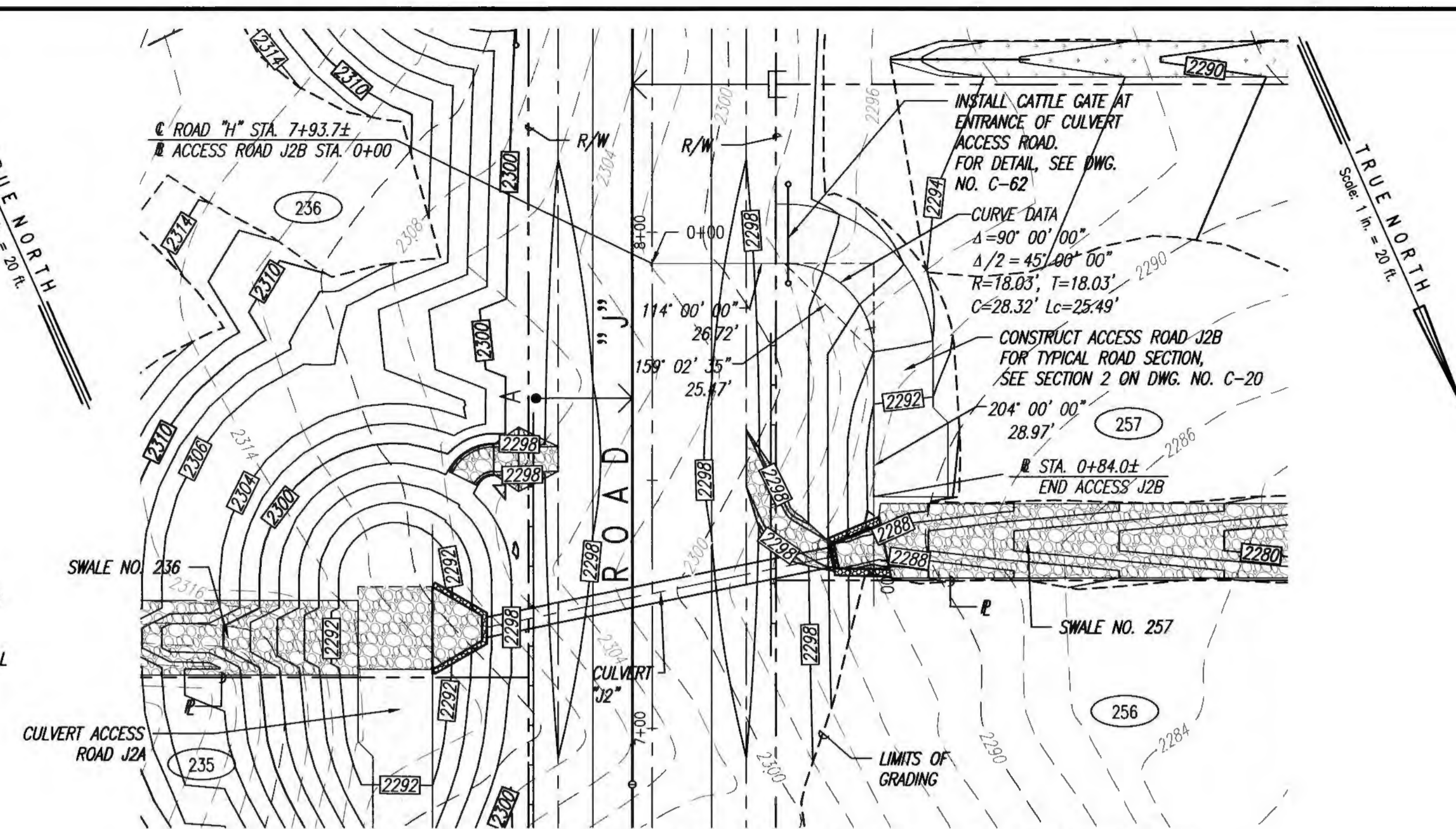
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN AND PROFILE ACCESS ROAD CULVERTS "J1" (A & B)

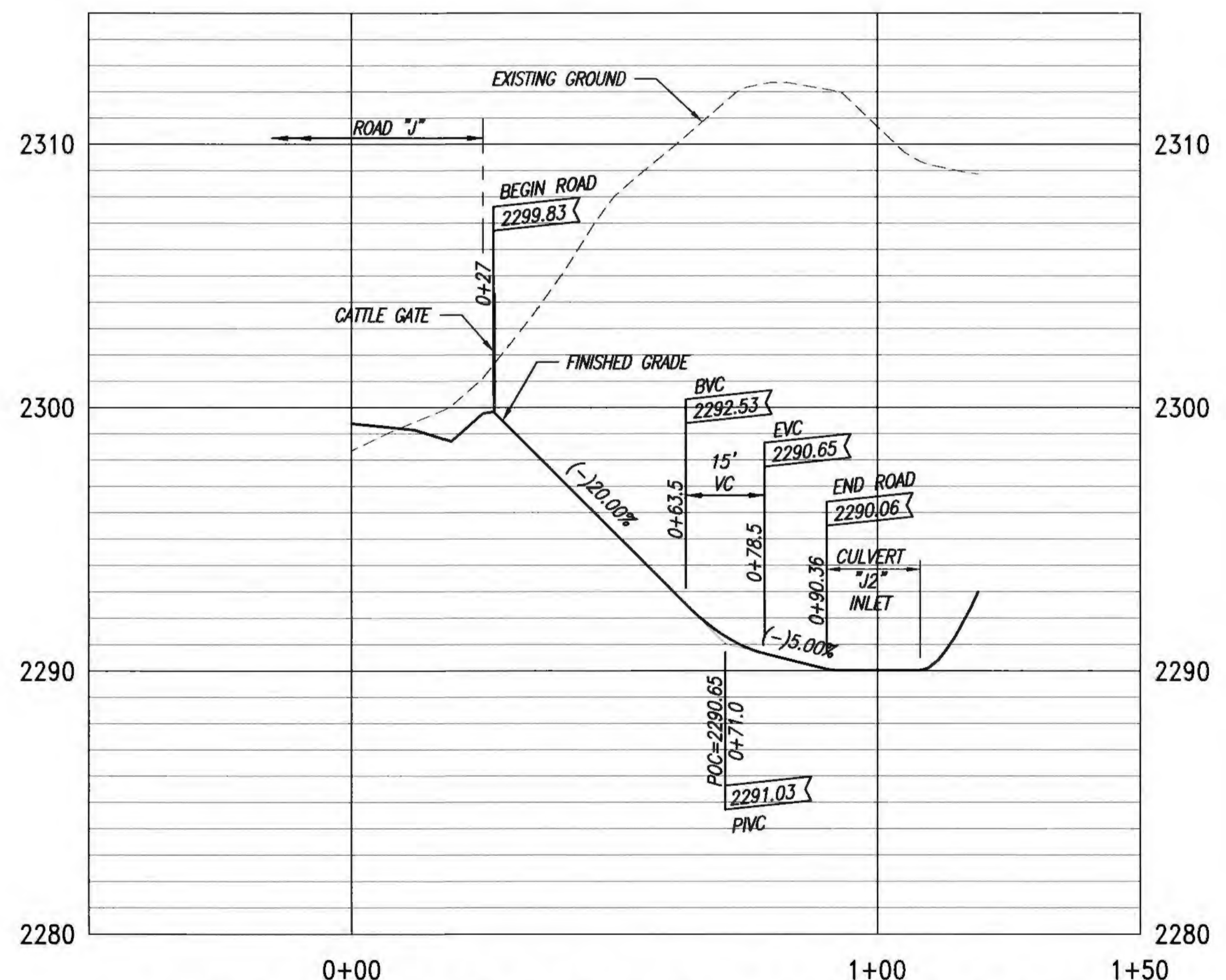
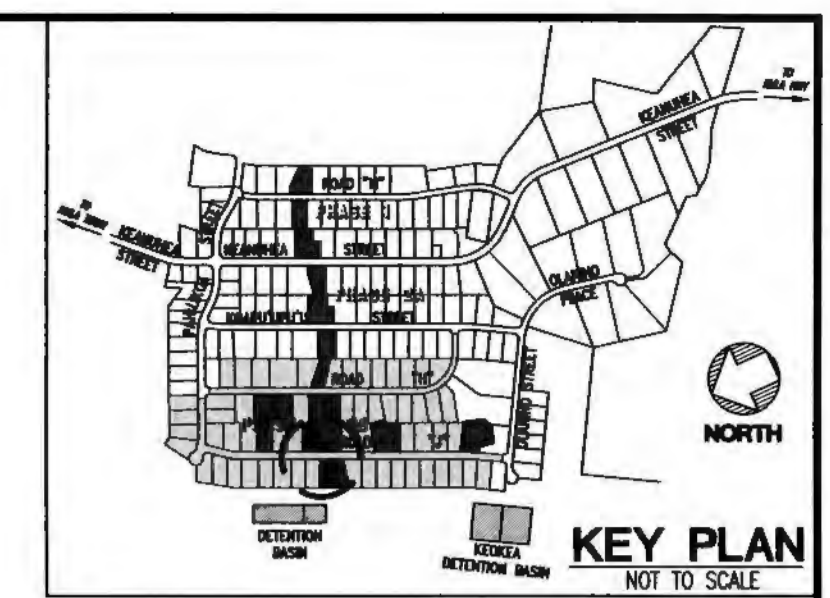
DRAWN BY: JSO ENGINEER: JSO, FJC CHECKED BY: AMM



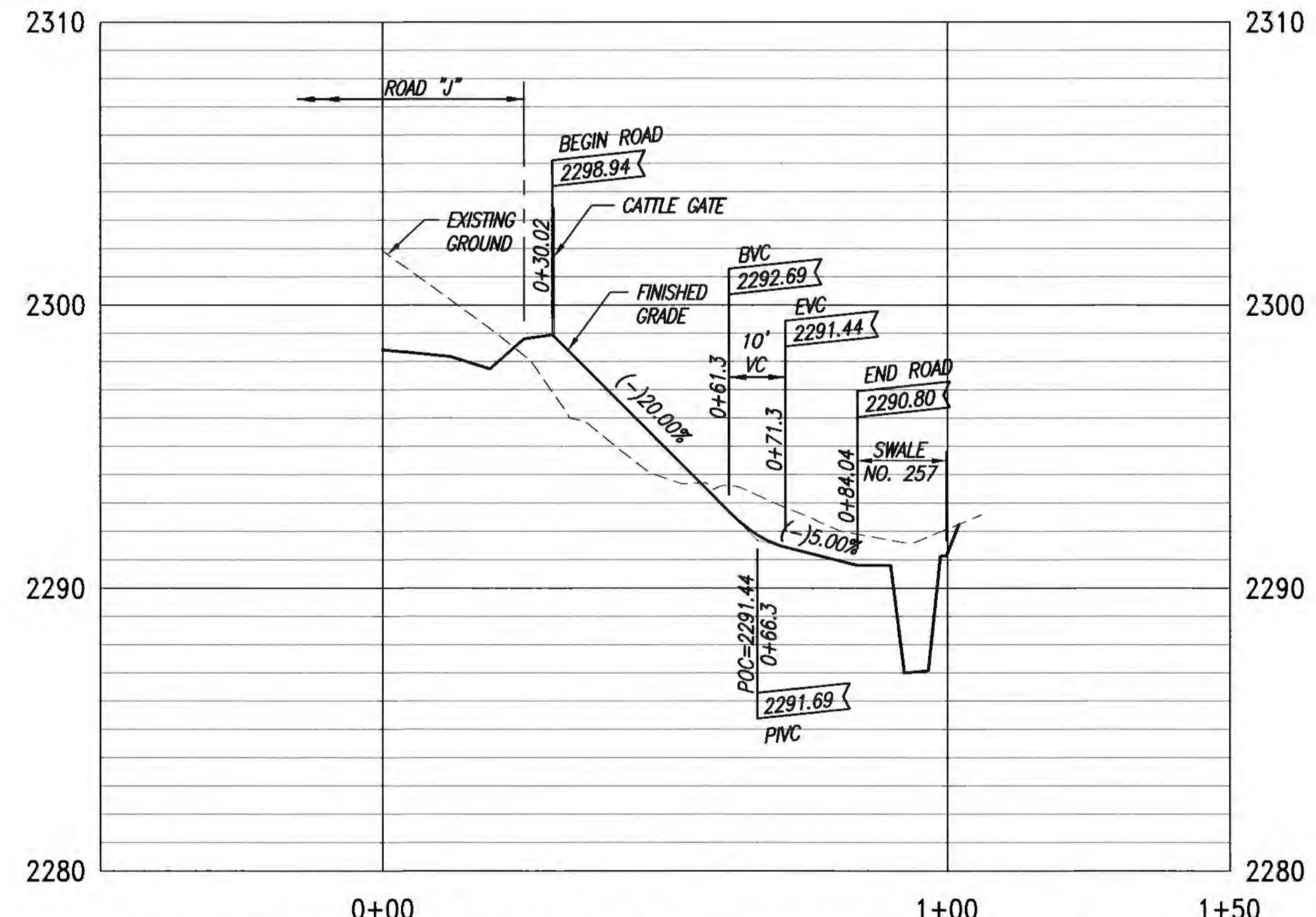
PLAN - CULVERT ACCESS ROAD J2A (LOT 235)
 SCALE: 1"=20'



PLAN - CULVERT ACCESS ROAD J2B (LOT 257)
 SCALE: 1"=20'

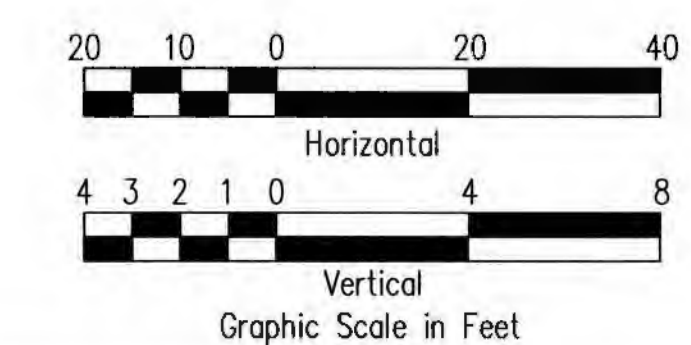


PROFILE - CULVERT ACCESS ROAD J2A (LOT 235)
 SCALES: HORIZ. 1"=20'
 VERT. 1"= 4'



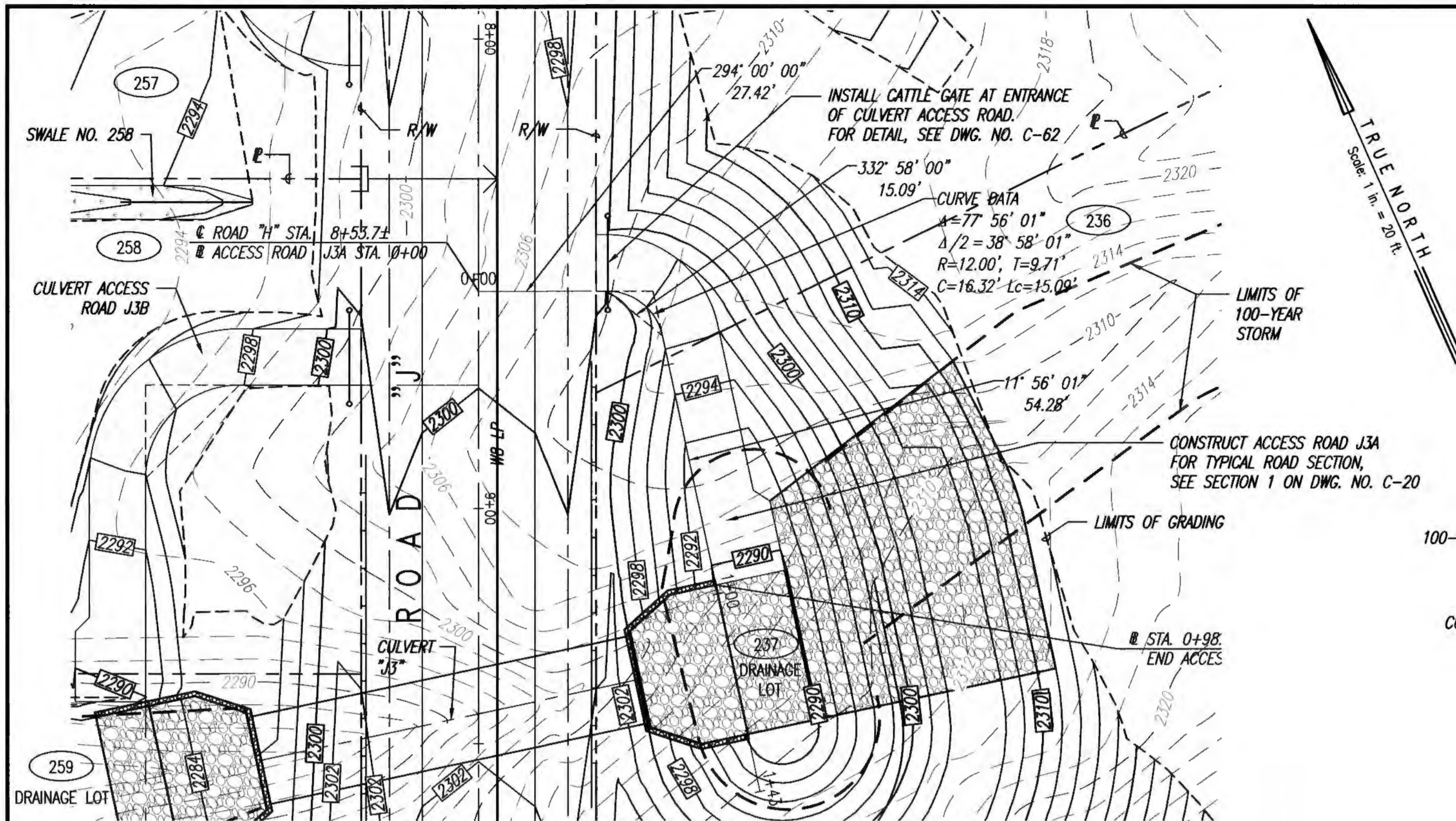
PROFILE - CULVERT ACCESS ROAD J2B (LOT 257)
 SCALES: HORIZ. 1"=20'
 VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - EXISTING GROUND CONTOUR
 - 2450 FINISH GRADE CONTOUR
 - PROPERTY LINE
 - GUARDRAIL
 - CATTLE GATE
 - NEW WATER LINE
 - ←→ TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - 216 LOT NUMBER



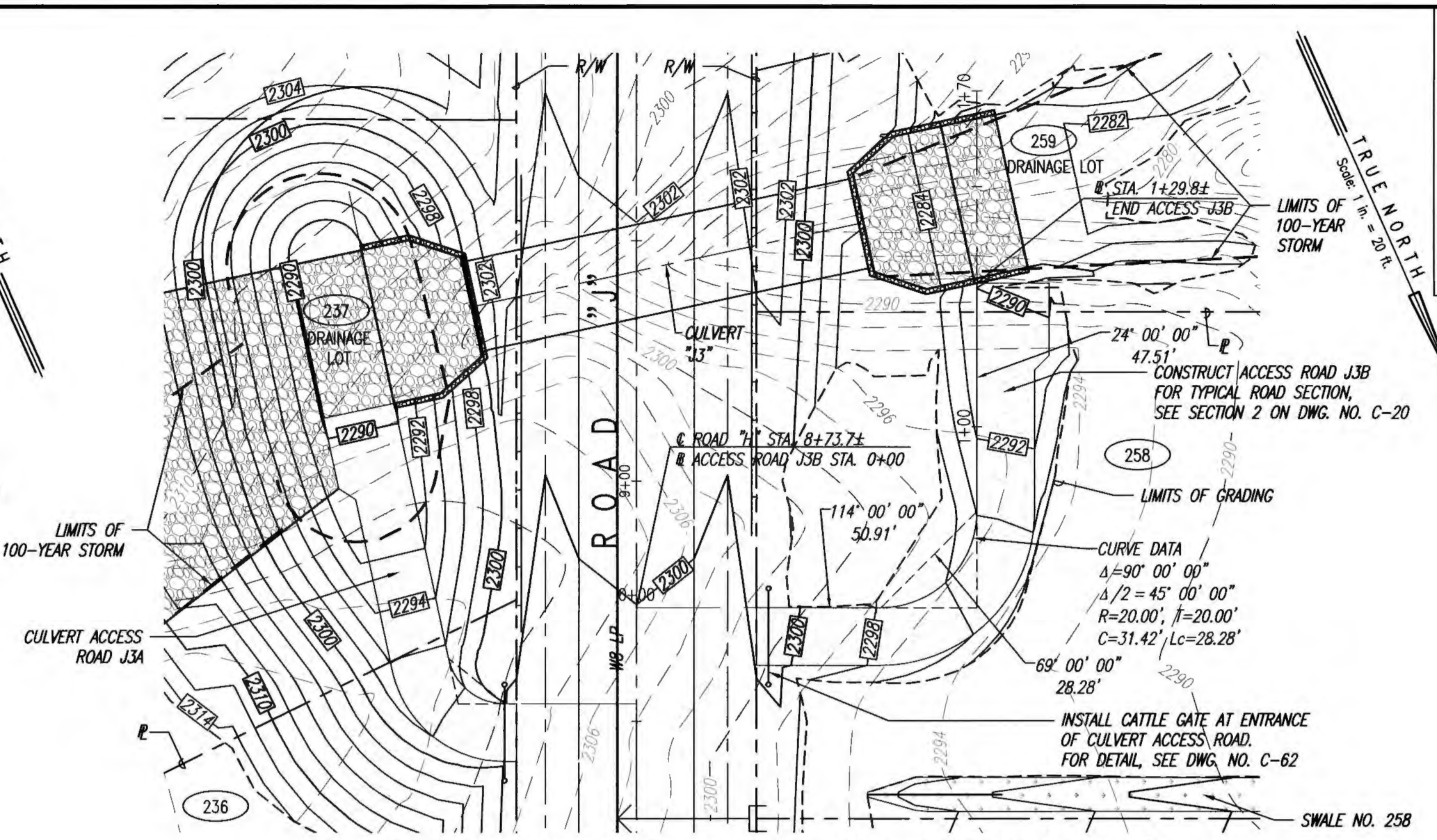
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<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1280 Queen Emma Street, Third Floor Honolulu, Hawaii</p> <p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & 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 ACCESS ROAD CULVERTS "J2" (A & B)</p>			
DRAWN BY: JSO	ENGINEER: JSO, FJC	CHECKED BY: AMM	
FILE	POCKET	FOLDER	NO.



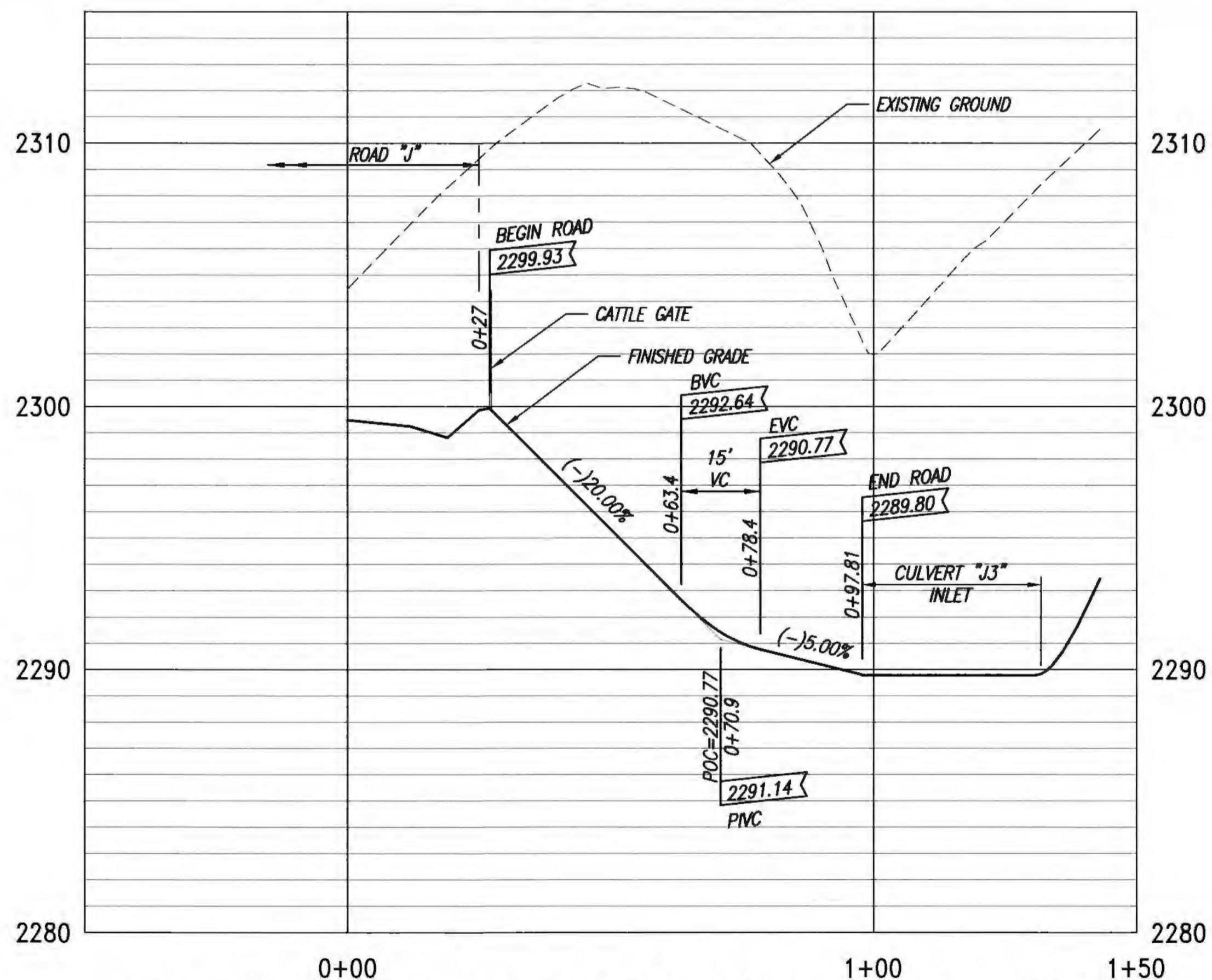
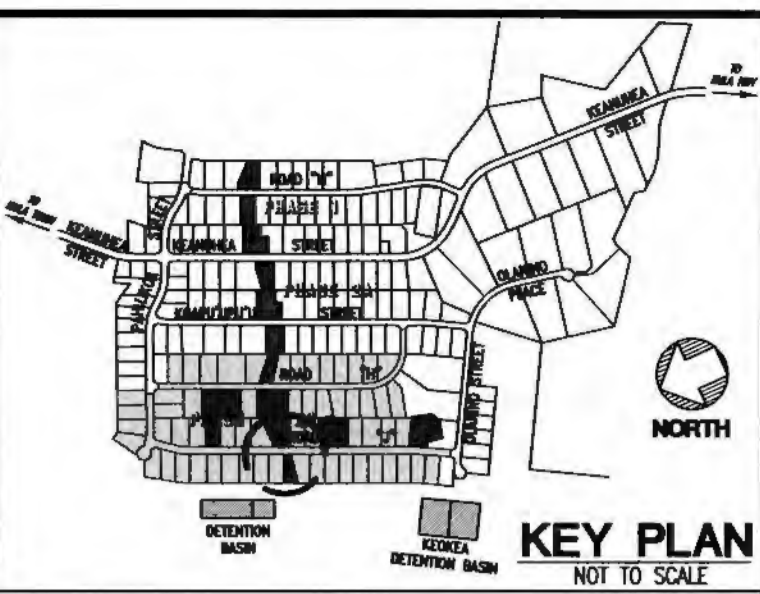
PLAN - CULVERT ACCESS ROAD J3A (LOT 237)

SCALE: 1"=20'



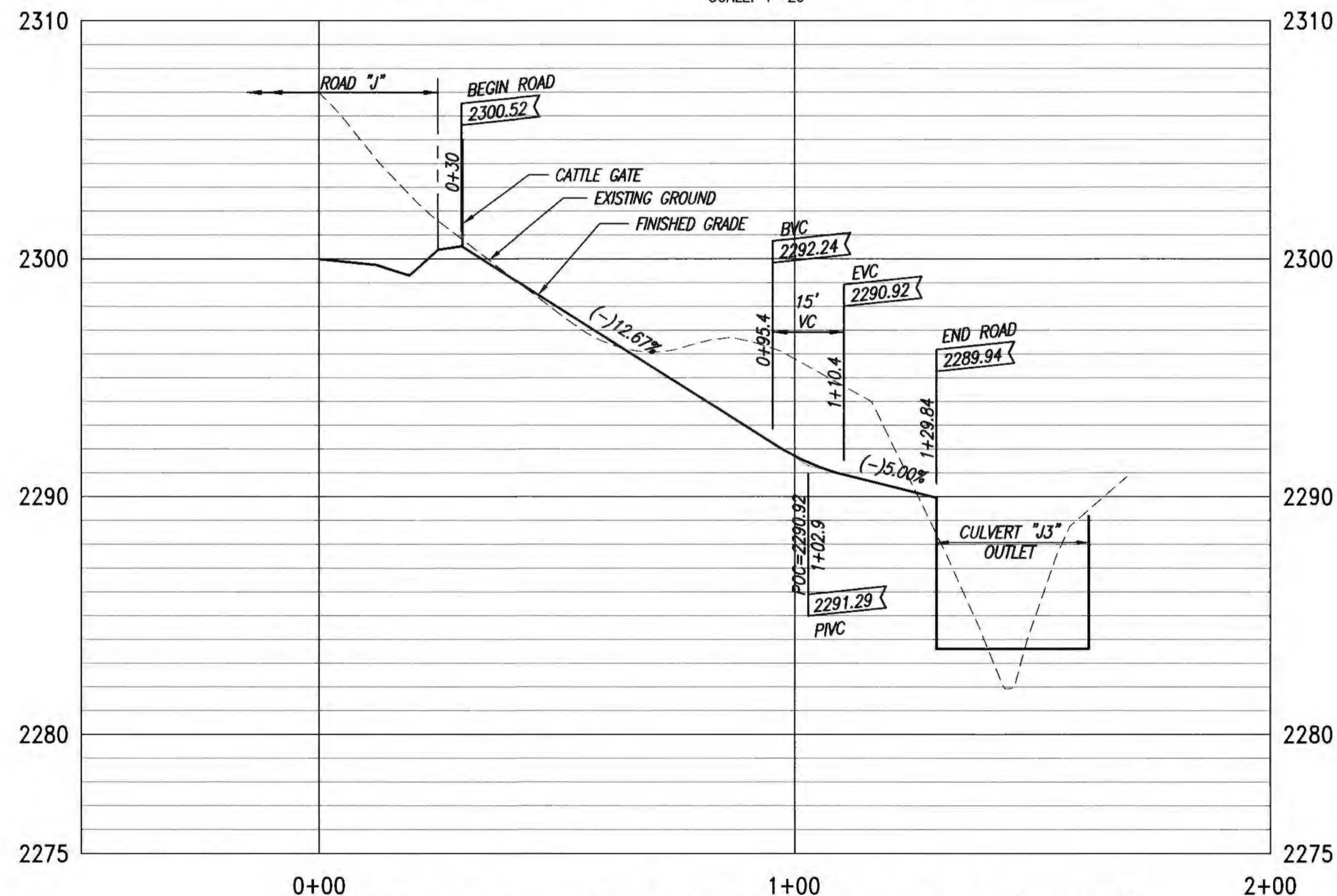
PLAN - CULVERT ACCESS ROAD J3B (LOT 258)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD J3A (LOT 237)

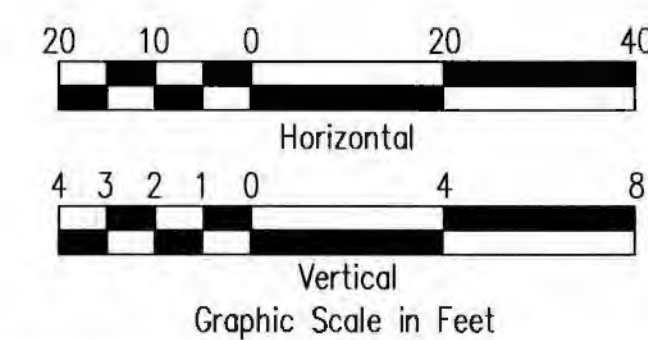
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD J3B (LOT 258)

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

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 FINISHED 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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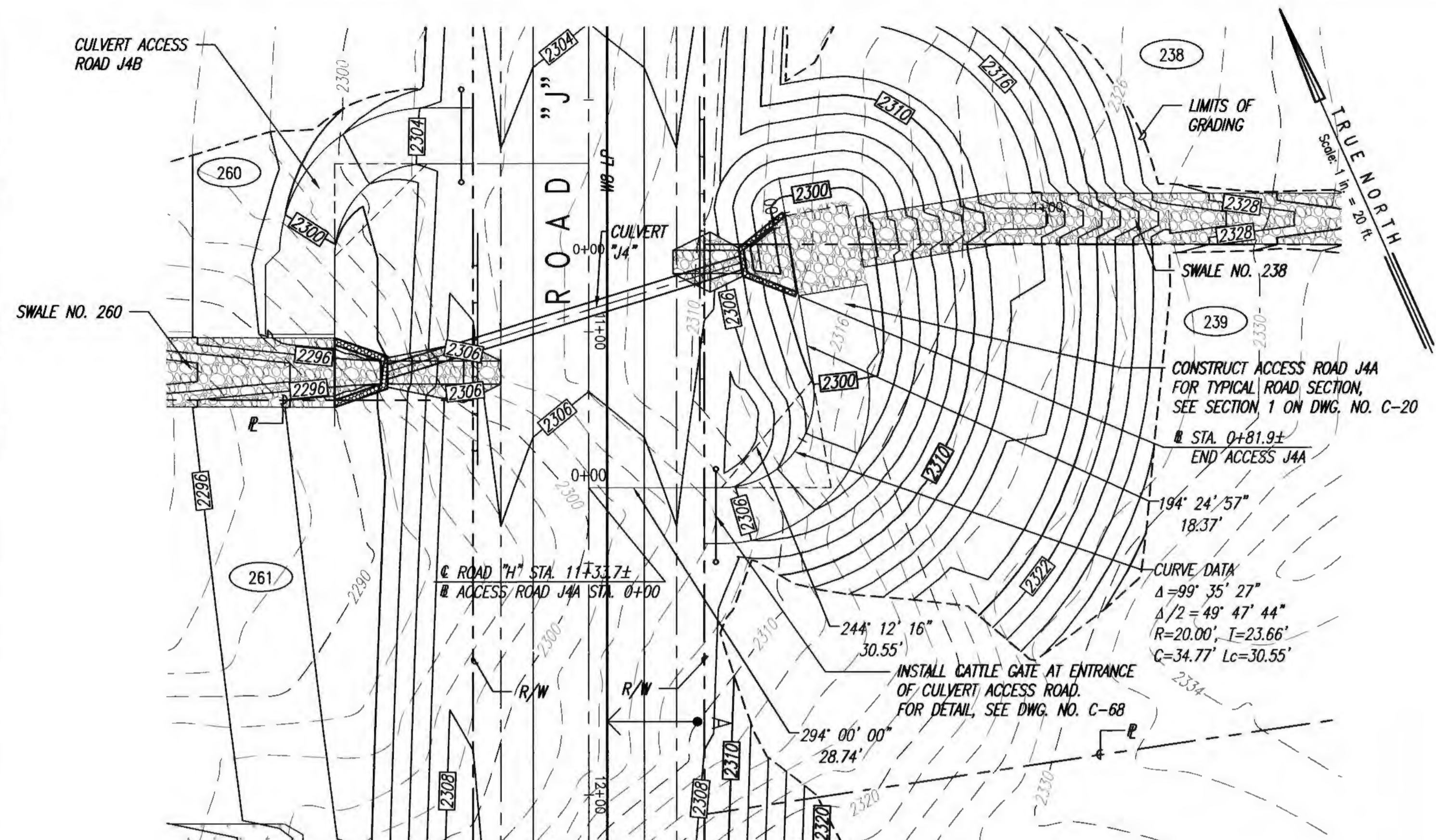
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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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

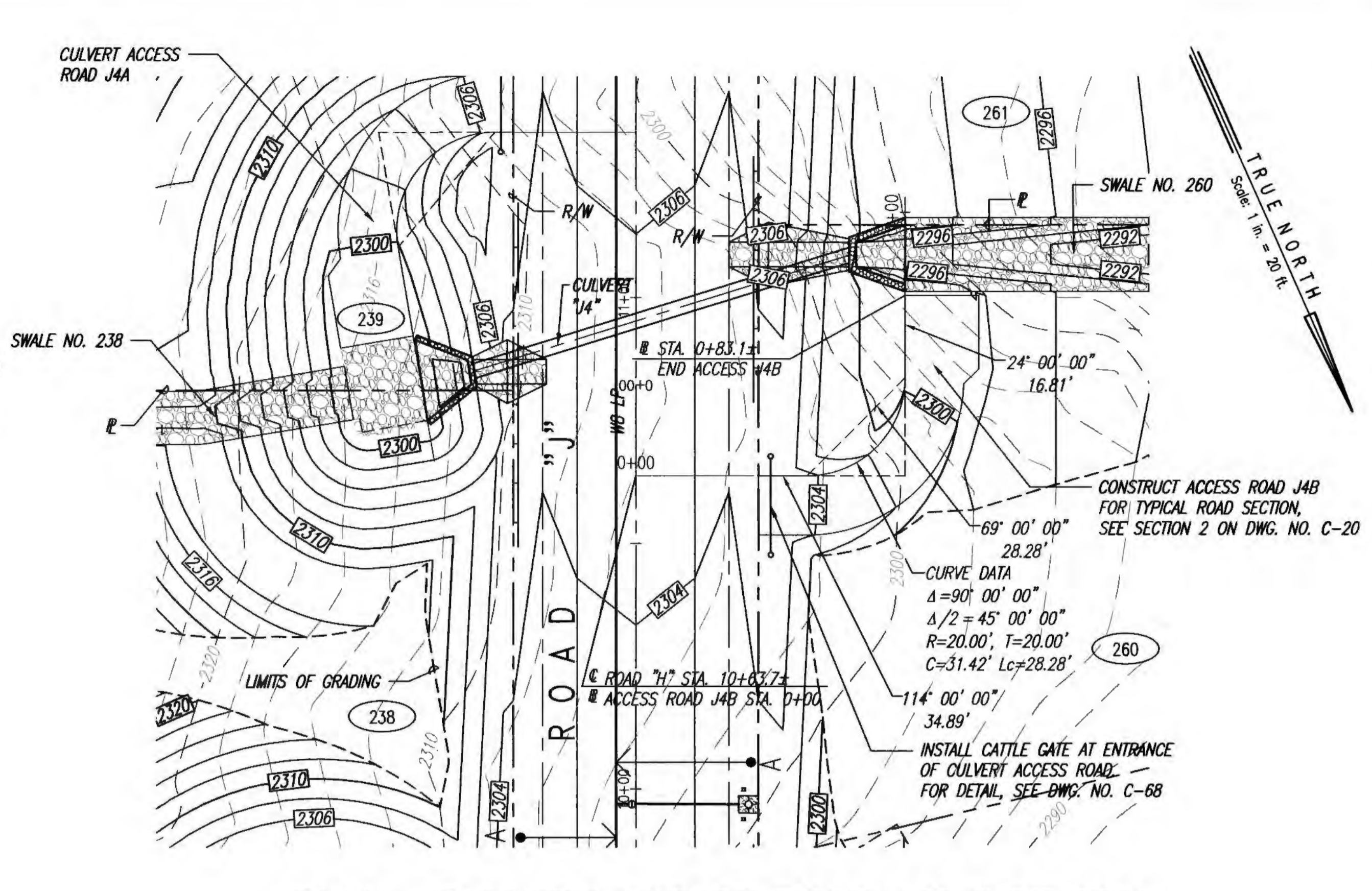
PLAN AND PROFILE ACCESS ROAD CULVERTS "J3" (A & B)

DRAWN BY: JSO ENGINEER: JSO, FJC CHECKED BY: AMM



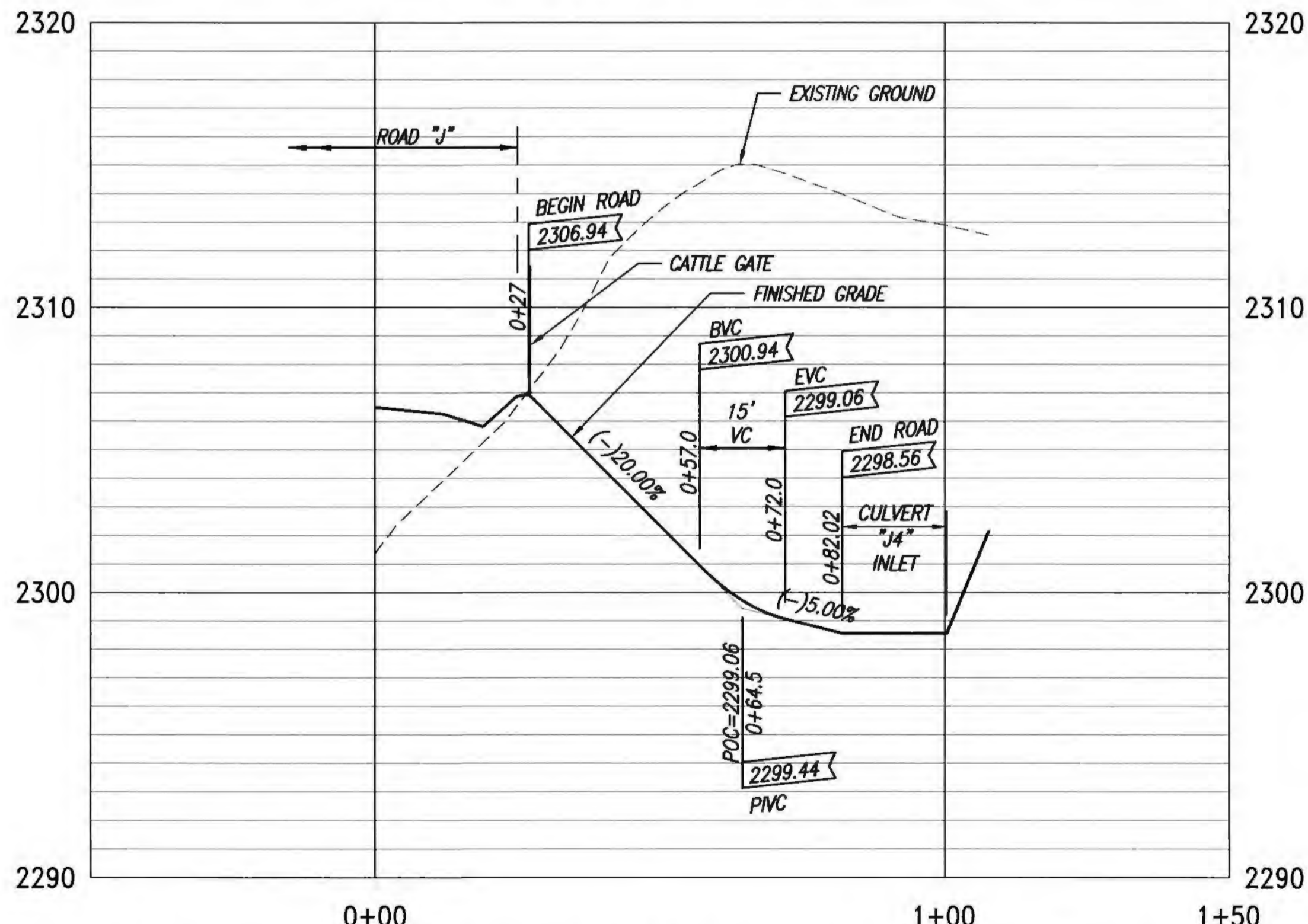
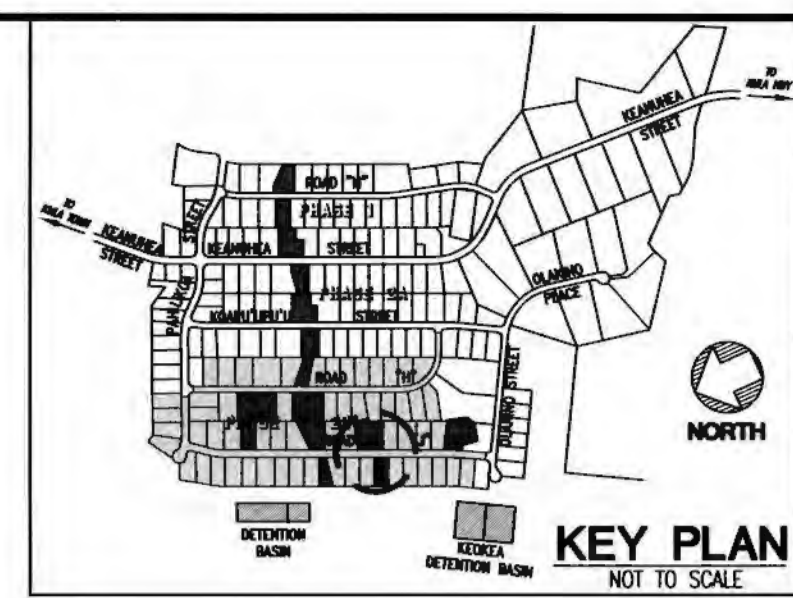
PLAN - CULVERT ACCESS ROAD J4A (LOT 239)

SCALE: 1"=20'



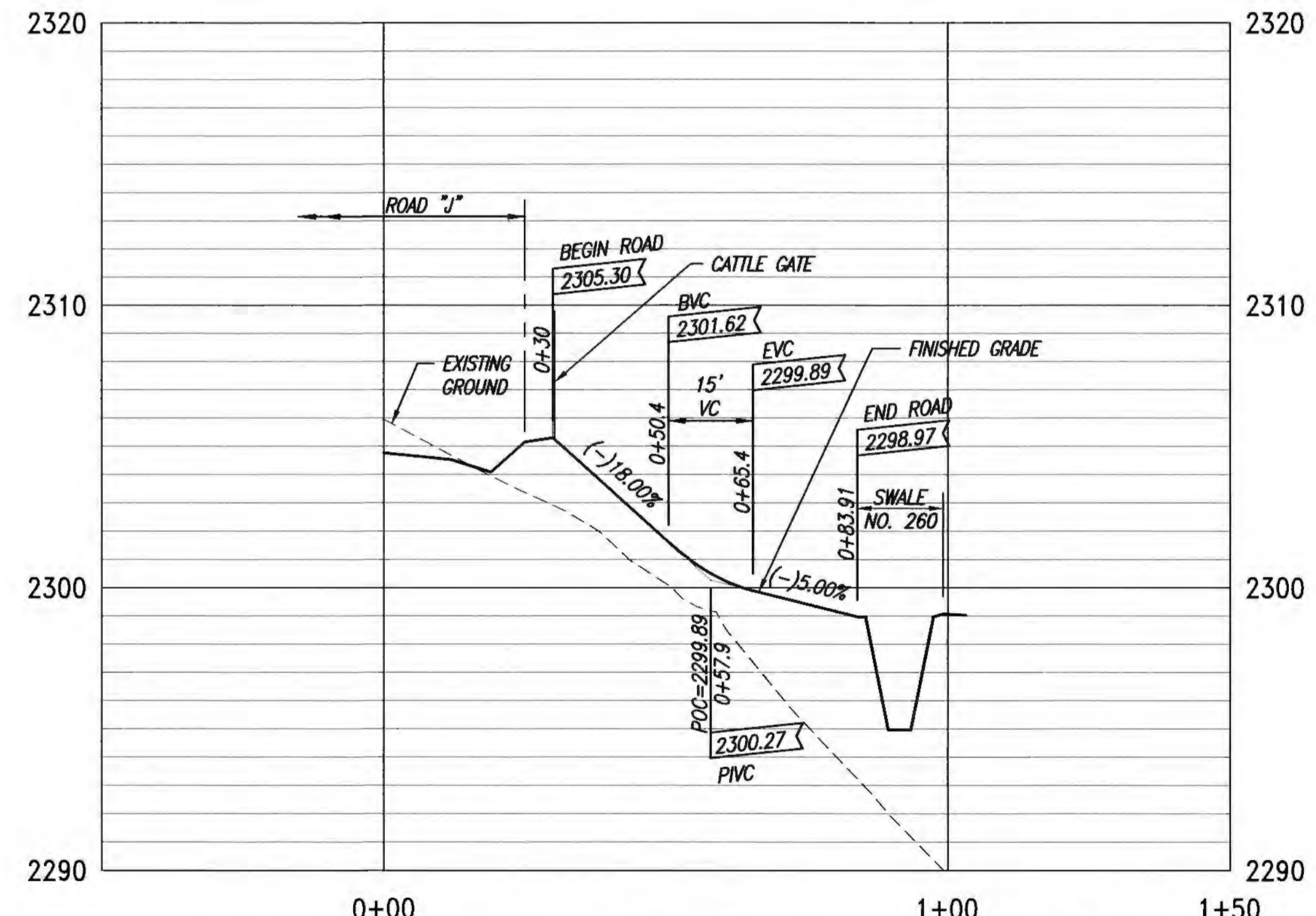
PLAN - CULVERT ACCESS ROAD J4B (LOT 260)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD J4A (LOT 239)

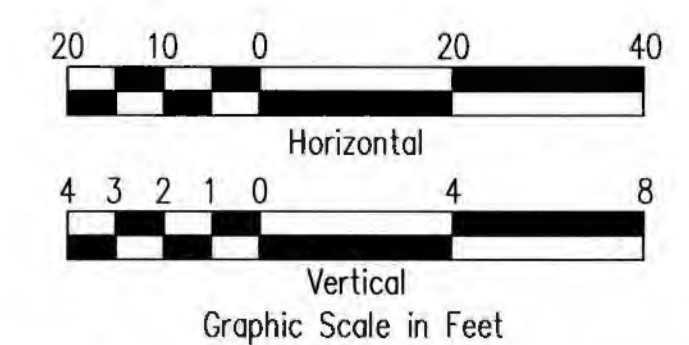
SCALES: HORIZ. 1"=20'
VERT. 1"=4'



PROFILE - CULVERT ACCESS ROAD J4B (LOT 260)

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

- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - [2450] — FINISH GRADE CONTOUR
 - — — — — PROPERTY LINE
 - + + + — GUARDRAIL
 - CATTLE GATE
 - W6 — NEW WATER LINE
 - ← — — — — TYPE "A" SERVICE LATERAL
 - — — — — TYPE "A-1" SERVICE LATERAL
 - 216 — LOT NUMBER



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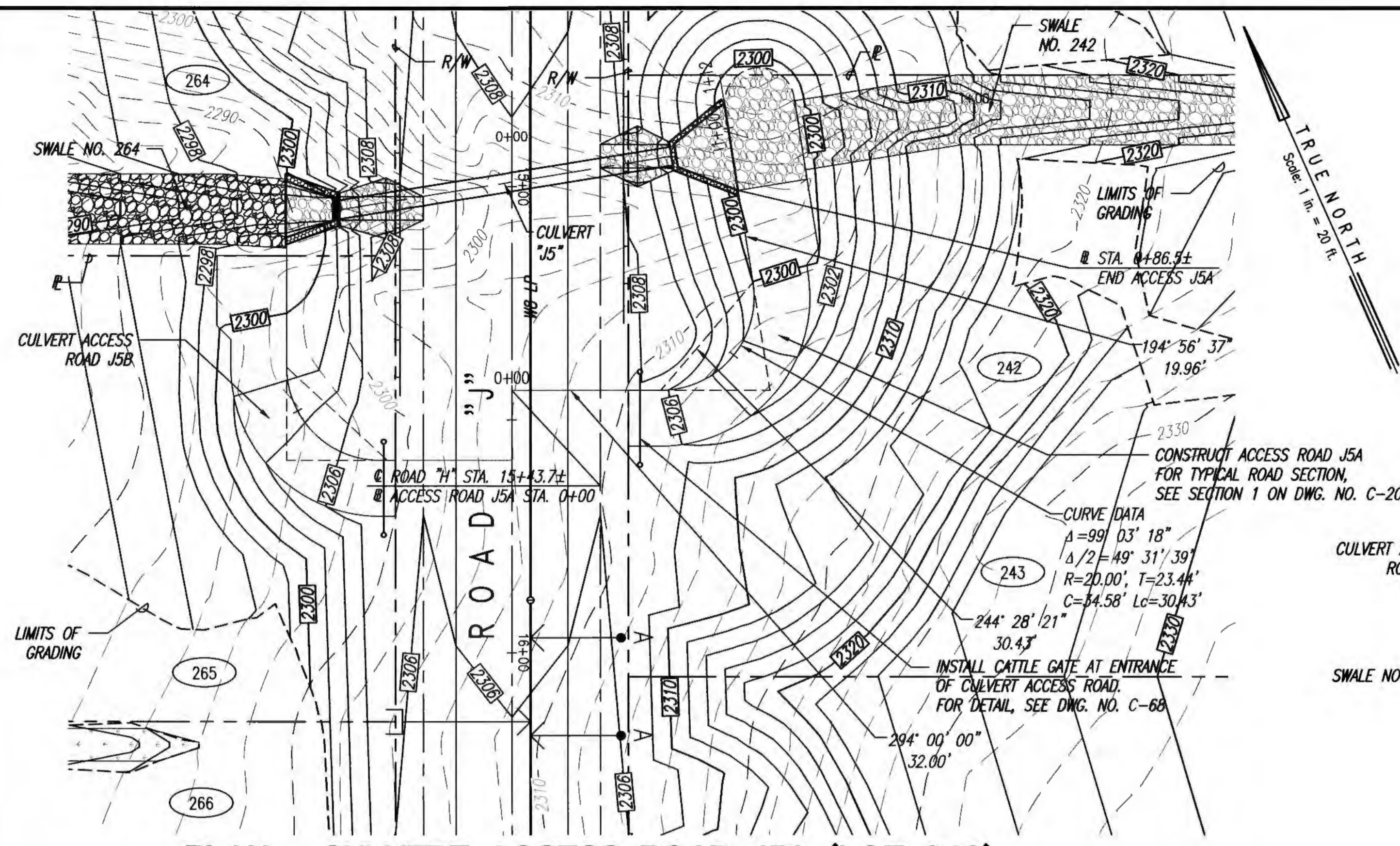
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

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 Engineering Design | Construction Management | Infrastructure Planning
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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

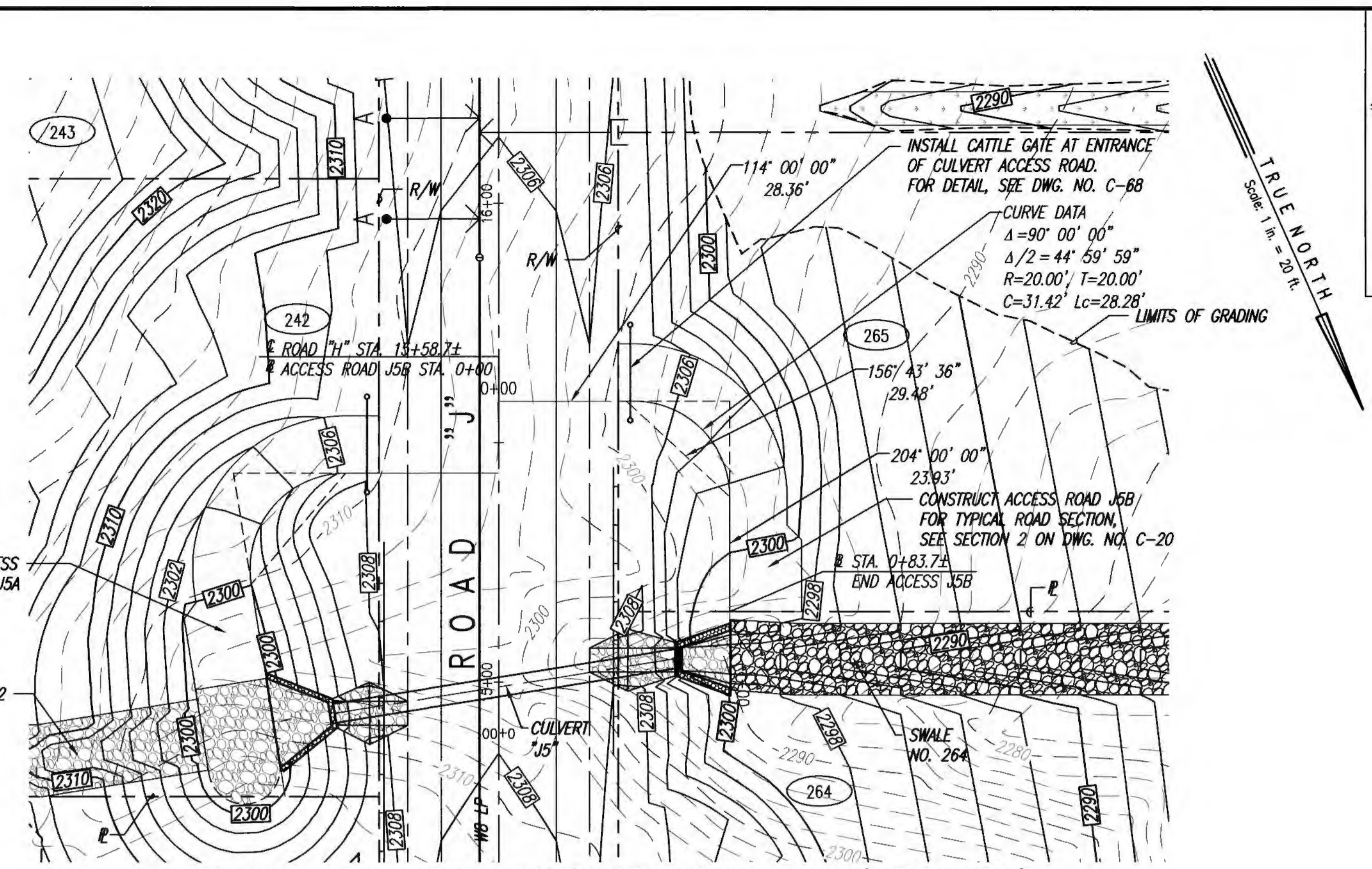
PLAN AND PROFILE ACCESS ROAD CULVERTS "J4" (A & B)

DRAWN BY: JSO ENGINEER: JSO, FJC CHECKED BY: AMM



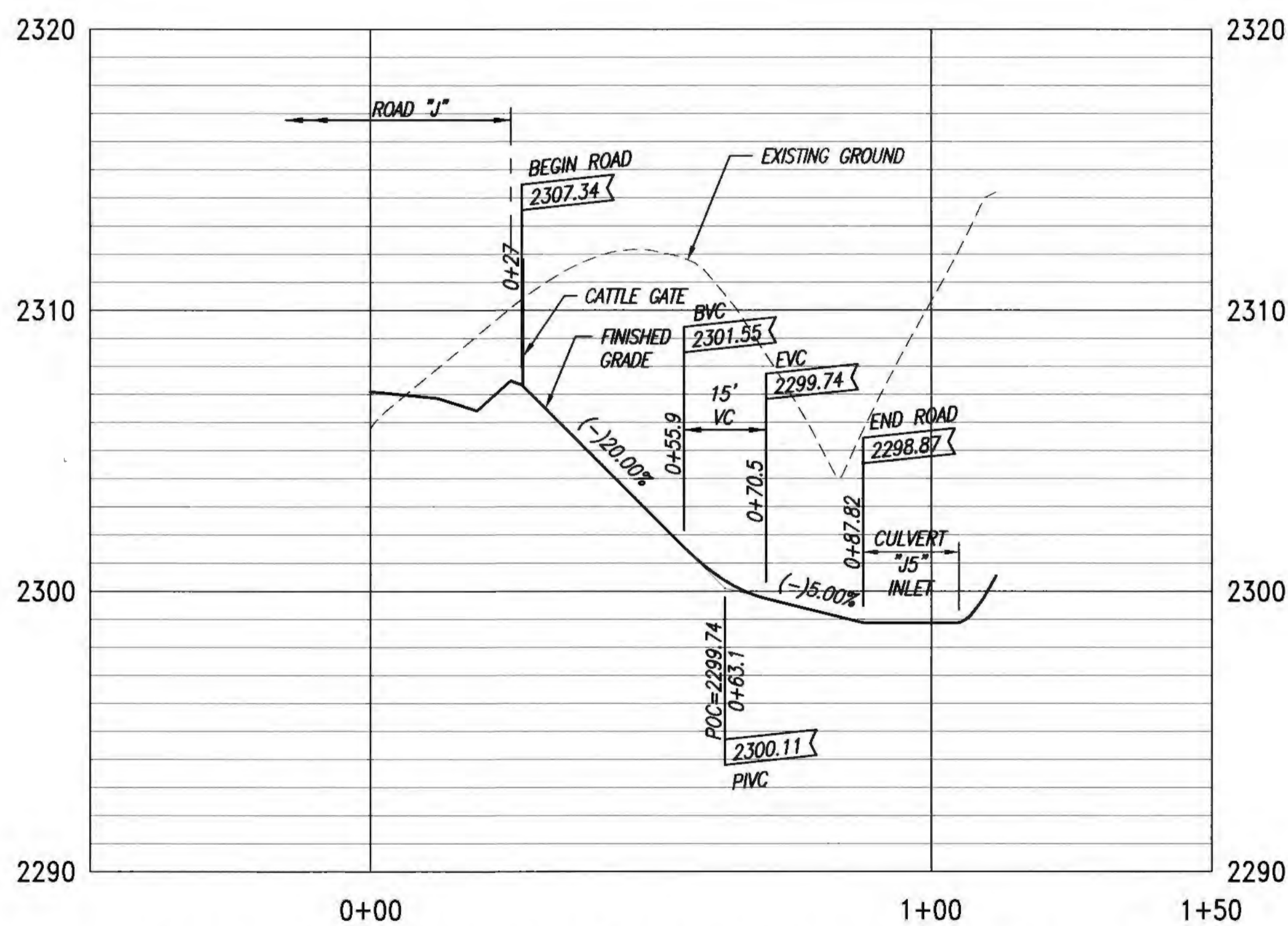
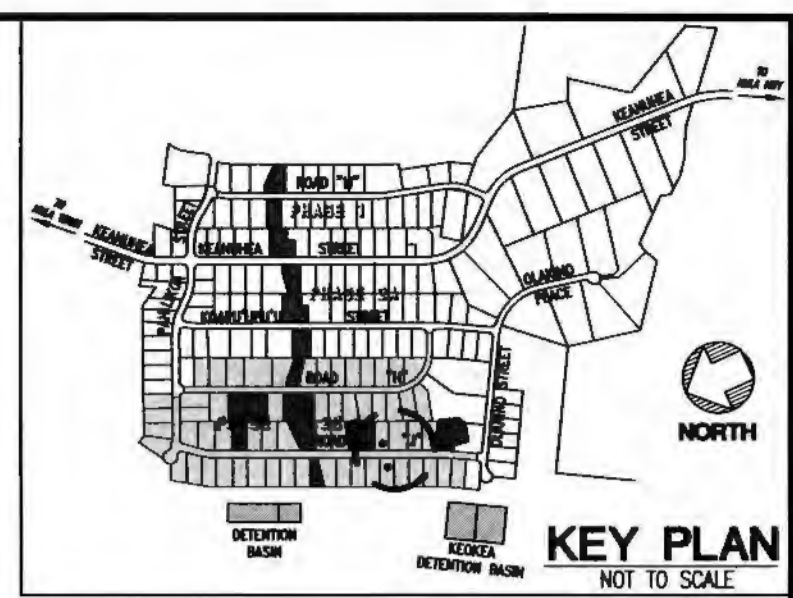
PLAN - CULVERT ACCESS ROAD J5A (LOT 242)

SCALE: 1"=20'



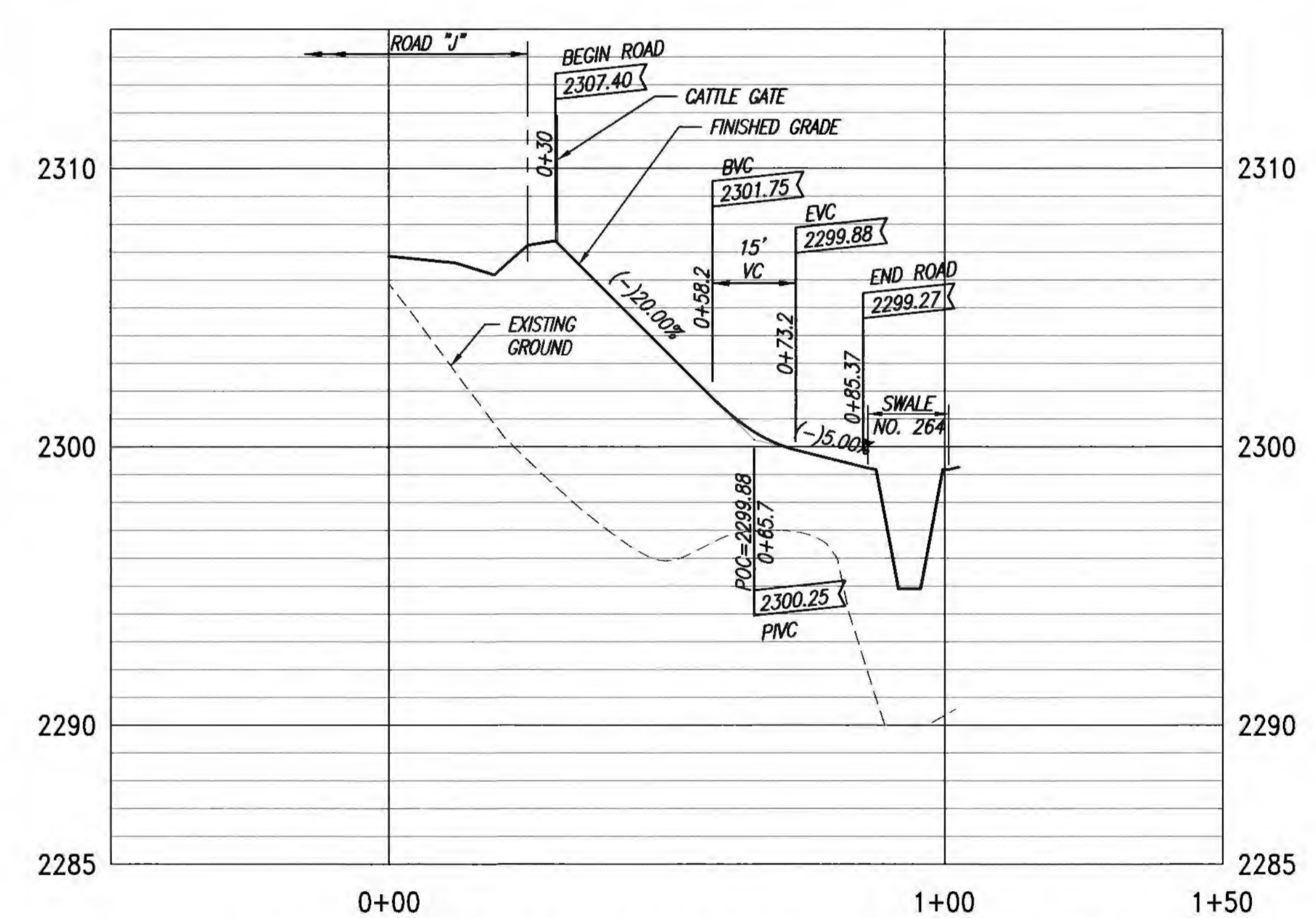
PLAN - CULVERT ACCESS ROAD J5B (LOT 265)

SCALE: 1"=20'



PROFILE - CULVERT ACCESS ROAD J5A (LOT 242)

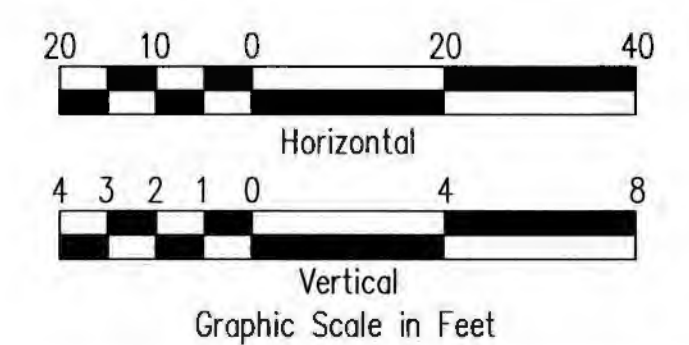
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - CULVERT ACCESS ROAD J5B (LOT 265)

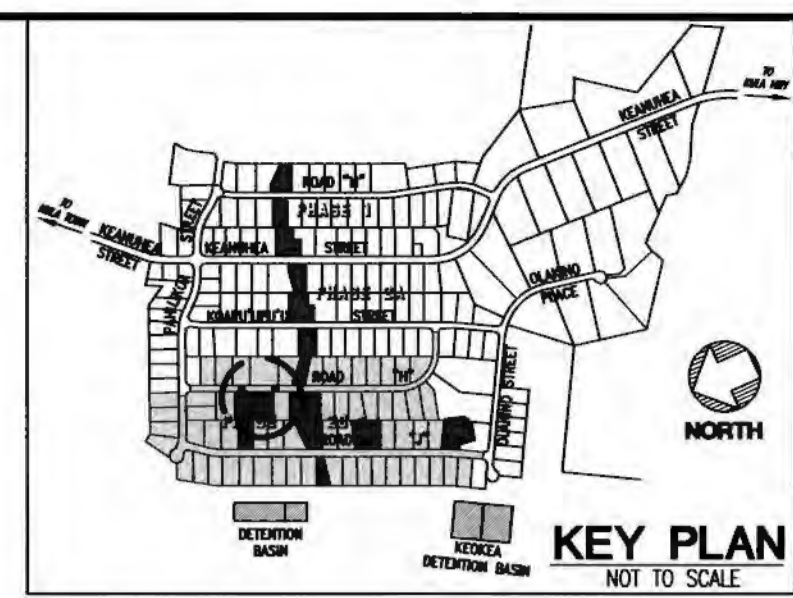
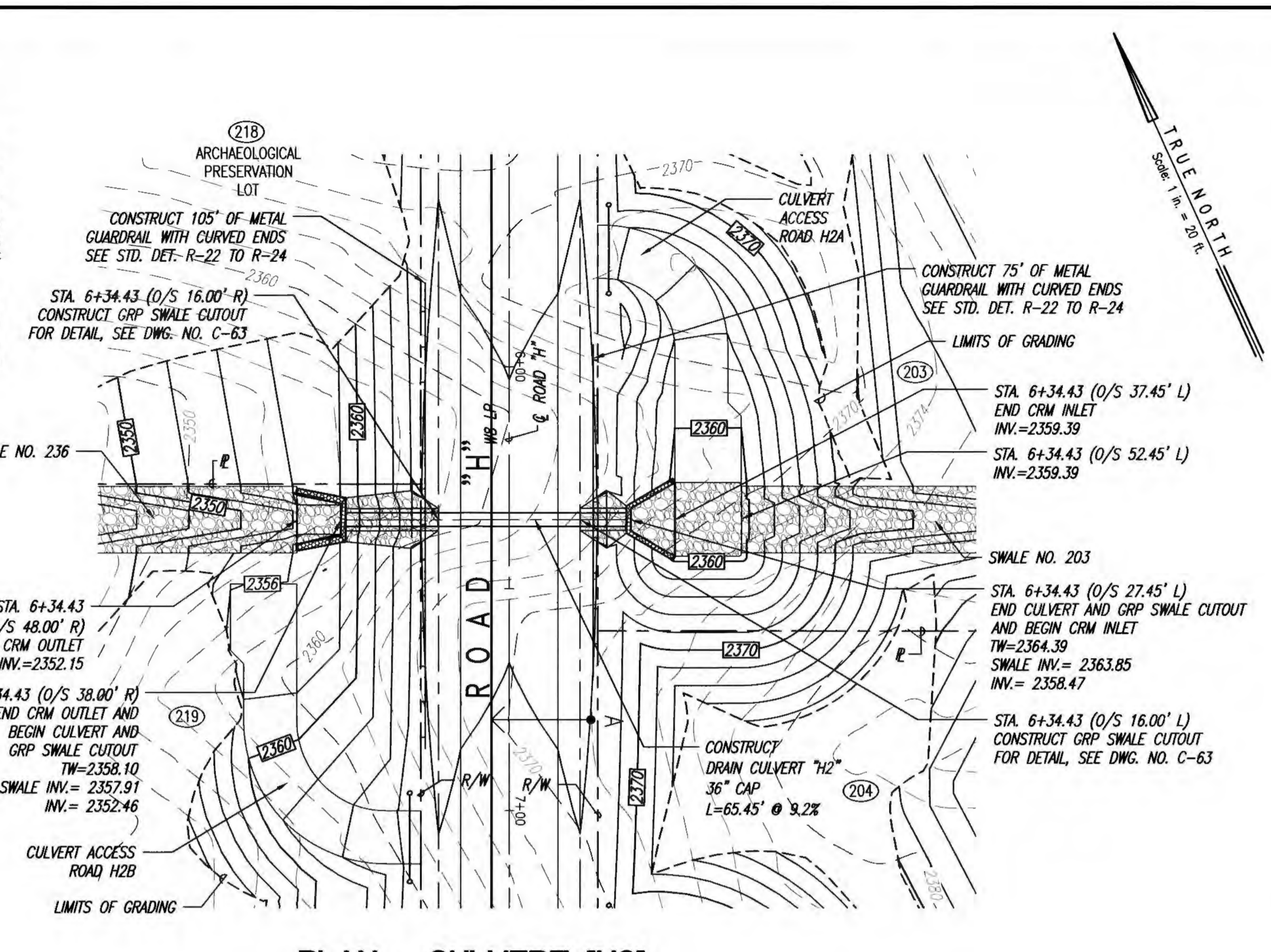
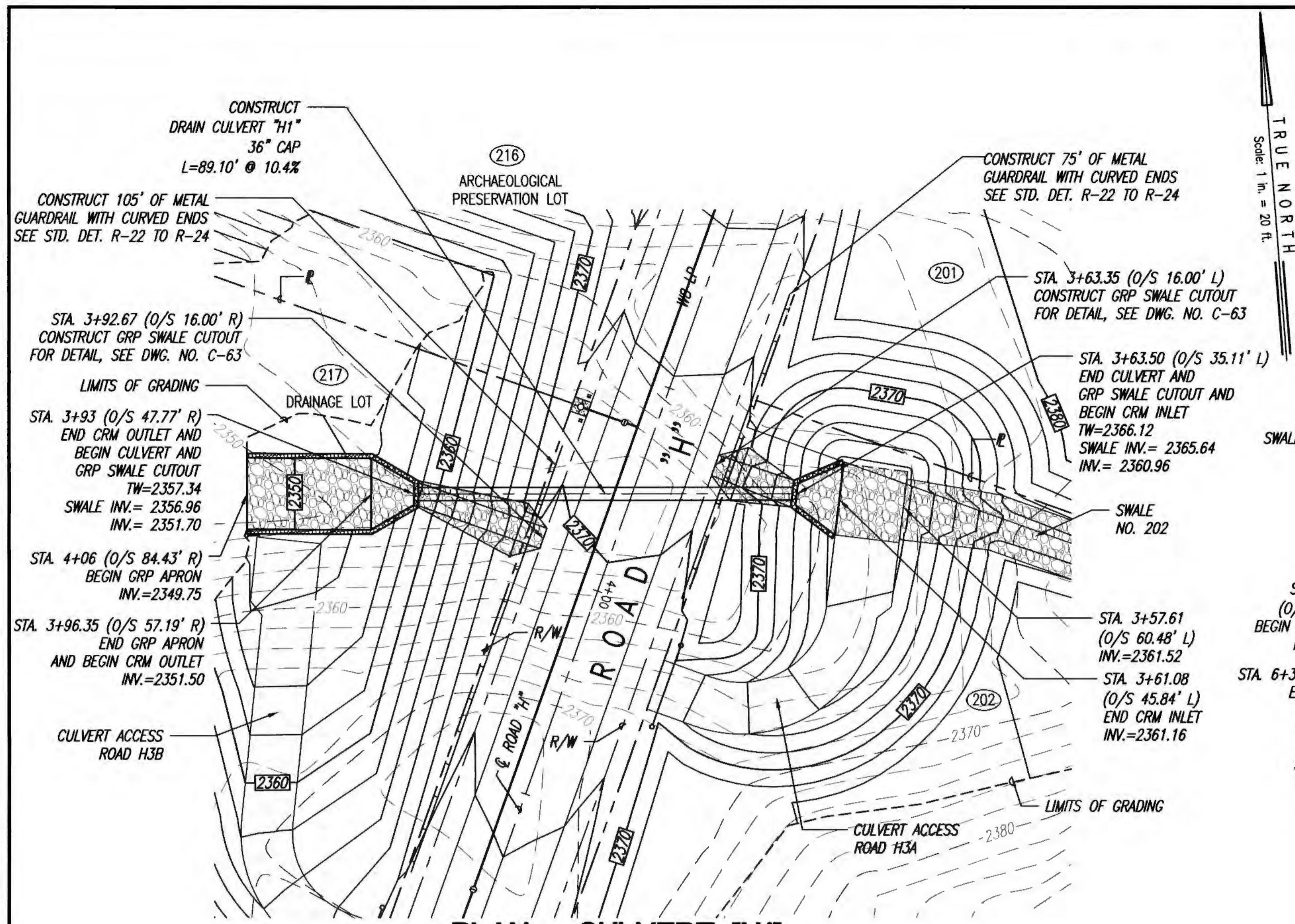
SCALES: HORIZ. 1"=20'
VERT. 1"= 4'

- LEGEND**
- LIMITS OF GRADING
 - - - - - 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

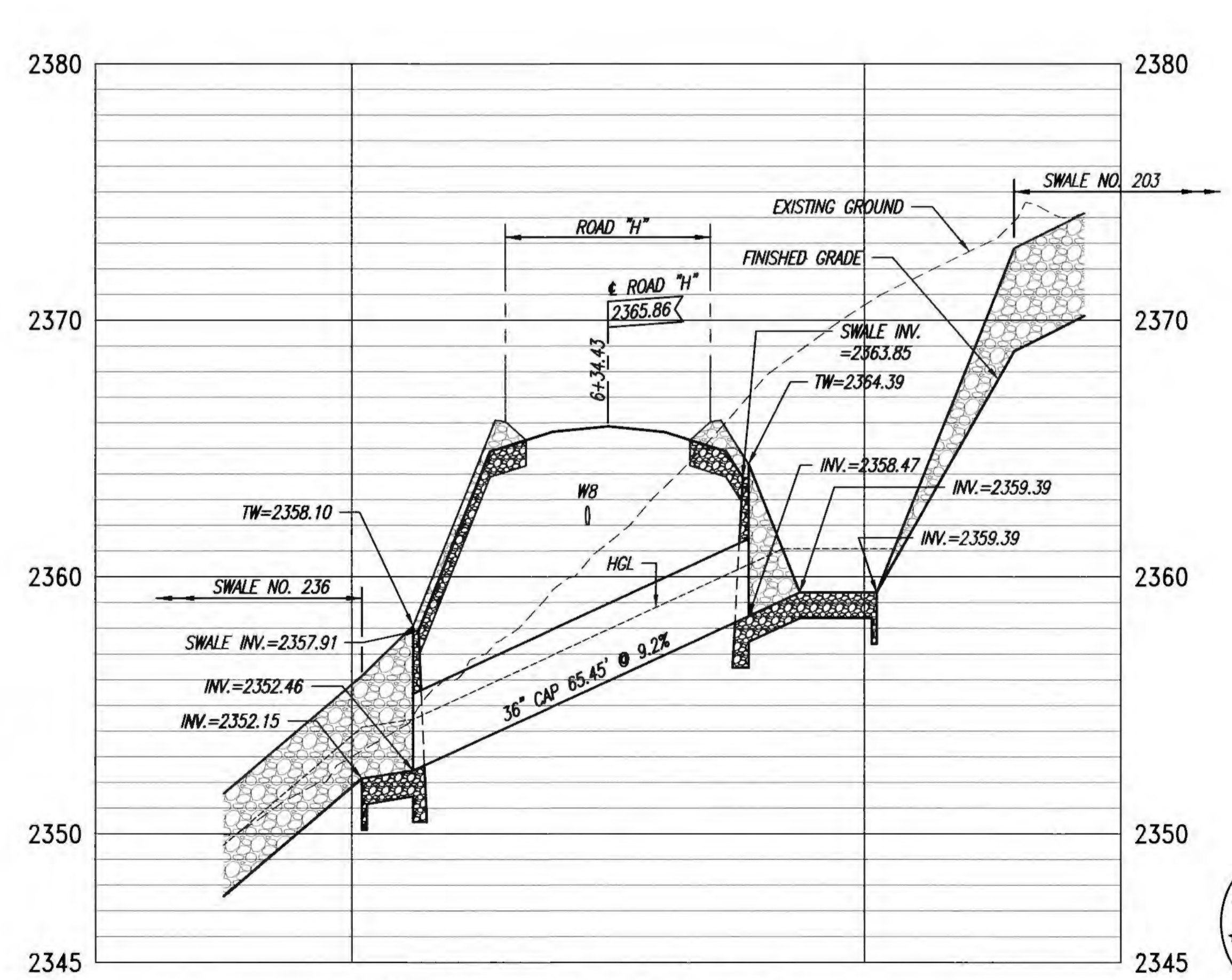
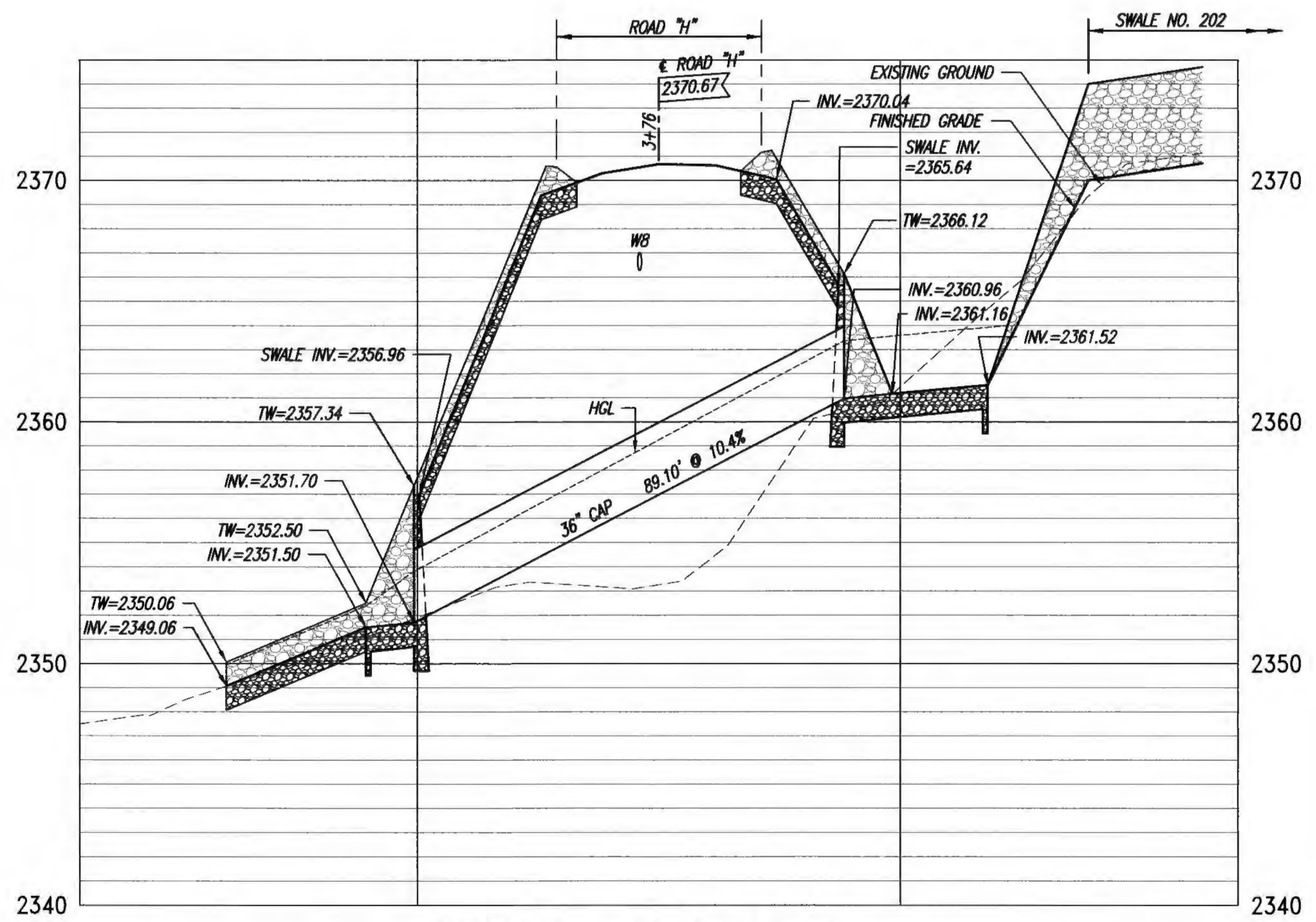
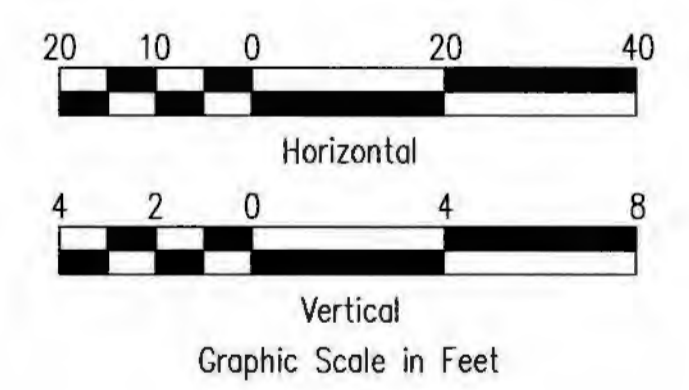


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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1298 Queen Emma Street, Third Floor Honolulu, Hawaii			
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B KEOKEA & WAIOHULI, MAKAWAO, MAUI OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023			
PLAN AND PROFILE ACCESS ROAD CULVERTS "J5" (A & B)			
DRAWN BY: JSO	ENGINEER: JSO, FJC	CHECKED BY: AMM	



- LEGEND**
- LIMITS OF GRADING
 - - - 2500 EXISTING GROUND CONTOUR
 - [2450] FINISH GRADE CONTOUR
 - PROPERTY LINE
 - - - - - LIMITS OF 100 YEAR STORM
 - — — — — GUARDRAIL
 - ○ ○ ○ ○ CATTLE GATE
 - W8 NEW WATER LINE
 - ← → TYPE "A" SERVICE LATERAL
 - — — TYPE "A-1" SERVICE LATERAL
 - (216) LOT NUMBER



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REVISION DATE DESCRIPTION MADE BY APPROVED

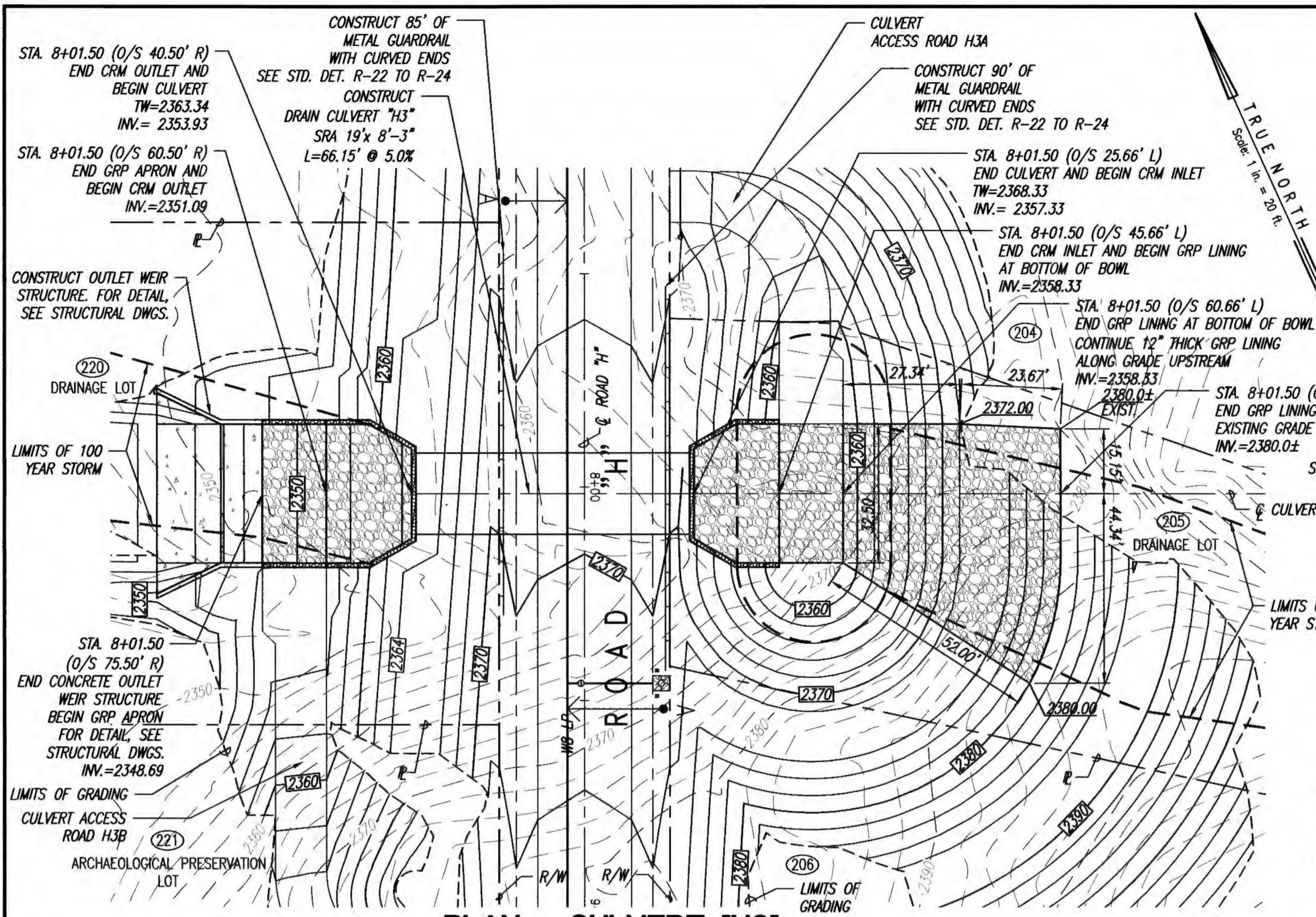
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1256 Queen Emma Street, Third Floor Honolulu, Hawaii

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 AND PROFILE DRAIN CULVERTS "H1" & "H2"

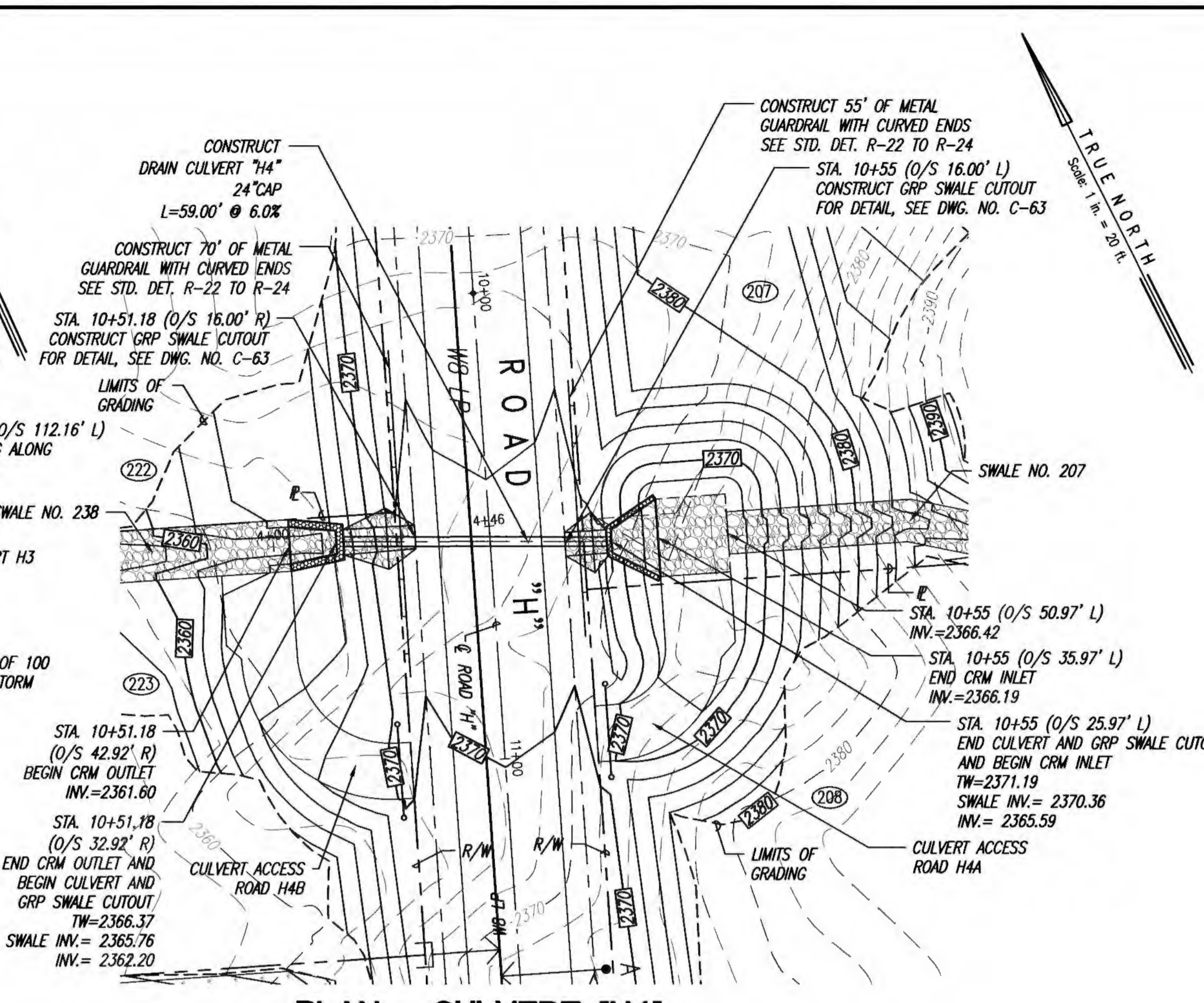
DRAWN BY: HWH ENGINEER: HWH, FJC CHECKED BY: AMM

FILE POCKET FOLDER NO.



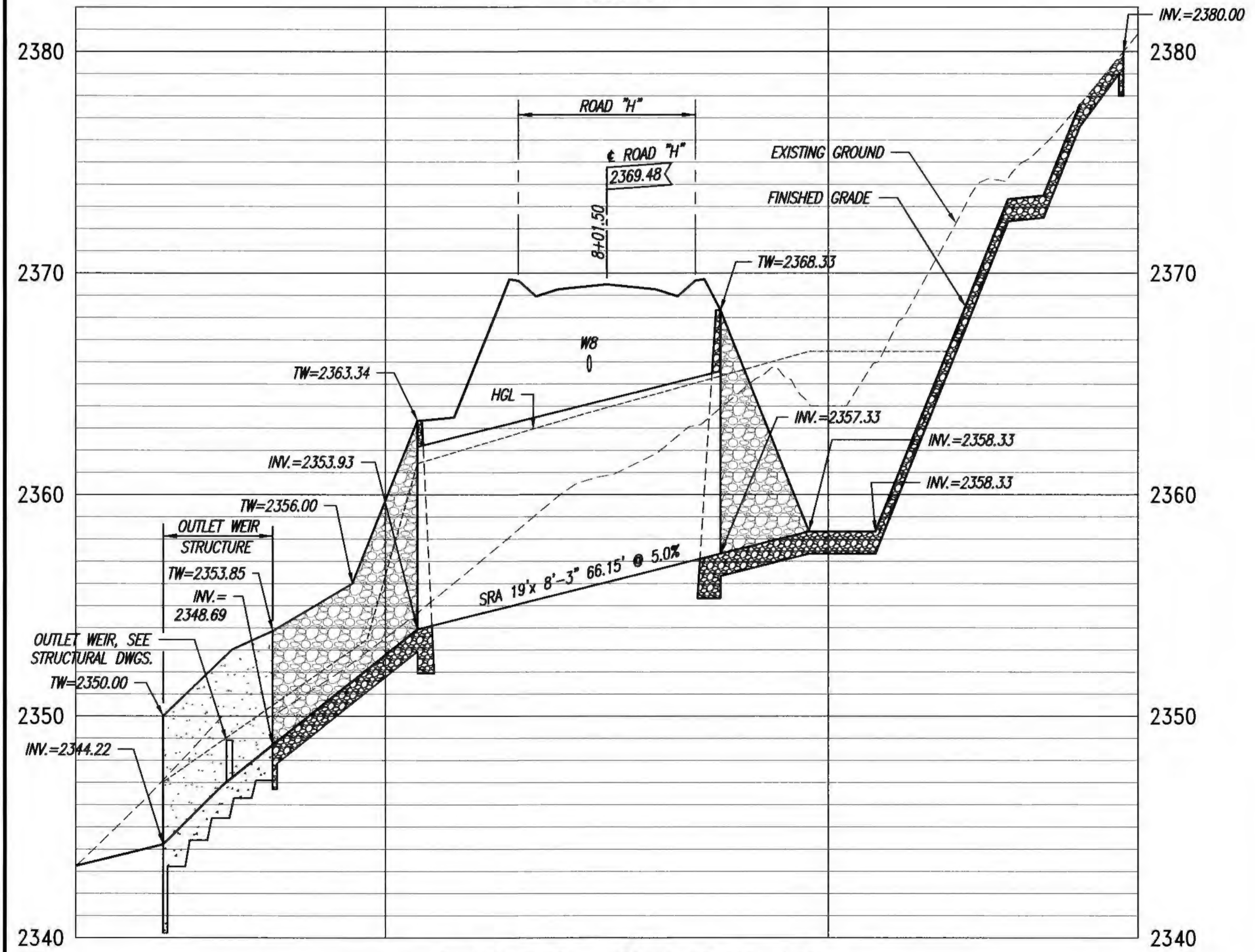
PLAN - CULVERT "H3"

SCALE: 1"=20'



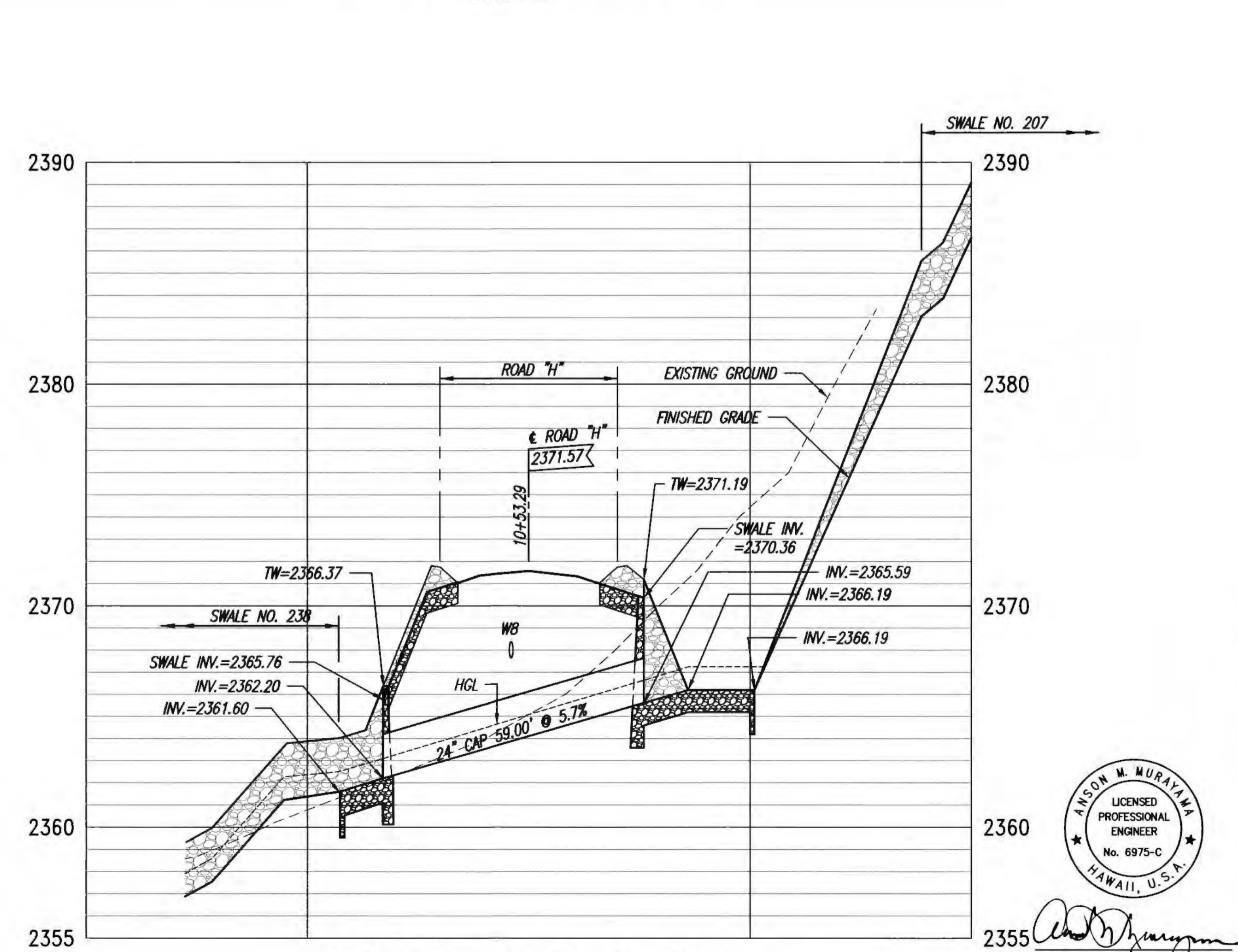
PLAN - CULVERT "H4"

SCALE: 1"=20'



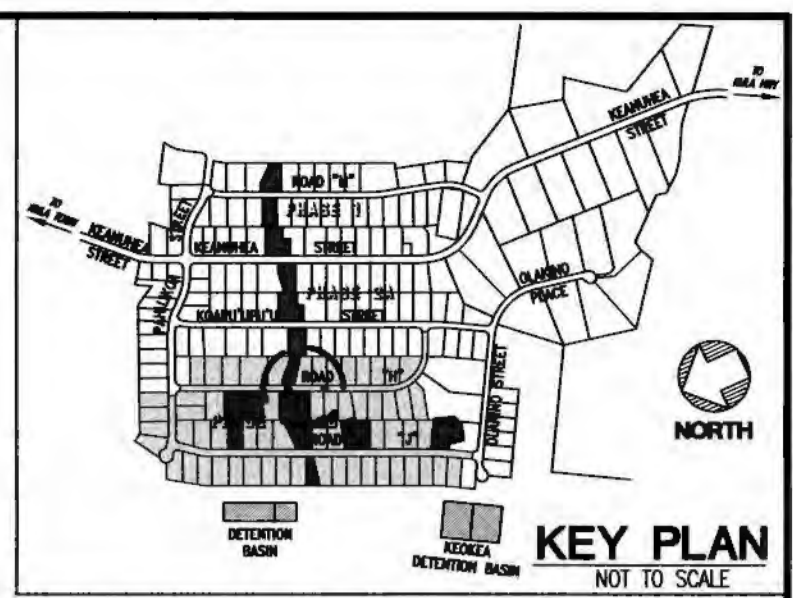
PROFILE - CULVERT "H3"

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

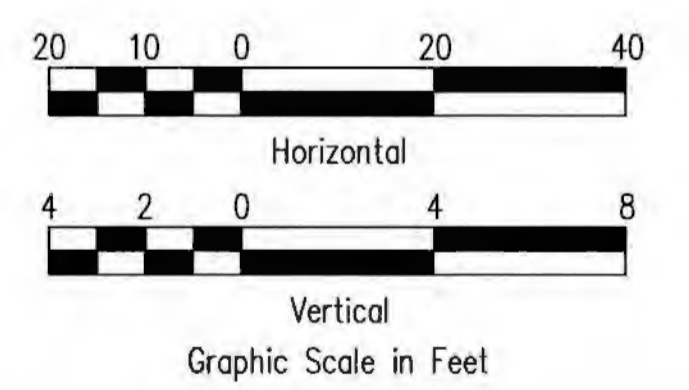


PROFILE - CULVERT "H4"

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



- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - FINISH GRADE CONTOUR
 - PROPERTY LINE
 - LIMITS OF 100 YEAR STORM GUARDRAIL
 - CATTLE GATE
 - NEW WATER LINE
 - TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - (216) LOT NUMBER



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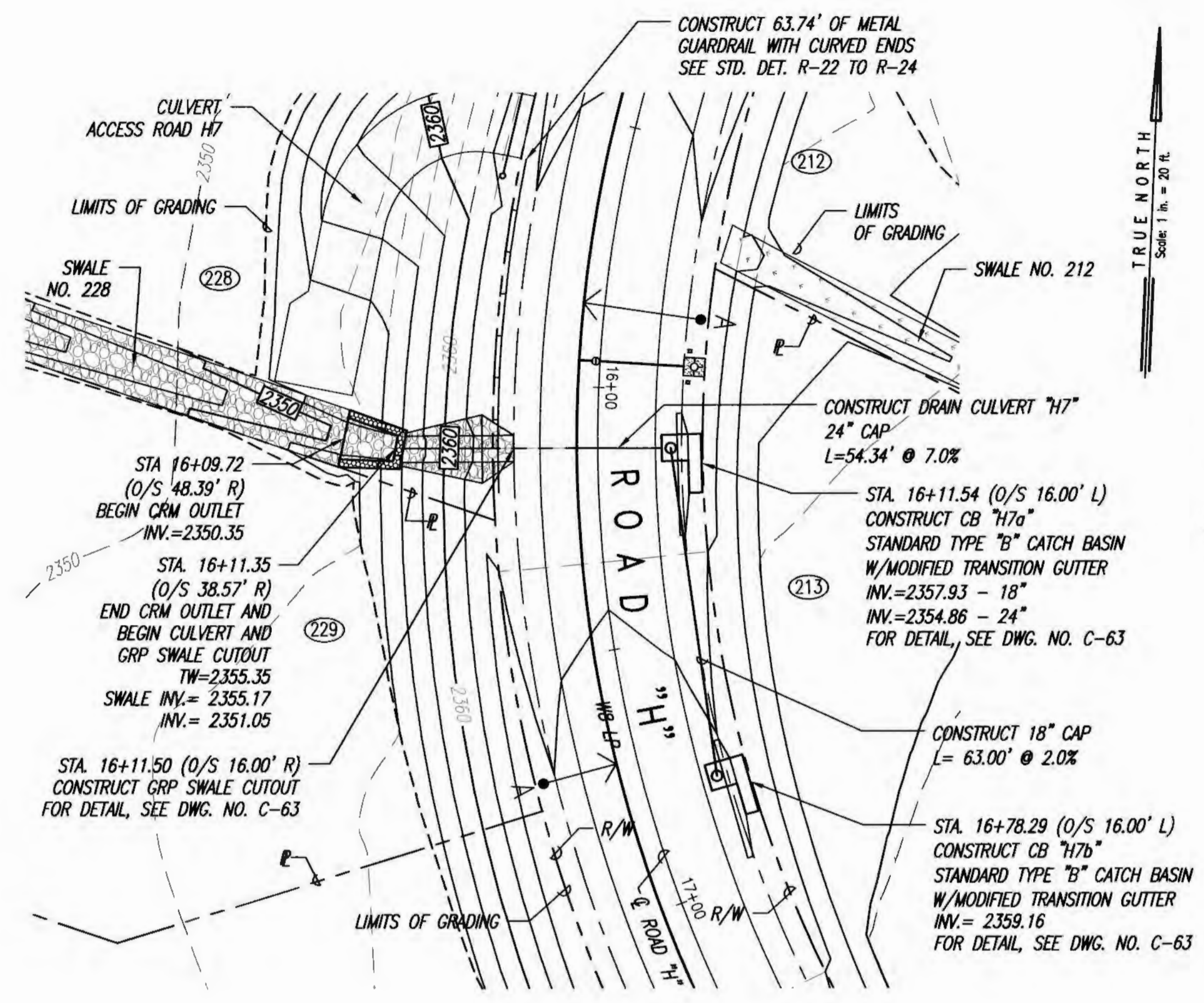
KEOKEA-WAIOHULI DEVELOPMENT PHASE 2B
KEOKEA & WAIOHULI, MAKAWAO, MAUI
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEYS: (2) 2-2-002:014 AND (2) 2-2-033:023

PLAN AND PROFILE DRAIN CULVERTS "H3" & "H4"

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

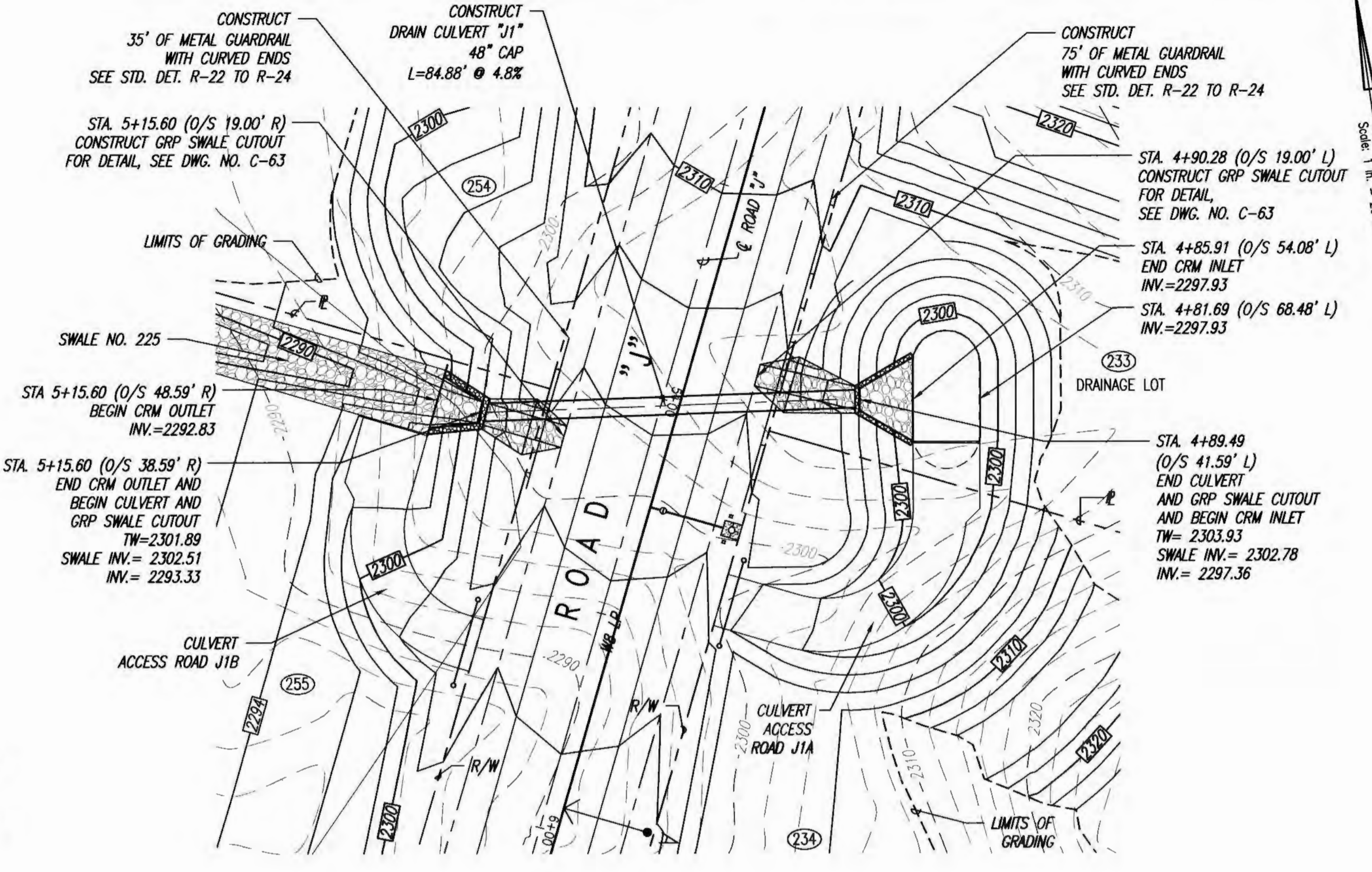


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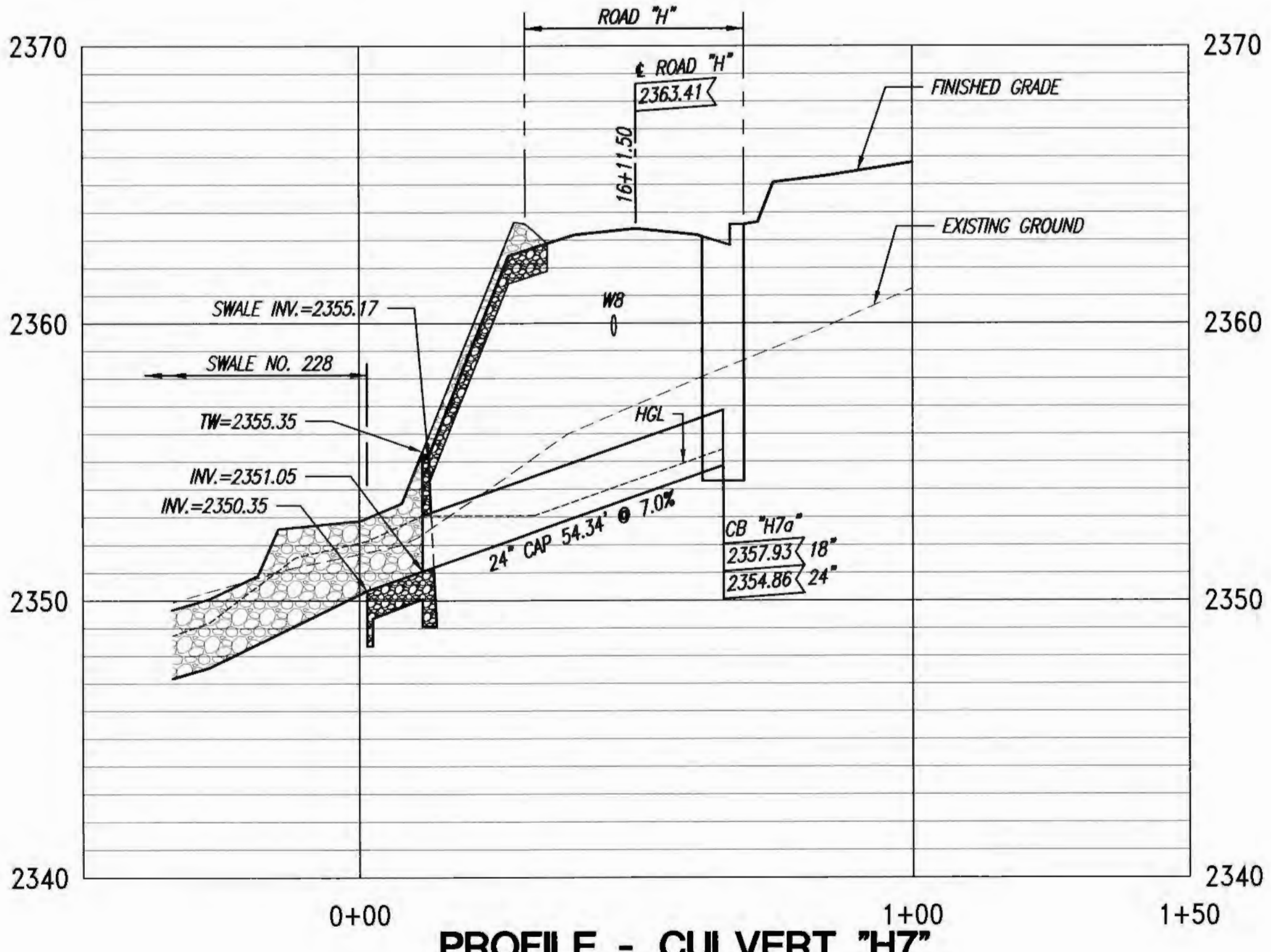
PLAN - CULVERT "H7"

SCALE: 1"=20'



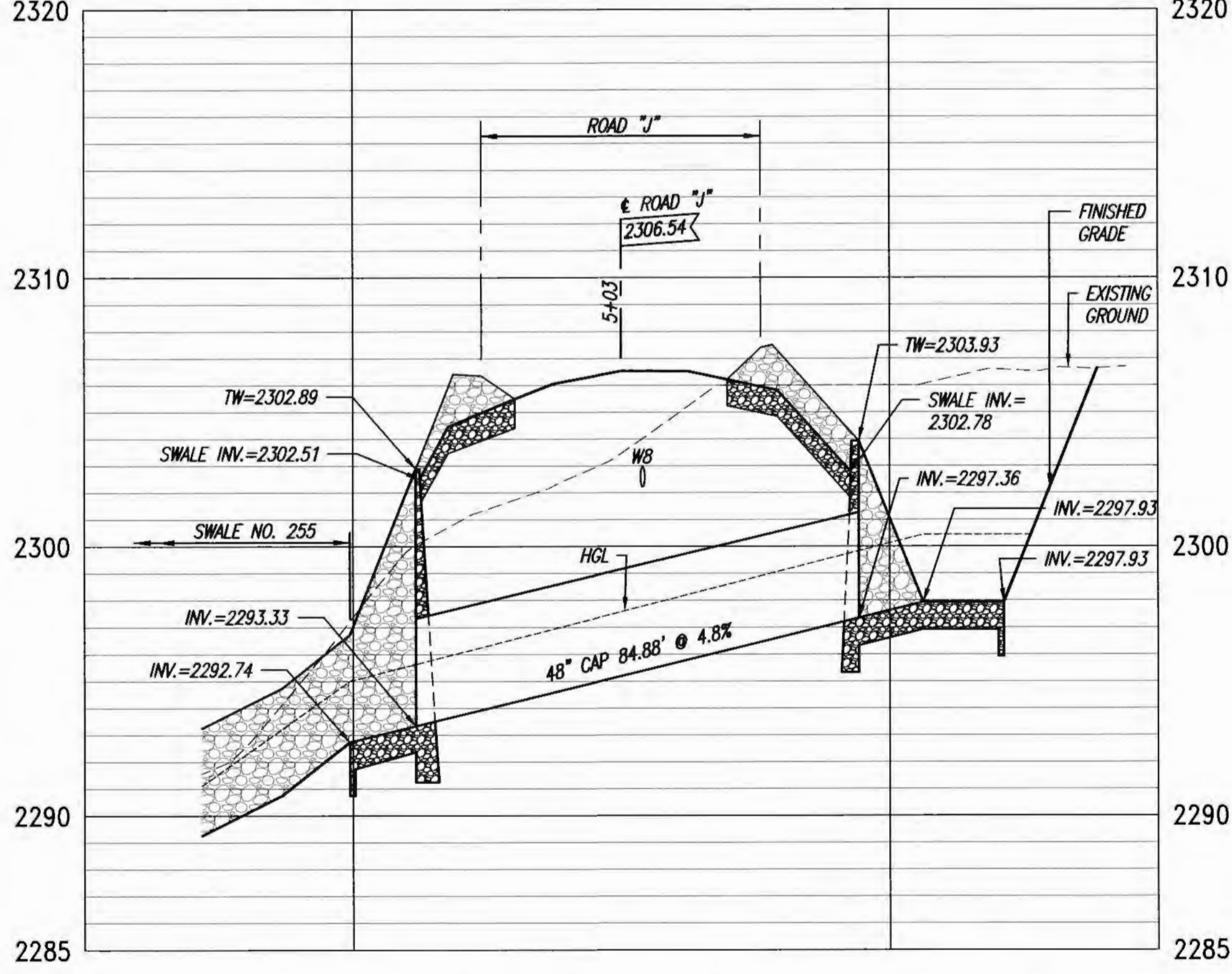
PLAN - CULVERT "J1"

SCALE: 1"=20'



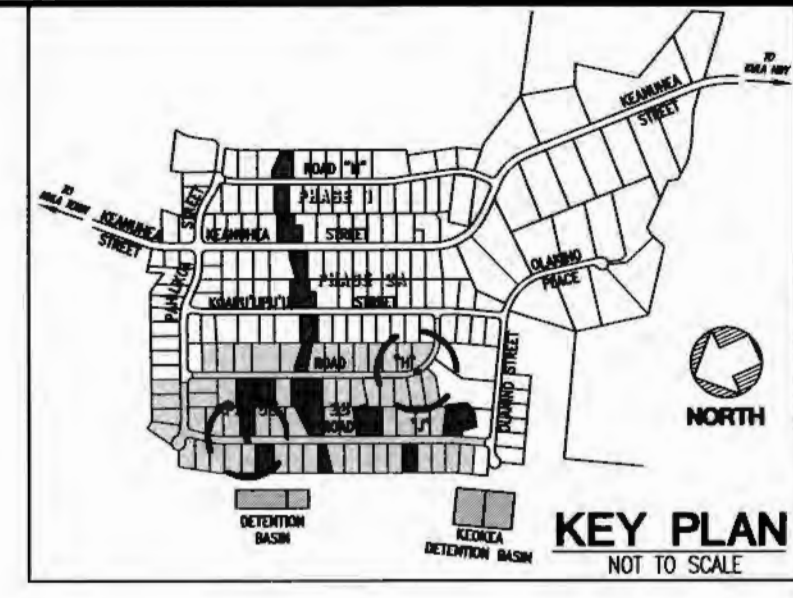
PROFILE - CULVERT "H7"

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

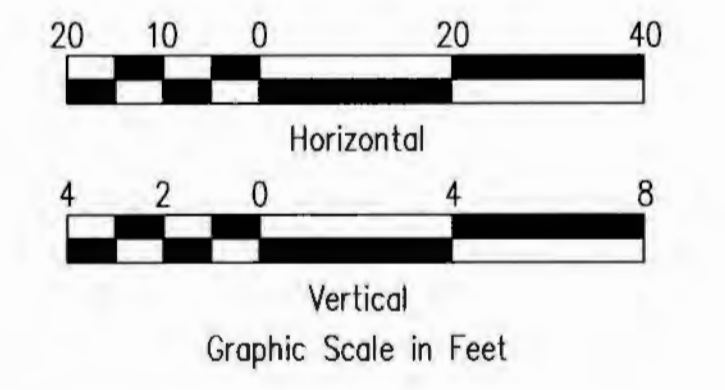


PROFILE - CULVERT "J1"

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

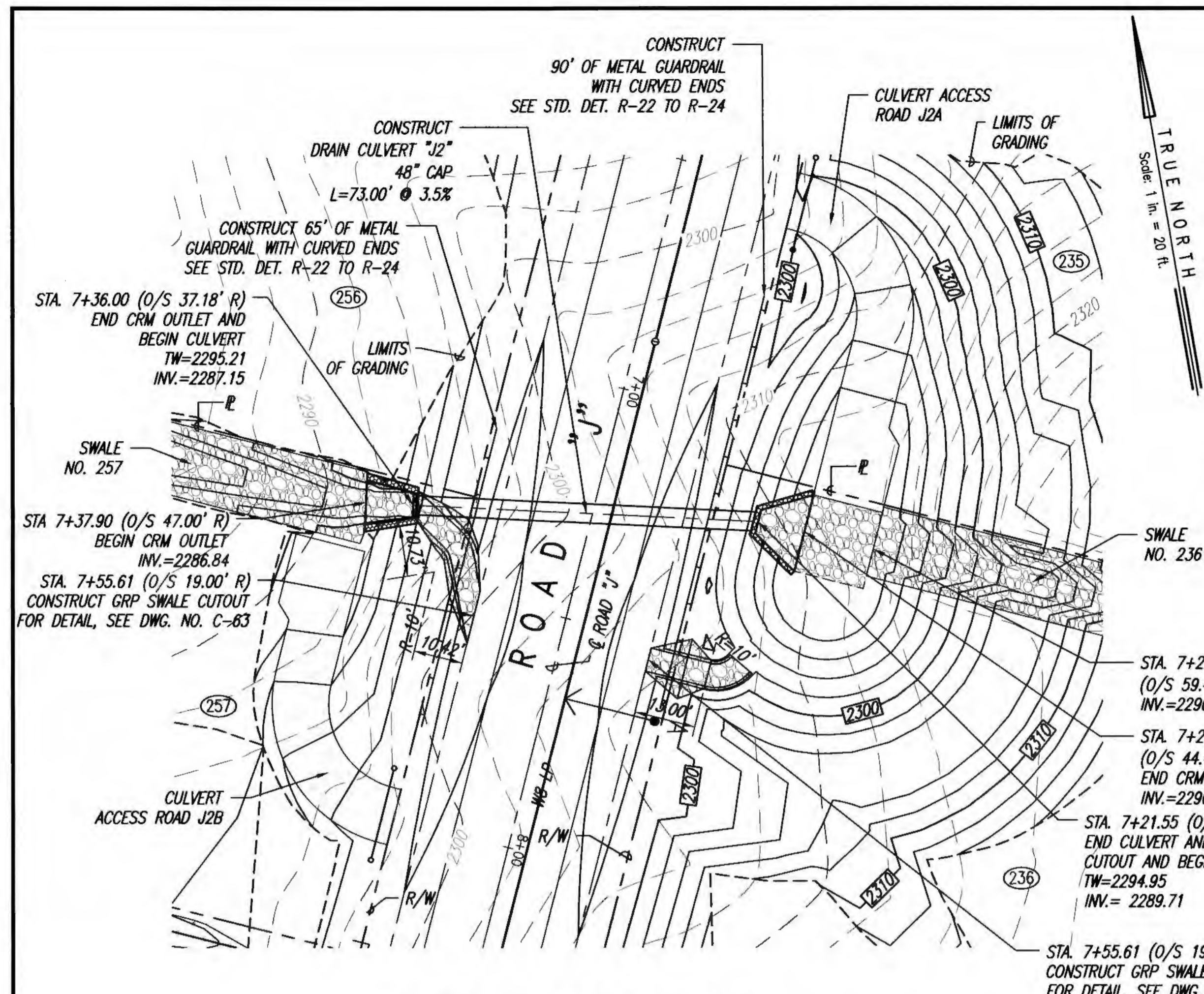


- LEGEND**
- LIMITS OF GRADING
 - - - - - EXISTING GROUND CONTOUR
 - 2450 FINISH GRADE CONTOUR
 - PROPERTY LINE
 - GUARDRAIL
 - CATTLE GATE
 - WB NEW WATER LINE
 - ←→ TYPE "A" SERVICE LATERAL
 - TYPE "A-1" SERVICE LATERAL
 - (216) LOT NUMBER



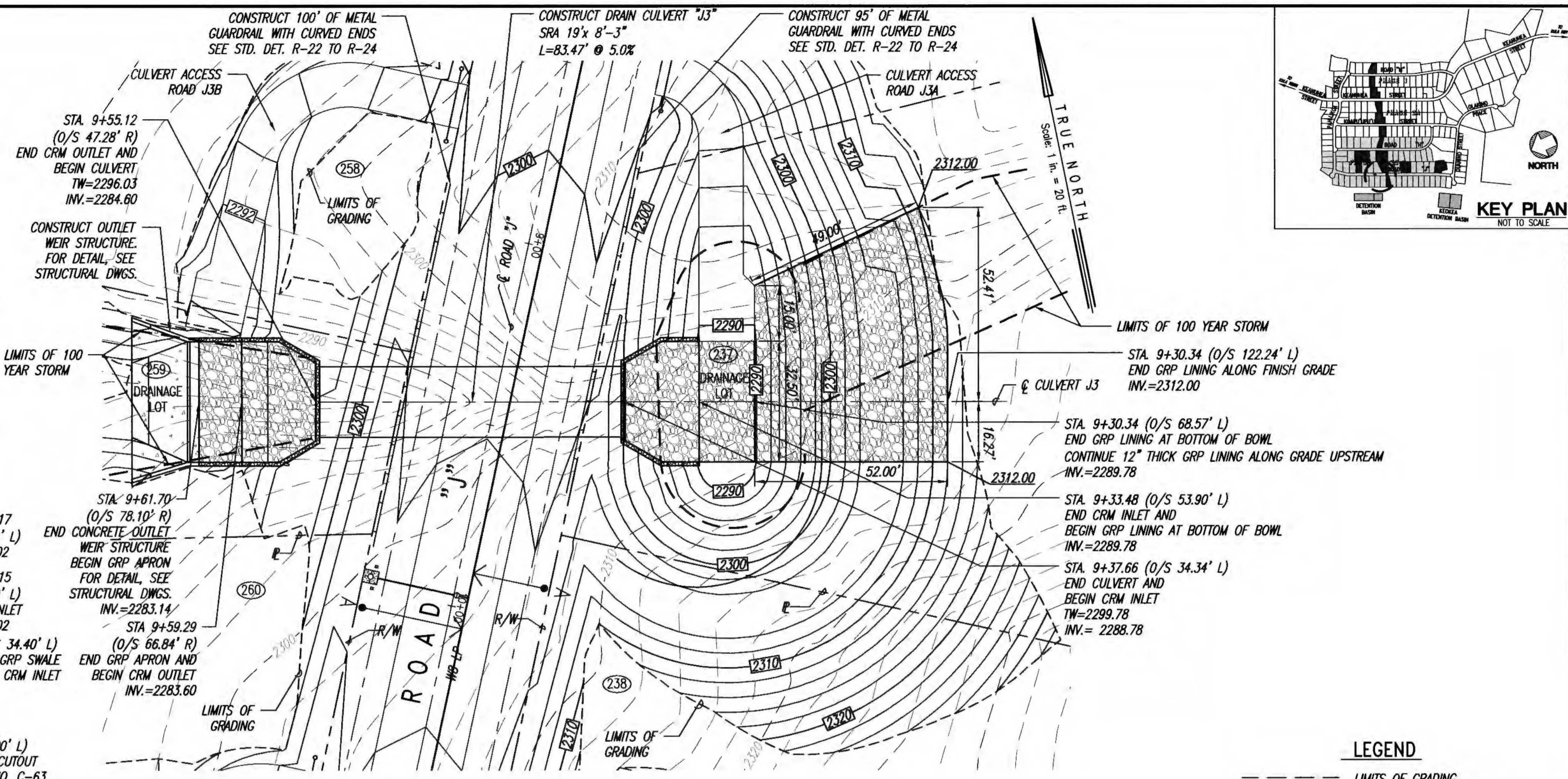
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 2205 Queen Emma Street, Third Floor Honolulu, Hawaii</p> <p>KEOKEA-WAIOHULI DEVELOPMENT PHASE 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 DRAIN CULVERTS "H7" & "J1"</p>			
DRAWN BY: HWH	ENGINEER: HWH, FJC	CHECKED BY: AMM	



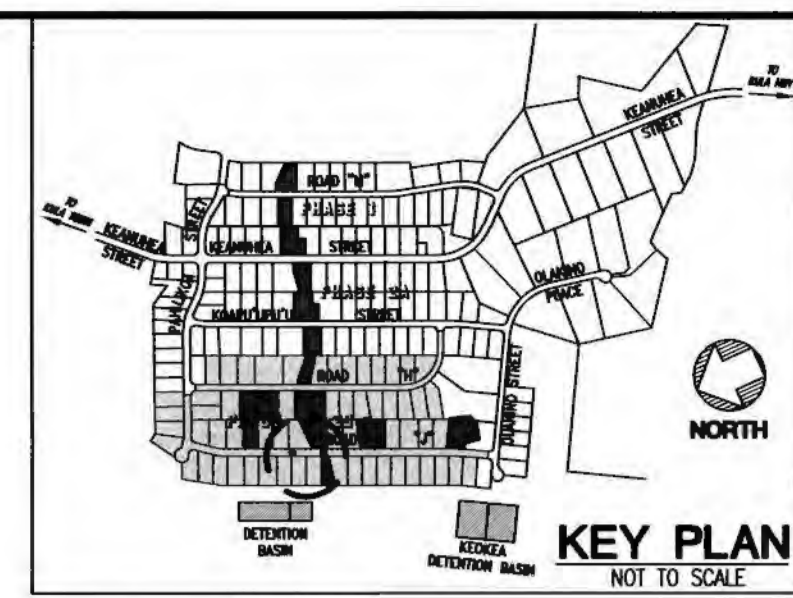
PLAN - CULVERT "J2"

SCALE: 1"=20'



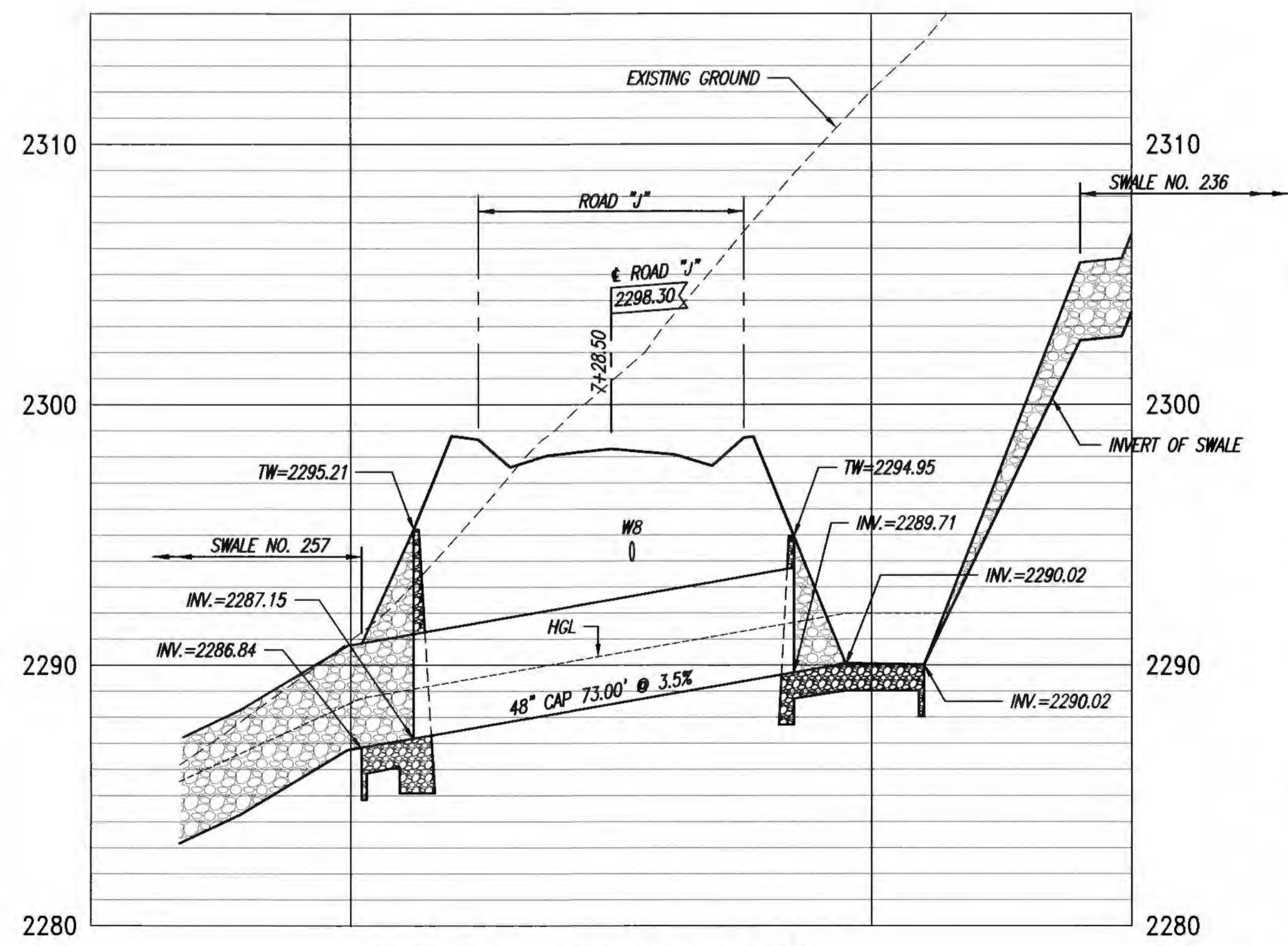
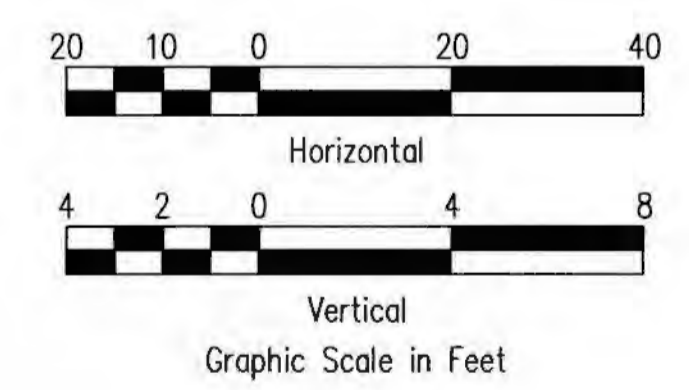
PLAN - CULVERT "J3"

SCALE: 1"=20'



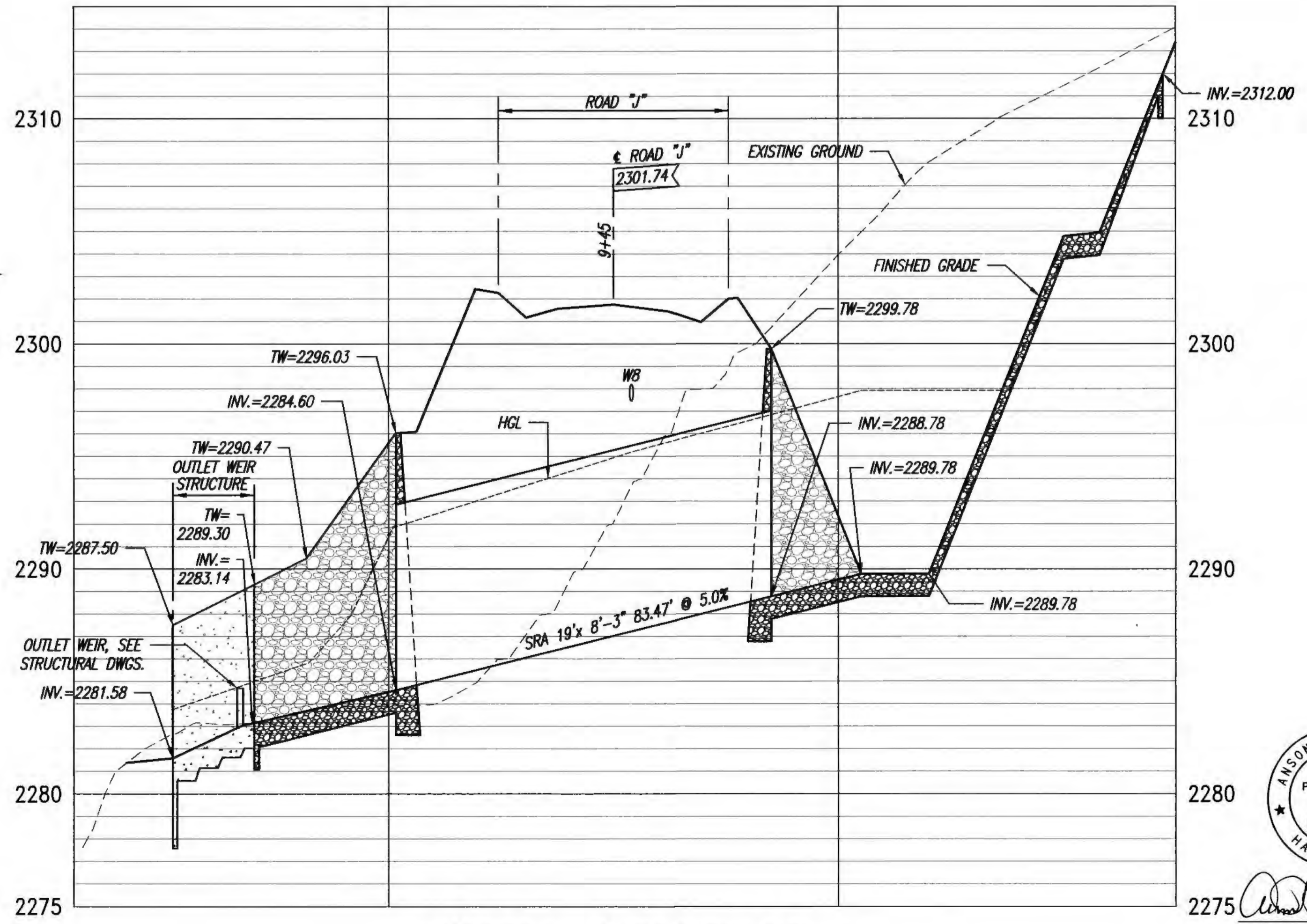
LEGEND

- LIMITS OF GRADING
- - - - - EXISTING GROUND CONTOUR
- FINISH GRADE CONTOUR
- PROPERTY LINE
- - - - - LIMITS OF 100 YEAR STORM
- GUARDRAIL
- CATTLE GATE
- NEW WATER LINE
- ←○→ TYPE "A" SERVICE LATERAL
- TYPE "A-1" SERVICE LATERAL
- 216 LOT NUMBER



PROFILE - CULVERT "J2"

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



PROFILE - CULVERT "J3"

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



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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 KEYS: (2) 2-2-002.014 AND (2) 2-2-003.023</p>			
<p>PLAN AND PROFILE DRAIN CULVERTS "J2" & "J3"</p>			
DRAWN BY: HW1	ENGINEER: HW1, FJC	CHECKED BY: AMM	
<p>ANSON M. MURAYAMA LICENSED PROFESSIONAL ENGINEER No. 6975-C HAWAII, U.S.A.</p>			