



LEAHI HOSPITAL
HAWAII HEALTH SYSTEMS CORPORATION

3675 Kilauea Avenue ■ Honolulu, Hawaii 96816 ■ Telephone: (808) 733-8000

April 23, 2020

TO: Interested Bidders

FROM: Scott Kawai
Contracts Department

SUBJECT: Addendum No. 2
IFB No. 20L-0050 Leahi Hospital – Central Courtyard Parking Lot –
Phase 1

Addendum No. 2 provides changes to the subject solicitation.

1. The attached documents shall replace the original associated sheets within the bid documents.

SECTION 02720 - STORM DRAINAGE SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Storm drainage piping, fittings and accessories, and bedding.

1.02 RELATED WORK

- A. Section 02222 - Excavation, Backfill, and Compacting for Utilities.
- B. Section 02227 - Aggregate Base Course
- C. Section 02270 - Slope Protection and Erosion Control
- D. Standard Specifications for Public Works Construction, City and County of Honolulu, September 1986
- E. Standard Details for Public Works Construction, City and County of Honolulu, September 1984
- F. Hawaii Standard Specifications for Road and Bridge Construction-2005, State of Hawaii, and current amendments. (Paragraphs on Measurement and Payment do not apply to this project)
- G. Construction Drawings

1.03 REFERENCES

- A. ANSI/ASTM D 3034 - Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
- B. ASTM D 1785 - Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80 and 120.

1.04 DEFINITIONS

Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations. Processed sand from Section 02200 – EARTHWORK is acceptable bedding.

1.05 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of pipe runs, connections, cleanouts, and invert elevations.
- B. Identify and describe unexpected variations to subsoil conditions and location of uncharted utilities.

1.06 SUBMITTALS

- A. Pipe material including manufacturer compliance certifications.

PART 2 - PRODUCTS

2.01 STORM DRAINAGE PIPE MATERIALS AND ACCESSORIES

- A. Pipe Smaller Than 18": PVC drain pipe, conforming to Section 21 - "PVC SEWER PIPE AND APPURTENANCES" of the City and County of Honolulu Standards.

PART 3 - EXECUTION

3.01 EXAMINATION

Verify that trench cut and excavation is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

3.02 EXCAVATION

- A. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.
- B. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction. Remove solid rock met in excavation below invert grade. Backfill and compact the trench up to the culvert invert. Backfill and compact the trench to a relative compaction of not less than 95% in maximum 6 inch lifts with bed course material.
- C. Trench widths shall be sufficient to allow:
 - 1. proper jointing of the culverts,
 - 2. thorough compaction of the bed course, and
 - 3. backfill material under and around the culvert.

If feasible, trench walls shall be vertical.

The completed trench bottom shall be firm for its full length and width.

- D. For pipes and culverts, except structural plate culverts, the bed course material under the culvert shall have a thickness of 0.5 inch for each foot of fill over the culvert with a minimum thickness of 12 inches. They need not exceed 0.75 of the nominal culvert diameter or rise. The width of the bed course shall be equal to the span or diameter of the culvert plus 18 inches on each side.
- F. When meeting soft, spongy, or unsuitable material, remove such material from a width equal to the span or diameter of the culvert plus one foot on each side and to a depth specified.

3.03 BEDDING

The culvert bedding shall conform to the classes specified. When the contract does not specify bedding class, the requirements for Class C Bedding shall apply.

- A. Class A Bedding. Class A bedding includes a continuous cradle conforming to the details shown in the contract.
- B. Class B Bedding. Class B bedding includes bedding the culvert in bed course material to a depth of not less than 15% of its total vertical height. The thickness of the bed course material under the culvert shall have a minimum thickness of 12 inches. Shape the bed course material to fit the culvert. Shape the recesses in the trench bottom to ease the bell or collar when using such culvert.
- C. Class C Bedding. Class C bedding includes bedding the culvert to a depth of not less than 10% of its total vertical height. Shape the foundation material to fit the culvert. Shape the recesses in the trench bottom to ease the bell or collar when using such culvert.

3.04 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with manufacturer's instructions and state or local requirements.
- B. Install pipe on bedding in accordance with Section 02222 for work in this Section.
- C. Lay pipe to slope gradients noted on construction drawings.
- D. Remove and replace the culverts that the Contractor breaks, bends, or damages by its operations at no cost to the State.

END OF SECTION

DIVISION 3 - CONCRETE

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. This section includes furnishing all labor, equipment, and materials to construct complete in place all concrete work indicated on the drawings and specified hereinafter. The work shall include the following:

1. All formwork.
2. All concrete placement and finishing.

B. Related Work Specified Elsewhere:

1. SECTION 02227 - AGGREGATE MATERIALS
2. Standard Details for Public Works Construction, City and County of Honolulu, September 1984.
3. Standard Specifications for Public Works Construction, City and County of Honolulu, September 1986.
4. Hawaii Standard Specifications for Road and Bridge Construction, State of Hawaii, Department of Transportation, Highways Division, 2005 and current amendments (Paragraphs on Measurement and Payment do not apply to this project).

1.03 SUBMITTALS:

- A. Contractor Mix Design: Submit a mix design for each type of concrete, including a complete list of materials including admixtures and the applicable reference specifications, and copies of test reports showing that the mix has been successfully used to product concrete with the properties specified.
- B. Certification: Submit one copy of the delivery ticket for each load of ready-mixed concrete, showing all information required by ASTM C 94.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Asbestos Prohibition: No asbestos-containing materials or equipment shall be used under this Section. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free.
- B. Gypsum Prohibition: No gypsum-containing materials shall be used under this Section. The Contractor shall insure that all materials incorporated in the project under this Section are gypsum-free.
- C. Portland cement shall conform to the requirements of ASTM C 150, Type I or Type II, for all concrete work. All cement for exposed concrete surfaces shall be of same manufacturer.

D. Concrete Aggregates:

- a. Fine Aggregates shall be calcareous or basalt sands, or a combination thereof. They shall meet the grading requirements of ASTM C 33 unless concrete producer can provide past data that shows that a proposed non-conforming gradation will produce concrete with the required strength and suitable workability.

If manufactured sands are used in the concrete mix, the Contractor may select and use a water-reducing and/or on air-entraining admixture as specified hereinafter to provide satisfactory workability in the concrete. The cement content of a mix shall in no way result in the reduction of the cement factor.

- b. Coarse Aggregates shall be crushed close-grained blue lava rock meeting the grading requirements of sizes 57 or 67 (ASTM D 448) or both. The maximum size of aggregate shall not be larger than 1/5 of the narrowest dimensions between sides of the forms of the member for which the concrete is to be used nor larger than 3/4 of the minimum clear spacing between individual reinforcing bars or bundles of bars. The maximum size of aggregate shall be not larger than three-fourths inch. Aggregates shall be free from any substance which may be deleteriously reactive with the alkalies in the cement.

- E. Water used in mixing concrete shall be clean, fresh, and potable.

- F. Expansion Joint Filler: A pre-moulded material of 1/2-inch thickness or 90 lb. roofing felt as indicated on drawings.

- G. Joint Sealing Materials: ASTM D 1190 or ASTM D 1850 inside buildings; ASTM D 1190 outside of buildings.
- H. Non-Slip Grit shall be silicon carbide "Carborundum" Sidewalk Grain, "Exolon", "Carbolon", or approved equal.
- I. Admixture shall conform to ASTM C 494 or ASTM C 260 or as specifically approved by the Officer-in-Charge. Mix proper amount in accordance with directions of manufacturer.
- J. Curing compound shall conform to ASTM C 309, "Specifications for Liquid Membrane-Forming Compounds for Curing Concrete", Type 2, free of paraffin or petroleum.
- K. Waterproof Paper - Waterproof paper conforming to ASTM C 171 or opaque polyethylene film may be used.
- L. Ready-Mixed and Mixed-in-Transit Concrete shall be mixed to conform to the provisions of ASTM Designation C-94 and as follows:;
1. The interval between batches for a pour shall not exceed thirty minutes.
 2. The time elapsed between the introduction of the mixing water to the cement and aggregates or the cement to the aggregates, and the placing of concrete in its final position shall not exceed ninety minutes.
- M. Materials for Forms: Wood, plywood, steel, or other suitable material. Wood forms, for surfaces exposed to view in the finished structure, shall be boards or plywood. Dress boards to a uniform thickness, evenly match, and provide boards free from loose knots, holes, and other defects. Plywood shall be B-B concrete form panels conforming to PS-1. Surfaces of steel forms shall be free from irregularities, dents, and sags.
- N. Patching Materials:
1. Material for patching spalls and voids in concrete shall consist of a non-shrink, non-metallic portland cement grout such as Sikagrout 212 as manufactured by Sika Corporation containing a blend of selected portland cements, plasticizing/water-reducing admixtures and shrinkage compensating agents. The shrinkage agents shall compensate for shrinkage in both the plastic and hardened state. Materials for forming and curing compound shall be per manufacturer's recommendation.
 - a. Properties of the mixed portland cement grout:
 - 1) The grout shall not exhibit bleeding.

- 2) The grout shall be pumpable through standard grout pumping equipment.

b. Properties of the cured portland cement grout:

- 1) Compressive Strength (CRD C-621)
 - 1) 1 day: 3800 psi min.
 - 2) 28 day: 7600 psi min.
- 2) Splitting Tensile Strength (ASTM C-496) at 28 days: 500 psi min.
- 3) Flexural Strength (ASTM C-580) at 2 days: 1200 psi min.
- 4) Bond Strength (ASTM C-882 Modified) - Plastic grout to hardened concrete at 28 days (moist cure): 1950 psi min.
- 5) Expansion (CRD C-62) at 28 days: +0.015% min.
- 6) The grout shall not produce a vapor barrier.
- 7) The grout shall exhibit positive expansion when tested in accordance to ASTM C-827.
- 8) The grout shall conform to United States Army Corps of Engineers Specification CRD C-621.

PART 3 - EXECUTION

3.01 DESIGN OF CONCRETE MIXES:

- A. Concrete shall be composed of Portland cement, fine and coarse aggregates, admixture and water.
- B. Concrete shall be designed in accordance with the current issue of the ACI Standard "Recommended Practice for Selecting Proportions for Concrete" (ACI 613) for normal weight concrete.
- C. For each class of concrete, the cement content and the tests for 7-day and 28-day compressive strength shall meet the following requirements:

<u>Class</u>	<u>Materials</u>			<u>28-Day Compressive Strength</u>		<u>7-Day Compressive Strength</u>	
	Max Gals Water per Bag Cement	Min. Cement per Cubic Yard; Sack	Min. Water Cement Ratio	Min. Average for any 3 Cylinder, psi	Min. for 1 Cylinder psi	Min. Average for any 3 Cylinder, psi	Min. for 1 Cylinder psi
4000	4.25	6.25	0.40	4,000	3,750	3,000	2,750

- D. Unless otherwise noted, Class 4000 concrete shall be used for all not-prestressed structural slabs, beams, piers, and columns, stairs, walls, footings and equipment pads.
- E. Concrete shall be designed so that the concrete materials will not segregate nor cause excessive bleeding. Slump shall be 4 +/- 1/2". The addition of water to the mix is not permitted in the field. The use of admixtures in the field to adjust the slump is permitted.

3.02 FORMWORK:

- A. Forms shall be constructed to slopes, lines, shapes, and dimensions shown, installed and maintained plumb and straight and sufficiently tight to prevent leakage, and securely braced and shored to prevent displacement, and to safely support construction loads. In no case shall the finished product deviate from established lines, grades and dimensions in excess of those tolerances listed in Section 2.4 of the ACT Standard Recommended Practice for Formwork (ACT 347-78). Any such deviation in excess of the allowable tolerance will be just cause for rejection of the finished product in question.
- B. All concrete forms shall be placed with metal clamps ties.

- C. Where soil conditions permit, side forms for footings may be omitted only if approved by the Officer-in-Charge.
- D. Do not use old worn out plywood. Provide for a 3/4" by 3/4" chamfer at external corners of exposed concrete beams, girders, columns, and as indicated.
- E. Forms which cannot be removed shall be of material other than wood and must be approved by the Officer-in-Charge.
- F. Forms shall be constructed so that they can be removed without hammering or prying against the concrete.
- G. Coating: Before placing the concrete, coat the contact surfaces of forms with a non-staining mineral oil, non-staining form coating compound, or two coats of nitro-cellulose lacquer.
- H. Forms shall not be removed before the expiration of the minimum lapsed time from concrete pour as follows:

Bottom forms of beams and girders	14 days
Walls, columns and side forms of beams	3 days
Footing side form	24 hours
Bottom forms of slabs	14 days

Supporting forms and shoring, however, shall not be removed until the members have attained required strength sufficient to support its own weight and the construction live loads on it with a safety factor not less than 2.
- I. Unless otherwise noted, all floor slabs and beams shall be cambered not less than 1/4" for every 14 feet of span.

3.03 JOINTS:

- A. Construction joints in suspended floors shall be provided as detailed at locations indicated on the plans. Construction joints not shown on the plans shall be so made as to at least impair the strength of the structure and shall be approved by the Officer-in-Charge. In general, they shall be located near the middle of the spans of slabs, beams and girders unless a beam intersects a girder at this point, in which case the construction joints in the girders shall be offset a distance equal to twice the width of the beam. Joints in columns and walls shall be at the underside of floors, slabs, beams or girders and at the top of footings or floor slabs. Beams, girders, brackets, column capitals, haunches and drop panels shall be placed at the same time as slabs. Joints shall be perpendicular to the main reinforcement.

3.04 SCREEDS FOR SLABS: Screeds shall be accurately set and maintained. Screeds shall be set adjacent to all walls and in parallel rows not to exceed 8 feet on centers.

3.05 MIXING CONCRETE: Hand mixing nor jobsite mixing will not be permitted, unless approved by the Officer-in-Charge.

A. Machine mix all concrete. Begin mixing within 30 minutes after the cement has been added to the aggregates. Introduce all mixing water in the drum before one-fourth of the mixing time has elapsed. The time elapsing between the introduction of the mixing water to the cement and aggregates or the cement to the aggregates and the start of placing of the concrete in final position in the forms shall not exceed 60 minutes if the air temperature is less than 85 degrees Fahrenheit, and 45 minutes if the air temperature is equal or greater than 85 degrees F. On arrival at the jobsite, no addition of water will be allowed unless approved by the Engineer. Such an addition must not exceed the limits of the specified maximum water-cement ratio.

B. The time elapsed between the introduction of the mixing water to the cement and aggregates or the cement to the aggregates, and the placing of concrete in its final position shall not exceed 90 minutes.

C. In hot weather (more than 90 degrees F.) or under conditions contributing to quick stiffening of the concrete, the elapsed time in C.2, shall not exceed 60 minutes, if no retarding admixture is used. If an ASTM C494, Type B or D admixture is added to the concrete, the elapsed time in 2. shall remain at 90 minutes.

3.06 PLACING CONCRETE:

A. Preparation:

1. All sawdust, chips and other construction debris and extraneous matter shall be removed from interior of forms.
2. Concrete shall be placed upon clean, damp surfaces, free from any water, or upon properly compacted fills but never upon soft mud or dry, porous earth. Before pouring footings or foundations, see that bottoms of excavations are undisturbed earth, properly leveled off and tamped.

B. Conveying:

1. Concrete shall be deposited as nearly as practicable in its final position. Extensive spading as a means of transportation shall be avoided and in no case shall vibrators be used to transport concrete inside the forms.

2. The concrete shall not be allowed to drop freely more than 3 feet except where specifically authorized by the Engineer. Do not use aluminum pipe or chutes.

C. Depositing:

1. Concrete shall be placed so as to avoid segregation of the materials and the displacement of the reinforcing.
2. In slab construction, placing of the concrete shall be started at the far end of the work so that each batch will be dumped against previously placed concrete, not away from it. The concrete shall not be dumped in separate piles and the piles then leveled and worked together.
3. Place concrete in one continuous operation except where construction joints are provided. Place concrete in areas bounded by construction joints in one continuous operation.

D. Compaction:

1. During and immediately after depositing, concrete shall be thoroughly compacted. All compaction shall be done by use of high frequency internal vibrators of an approved type.

3.07 FINISHING OF SLABS:

- A. Finish B: Light Trowelled Finish: After the concrete has been placed, struck off, consolidated and leveled, the surface shall then be consolidated with power-driven floats of the impact type. Hand floating shall be used in inaccessible locations. The slab shall then be steel trowelled (once by hand or machine) to a uniform, smooth texture.
- B. Finish C: Trowelled Finish: The surface shall be finished first with impact power floats, as specified above for Finish B, then with power trowels and finally with steel hand trowels. The final trowelling shall be done to a point when a ringing sound is produced as the trowel is moved over the surface. The finished surface shall be free of any trowel marks. On surfaces intended to support floor coverings, any defects that will show through the floor covering shall be removed by grinding.
- C. Finish D: Broom Finish: The concrete slab shall be given a coarse transverse scored texture by drawing a broom across the surface. The operation shall follow immediately after refloating performed under Finish B above.
- D. Finish F: Non-Slip Finish: The surface shall be given a dust-on application of carborundum grits. Finish with steel trowel but avoid over-trowelling. The

rate of application of carborundum grits shall be not less than 25 pounds per 100 square feet. Application shall be in strict accordance with the manufacturer's recommendations.

- E. Tolerance: Trueness of surface shall be checked with a 10-foot straight edge applied at not less than two different angles. All high spots shall be cut down and all low spots filled during this procedure to produce planes checking true under the straight edge in any direction with tolerance not exceeding 1/8 inch in 10 feet.

3.08 SELECTION OF FLOOR FINISHES:

- A. Unless otherwise indicated on drawings, the following floor finishes shall be used:
 - 1. Finish B - Light Trowelled Finish: For surfaces intended to receive roofing, waterproofing and membranes.
 - 2. Finish C - Trowelled Finish: For interior floors and floors for reception of floor coverings.
 - 3. Finish D - Broom Finish: For sidewalks.
 - 4. Finish F - Non-Slip Finish: For platforms, interior and exterior steps, landings and ramps.

3.09 REPAIR OF SURFACE DEFECTS:

- A. Concrete Patching: Applies to spalls, delaminations, and holes in concrete wall and beams. The area to be repaired shall not be less than 1/8" to 1/2".
 - 1. Surface Preparation: Where indicated in the plans, all visibly loose and deteriorated concrete shall be removed with water jetting, water blasting or abrasive blast cleaning equipment, and with suitable pneumatic or hand tools until only sound concrete remains. Such chipped areas and adjoining areas shall be further tapped with a light hammer. Areas emitting a "hollow" sound indicating unsound concrete voids shall be further chipped to sound concrete. There shall be minimum of one inch of clear distance between the reinforcing bars and the chopped surface of the existing concrete for placing new patching compound.
- B. Applying Epoxy Bonding Compound: The manufacturer's recommendations shall be closely followed in the application of the bonding compound. Prior to application of bonding agent, the prepared substrate must be saturated surface dry (SSD) but free of standing water. The entire contact surface

between existing concrete, reinforcement and new patching compound shall be coated with epoxy bonding compound.

- C. While epoxy is still tacky, mix and apply patching material in accordance with the manufacturer's recommendations and instructions.
- D. All forms should retain repair material without leakage. Forms should be lined or coated with release agent for easy removal.
- E. Cracks in substrate in the area of the patching work must be treated as directed by the manufacturer's representative.
- F. After forms have been removed, any concrete which is not formed as shown on the drawings or which is out of alignment or level beyond required tolerances or which shows a defective surface which cannot be properly repaired or patched shall be removed.
- G. All tie holes and all repairable defective areas shall be patched immediately after form removal.
- H. Shrinkage cracks in walls and slabs in exposed concrete surfaces shall be patched by veering out the crack to a minimum depth of 1/4" and width of 1/4" and filled with epoxy based mortar or filled with epoxy pressure grout. Such repairs shall be made at no additional cost.

3.10 FINISHING OF FORMED SURFACES:

- A. Rough or Board Form Finish - Tie holes, honeycombing and defects shall be patched and fins exceeding 1/4" in height shall be removed. Otherwise, surfaces shall be left with the texture imparted by the forms.
- B. Cement Wash Finish - The plywood finished surfaces shall be brushed with a thin wash composed of equal parts of cement and fine aggregate and steel trowelled so that the entire surface is uniform in texture and color and free from air holes.

3.11 SELECTION OF FORMED SURFACE FINISHES:

- A. Unless otherwise indicated on drawings, the following formed surface finishes shall be used:
 - 1. Rough or Board Form Finish - For all concealed concrete surfaces.

3.12 CURING AND PROTECTION:

- A. All concrete shall be cured for a period of not less than seven days by one of the approved methods listed below, unless permitted otherwise by the Engineer. During this curing period, the concrete shall be maintained without drying at a relatively constant temperature. Fresh concrete shall be protected from heavy rains, flowing water, mechanical injury, and injurious action of the sun. Curing shall immediately follow the finishing operation.
- B. Water Curing - Concrete shall be kept by mechanical sprinklers, by ponding, or by any other approved method which will keep the surfaces continuously wet.
- C. Curing Compounds - Curing compounds shall not be used on concrete surfaces that are to receive paint finish or resilient flooring, except those that are recommended by the manufacturer to be compatible with the applied finish. Application shall be in accordance with the manufacturer's recommendations. If curing, sealing or other compounds are used which are incompatible with applied finish, such compound shall be thoroughly removed by grinding.
- D. Waterproof Paper - The paper or film shall be anchored securely and all edges sealed or applied in such a manner as to prevent moisture escaping from the concrete.

- 3.15 CLEANUP: Contractor shall clean up all concrete and cement materials, equipment and debris upon completion of any portion of the concrete work when so directed by the Engineer and upon completion of the entire concrete and related work.

END OF SECTION

[illegible]

Austin Tsutsumi
 & ASSOCIATES, INC.
 Engineers & Surveyors

Map of the project location in Honolulu, Hawaii. The map shows the intersection of Sunset Ave., Kilauea Ave., Maunalei Ave., Pokole St., and Makapiuu Ave. The project location is a triangular area bounded by Kilauea Ave., Pokole St., and Maunalei Ave., shaded with diagonal lines. Surrounding areas include Leahi Hospital, Kapiolani Community College, and Diamond Head Theater. A north arrow and "NOT TO SCALE" note are in the top right corner.

DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
(FOR SITE GRADING ONLY)

ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.

2. 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 TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR 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.

4. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

5. FOR NON-CITY PROJECTS, THE CONTRACTOR MAY SUBMIT A SUBSTITUTION REQUEST TO PRECAST ANY CITY OWNED AND/OR MAINTAINED DRAINAGE STRUCTURE (EX., CATCH BASINS, DRAIN MANHOLES, DRAIN INLETS, CULVERTS, ETC). HOWEVER, PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL A) SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AND OBTAIN WRITTEN APPROVAL AND B) NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE WITH ANY OF THESE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST CONSTRUCTION WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.

FOR CITY PROJECTS, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE RESPONSIBLE CITY AGENCY FOR REVIEW AND APPROVAL. ALSO, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

6. CONFINED SPACE

FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

1. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.

B. LIFELINE AND ASSOCIATED CLIPS.

C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.

D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.

E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).

F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.

G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20- FEET AWAY).

H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

7. PURSUANT TO CHAPTER 6E, HRS. IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

8. FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHTS-OF WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 831- 6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.

9. FOR BENCH MARK, SEE SHEET C-06.

- ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT BY _____ DATED _____.
2. 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".
3. 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.
4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
5. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
6. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
7. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P. PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL".
8. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
9. THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR ALL GRADING OPERATIONS TO BE PERFORMED IN CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION. 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](http://health.hawaii.gov/cwb). THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.
12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
13. TEMPORARY EROSION CONTROLS 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 GRADING PERMIT.
15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. BUILDING PERMIT FOR RETAINING WALLS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF GRADING WORK ON SITE.
17. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

- ## ABBREVIATIONS

& @		DELTA AND AT	PAV'T	
A.C.	OR A/C	ASPHALT CONCRETE	PB	PAVEMENT
ADJ.		ADJUST	PC	PULLBOX
AZ		AZIMUTH	PVC	POINT OF CURVATURE
				POINT OF INTERSECTION
B			PL.	VERTICAL CURVE
BC		BASELINE	P	PLACE
BEG		BOTTOM CURB	PT	PROPERTY LINE
BLK.		BEGIN	PVC	POINT OF TANGENCY
BOT OR BOTT		BLOCK		POLYVINYL CHLORIDE
BVC		BOTTOM		
BW		BEGIN VERTICAL CURVE	R	RADIUS
		BOTTOM OF WALL	RD.	ROAD
CB			REF.	REINFORCED OR REINFORCEMENT
CBMH		CATCH BASIN	REQ'D	REQUIRED
Ch		CATCH BASIN MANHOLE	RP	RADIUS POINT
C		CHORD LENGTH	RT.	RIGHT
CLR.		CENTERLINE	R.O.W OR R/W	RIGHT-OF-WAY
CONC.		CLEAR		
CONN.		CONCRETE	S	SLOPE
CONT		CONNECTION	SCH	SCHEDULE
CY		CONTINUATION OR CONTINUOUS	SF	SQUARE FOOT
		CUBIC YARD	SMH	SEWER MANHOLE
			SP	SIGN POST
ø, D		DIAMETER	S.S	STAINLESS STEEL
DBL.		DOUBLE	ST.	STREET
DET.		DETAIL	STA.	STATION
DMH		DRAIN MANHOLE	STD	STANDARD
DWY. OR D/W		DRIVEWAY	STRUCT.	STRUCTURE
			SCV.	SERVICE
e		EXISTING	S/W	SIDEWALK
EA		EACH	SWL	SWALE
EAH		ELECTRIC HANDHOLE		
ELEC.		ELECTRIC OR ELECTRICAL	T	TANGENT
ELEV. OR EL		ELEVATION	TC	TOP CURB
EMH		ELECTRIC MANHOLE	TEL	TELEPHONE
E.P.		EDGE OF PAVEMENT	TEMP	TEMPORARY
EPB		ELECTRICAL PULLBOX	TEBX	TELEPHONE BOX
EVC		END VERTICAL CURVE	TEL	TELEPHONE HANDHOLE
EXIST.		EXISTING	THK.	THICK
			TMH	TELEPHONE MANHOLE
FIN		FINISHED	TPB	TELEPHONE PULLBOX
FT		FEET	TRAV.	TRAVERSE
			TW	TOP OF WALL
GRD.		GRADE	T/P	TOP OF PIPE
			T/V	TOP OF VALVE
HB		HOSE BIBB	TYP.	TYPICAL
H		HEIGHT	VC	VERTICAL CURVE
HORIZ		HORIZONTAL		
HP		HIGH POINT	W	WIDE
			W/	WITH
ICBX		IRRIGATION CONTROL BOX		
ICV		IRRIGATION CONTROL VALVE		
IN		INCHES		
INV		INVERT ELEVATION		
JB		JUNCTION BOX		
HT.				
LB		LATERAL		
Lc		LENGTH OF CURVE		
LEN		LENGTH		
LF		LINEAL FEET		
LP		LIGHT POLE		
LP		LOW POINT		
LT.		LEFT		
MAX		MAXIMUM		
MH		MANHOLE		
MIN		MINIMUM		
NO.		NUMBER		
O.C.		ON CENTER		
O.D.		OUTSIDE DIAMETER		
O/S		OFFSET		

EXISTING

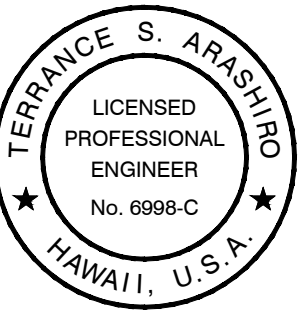
	CLEAN OUT
	DRAIN INLET
	DRAIN MANHOLE
	ELECTRIC BOX
	ELECTRIC MANHOLE
	HOSE BIBB
	LIGHT POLE
	SEWER MANHOLE
	SWALE
	TELEPHONE BOX
	TELEPHONE HANDHOLE
	TELEPHONE MANHOLE
	TELEPHONE PULLBOX
	SIGN
	TREE

UTILITY LINES AND SIZES


SANITARY SEWER

**LEAHI HOSPITAL
CENTRAL
COURTYARD
PARKING LOT
- PHASE 1**

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")


APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

[illegible]

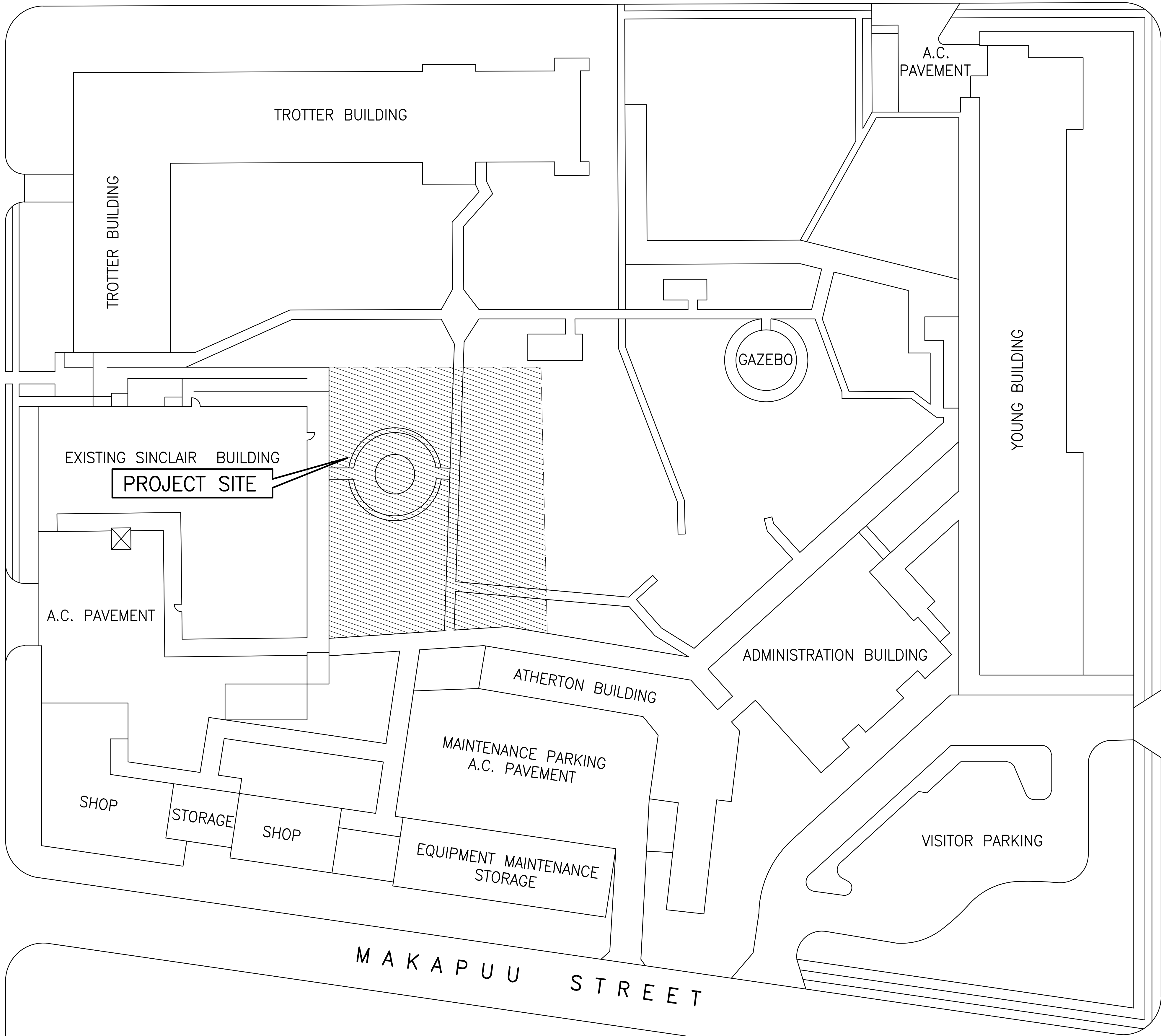
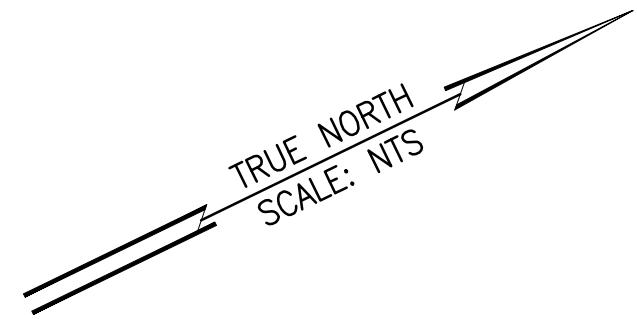
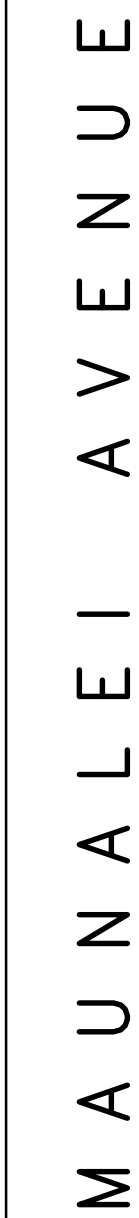
Project No:	20-003
Scale:	AS NOTED
Date:	02/28/2020
Designed By:	TSA
Drawn By:	DON
Checked By:	TSA

OVERALL SITE PLAN

DWG. NO.

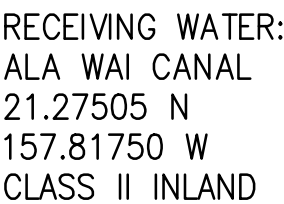
C-02

SHEET 3 OF 13



OVERALL SITE PLAN

SCALE: NOT TO SCALE

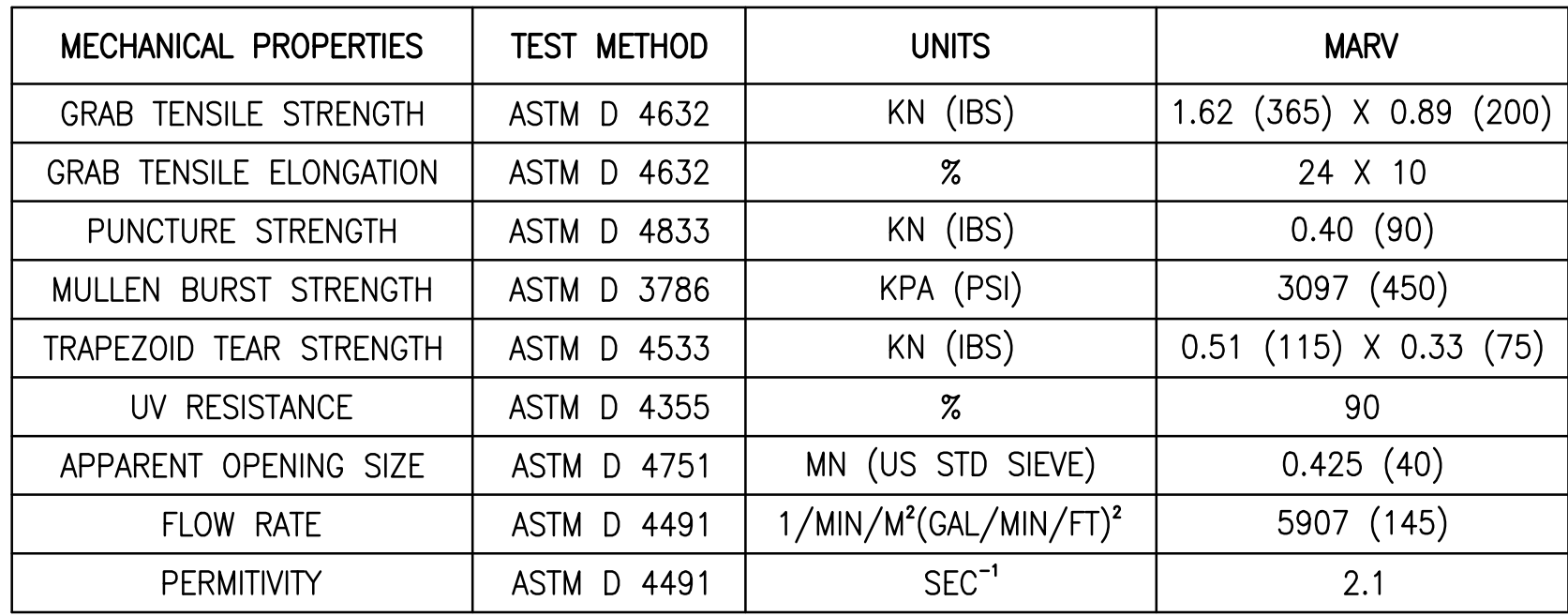


NOT TO SCALE

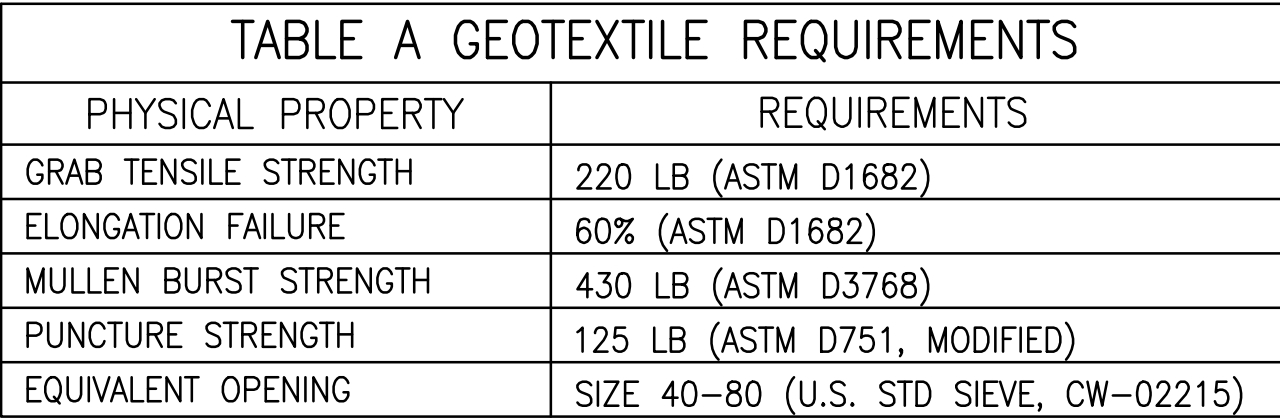
DATE _____

SHEET 4 OF 13

HONOLULU, HAWAII



NOT TO SCALE



NOT TO SCALE



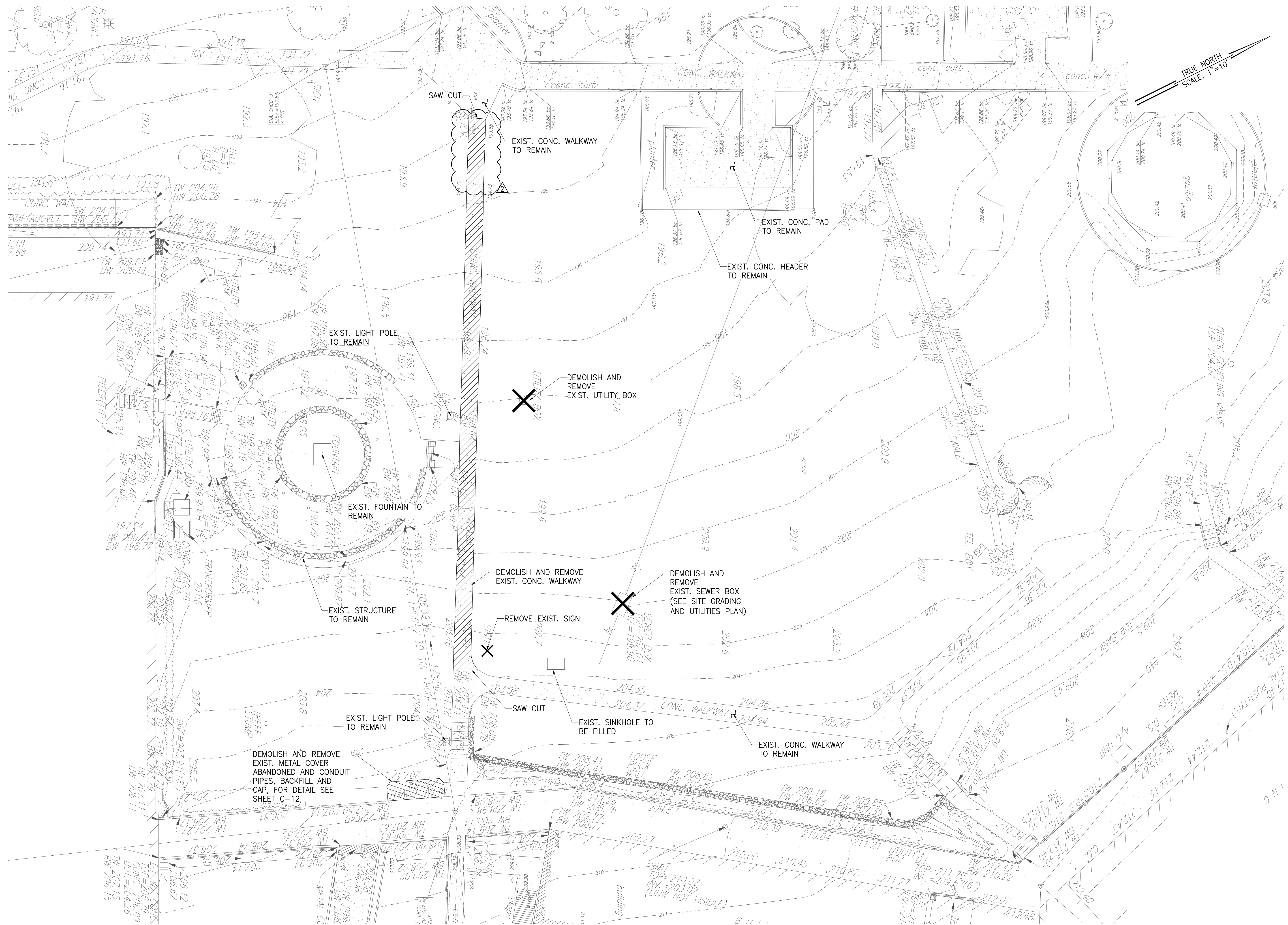
CHIEF, CIVIL ENGINEERING BRANCH, DATE
DEPARTMENT OF PLANNING AND PERMITTING,
CITY & COUNTY OF HONOLULU

DWG. NO.

C-05

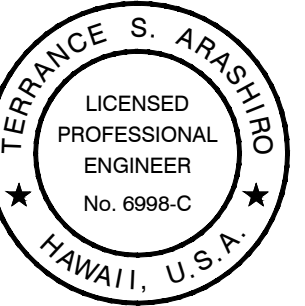
SHEET 6 OF 13

\\V:\2020\20-003 Leahi Hospital Engineering\DWG\C-06 DEMOLITION PLAN.dwg, April 21, 2020



**LEAHI HOSPITAL
CENTRAL
COURTYARD
PARKING LOT
- PHASE 1**

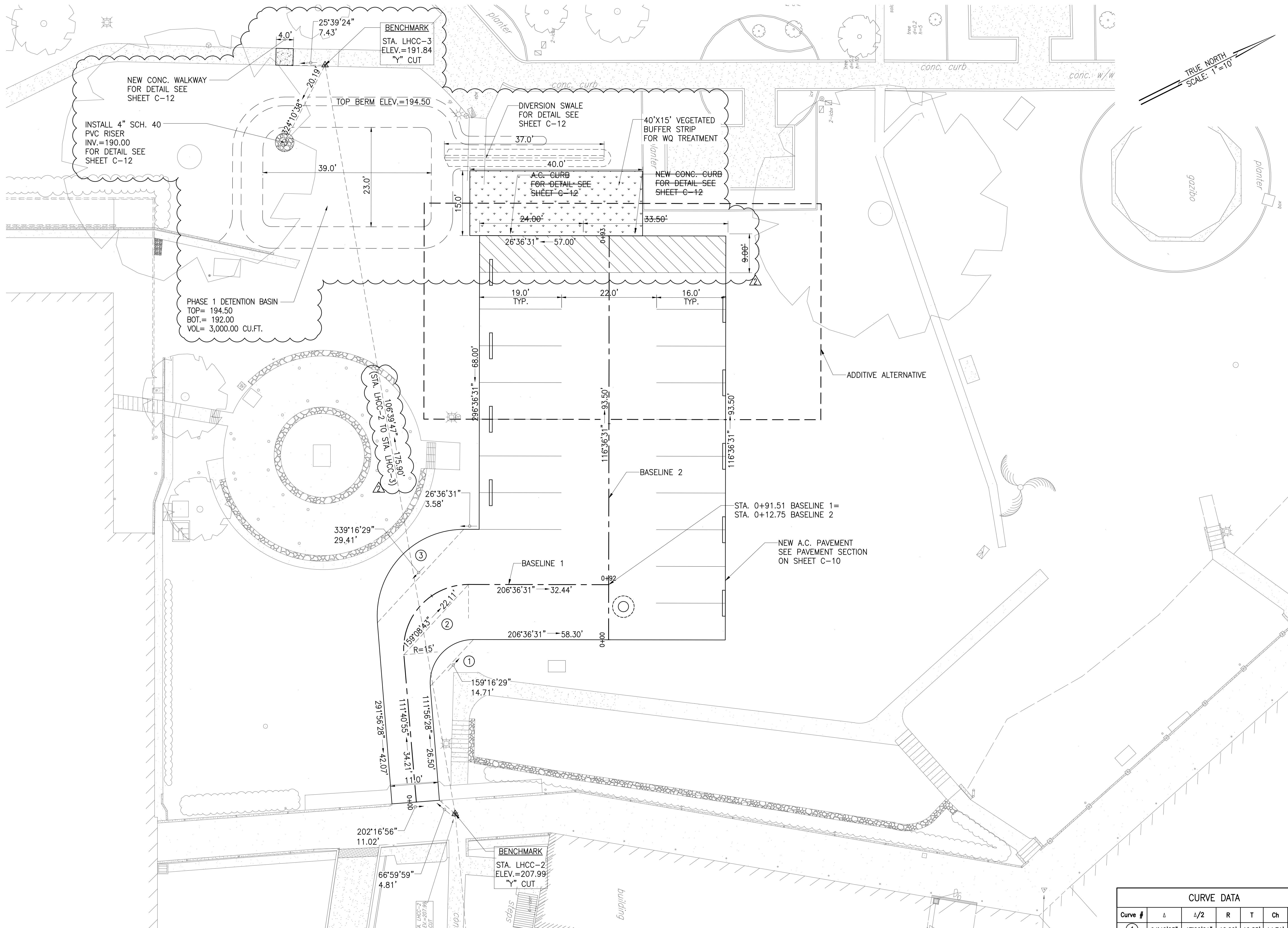
HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *Terrance S. Arasio*
DATE: APRIL 30, 2020
EXP. DATE OF THE LICENSE

V:\2020\20-003 Leahi Hospital\ENGINEERING\DWG\C-07 SITE LAYOUT.dwg; April 21, 2020



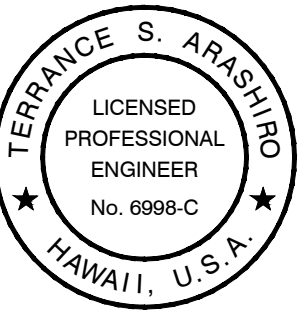
SITE LAYOUT PLAN
SCALE: 1"=10'

CURVE DATA						
Curve #	Δ	L/2	R	T	Ch	Lc
①	94°40'03"	47°20'01"	10.00'	10.85'	14.71'	16.52'
②	94°55'36"	47°27'48"	15.00'	16.35'	22.11'	24.85'
③	94°40'03"	47°20'01"	20.00'	21.70'	29.41'	33.05'

AustinTsutsumi
& ASSOCIATES, INC.
Engineers & Surveyors
501 SUMNER STREET, SUITE 521
HONOLULU, HAWAII 96817
PHONE: 808-533-3646
FAX: 808-526-1267

**LEAHI HOSPITAL
CENTRAL
COURTYARD
PARKING LOT
- PHASE 1**

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Terrance S. Arasimio
SIGNATURE
APRIL 30, 2020
EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
1	2020/04/22	ADD STORMWATER QUALITY	ATA

Project No: 20-003
Scale: AS NOTED
Date: 02/28/2020
Designed By: TSA
Drawn By: DON
Checked By: TSA

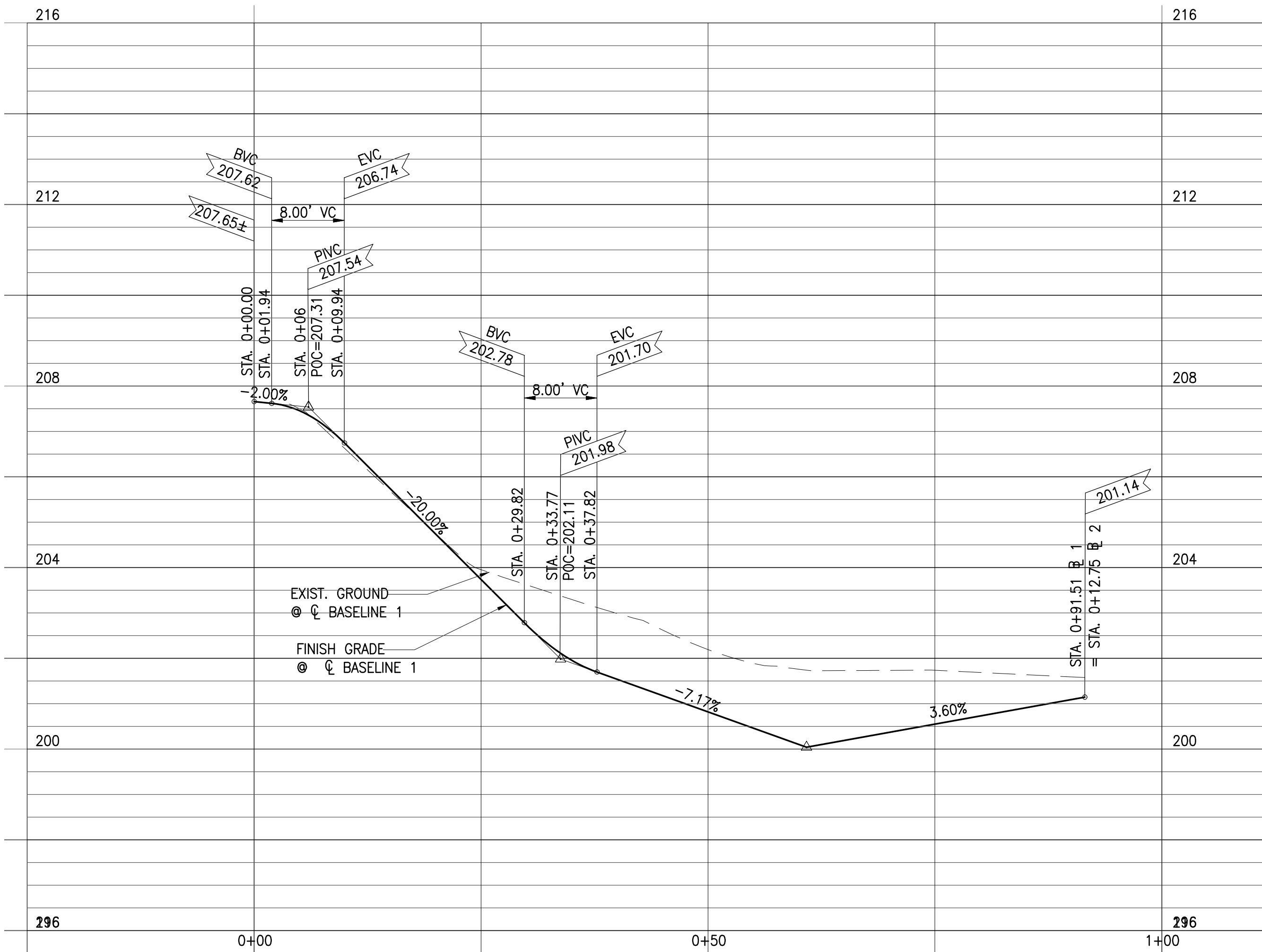
SITE LAYOUT PLAN

DWG. NO.

C-07

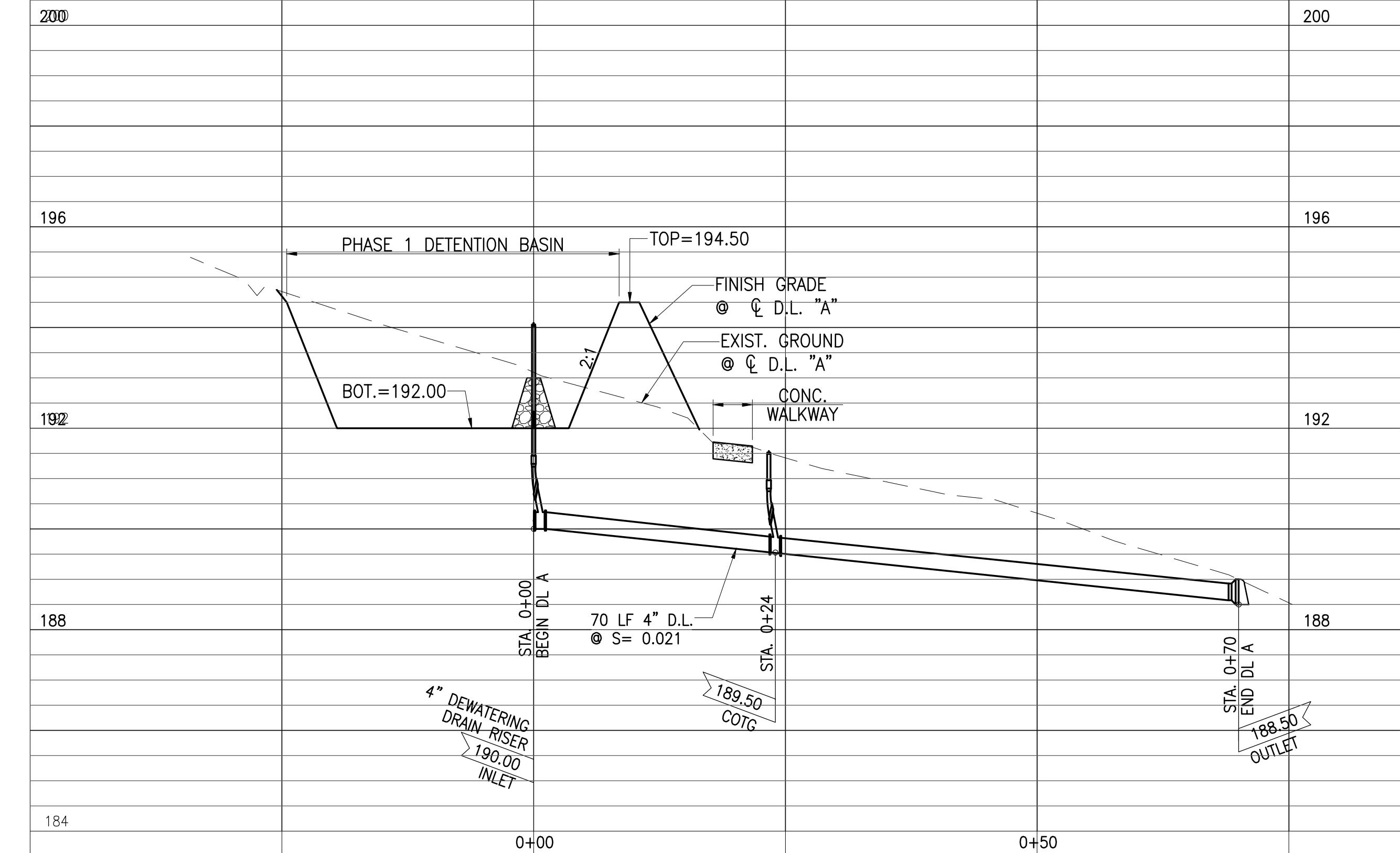
SHEET 8 OF 13

V:\2020\20-003 Leahi Hospital\ENGINEERING\DWG\C-08 BASELINE PROFILE.dwg; April 21, 2020



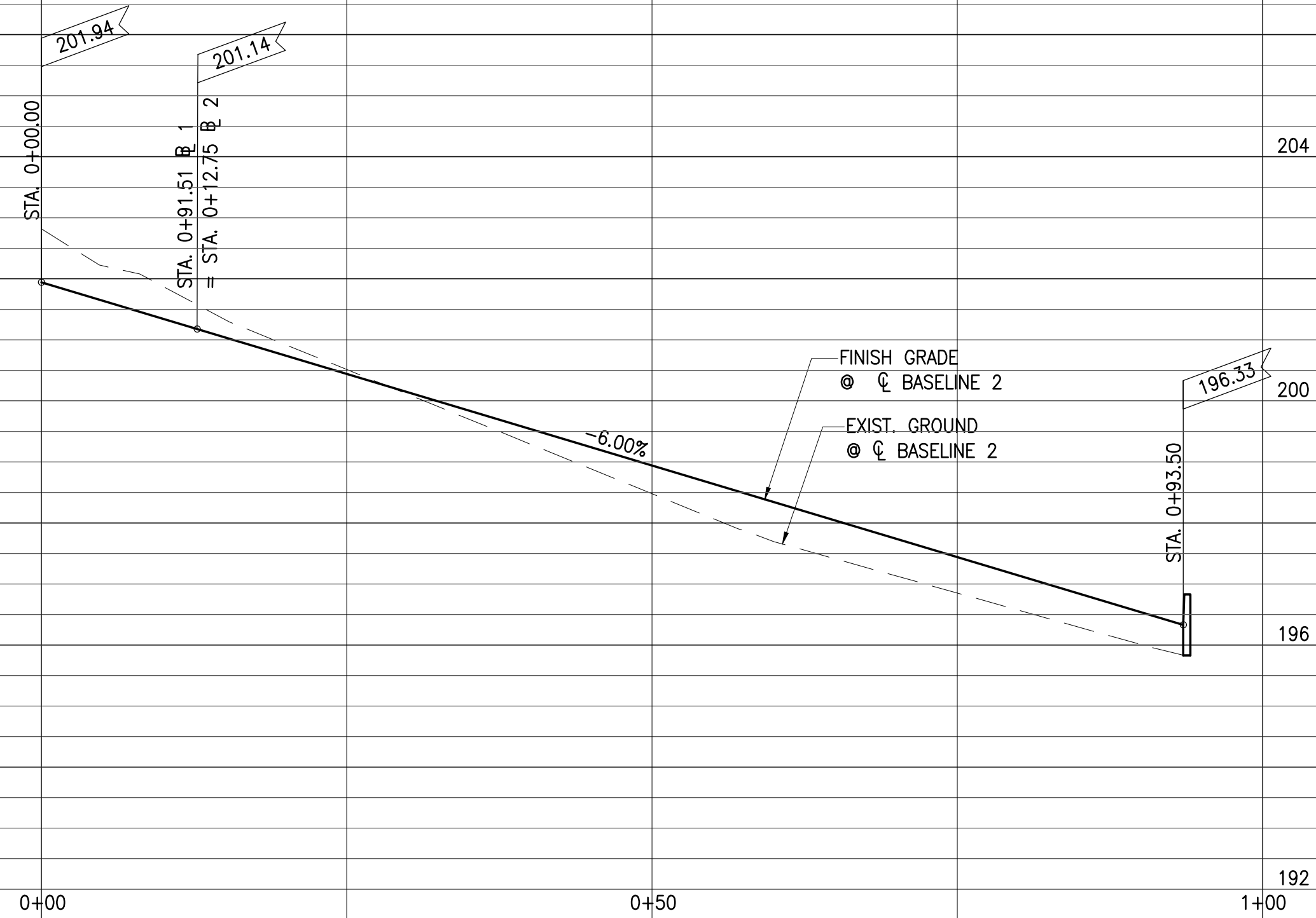
PROFILE - BASELINE 1

SCALE: HORIZ:1"=10'
VERT.: 1"=2'



PROFILE - 4" DRAINLINE "A"

SCALE: HORIZ:1"=10'
VERT.: 1"=2'



PROFILE - BASELINE 2

SCALE: HORIZ:1"=10'
VERT.: 1"=2'

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH,
DEPARTMENT OF PLANNING AND PERMITTING,
CITY & COUNTY OF HONOLULU

DATE

**LEAHI HOSPITAL
CENTRAL
COURTYARD
PARKING LOT
- PHASE 1**

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Terrance S. Arashiro
SIGNATURE APRIL 30, 2020
EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
1	2020/04/22	ADD DRAINLINE PROFILE	ATA

Project No: 20-003
Scale: AS NOTED
Date: 02/28/2020
Designed By: TSA
Drawn By: DON
Checked By: TSA

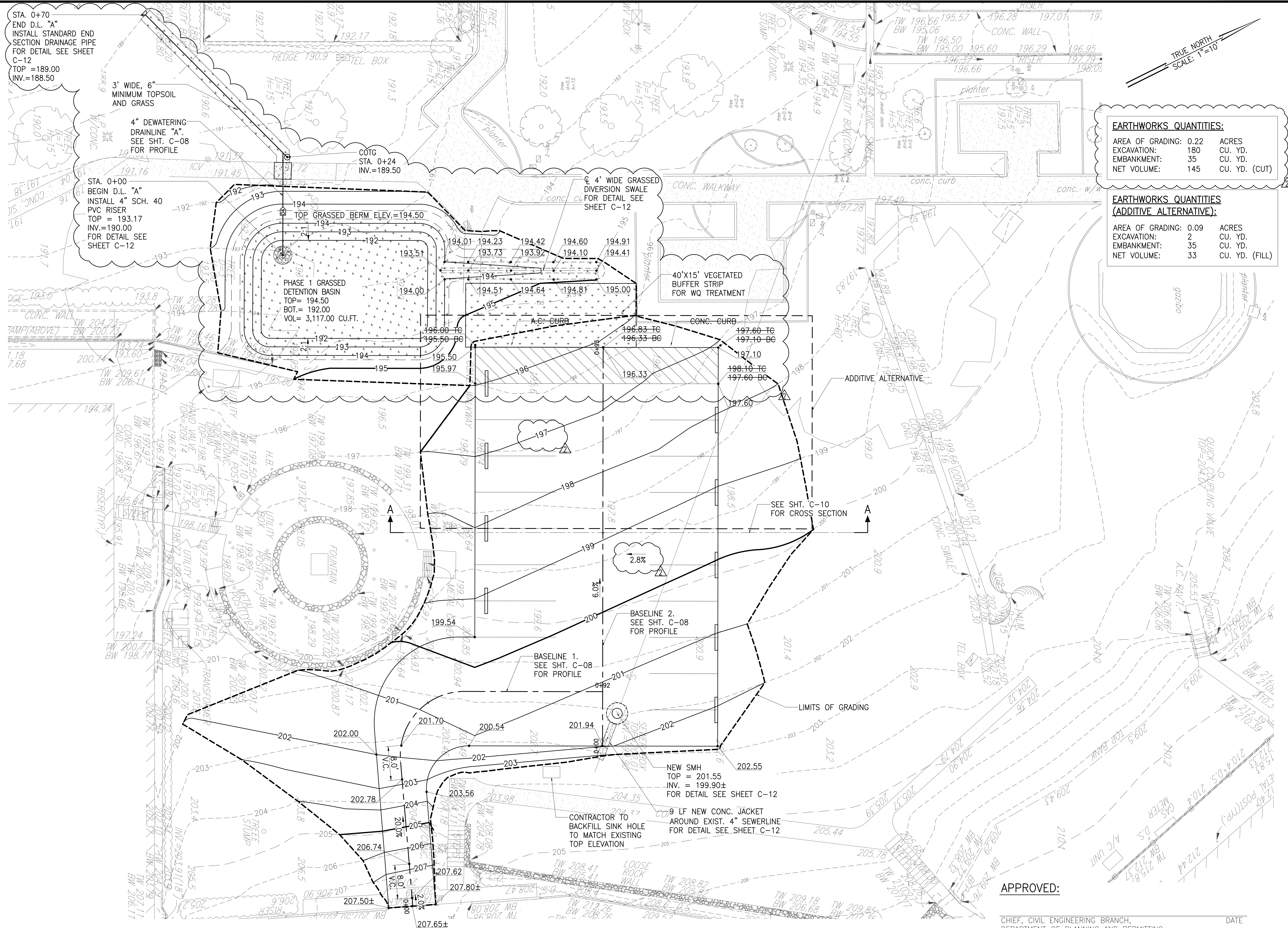
**BASELINE AND
DRAINLINE "A"
PROFILES**

DWG. NO.

C-08

SHEET 9 OF 13

\\V:\2020\20-003 Leahi Hospital\Engineering\DWG\C-09 SITE GRADING AND UTILITY PLAN.dwg; April 22, 2020



SITE GRADING AND UTILITY PLAN
SCALE: 1"=10'

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH,
DEPARTMENT OF PLANNING AND PERMITTING,
CITY & COUNTY OF HONOLULU

DATE

LEAHI HOSPITAL CENTRAL COURTYARD PARKING LOT - PHASE 1

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: T. S. O. Date: APRIL 30, 2020
EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
1	2020/04/22	ADD STORMWATER QUALITY	ATA

Project No: 20-003
Scale: AS NOTED
Date: 02/28/2020
Designed By: TSA
Drawn By: DON
Checked By: TSA

SITE GRADING AND UTILITY PLAN

DWG. NO.

C-09


SHEET 10 OF 13

**LEAHI HOSPITAL
CENTRAL
COURTYARD
PARKING LOT
- PHASE 1**

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules "Professional Engineers, Architects, Surveyors, and Landscape Architects.")


APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

[illegible]

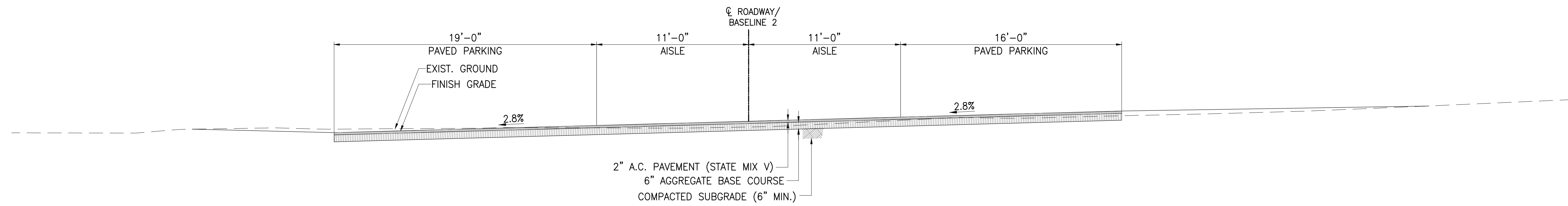
Project No:	20-003
Scale:	AS NOTED
Date:	02/28/2020
Designed By:	TSA
Drawn By:	DON
Checked By:	TSA

SITE SECTION

DWG. NO.

C-10

SHEET 11 OF 13

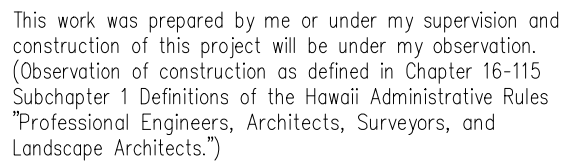



CROSS SECTION "A-A"

APPROVED:

CHIEF, CIVIL ENGINEERING BRANCH, DATE
DEPARTMENT OF PLANNING AND PERMITTING,
CITY & COUNTY OF HONOLULU

HONOLULU, HAWAII




APRIL 30, 2020
SIGNATURE EXP. DATE OF THE LICENSE

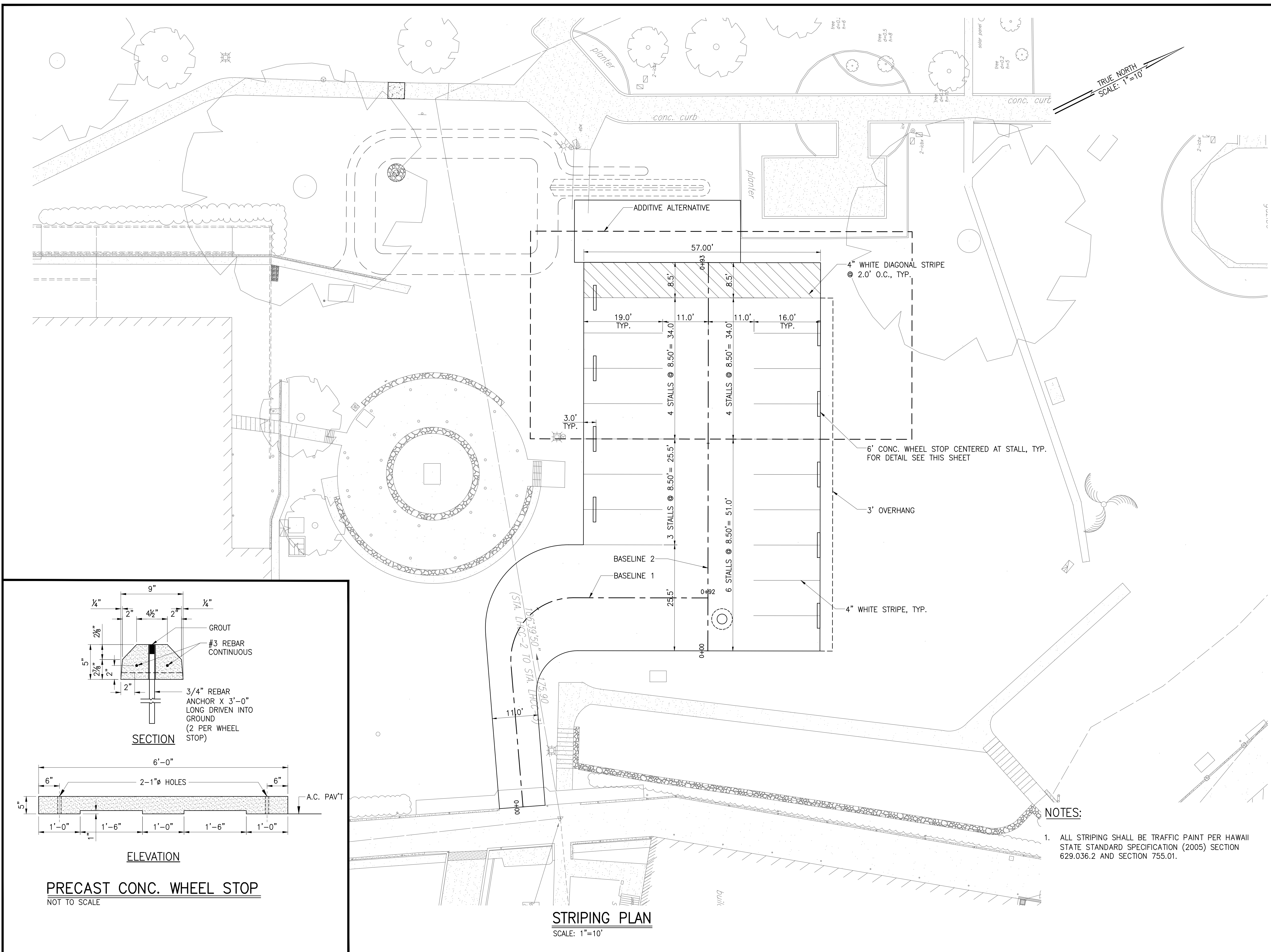
[illegible]

Project No:	20-003
Scale:	AS NOTED
Date:	02/28/2020
Designed By:	TSA
Drawn By:	DON
Checked By:	TSA

DWG. NO.

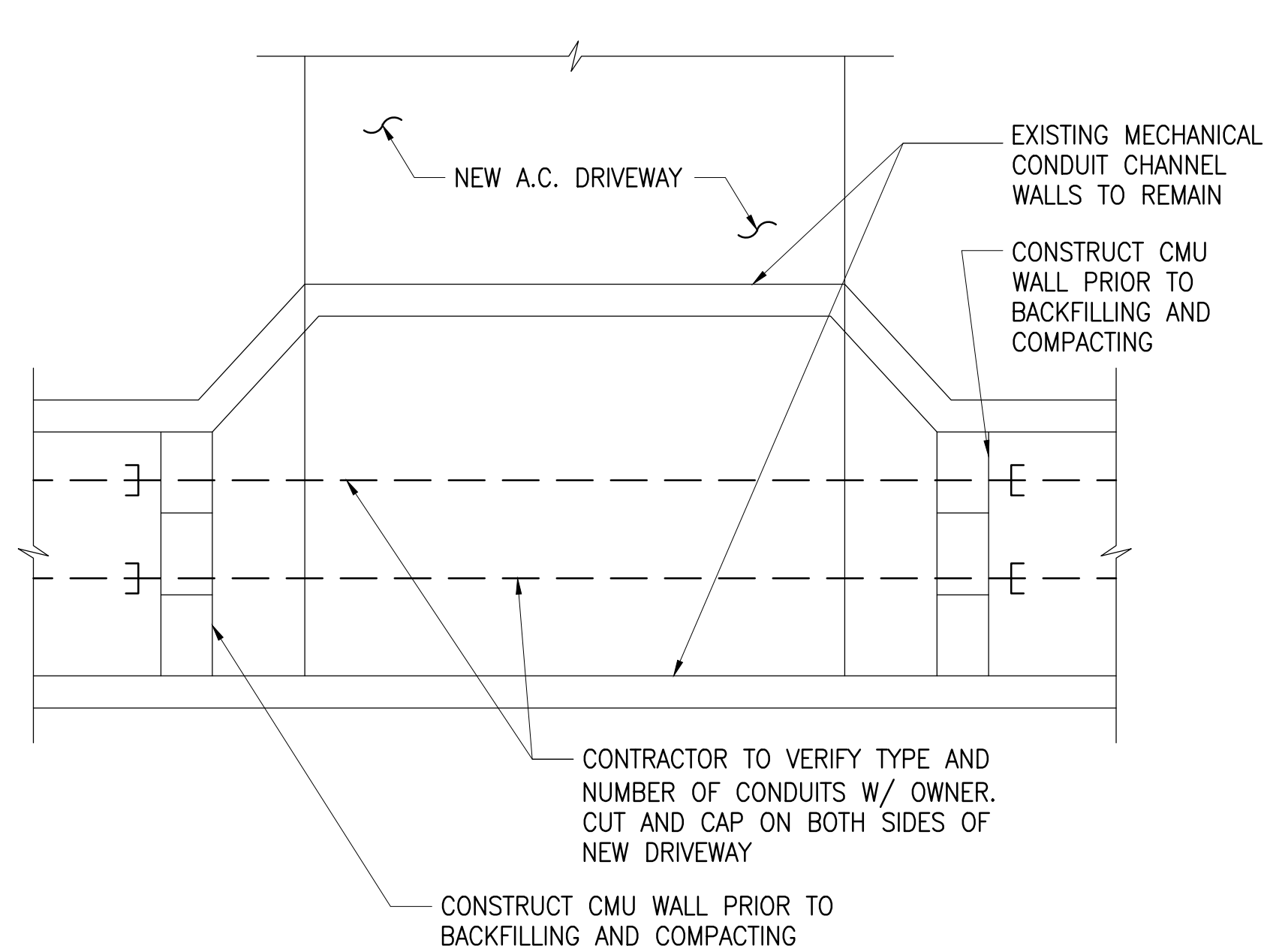
C-11

SHEET 12 OF 13

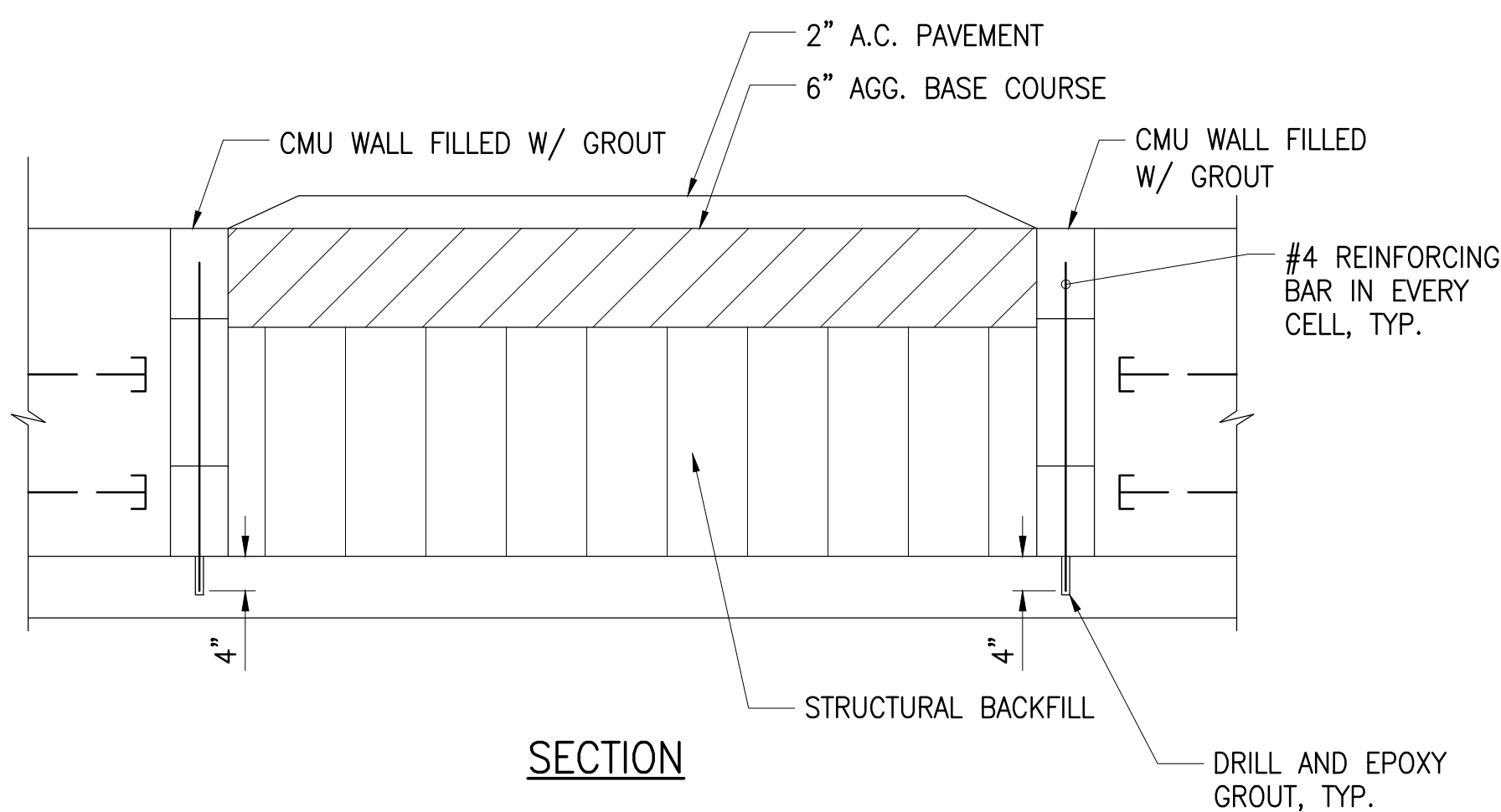


C:\2020\20-003 Lechi Hospital\ENGINEERING\DWG\C-11 STRIPING PLAN.dwg: April 22, 2020

V:\2020\20-003_Leahi Hospital\ENGINEERING\DWG\C-12 MISCELLANEOUS DETAILS.dwg; April 22, 2020



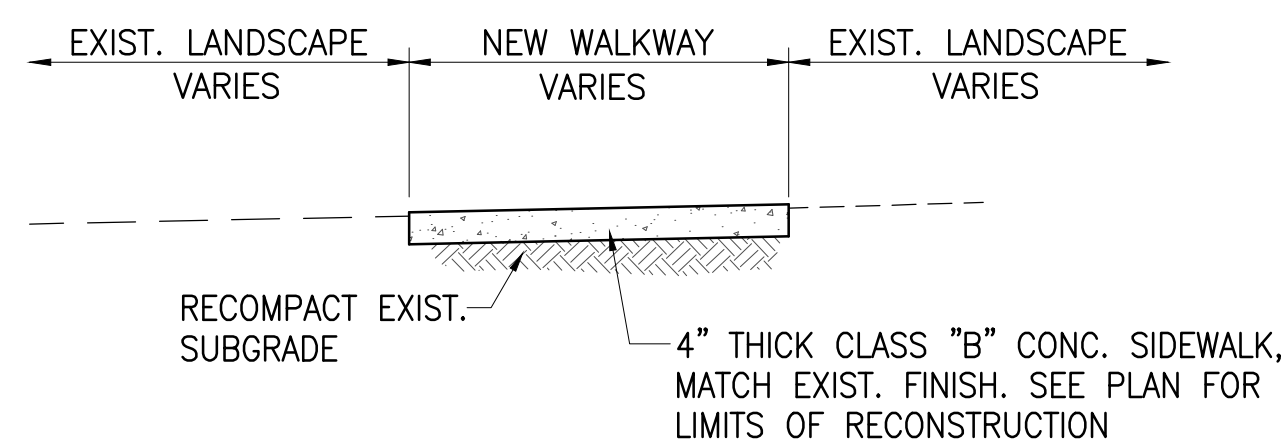
PLAN



SECTION

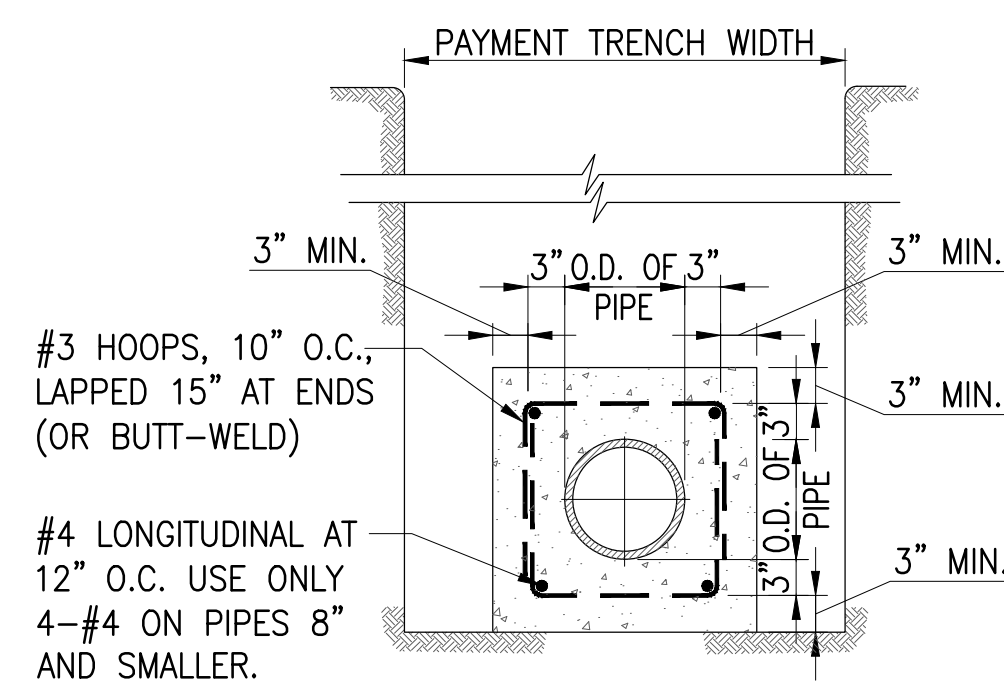
ABANDONED CONDUIT CHANNEL BACKFILL DETAIL

NOT TO SCALE



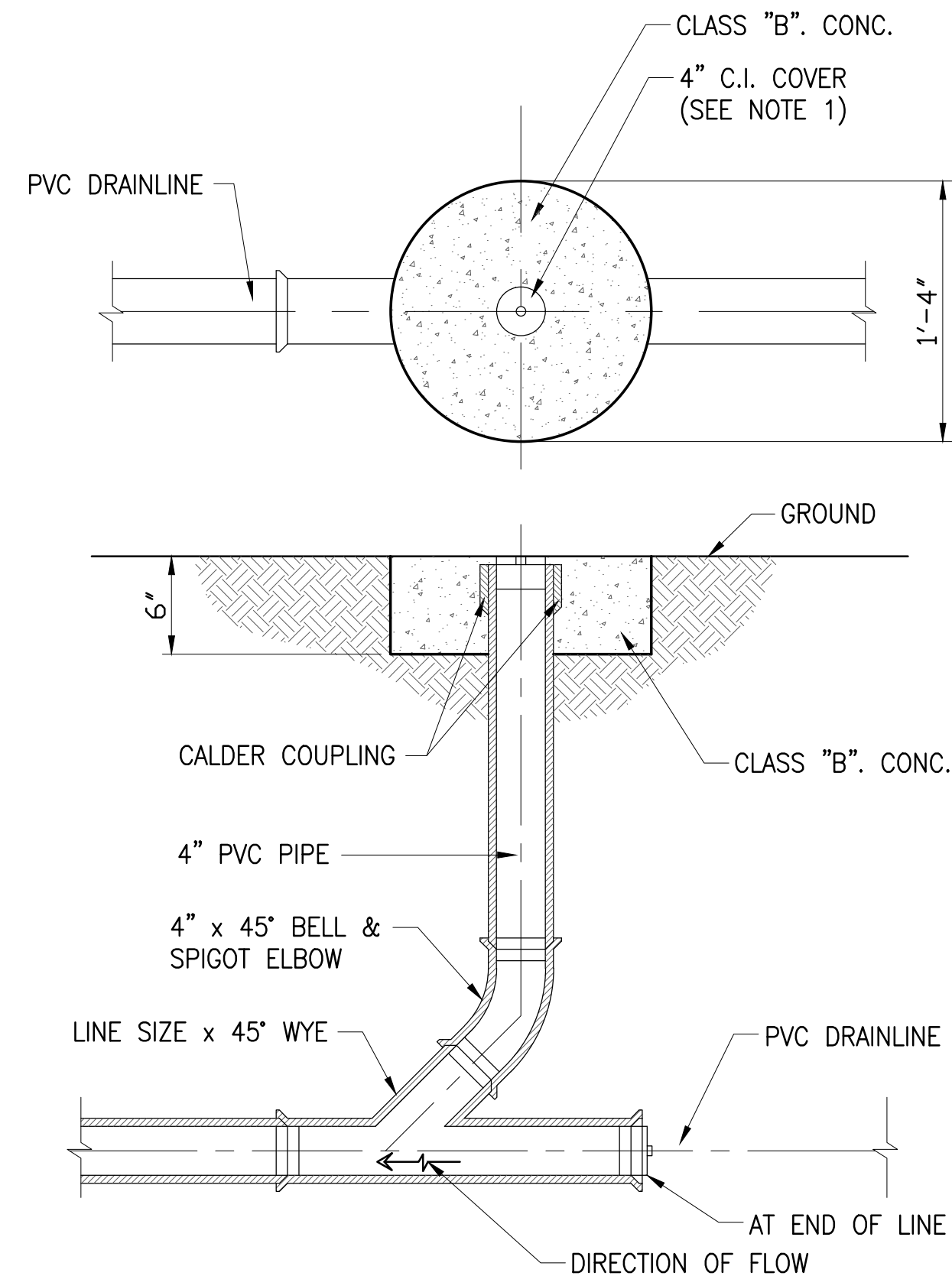
CONC. WALKWAY RECONSTRUCTION DETAIL

NOT TO SCALE



CONCRETE JACKET

NOT TO SCALE

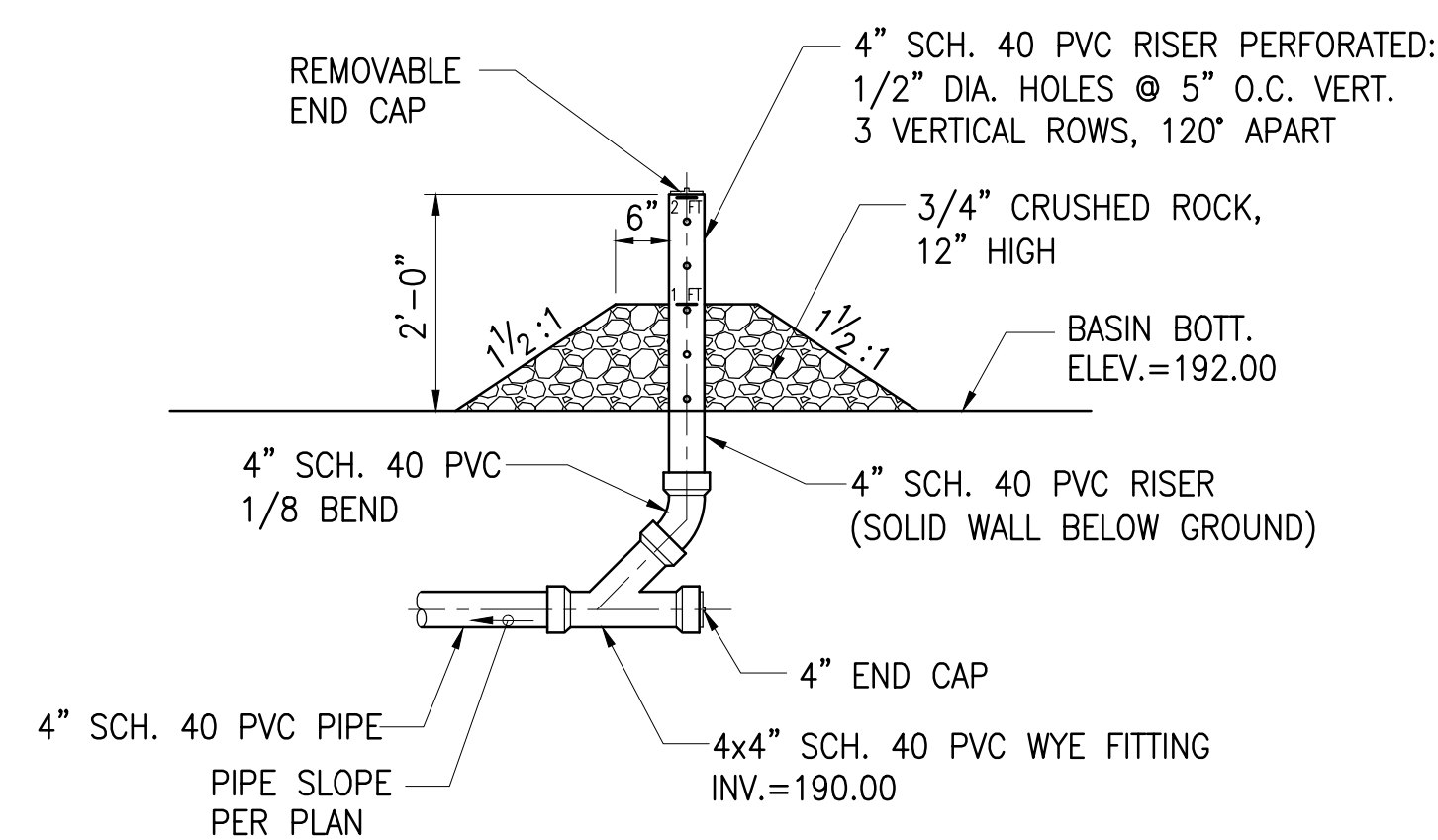


NOTE:

- COTG IN PAVED OR CONCRETE AREAS SHALL HAVE ROUND HEAVY DUTY NICKEL TOP COVER AS MANUFACTURED BY JAY R. SMITH COMPANY OR APPROVED EQUAL.
- SEE GRADING AND UTILITY PLAN FOR SIZE AND LOCATION OF DRAINLINE.

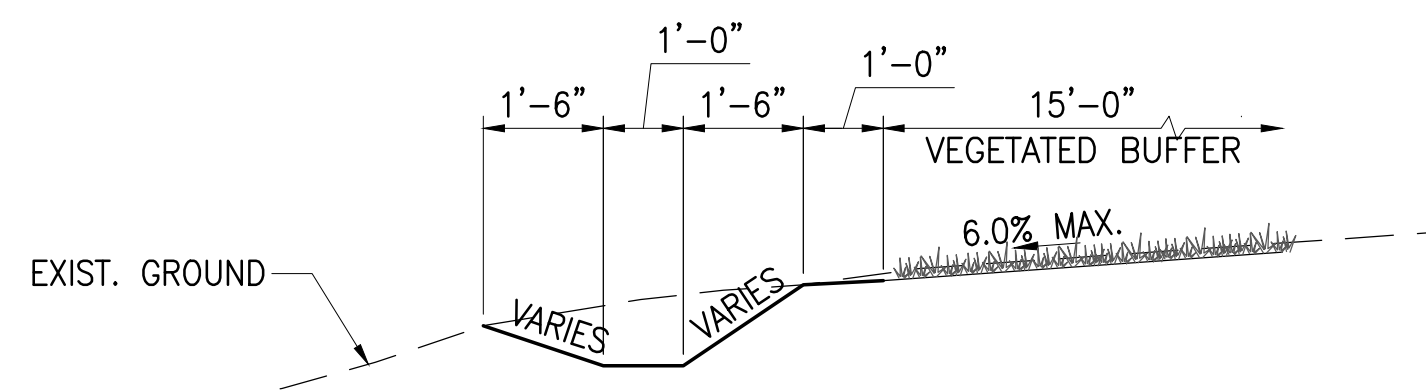
CLEANOUT TO GRADE FOR DRAINLINE DETAIL

NOT TO SCALE



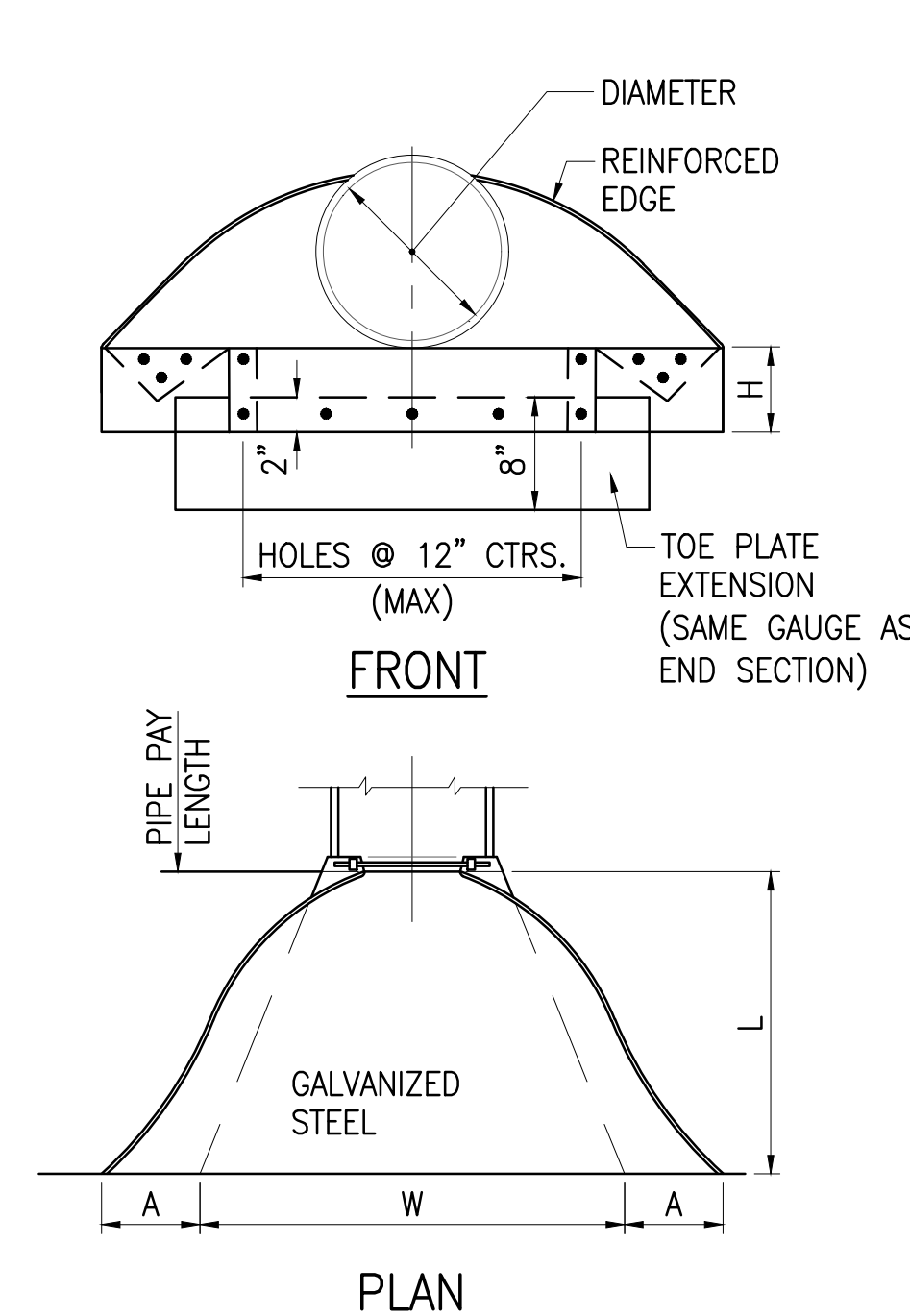
DETENTION BASIN LOW-FLOW OUTLET RISER

NOT TO SCALE



TYPICAL DIVERSION SWALE

NOT TO SCALE



PLAN

END SECTION FOR DRAINAGE PIPE								
DIA.	GAUGE	WEIGHT	* A	* H	* L	* W	SLOPE	OVERALL WIDTH
6"	18	10	4	3	8	12	2	20"

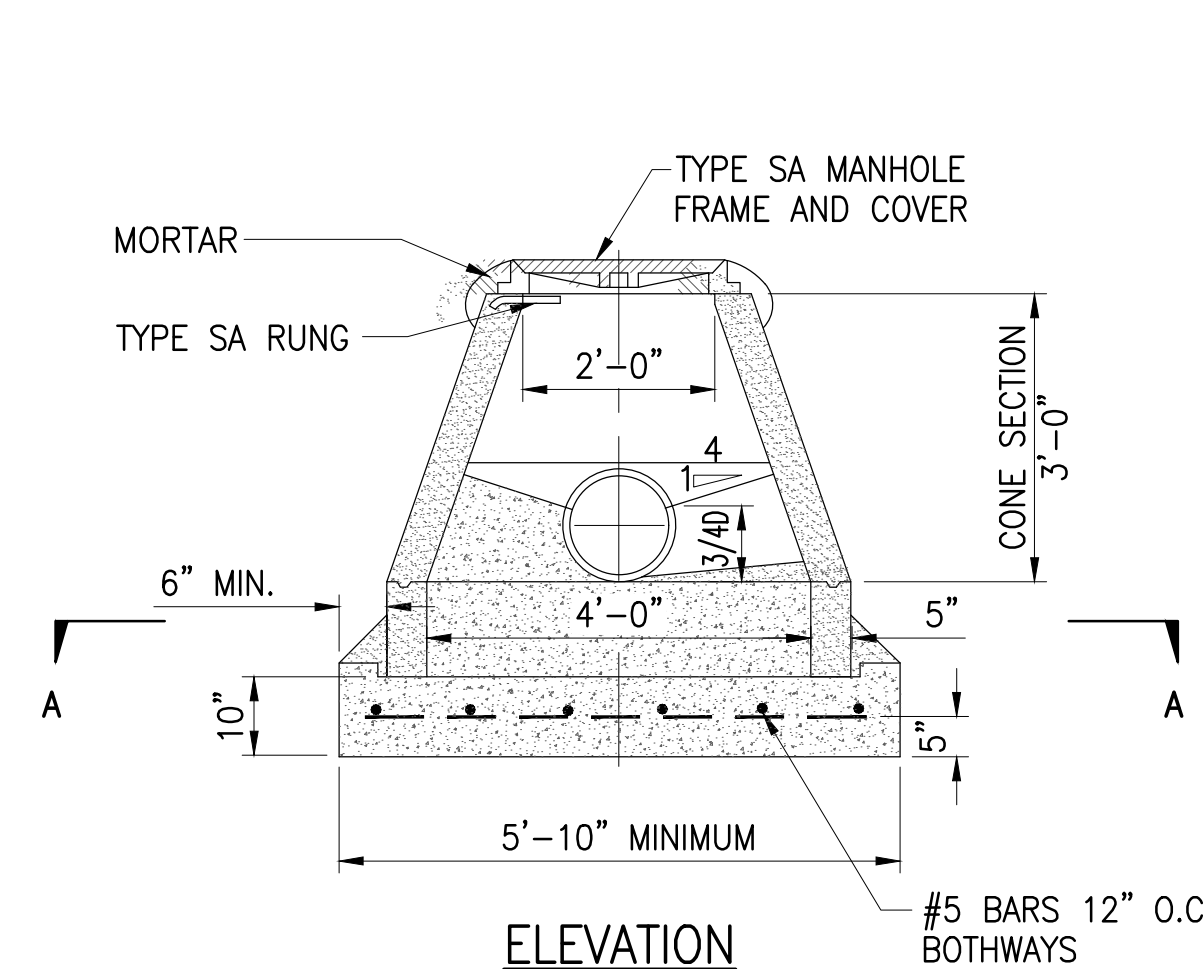
TOE PLATE EXTENSIONS WHERE SPECIFIED, TO BE PUNCHED TO MATCH HOLES IN APRON LIP.
3/8" BOLTS TO BE FURNISHED. THE LENGTH OF TOE PLATE TO BE AS FOLLOW:
W + 10" FOR 12" TO 30" DIAMETER PIPES INCLUSIVE.
W + 20" FOR 36" TO 60" DIAMETER PIPES INCLUSIVE.

MULTIPLE PANEL END SECTIONS SHALL HAVE LAP SEAMS WHICH ARE TO BE TIGHTLY JOINTED BY BOLTS. CORNER PLATE, AND TOE PLATE TO BE SAME GAUGE AS END SECTION.

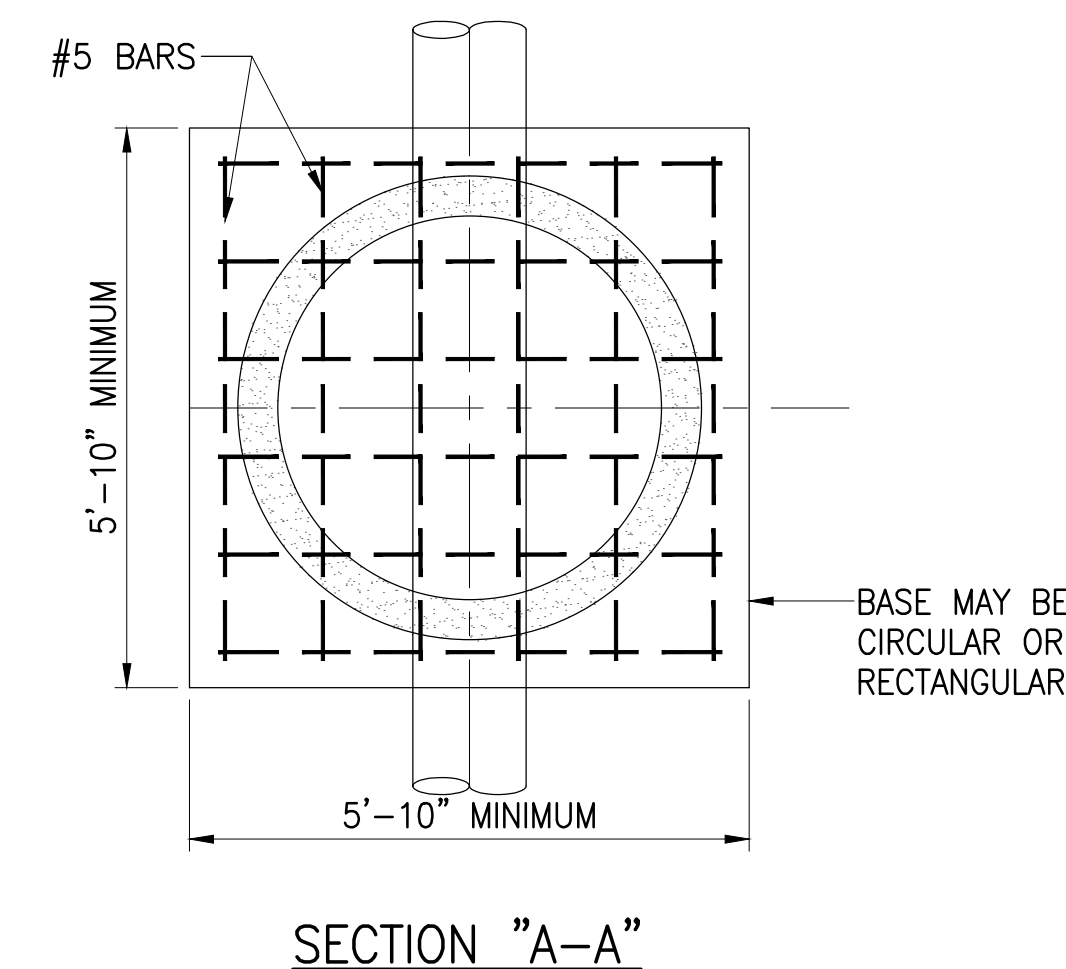
* - DIMENSIONS IN INCHES PLUS OR MINUS STANDARD SHOP TOLERANCE.

STANDARD END SECTION FOR DRAINAGE PIPE

NOT TO SCALE



ELEVATION



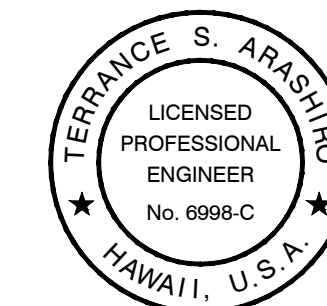
SECTION "A-A"

PRE-CAST CONCRETE SEWER MANHOLE

NOT TO SCALE

LEAHI HOSPITAL CENTRAL COURTYARD PARKING LOT - PHASE 1

HONOLULU, HAWAII



This work was prepared by me or under my supervision and construction of this project will be under my observation. (Observation of construction as defined in Chapter 16-115 Subchapter 1 Definitions of the Hawaii Administrative Rules Professional Engineers, Architects, Surveyors, and Landscape Architects.)

Signature: *Terance S. Arashiro*
APRIL 30, 2020
EXP. DATE OF THE LICENSE

REVISION	DATE	BRIEF	BY
1	2020/04/22	ADD DRAINAGE AND WALKWAY DETAILS	ATA

Project No: 20-003
Scale: AS NOTED
Date: 02/28/2020
Designed By: TSA
Drawn By: DON
Checked By: TSA

MISCELLANEOUS DETAILS

DWG. NO.

C-12

SHEET 13 OF 13