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GENERAL NOTES:

- ELEVATIONS SHOWN ARE BASED ON MEAN SEA LEVEL ELEVATION (ELEVATION = 0 FEET).
- DIMENSIONS TAKE PRECEDENCE OVER SCALE.
- THE TOPOGRAPHIC SURVEY WAS PREPARED BY CONTROLPOINT SURVEYING INC. DATED JANUARY 2011 WITH ADDITIONAL TOPOGRAPHIC SURVEY DATED JANUARY 2013 AND SUPPLEMENTARY INFORMATION FROM RECORD DRAWINGS AND FIELD INVESTIGATIONS BY HDR. THE DRAWINGS DO NOT REFLECT SITE CHANGES THAT HAVE OCCURRED SINCE THE TOPOGRAPHIC SURVEY WAS COMPLETED. OF PARTICULAR NOTE ARE THE CONSTRUCTION OF THE BRIGADE READINESS CENTER AND BUILDINGS 117A AND 117B, AND GATE HOUSE AND BARRICADES AT GATES. THE BRIGADE READINESS CENTER FACILITIES TO INCLUDE SITE ROADWAYS AND UTILITIES FROM THE CONSTRUCTION CONTRACT DRAWINGS ARE SHOWN AS EXISTING CONDITIONS.
- AZIMUTHS ARE REFERENCED FROM TRUE SOUTH = 0° 00' 00" AND INCREASE CLOCKWISE.
- DURING NON-WORKING HOURS, ALL TRENCHES AND EXCAVATIONS SHALL BE BARRICADED, COVERED AND/OR MARKED.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON THE AVAILABLE DATA. THE CONTRACTOR SHALL TONE THE PROJECT AREA, VERIFY THE LOCATIONS AND DEPTHS OF THE EXISTING UTILITIES SHOWN AND EXERCISE CARE WHEN EXCAVATING IN THE AREA.  
  
WHEREVER CONNECTIONS AND CROSSINGS OF PROPOSED UTILITIES TO EXISTING UTILITIES ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. IF UTILITIES NOT SHOWN ARE ENCOUNTERED, OR IF POTENTIAL UTILITY CONFLICTS ARISE, NOTIFY THE PROJECT MANAGER IMMEDIATELY. THE CONTRACTOR SHALL PROVIDE STRUCTURAL SUPPORT FOR ALL EXISTING UTILITY LINES UNCOVERED IN THE TRENCHES.
- IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION THE CONTRACTOR SHALL REPAIR SUCH UTILITIES AT HIS OWN EXPENSE.
- CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE AND WITHIN ALLOWABLE NOISE LEVELS. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION SHALL BE PAYABLE BY THE CONTRACTOR.
- EXISTING SITE DRAINAGE SYSTEMS SHALL BE FUNCTIONAL AT ALL TIMES.

- PRIOR TO COMMENCING EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER. THE CONTRACTOR SHALL COORDINATE, BE HELD RESPONSIBLE AND PAY FOR ALL DAMAGE TO EXISTING UTILITIES AND STRUCTURES. PERSONAL INJURY RESULTING FROM CONTACT WITH THE EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- EXISTING UTILITIES SHALL REMAIN IN-SERVICE AND IN PLACE. IF RELOCATION OF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, IS REQUIRED FOR THE CONTRACTOR'S CONVENIENCE, INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE PROJECT MANAGER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION SHORING PLAN PREPARED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER COMPETENT IN SOILS AND A LICENSED STRUCTURAL ENGINEER, BOTH LICENSED IN THE STATE OF HAWAII.
- IF DEWATERING IS REQUIRED, DISPOSE DEWATERING EFFLUENT WITHOUT DISCHARGE TO WATERS OF THE STATE OF HAWAII, STORM DRAIN SYSTEMS, DRAINAGE SWALES, ETC. THE DEWATERING EFFLUENT WILL NOT BE ALLOWED TO POND, EXCEPT IN AREAS APPROVED BY THE PROJECT MANAGER. IF DISCHARGE OF DEWATERING EFFLUENT IS REQUIRED, CONTRACTOR IS RESPONSIBLE TO OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT PRIOR TO DISCHARGING TO THE STORM DRAINAGE SYSTEM. DEWATERING INTO SANITARY SEWER SYSTEM IS PROHIBITED.
- WHEREVER INSTRUCTED TO "CUT AND PLUG" AN EXISTING UTILITY LINE:

- CUT THE EXISTING PIPE A MINIMUM OF 24 INCHES FROM THE EXISTING POINT OF CONNECTION EXCEPT WHEN DIRECTED BY THE PROJECT MANAGER.
- FILL THE PIPE OPENING WITH CONCRETE TO A LENGTH OF TWO TIMES THE DIAMETER OF THE PIPE. THE CONCRETE SHALL PROVIDE A WATERTIGHT SEAL.

GENERAL NOTES (CONTINUED):

- THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION, WHETHER OR NOT SHOWN ON PLANS, ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND LICENSES REQUIRED. THE CONTRACTOR SHALL CONDUCT ALL TESTS AS REQUIRED BY THE CONSTRUCTION MANAGER AND BE RESPONSIBLE FOR ALL EXPENSES INCURRED IN CONDUCTING THESE TESTS.
- THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS, ELEVATIONS, AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCY OR CONFLICT FOUND IN THE FIELD PRIOR TO OR DURING THE COURSE OF CONSTRUCTION AND SHALL NOT PROCEED WITH CONSTRUCTION UNTIL THE PROJECT MANAGER RESOLVES THE SAID DISCREPANCY OR CONFLICT. DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON LIMITED FIELD MEASUREMENTS AND ORIGINAL CONSTRUCTION DRAWINGS. DIMENSIONS AND ELEVATIONS FOR THE NEW WORK SHALL BE ADJUSTED AS REQUIRED BASED ON THE CONTRACTOR'S FIELD MEASUREMENTS WITH THE APPROVAL OF THE PROJECT MANAGER.
- THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE REMOVAL/ AVOIDANCE OF ABANDONED UTILITIES, WHETHER OR NOT SHOWN ON PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS" AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL". BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
- THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NPDES PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM HAVE BEEN MET.
- IF CAVITIES AND/OR VOIDS ARE ENCOUNTERED DURING EXCAVATION WORK, STOP WORK IMMEDIATELY AND NOTIFY THE PROJECT MANAGER.
- CONFINE ACTIVITIES WITHIN THE PROJECT LIMITS.
- WHENEVER INSTRUCTED TO "ABANDON" EXISTING UTILITY STRUCTURE.
  - REMOVE THE FRAME AND COVER, IF ANY. THE COVER AND FRAME SHALL BE CLEANED FREE OF CONCRETE. COORDINATE DELIVERY TO HIARNG FACILITIES THROUGH THE PROJECT MANAGER.
  - DEMOLISH A MINIMUM OF THE TOP 3 FEET OF THE UTILITY STRUCTURE BELOW EXISTING GRADE.
  - BREAK BASE OF STRUCTURE TO PERMIT FREE DRAINAGE OF WATER. ADEQUACY OF PENETRATION SHALL BE BASED SOLELY ON THE JUDGEMENT OF THE PROJECT MANAGER. CONTRACTOR SHALL FULLY DRAIN THE STRUCTURE PRIOR TO FILLING.
  - CUT AND PLUG CONNECTING PIPES WITH MINIMUM OF 18 INCHES OF CONCRETE.
  - FILL STRUCTURE WITH COMPACTED FILL. THE TOP OF THE CONTROLLED BACKFILL SHALL MATCH THE GRADE OF THE SURROUNDING AREA LESS THE THICKNESS OF THE TOP SOIL OR PAVEMENT STRUCTURE AS APPROPRIATE.
  - IF THE SURROUNDING AREA IS GRASSED, PROVIDE A MINIMUM OF 6 INCHES OF TOPSOIL AND HYDROMULCH AND SEED WITH COMMON BERMUDA GRASS AT A RATE OF 12 Pq.
  - WHEREVER AN EXISTING STRUCTURE IS WITHIN ASPHALTIC CONCRETE PAVEMENT, PROVIDE BASE COURSE AND ASPHALTIC CONCRETE PAVEMENT OF THICKNESS THAT MATCHES THE SURROUNDING PAVEMENT OR AS SPECIFIED BY THE CONTRACT DOCUMENTS.
- PROJECT MANAGER IS THE COORDINATOR BETWEEN THE CONTRACTOR AND ACTIVITY. NOTIFY THE PROJECT MANAGER PRIOR TO CONTACTING THE ACTIVITY. COORDINATE ALL WORK WITH THE PROJECT MANAGER TO ENSURE THAT CONSTRUCTION ACTIVITIES DO NOT INTERFERE WITH BASE OPERATIONS.
- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
- ALL WORK PERFORMED SHALL COMPLY WITH US ARMY CORPS OF ENGINEERS EM 385-1-1, SAFETY AND HEALTH REQUIREMENTS, AND WITH ALL APPLICABLE FEDERAL, SAFETY AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY. WHERE REQUIREMENTS VARY, THE MOST STRINGENT REQUIREMENTS SHALL APPLY.

GENERAL NOTES (CONTINUED):

- CONFINED SPACE
  - FOR ENTRY BY PROJECT MANAGER AND PERSONNEL, INCLUDING INSPECTORS AND REPRESENTATIVES, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(B), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:
    - FULL BODY HARNESSSES FOR UP TO TWO PERSONNEL.
    - LIFELINE AND ASSOCIATED CLIPS.
    - INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
    - TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
    - EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
    - CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
    - CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE, AND FLAMMABLE GASES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20 FEET AWAY).
    - PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.
  - CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
  - ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT) FOR EACH ENTRANT INTO A CONFINED SPACE.
  - ALL SAFETY EQUIPMENT SHALL COMPLY WITH THE STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL APPLICABLE FEDERAL, STATE AND CITY LAWS AND REGULATIONS RELATING TO SAFETY.
- THE CONTRACTOR SHALL PROVIDE SAFE ACCESS TO AND FROM ALL DRIVEWAYS AND STREETS.
- THE CONTRACTOR SHALL PLAN OPERATIONS TO MINIMIZE THE AMOUNT OF EXCAVATED TRENCHES LEFT OPEN AT THE END OF EACH WORK DAY WITH THE TOTAL LENGTH OF OPEN TRENCHES NOT TO EXCEED 500 FEET. OPEN TRENCHES SHALL BE COVERED BY NON-SKID STEEL PLATES CAPABLE OF CARRYING H-20 VEHICLES IN TRAFFIC AREAS AND 100 POUNDS PER SQUARE FOOT IN NON-TRAFFIC AREAS. PROVIDE ANCHORING OF THE PLATES IN NON-TRAFFIC AREAS. PROVIDE FLASHING BARRICADES TO DELINEATE COVERED TRENCHES IN NON-TRAFFIC AREAS AND ALL STOCK/SPOIL PILES.
- WHEREVER EXISTING FENCE IS REMOVED, REINSTALL CHAIN LINK FENCE AS NECESSARY TO SECURE PROTECTED AREAS PRIOR TO THE END OF EACH WORK DAY. TRENCHES CROSSING ANY FENCE, EXISTING OR PROVIDED, SHALL NOT BE LEFT OPEN DURING NON-WORK HOURS. BACKFILL A MINIMUM OF 10 FEET ON EACH SIDE OF FENCE AT THE END OF WORK DAY. OTHER MEASURES MAY BE UTILIZED AS APPROVED BY THE PROJECT MANAGER.

SEWER NOTES:

- THE SEWER SYSTEM, INCLUDING ALL LATERAL CONNECTIONS AND SERVICES, SHALL BE OPERATIONAL AT ALL TIMES. NO SERVICE INTERRUPTION IS PERMITTED. WHEN WORK ON EXISTING SEWER IS REQUIRED, THE CONTRACTOR SHALL PROVIDE EQUIPMENT NECESSARY TO REDIRECT SEWAGE AROUND THE SEWER AND MANHOLES. BYPASSING PLANS AND SCHEDULES SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO IMPLEMENTATION. BYPASS REQUESTS SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR REVIEW 30 DAYS PRIOR TO THE START OF THE BYPASS WORK.
- THE CONTRACTOR SHALL REPORT TO THE PROJECT MANAGER ANY ACCIDENTAL SPILLS OR BYPASSES RESULTING FROM HIS WORK.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING SEWER LATERAL LOCATIONS WHETHER SHOWN OR NOT SHOWN ON PLANS PRIOR TO COMMENCING WITH ANY OF THE WORK AND SHALL NOT ASSUME THAT WHERE NO LATERALS ARE SHOWN, NONE EXIST. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGED UTILITIES. THE LOCATION AND DEPTHS OF ALL EXISTING SEWER LATERALS ARE APPROXIMATE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.
- IN THE EVENT THAT ANY CHANGE IN ALIGNMENT OR GRADE FROM THAT PROPOSED ON THE PLANS ARE REQUIRED DUE TO UNFORESEEN CONFLICT WITH OTHER UTILITIES, THE PROJECT MANAGER OR THE MAKER OF THE PLANS SHALL BE RESPONSIBLE FOR THE REQUIRED CHANGES.

SEWER NOTES (CONTINUED):

- UPON COMPLETION OF THE NEW SEWER CONSTRUCTION, PROVIDE CCTV VIDEO AND SEWER AS-BUILTS OF ONLY SEWER LINE "B" AND "D" TO NAVFAC HI OPC 64 (CALL 474-3863). ALLOW APPROXIMATELY 5-WORKING DAYS TO REVIEW THESE CLOSEOUT SUBMITTALS PRIOR TO SCHEDULING A FINAL WALK-THROUGH ACCEPTANCE INSPECTION.
- THE CONTRACTOR SHALL ENSURE THAT THE GRAVITY SEWER LINE IS FREE OF DEBRIS OR OTHER OBSTRUCTIONS PRIOR TO MAKING ANY ON-LINE FLOW CONNECTIONS.
- PRIOR TO FINAL ACCEPTANCE, ALL SEWER LINES INSTALLED SHALL BE FLUSHED WITH WATER AND ANY ACCUMULATED CONSTRUCTION DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
- THE SEWER SYSTEM SHALL BE OPERATIONAL AT ALL TIMES. NO SERVICE INTERRUPTION IS PERMITTED. WHEN WORK ON EXISTING SEWER LINES AND MANHOLES IS REQUIRED, THE CONTRACTOR SHALL PROVIDE EQUIPMENT NECESSARY TO REDIRECT THE SEWAGE AROUND THESE SEWER LINES AND MANHOLES.
- THE CONTRACTOR SHALL PROVIDE SUCH TEMPORARY PUMPS AND PIPING AS ARE REQUIRED TO BY-PASS THE SECTION OF SEWER UNDER CONSTRUCTION IN ORDER TO MAINTAIN THE EXISTING FLOW THROUGH THE SEWERS AND LATERALS AT ALL TIMES. THE BY-PASS EQUIPMENT/OPERATION SHALL NOT INTERFERE WITH TRAFFIC FLOW.
- ALL SEWER LINES AND LATERALS SHALL BE THE SIZE AS INDICATED ON THE PLANS AND OF THE FOLLOWING MATERIAL:
  - PVC PIPE CLASS SDR 26 CONFORMING TO ASTM 3034 FOR SIZES OF 4 TO 15 INCHES.
  - PVC PIPE CLASS SDR 26 CONFORMING TO ASTM F679 FOR SIZES LARGER THAN 15 INCHES.



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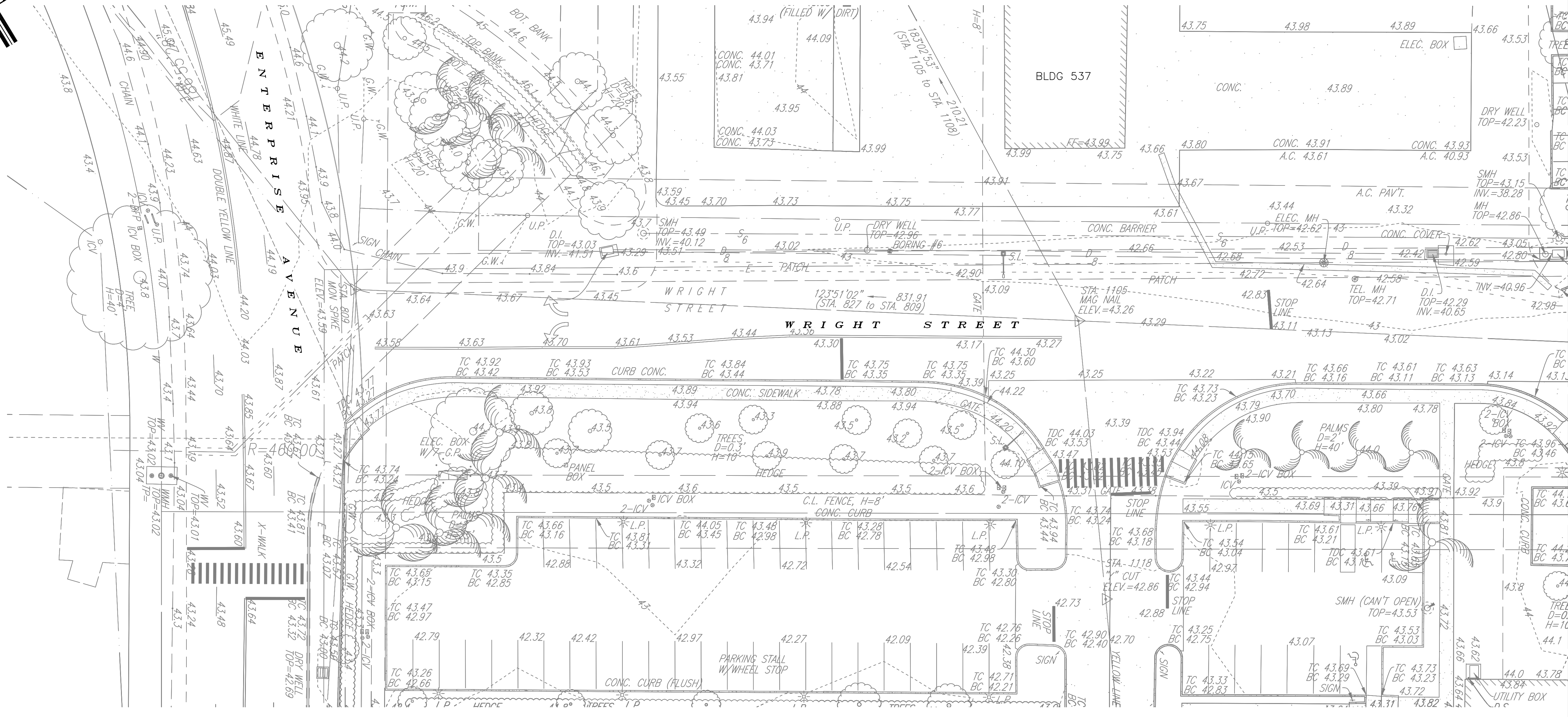
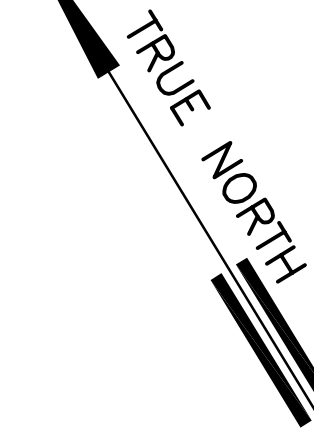


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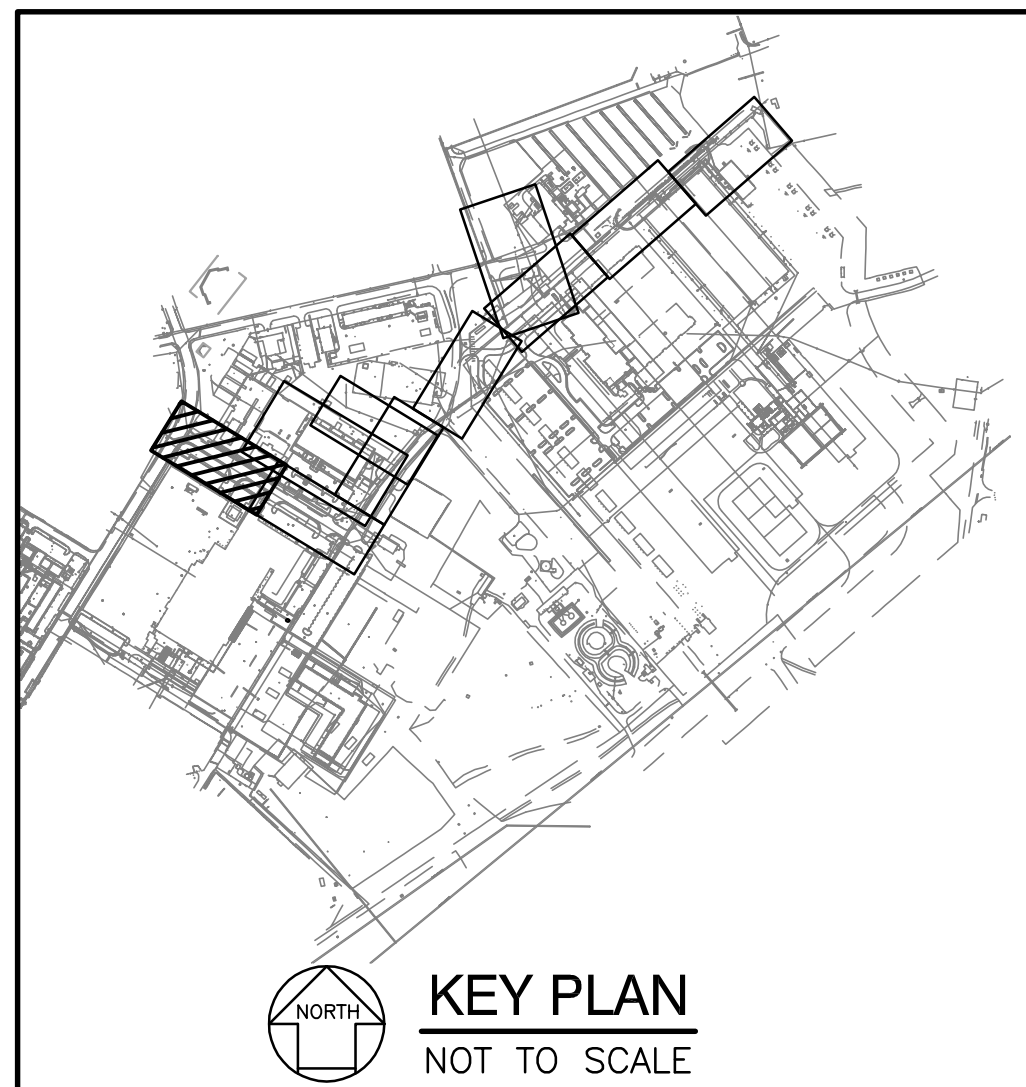


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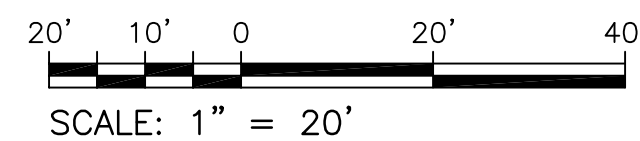
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**NOTE:**

EXIST GUARD HOUSE AND PORTABLE BARRICADES ARE NOT INDICATED ON THIS SHEET. CONTRACTOR TO VERIFY.

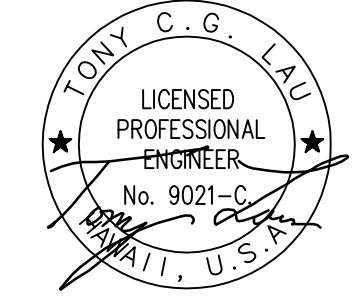


**GRAPHIC SCALE:**



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DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HAIRNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

EXISTING CONDITIONS PLAN, SHEET 1

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

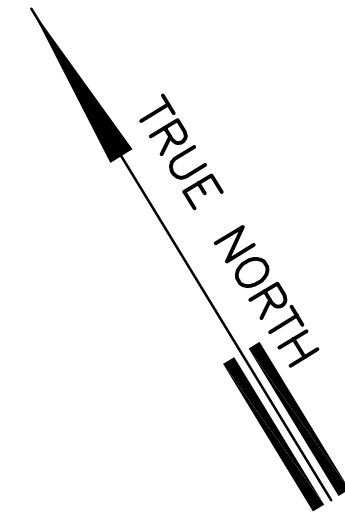
FEDERAL PROJECT NO. 15140005

SHEET 6 OF 42

**G-06**

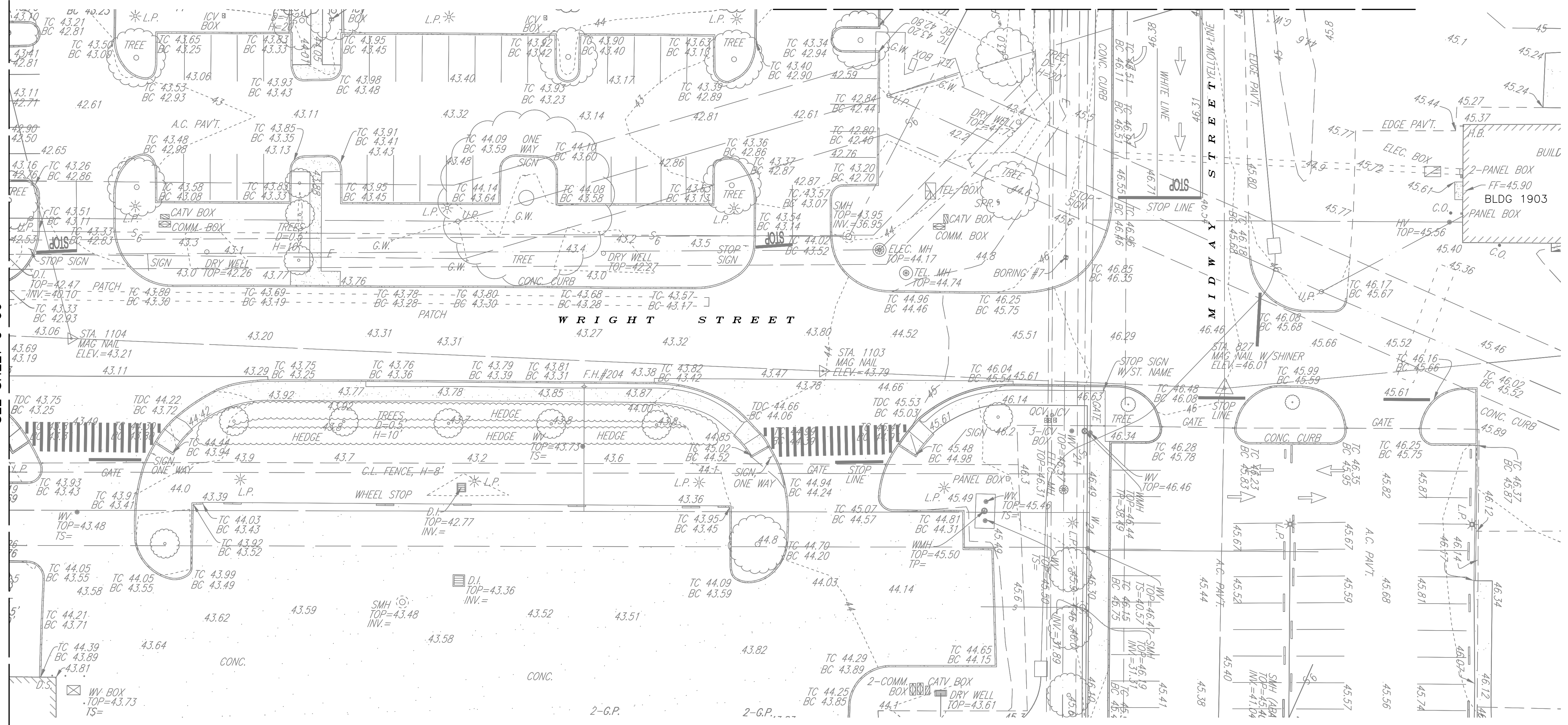


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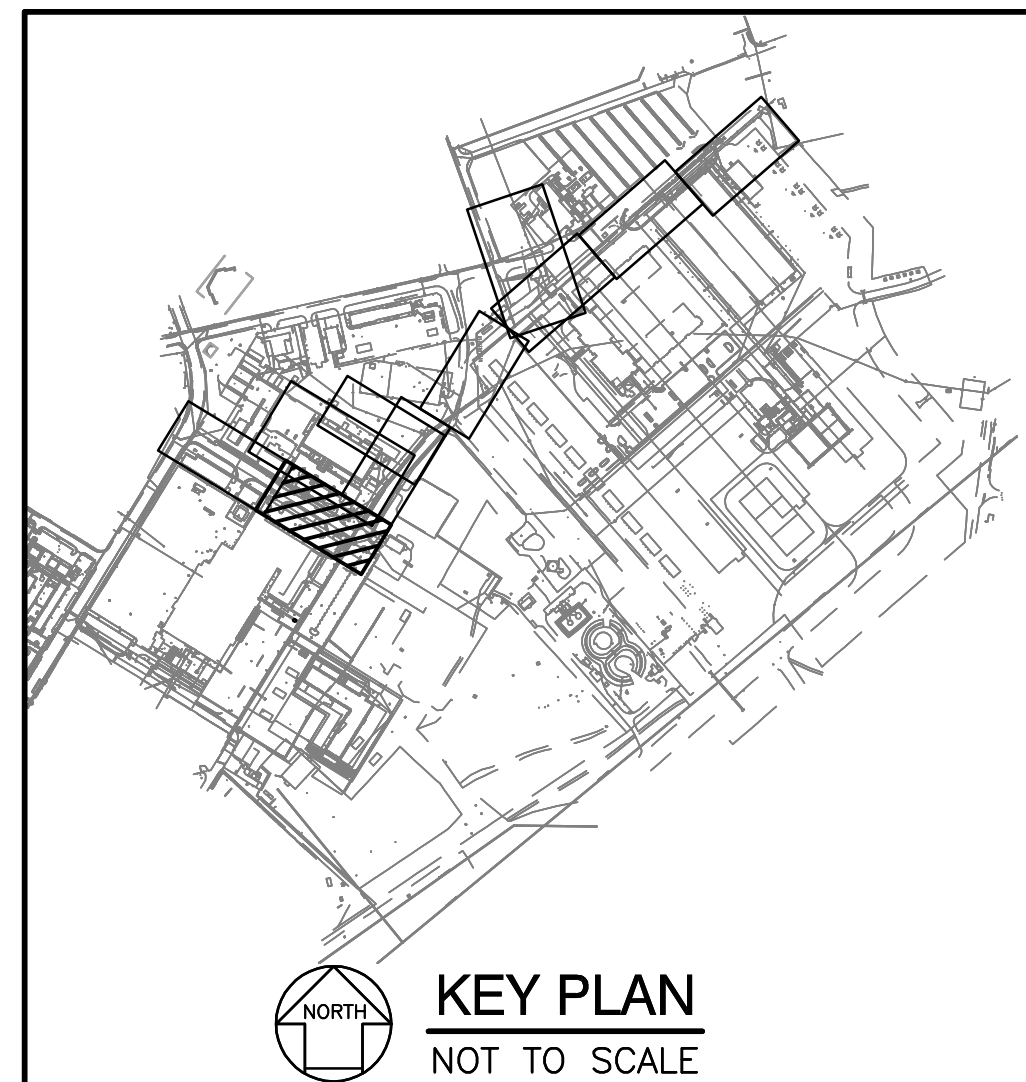
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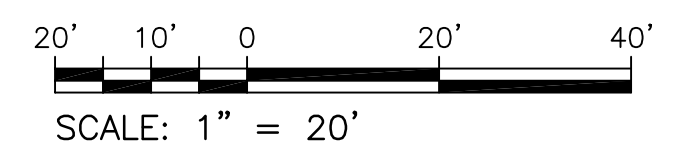


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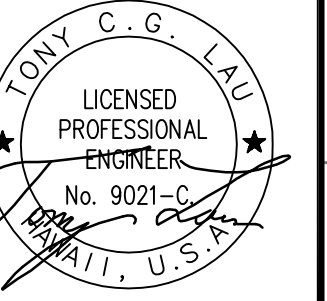


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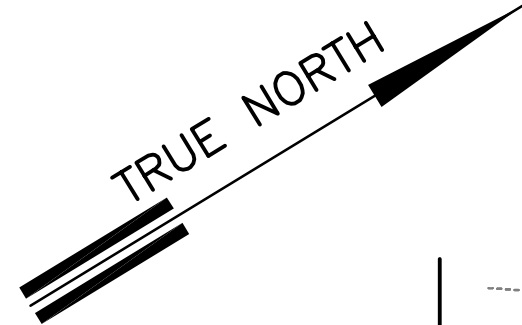
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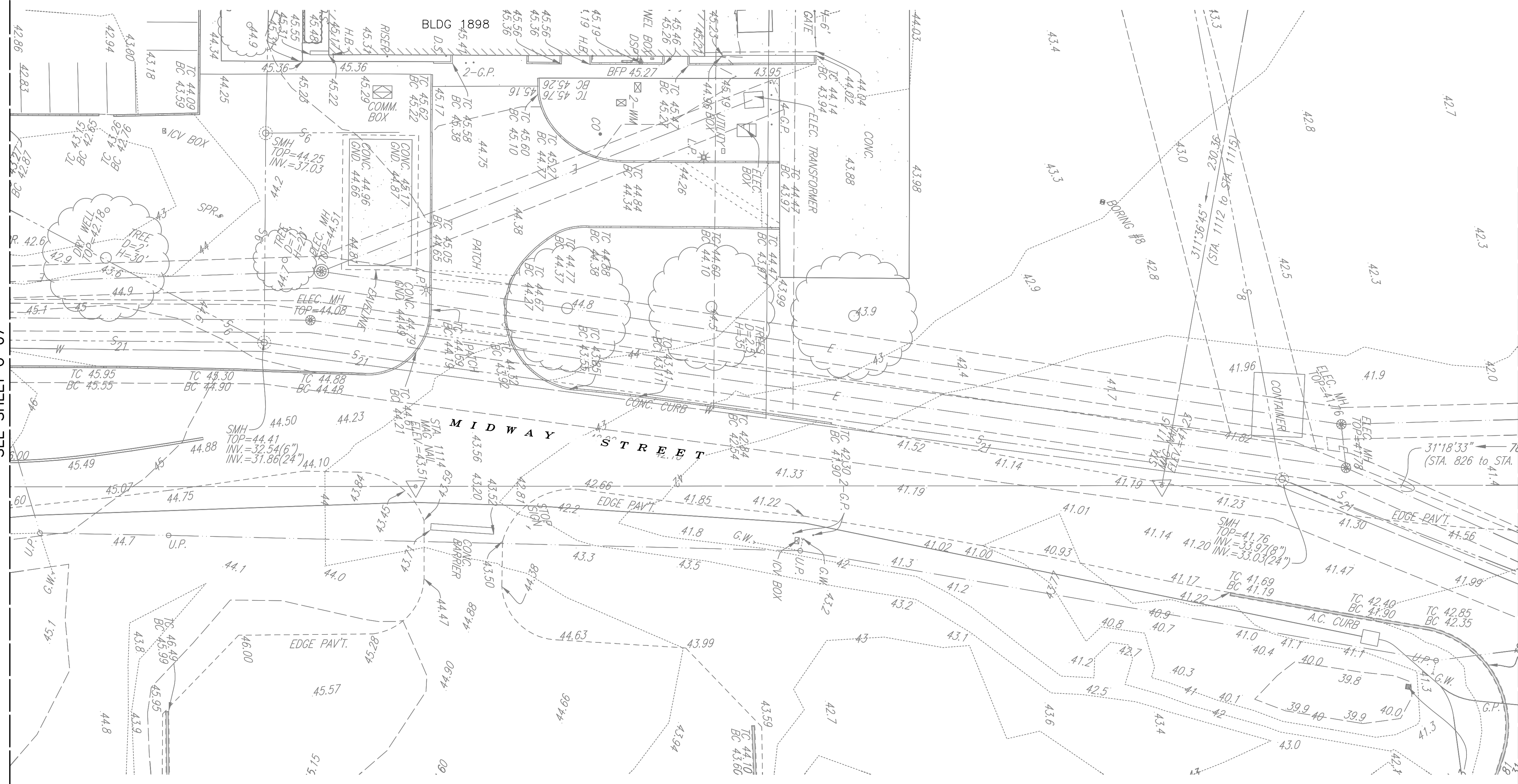
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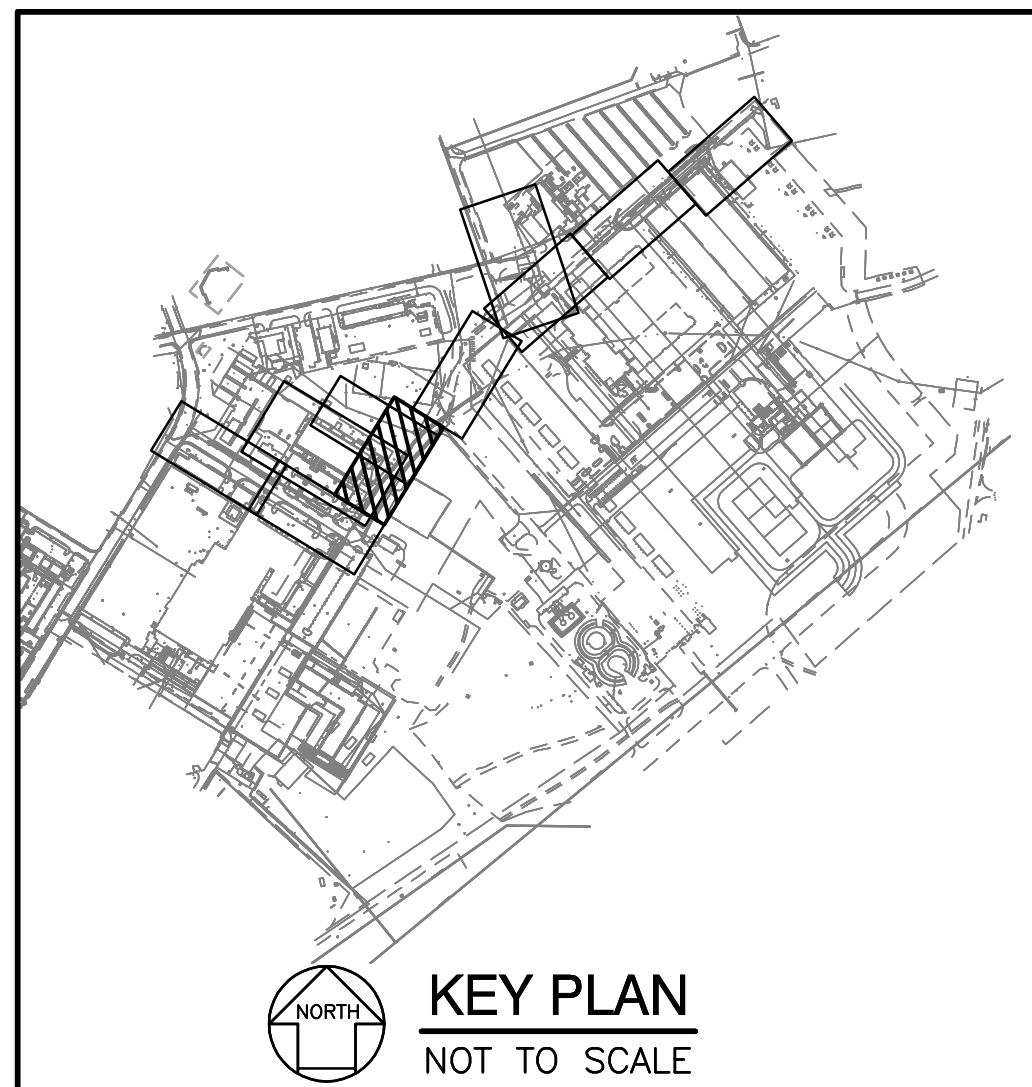
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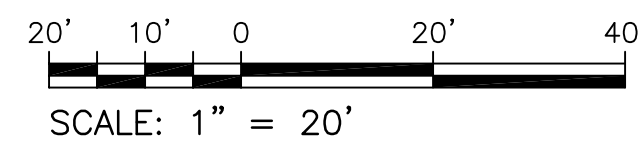
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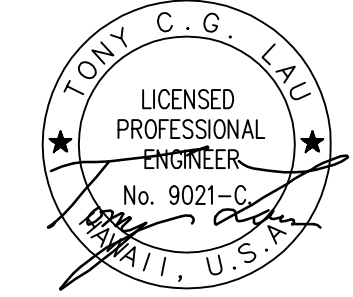


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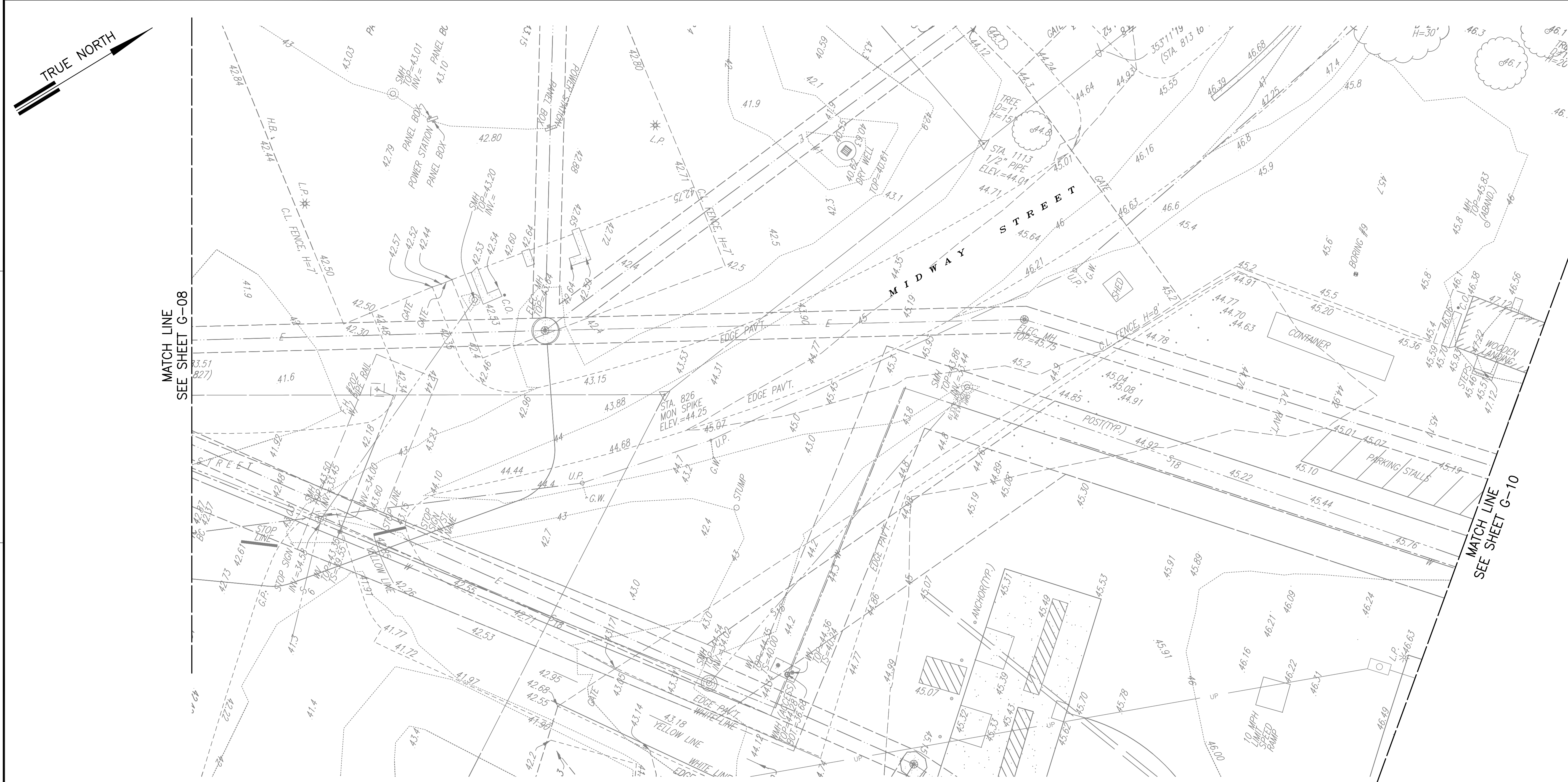
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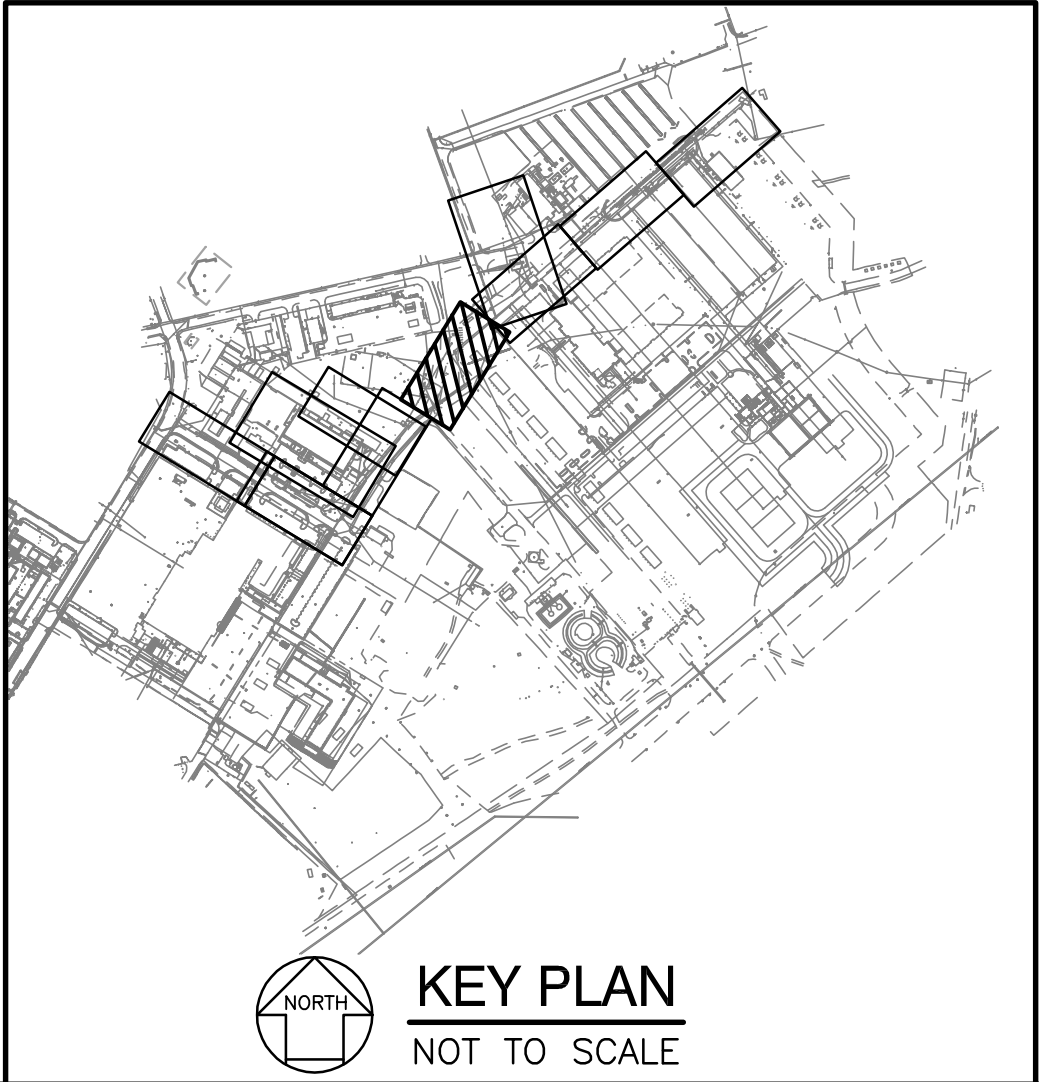
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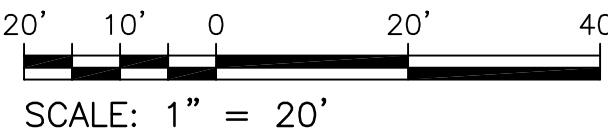


EXISTING CONDITIONS PLAN  
SCALE: 1" = 20'

NOTE:  
SEE GENERAL NOTE 3  
ON SHEET G-03.



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DEPARTMENT OF DEFENSE  
HAWAII ARMY NATIONAL GUARD  
SITE UTILITIES REPLACEMENT  
DESIGN AND PROJECT MANAGEMENT BRANCH  
KALAELOA (KAPOLEI), HAWAII  
SEWER LINE -  
WRIGHT STREET TO BUILDING 282  
EXISTING CONDITIONS PLAN, SHEET 4

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

FEDERAL PROJECT NO. 15140005

SHEET 9 OF 42

G-09

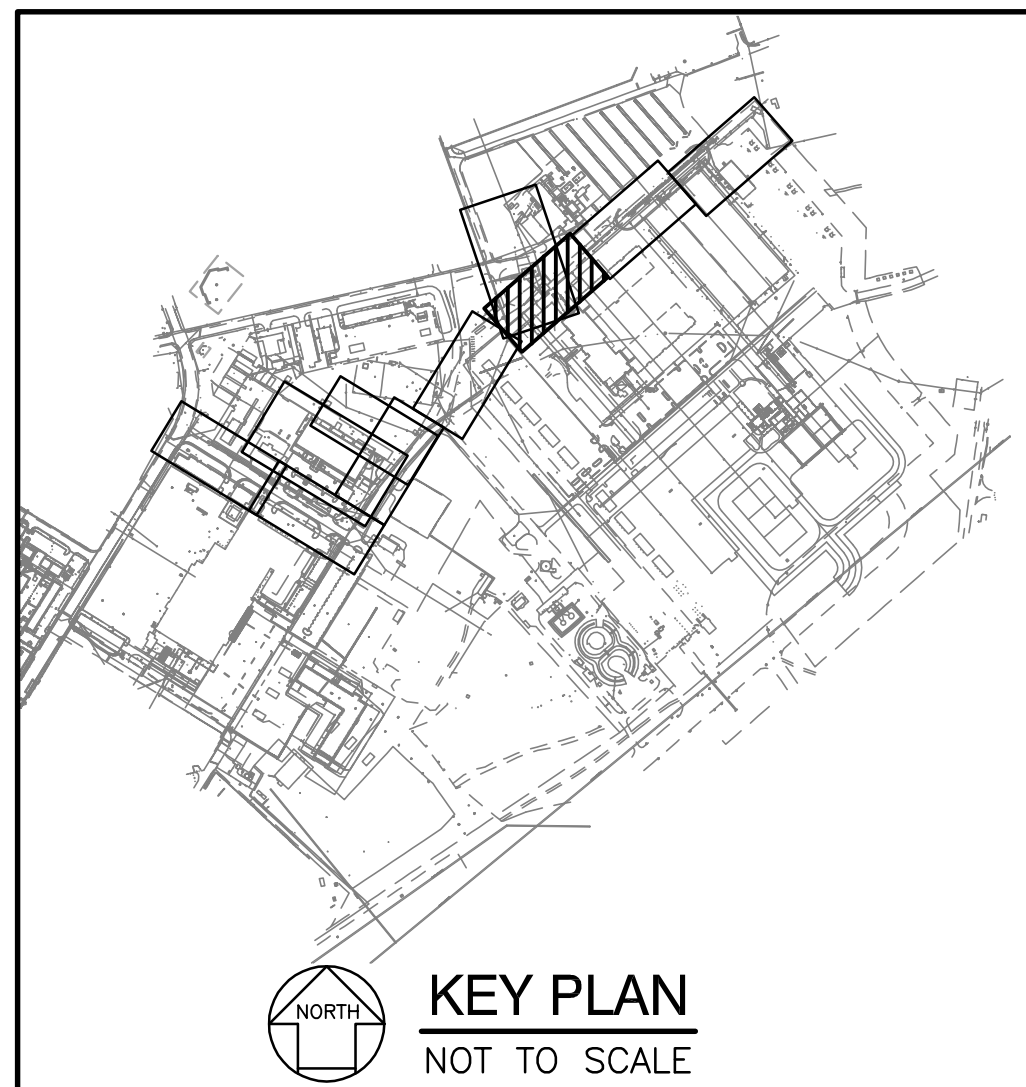
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NOTE:  
SEE GENERAL NOTE 3  
ON SHEET G-03.

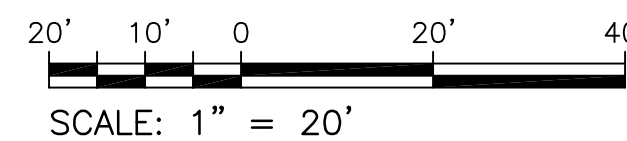
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SCALE: 1" = 20'



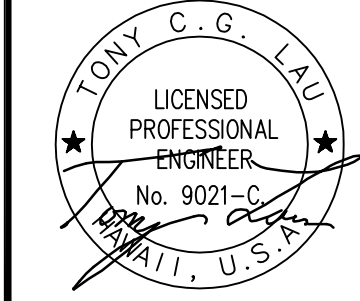
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DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

HAWAII

KALAELOA (KAPOLEI), HAWAII

SEWER LINE -

WRIGHT STREET TO BUILDING 282

EXISTING CONDITIONS PLAN, SHEET 5

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

HIARNG KALAELOA

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

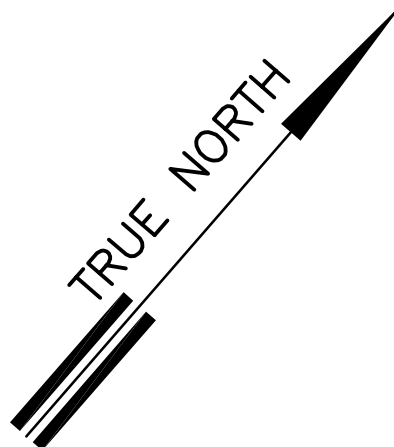
FEDERAL PROJECT NO. 15140005

SHEET 10 OF 42

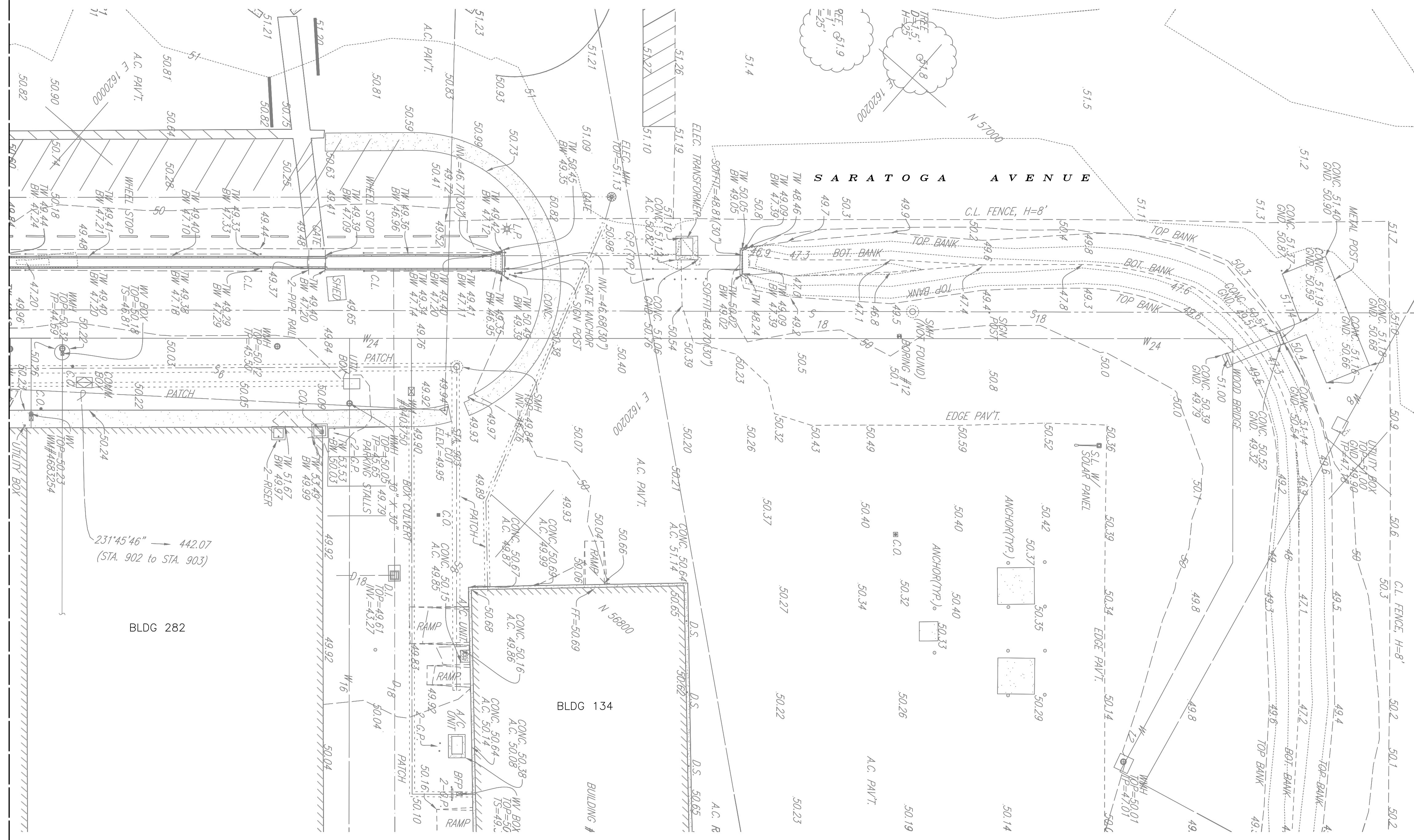
G-10



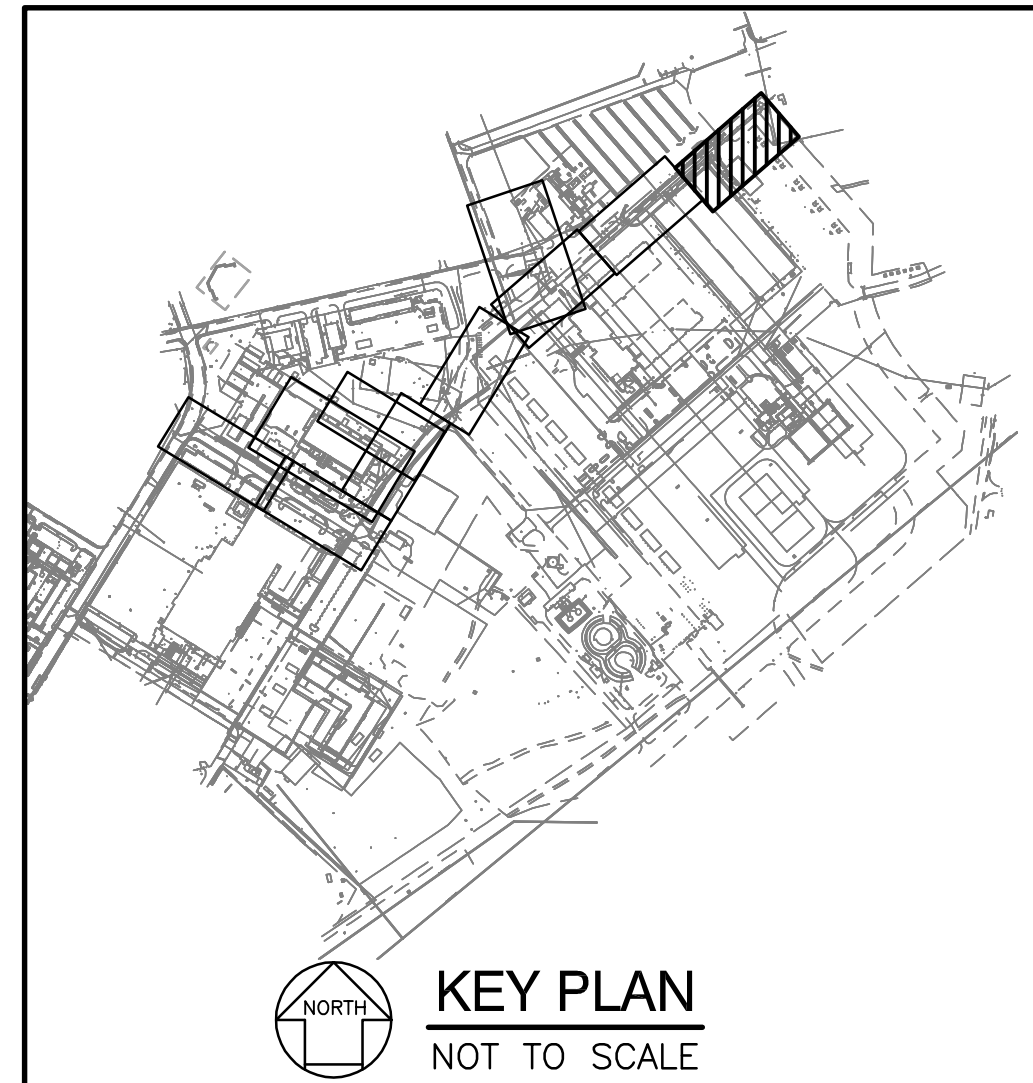




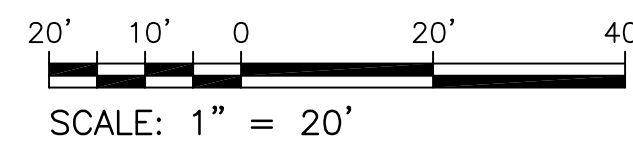
MATCH LINE  
SEE SHEET G-11



**EXISTING CONDITIONS PLAN**  
SCALE: 1" = 20'

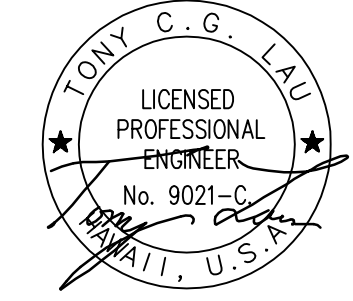


GRAPHIC SCALE:



**HDR**

A/E INFO



SEAL

NO.	DATE	APPROV.	DESCRIPTION	MS

SUBMITAL PHASE  
**BID FINAL**

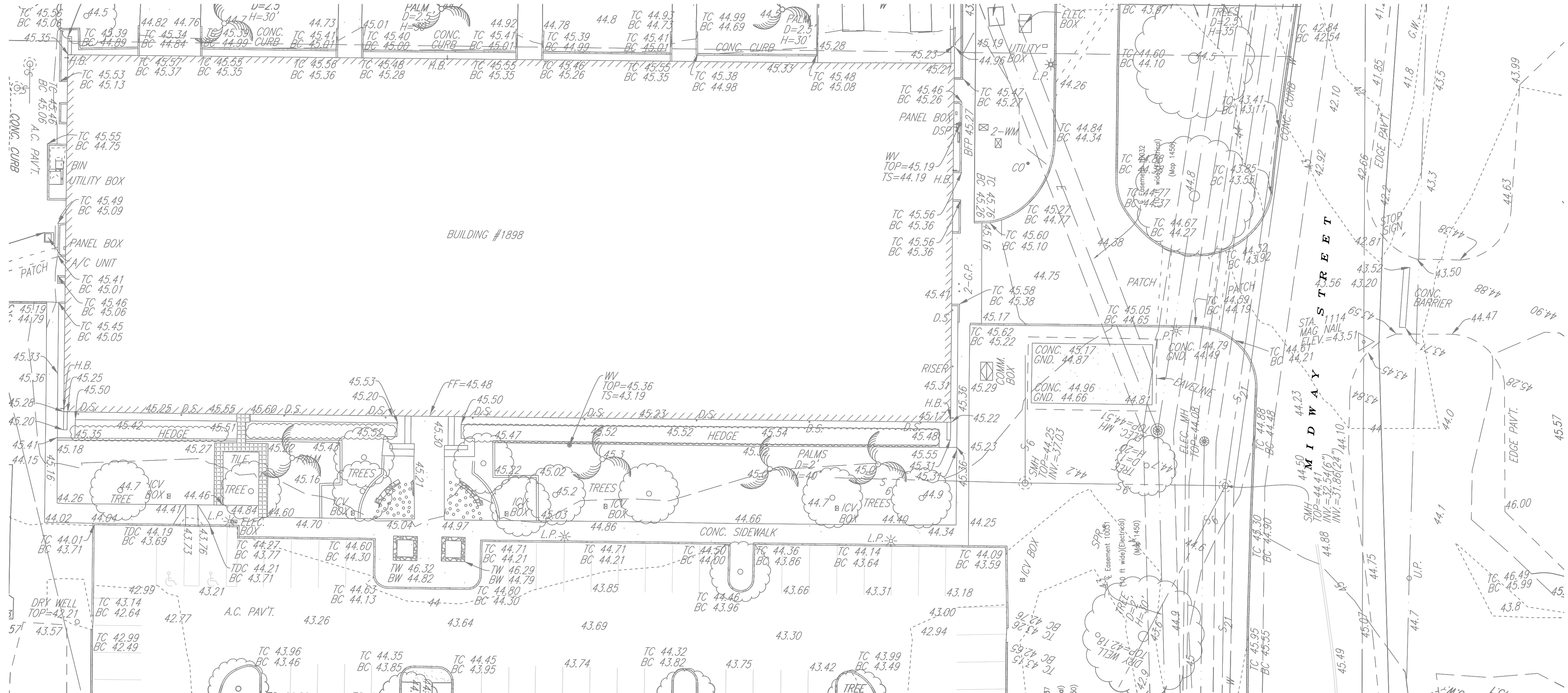
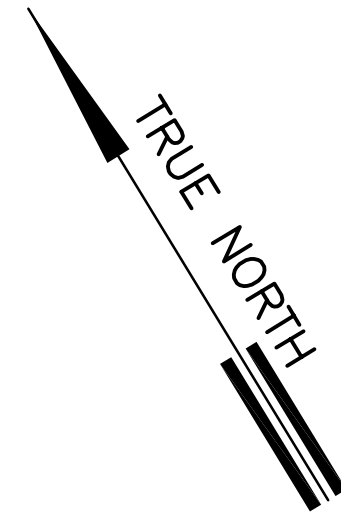
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STATE OF HAWAII FACILITY MANAGEMENT OFFICE HAWAII ARMY NATIONAL GUARD SITE UTILITIES REPLACEMENT	DEPARTMENT OF DEFENSE DESIGN AND PROJECT MANAGEMENT BRANCH KALAELOA (KAPOLEI), HAWAII	SEWER LINE - WRIGHT STREET TO BUILDING 282 EXISTING CONDITIONS PLAN, SHEET 7
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SCALE:	AS NOTED
STATE JOB NO.	CA-1220-C
FEDERAL PROJECT NO.	15140005
SHEET	12 OF 42
<b>G-12</b>	

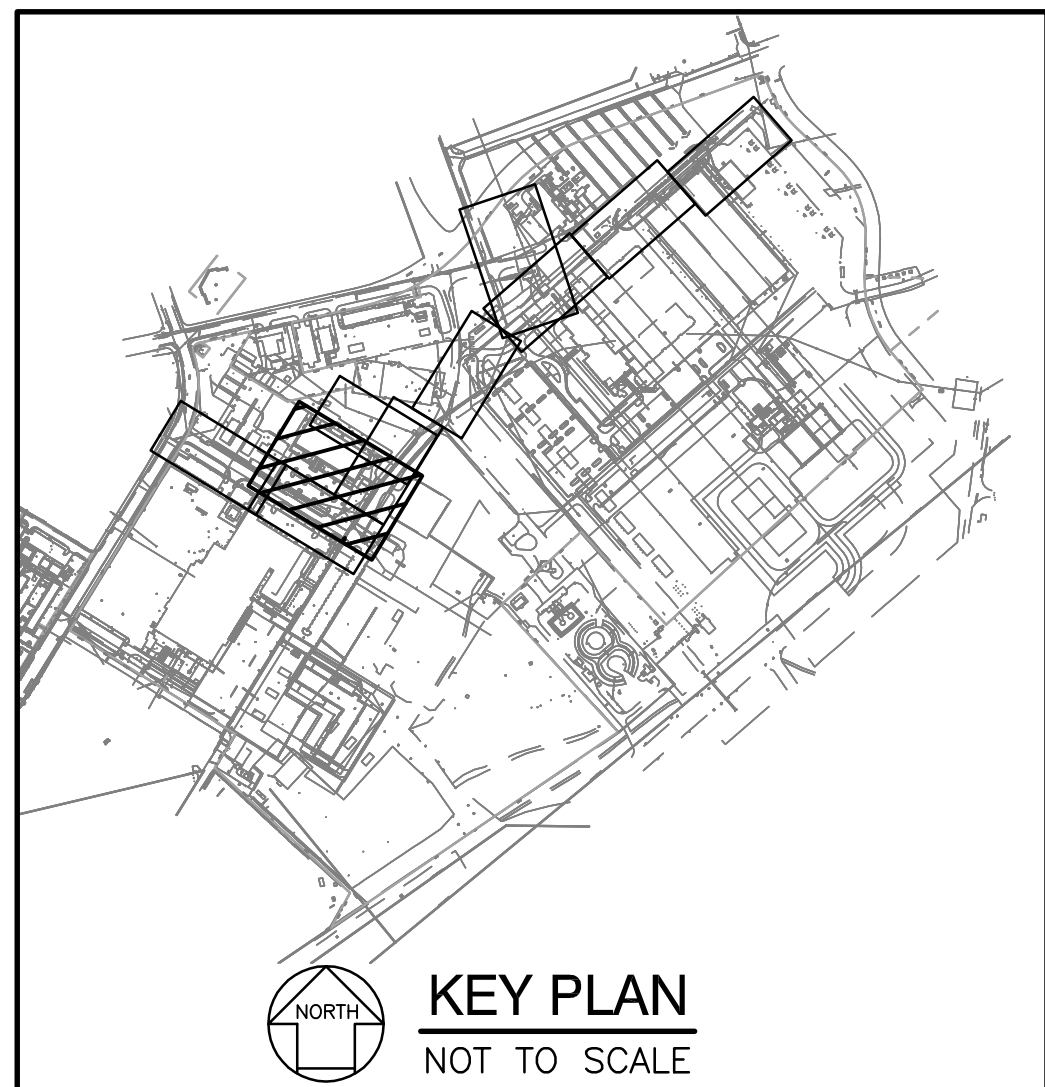


2012020-012A  
FILE: REV: 02/25/14

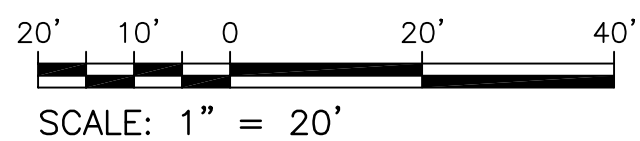


**EXISTING CONDITION PLAN**

SCALE: 1" = 20'

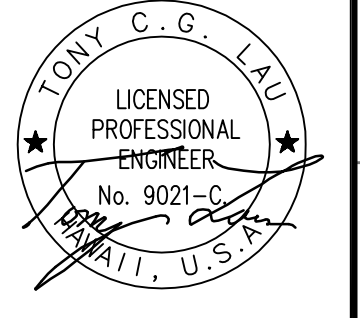


**GRAPHIC SCALE:**



**HDR**

A/E INFO



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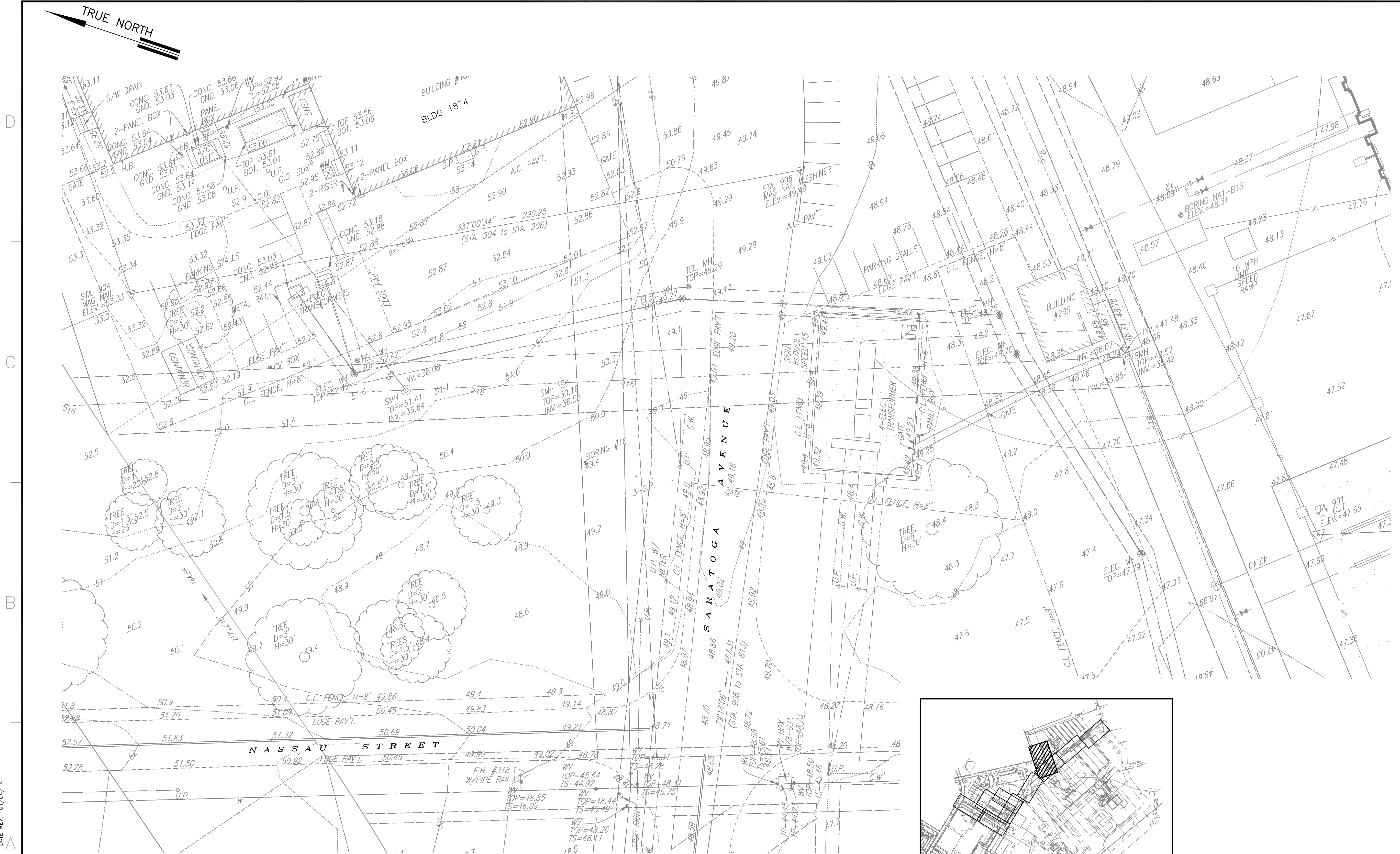
DATE

DESCRIPTION

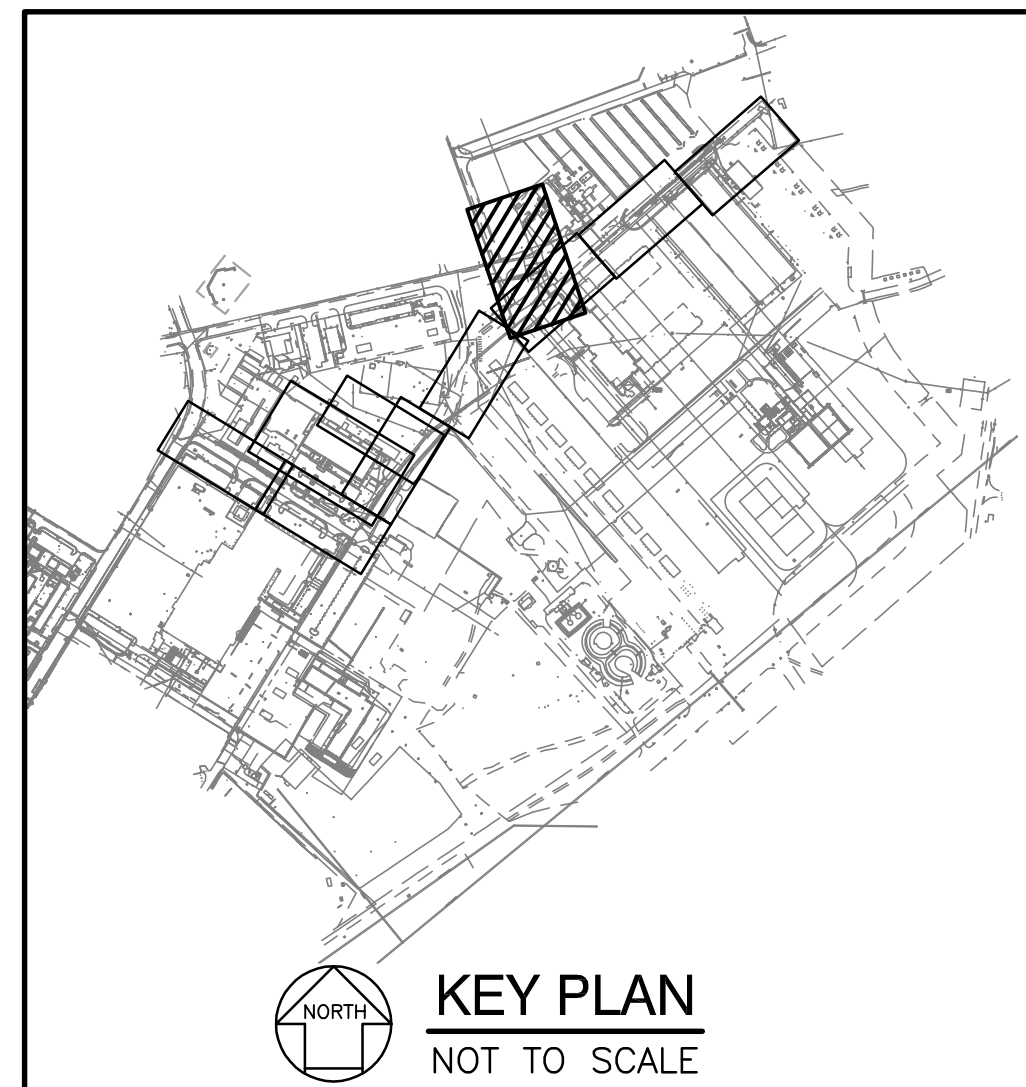
FILE: 2012020-013  
DATE REV.: 01/04/14



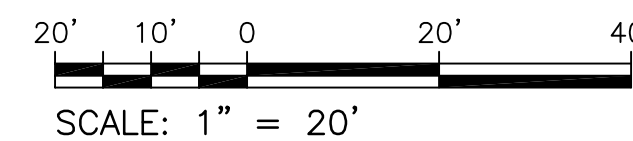
FILE: 201202-014  
DATE REV.: 01/04/14



**EXISTING CONDITIONS PLAN**  
SCALE: 1" = 20'



**GRAPHIC SCALE:**



**HDR**

AVE INFO



SEAL

APPR

DATE

DESCRIPTION

SW

PHASE

BID FINAL

SUBMITAL DATE 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HIARNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

EXISTING CONDITIONS PLAN, SHEET 10

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

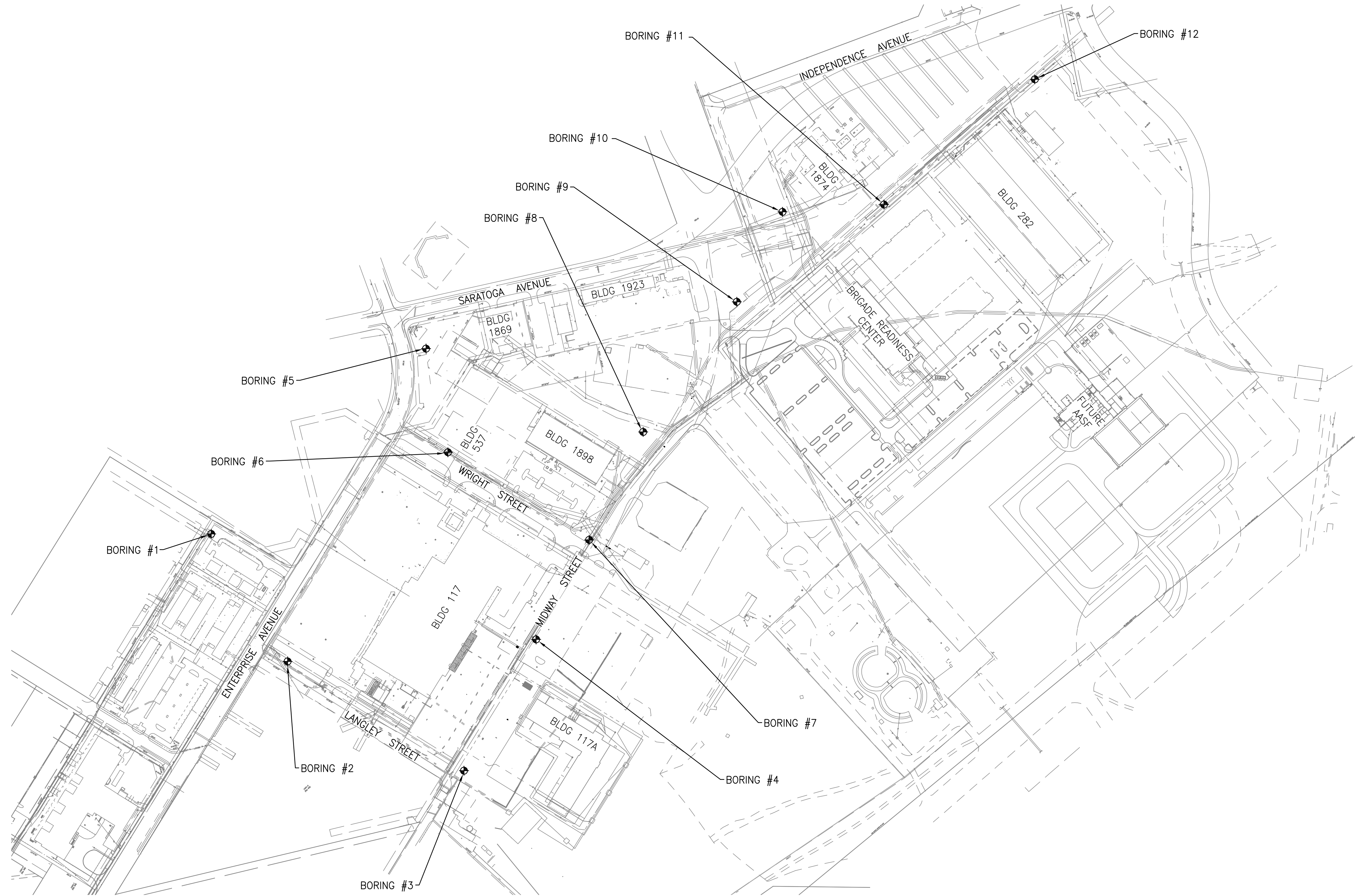
FEDERAL PROJECT NO. 15140005

SHEET 15 OF 42

**G-15**

FILE: 2012020-035  
DATE REV.: 01/04/14

TRUE NORTH



**NOTE:**

1. SEE 20-SCALE PLAN SHEETS FOR MORE DETAILED LOCATION OF BORINGS.

**GENERAL BORING LOCATION PLAN**

SCALE: 1" = 200'

**GRAPHIC SCALE:**

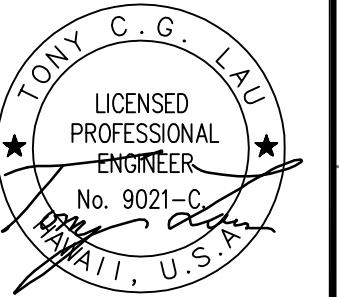


SCALE: 1" = 200'



**HDR**

A/E INFO



SEAL

APPR

DATE

DESCRIPTION

SYM

SUBMITAL PHASE

BID FINAL

SUBMITAL DATE 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE  
HAWAII ARMY NATIONAL GUARD  
SITE UTILITIES REPLACEMENT

DESIGN AND PROJECT MANAGEMENT BRANCH  
KALAELOA (KAPOLEI), HAWAII

STATE OF HAWAII  
FACILITY MANAGEMENT OFFICE  
HIARNG KALAELOA

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

FEDERAL PROJECT NO. 15140005

SHEET 16 OF 42

**G-16**



### BORING LOGS LEGEND:

- - 3.3-inch outside diameter split-barrel sampler
- ☒ - Disturbed sample (3.3-inch O.D.)
- - Sample lost during extraction
- - 2-inch outside diameter Standard Penetration Test split-spoon sampler

- └ - Core run
- └ - Piston sample

DRIVING ENERGY: 140-lb. dropping 30 inches

### NOTES:

The logs of borings indicate the subsurface and groundwater conditions encountered only at the locations where the borings were drilled and at the times designated on the logs, and may not represent conditions at other locations or at other times. Subsurface and groundwater conditions may differ from the logs due to the passage of time, improvements constructed at the site, changes in surface drainage and irrigation patterns, and other changes.

The boring logs are furnished for the convenience of the bidder. No assurance is given that the subsurface or groundwater conditions shown on the boring logs are representative of the conditions to be encountered during construction. The bidder is solely responsible for all assumptions, deductions, or conclusions which he may make or derive from his examination of the subsurface information and data furnished herein.

The blow counts for 3.3-inch (84 mm) diameter split barrel sampler represent actual blow counts for the last 12 inches of penetration and have not been converted to equivalent SPT-N values.

### CALCAREOUS ROCK CLASSIFICATION SYSTEM FOR HAWAII

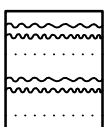
#### BASIC TYPES OF CALCAREOUS ROCK



TYPE I

#### REEF ROCK

Composed largely of algal coral and/or skeletal coral in their growth positions. Algal coral is formed by calcareous algae that remove calcium carbonate from the water and secrete or deposit it throughout the thallus (plant body). Skeletal coral is formed by polyps having external skeletons composed of calcium carbonate. The skeletons join to form a structural framework. Coralline and other calcareous detritus commonly fill the framework interstices of the skeletal coral or fall onto the surface of the calcareous algae, becoming incorporated into the algal coral.



TYPE II

#### SECONDARY ROCK

Composed essentially of cemented fragments or coralline skeletons and/or calcareous shells. Cementation is believed to occur primarily after accretion is completed and the marine deposit begins to emerge above sea level. The common types of secondary rock are listed below.

1. **Conglomerate**- Cemented, non-uniform sand-and gravel- size particles of cemented coralline skeletons and/or calcareous shell. The skeletons and shells are originally deposited in near-shore waters. The cementing agent is calcium carbonate precipitated primarily from percolating ground water.
2. **Shell Rock**- Cemented shells and shell fragments that have accumulated in protected shallow sea water. The shells are often cemented in a clay-and silt-size matrix. Cementation develops from calcium carbonate deposited by ground water.
3. **Dune Rock**- Cemented dune sand. The cementing agent is generally calcium carbonate precipitated from percolating ground water. Dune rock generally has a relatively low density because the constituent sand grains are loosely packed and often poorly cemented.



TYPE III

#### CHALK

Poorly cemented mass of calcareous clay-and silt-size particles, believed to be precipitated from shallow sea water and associated with near-shore environments.

\*The term coralline is used to indicate coral and/or other calcium compound secreting organisms.

### Rock Description System

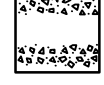
#### GRAPHIC SYMBOLS



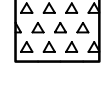
Basalt



Clinker



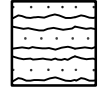
Tuff



Breccia



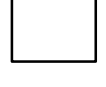
Coral (Type I)



Coral (Type II)



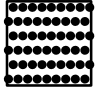
Coral (Type III)



Void / Cavity



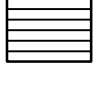
Conglomerate



Sandstone



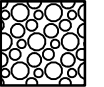
Siltstone



Claystone



Boulders



Cobbles

#### A. DEGREE OF WEATHERING

The following terms describe the chemical weathering of a rock:

**Fresh:** No visible sign of decomposition or discoloration. Rings under hammer impact.

**Slightly Weathered:** Slight discoloration inwards from open fractures, otherwise similar to Fresh.

**Moderately Weathered:** Discoloration throughout. Weaker minerals such as feldspar decomposed. Strength somewhat less than fresh rock but cores cannot be broken by hand or scraped by knife. Texture preserved.

**Highly Weathered:** Most minerals somewhat decomposed. Specimens can be broken by hand with effort or shaved with knife. Core stones present in rock mass. Texture becoming indistinct but fabric preserved.

**Completely Weathered:** Minerals decomposed to soil but fabric and structure preserved (Saprolite). Specimens easily crumbled or penetrated.

**Residual Soil:** Advanced state of decomposition resulting in plastic soils. Rock fabric and structure completely destroyed. Large volume change relative to fresh rock.

#### B. HARDNESS

The following terms describe the resistance of a rock to indentation or scratching:

**Very Soft:** Can be peeled with a knife, material crumbles under firm blows with the sharp end of a geologic pick.

**Soft:** Can just be scraped with a knife, indentations of 2 to 4 mm with firm blows of the pick point.

**Medium Hard:** Cannot be scraped or peeled with a knife but can be scratched with knife point. Hand held specimen breaks with firm blows of the pick.

**Hard:** Difficult to scratch with knife point, cannot break hand held specimen.

**Very Hard:** Cannot be scratched with pocket knife.

#### C. ROCK FRACTURE CHARACTERISTICS

The following terms describe general fracture spacing of a rock:

**Crushed:** Less than 5 microns (mechanical clay) to 0.05 foot.

**Intensely Fractured:** 0.05 to 0.1 foot (contains no clay).

**Highly Fractured:** 0.1 to 0.5 feet.

**Moderately Fractured:** 0.5 to 1.0 feet

**Occasionally Fractured:** 1.0 to 3.0 feet

**Slightly Fractured:** Greater than 3.0 feet.

### UNIFIED SOIL CLASSIFICATION SYSTEM – (ASTM D2487)

MAJOR DIVISIONS			LETTER SYMBOL	GRAPHIC SYMBOL	GROUP NAMES
COARSE-GRAINED SOILS  MORE THAN 50% RETAINED ON NO. 200 SIEVE	GRAVELS  MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS LESS THAN 5% FINES	GW		WELL-GRADED GRAVEL, WELL-GRADED GRAVEL WITH SAND
			GP		POORLY GRADED GRAVEL, POORLY GRADED GRAVEL WITH SAND
		GRAVELS WITH MORE THAN 12% FINES	GM		SILTY GRAVEL, SILTY GRAVEL WITH SAND
			GC		CLAYEY GRAVEL, CLAYEY GRAVEL WITH SAND
	SANDS  50% OR MORE OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND LESS THAN 5% FINES	SW		WELL-GRADED SAND, WELL-GRADED SAND WITH GRAVEL
			SP		POORLY GRADED SAND, POORLY GRADED SAND WITH GRAVEL
FINE-GRAINED SOILS  50% OR MORE PASSES NO. 200 SIEVE	SILTS AND CLAYS  LIQUID LIMIT LESS THAN 50	SANDS WITH MORE THAN 12% FINES	SM		SILTY SAND, SILTY SAND WITH GRAVEL
			SC		CLAYEY SAND, CLAYEY SAND WITH GRAVEL
		SILTS AND CLAYS  LIQUID LIMIT 50 OR MORE	ML		SILT, SILT WITH SAND OR GRAVEL, SANDY OR GRAVELLY SILT
	CL			LEAN CLAY, LEAN CLAY WITH SAND OR GRAVEL, SANDY OR GRAVELLY LEAN CLAY	
	OL			ORGANIC SILT OR CLAY, ORGANIC SILT OR CLAY WITH SAND OR GRAVEL, SANDY OR GRAVELLY ORGANIC SILT OR CLAY	
	MH			ELASTIC SILT, ELASTIC SILT WITH SAND OR GRAVEL, SANDY OR GRAVELLY ELASTIC SILT	
HIGHLY ORGANIC SOILS			CH		FAT CLAY, FAT CLAY WITH SAND OR GRAVEL, SANDY OR GRAVELLY FAT CLAY
			OH		ORGANIC SILT OR CLAY, ORGANIC SILT OR CLAY WITH SAND OR GRAVEL, SANDY OR GRAVELLY ORGANIC SILT OR CLAY
HIGHLY ORGANIC SOILS			PT		PEAT

NOTE:  
DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE CLASSIFICATIONS.  
REFER TO ASTM D2487 FOR BORDERLINE CLASSIFICATIONS GW-GM,  
GW-GC, GP-GM, GP-GC, SW-SM, SW-SC, SP-SM, AND SP-SC.

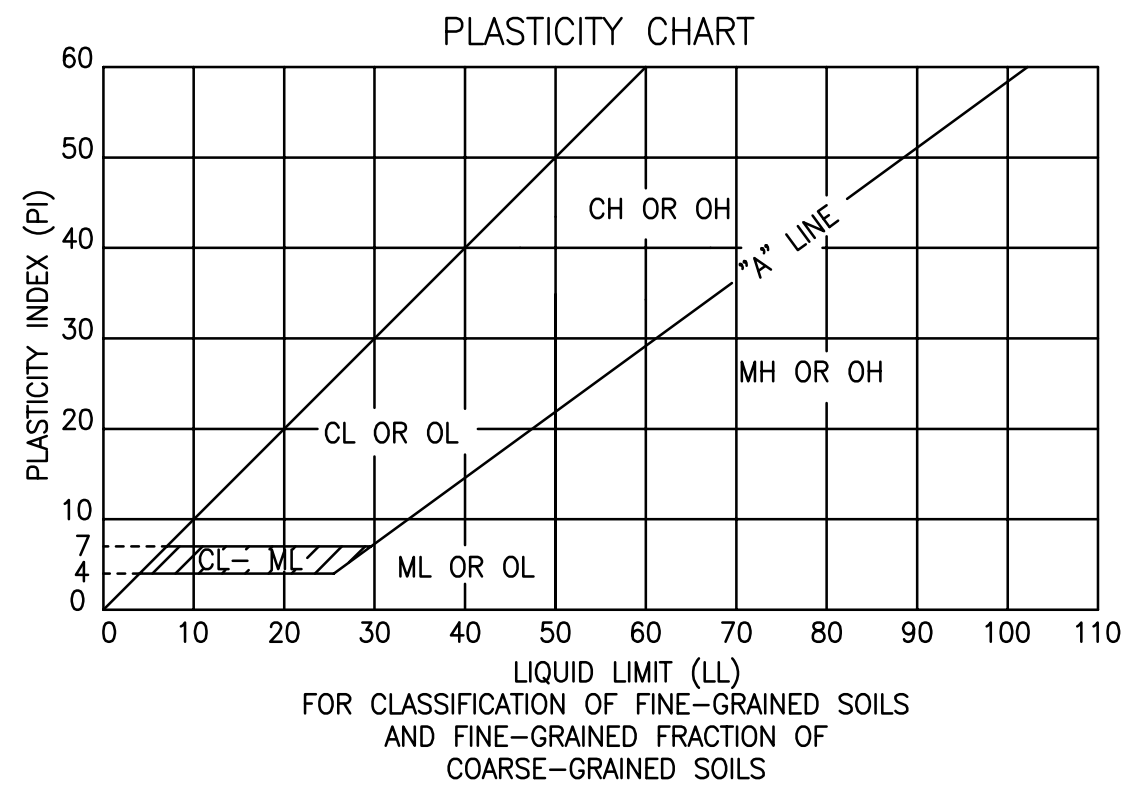
### UNIFIED SOIL CLASSIFICATION SYSTEM (SHEET 1 OF 2)

#### GRADATION CHART

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE **	MILLIMETERS	SIEVE SIZE **
SAND				
FINE	0.075	#200 **	0.425	#40 **
MEDIUM	0.425	#40 **	2.00	#10 **
COARSE	2.00	#10 **	4.75	#4 **
GRAVEL				
FINE	4.75	#4 **	19.0	3/4" *
COARSE	19.0	3/4" *	75.0	3" *
COBBLES	75.0	3" *	300	12" *
BOULDERS	300	12" *	---	---

\*\* U.S. STANDARD SIEVE

\* SQUARE OPENINGS



NOTE:  
WHEN SHOWN ON THE BORING LOGS, THE FOLLOWING TERMS ARE USED TO DESCRIBE THE CONSISTENCY OF FINE-GRAINED SOILS AND COARSE-GRAINED SOILS.

FINE-GRAINED SOILS		COARSE-GRAINED SOILS	
APPROXIMATE SHEAR STRENGTH IN KSF		THESE ARE USUALLY BASED ON AN EXAMINATION OF SOIL SAMPLES, AND PENETRATION RESISTANCE.	
VERY SOFT	LESS THAN 0.25	VERY LOOSE	
SOFT	0.25 TO 0.5	LOOSE	
MEDIUM STIFF	0.5 TO 1.0	MEDIUM DENSE	
STIFF	1.0 TO 2.0	DENSE	
VERY STIFF	2.0 TO 4.0	VERY DENSE	
HARD	GREATER THAN 4.0		

### UNIFIED SOIL CLASSIFICATION SYSTEM (SHEET 2 OF 2)



A/E INFO



SEAL

APPR

DATE

DESCRIPTION

SYM

SUBMITAL PHASE

BID FINAL

SUBMITAL DATE 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE

SITE UTILITIES REPLACEMENT

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HIARNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

BORING LOGS, LEGEND AND NOTES

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

SCALE: AS NOTED

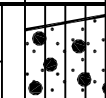
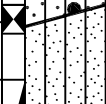

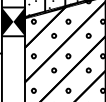

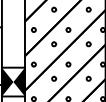
STATE JOB NO. CA-1220-C

FEDERAL PROJECT NO. 15140005

SHEET 17 OF 42

G-17

Project <u>Hawaii Army National Guard, Site Utilities Replacement</u>	Job No. <u>3771-140</u>	BORING B-1 (Page 1 of 1)
Location <u>Kalaheo (Kapalei), Hawaii</u>	Drawn By <u>LML</u>	
Date Started <u>2/7/2013</u>	Date Ended <u>2/7/2013</u>	
Drilling Method <u>4-inch Augers, Rotary Wash</u>	Drilling Equipment <u>SIMCO 2400 SK-1</u>	
Logged By <u>L. Oshiro</u>	Water Level (depth) <u>Not Encountered</u>	
		Surface Elevation <u>+44.0</u> ± feet
		Datum <u>Mean Sea Level</u>
		Northing <u>55308.60 ft (NAD83, Zone 3)</u>
		Easting <u>1617314.86 ft (NAD83, Zone 3)</u>

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)	Drill Rate min/ft						
11	93							86				ML GM	Reddish brown silt, moist (fill) Brown and white silty coralline gravel, medium dense, with coralline sand, moist (fill)
22								21	4			SM	White silty coralline sand, dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
17	91	35	8					40				SC	Light brown to white clayey coralline sand, medium dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
13								27	8				
11	100							27					
8									12				grades white
Boring completed at 15.5 feet on 2/7/2013.													
Ground water not encountered.													

Project Hawaii Army National Guard, Site Utilities Replacement Job No. 3771-140  
 Location Kalaheo (Kapele), Hawaii Drawn By LML  
 Date Started 2/13/2013 Date Ended 2/13/2013  
 Drilling Method 4-inch Augers, Rotary Wash Drilling Equipment SIMCO 2400 SK-1  
 Logged By L. Oshiro Water Level (depth) Not Encountered

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RDD (%)	Drill Rate min/ft						
22	74							124/5"					SURFACE
													AC 2 inches asphaltic concrete
													GW Reddish brown well-graded basaltic gravel, with silt and basaltic sand, moist (fill)
													GM Grayish brown silty basaltic gravel, with basaltic sand, moist (fill)
													GC Light brown to white clayey coralline gravel, very dense, weakly cemented, moist (coral reef deposit)
27								21	4				SC Light brown to white clayey coralline sand, medium dense, locally weakly cemented, moist (coral reef deposit)
21	98							25					grades white and loose
15								14	8				grades medium dense
16	86							21					grades loose
									12				
7								57					grades very dense

Boring completed at 15.0 feet on 2/13/2013.

Ground water not encountered.

Project Hawaii Army Medical Center, Site Utilities Replacement Job No. 3771-140  
 Location Kaialoa (Kapolei), Hawaii Drawn By LML  
 Date Started 2/13/2013 Date Ended 2/13/2013  
 Drilling Method 4-inch Augers, Rotary Wash Drilling Equipment SIMCO 2400 SK-1  
 Logged By L. Oshiro Water Level (depth) Not Encountered

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description	
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RDD (%)	Drill Rate min/ft							
7								28					SURFACE	
												AC	4 inches of asphaltic concrete	
												GM	Grayish brown to dark brown silty basaltic gravel, medium dense, with basaltic sand, moist (fill)	
												GM	Light brown and white silty coralline gravel, medium dense, with coralline sand, moist (fill)	
15	85	73	36					27	4			GC	Dark brown silty tuffaceous gravel, medium dense, with tuffaceous sand, moist (fill)	
												SP	Light brown to white clayey coralline gravel, medium dense, weakly cemented, moist (fill)	
20								40				MH	Light brown poorly graded coralline sand, medium dense, moist (fill)	
	106							70/4"	8			SC	Dark yellowish brown elastic silt, stiff, moist (alluvium) - grades mottled yellowish brown and white, hard and locally weakly cemented	
16								30/3"						Mottled light grayish brown and yellowish brown clayey coralline sand, very dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit) - grades light brown to white
									12			GC	White clayey coralline gravel, medium dense, with coralline sand, moist (coral reef deposit)	
13	93							26						

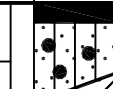


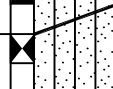


Boring completed at 15.5 feet on 2/13/2013.

Ground water not encountered.

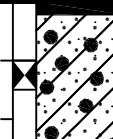
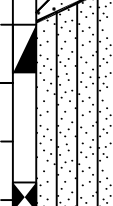
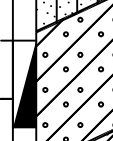
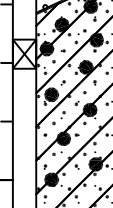
Project <u>Hawaii Army National Guard, Site Utilities Replacement</u>	Job No. <u>3771-140</u>	BORING B-5 (Page 1 of 1)
Location <u>Kaialoa (Kapolei), Hawaii</u>	Drawn By <u>LML</u>	
Date Started <u>2/7/2013</u>	Date Ended <u>2/7/2013</u>	
Drilling Method <u>4-inch Augers, Rotary Wash</u>	Drilling Equipment <u>SIMCO 2400 SK-1</u>	
Logged By <u>L. Oshiro</u>	Water Level (depth) <u>Not Encountered</u>	
		Surface Elevation <u>+46.2</u> ± feet
		Datum <u>Mean Sea Level</u>
		Northing <u>55669.86 ft (NAD83, Zone 3)</u>
		Easting <u>1618081.52 ft (NAD83, Zone 3)</u>

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)	Drill Rate min/ft						
3								30				ML	Reddish brown silt, very stiff, moist (fill)
								98	4			SC	White clayey coralline sand, medium dense to dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
6								14					grades dense
8	94							12					grades medium dense
16								4	8				grades light reddish brown
													grades white and loose
													grades very loose to loose
								12				GC	White clayey coralline gravel, medium dense, locally weakly cemented, with coralline sand, moist (coral reef deposit)
13	85							27					
Boring completed at 15.5 feet on 2/7/2013.													
Ground water not encountered.													

Project Hawaii Army National Guard, Site Utilities Replacement Job No. 3771-140  
 Location Kalaheo (Kapolei), Hawaii Drawn By LML  
 Date Started 2/13/2013 Date Ended 2/13/2013  
 Drilling Method 4-inch Augers, Rotary Wash Drilling Equipment SIMCO 2400 SK-1  
 Logged By L. Oshiro Water Level (depth) Not Encountered

Lab Data				Core Info			Blows/ft	Depth (ft)	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)					
9	102							56/4"		AC GM SC	4 inches of asphaltic concrete Grayish brown silty basaltic gravel, very dense, with basaltic sand, moist (fill) White and brown clayey coralline sand, very dense, weakly cemented, with coralline gravel, moist (coral reef deposit)
8								58		SM	Light yellow to white silty coralline sand, very dense, weakly cemented, moist (coral reef deposit)
10	100							84/6"		SM	Light brown to white silty coralline sand, very dense, locally weakly to moderately cemented, with coralline gravel, moist (coral reef deposit)
		0	NP					52			grades white and locally weakly cemented
4								58/6"		GM	White silty coralline gravel, very dense, locally weakly cemented, with coralline sand, moist (coral reef deposit)
8								36			grades dense
Boring completed at 15.5 feet on 2/13/2013.											
Ground water not encountered.											

Project Hawaii Army National Guard, Site Utilities Replacement Job No. 3771-140  
 Location Kalaheala (Kapolei), Hawaii Drawn By LML  
 Date Started 2/7/2013 Date Ended 2/7/2013  
 Drilling Method 4-inch Augers, Rotary Wash Drilling Equipment SIMCO 2400 SK-1  
 Logged By L. Oshiro Water Level (depth) Not Encountered

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)	Drill Rate min/ft						
												SURFACE	
13	101							70/3"				AC GC	2 inches of asphaltic concrete White clayey coralline gravel, very dense, locally weakly cemented, with coralline sand, moist (coral reef deposit)
12								53/4"	4			SM	White silty coralline sand, very dense, with coralline gravel, moist (coral reef deposit)
12	94							58					grades medium dense
13								26	8			SC	White clayey coralline sand, medium dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
12	94	30	8					63/4"				GC	White clayey coralline gravel, very dense, locally weakly cemented, with coralline sand, moist (coral reef deposit)
16								48					grades dense
Boring completed at 15.5 feet on 2/7/2013.													
Ground water not encountered.													

[illegible]

SUBMITTAL PHASE					
BID FINAL					
SUBMITTAL DATE				03/12/14	
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STATE OF HAWAII	HAWAII ARMY NATIONAL GUARD	DEPARTMENT OF DEFENSE
FACILITY MANAGEMENT OFFICE	SITE UTILITIES REPLACEMENT	DESIGN AND PROJECT MANAGEMENT BRANCH
HIARNG KALAELAO	KALAELAO (KAPOLEI), HAWAII	

SCALE:	AS NOTED	
STATE JOB NO.	CA-1220-C	
FEDERAL PROJECT NO.	15140005	
SHEET	18	OF 42
G-18		



Project <u>Hawaii Army Medical Center, Site Utilities Replacement</u> Job No. <u>3771-140</u>										BORING B-10 (Page 1 of 1)	
Location <u>Kalaheo (Kapolei), Hawaii</u>										Surface Elevation <u>+49.6</u> ± feet	
Date Started <u>2/4/2013</u>										Datum <u>Mean Sea Level</u>	
Drilling Method <u>4-inch Augers, Rotary Wash</u>										Northing <u>56458.07 ft (NAD83, Zone 3)</u>	
Logged By <u>L. Oshiro</u>										Easting <u>1619353.66 ft (NAD83, Zone 3)</u>	
Drilling Equipment <u>SIMCO 2400 SK-1</u>											
Water Level (depth) <u>Not Encountered</u>											

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)	Drill Rate min/ft						
11	76							69 3/4"				SM ML	SURFACE Brown silty coralline sand, moist (fill) Brown silt, stiff, with coralline gravel, damp (alluvium)
								68 3/4"					White coral reef rock, soft, strongly cemented, highly fractured (Type I coral)
					NX	25	0		4			SM	White silty coralline sand, medium dense, with coralline gravel, moist (coral reef deposit)
10								21	8				
23	95							149				GM	Light brown silty coralline gravel, medium dense, with coralline sand, moist (coral reef deposit) grades light brown to white, very dense, locally weakly cemented, and with coralline sand
28								47	12				

Boring completed at 15.5 feet on 2/4/2013.

Ground water not encountered.

Project <u>Hawaii Army Medical National Guard, Site Utilities Replacement</u> Job No. <u>3771-140</u>										BORING B-11 (Page 1 of 1)	
Location <u>Kalaheala (Kapolei), Hawaii</u> Drawn By <u>LML</u>										Surface Elevation <u>+49.3</u> ± feet	
Date Started <u>2/4/2013</u> Date Ended <u>2/4/2013</u>										Datum <u>Mean Sea Level</u>	
Drilling Method <u>4-inch Augers, Rotary Wash</u> Drilling Equipment <u>SIMCO 2400 SK-1</u>										Northing <u>56484.20 ft (NAD83, Zone 3)</u>	
Logged By <u>L. Oshiro</u> Water Level (depth) <u>Not Encountered</u>										Easting <u>1619716.03 ft (NAD83, Zone 3)</u>	
Lab Data		Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)						
12	100							13/2"		AC	6 inches of asphaltic concrete
										GM	Light brown silty coralline gravel, medium dense, with coralline sand, moist (fill)
24								27/3"		SM	Light yellowish brown silty coralline gravel, very dense, locally weakly to moderately cemented, with coralline sand and grayish brown lean clay, moist (coral reef deposit)
5	108									GM	Light yellowish brown silty coralline sand, very dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
21								57			Light yellowish brown silty coralline gravel, medium dense, locally weakly cemented, with coralline sand, moist (coral reef deposit)
								68		SM	White silty coralline sand, very dense, locally weakly cemented, with coralline gravel, moist (coral reef deposit)
21	83							17/1"			Light brown to white silty coralline gravel, very dense, with coralline sand and cobbles, moist (coral reef deposit)
										SM	Light brown silty coralline sand, medium dense, with coralline gravel, moist (coral reef deposit)
18								24			
Boring completed at 15.5 feet on 2/4/2013.											
Ground water not encountered.											

Project <u>Hawaii Army National Guard, Site Utilities Replacement</u> Job No. <u>3771-140</u>										BORING B-12 (Page 1 of 1)	
Location <u>Kalaheo (Kapolei), Hawaii</u> Drawn By <u>LML</u>										Surface Elevation <u>+50.0</u> ± feet	
Date Started <u>2/4/2013</u> Date Ended <u>2/4/2013</u>										Datum <u>Mean Sea Level</u>	
Drilling Method <u>4-inch Augers, Rotary Wash</u> Drilling Equipment <u>SIMCO 2400 SK-1</u>										Northing <u>56931.11 ft (NAD83, Zone 3)</u>	
Logged By <u>L. Oshiro</u> Water Level (depth) <u>Not Encountered</u>										Easting <u>1620254.11 ft (NAD83, Zone 3)</u>	

Lab Data				Core Info				Blows/ft	Depth (ft)	Samples	Graphic Log	Soil Class	Description
Moisture Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	Core Type	Recovery (%)	RQD (%)	Drill Rate min/ft						
				NX	20	0		10/1"				SP-SM	SURFACE Light brown to white poorly graded coralline sand, with silt, moist (fill) Light brown to white coral reef rock, medium hard strongly cemented, highly fractured (Type I coral)
									4			GM	Light brown to white silty fine coralline gravel, medium dense, locally weakly cemented with coralline sand, moist (coral reef deposit)
20								14	8				grades loose
13								24				SM	White silty coralline sand, medium dense, locally weakly cemented, coarse, with coralline gravel, moist (coral reef deposit)
									12				
17	115							45					

Boring completed at 15.5 feet on 2/4/2013.

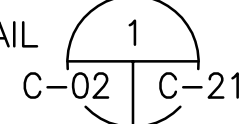
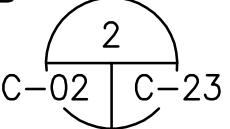
Ground water not encountered.



C-01

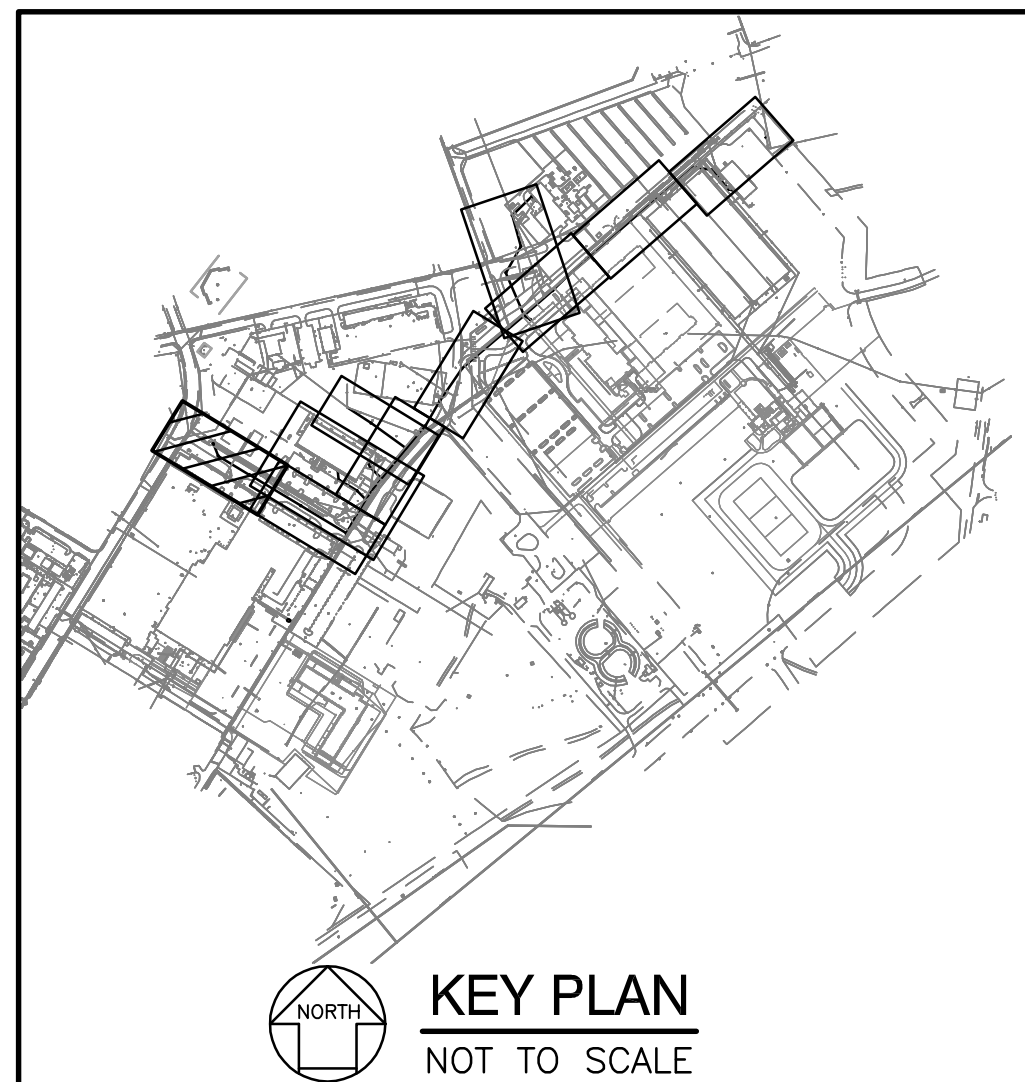


NOTES:

- FOR STANDARD SEWER MANHOLE, SEE DETAIL 
- FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL 
- REMOVE EXIST CHAIN LINK FENCE AND REINSTALL CHAIN LINK FENCE AS NECESSARY. SEE GENERAL NOTE 31 ON SHEET G-03.

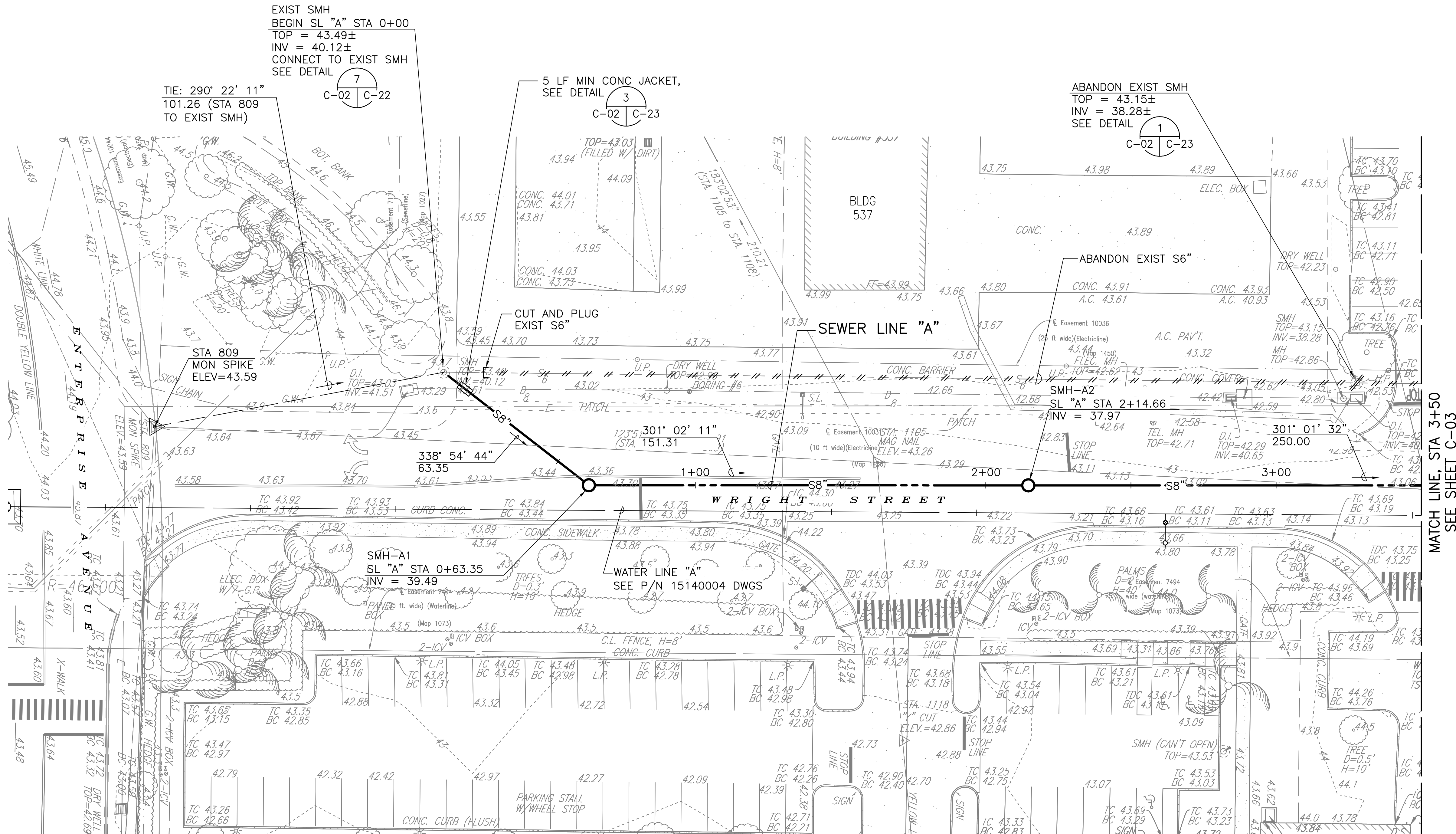
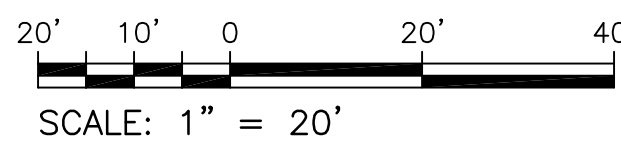
PLAN - SEWER LINE "A"

SCALE: 1" = 20'



KEY PLAN  
NOT TO SCALE

GRAPHIC SCALE:

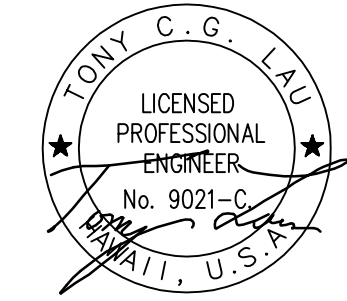


MATCH LINE, STA 3+50  
SEE SHEET C-03



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A/E INFO



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DEPARTMENT OF DEFENSE

HAWAII ARMY NATIONAL GUARD

SITE UTILITIES REPLACEMENT

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HIARNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

PLAN - SEWER LINE "A", BEGIN TO STA 3+50

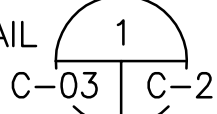
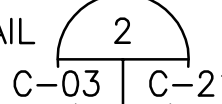
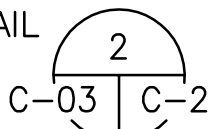
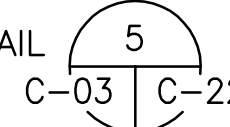
CA-1220-C

15140005

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C-02



1. FOR STANDARD SEWER MANHOLE, SEE DETAIL 
2. FOR SHALLOW DROP MANHOLE, SEE DETAIL 
3. FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL 
4. FOR CURB RESTORATION, SEE DETAIL 
5. CONTRACTOR TO VERIFY EXIST SEWER LINE SIZE.

KEY PLAN

NOT TO SCALE

20' 10' 0 20' 40'

SCALE: 1" = 20'

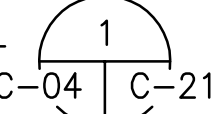
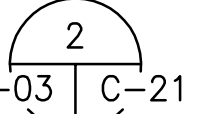
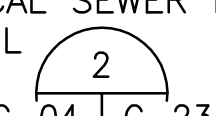
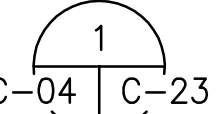


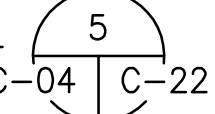


FILE: 2012020-18  
DATE REV: 01/05/14

A

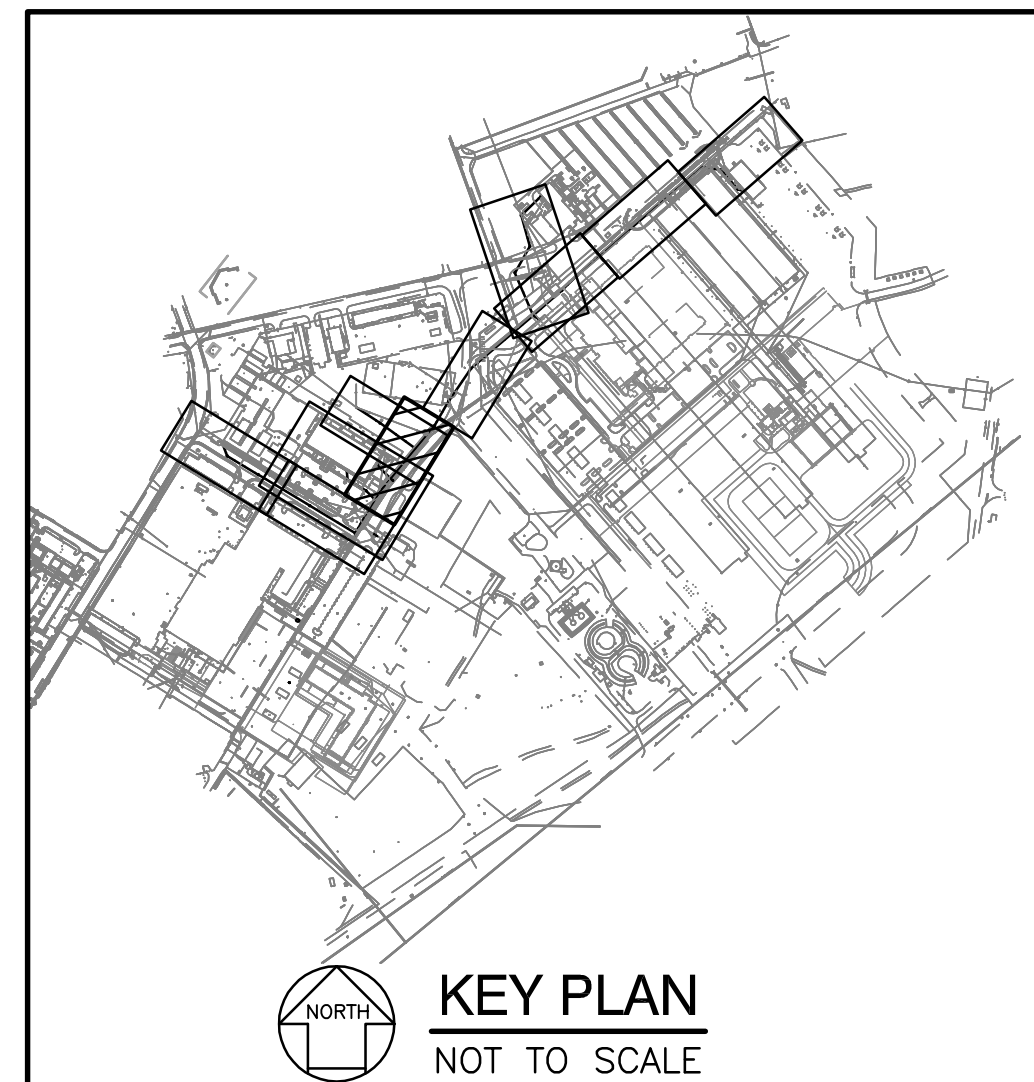
#### NOTES:

- FOR STANDARD SEWER MANHOLE, SEE DETAIL  C-04 C-21
- FOR SHALLOW DROP MANHOLE, SEE DETAIL  C-03 C-21
- FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL  C-04 C-23
- FOR EXISTING SEWER MANHOLE ABANDONMENT, SEE DETAIL  C-04 C-23

- FOR CURB RESTORATION, SEE DETAIL  C-04 C-22
- EXISTING SEWER LINE SHALL BE PLUGGED AND MANHOLE RECHANNELIZED AFTER SEWER LINE "B" HAS BEEN CONSTRUCTED.
- CONTRACTOR SHALL PROVIDE BYPASS AROUND EACH SEGMENT OF EXISTING SEWER LINE. SEE SEWER NOTE 1 AND 10 ON SHEET G-03.
- CONTRACTOR TO VERIFY EXIST SEWER LINE SIZE.

#### PLAN - SEWER LINE "B"

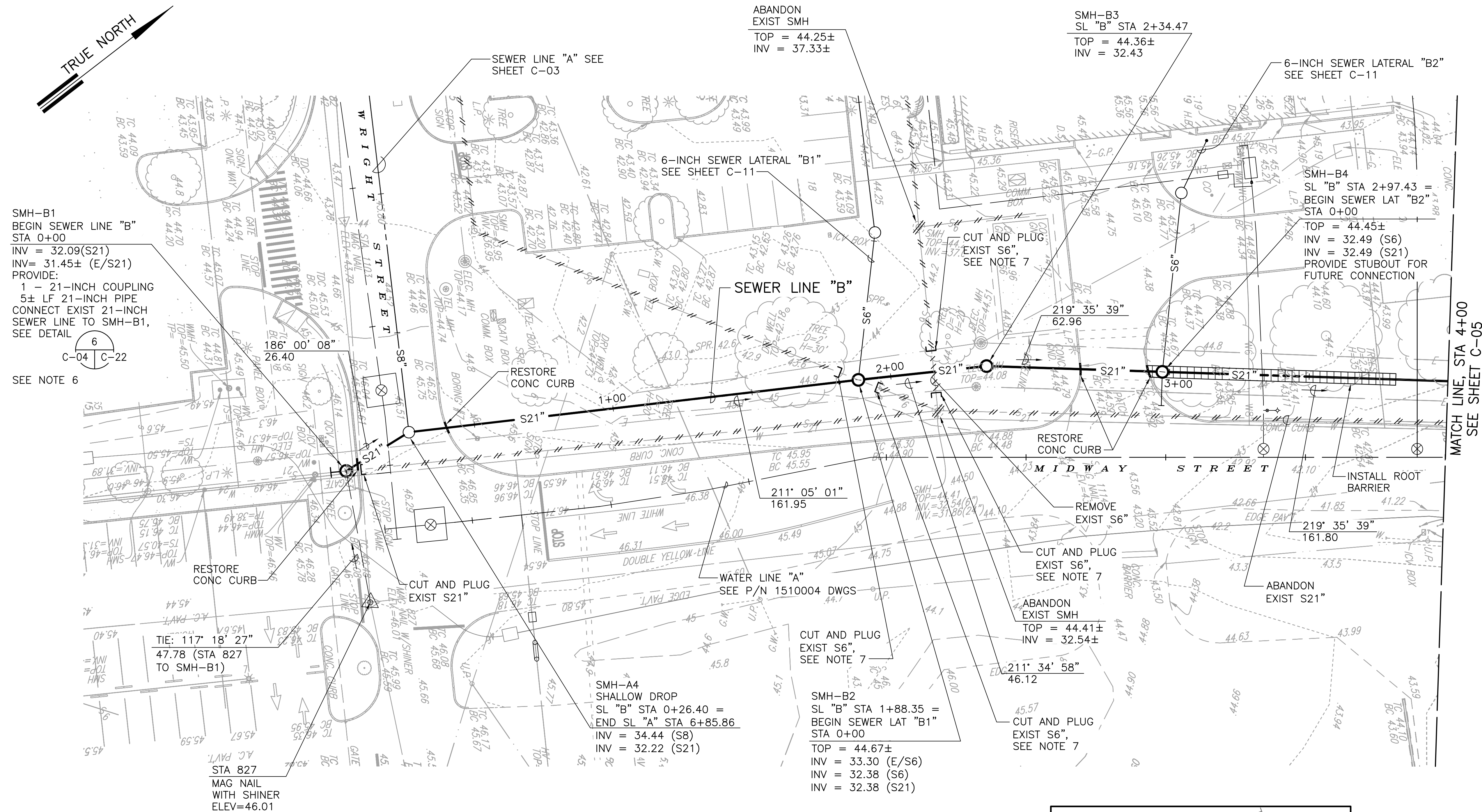
SCALE: 1" = 20'



KEY PLAN  
NOT TO SCALE

#### GRAPHIC SCALE:

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



HDR

A/E INFO



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SUBMITAL DATE 03/12/14

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DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HIARNG KALAELOA

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

HAWAII ARMY NATIONAL GUARD

SITE UTILITIES REPLACEMENT

SEWER LINE -

WRIGHT STREET TO BUILDING 282

PLAN - SEWER LINE "B", BEGIN TO STA 4+00

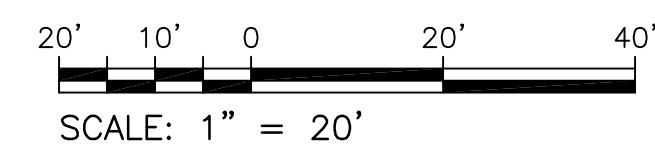
C-04

SHEET 23 OF 42

FEDERAL PROJECT NO. 15140005

STATE JOB NO. CA-1220-C

SCALE: AS NOTED



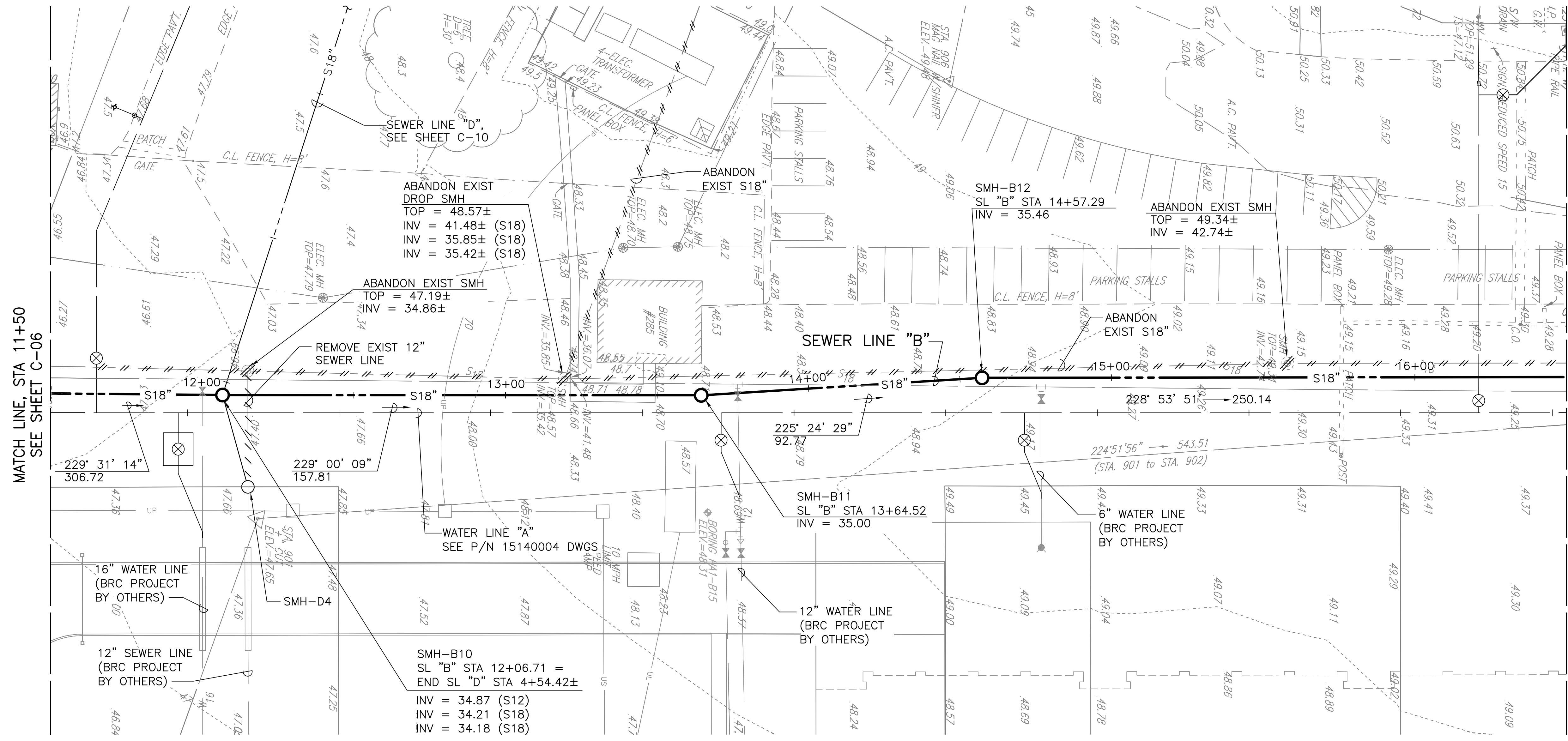
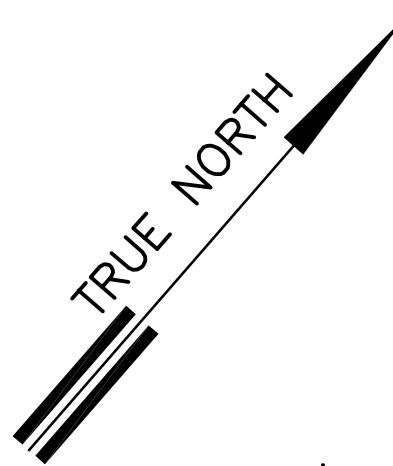




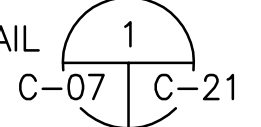
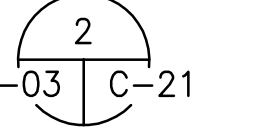
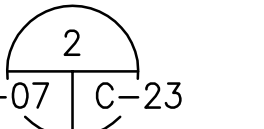
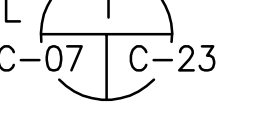
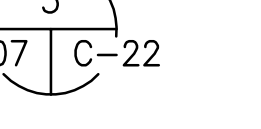
2012020-021  
FILE: DATE REV.: 07/05/14

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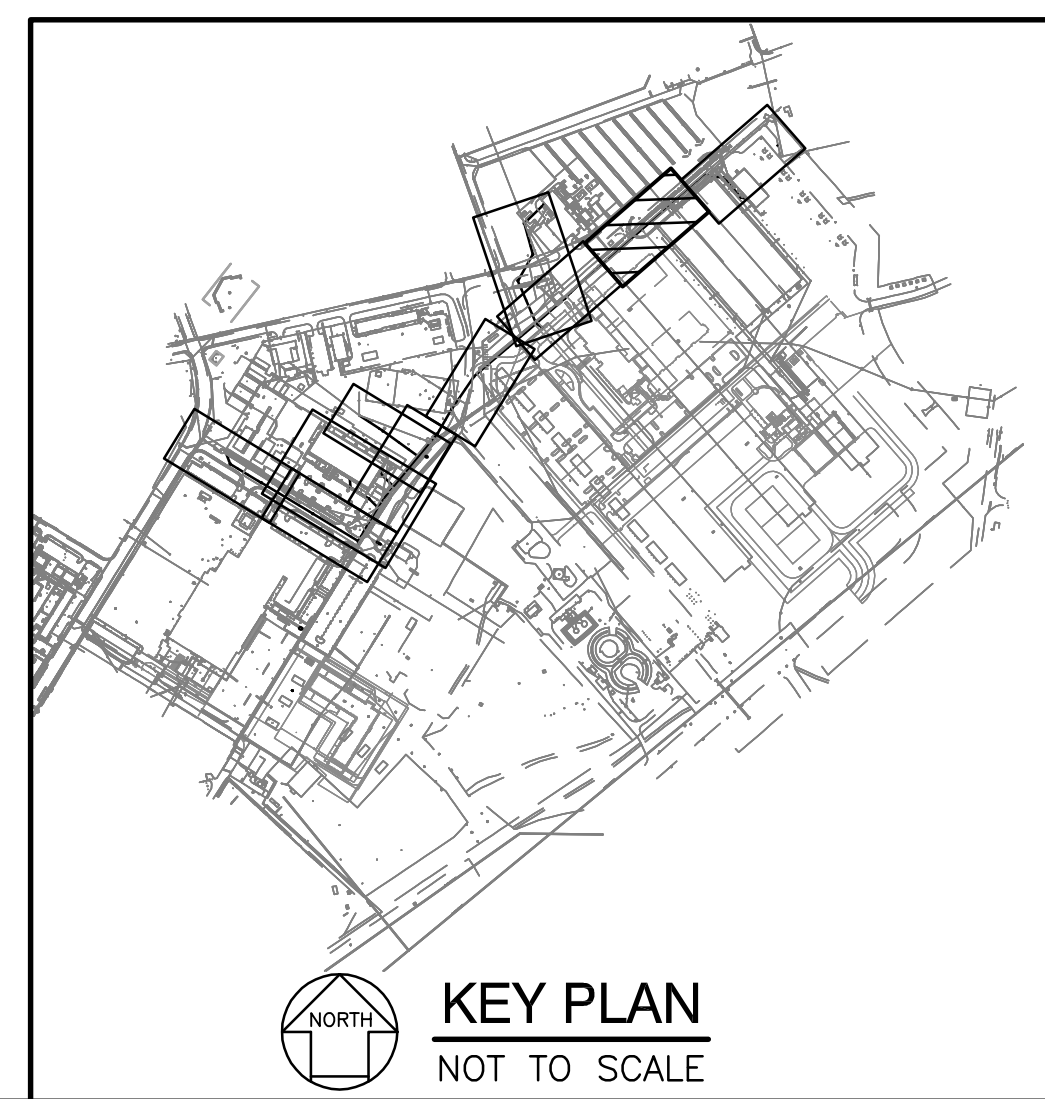


NOTES:

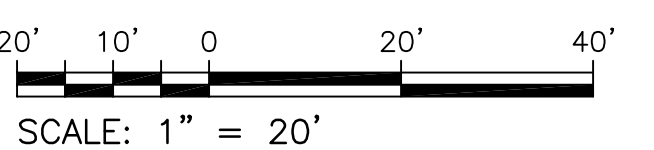
1. FOR STANDARD SEWER MANHOLE, SEE DETAIL  C-07 C-21
2. FOR SHALLOW DROP MANHOLE, SEE DETAIL  C-03 C-21
3. FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL  C-07 C-23
4. FOR EXIST SEWER MANHOLES ABANDONEMENT, SEE DETAIL  C-07 C-23
5. FOR CONCRETE WALKWAY RESTORATION, SEE DETAIL  C-07 C-22

PLAN - SEWER LINE "B"

SCALE: 1" = 20'



GRAPHIC SCALE:



HDR

A/E INFO



SEAL

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DESCRIPTION

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SUBMITAL PHASE

BID FINAL

SUBMITAL DATE 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

HIARNG KALAELOA

HAWAIIAN ARMY NATIONAL GUARD

SITE UTILITIES REPLACEMENT

SEWER LINE -

WRIGHT STREET TO BUILDING 282

PLAN - SEWER LINE "B", STA 11+50 TO STA 16+50

05+61 01 00+50 TO STA 11+50

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

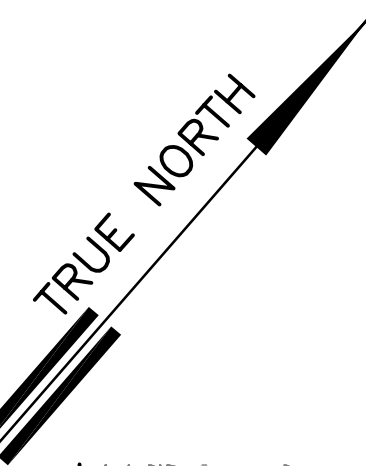
FEDERAL PROJECT NO. 15140005

SHEET 26 OF 42

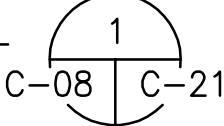
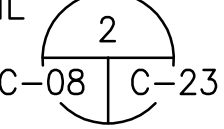
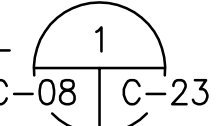
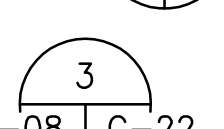
C-07



MATCH LINE, STA 16+50, SEE SHEET C-07

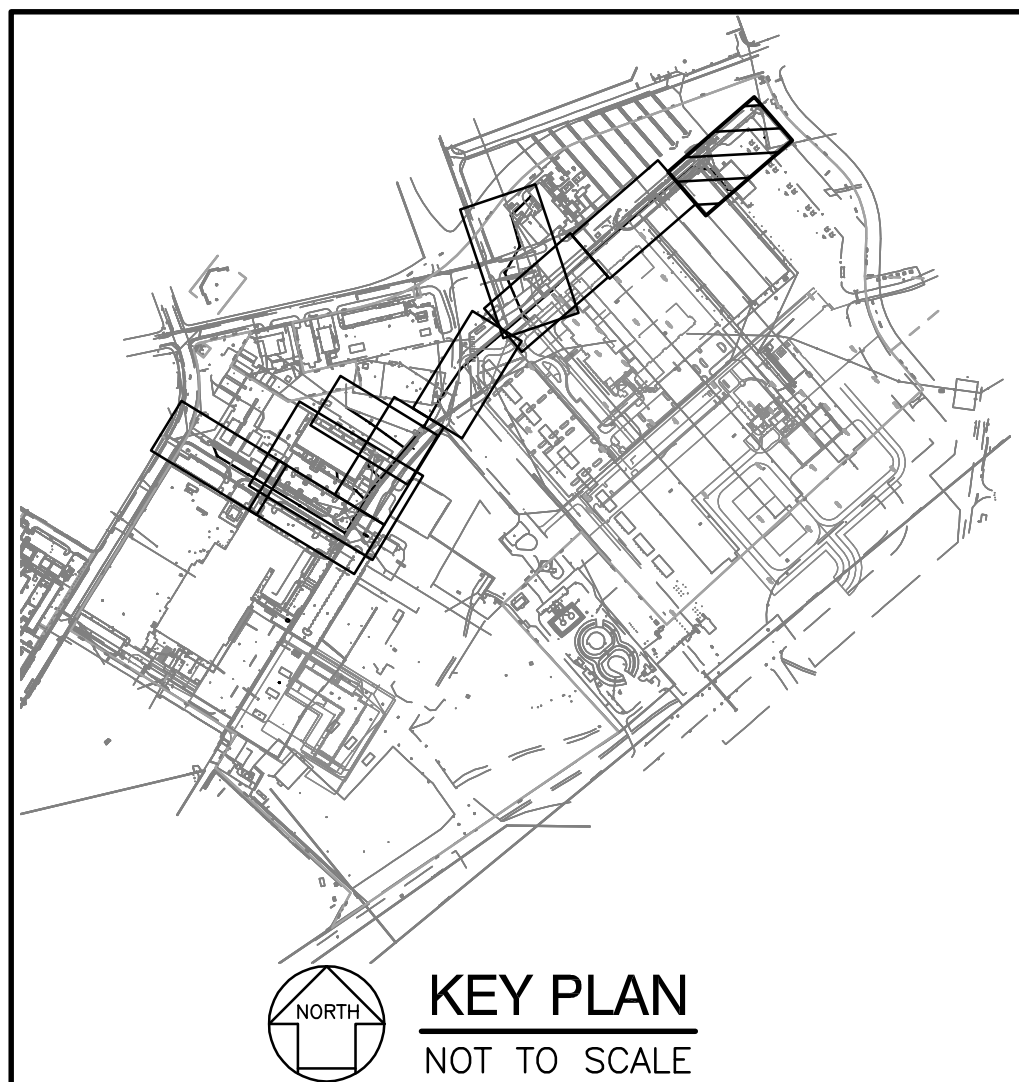


**NOTES:**

1. FOR STANDARD SEWER MANHOLE, SEE DETAIL  C-08/C-21
2. FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL  C-08/C-23
3. FOR EXIST SEWER MANHOLE ABANDONMENT, SEE DETAIL  C-08/C-23
4. FOR CONCRETE WALKWAY RESTORATION, SEE DETAIL  C-08/C-22
5. CONTRACTOR SHALL PROVIDE BYPASS AROUND EACH SEGMENT OF EXISTING SEWER LINE. SEE SEWER NOTE 1 AND 10 ON SHEET G-03.

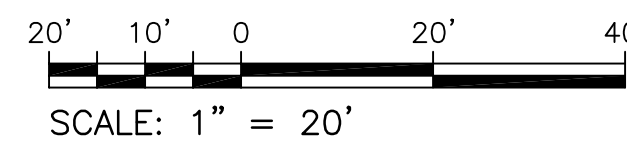
**PLAN - SEWER LINE "B"**

SCALE: 1" = 20'



**KEY PLAN**  
NOT TO SCALE

**GRAPHIC SCALE:**



**HDR**

A/E INFO



SEAL

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DESCRIPTION

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BID FINAL

SUBMITAL DATE: 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HAWAII ARMY NATIONAL GUARD

SITE UTILITIES REPLACEMENT

HIARNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

PLAN - SEWER LINE "B", STA 16+50 TO END

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

SCALE: AS NOTED

STATE JOB NO. CA-1220-C

FEDERAL PROJECT NO. 15140005

SHEET 27 OF 42

**C-08**



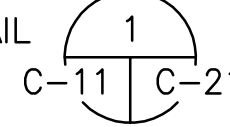
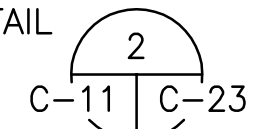
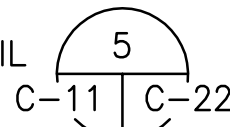
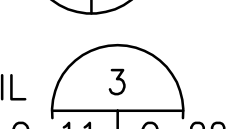
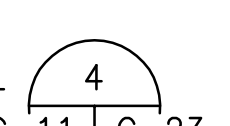


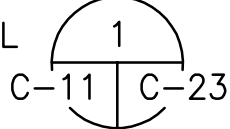




FILE: 2012020-050  
DATE: REV: 01/02/14

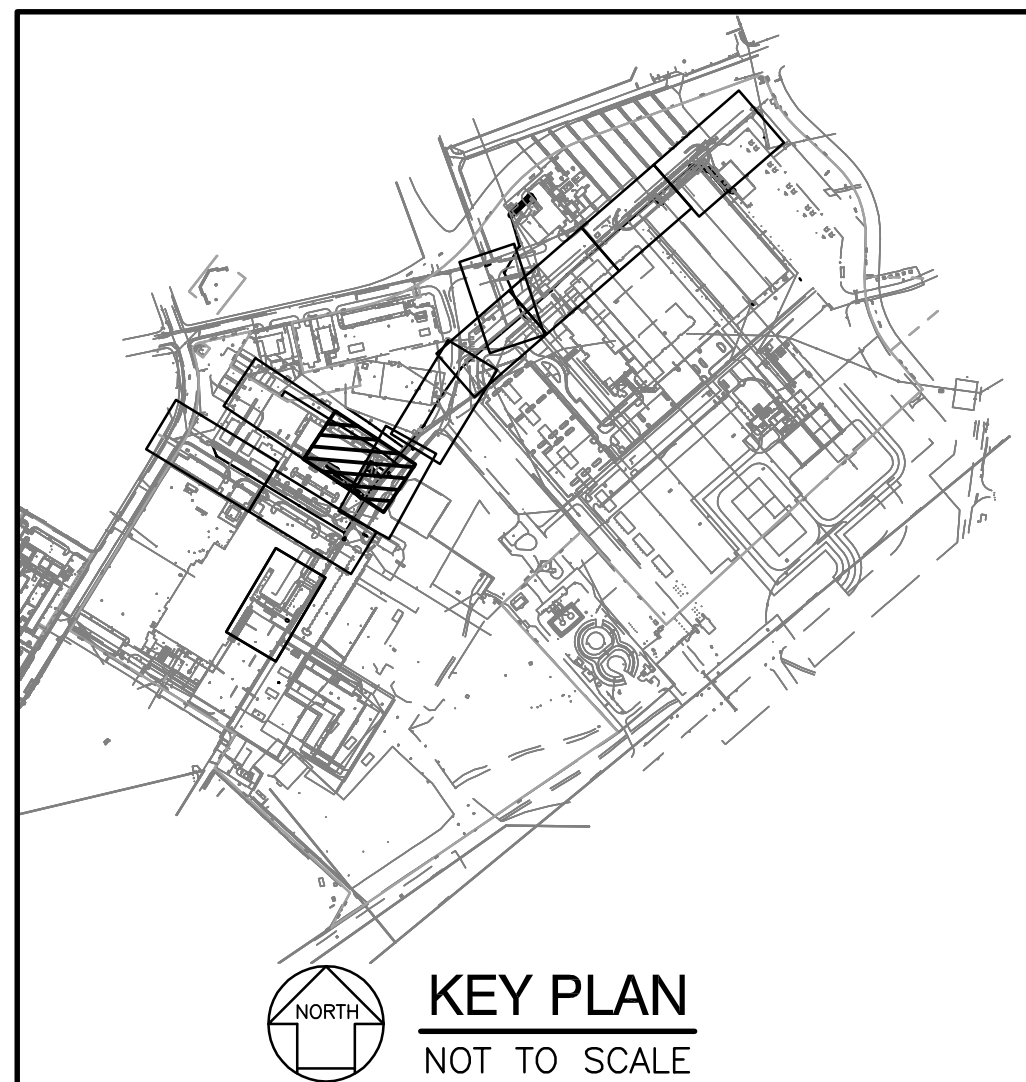
**NOTES:**

1. FOR STANDARD SEWER MANHOLE, SEE DETAIL  C-11 | C-21
2. FOR TYPICAL SEWER LINE TRENCH AND PAVEMENT RESTORATION, SEE DETAIL  C-11 | C-23
3. FOR CURB AND GUTTER RESTORATION, SEE DETAIL  C-11 | C-22
4. FOR CONCRETE SIDEWALK RESTORATION, SEE DETAIL  C-11 | C-22
5. FOR CLEANOUT TO GRADE, SEE DETAIL  C-11 | C-23

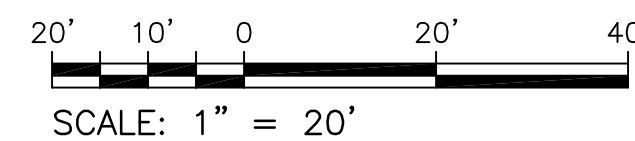
6. FOR EXIST SEWER MANHOLE ABANDONMENT, SEE DETAIL  C-11 | C-23
7. CONTRACTOR SHALL PROVIDE BYPASS AROUND EACH SEGMENT OF EXISTING SEWER LINE. SEE SEWER NOTE 1 AND 10 ON SHEET G-03.
8. CONTRACTOR TO PROVIDE SEWER LATERAL RECONNECTION TO BUILDING.
9. CONTRACTOR TO VERIFY LOCATION OF EXISTING BUILDING SEWER LATERAL AND CLEANOUTS.
10. CONTRACTOR SHALL TEMPORARILY TRANSPLANT THEN RE-ESTABLISH HEDGE.
11. CONTRACTOR TO VERIFY EXISTING SEWER LINE SIZE.

**PLAN - SEWER LINE AND LATERAL "B1" AND "B2"**

SCALE: 1" = 20'



**GRAPHIC SCALE:**



**HDR**

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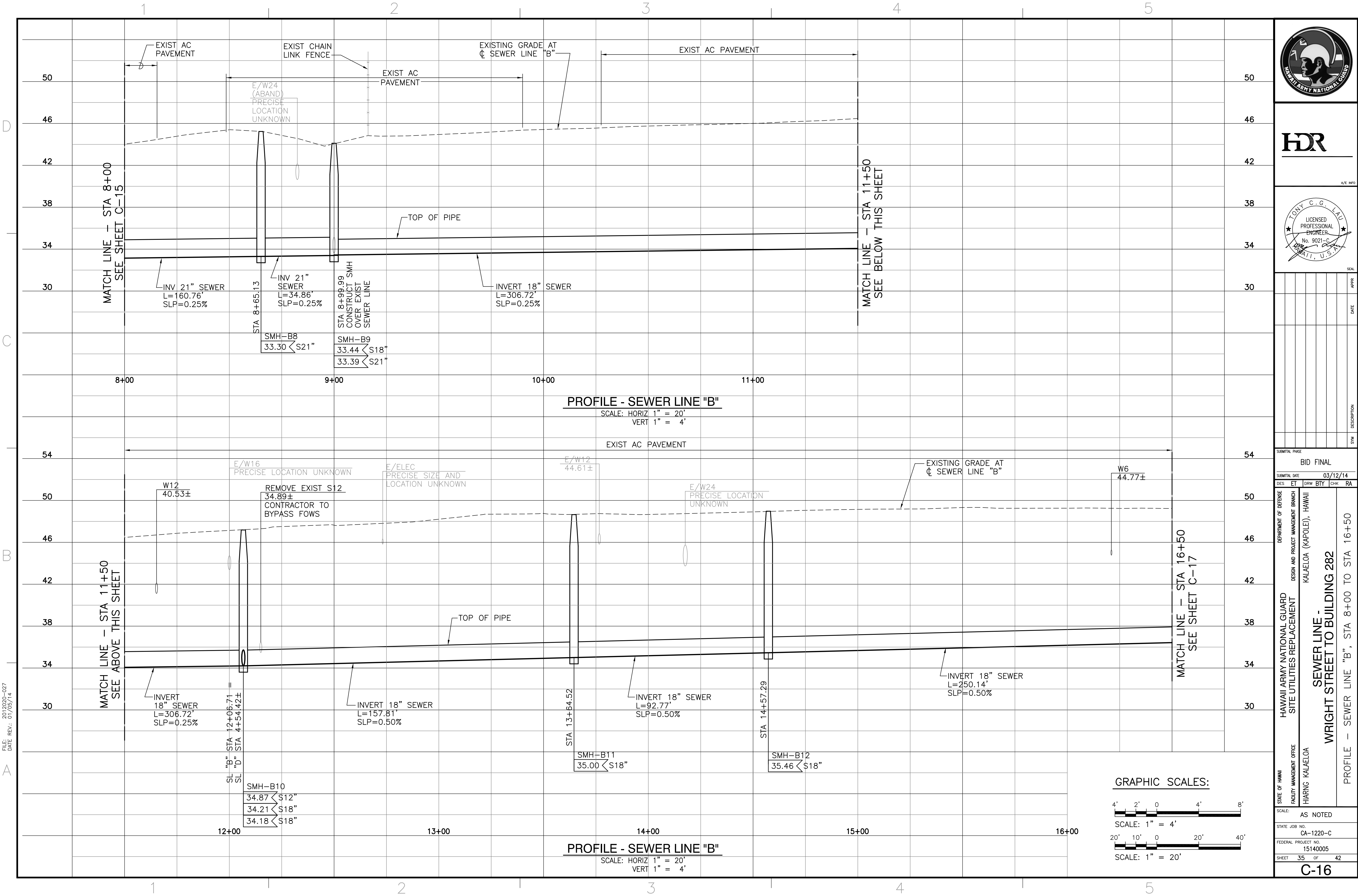












DES	ET	DRW	BTY	CHK	RA

DATE	DESCRIPTION

SUBMITAL PHASE					
BID FINAL					
SUBMITAL DATE 03/12/14					
DES	ET	DRW	BTY	CHK	RA

DEPARTMENT OF DEFENSE	DESIGN AND PROJECT MANAGEMENT BRANCH	KALAELOA (KAPOLEI), HAWAII
HAWAII ARMY NATIONAL GUARD	SITE UTILITIES REPLACEMENT	SEWER LINE - WRIGHT STREET TO BUILDING 282
FACILITY MANAGEMENT OFFICE	HIARNG KALAELOA	PROFILE - SEWER LINE "B", STA 8+00 TO STA 16+50
STATE OF HAWAII		

SCALE:	AS NOTED
STATE JOB NO.	CA-1220-C
FEDERAL PROJECT NO.	15140005
SHEET	35 OF 42

C-16



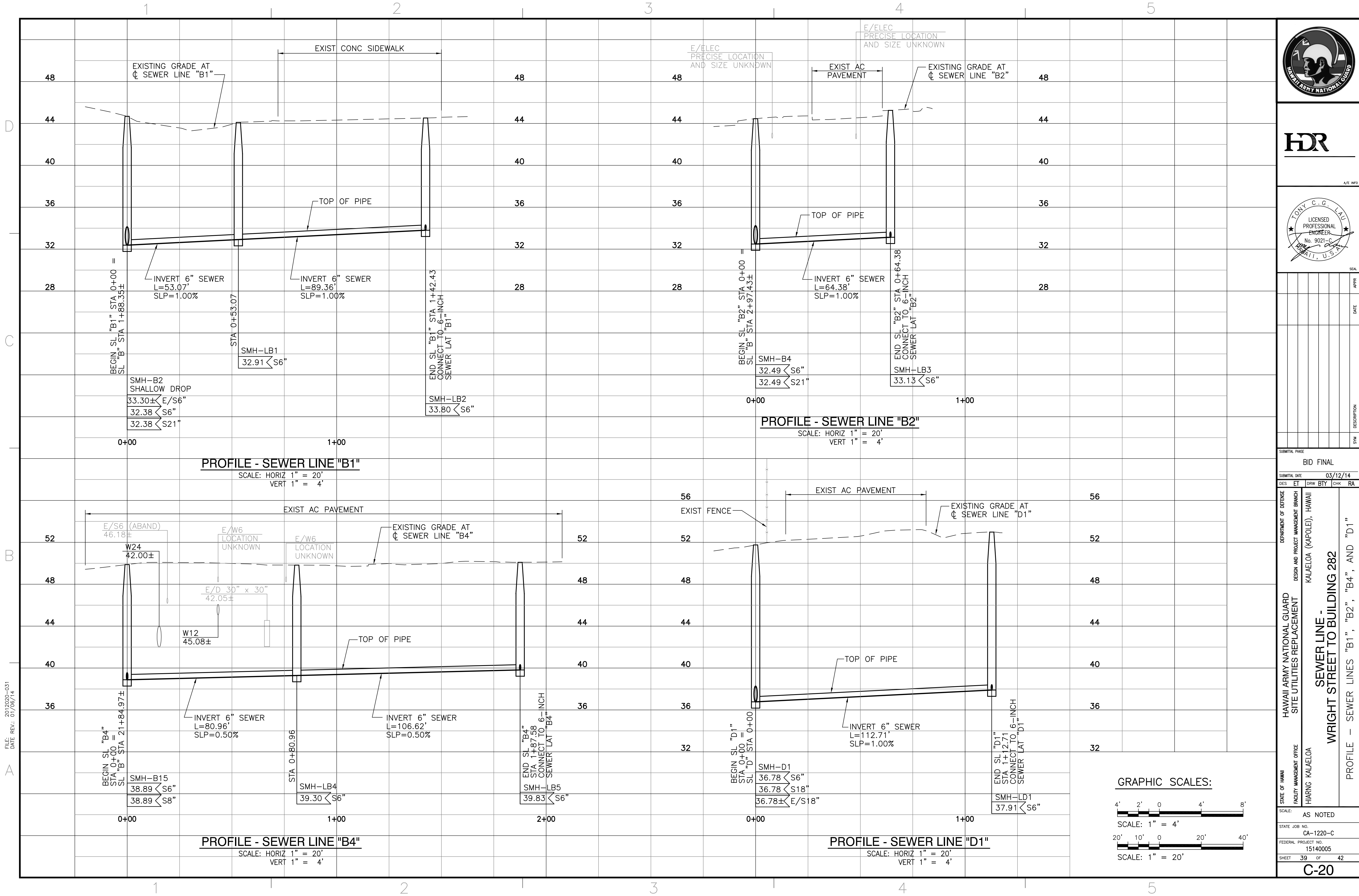






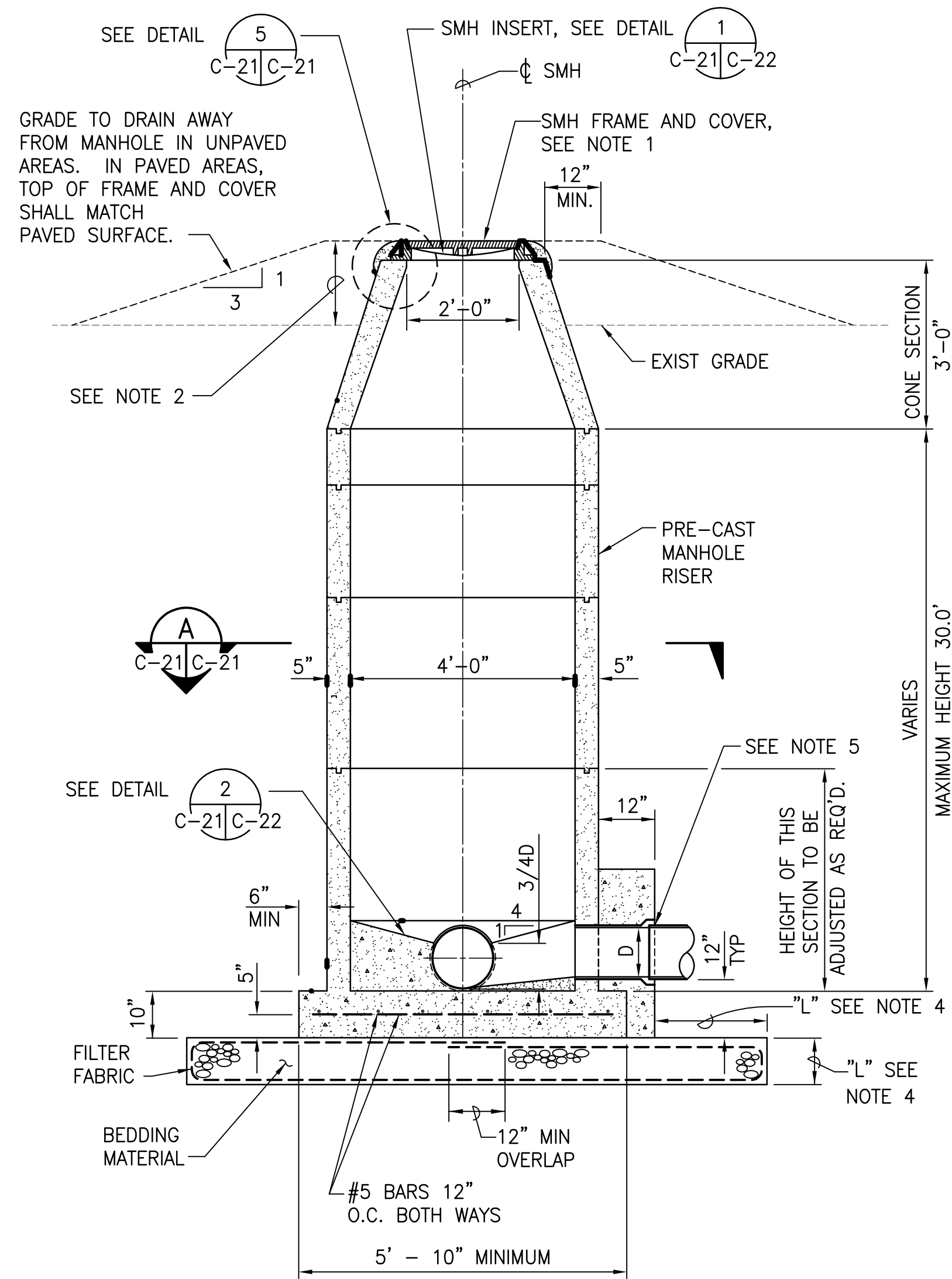


FILE: 2012020-031  
DATE REV.: 07/06/14



DES	ET	DRW	BTY	CHK	RA

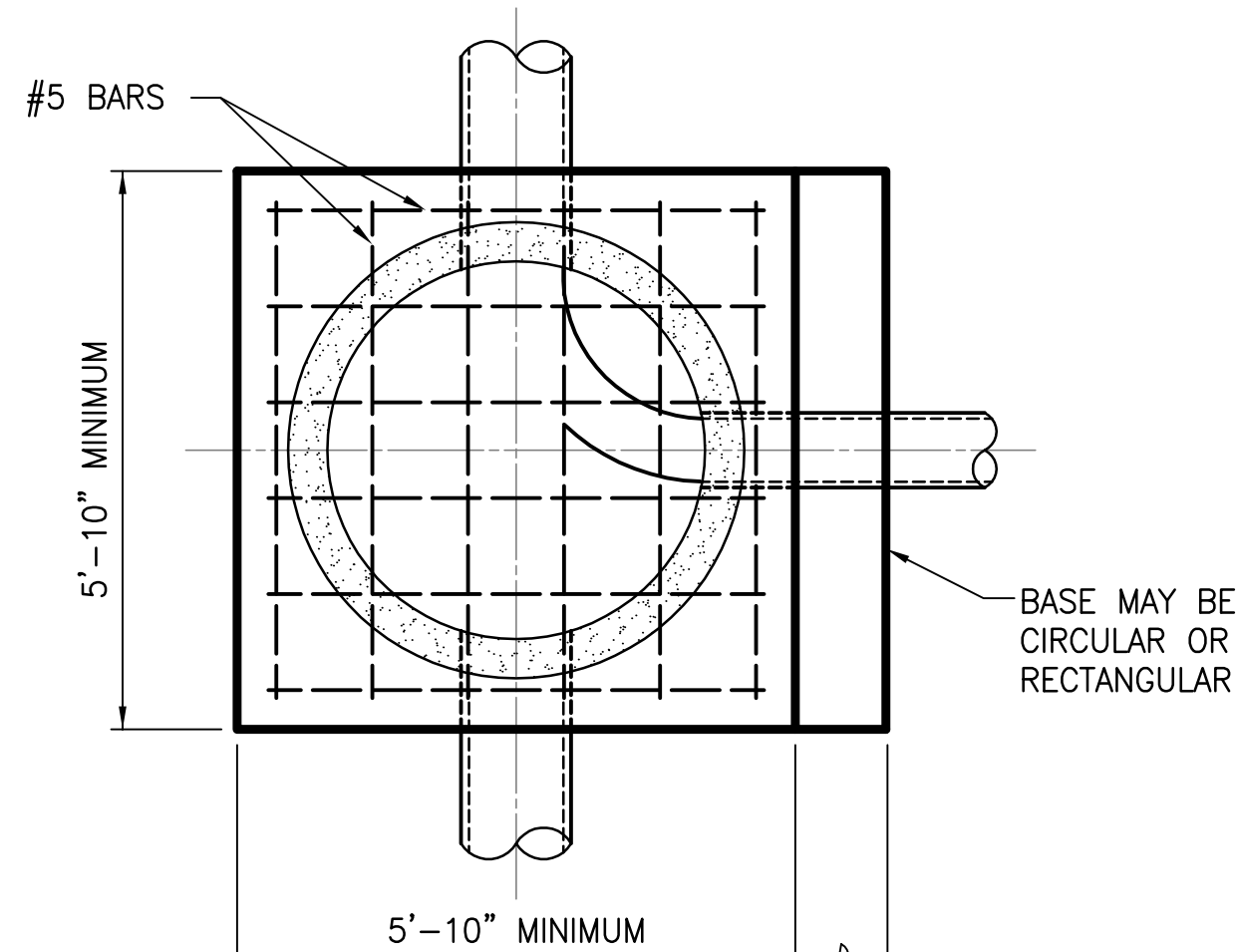
STATE OF HAWAII	HAWAII ARMY NATIONAL GUARD	DESIGN AND PROJECT MANAGEMENT BRANCH	KALAELOA (KAPOLEI), HAWAII
FACILITY MANAGEMENT OFFICE	HIARNG KALAELOA	SEWER LINE - WRIGHT STREET TO BUILDING 282	
PROFILE - SEWER LINES "B1", "B2", "B4", AND "D1"			
C-20			



**STANDARD SEWER MANHOLE**

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

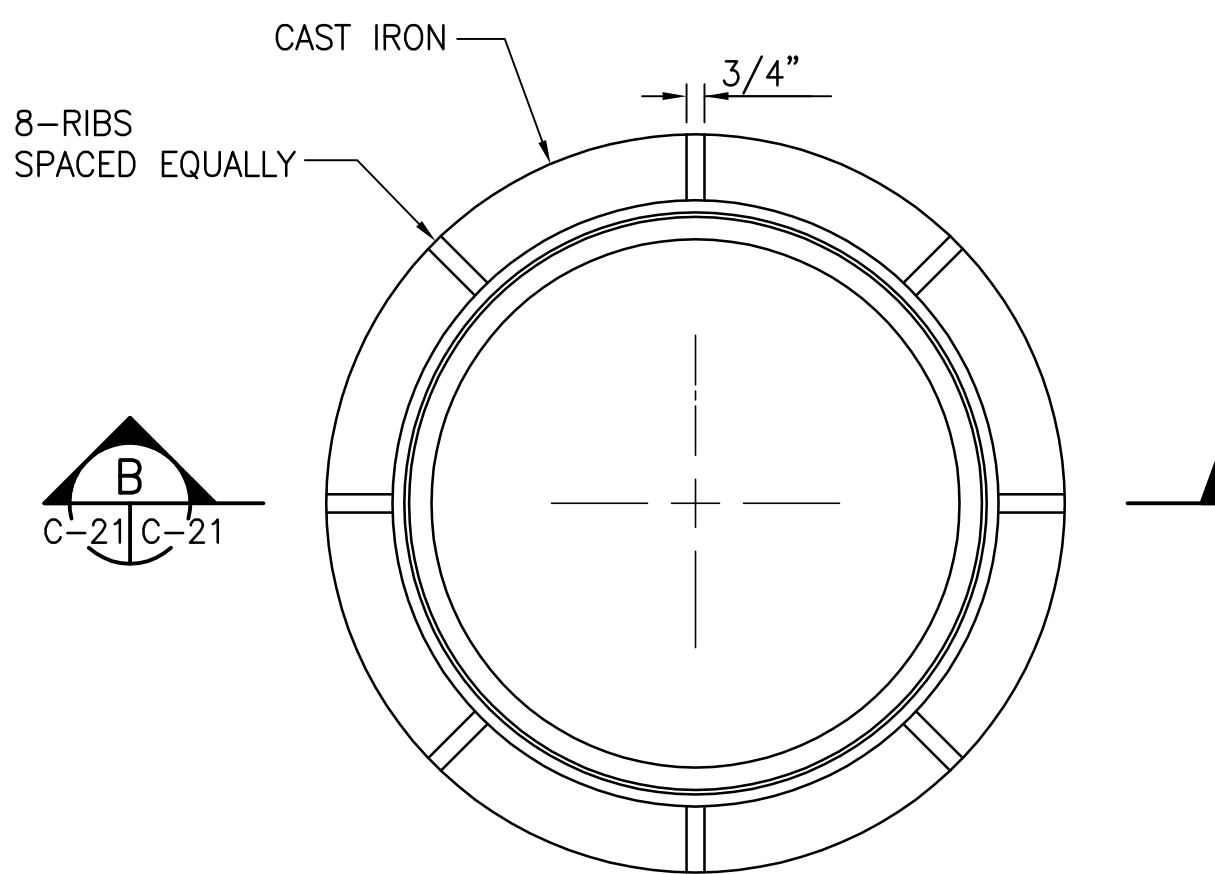
1  
VAR C-21



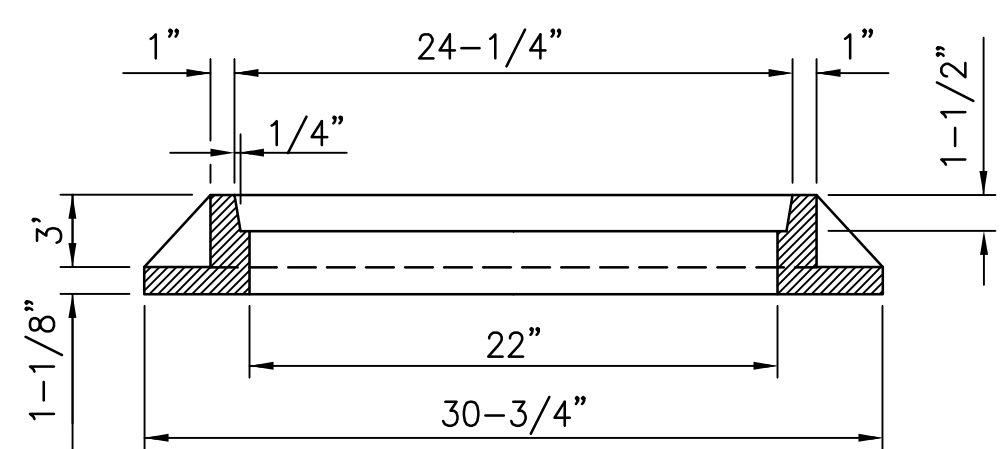
**SECTION**

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

A  
C-21 C-21



**PLAN**

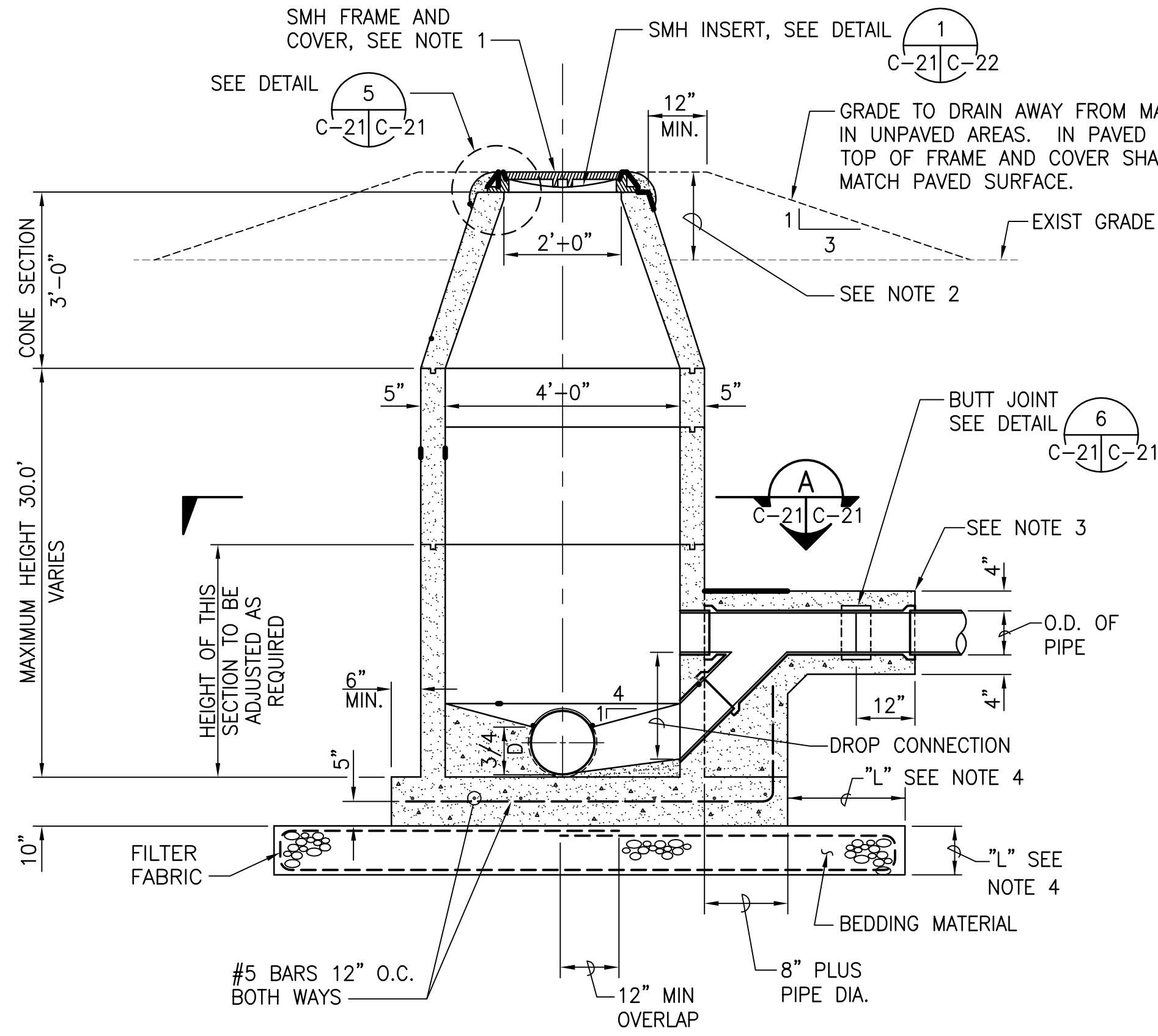


**SECTION**

**SEWER MANHOLE FRAME**

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

4  
C-21 C-21

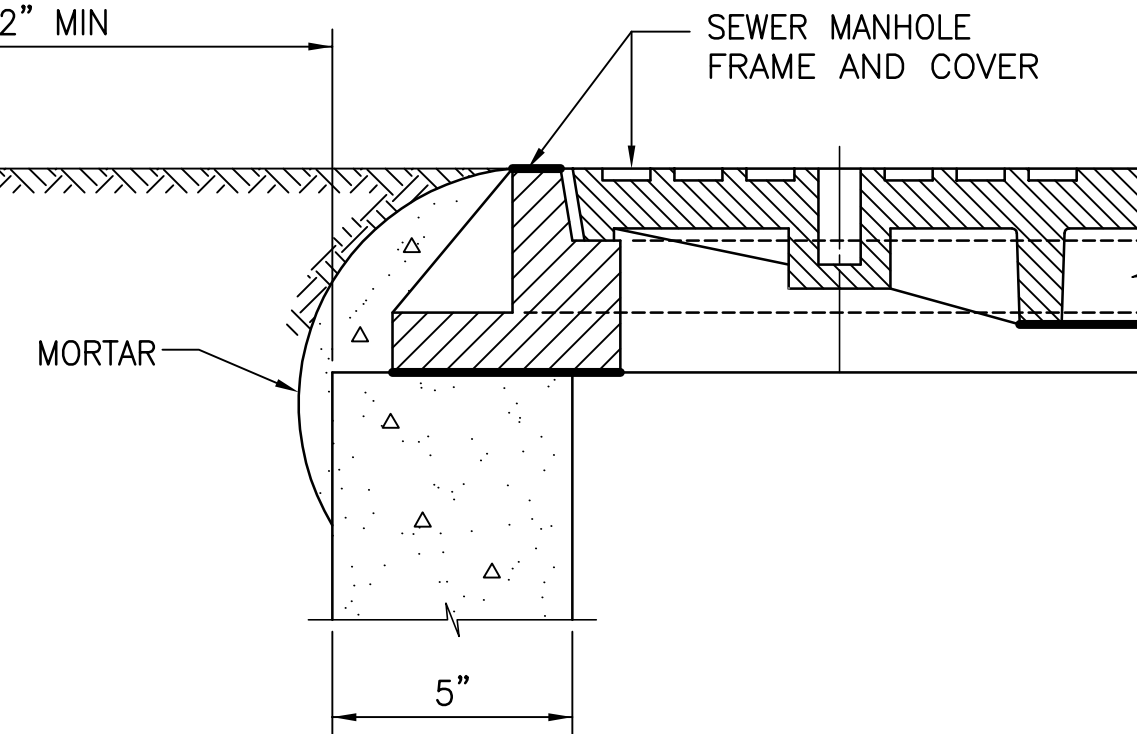


**SHALLOW DROP MANHOLE**

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

2  
VAR C-21

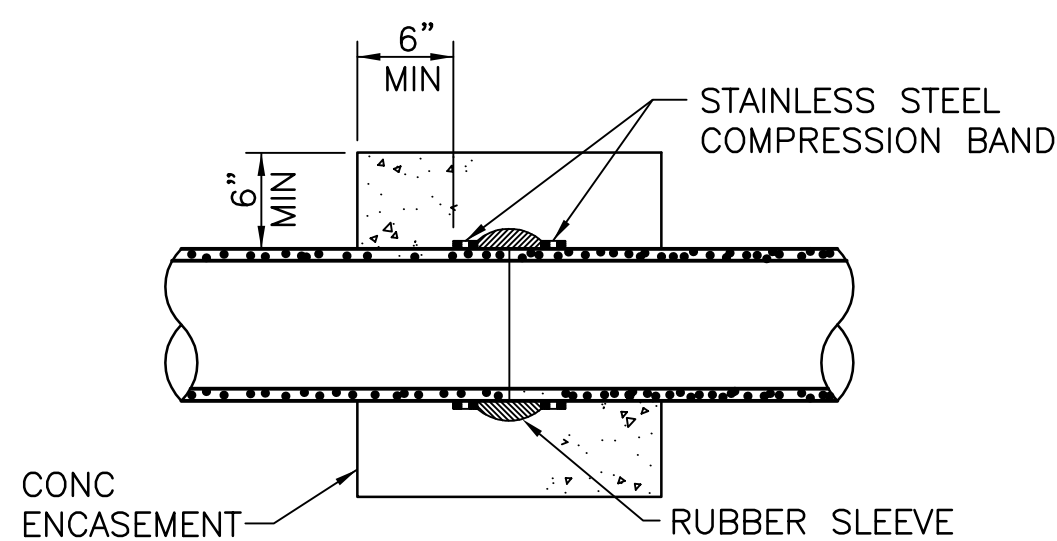
GRADE TO DRAIN AWAY FROM MH IN UNPAVED AREAS. IN PAVED AREAS, TOP OF FRAME AND COVER SHALL MATCH GRADE OF PAVED SURFACE.



**DETAIL**

SCALE: 3" = 1'-0"

5  
C-21 C-21



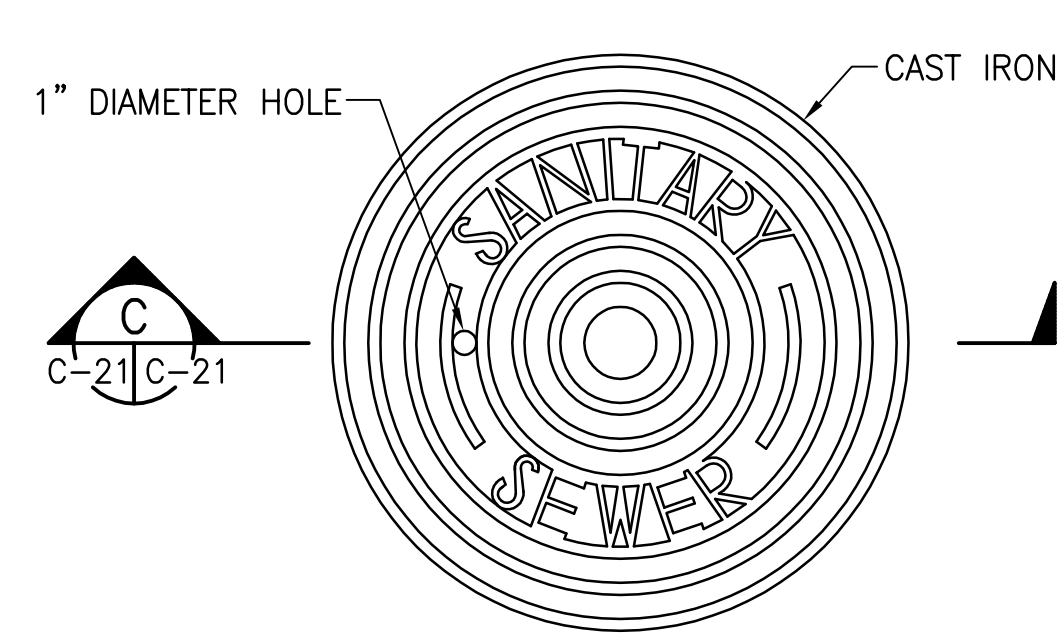
**NOTE:**

RUBBER SLEEVE AND STAINLESS STEEL COMPRESSION BAND JOINT SHALL BE CONCRETE ENCASED UNLESS OTHERWISE INDICATED. PROVIDE MINIMUM 6" COVER OF CONCRETE.

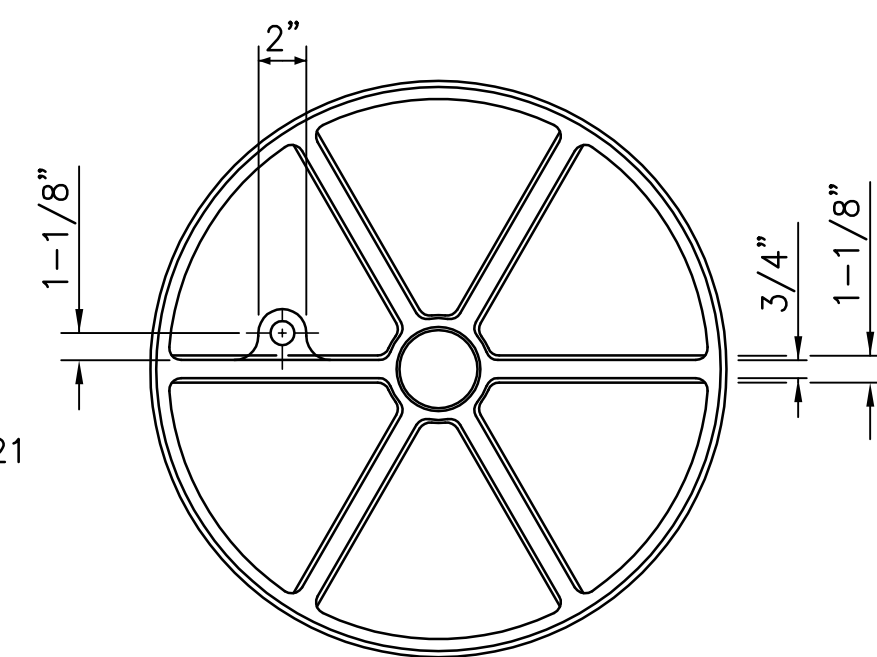
**BUTT JOINT**

SCALE: 1" = 1'-0"

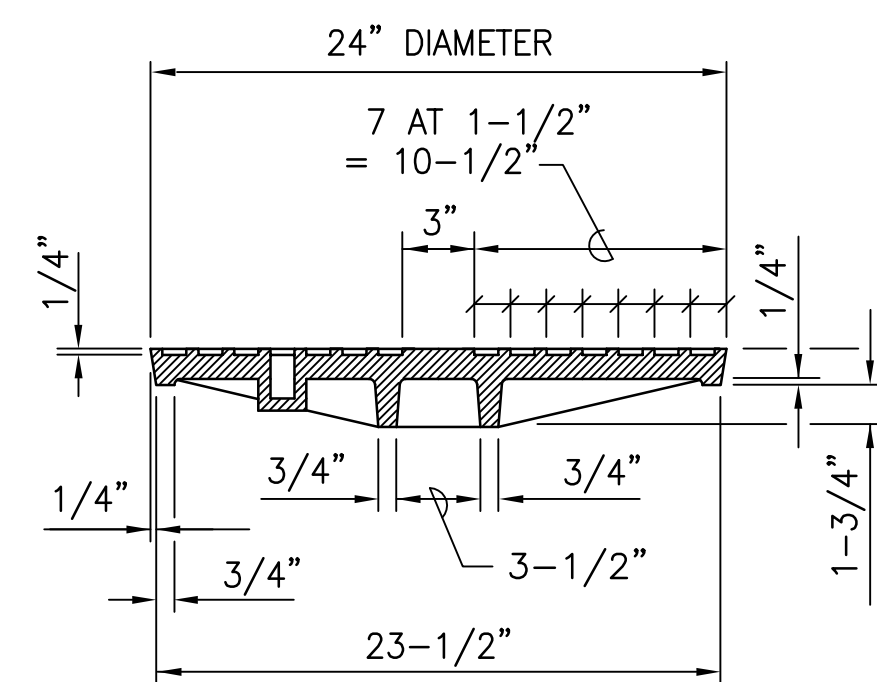
6  
C-21 C-21



**TOP PLAN**



**BOTTOM PLAN**



**SECTION**

C  
C-21 C-21

**SEWER MANHOLE COVER**

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

3  
C-21 C-21

**GRAPHIC SCALES:**

2' 0 2' 4'

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

1' 0 1' 2'

SCALE: 1" = 1'-0"

6" 0 6" 1' 1'-6"

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

4" 0 4" 8"

SCALE: 3" = 1'-0"



**HDR**

A/E INFO



SEAL

APPR

DATE

DESCRIPTION

SW

SUBMITAL PHASE

BID FINAL

SUBMITAL DATE 03/12/14

DES ET DRW BTY CHK RA

DEPARTMENT OF DEFENSE

SITE UTILITIES REPLACEMENT

DESIGN AND PROJECT MANAGEMENT BRANCH

KALAELOA (KAPOLEI), HAWAII

HIARNG KALAELOA

SEWER LINE -

WRIGHT STREET TO BUILDING 282

SEWER DETAILS, SHEET 1

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

AS NOTED

STATE JOB NO. CA-1220-C

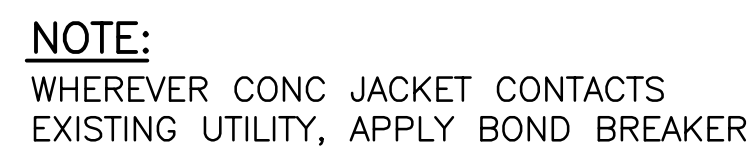
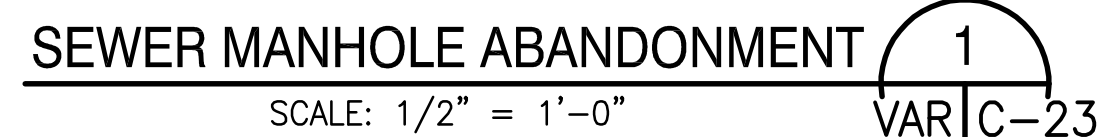
FEDERAL PROJECT NO. 15140005

SHEET 40 OF 42

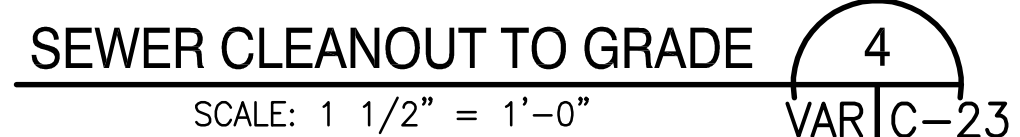
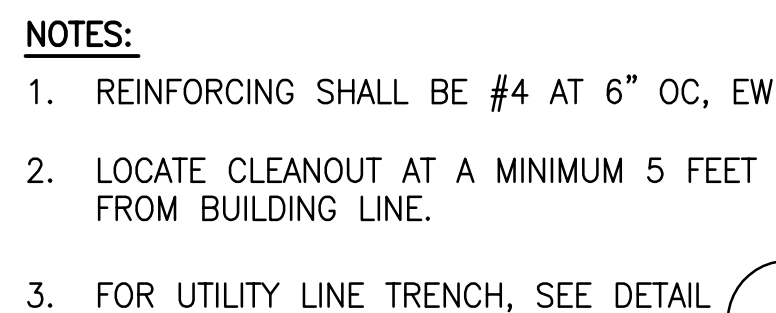
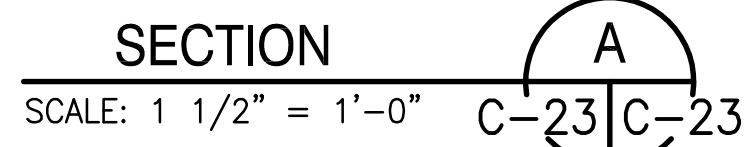
**C-21**



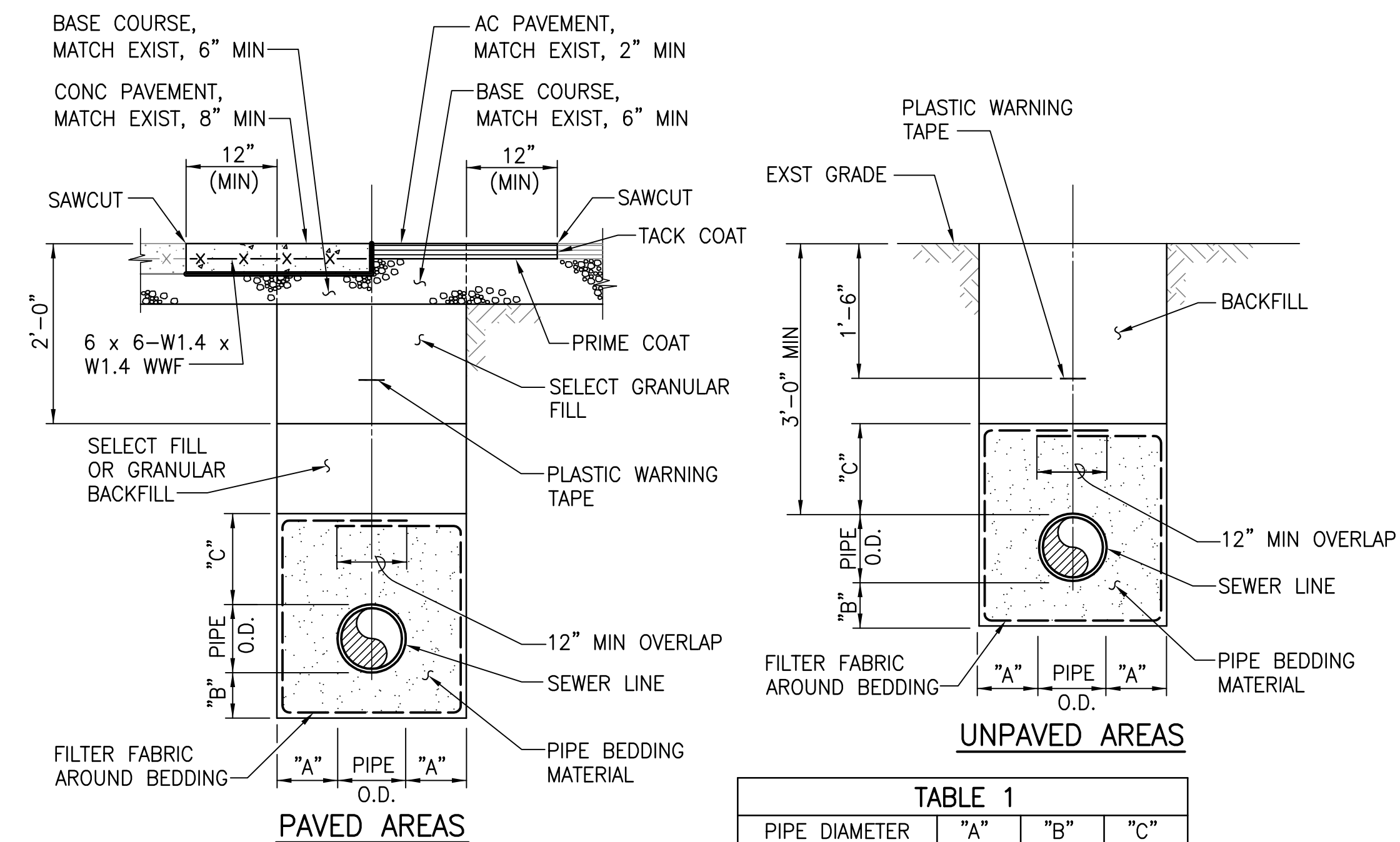




SCALE: 3/4" = 1'-0" C-02 | C-23



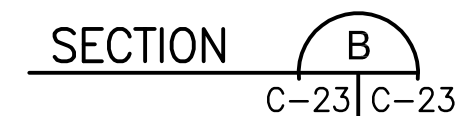
- ### NOTES:
1. REMOVE SEWER MANHOLE FRAME AND COVER.
  2. DEMOLISH AND REMOVE THE TOP THREE FEET OF THE SEWER MANHOLE.
  3. PRIOR TO FRACTURING THE BASE, THE CONTRACTOR SHALL THOROUGHLY CLEAN AND DRAIN THE MANHOLE AND NOT PERMIT ANY SEWAGE FROM ADJACENT PIPE SECTIONS FROM ENTERING THE MANHOLE TO ENSURE NO SEWAGE SPILLS INTO THE UNDERLYING SOIL. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER PRIOR TO FRACTURING THE BASE TO ENSURE ALL PREPARATORY WORK HAS BEEN PERFORMED SATISFACTORILY.
  4. ALL CONNECTING PIPES SHALL BE PLUGGED AS SHOWN.
  5. FILL SEWER MANHOLE WITH CRUSHED ROCK FILL MATERIAL BY PLACING IN HORIZONTAL LIFTS NOT EXCEEDING 12 INCHES IN THICKNESS AND COMPACTING EACH LIFT WITH SUITABLE HAND OPERATED COMPACTION EQUIPMENT TO A DENSE CONSISTENCY AS EVIDENT BY LITTLE TO NO SETTLEMENT OF THE MATERIAL, BUT NOT LESS THAN 6 PASSES PER LIFT. THE TOP OF THE COMPACTED FILL SHALL MATCH THE GRADE OF THE SURROUNDING AREA LESS THE THICKNESS OF THE TOP SOIL OR PAVEMENT STRUCTURE AS APPROPRIATE.
  6. WHEREVER AN EXISTING MANHOLE IS WITHIN ASPHALTIC CONCRETE PAVEMENT, PROVIDE SELECT BORROW, BASE COURSE AND ASPHALTIC CONCRETE PAVEMENT.
  7. RESTORE DISTURBED GROUND AND SURFACES AS REQUIRED.



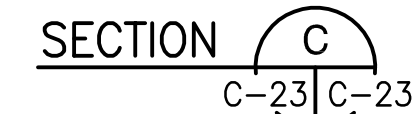
- NOTES:**

  1. MINIMUM COVER OVER TOP OF PIPE = 3 FEET.
  2. SAWCUT CONCRETE AND AC PAVT PRIOR TO TRENCHING.
  3. PROVIDE STRUCTURAL SUPPORT FOR ALL EXISTING UTILITY LINES UNCOVERED BY TRENCH EXCAVATION.
  4. PROVIDE 12 INCHES OF SUBBEDDING MATERIAL BELOW THE PIPE BEDDING MATERIAL, "B", FOR THE FOLLOWING:
    - A. SEWER LINE "B", APPROX STA 4+00 TO 6+00.
    - B. SEWER LINE "C", APPROX STA 0+00 TO 3+00

SCALE: 3/4" = 1'-0"



SCALE: 1 1/2" = 1'-0" C-23 C-23



SCALE: 1 1/2" = 1'-0" C-23 C-23

2' 0 2' 4'

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

1' 0 1' 2' 3'

SCALE:  $3/4" = 1'-0"$

6" 0 6" 1' 1'-6"

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

