

BEST MANAGEMENT PRACTICES

1. EROSION AND SEDIMENT CONTROL PRACTICES:

A. CONSTRUCTION MANAGEMENT

- 1) GRADING OPERATIONS SHALL BE PLANNED SO AS TO MINIMIZE TIME OF CONSTRUCTION.
- 2) GRADING OPERATIONS SHALL BE PLANNED SO AS TO MINIMIZE SIZE OF THE DISTURBED AREA. THE AREA GRUBBED SHALL NOT EXTEND BEYOND WHAT WILL ACTUALLY REQUIRED FOR GRADING.
- 3) THE PROJECT GRADING LIMITS SHALL BE STAKED PRIOR TO THE START OF CONSTRUCTION.
- 4) UPON COMPLETION OF GRADING ALL EXPOSED AREAS WILL BE GRASSED AS REQUIRED.

B. STABILIZATION TECHNIQUES

- 1) EXISTING GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 30 CALENDAR DAYS PRIOR TO THE START OF GRADING OPERATIONS.
- 2) AREAS THAT REMAIN UNFINISHED FOR MORE THAN 21 CALENDAR DAYS WILL BE HYDROMULCHED TO PROVIDE TEMPORARY SOIL STABILIZATION BY NO LATER THAN THE 14TH DAY AFTER LAST DISTURBANCE.
- 3) AFTER ACHIEVING FINISHED GRADES, ALL SLOPES AND EXPOSED AREAS SHALL BE PERMANENTLY STABILIZED BY HYDROMULCHING WITH GRASS SEED AS SOON AS PRACTICABLE.

C. STRUCTURAL CONTROLS

- 1) SILT FENCES OR FILTER BERMS SHALL BE CONSTRUCTED ALONG THE ENTIRE DOWNSTREAM SIDE OF THE ACTIVE CONSTRUCTION ZONE IN AREAS WHERE ONSITE RUNOFF FLOWS INTO ADJOINING PROPERTIES. FILTER BAGS SHALL BE PLACED AT ALL EXISTING CURB-INLET CATCH BASIN OPENINGS TO REMOVE SILT FROM THE ONSITE RUNOFF.

D. INSPECTION AND MAINTENANCE PROCEDURES

- 1) ALL CONTROL MEASURES SHALL BE INSPECTED AND REPAIRED AS NECESSARY. INSPECTIONS SHALL BE PERFORMED AT LEAST WEEKLY IN DRY PERIODS, AND WITHIN 24 HOURS AFTER ANY RAINFALL 0.5 INCHES OR GREATER OVER A 24-HOUR PERIOD. CONTROL MEASURES SHALL BE CHECKED DAILY DURING PERIODS OF PROLONGED RAINFALL.

E. SCHEDULE FOR IMPLEMENTING CONTROLS

- 1) EROSION AND SEDIMENT CONTROL MEASURES WILL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
- 2) THE FOLLOWING GENERAL ORDER SHOULD BE USED:
 - A. INSTALLATION OF TIRE CLEANING PAD.
 - B. INSTALLATION OF SILT FENCE AND FILTER BERMS.
 - C. GRADING MAY PROCEED.

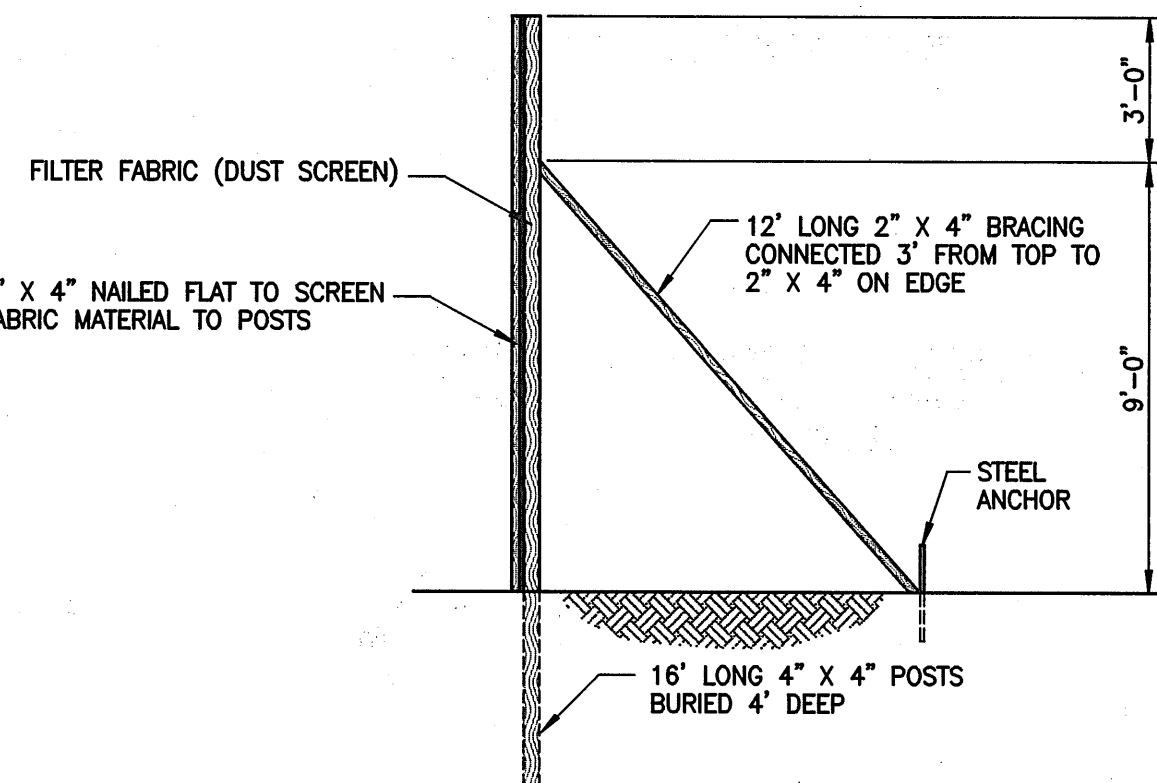
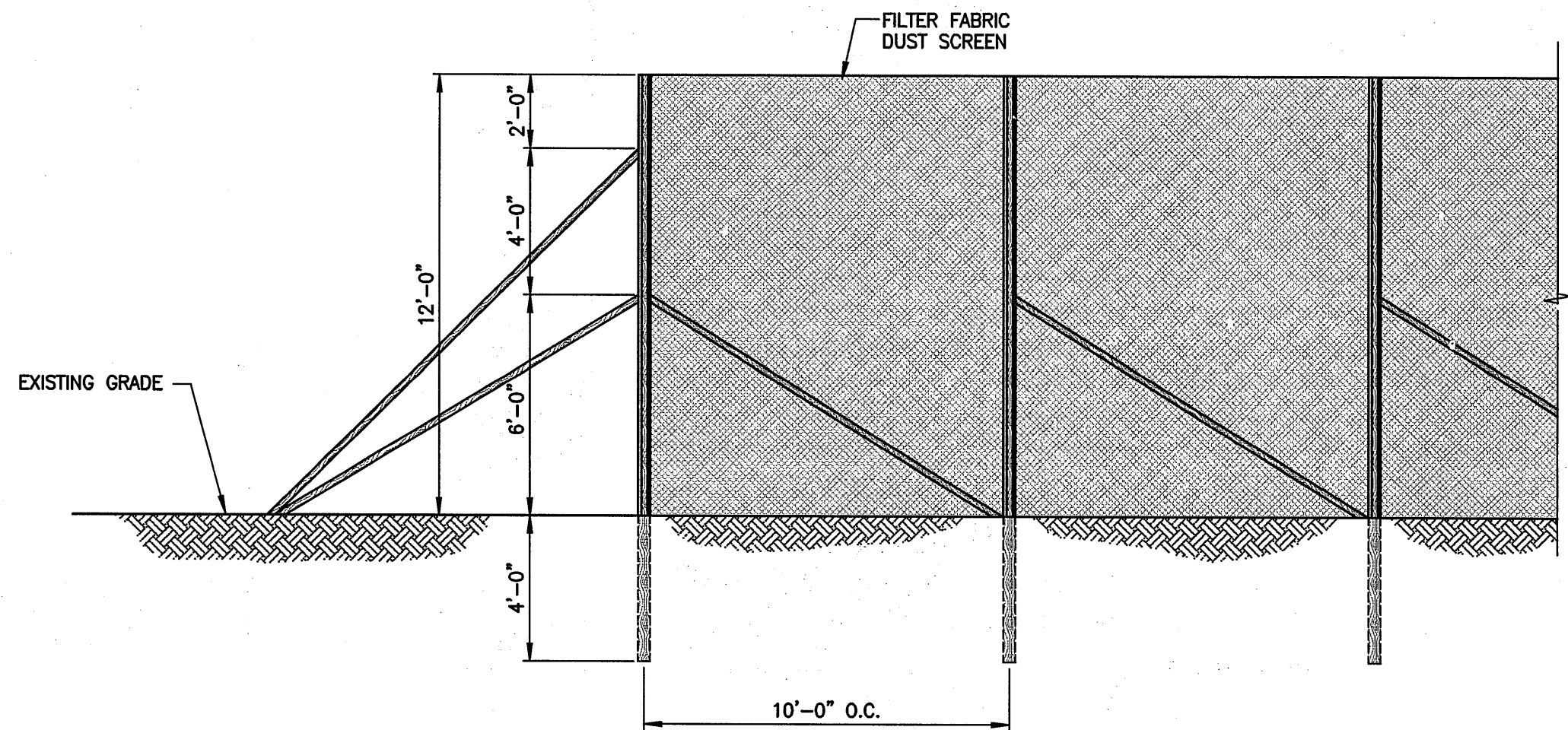
2. DUST CONTROLS:

THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE. THE FOLLOWING MITIGATIVE MEASURES WILL BE INCORPORATED:

- A. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
- B. CONSTRUCT DUST FENCES IF NECESSARY ALONG PROJECT SITE BOUNDARIES AFFECTED BY PREVAILING WIND DIRECTION.
- C. STATION A WATER TRUCK ON SITE AT ALL TIMES DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES OR WHEREVER NEEDED ON THE CONSTRUCTION SITE (WEEKENDS AND HOLIDAYS INCLUDED).
- D. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITIES HAVE CEASED FOR THE DAY AND ON WEEKENDS.

3. OTHER POLLUTION CONTROL PRACTICES:

- A. CONTRACTOR SHALL INSTALL DANDY BEAVER DAM OR DANDY BAG (OR APPROVED EQUAL) AT ALL NEW AND EXISTING INLETS AND DISCHARGE POINTS WHICH MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITY.
- B. MAINTENANCE AND FUELING OF CONSTRUCTION EQUIPMENT SHALL BE PERFORMED ONLY IN DESIGNATED AREAS ENCLOSED BY A CONTAINMENT BERM CONSTRUCTED SO AS TO CONTAIN SPILLS AND PREVENT STORM WATER RUNOFF FROM CARRYING POLLUTANTS TO DOWNSTREAM PROPERTIES.

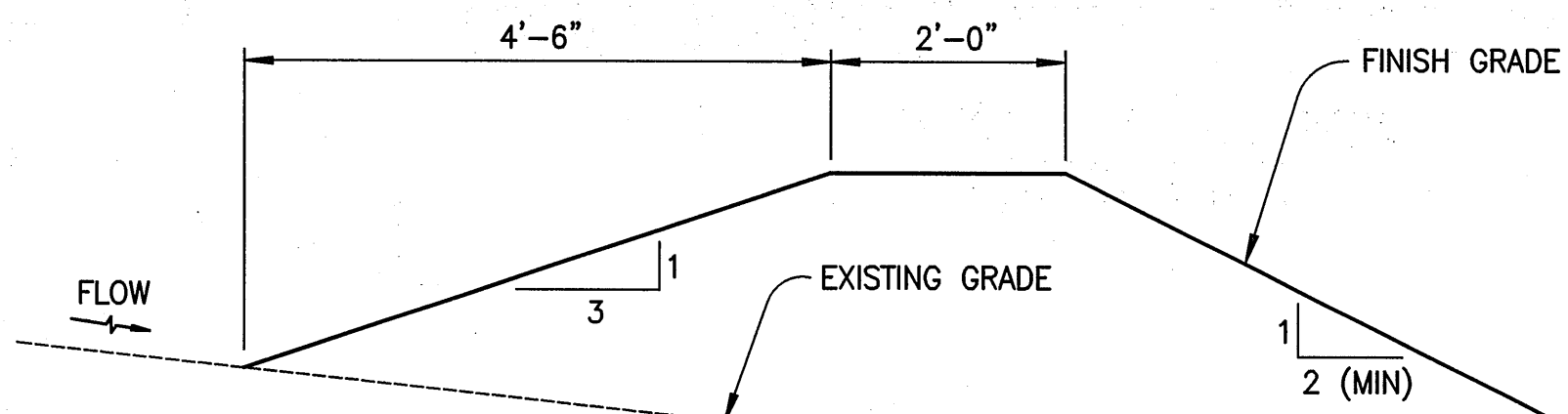


NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR RETAINING A STRUCTURAL ENGINEER (LICENSED TO PRACTICE IN THE STATE OF HAWAII) TO DESIGN DUST FENCE AND SHALL SUBMIT STAMPED AND SIGNED DRAWINGS FOR DUST FENCE TO ENGINEER AND COUNTY OF MAUI FOR REVIEW AND APPROVAL, AND FOR SECURING ALL REQUIRED AGENCY PERMITS.

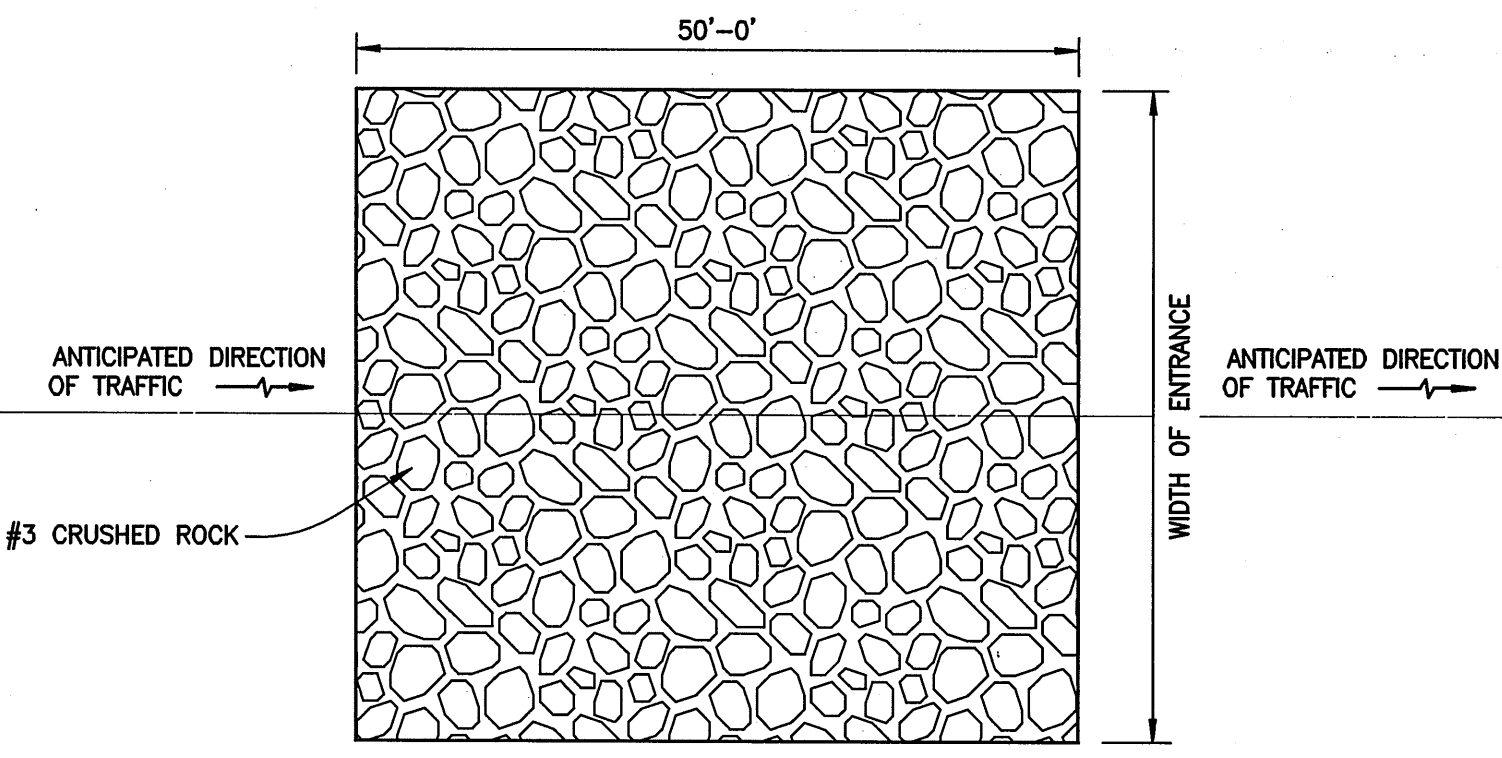
DETAIL - DUST FENCE

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



DETAIL - CROSS / DIVERSION BERM

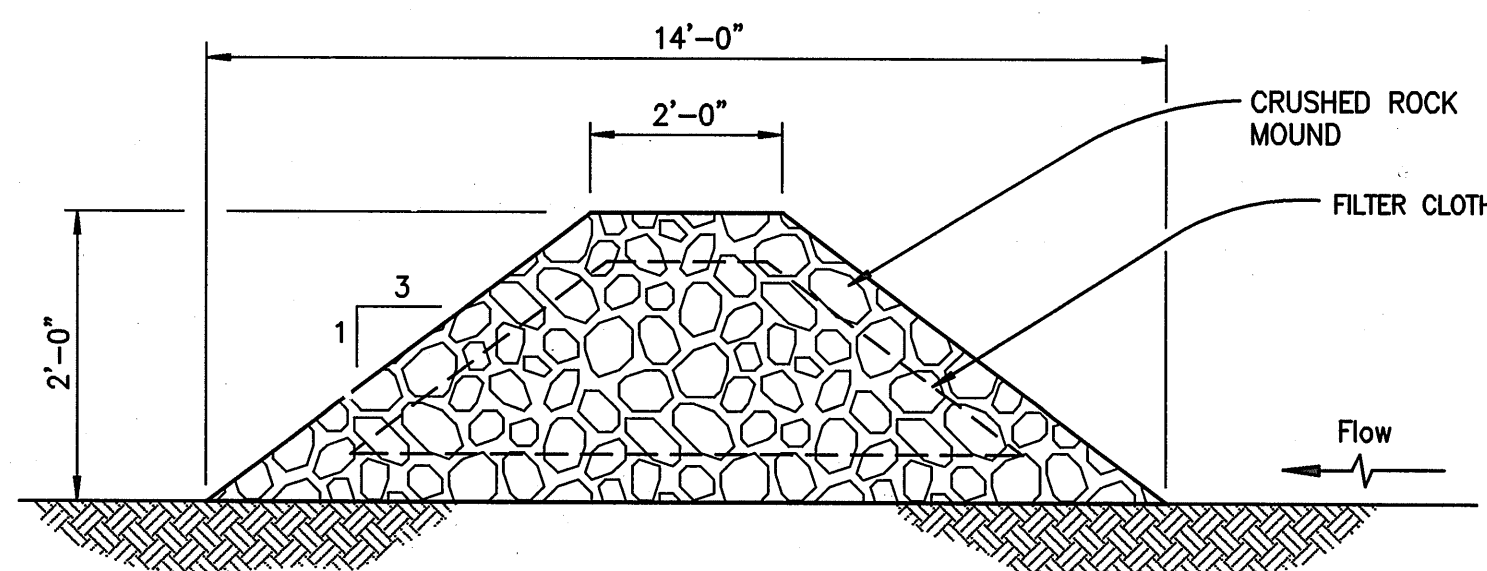
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SECTION A

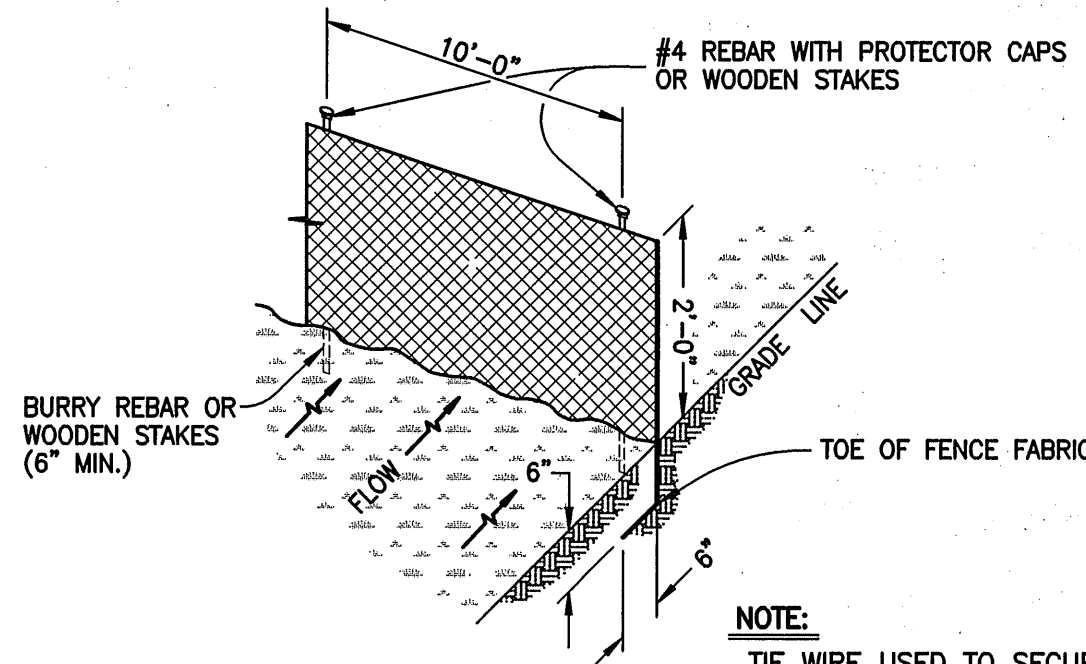
DETAIL - TIRE CLEANING PAD

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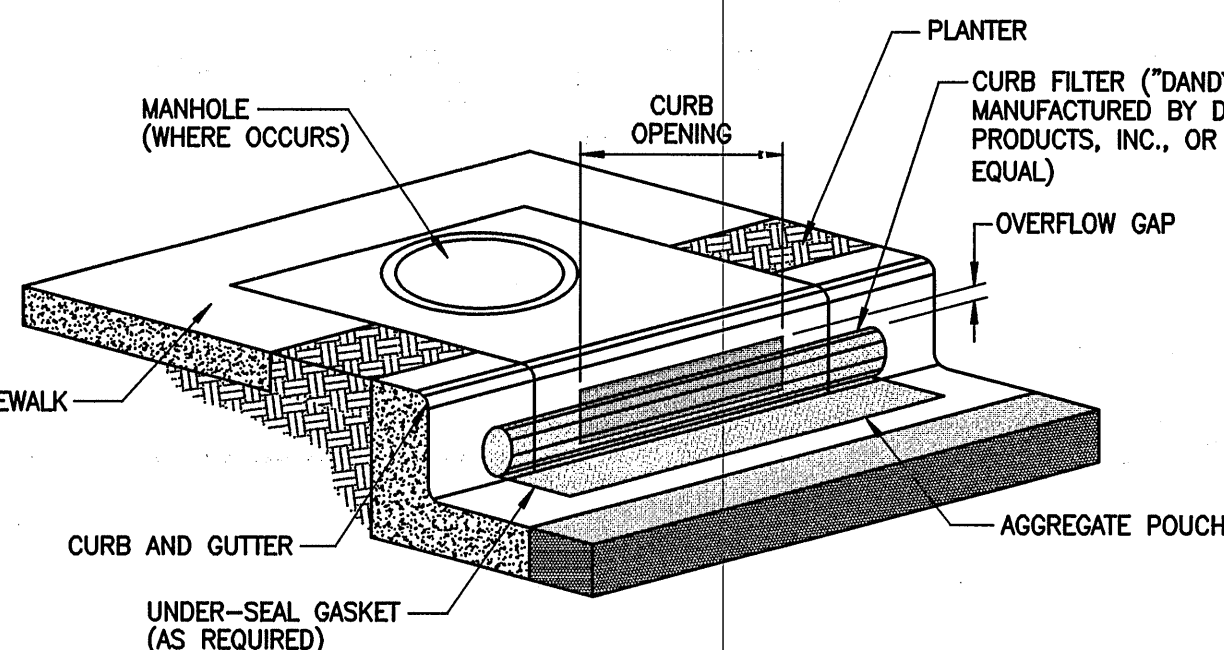
DETAIL - FILTER BERM

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DETAIL - SILT FENCE

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NOTES:

1.0 INSTALLATION:

- 1.1 PLACE DANDY CURB INLET PROTECTION UNIT ON GROUND WITH AGGREGATE POUCH ON STREET SIDE NEAR INLET IT WILL BE INSTALLED ON.
- 1.2 WHERE OIL AND SEDIMENT MODEL IS REQUIRED, TO INSTALL OR REPLACE ABSORBENT, PLACE ABSORBENT SOCK IN POUCH.
- 1.3 FILL POUCH WITH AGGREGATE SUCH AS #5-7, 8'S OR SIMILAR TO A LEVEL (AT LEAST 3/4 FULL) THAT WILL KEEP UNIT IN PLACE DURING A RAIN EVENT AND CREATE A SEAL BETWEEN THE DANDY CURB AND THE SURFACE OF THE STREET. RESEAL VELCRO ACCESS.
- 1.4 CENTER THE UNIT AGAINST CURB OR MEDIAN INLET OPENING SO THAT THE CURB SIDE OF THE UNIT CREATES A SEAL WITH THE CURB OR MEDIAN BARRIER AND INLET STRUCTURE. THERE WILL BE APPROXIMATELY TWELVE (12) INCHES OF THE INLET PROTECTION UNIT OVERHANGING ON EACH SIDE OF THE OPENING. IF THE UNIT IS NOT INSTALLED IN THIS MANNER, IT WILL NOT FUNCTION PROPERLY.

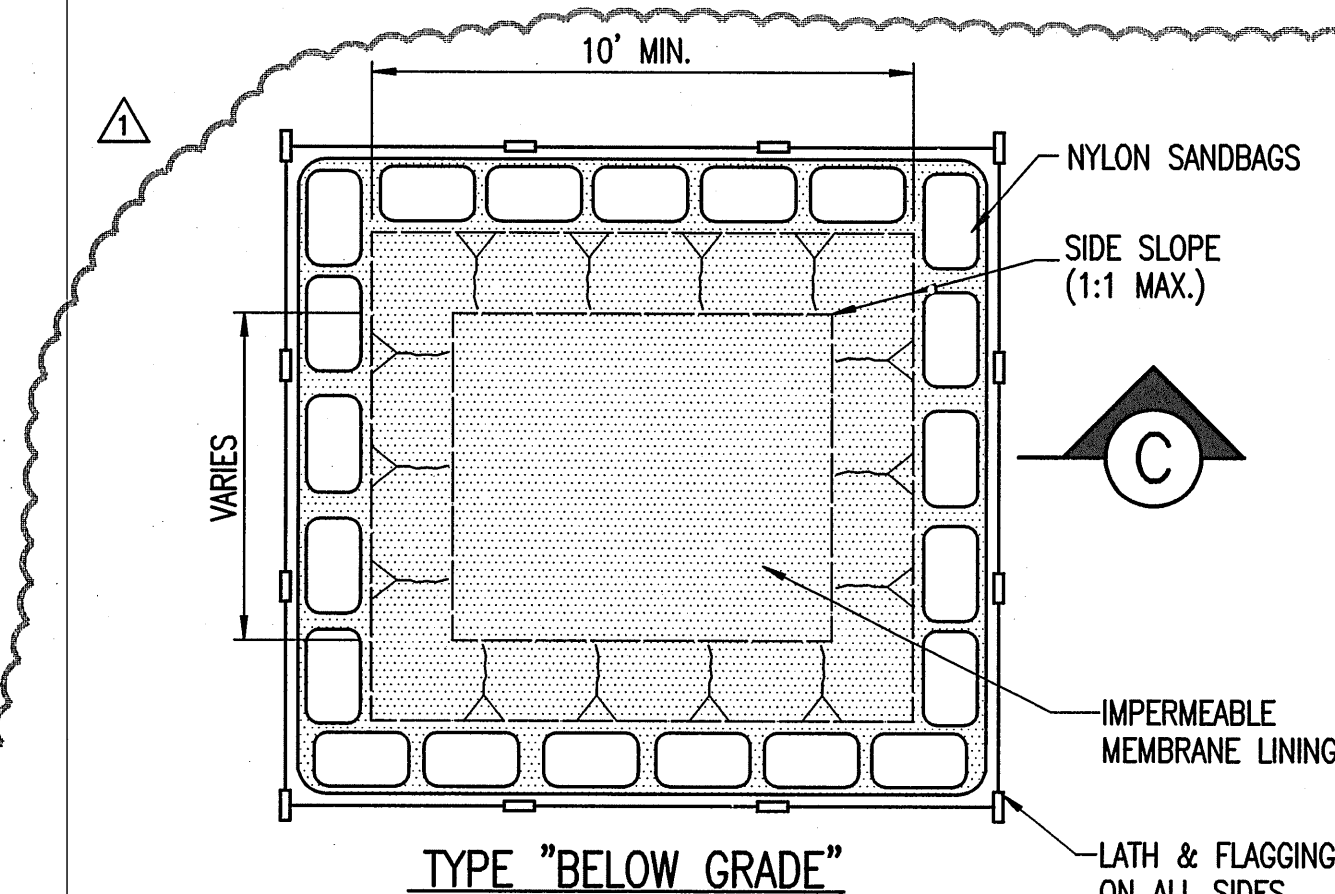
2.0 MAINTENANCE:

- 2.1 THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER. THE CONTRACTOR SHALL DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
- 2.2 WHERE OIL AND SEDIMENT MODEL IS REQUIRED, REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.

- 3.0 ALTERNATIVE CURB INLET PROTECTION WILL BE SUBJECT TO REVIEW AND APPROVAL BY COUNTY AND ENGINEER.

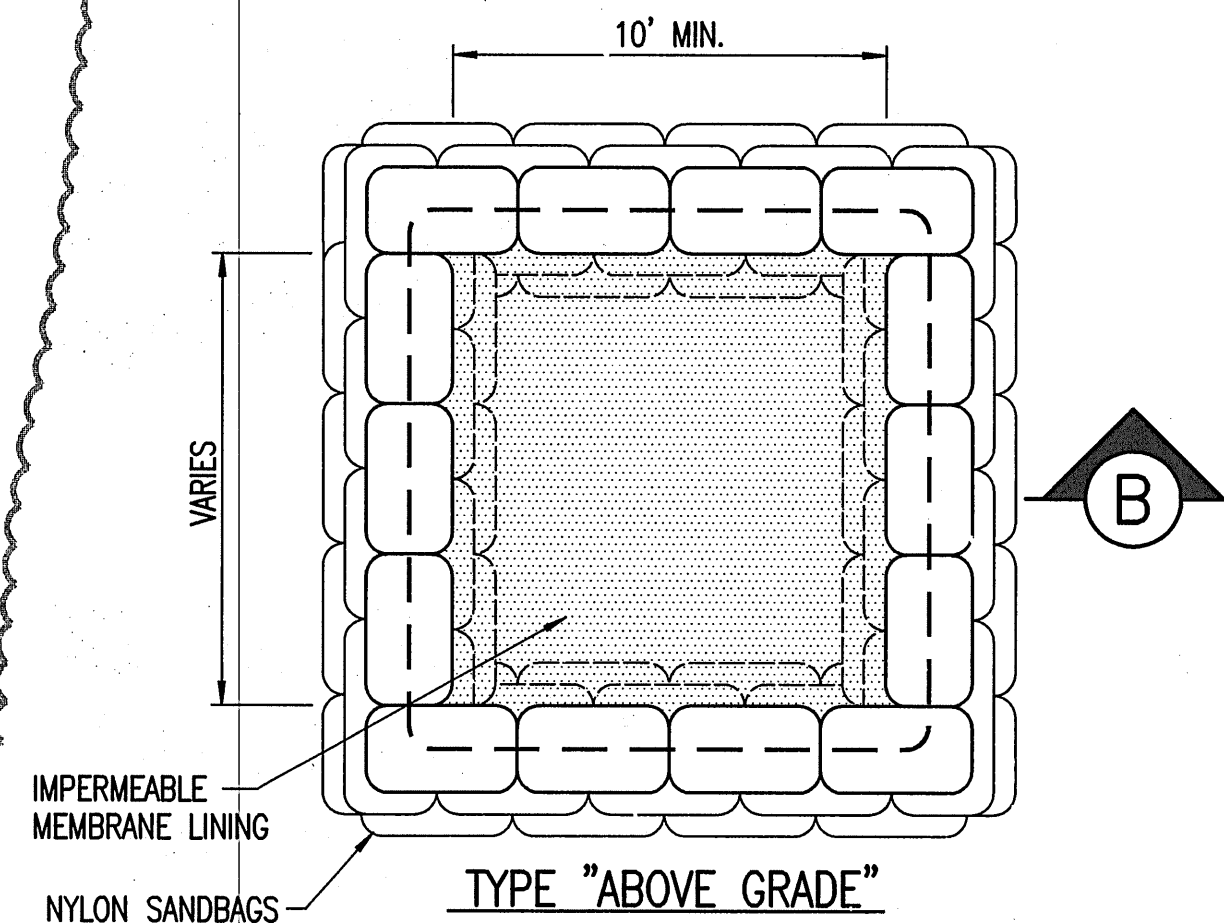
DETAIL - CURB INLET PROTECTION

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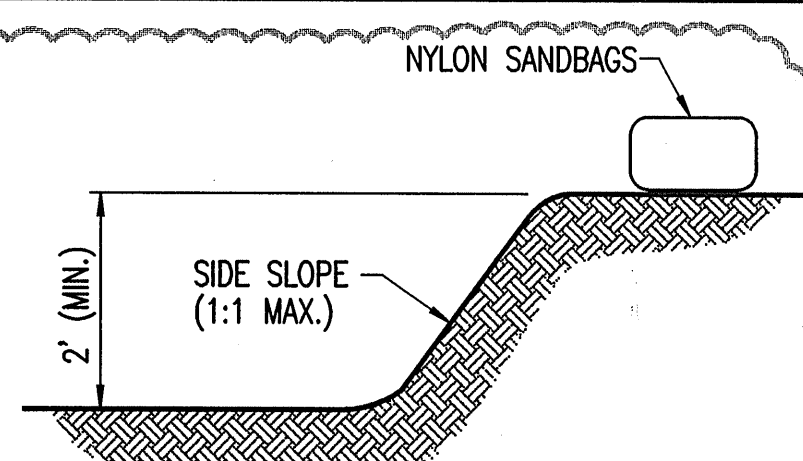
CONCRETE WASH WATER MANAGEMENT (AS REQUIRED)

NOT TO SCALE



CONCRETE WASTE MANAGEMENT (AS REQUIRED)

NOT TO SCALE

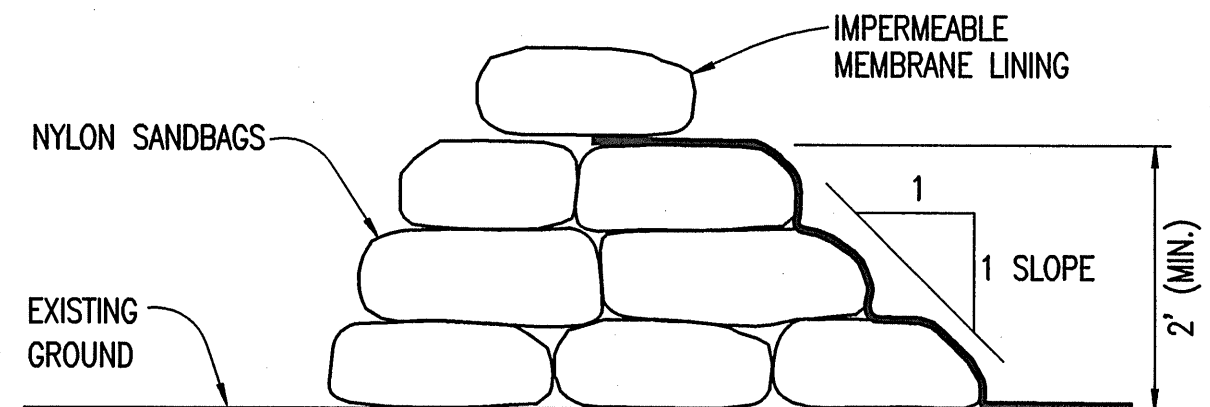


SECTION C

NOT TO SCALE

NOTES:

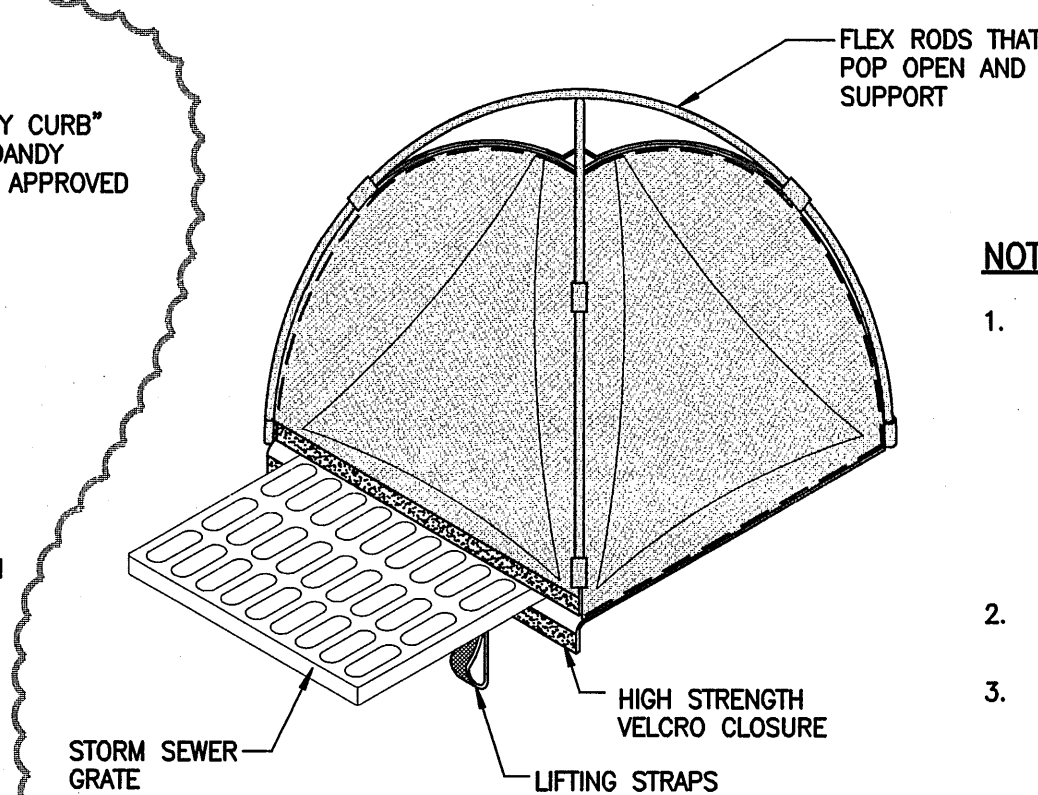
1. ACTUAL LAYOUT TO BE DETERMINED IN FIELD.
2. CONTRACTOR TO VERIFY LOCATION.
3. CONCRETE TRUCK WASH WATER SHALL BE DISPOSED OF OFFSITE OR IN DESIGNATED CONTAINMENT BERMS WITH IMPERMEABLE LINERS TO PREVENT INFILTRATION OR DISCHARGING OF POLLUTANTS DOWNSTREAM.



SECTION B

DETAIL - CONTAINMENT BERM

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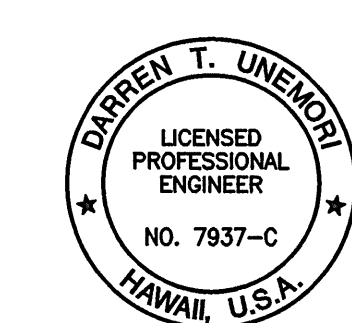


NOTES:

1. CONTRACTOR SHALL INSPECT & MAINTAIN DANDY POP INLET PROTECTION SYSTEM ON A REGULAR BASIS TO ENSURE PROPER FUNCTION TO KEEP SILT, SEDIMENT AND CONSTRUCTION DEBRIS OUT OF THE STORM WATER SYSTEM. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM PANELS AND SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER/INSPECTOR (FOR OIL AND SEDIMENT MODEL). REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION. DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
2. THE DANDY POP INLET PROTECTION UNIT SHALL ENCLOSE THE DRAIN INLET GRATE WITH THE GEOTEXTILE FABRIC.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW & APPROVAL PRIOR TO ORDERING MATERIALS.

DETAIL - "DANDY POP" INLET PROTECTION SYSTEM

NOT TO SCALE




WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE

T.M.K.: (2) 3-9-01 : 16
KIHAI, MAUI, HAWAII

TITLE: EROSION CONTROL NOTES AND DETAILS

DESIGNED BY	DTU	04010.10	13.02
CHECKED BY	DTU	JOB NUMBER	
DRAWN BY	DTU	10-10-05	SHEET
APPROVED BY	DTU	DATE	
SCALE	AS NOTED		OF SHEETS

	REVISIONS FOR SDOH	8/31/10
LETTER	DESCRIPTION	DATE

SIGNATURE
DATE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS REQUIRED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS

1. CW20-1ad SIGN REQUIRED FOR POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER.
2. SEE TABLE 1 FOR ADDITIONAL DIMENSIONS.
3. ONE LANE ROAD (CW20-4) AND FLAGGER AHEAD (CW20-7) SIGNS SHALL BE REMOVED OR COVERED WHEN NO WORK IS BEING PERFORMED AND LANE IS NOT CLOSED.
4. THE ADVISORY SPEED (XX) SHALL BE DETERMINED BY THE ENGINEER.
5. CONES OR DELINEATORS SHALL BE INSTALLED AT 25' O.C. MAX. ON TAPERS.

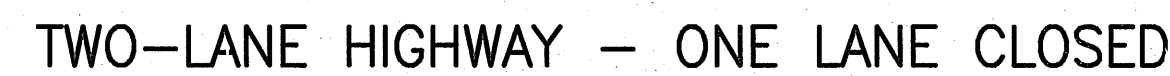


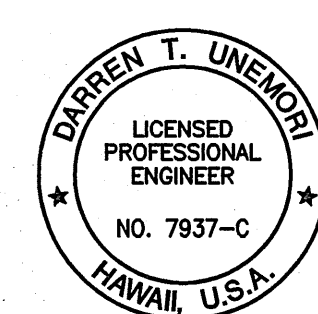
FIGURE 1 – TRAFFIC CONTROL PLAN

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

POSTED SPEED LIMIT ① (M.P.H)	SIGN SPACING (L) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET) ③		
		W = 12' OR LESS ②	W = GREATER THAN 12' ②		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

- ① USE ADVISORY SPEEDS WHEN POSTED.
- ② W = WIDTH OF LANE, SHOULDER, OR OFFSET.
- ③ NOT APPLICABLE FOR TWO-LANE HIGHWAYS.

NOT TO SCALE



SIGNATURE _____ DATE 12/12/08

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

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T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

[illegible]

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DESIGNED BY	CHECKED BY	04010.10	14.0

WIS DRAWN BY	DTU APPROVED BY	JOB NUMBER	SHEET
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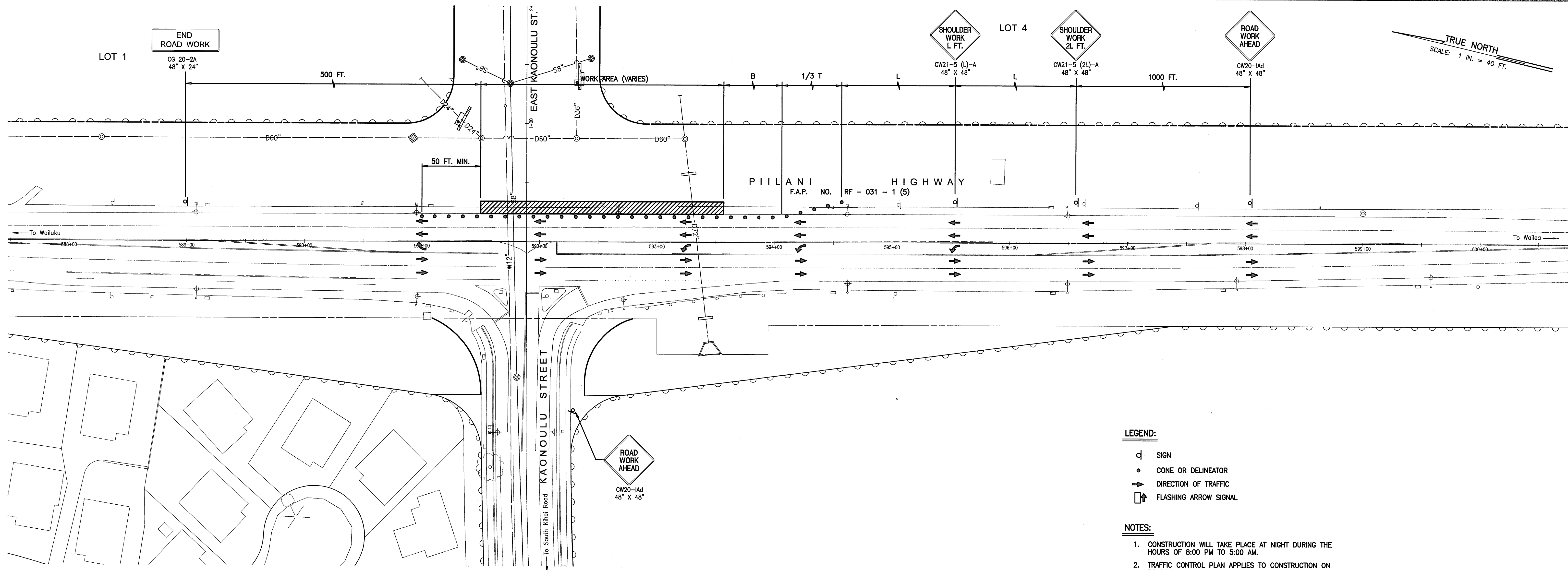
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OF SHEETS



LEGEND:

- SIGN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- ⬇ FLASHING ARROW SIGNAL

NOTES:

- CONSTRUCTION WILL TAKE PLACE AT NIGHT DURING THE HOURS OF 8:00 PM TO 5:00 AM.
- TRAFFIC CONTROL PLAN APPLIES TO CONSTRUCTION ON ROADSIDE OR SHOULDER OF BOTH SIDES OF PILANI HIGHWAY.

TRAFFIC CONTROL PLAN FOR CONSTRUCTION ON SHOULDER OR ROADSIDE OF STATE RIGHT-OF-WAY

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

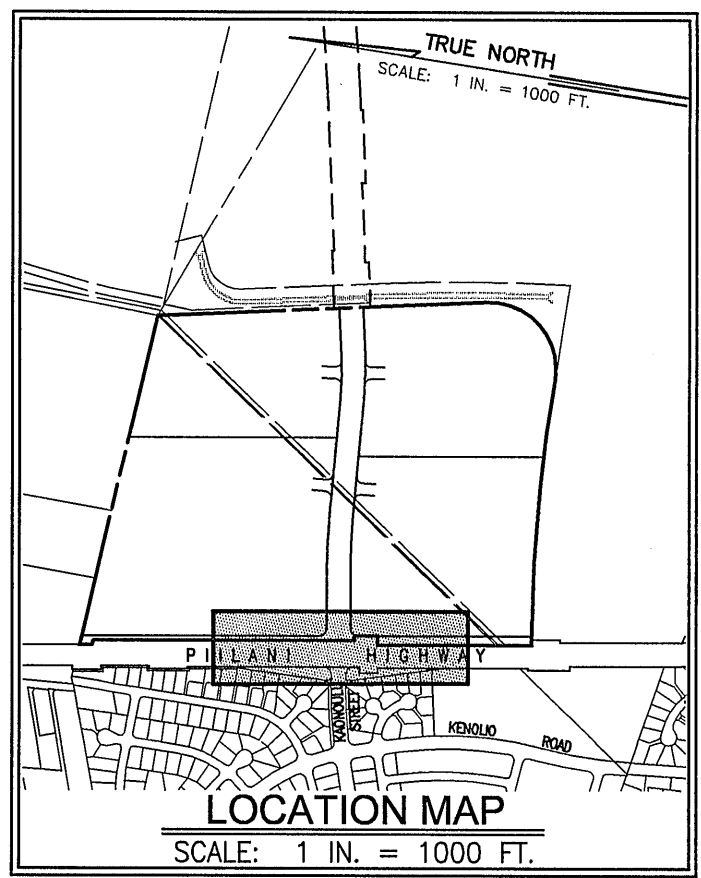
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- THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
- AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
- REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK.

TABLE 1 FOR TRAFFIC CONTROL PLAN

POSTED SPEED LIMIT ① (M.P.H.)	SIGN SPACING (L) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET) ③		
		W = 12' OR LESS ②	W = GREATER THAN 12' ②		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

NOTE:

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- NOT APPLICABLE FOR TWO-LANE HIGHWAYS.



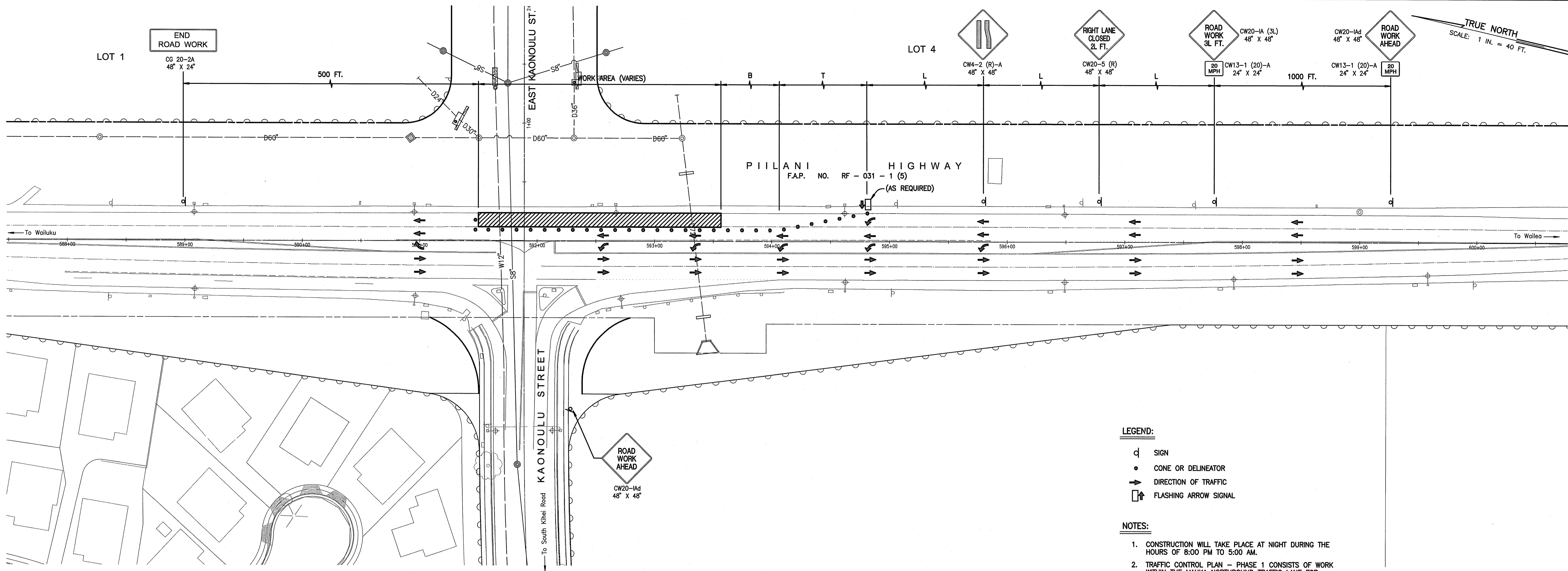
WARREN S. UNEMORI ENGINEERING, INC.
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KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE: TRAFFIC CONTROL PLAN - PILANI HIGHWAY

DESIGNED BY: WSU	CHECKED BY: WSU	04010.10	14.10
DRAWN BY: WIS	APPROVED BY: WSU	JOB NUMBER	
SCALE: 1 in. = 40 ft.	DATE: 10-10-05	SHEET	

OF SHEETS



LEGEND:

- d SIGN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- ⬆ FLASHING ARROW SIGNAL

NOTES:

1. CONSTRUCTION WILL TAKE PLACE AT NIGHT DURING THE HOURS OF 8:00 PM TO 5:00 AM.
2. TRAFFIC CONTROL PLAN - PHASE 1 CONSISTS OF WORK WITHIN THE MAUKA NORTHBOUND TRAFFIC LANE FOR CONSTRUCTION OF THE WATER, SEWER AND DRAINAGE UTILITY CROSSINGS AND PAVEMENT RE-STRIPING.

TRAFFIC CONTROL PLAN FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY - PHASE I

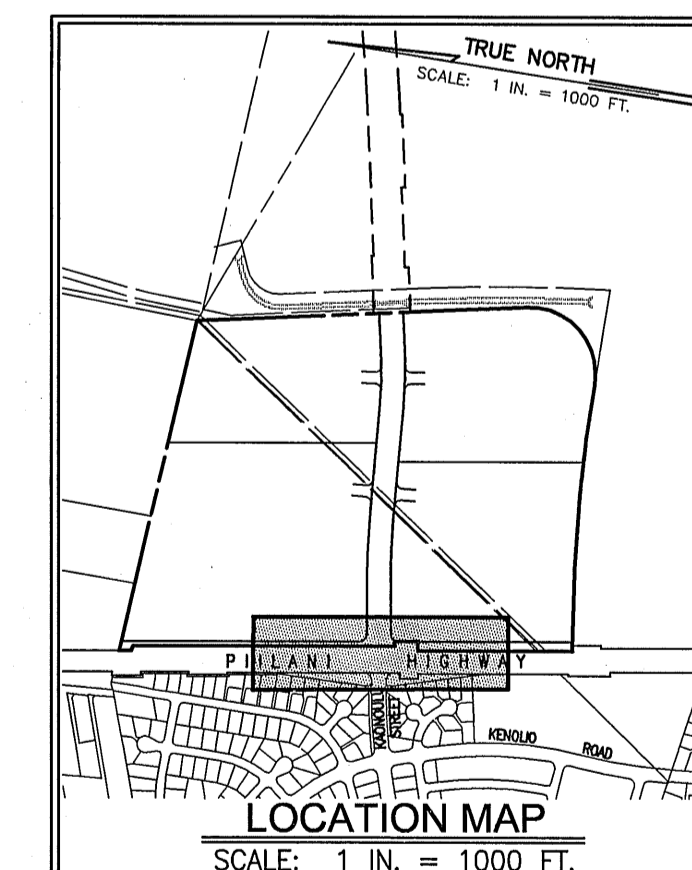
GENERAL NOTES FOR TRAFFIC CONTROL PLAN

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8. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
9. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
10. THE BACKS OF ALL SIGNS USED FOR TRAFFIC CONTROL SHALL BE APPROPRIATELY COVERED TO PRECLUDE THE DISPLAY OF INAPPLICABLE SIGN MESSAGES (I.E., WHEN SIGNS HAVE MESSAGES ON BOTH FACES).
11. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK.

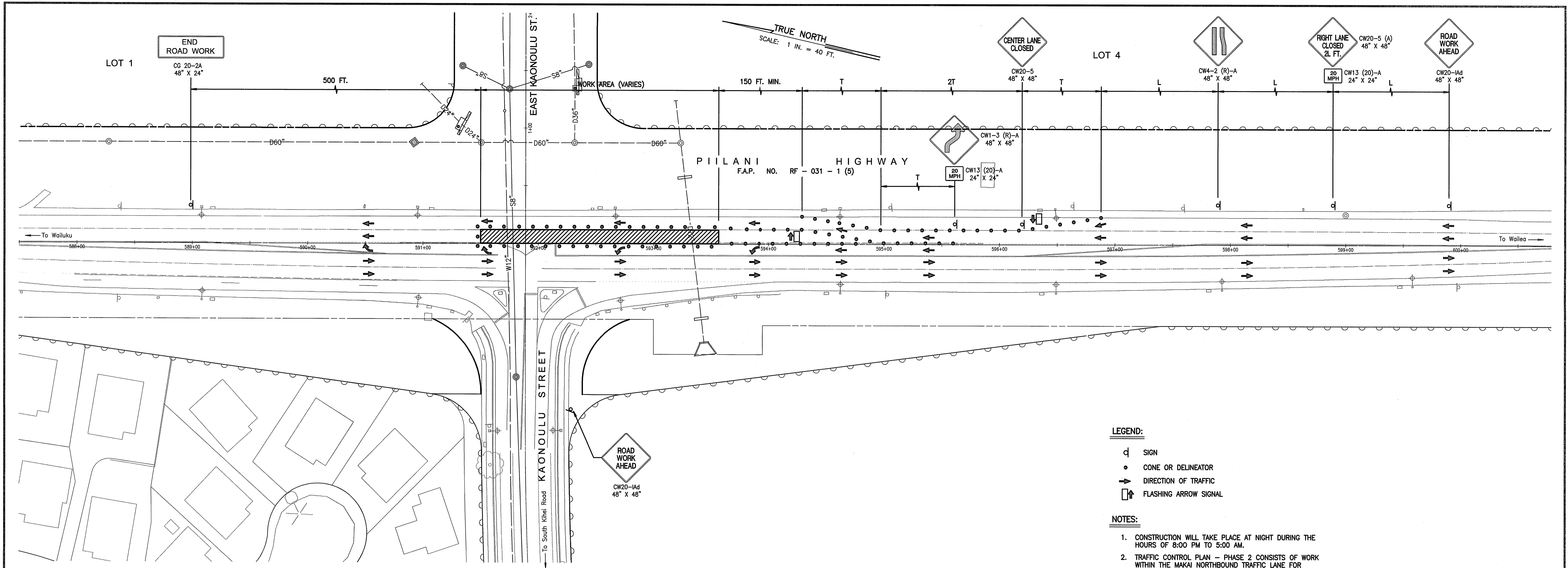
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- ③ NOT APPLICABLE FOR TWO-LANE HIGHWAYS.



WARREN S. UNEMORI ENGINEERING, INC. CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS 2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793		KAONOULU MARKET PLACE T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16 KIHAI, MAUI, HAWAII	
TITLE TRAFFIC CONTROL PLAN - PILANI HIGHWAY			
DESIGNED BY WIS	CHECKED BY WSU	DATE 10-10-05	SHEET 14.11 OF SHEETS
DRAWN BY WIS	APPROVED BY WSU	DATE 10-10-05	
SCALE 1 in. = 40 ft.			



TRAFFIC CONTROL PLAN FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY - PHASE 2

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

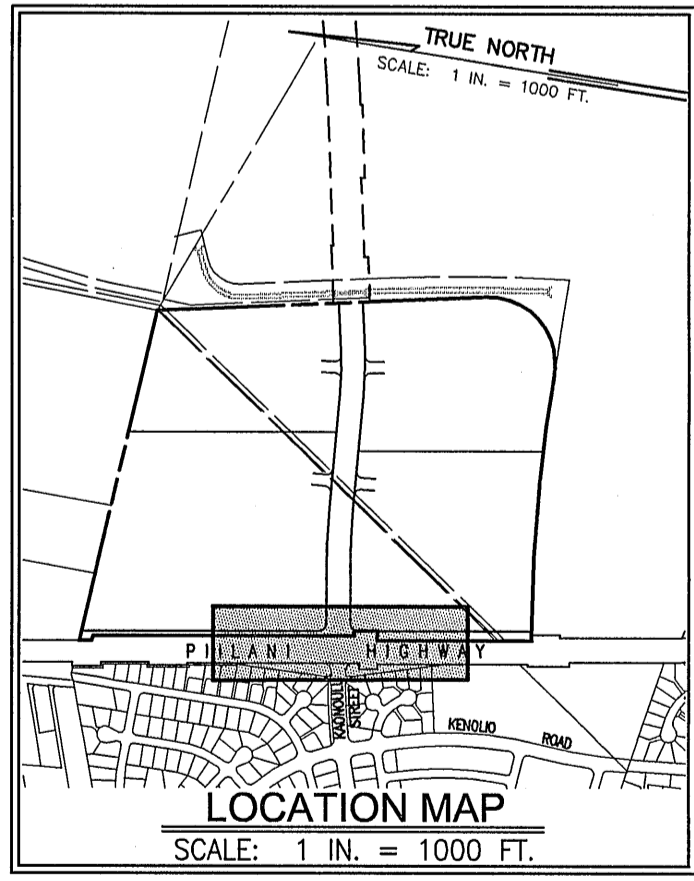
1. THE PERMITEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF WORK.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. WHEN REQUIRED BY THE ISSUING OFFICE, THE PERMITEE SHALL INSTALL A FLASHING ARROW SIGNAL AS SHOWN ON THE TRAFFIC CONTROL PLANS.
7. SIGNS SPACING (L), TAPER LENGTHS (T) AND SPACINGS OF CONES OR DELINEATORS SHALL BE AS SHOWN IN TABLE 1, UNLESS OTHERWISE NOTED ON THE TRAFFIC CONTROL PLANS.
8. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
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11. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
12. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF WORK.

TABLE 1 FOR TRAFFIC CONTROL PLAN

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20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

NOTE:

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WARREN S. UNEMORI
LICENSED PROFESSIONAL ENGINEER
NO. 1569-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

DATE

SIGNATURE

DESIGNED BY WSU

CHECKED BY WSU

DRAWN BY WSU

APPROVED BY WSU

SCALE 1 in. = 40 ft.

04010.10

JOB NUMBER

10-10-05

DATE

14.12

SHEET

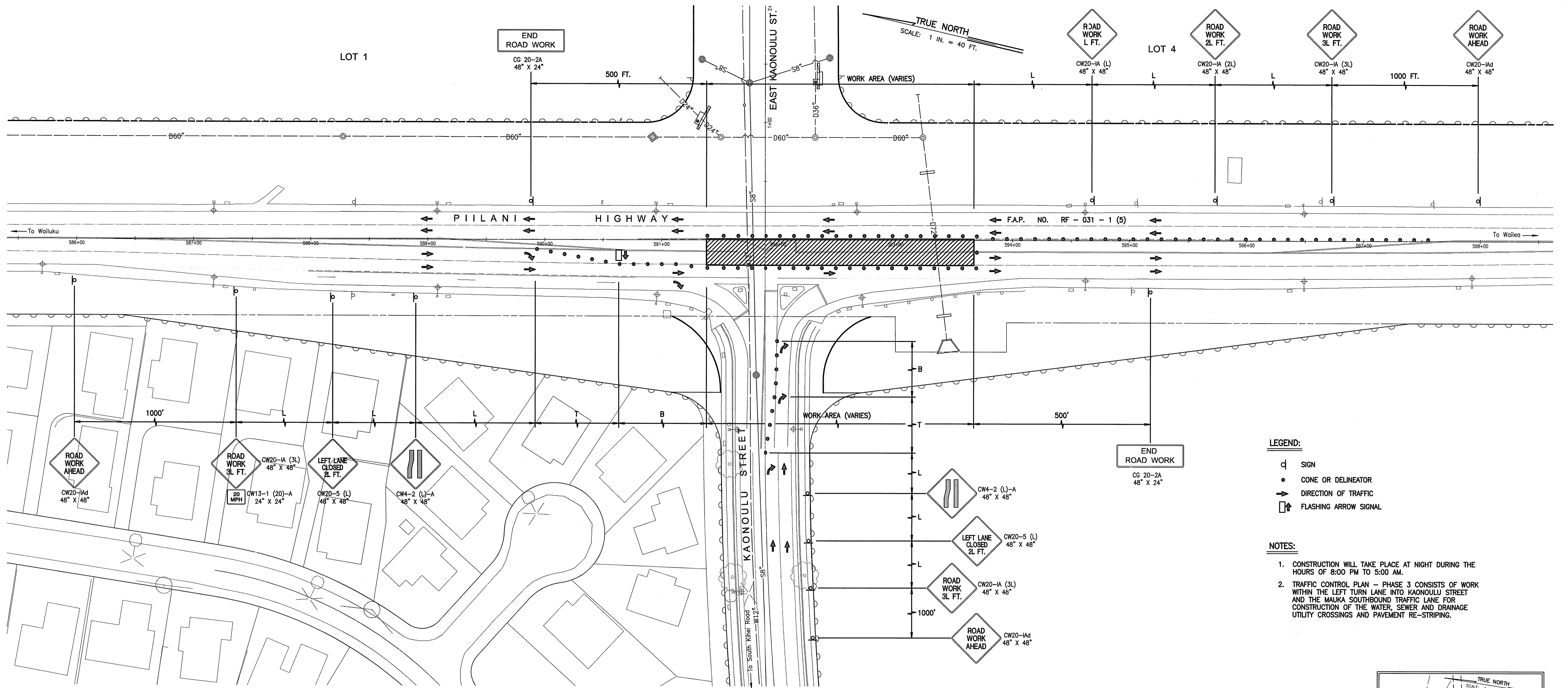
OF SHEETS

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHAI, MAUI, HAWAII

TITLE: TRAFFIC CONTROL PLAN - PILI HIGHWAY

04010.10.dwg/2004/comp/traffic-control-00.dwg



TRAFFIC CONTROL PLAN FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY - PHASE 3

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

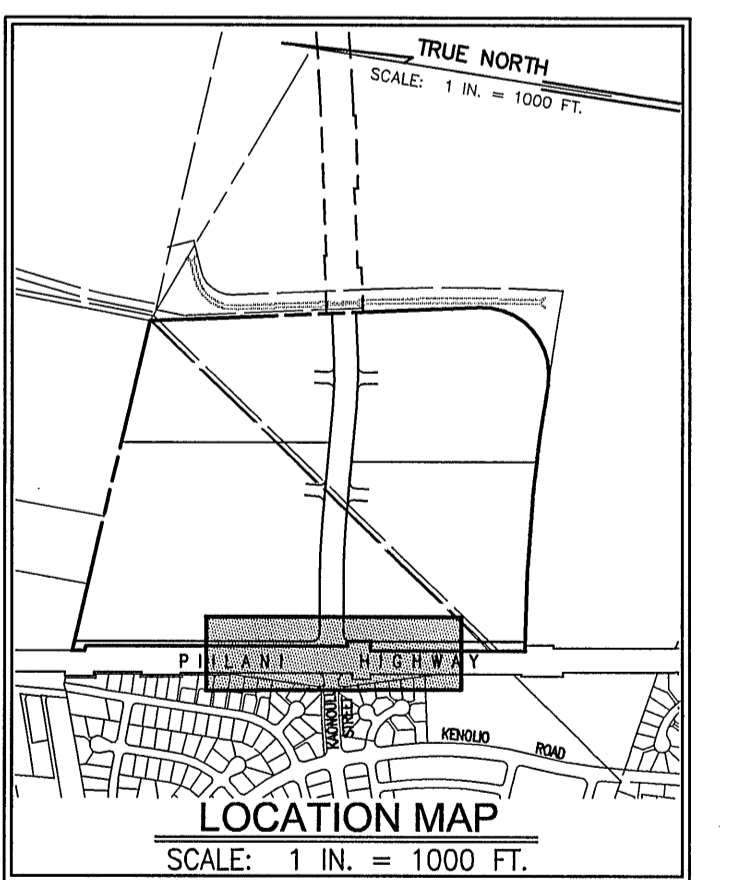
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WARREN S. UNEMORI
LICENSED PROFESSIONAL ENGINEER
NO. 1569-C
HAWAII, U.S.A.

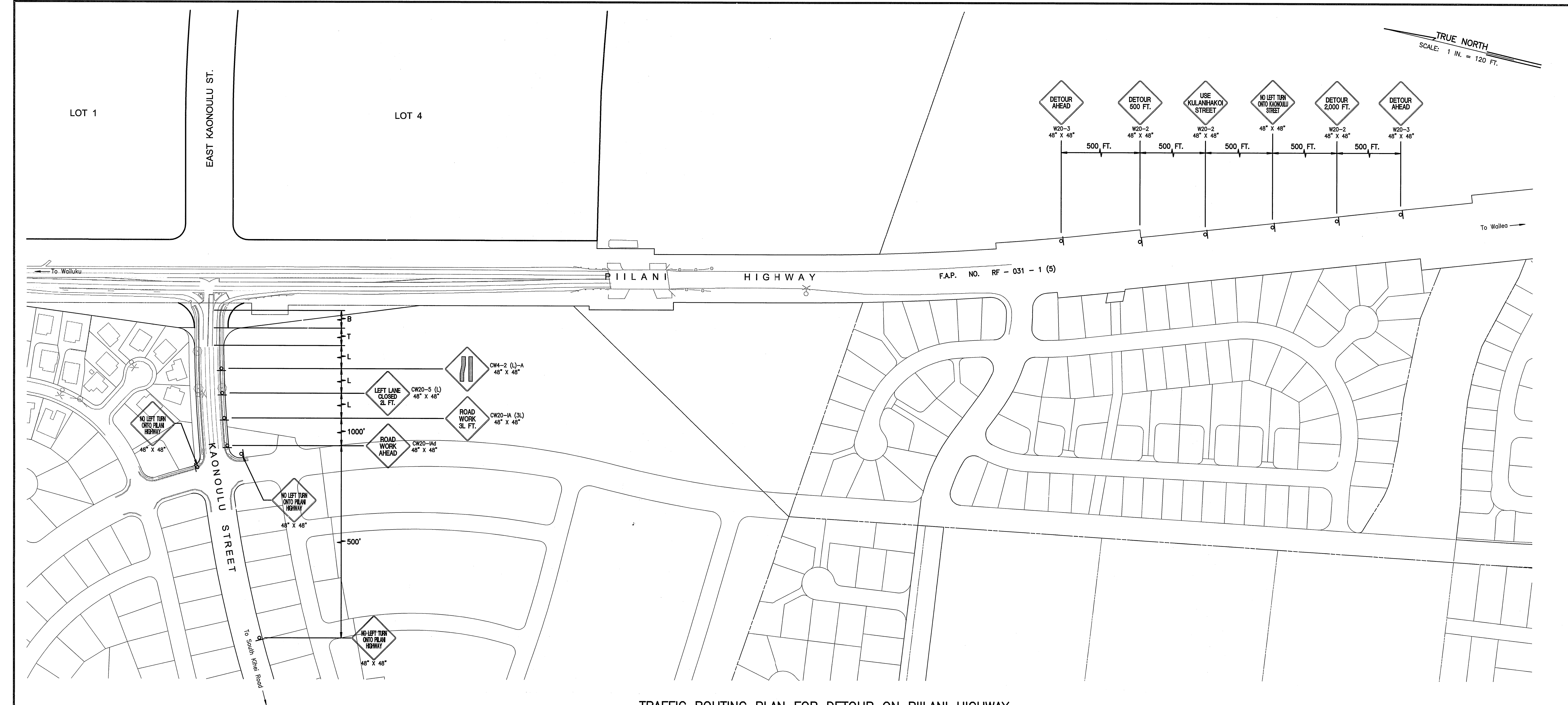
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WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOU LU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHAI, MAUI, HAWAII

TITLE: TRAFFIC CONTROL PLAN - PIILANI HIGHWAY

DESIGNED BY	WSU	CHECKED BY	WSU	04010.10	14.13
DRAWN BY	WIS	APPROVED BY	WSU	JOB NUMBER	
SCALE 1 in. = 40 ft.				10-10-05	SHEET OF SHEETS
				DATE	



TRAFFIC ROUTING PLAN FOR DETOUR ON PILIHI HIGHWAY

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. THE PERMITEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC., TO FIT FIELD CONDITIONS.
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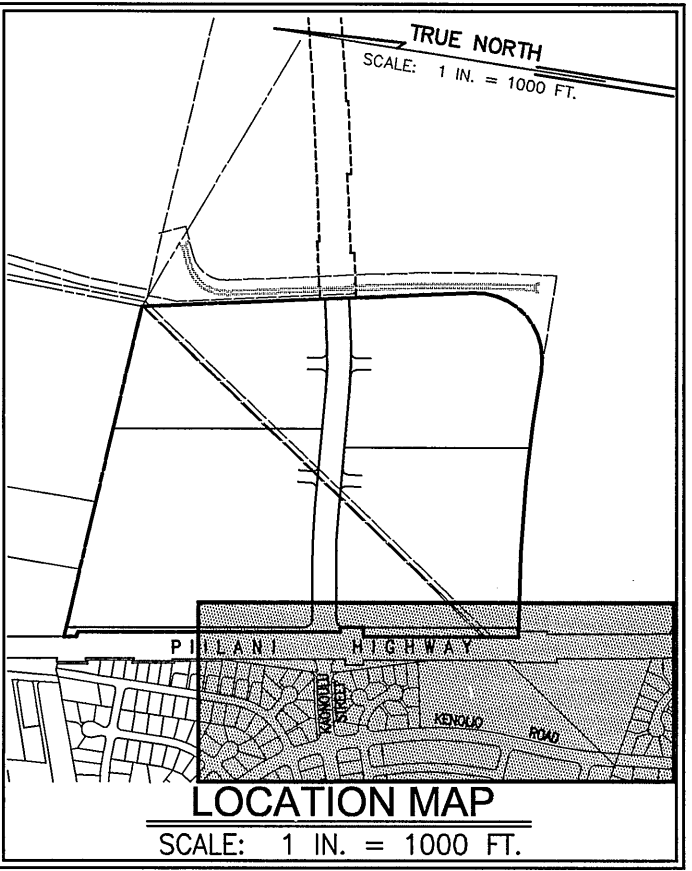
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LEGEND:

- SIGN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- ⬇ FLASHING ARROW SIGNAL

NOTES:

1. CONSTRUCTION WILL TAKE PLACE AT NIGHT DURING THE HOURS OF 8:00 PM TO 5:00 AM.
2. TRAFFIC ROUTING PLAN FOR DETOUR ON PILIHI HIGHWAY WILL BE IMPLEMENTED DURING PHASE 3 AND 4 OF THE TRAFFIC CONTROL PLAN WHEN THERE WILL BE NO LEFT TURN INTO OR OUT OF KAOHOLA STREET AT ITS INTERSECTION WITH PILIHI HIGHWAY.



WARREN S. UNEMORI
LICENSED PROFESSIONAL ENGINEER
NO. 1569-C
HAWAII, U.S.A.

Warren S. Unemori
DATE: 11/10/2024

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 10-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
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KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE: TRAFFIC ROUTING PLAN - PILIHI HIGHWAY DETOUR

DESIGNED BY	WSU	CHECKED BY	WSU	04010.10	14.20
DRAWN BY	WIS	APPROVED BY	WSU	JOB NUMBER	
SCALE: 1 in. = 120 ft.				10-10-05	
				DATE	OF SHEETS

CONSTRUCTION NOTES:

PUBLIC WORKS:

- THE CONTRACTOR SHALL OBTAIN THE FOLLOWING PERMITS FROM THE DEVELOPMENT SERVICES ADMINISTRATION (D.S.A.) OF THE DEPARTMENT OF PUBLIC WORKS (D.P.W.), COUNTY OF MAUI, BEFORE ANY WORK IS BEGUN:
 - "WORK TO PERFORM ON COUNTY HIGHWAY PERMIT", TWO (2) WEEKS PRIOR TO COMMENCEMENT OF WORK ON
 - "DRIVEWAY PERMIT", TWENTY-FOUR HOURS PRIOR TO COMMENCEMENT OF WORK ON ANY DRIVEWAY.
 - "GRADING PERMIT", FOUR (4) WEEKS PRIOR TO COMMENCEMENT OF ANY CLEARING AND GRUBBING. A SATISFACTORY DUST AND EROSION CONTROL PLAN AND/OR OUTLINE SHALL BE SUBMITTED BY THE CONTRACTOR.
- EACH PHASE OF ROAD CONSTRUCTION IS TO BE APPROVED BY THE D.P.W., D.S.A., PRIOR TO WORKING ON THE NEXT PHASE OF ROAD CONSTRUCTION.
- COMPACTION REQUIREMENTS: TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
 - EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT.
 - AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT.
 - AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT.
 - ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE: THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT.
 - TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
- CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION. NONCOMPLIANCE WILL REQUIRE REMOVAL OF ALL SUBSEQUENT WORK TO CORRECT THE AREA OF FAILURE. ALL COSTS OF TESTING, REMOVAL, AND RECONSTRUCTION, SHALL BE BORNE BY THE CONTRACTOR.
- IF THE LATEST REVISIONS OF THE STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
- THE CONTRACTOR SHALL STRIPE STOP LINES, CROSSWALKS AND OTHER LINES, AS REQUIRED, AND SHALL INSTALL SIGNS IN ACCORDANCE WITH THE LATEST REVISIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, DATED MAY 2003."
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY, AND CONVENIENCE OF THE PUBLIC, ALL IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, DATED MAY 2003."
- CONTRACTOR SHALL SUBMIT TO D.P.W., A STRIPING PLAN FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
- THE DIRECTOR OF PUBLIC WORKS OR THE DIRECTOR OF WATER SUPPLY MAY STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLANS OR BE DETRIMENTAL TO THE PUBLIC INTEREST.
- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- RECORD DRAWINGS (ONE (1) TIFF COPY AND SEVEN (7) SETS OF PLANS) ARE TO BE SUBMITTED TO THE DEVELOPMENT SERVICES ADMINISTRATION PRIOR TO FINAL APPROVAL OF THE IMPROVEMENTS AS SHOWN ON THE APPROVED CONSTRUCTION PLANS.
- BENCH MARKS SHALL BE ESTABLISHED AND CERTIFIED BY A REGISTERED SURVEYOR, AND SUBMITTED TO THE DEVELOPMENT SERVICES ADMINISTRATION.
- PURSUANT TO MAUI COUNTY CODE SECTION 3.44.015(C), THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT, OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY RESOLUTION APPROVED BY A MAJORITY OF COUNCIL'S MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL.

EXISTING UTILITIES:

- THE LOCATION, DEPTH AND TYPE OF THE VARIOUS EXISTING UTILITY LINES SHOWN ON THE CONSTRUCTION PLANS WERE DETERMINED ON THE BASIS OF THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH AND TYPE PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING UTILITIES AS SHOWN ON THE CONSTRUCTION PLANS AND IN GROUND, AND NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE ENGINEER.
- ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS, IF DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, SHALL BE REPAIRED SOLELY AT HIS EXPENSE.

ENVIRONMENTAL PROTECTION:

- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENVIRONMENTALIST SHALL BE BORNE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE, ALL IN ACCORDANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS OF THE PUBLIC HEALTH REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND THE COUNTY'S GRADING ORDINANCE.
- ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED OR WITHIN 14 DAYS OF LAST DISTURBANCE.
- CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT APPROPRIATE SITES. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE SHALL ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- THE CONTRACTOR SHALL NOT DEMOLISH OR CLEAR ANY STRUCTURE, SITE, OR VACANT LOT WITHOUT FIRST ASCERTAINING THE PRESENCE OR ABSENCE OF RODENTS WHICH MAY ENDANGER THE PUBLIC HEALTH BY DISPERSAL FROM SUCH PREMISES. SHOULD SUCH INSPECTION REVEAL THE PRESENCE OF SUCH RODENTS, THE CONTRACTOR SHALL ERADICATE SUCH RODENTS BEFORE DEMOLISHING OR CLEARING SAID STRUCTURE, SITE OR VACANT LOT.

CLEARING AND GRUBBING:

- NO CLEARING AND GRUBBING MATERIALS SHALL BE DEPOSITED IN COUNTY SANITARY LANDFILLS. CONTRACTOR SHALL MAKE THEIR OWN ARRANGEMENTS FOR SATISFACTORY DEPOSIT OF SAME.

EXISTING GRADES:

- EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING FURTHER WITH ANY WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.

PLAN NOTES FOR WATER SYSTEM:

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
- ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF DWS STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARD DETAILS BEFORE COMMENCING CONSTRUCTION.
- ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
- THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE NEW WATERLINE, UNLESS NOTED OTHERWISE, AND WILL NOT BE PAID FOR SEPARATELY.
- CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
- THE MAXIMUM DISTANCE BETWEEN VALVE AND NUT AND TOP OF VALVE MANHOLE COVER SHALL BE THREE (3) FEET.
- THE CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
- CONNECTION TO DWS SYSTEM:
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. HE SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. HE SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
 - WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS, AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
 - AUTHORIZED DWS PERSONNEL MAY BE REQUIRED TO MAKE THE FINAL CONNECTION TO THE EXISTING LINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK, INCLUDING THE COST OF PRESSURE TESTING AND DISINFECTION.
 - IF THE DWS PROVIDES ONLY INSPECTION AND SUPERVISING OPERATORS, AND DOES NOT PROVIDE PERSONNEL FOR THE ACTUAL CONNECTION, THE CONTRACTOR SHALL PROVIDE ALL PIPEFITTERS AND LABORS TO MAKE THE CONNECTION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
- MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
- BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTING WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
 - 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
 - COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
 - COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".
- ALL BURIED METALS SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
- LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
- THE CONTRACTOR SHALL PAINT AND NUMBER THE FIRE HYDRANT. NUMBERING TO BE FURNISHED BY DWS.
- WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
- THE DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
- THE CONTRACTOR SHALL SUBMIT TWO SETS OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN TIF FORMAT SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

PLAN NOTES FOR CHLORINATION OF WATER SYSTEM PIPELINES:

- WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
- PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
- THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
- SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
- AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
- SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
- FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
- ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
- MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
- THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

WASTEWATER NOTES:

- ALL WASTEWATER LINES AND APPURTENANCES SHALL CONFORM TO STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI.
- ALL SEWERLINE AND APPURTENANCES SHALL FOLLOW THE DESIGN STANDARDS OF THE WASTEWATER RECLAMATION DIVISION, CITY AND COUNTY OF HONOLULU, VOLUMES 1 AND 2, DATED JULY 1993 AND JULY 1984 RESPECTIVELY, UNLESS OTHERWISE NOTED.
- BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL SCHEDULE AND DOCUMENT A PRE-CONSTRUCTION MEETING WITH ALL AGENCIES HAVING UTILITIES AFFECTED BY THE WORK.
- THE DEPARTMENT OF PUBLIC WORKS, WASTEWATER RECLAMATION DIVISION, HAS THE RIGHT TO STOP CONSTRUCTION, SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED PLANS AND SPECIFICATIONS, OR DETRIMENTAL TO THE PUBLIC INTEREST.
- ALL EXISTING WASTEWATER LINES, WHETHER OR NOT SHOWN ON THE PLANS, IF DAMAGED DURING CONSTRUCTION, SHALL BE REPAIRED BY THE CONTRACTOR AND THE CONTRACTOR SHALL PAY ALL EXPENSES.
- THE CONTRACTOR SHALL NOTIFY THE WASTEWATER RECLAMATION DIVISION ONE (1) WEEK PRIOR TO CONNECTION TO ANY EXISTING WASTEWATER LINES.
- SHOULD THE CONTRACTOR EXCAVATE BEYOND THE TRENCH PAY-WIDTH, AS SPECIFIED IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, AND SUCH ACTION RESULTS IN A GREATER LOAD TO THE PIPE, THE CONTRACTOR SHALL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HIGHER CLASS OF BEDDING MATERIAL THAT WILL WITHSTAND THE ADDED LOAD.
- WASTEWATER LATERALS SHALL BE SIX (6) INCHES IN DIAMETER AT A MINIMUM OF 1% SLOPE, UNLESS APPROVED OTHERWISE.
- AN ADVANCE RISER CONNECTION SHALL BE INSTALLED AT EACH NEW WASTEWATER LATERAL.
- WHERE THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING UTILITY LINE IS EIGHTEEN (18) INCHES OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE JACKED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984.
- WHEN THE WASTEWATER MAINS ARE OF A DIFFERENT MATERIAL THAN THE LATERALS, THE CONTRACTOR SHALL INSTALL APPROVED ADAPTERS.
- ALL BACKFILL FOR WASTEWATER TRENCHES SHALL BE COMPACTED IN ONE (1) FOOT LIFTS TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY.
- WHERE CONSTRUCTION IS TO BE DONE IN PHASES OR INCREMENTS, EACH PHASE OR INCREMENT SHALL BE APPROVED BY WASTEWATER RECLAMATION DIVISION BEFORE THE NEXT PHASE OR INCREMENT IS STARTED.
- ALL WASTEWATER MAINS SHALL PASS A MANHOLE TEST AS A CONDITION OF ACCEPTANCE 30 DAYS AFTER COMPLETION AND BACKFILL. THE MANHOLE DIAMETER SHALL BE 95% OR MORE OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED. A CERTIFICATION LETTER FROM THE CONTRACTOR, SIGNED BY THE LUCA INSPECTOR, WILL BE FORWARDED TO THE WASTEWATER RECLAMATION DIVISION.
- PRIOR TO FINAL ACCEPTANCE, ALL WASTEWATER LINES INSTALLED SHALL BE FLUSHED WITH WATER AND ANY ACCUMULATED CONSTRUCTION DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED.
- "AS-BUILT" DRAWINGS SHALL BE SUBMITTED AS A CONDITION FOR THE FINAL ACCEPTANCE OF THE PROJECT. IF MAIN TRANSMISSION LINES WILL BE DEDICATED TO THE COUNTY, THE CONTRACTOR SHALL SUBMIT AN AUTOCAD RELEASE 14 DRAWING FILE TO THE WASTEWATER RECLAMATION DIVISION.
- ALL MAIN WASTEWATER LINES WHICH WILL BE DEDICATED TO THE COUNTY OF MAUI SHALL BE INSPECTED BY CLOSED CIRCUIT TELEVISION (CCTV) IN STRICT ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE NOVEMBER 1, 1996. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY.
- ANY CONNECTION MADE UNDER THE WATER TABLE WILL REQUIRE CCTV AT HIGH TIDE TO DETERMINE WATER TIGHTNESS, IN ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE NOVEMBER 15, 1996. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY.
- CONTRACTOR MUST HAVE A SITE SPECIFIC SPILL PREVENTION PLAN (SSSPP) APPROVED BY WWRD PRIOR TO SEWERLINE CONSTRUCTION AND CONNECTION TO EXISTING FACILITIES.

EROSION CONTROL:

THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL EROSION DURING THE SITE DEVELOPMENT PERIOD:

- MINIMIZE TIME OF CONSTRUCTION.
- RETAIN EXISTING GROUND COVER UNTIL LATEST DATE TO COMPLETE CONSTRUCTION.
- EARLY CONSTRUCTION OF DRAINAGE CONTROL FEATURES.
- USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
- STATION WATER TRUCK ON SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES (WEEKENDS AND HOLIDAYS INCLUDED).
- USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
- GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
- ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

EARTHWORK:

DISTANCE FROM TOP OF CUT OR BOTTOM OF FILL TO PROPERTY LINE:

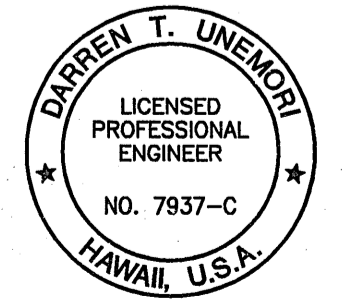
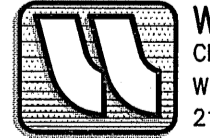
HEIGHT OF CUT OR FILL DISTANCE FROM PROPERTY LINE

0' to 2':	1'
MORE THAN 2' to 4':	2'
MORE THAN 4' to 6':	3'
MORE THAN 6' to 10':	4'
MORE THAN 10' to 15':	5'
MORE THAN 15':	8'

NOTE:

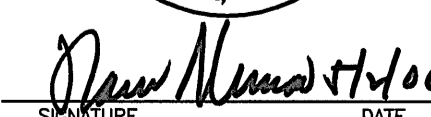
SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.

LETTER	DESCRIPTION	DATE

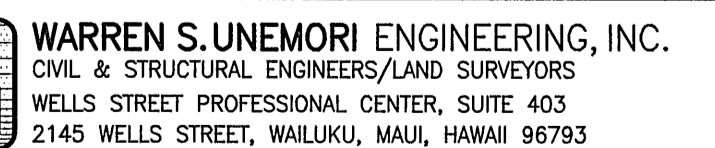
				WARREN S. UNEMORI ENGINEERING, INC. CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS WELLS STREET PROFESSIONAL CENTER, SUITE 403 2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793	
KAONOLU MARKET PLACE					
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16 KIHEI, MAUI, HAWAII					
TITLE CONSTRUCTION NOTES					
DESIGNED BY		DTU		04010.10	
DRAWN BY		DTU		JOB NUMBER	
AS NOTED		APPROVED BY		15.01	
SCALE				10-10-05	
DATE				SHEET	
OF				SHEETS	

1. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE'S HIGHWAY DISTRICT ENGINEER AT MAUI DISTRICT OFFICE PRIOR TO COMMENCEMENT OF WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY.
2. CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE SPECIFICATION FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, OF THE STATE HIGHWAYS DIVISION.
3. ALL LANES SHALL BE OPENED TO TRAFFIC AT ALL TIMES. LANE CLOSURE OF HONOAPILANI HIGHWAY WILL NOT BE PERMITTED.
4. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U. S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS". IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
5. THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:
 - A. RESIDENTIAL DRIVEWAYS
 - (1) 2" ASPHALT CONCRETE AND 6" AGGREGATE BASE COURSE, OR 2" ASPHALT CONCRETE AND 2-1/2" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE.
 - (2) 4" OF CLASS "A" CONCRETE REINFORCED WITH 6"X 6" - 6/6 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY ENGINEER.
 - B. COMMERCIAL DRIVEWAYS, SIDE ROADS AND UTILITY INSTALLATIONS ON MINOR HIGHWAYS
 - (1) 2-1/2" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 2-1/2" ASPHALT CONCRETE AND 8" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE.
 - (2) 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"X 6" - 6/6 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY ENGINEER.
 - C. CHANNELIZED INTERSECTIONS AND UTILITY INSTALLATIONS ON MAJOR HIGHWAYS
 - 4" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 4" ASPHALT CONCRETE AND 8" ASPHALT CONCRETE BASE COURSE OR ASPHALT CONCRETE, OR MATCH EXISTING PAVEMENT STRUCTURE, WHICHEVER IS GREATER.
6. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DISTRICT ENGINEER.
7. COMPACTION TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, AS FOLLOWS:
 - A. SUBBASE: ONE (1) COMPACTION TEST(S)
 - B. BASE COURSE: ONE (1) COMPACTION TEST(S)
 - C. ONE (1) COMPACTION TEST(S) FOR EACH 200 LINEAL FEET OF TRENCH OR FRACTION THEREOF.

SUBMIT COMPACTION TEST RESULTS TO DISTRICT ENGINEER FOR REVIEW.
8. PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE NEW CENTERLINE OF UTILITY TRENCH AND THAT SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE DISTRICT ENGINEER.
9. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
10. NO TRENCH SHALL BE OPENED MORE THAN 150 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCTLINE.
11. LONGITUDINAL DRAINAGE ALONG THE HIGHWAY SHALL BE MAINTAINED.
12. PAVEMENT STRIPING SHALL BE DONE BY CONTRACTOR.
13. APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE YEAR THEREOF FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT HIS CONSTRUCTION PLANS FOR DIVISION'S REVIEW AND APPROVAL.
14. ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.
15. OPERATION OF STEEL TRACK EQUIPMENT WILL NOT BE ALLOWED ON STATE HIGHWAY UNLESS AUTHORIZED BY DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION.



LETTER	DESCRIPTION	DATE








KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE CONSTRUCTION NOTES

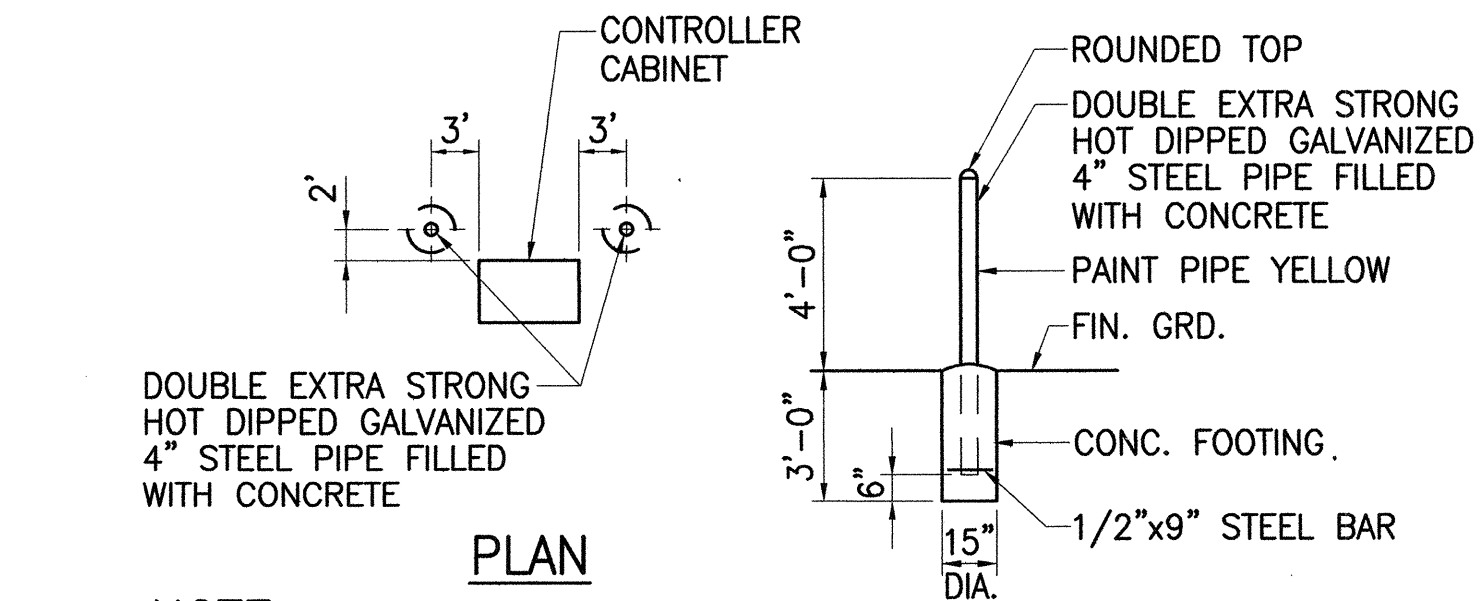
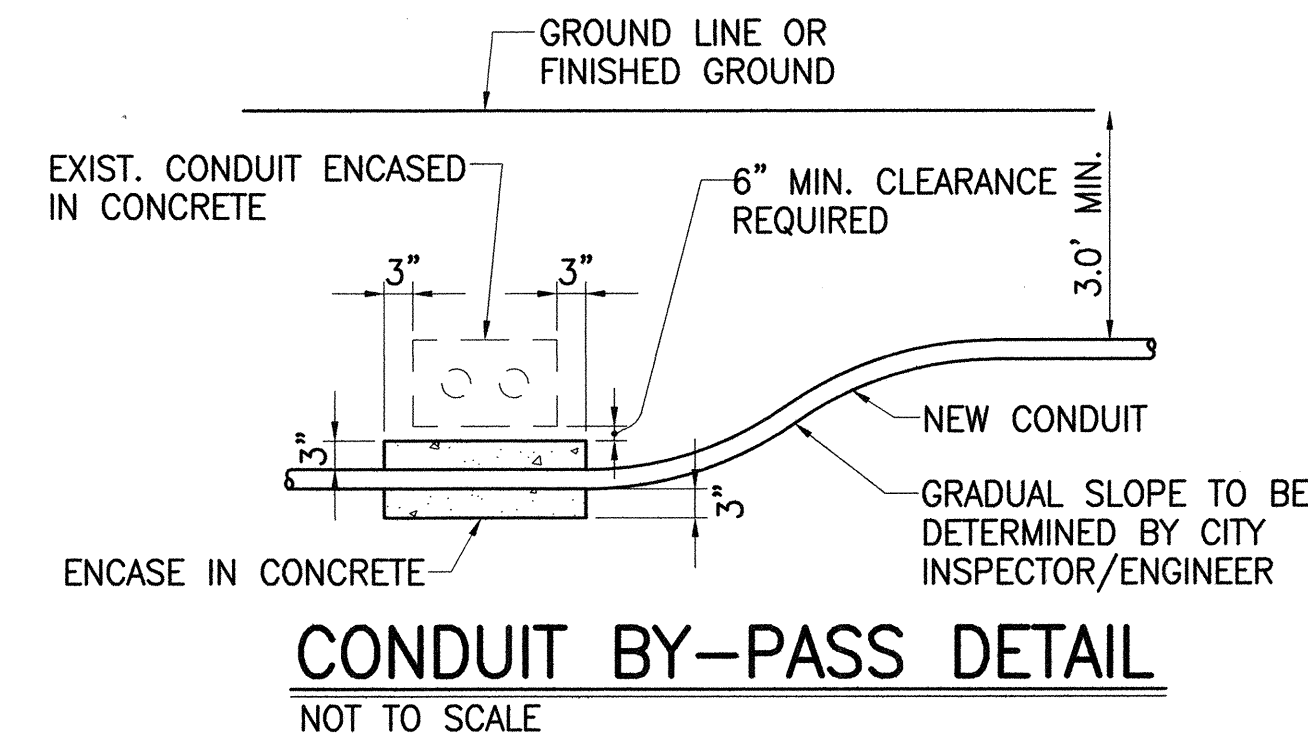
WSU DESIGNED BY	WSU CHECKED BY	04010.10 JOB NUMBER	15.02
WIS DRAWN BY	WSU APPROVED BY		
SCALE AS NOTED		10-10-05 DATE	SHEET
			OF SHEETS

TRAFFIC SIGNAL NOTES

- ALL TRAFFIC SIGNAL CONTROLLER EQUIPMENT SHALL BE COMPLETELY WIRED IN THE CABINET AND SHALL CONTROL THE TRAFFIC SIGNALS AS CALLED FOR IN THE PLANS.
- SIGNAL INDICATIONS DURING CLEARANCE INTERVAL:
 - IF A SIGNAL IS G OR  AND WILL REMAIN G OR  DURING THE NEXT PHASE, IT SHALL BE G OR  DURING THE CLEARANCE INTERVAL.
 - IF A SIGNAL IS G OR  AND WILL BECOME R OR EXTINGUISHED DURING THE NEXT PHASE, IT SHALL BE Y OR  DURING THE CLEARANCE INTERVAL.
 - IF A SIGNAL IS R AND WILL REMAIN R OR BECOMES G DURING THE NEXT PHASE, IT SHALL REMAIN R DURING THE CLEARANCE INTERVAL.
- THE LOOP AMPLIFIER UNITS FURNISHED FOR THIS PROJECT SHALL BE CAPABLE OF OPERATING THE LOOP DETECTOR CONFIGURATIONS SHOWN ON THE PLANS. COST FOR THE LOOP AMPLIFIER SHALL BE INCIDENTAL TO THE INSTALLATION OF THE LOOP DETECTOR.
- A SOLID #8 BARE COPPER WIRE SHALL BE PULLED WITH THE TRAFFIC CONTROL CABLE FOR EQUIPMENT GROUND. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE CONTROL CABLE.
- CONDUITS AND PULLBOX LOCATIONS AS SHOWN ON THE PLANS ARE SCHEMATIC. THEY MAY BE MODIFIED BY THE CONTRACTOR WITH THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL THE CONTROLLER AND CABINET IN THE INDICATED LOCATION.
- ALL WORK FOR THE INSTALLATION OR MODIFICATION OF THE TRAFFIC SIGNAL SYSTEM SHALL CONFORM TO THE LATEST REVISIONS OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1994" AND THE "STANDARD PLANS" OF THE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION AND AS SHOWN ON THESE DRAWINGS.
- ALL SPLICING SHALL BE DONE IN THE PULLBOXES.
- FURNISHING AND INSTALLING THE CONDUIT STUBOUTS (PULLBOXES TO EDGE OF PAVEMENT) WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS.
- THE CONCRETE JACKET FOR THE CONDUIT BY-PASS DETAIL SHOWN ON THIS SHEET SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS. THE ENGINEER SHALL DETERMINE IF A CONCRETE JACKET IS REQUIRED.
- ALL CABLE AND ELEMENTS FOR GROUNDING SHALL BE NEW.
- CABLES BETWEEN SIGNAL FACES, PEDESTRIAN HEADS, PEDESTRIAN PUSH BUTTONS, AND EVP DETECTORS AND THE NEAREST PULLBOX ARE NOT CALLED OUT ON THE PLAN, BUT SHALL BE FURNISHED AND INSTALLED IN SUFFICIENT NUMBERS AND LENGTHS AS REQUIRED. COST SHALL BE INCIDENTAL TO VARIOUS TRAFFIC SIGNAL CONTRACT ITEMS.
- CONDUITS BETWEEN THE TRAFFIC SIGNAL STANDARD AND THE PULLBOX SHALL BE IN SUFFICIENT NUMBER AS REQUIRED. COST SHALL BE INCIDENTAL TO THE INSTALLATION OF THE TRAFFIC SIGNAL STANDARD FOUNDATION.
- UNLESS OTHERWISE SPECIFIED, ALL CONDUITS SHALL BE PVC SCHEDULE 80.
- THE CONTRACTOR SHALL NOTIFY THE MAUI DISTRICT OFFICE, HIGHWAY DIVISION, STATE OF HAWAII DEPARTMENT OF TRANSPORTATION, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE TRAFFIC SIGNAL SYSTEM (PHONE: 873-3535).
- THE TRAFFIC SIGNAL STANDARDS SHALL BE DESIGNED & CONSTRUCTED IN CONFORMANCE WITH THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS" OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIAL'S (AASHTO).
- ALL TRAFFIC SIGNAL CONDUITS SHALL BE CONCRETE ENCASED.

CONSTRUCTION NOTES

- LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES SUCH AS PIPE-LINES, CONDUITS, CABLES, ETC., SHOWN ON PLANS ARE APPROXIMATE ONLY. IT IS NOT THE INTENT OF THESE PLANS TO SHOW THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES WITH THE RESPECTIVE OWNERS. EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN COST.
- THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR SHALL NOTIFY ALL COMPANIES TO VERIFY, TONE AND LOCATE THEIR EXISTING UTILITIES WITHIN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL COORDINATE ALL WORK.
- THE LOCATIONS OF THE NEW TRAFFIC SIGNAL STANDARDS, TRAFFIC SIGNAL STANDARDS WITH MAST-ARM, PEDESTRIAN PUSH BUTTONS, TRAFFIC CONTROLLER, PULLBOXES, CONDUITS AND LOOP DETECTORS SHALL BE STAKED OUT IN THE FIELD BY THE CONTRACTOR AND APPROVAL OF THE LOCATIONS SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION AND INSTALLATION.
- ALL TRAFFIC SIGNAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," FEDERAL HIGHWAY ADMINISTRATION (2003) AND AMENDMENTS.
- MAINTENANCE OF TRAFFIC THROUGH THE CONSTRUCTION AREA SHALL BE IN ACCORDANCE WITH PART VI OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," FEDERAL HIGHWAY ADMINISTRATION (2003) AS AMENDED AND AS SPECIFIED IN THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL FURNISH AND MAINTAIN ADEQUATE BARRICADES, BLINKERS, CONSTRUCTION SIGNS, ETC., FOR THE SAFETY OF THE MOTORING PUBLIC.
- AT THE END OF EACH DAY'S WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND OTHER OBSTRUCTIONS TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC.
- THE CONTRACTOR SHALL PROVIDE A 3-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN TRAFFIC SIGNAL CONDUIT AND ALL EXISTING UTILITY LINES.

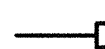










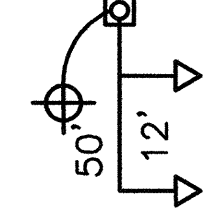

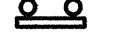



NOTE:
COST OF CONC. FILLED GALVANIZED POSTS SHALL BE INCIDENTAL TO OTHER ITEMS OF WORK.

PIPE GUARD DETAIL

NOT TO SCALE

LEGEND

NEW	EXISTING
	PEDESTRIAN SIGNAL HEAD
	12" R Y G STANDARD TRAFFIC SIGNAL HEAD
	12" R Y ↑ STANDARD TRAFFIC SIGNAL HEAD
	12" R Y G STANDARD TRAFFIC SIGNAL HEAD
	EVP DETECTOR
	LOOP DETECTOR
	MODEL 170 CONTROLLER ON BASE
	TYPE "A" PULLBOX
	TYPE "B" PULLBOX
	TYPE "C" PULLBOX
	STANDARD TRAFFIC AND PEDESTRIAN SIGNAL HEADS MOUNTED ON TYPE I SIGNAL STANDARD
	TRAFFIC SIGNAL HEADS MOUNTED ON TYPE III SIGNAL STANDARD 50' M.A. : 12' BETWEEN HEADS WITH A 12' ARM FOR THE LUMINAIRE
	NEW CONDUIT(S) WITH SIZE & NUMBER AND TYPE OF NEW CABLES AS INDICATED.
	MECO METER PEDESTAL
	SPREAD SPECTRUM RADIO RECEIVER (SSR) AND DECODER FOR WIRELESS INTERCONNECT

LETTER	DESCRIPTION	DATE

KEITH K. NIJIA
LICENSED PROFESSIONAL ENGINEER
No. 8226-C
HAWAII, U.S.A.
EXP. 4/30/10

SIGNATURE DATE

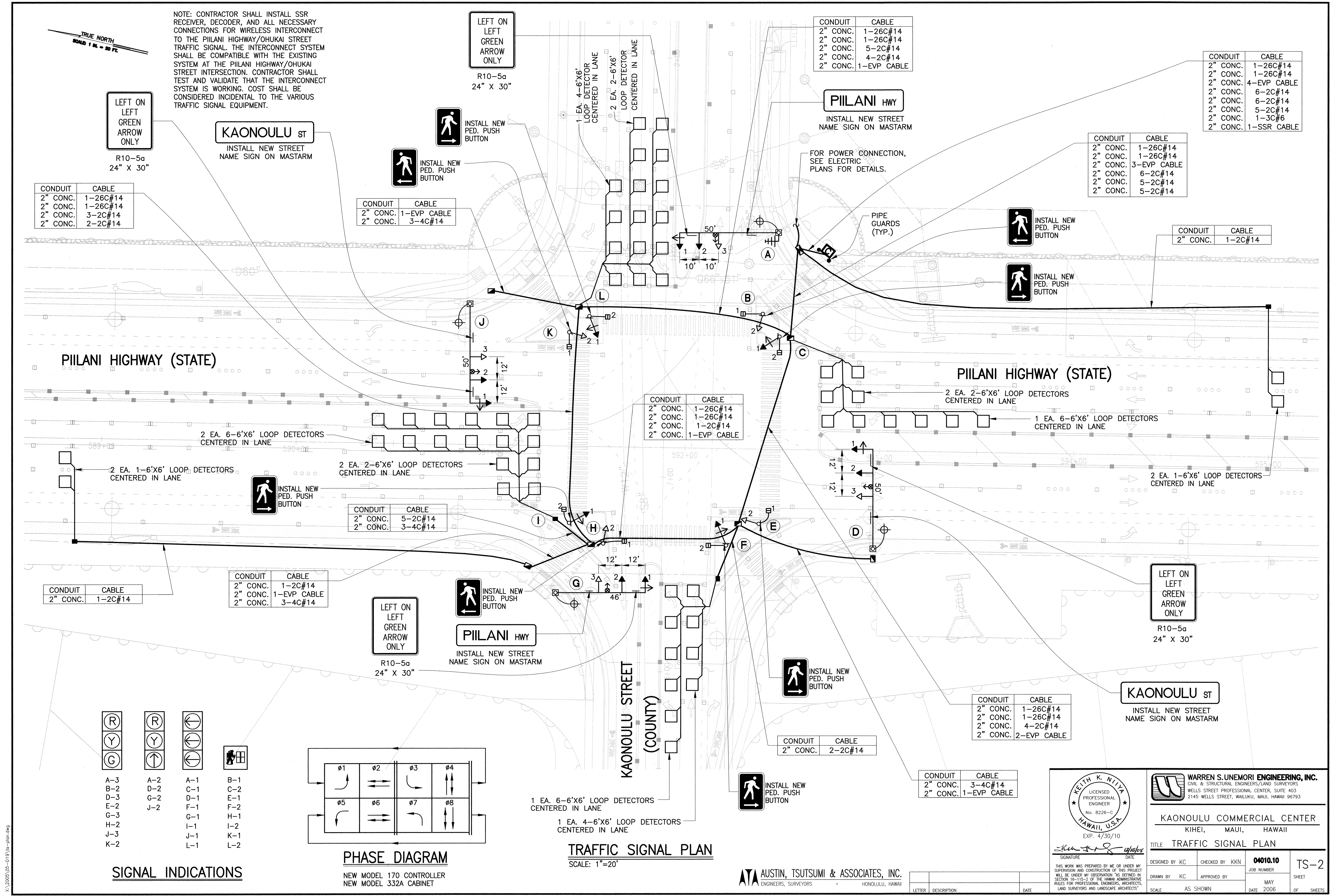
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU COMMERCIAL CENTER
KIHU, MAUI, HAWAII

TITLE
TRAFFIC SIGNAL NOTES AND LEGEND

DESIGNED BY K.C.	CHECKED BY KKN	JOB NUMBER 04010.10	TS-1
DRAWN BY K.C.	APPROVED BY	MAY	SHEET
SCALE AS SHOWN	DATE 2006	OF SHEETS	



NOTE: CONTRACTOR SHALL INSTALL SSR RECEIVER, DECODER, AND ALL NECESSARY CONNECTIONS FOR WIRELESS INTERCONNECT TO THE PIILANI HIGHWAY/OHUKAI STREET TRAFFIC SIGNAL. THE INTERCONNECT SYSTEM SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM AT THE PIILANI HIGHWAY/OHUKAI STREET INTERSECTION. CONTRACTOR SHALL TEST AND VALIDATE THAT THE INTERCONNECT SYSTEM IS WORKING. COST SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS TRAFFIC SIGNAL EQUIPMENT.

LEFT ON LEFT GREEN ARROW ONLY
R10-5a
24" X 30"

KAONOULU ST
INSTALL NEW STREET NAME SIGN ON MASTARM

LEFT ON LEFT GREEN ARROW ONLY
R10-5a
24" X 30"

PIILANI HWY
INSTALL NEW STREET NAME SIGN ON MASTARM

KAONOULU ST
INSTALL NEW STREET NAME SIGN ON MASTARM

- R

Y

G

A-3
B-2
D-3
E-2
G-3
H-2
J-3
K-2
- R

Y

U

A-2
D-2
G-2
J-2
- ←

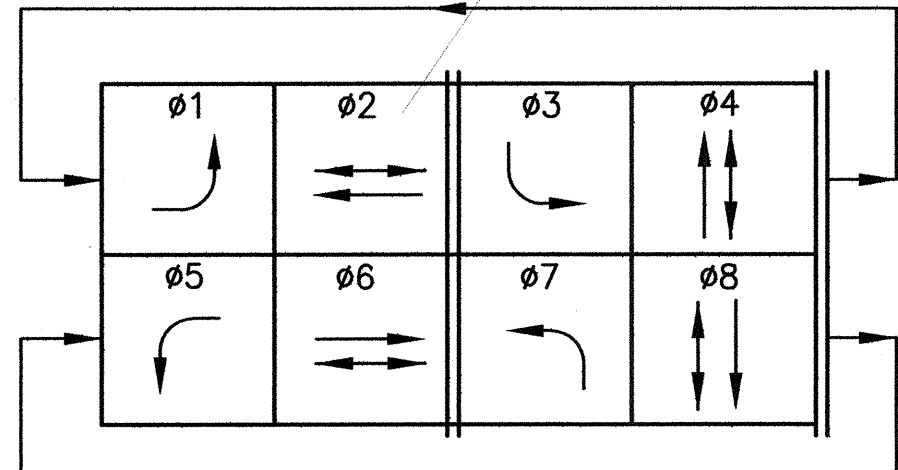
←

←

C-1
D-1
F-1
G-1
I-1
J-1
L-1
- ⬇

⬆

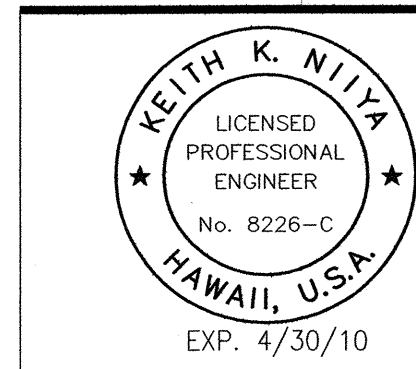
B-1
C-2
E-1
F-2
H-1
I-2
K-1
L-2



PHASE DIAGRAM
NEW MODEL 170 CONTROLLER
NEW MODEL 332A CABINET

TRAFFIC SIGNAL PLAN
SCALE: 1"=20'

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS
HONOLULU, HAWAII



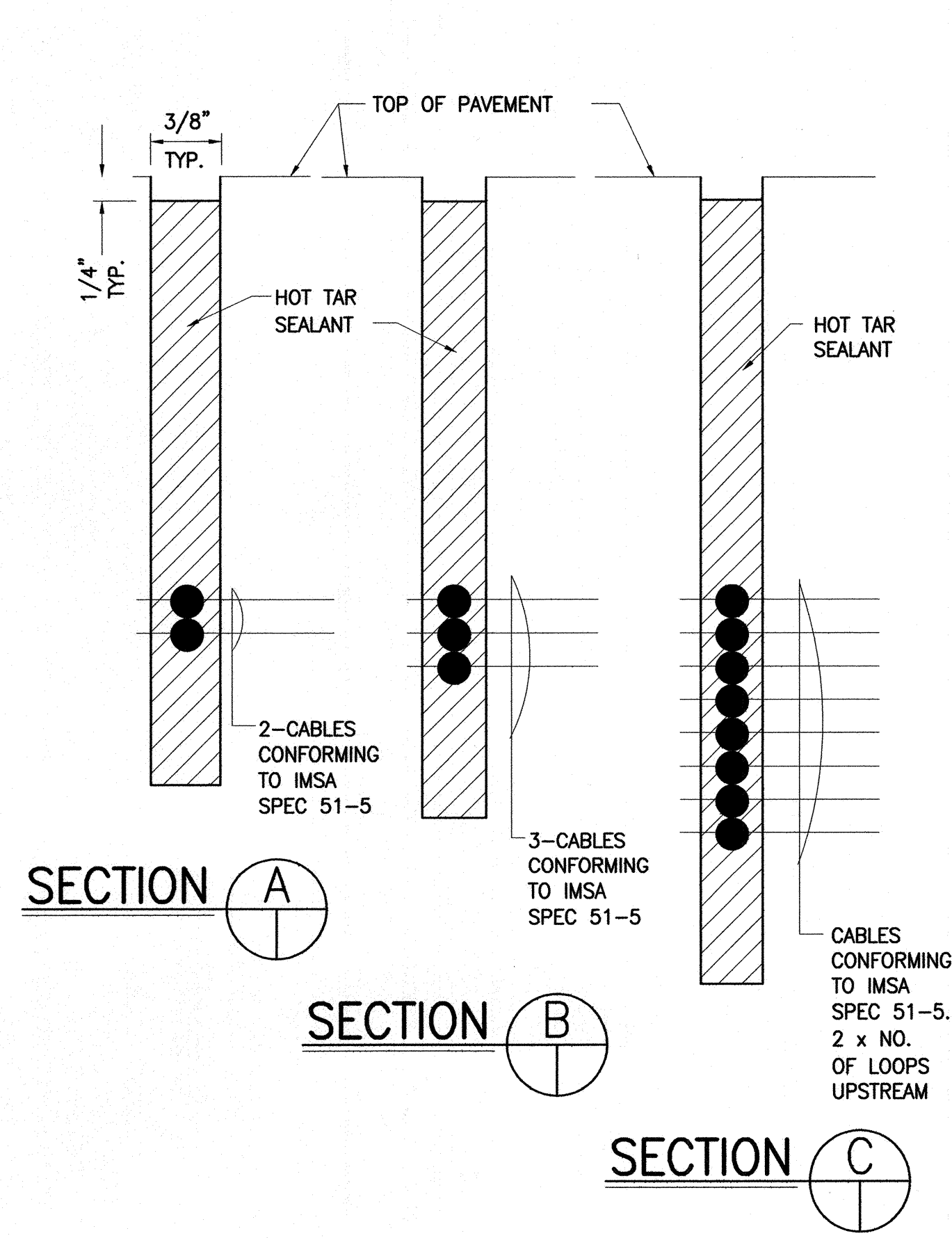
WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
2145 WELLS STREET, WALLUKU, MAUI, HAWAII 96793

KAONOULU COMMERCIAL CENTER
KIHIEI, MAUI, HAWAII

TITLE: TRAFFIC SIGNAL PLAN

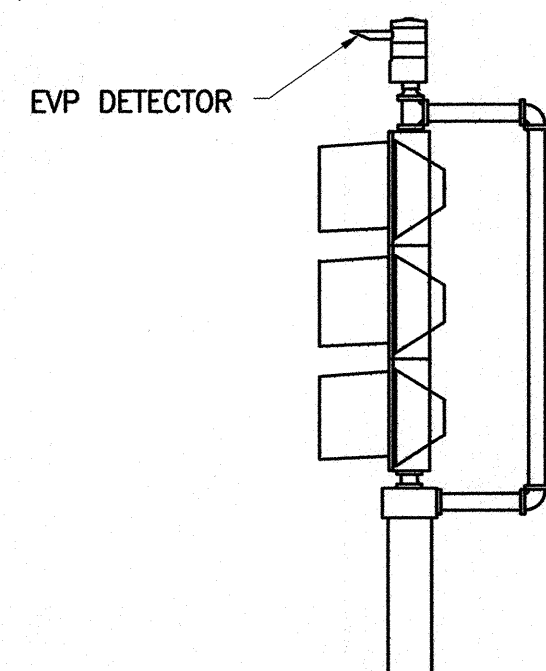
DESIGNED BY: KC	CHECKED BY: KKN	JOB NUMBER: 04010.10	TS-2
DRAWN BY: KC	APPROVED BY:	MAY 2006	
SCALE: AS SHOWN			SHEET OF SHEETS

X:\2005\05-019\ts-plan.dwg

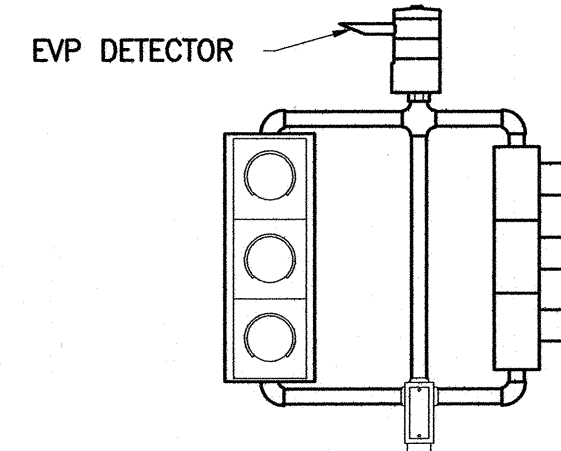


NOTES:

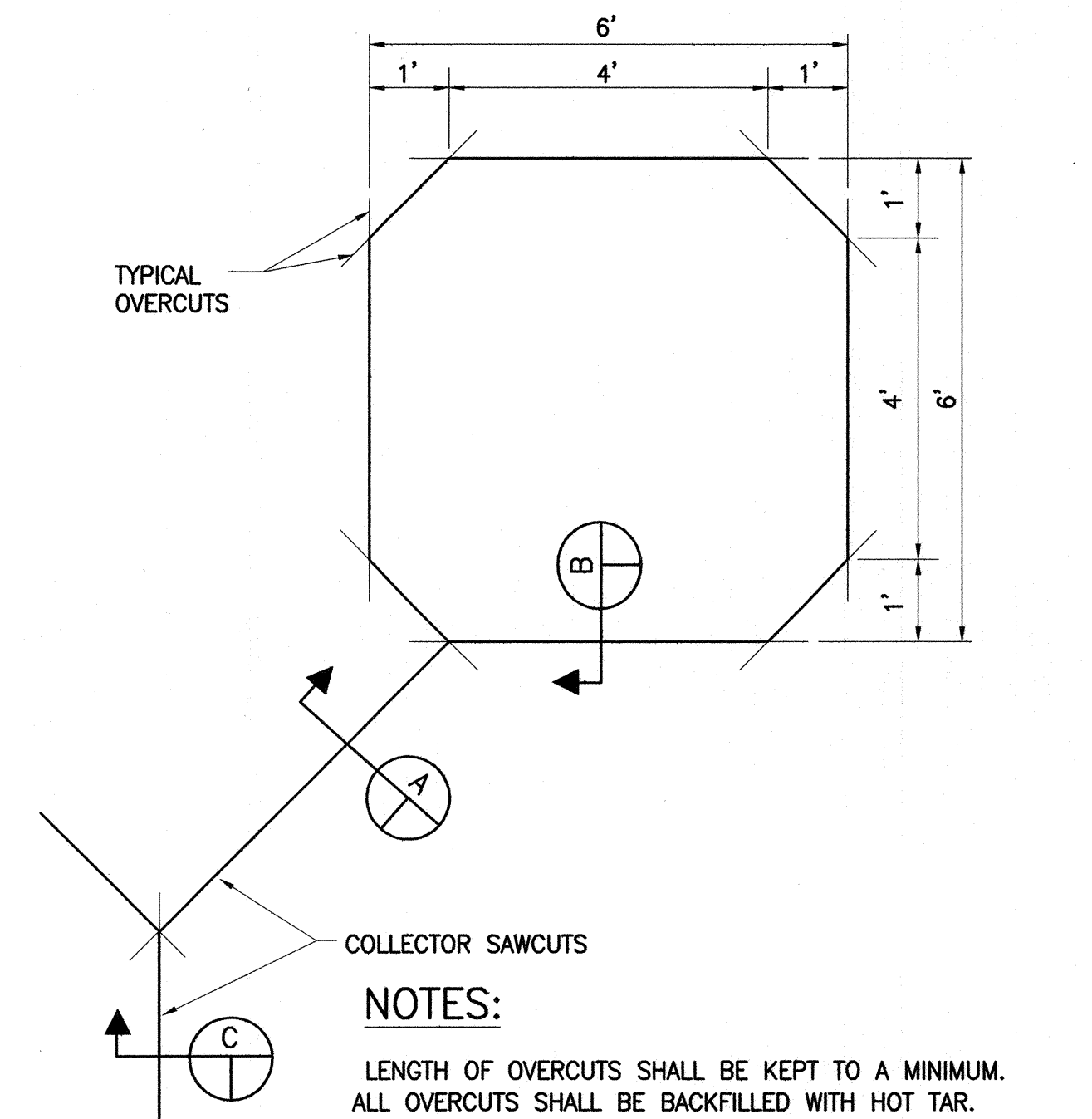
1. OPTICAL DETECTOR SHALL BE "MODEL 711 PREEMPTION DETECTOR" OR APPROVED EQUAL, UNLESS NOTED OTHERWISE IN THE SPECIAL PROVISIONS.
2. SUPPORT SADDLE ASSEMBLY SHALL BE "ASTRO MINI-BRAC, AB-0132-29", OR APPROVED EQUAL, UNLESS NOTED OTHERWISE IN THE SPECIAL PROVISIONS.



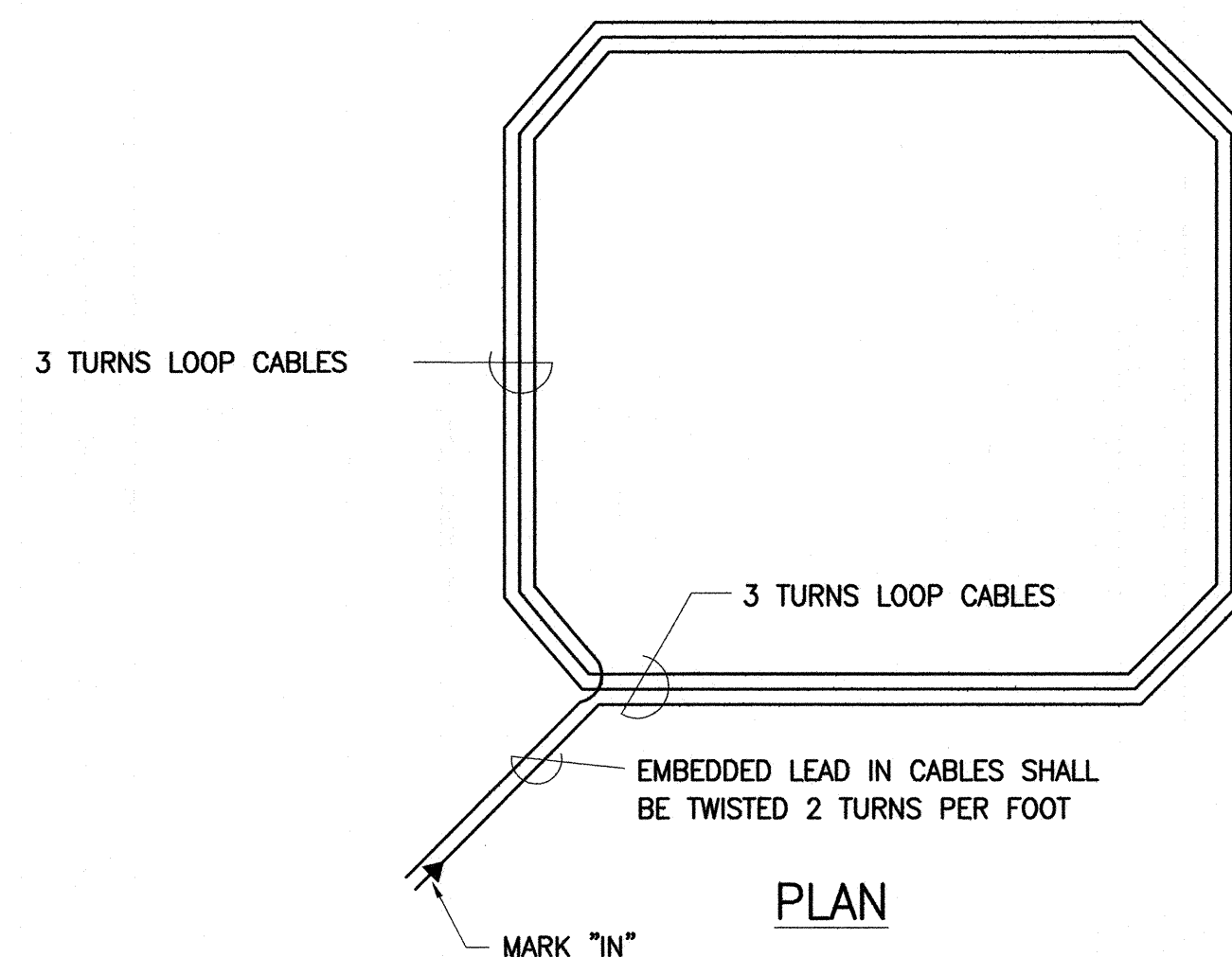
**POST TOP
TP-EVP MOUNTING**
NOT TO SCALE



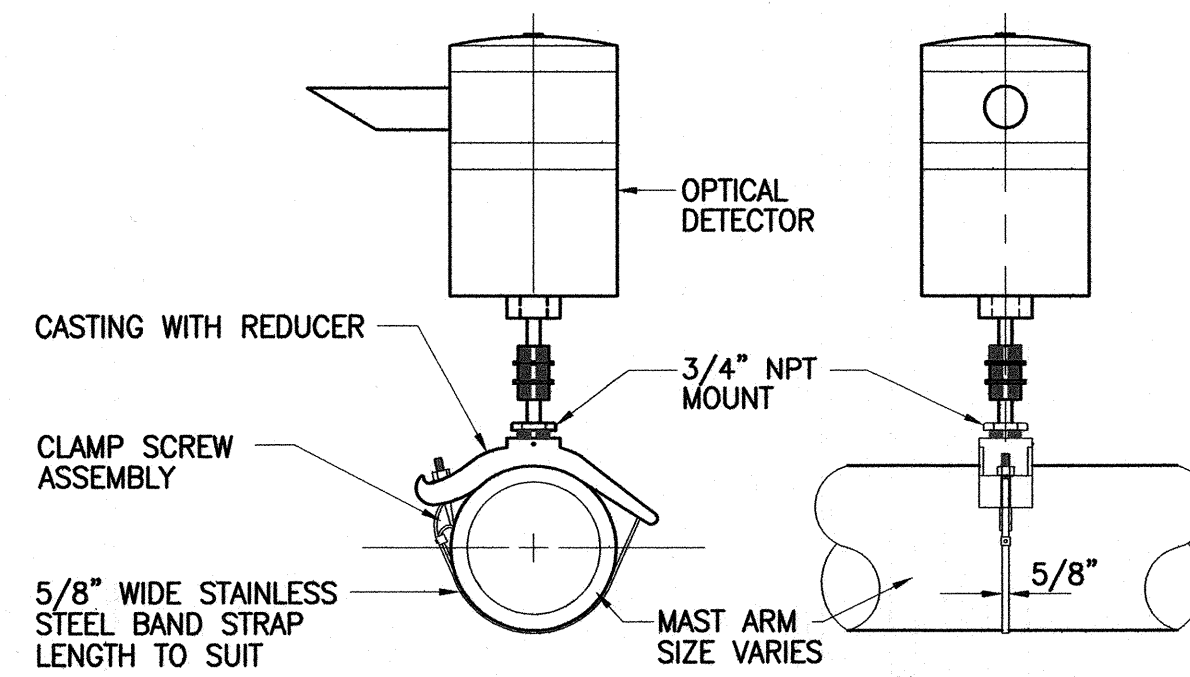
**POST TOP
TP-EVP MOUNTING**
NOT TO SCALE



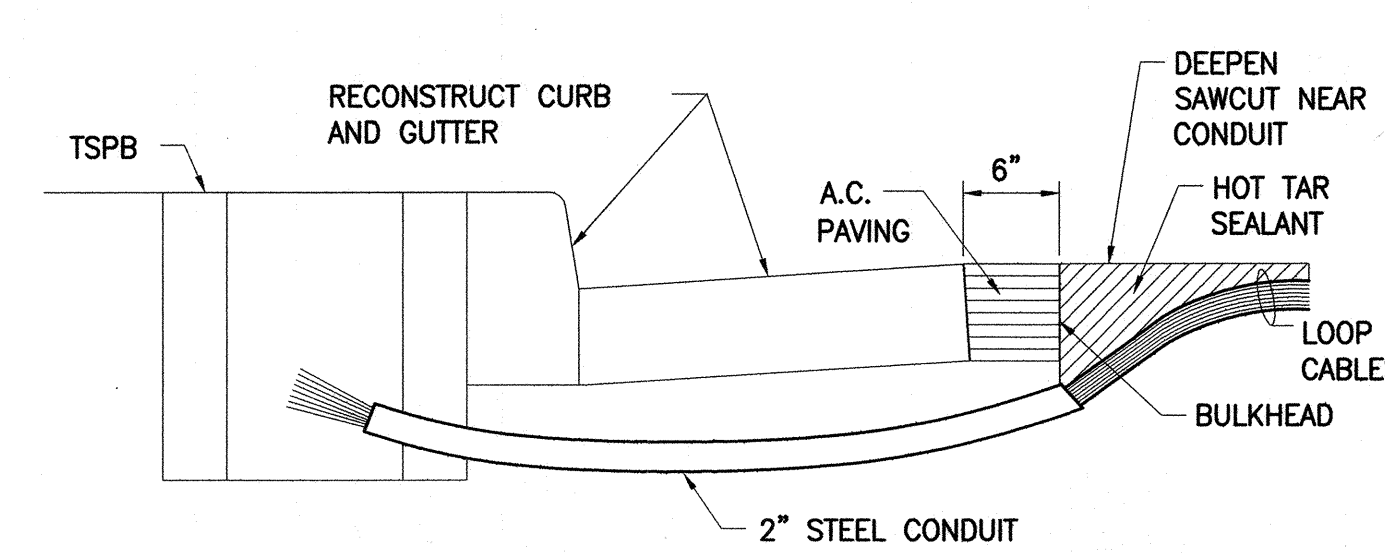
TYPICAL SENSOR LOOP SAWCUT DETAIL
NOT TO SCALE



TYPICAL SENSOR LOOP WIRING DIAGRAM
NOT TO SCALE



**OPTICAL DETECTOR FOR
MAST ARM MOUNTING**
NOT TO SCALE

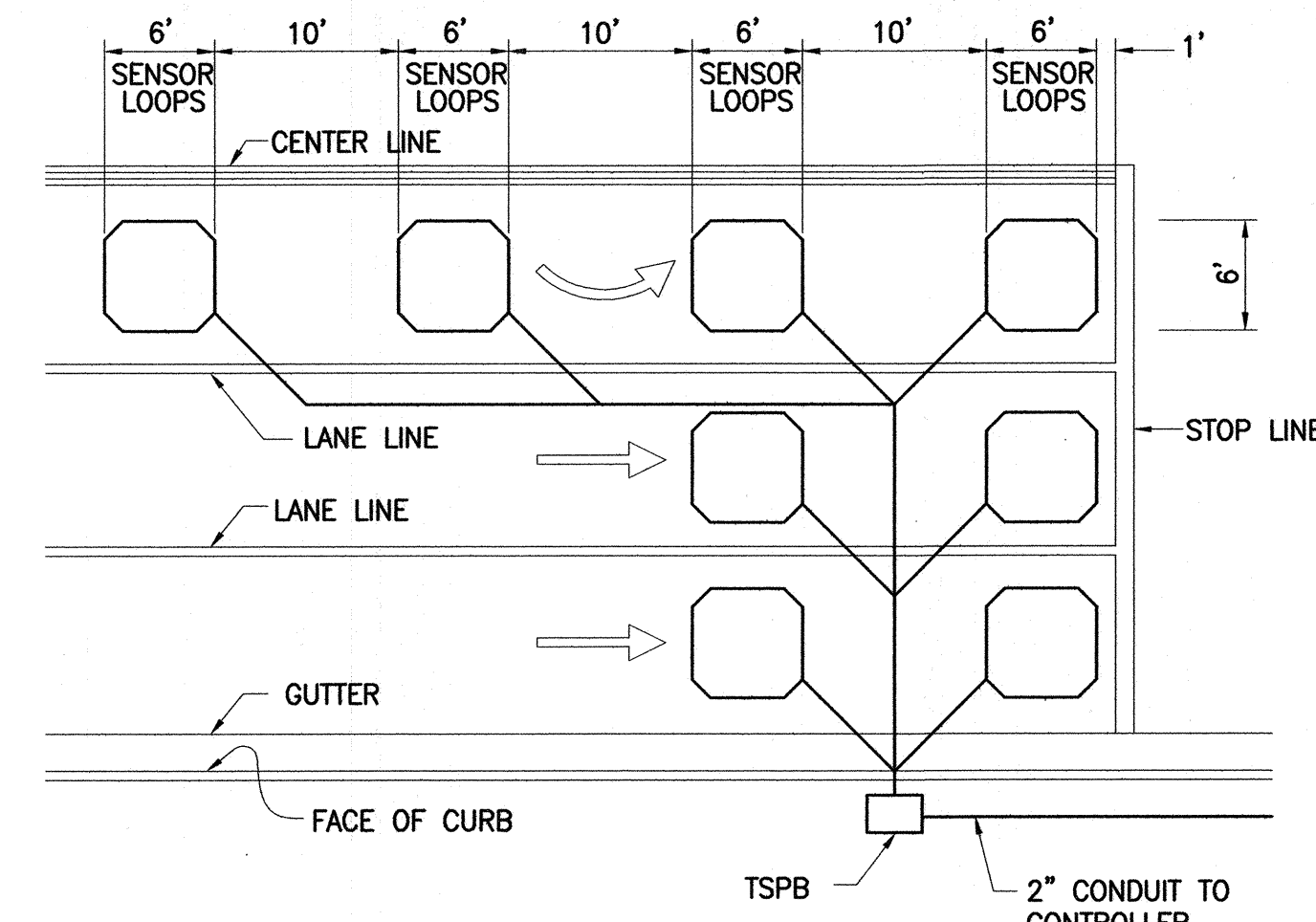


NOTES ON CONSTRUCTION AT END OF SAWCUT

1. SEAL ROADWAY END OF CONDUIT AFTER INSTALLATION OF CONDUCTORS
2. INSTALL BULKHEAD ACROSS CONDUIT TRENCH.
3. PLACE HOT TAR IN SAWCUT.
4. BACKFILL OVER CONDUIT WITH NEW A.C.
5. RECONSTRUCT CURB AND GUTTER AS REQUIRED.

**DETAIL OF SENSOR LOOP INSTALLATION
AT EDGE OF ROADWAY**

NOT TO SCALE



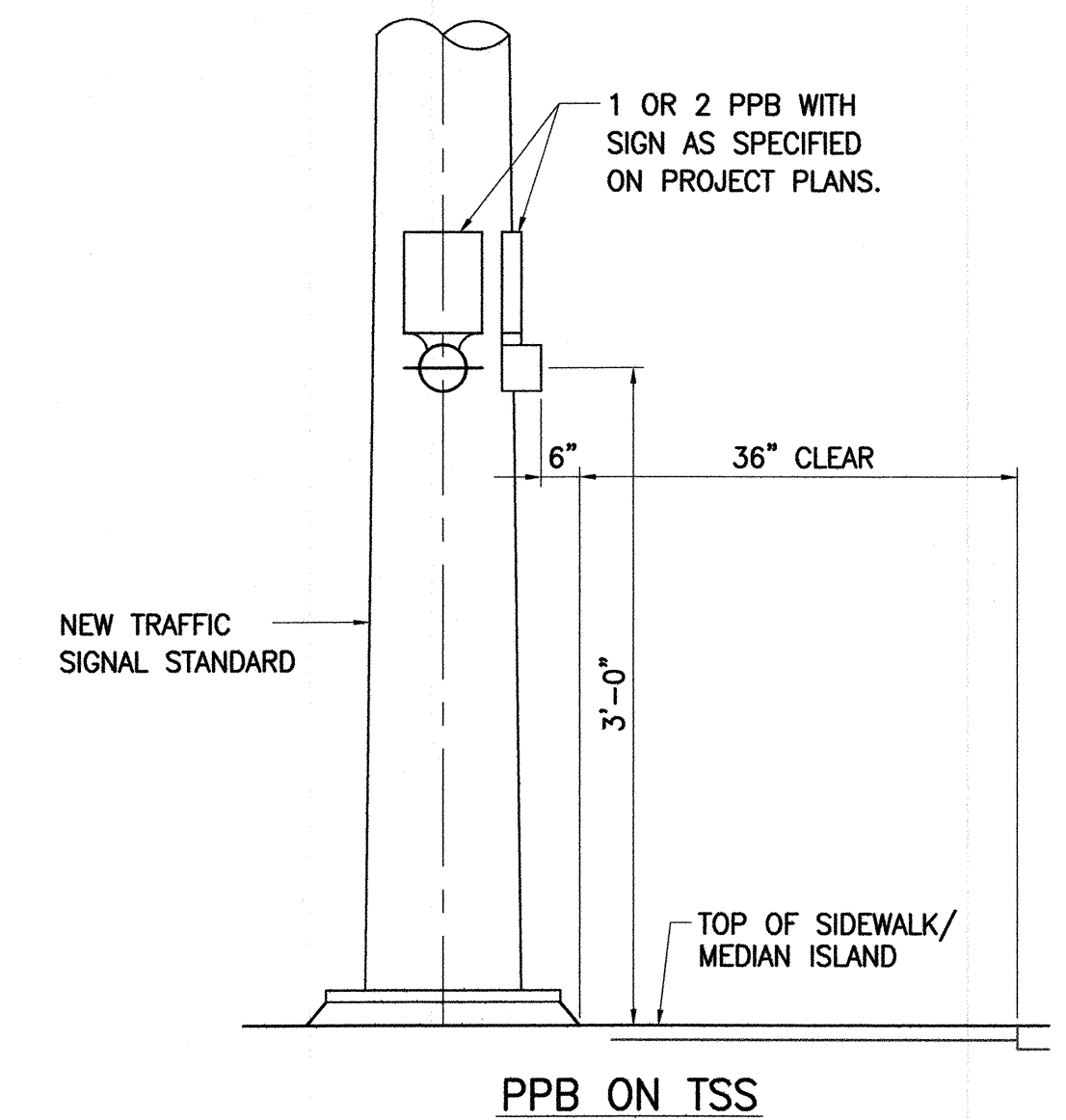
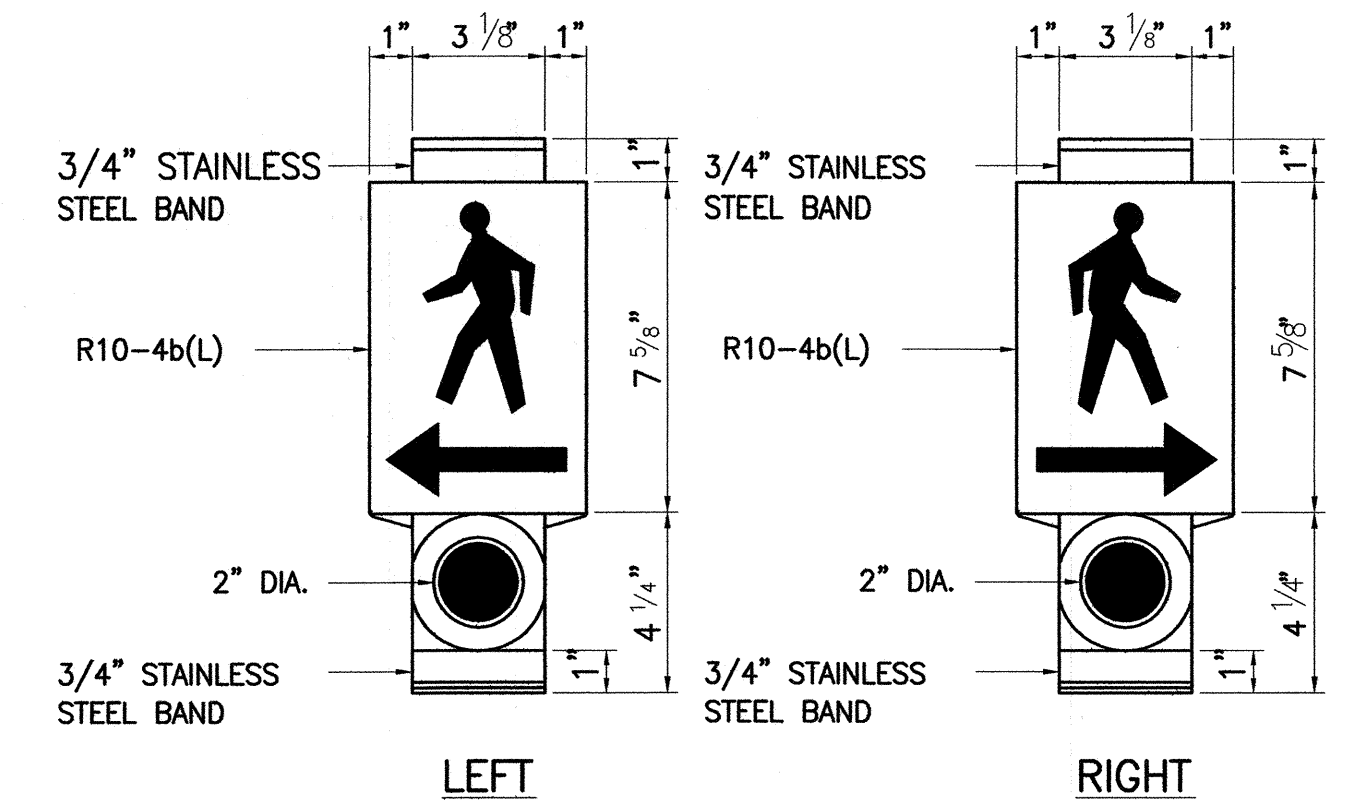
NOTES:

1. CENTER SENSOR LOOPS IN LANES.
2. COLLECTOR CABLES SHALL BE TWISTED 2 TURNS PER FOOT.
3. NUMBER OF LOOPS AND LOCATIONS VARY. SEE PROJECT PLANS.
4. NUMBER AND LOCATIONS OF COLLECTOR SAWCUTS MAY BE VARIED IN THE FIELD TO SUIT.

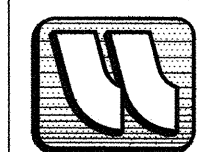
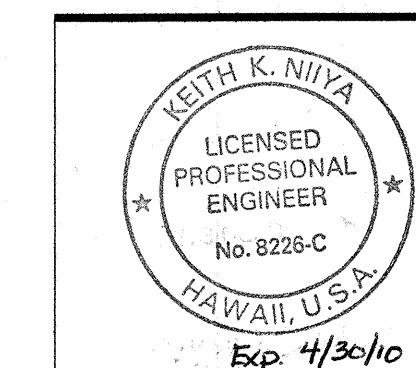
TYPICAL SENSOR LOOP LAYOUT

NOT TO SCALE

THE COLOR SCHEME SHALL BE:
WHITE - MAN, ARROW AND PUSH BUTTON
BLACK - BACKGROUND
NOTE: ON PLAN SHEET, USE APPLICABLE DETAIL



PEDESTRIAN PUSH BUTTON DETAILS
NOT TO SCALE



WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU COMMERCIAL CENTER
KIHEI, MAUI, HAWAII

TITLE: **TRAFFIC SIGNAL DETAILS - 1**

DESIGNED BY: K.C.	CHECKED BY: KKN	DATE: 12/15/06	JOB NUMBER: 04010.10	SHEET: TS-3
DRAWN BY: K.C.	APPROVED BY:	DATE: MAY 2006	OF SHEETS:	
SCALE: AS SHOWN				

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII

LETTER	DESCRIPTION	DATE

CONTROLLED LOW STRENGTH MATERIAL (CLSM)
APPROXIMATELY 50-150 PSI COMPRESSIVE
STRENGTH AT 28 DAYS. CLSM SHALL
COMPLY WITH SECTIONS 313 AND 601 OF
THE SPECIAL PROVISIONS.

NOTE: BASE COURSE & SUB-BASE COURSE PER
1994 STATE STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION.

1. IF TRENCH IS LOCATED ON UNPAVED AREA, THE CONTRACTOR SHALL REPLACE 10 A.C. BASE COURSE AND 4" A.C. PAVEMENT WITH TYPE "A" TRENCH BACKFILL MATERIAL. (TRENCH BACKFILL MATERIAL "A" CONSIST OF BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL IS USED, THE MAXIMUM SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLE. MAXIMUM 8" LOOSE FILL PER LIFT OBTAIN 95% COMPACTION FOR EACH LIFT. ROCK SHALL NOT EXCEED 1" Ø.)
2. THE METAL DETECTABLE RED PLASTIC WARNING TAPE SHALL BE A MINIMUM 5 MILS THICK AND 4" WIDE WITH A CONTINUOUS METALLIC BACKING AND CORROSION RESISTANT 1' MIL THICK FOIL CORE. THE MESSAGE ON THE TAPE SHALL READ, "CAUTION – STATE TRAFFIC SIGNAL AND/OR HWY LIGHTING BURIED BELOW," UTILIZING 1½ INCHES SERIES "C" BLACK LETTERING. THE MESSAGE WILL BE REPEATED WITH A 4¼" SPACING BETWEEN TOP LINE OF MESSAGE AND START OF NEXT REPEAT.
3. THE CONTRACTOR MAY BEGIN BACKFILLING THE CONDUIT TRENCH BEFORE THE CONCRETE REACHES 2500 PSI COMPRESSIVE STRENGTH BUT AFTER CONCRETE HAS HARDENED SUFFICIENTLY ENOUGH THAT BACKFILLING WILL NOT DAMAGE THE CONCRETE JACKET.
4. MAXIMUM FOUR (4) CONDUITS PER ROW FOR MULTIPLE CONDUIT DUCT SECTION. DUCTS SHALL BE INSTALLED WITH SPACERS AND ANCHORED TO THE GROUND BEFORE POURING CONCRETE. SPACERS SHALL BE A MAXIMUM OF 5' APART. JOINTS SHALL BE STAGGERED.
5. FOR DIRECT BURIED DUCT SECTIONS, THE CONCRETE JACKET REQUIRED AT THE CONDUIT BY-PASS FOR VARIOUS UTILITIES, SHALL BE AT THE CONTRACTOR'S EXPENSE.
6. AFTER INSTALLING ALL THE TRAFFIC SIGNAL CABLES, THE CONTRACTOR SHALL DUCT SEAL ALL CONDUITS IN THE PULLBOXES, TRAFFIC SIGNAL STANDARDS AND TRAFFIC SIGNAL CONTROLLER CABINET CONCRETE BASE. THE DUCT SEAL MATERIAL SHALL BE APPROVED BY THE TRAFFIC SIGNAL INSPECTOR/ENGINEER.



SAWCUT PRIOR TO TRENCHING

SAWCUT THROUGH AND REMOVE ALL EXISTING MATERIAL BOUND BY ASPHALT OR PORTLAND CEMENT

24"

TRENCH WIDTH

24"

A.C. MIX IV PAV'T.

4"*

8"

A.C. BASE COURSE

PRIME COAT

3"

12"

METAL DETECTABLE RED PLASTIC WARNING TAPE, SEE NOTE NO. 2.

12"

VARIES

CLSM

42" MIN.

CONCRETE ENCASEMENT

PVC CONDUITS SCH. 40 (TYP.) (See DUCT SECT.)

PRIOR TO INSTALLING CONDUITS, LEVEL & COMPACT BOTTOM OF TRENCH TO 95% COMPACTION

3"

3"

3"

* PAVEMENT STRUCTURE SHALL CONSISTS OF THE FOLLOWING:
 4" AC MIX (IV)
 8" ACB
 OR
 4" AC MIX (IV)
 8" AGG BASE
 12" AGG SUBBASE

Figure 10 consists of two cross-sectional diagrams illustrating typical details for conduit encasement. The left diagram shows a single conduit (PVC SCH 40) with a 3-inch diameter, encased in a 3-inch thick concrete encasement. The right diagram shows a multiple conduit arrangement with six conduits (PVC SCH 40) in a 3-inch by 3-inch grid, encased in a 3-inch thick concrete encasement. Both diagrams include labels for 'PVC CONDUIT SCH 40', 'CONCRETE ENCASMENT', and 'SEE BACKFILL SECTION (1)'.

* TO BE DETERMINED BY COUNTY ELECTRICAL INSPECTOR/ENGINEER

NEW CONCRETE JACKET

GRD. LINE OR FIN. GR.

2'-0" MIN.

3'-0" TYP.

3"

NEW CONDUIT

6" (TYP.)

GRADUAL SLOPE *

CONTRACTOR SHALL CONTACT UTILITY CO. FOR PROPER CLEARANCE

6" MIN. CLEARANCE REQUIRED

EXIST. ELECTRICAL, WATER, GAS ETC.



KEITH K. NIYA
LICENSED
PROFESSIONAL
ENGINEER
No. 8226-C
HAWAII, U.S.A.

Exp 4/30/10

Signature: *[Signature]* Date: 10/26/09



WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

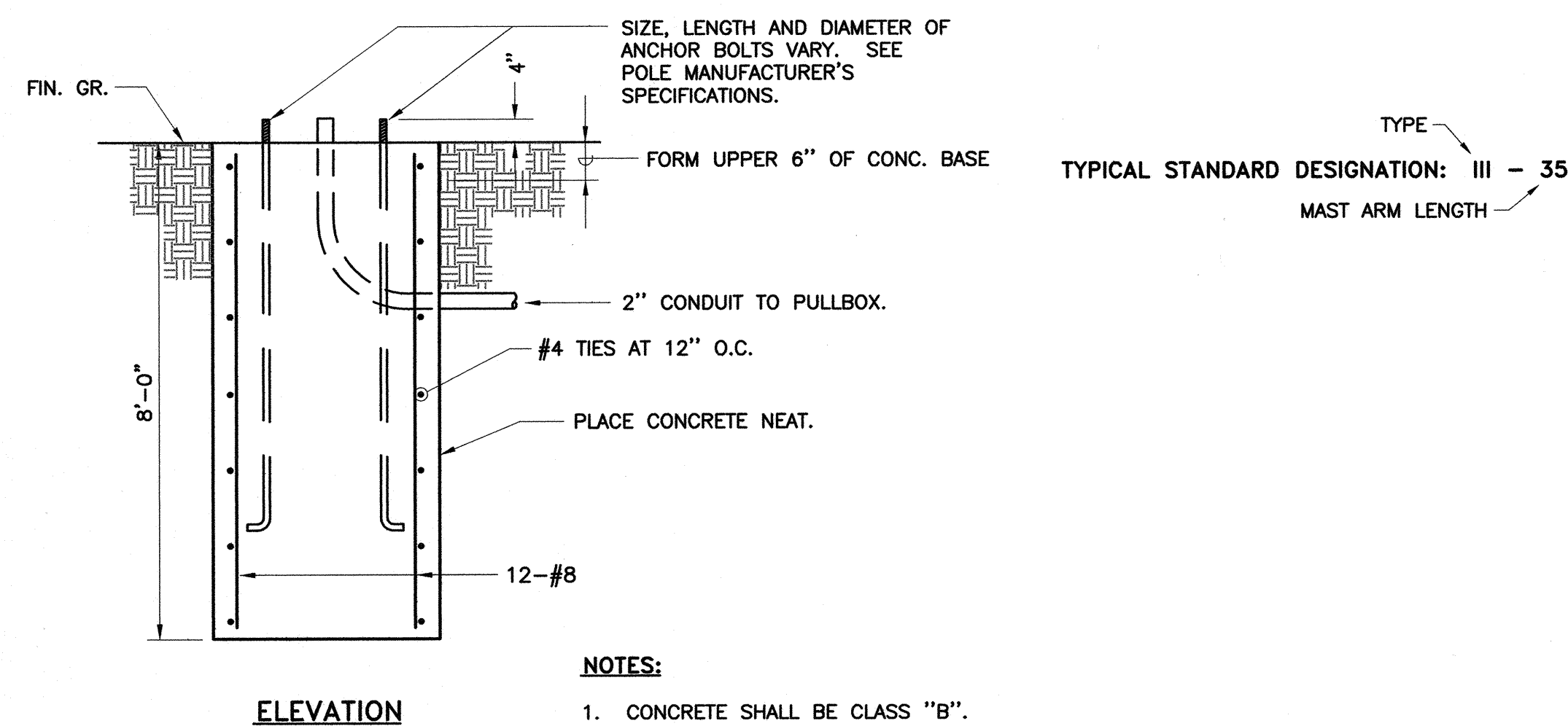
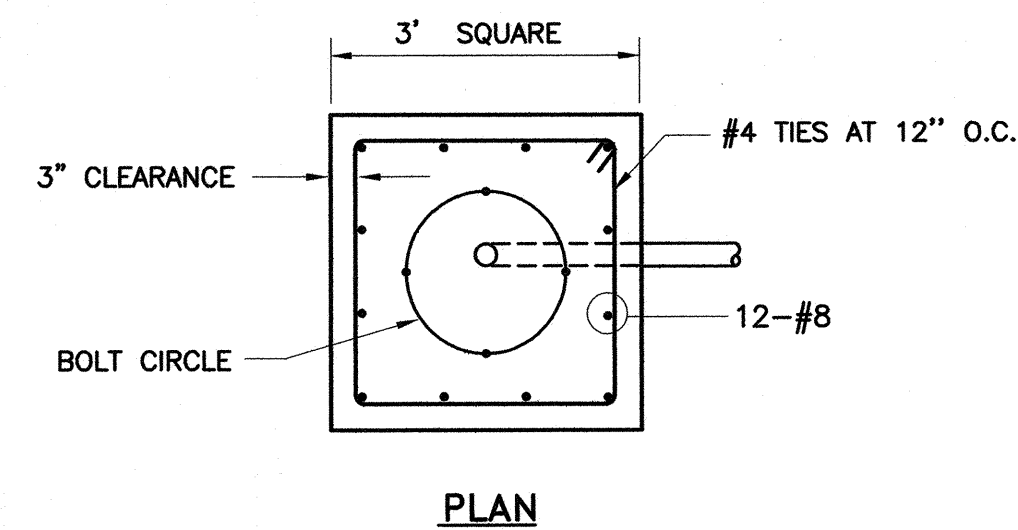
KAONOULU COMMERCIAL CENTER

KIHEI, MAUI, HAWAII

TITLE: TRAFFIC SIGNAL DETAILS - 2

DESIGNED BY KC	CHECKED BY KKN	04010.10
		JOB NUMBER
DRAWN BY KC	APPROVED BY	MAY 2006
		DATE
SCALE	AS SHOWN	OF SHEET

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"



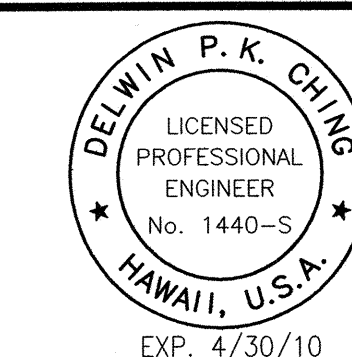
TYPE "C" CONCRETE BASE
NOT TO SCALE

- NOTES:
1. CONCRETE SHALL BE CLASS "B".
 2. TYPE "C" CONCRETE BASE SHALL BE USED FOR TYPES II AND III TRAFFIC SIGNAL STANDARDS.
 3. DESIGN LATERAL PRESSURE: 1,500 PSF.
 4. CONDUIT BEND IS INCIDENTAL TO CONCRETE BASE.

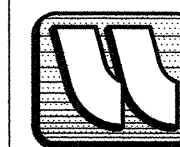
04010.10/4w2004/complans/

ATA AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS HONOLULU, HAWAII

LETTER	DESCRIPTION	DATE



SIGNATURE DATE
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

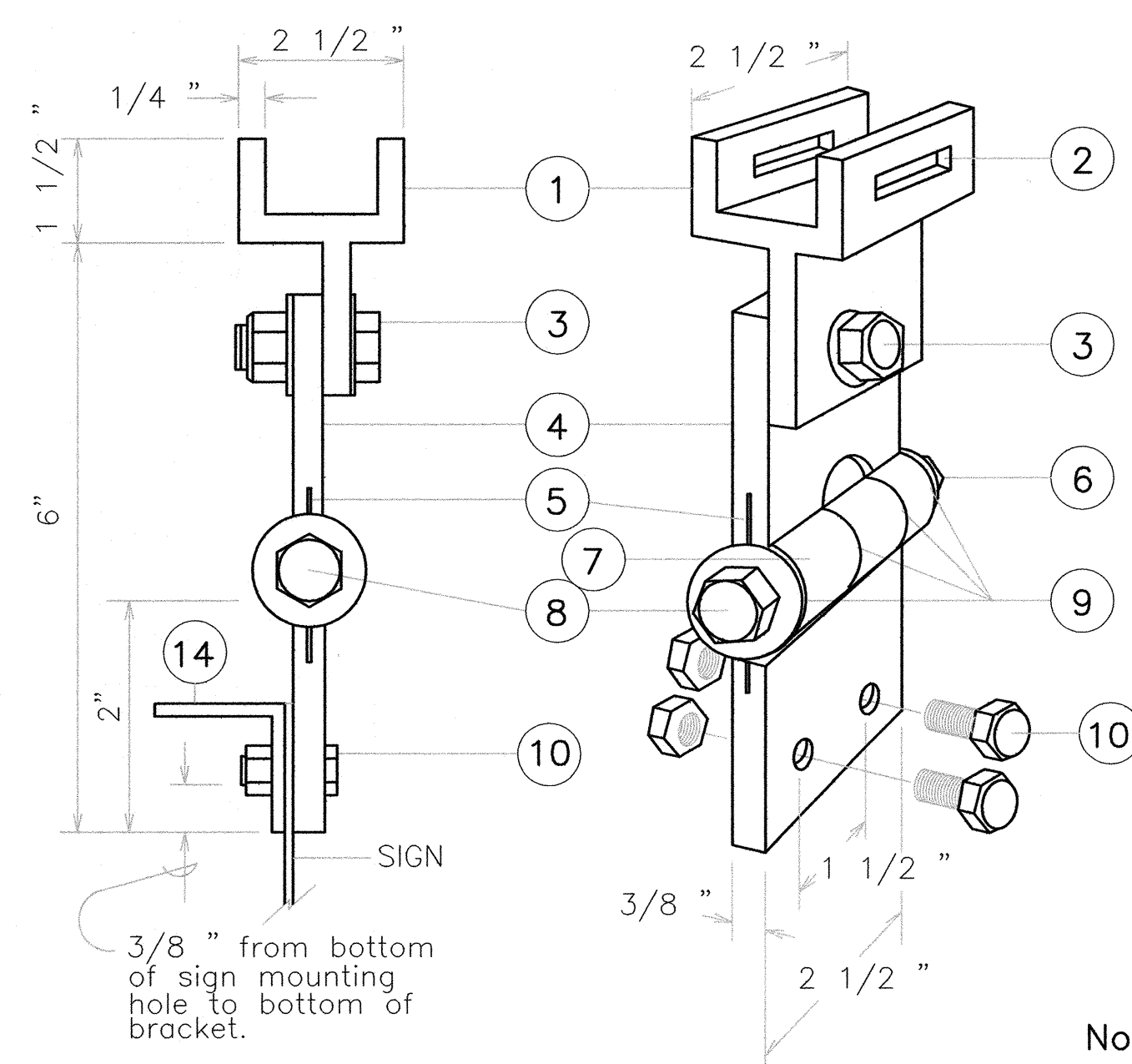


WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU COMMERCIAL CENTER
KIHEI, MAUI, HAWAII

TITLE TRAFFIC SIGNAL DETAILS - 3

DESIGNED BY KC	CHECKED BY KKN	JOB NUMBER 04010.10	SHEET TS-5
DRAWN BY KC	APPROVED BY	DATE MAY 2006	OF SHEETS
SCALE AS SHOWN			

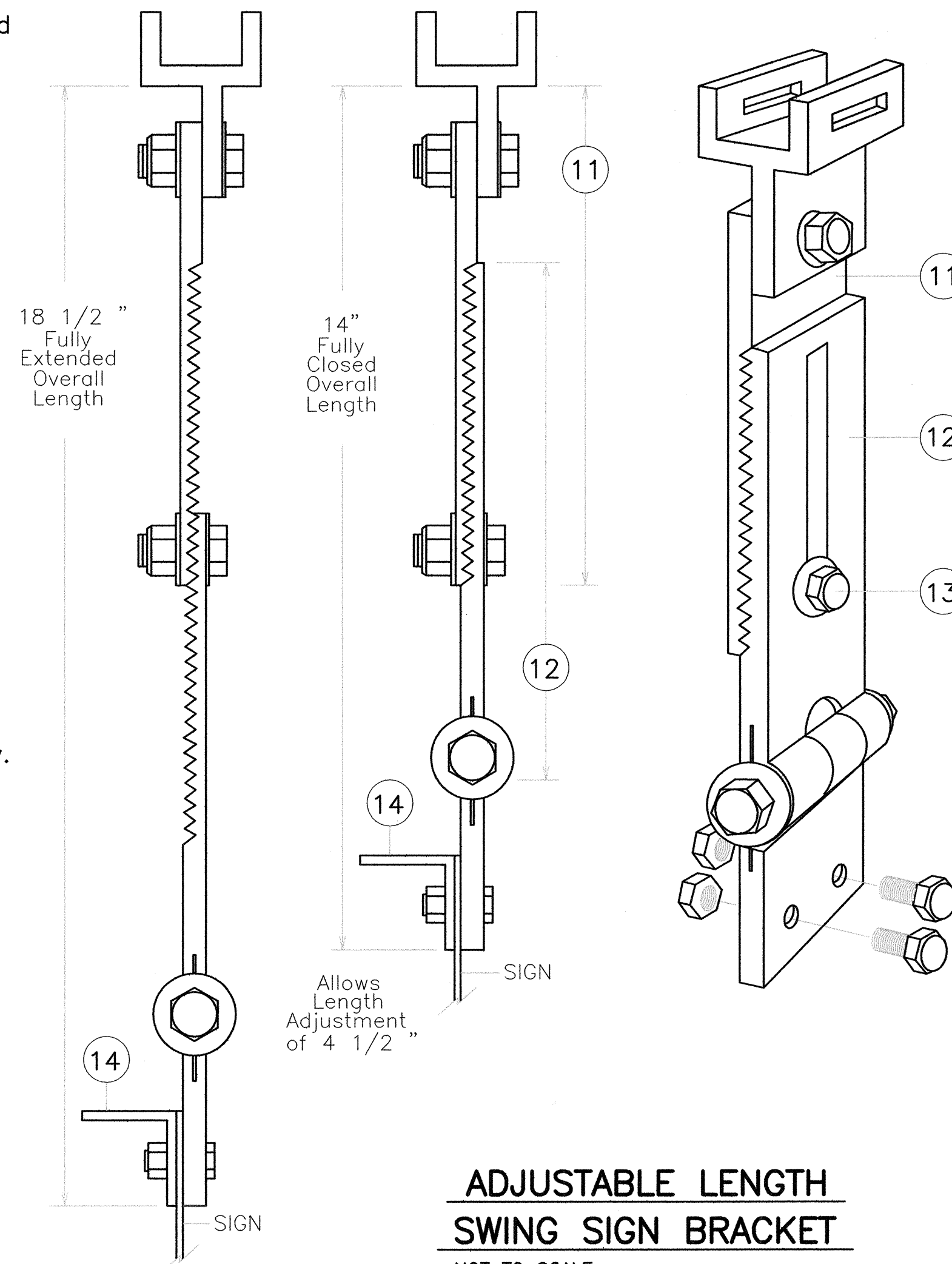


**FIXED LENGTH NON-ADJUSTABLE
SWING SIGN BRACKET**
NOT TO SCALE

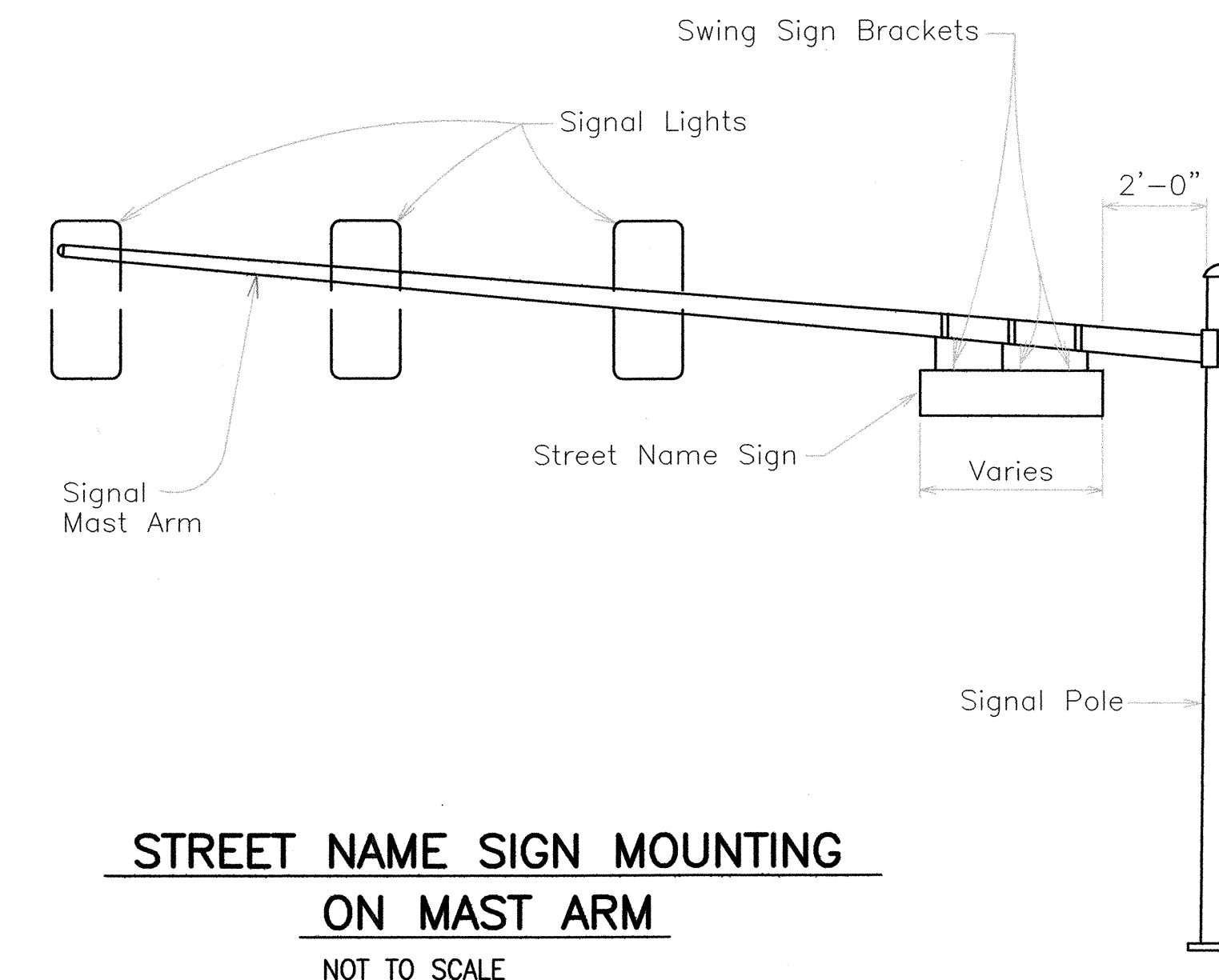
All Aluminum 6061T6 Alloy and
Stainless Steel Components.

Note: Dimensions may vary slightly.

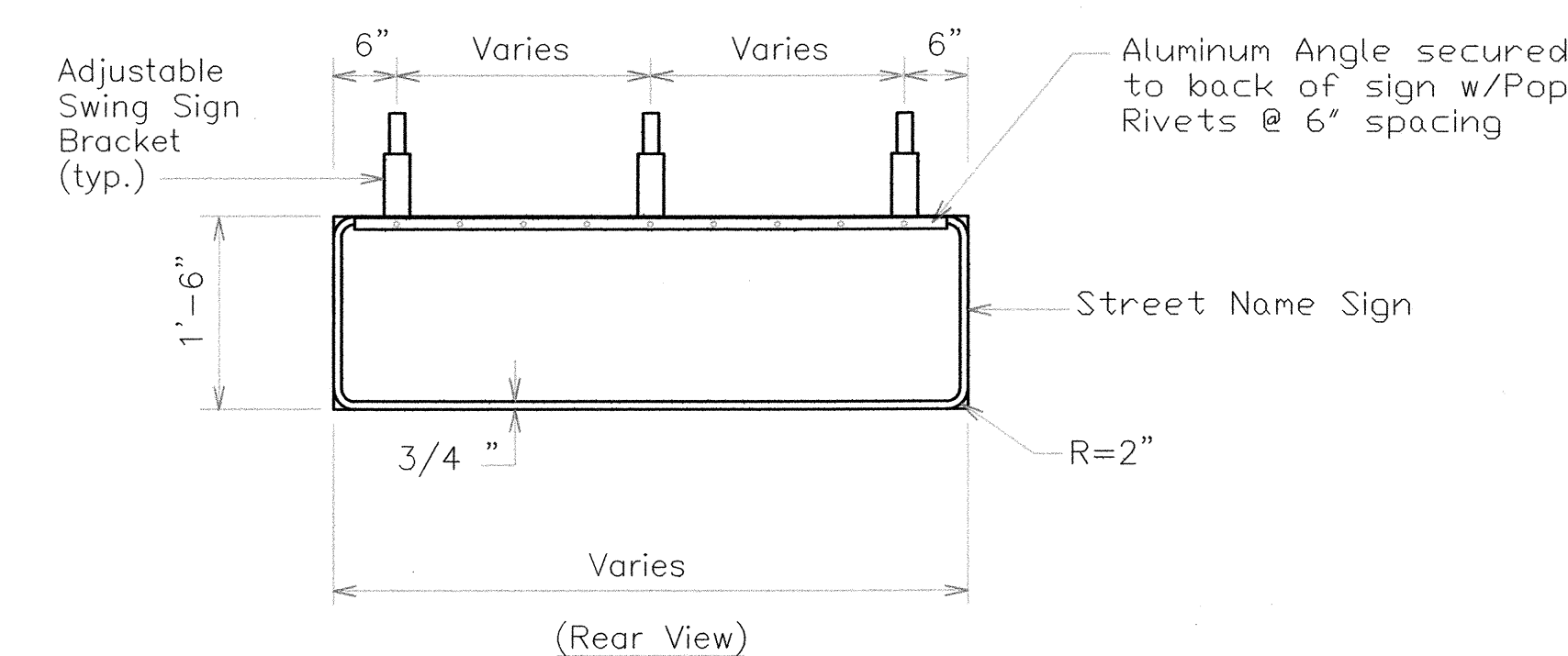
- ① Pivotal Upper Bracket
- ② 1 5/8 " x 1/4 " Slot for double strapping to electrolier mast arm.
(M2G-34S(HD) .030" x 3/4 " Heavy Duty Stainless Steel Strap
with M2G-34B(HD) Buckle recommended.)
- ③ 1/2 " - 13 x 1 1/2 " Stainless Steel Hex Head Bolt with Stainless
Steel Hex Lock Nut and 1/16 " Stainless Steel Washer (both
sides). Allows upper bracket to pivot and align with elec-
trolier mast arm.
- ④ 6" Overall drop with Fixed Length Sign Bracket
- ⑤ Stainless Steel Dampener Spring (Removable)
- ⑥ Stainless Steel Hex Lock Nut with 1/16 " Stainless Steel
Washer
- ⑦ 1" O.D. Axle Housing
- ⑧ 1/2 " - 13 x 4" Stainless Steel Hex Head Bolt with 1/16 " Stainless Steel Washer
- ⑨ Oilite Bushing
- ⑩ Sign Mounting Sets, consisting of two each 5/16 " - 18 x 1" Stainless Steel Hex Head Bolt with Stainless Steel Hex Lock Nut. Two holes on 1 1/2 " centers provide positive lock sign mounting to bracket.
- ⑪ 8 1/4 " overall length Upper Adjustable Sign Bracket section
- ⑫ 9" overall length Lower Adjustable Sign Bracket section, including Axle Housing (8" overall length to top of Axle Housing)
- ⑬ 1/2 " - 13 x 1 1/2 " Stainless Steel Hex Bolt with Stainless Steel Hex Lock Nut and 1/16 " Stainless Steel Washers (both sides). Loosen lock nut, adjust bracket teeth to level sign.
- ⑭ 1 1/4 " x 1 1/4 " x 1/8 " Aluminum Angle



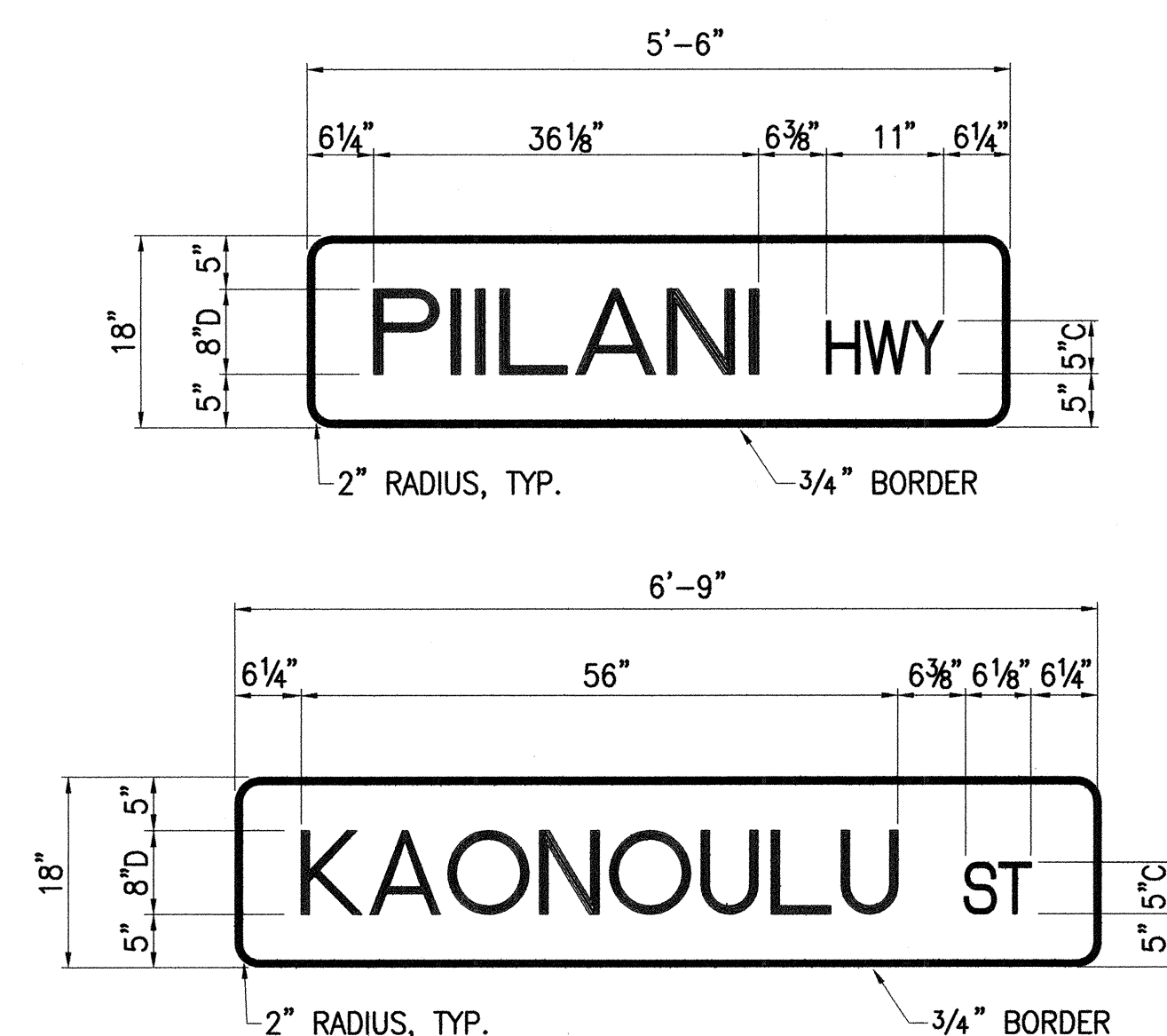
**ADJUSTABLE LENGTH
SWING SIGN BRACKET**
NOT TO SCALE



**STREET NAME SIGN MOUNTING
ON MAST ARM**
NOT TO SCALE

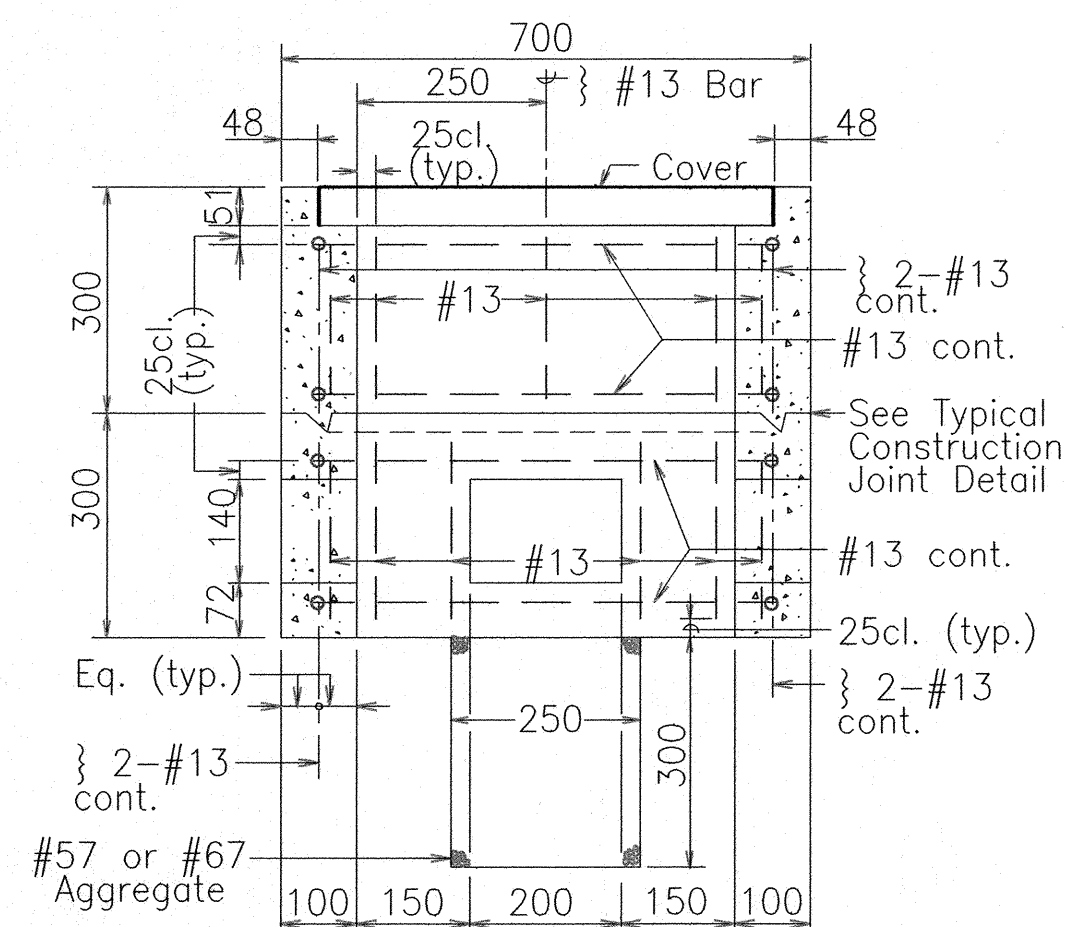
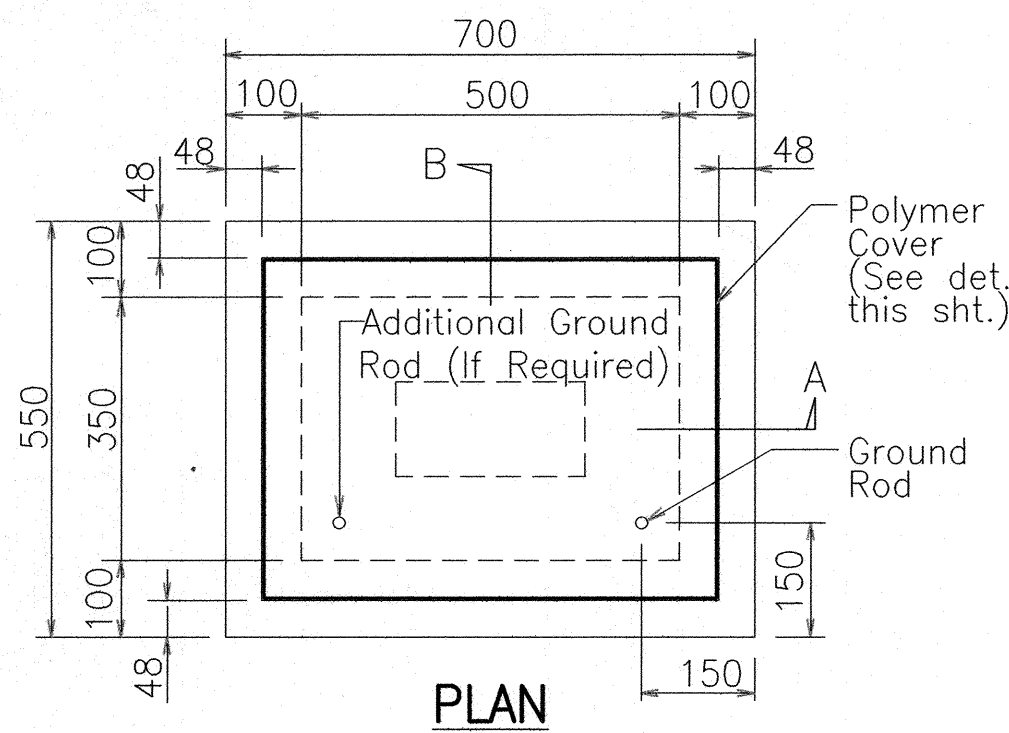


**PANEL & SWING BRACKET LAYOUT
FOR STREET NAME SIGN**
NOT TO SCALE

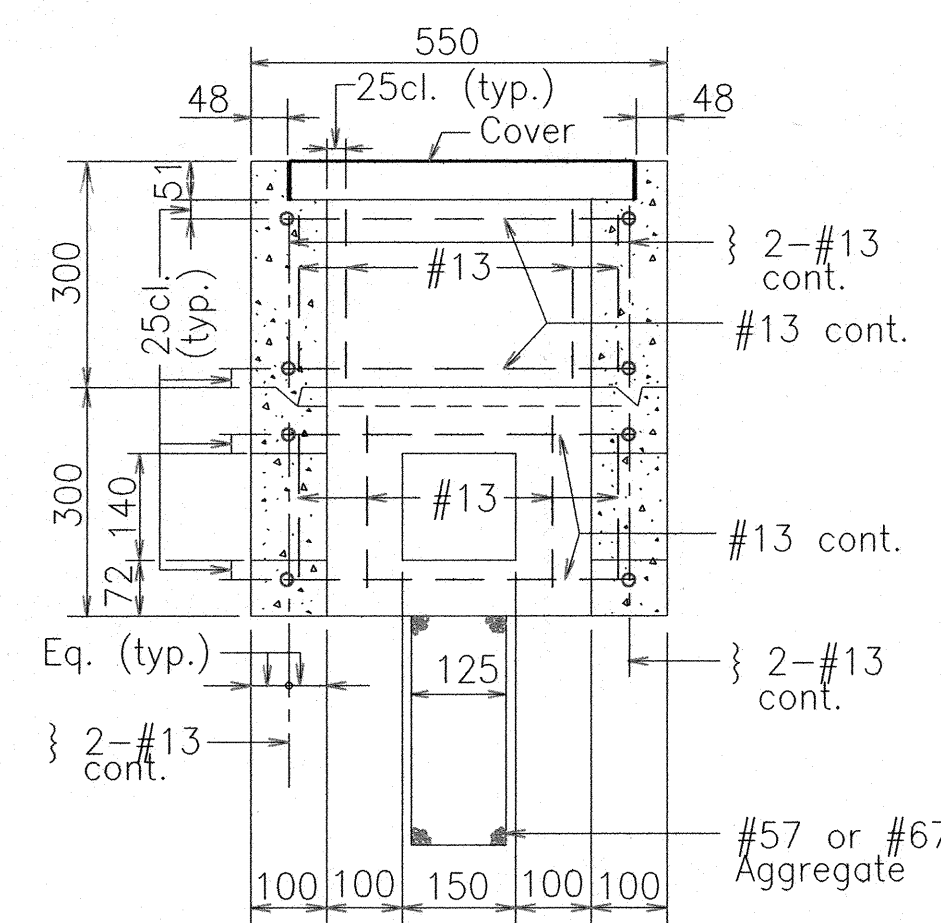


STREET NAME SIGN DETAILS
NOT TO SCALE

	WARREN S. UNEMORI ENGINEERING, INC. CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS WELLS STREET PROFESSIONAL CENTER, SUITE 403 2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793	
	KAONOULU COMMERCIAL CENTER KIHIEI, MAUI, HAWAII	
	TITLE STREET NAME SIGN DETAILS	
	DESIGNED BY KC DRAWN BY KC SCALE AS SHOWN	CHECKED BY KKN APPROVED BY DATE 2006
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"		TS-6 SHEET OF SHEETS

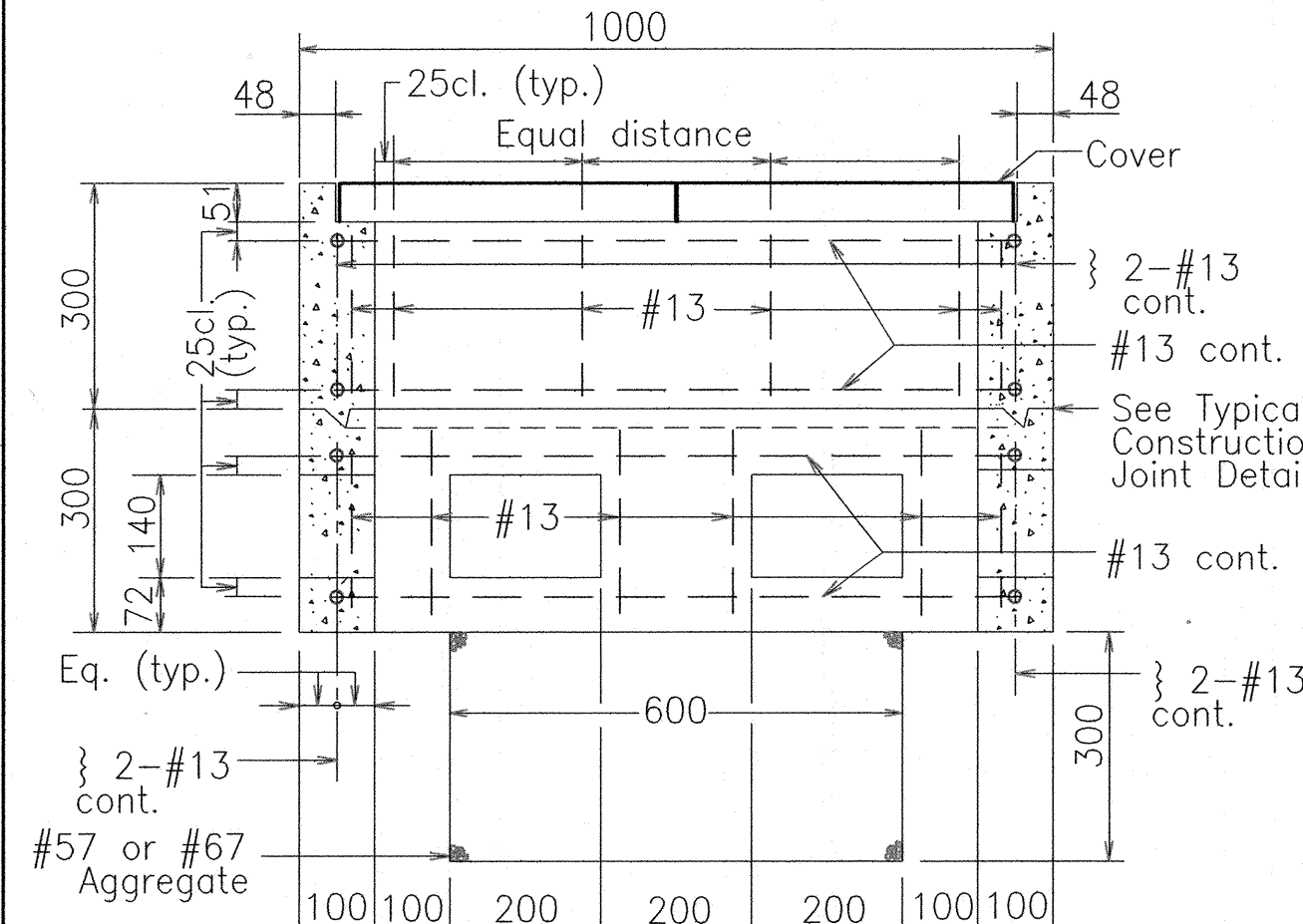
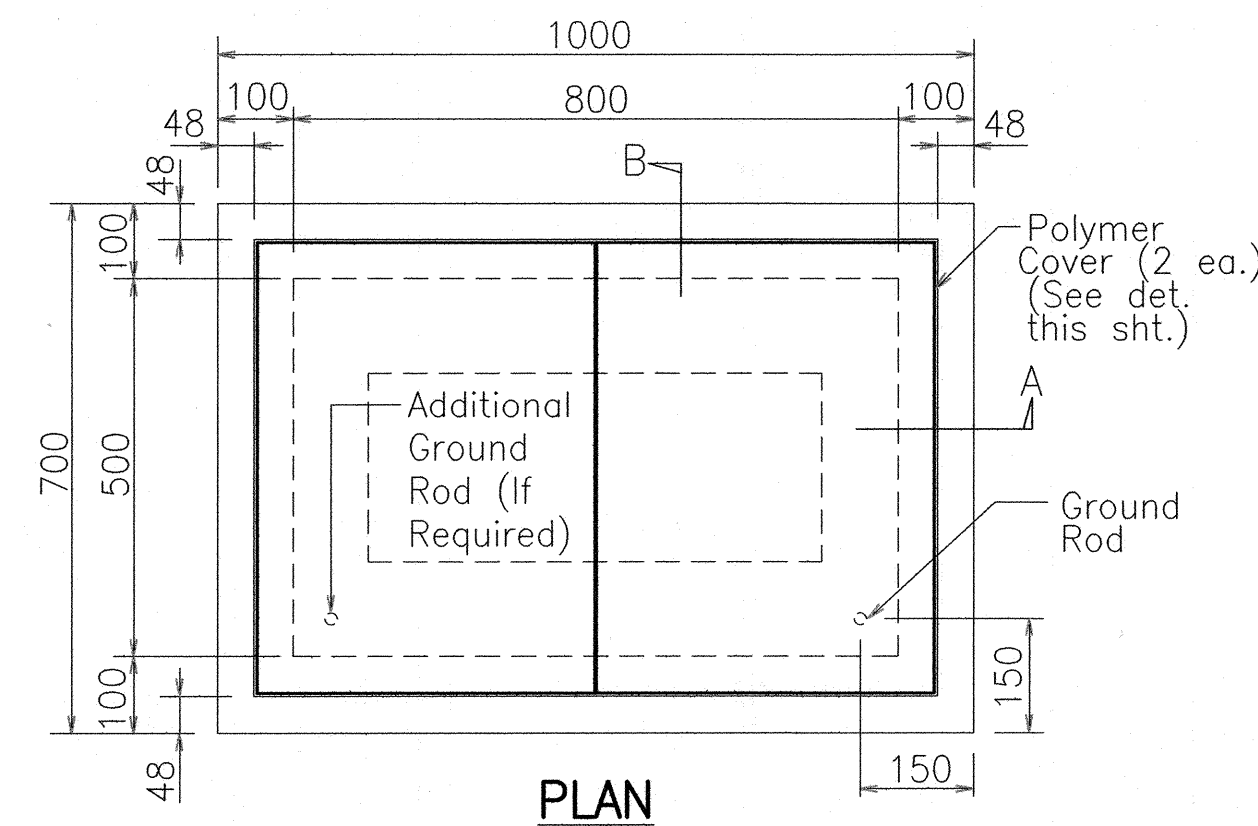


SECTION A-A

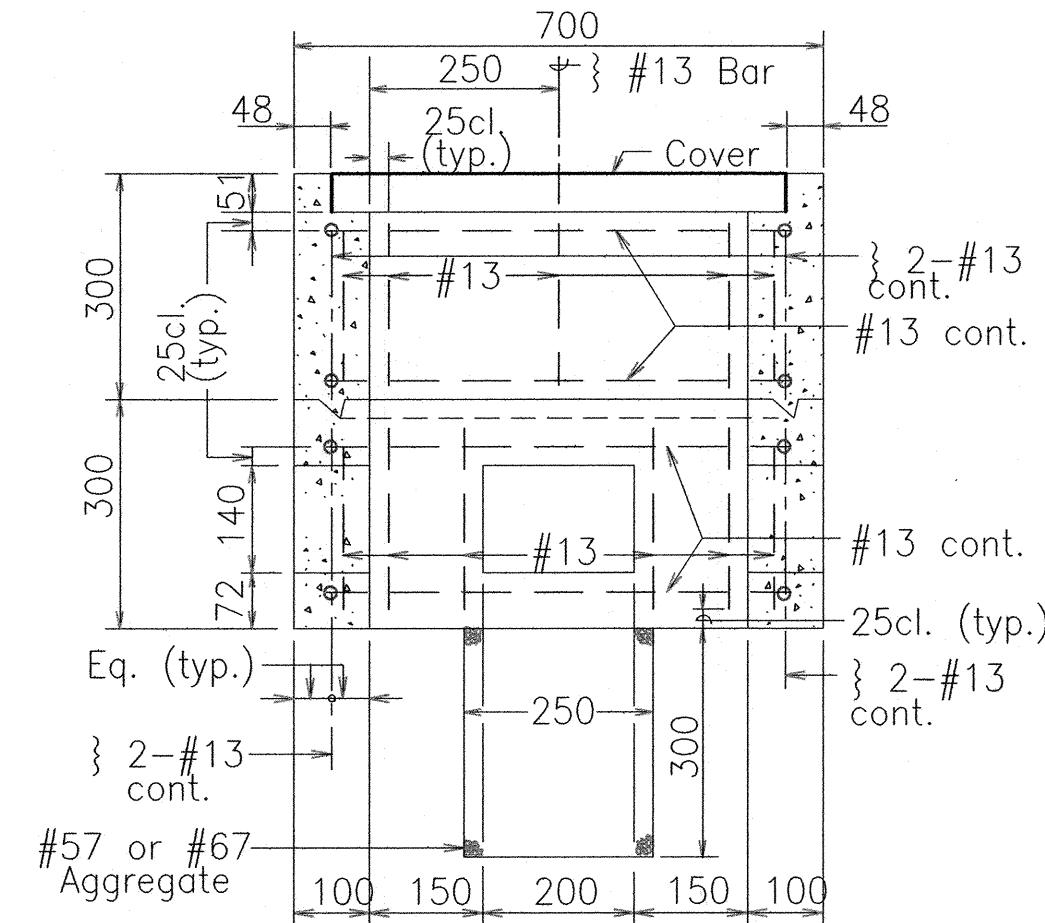


SECTION B-B
TYPE "A" PULLBOX
(Old Type "B")

Scale: 1 : 100

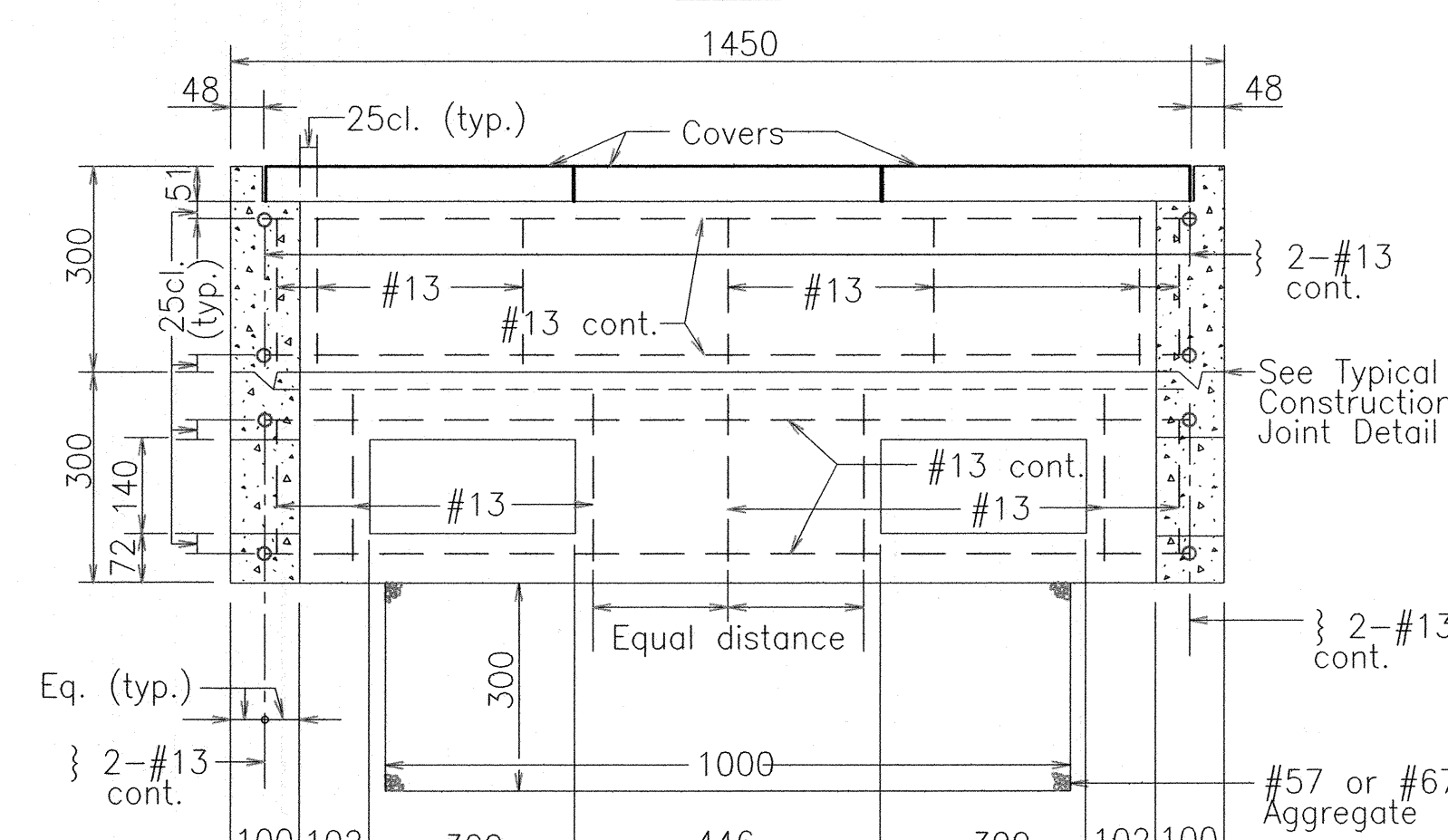
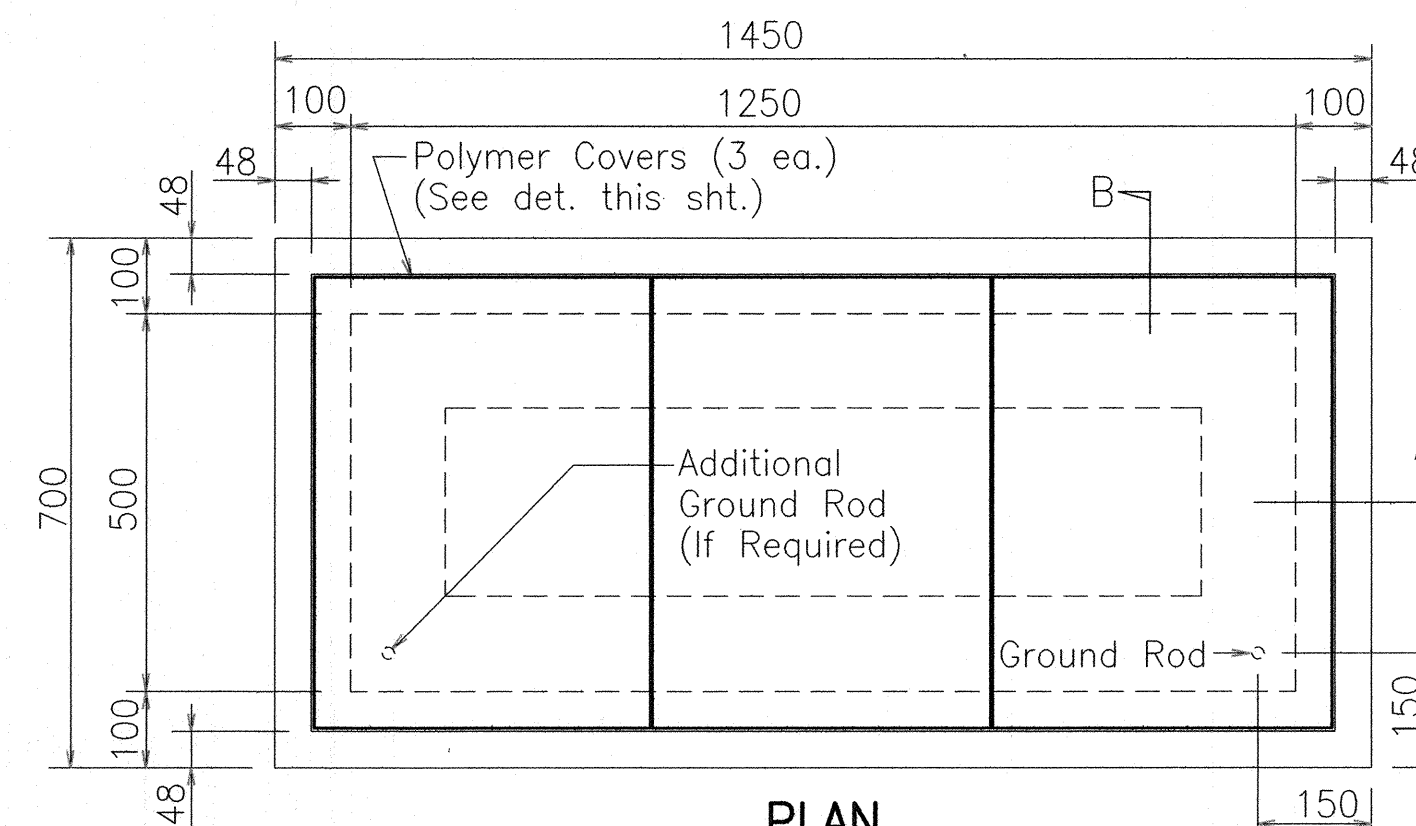


SECTION A-A

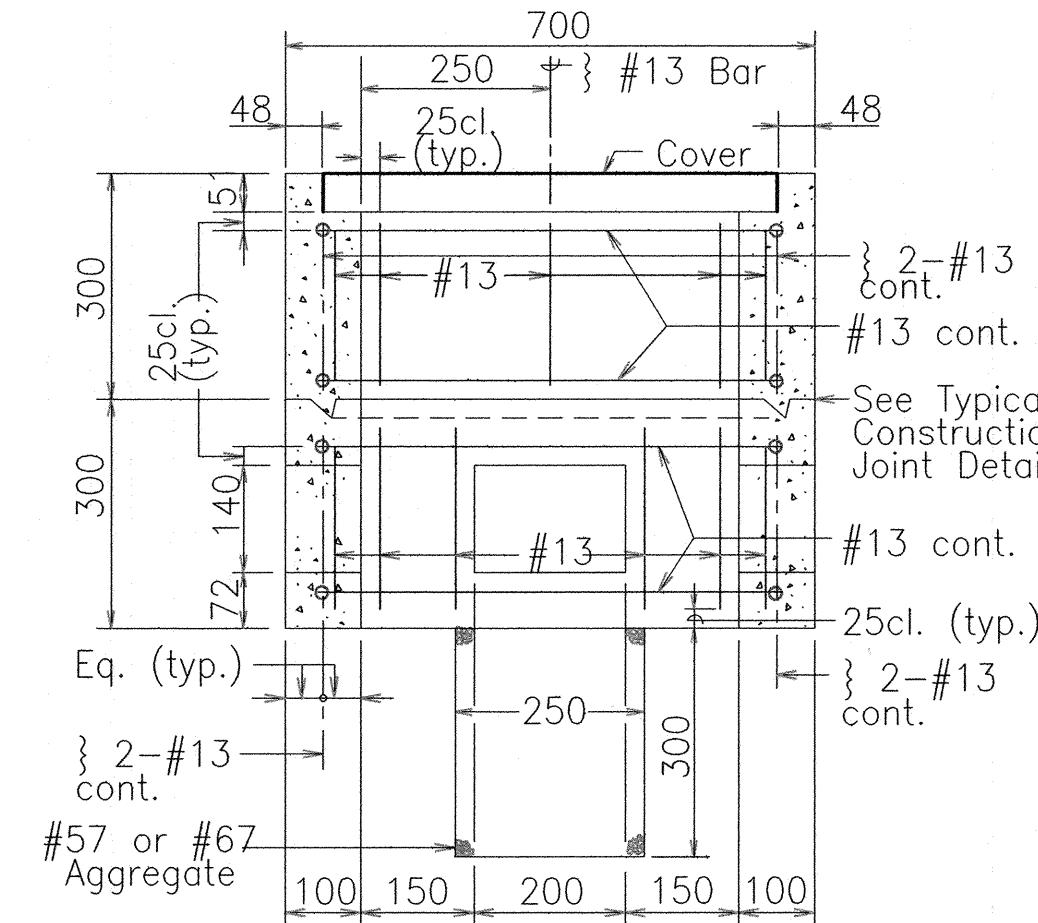


SECTION B-B
TYPE "B" PULLBOX (Old Type "C")

Scale: 1 : 100



SECTION A-A



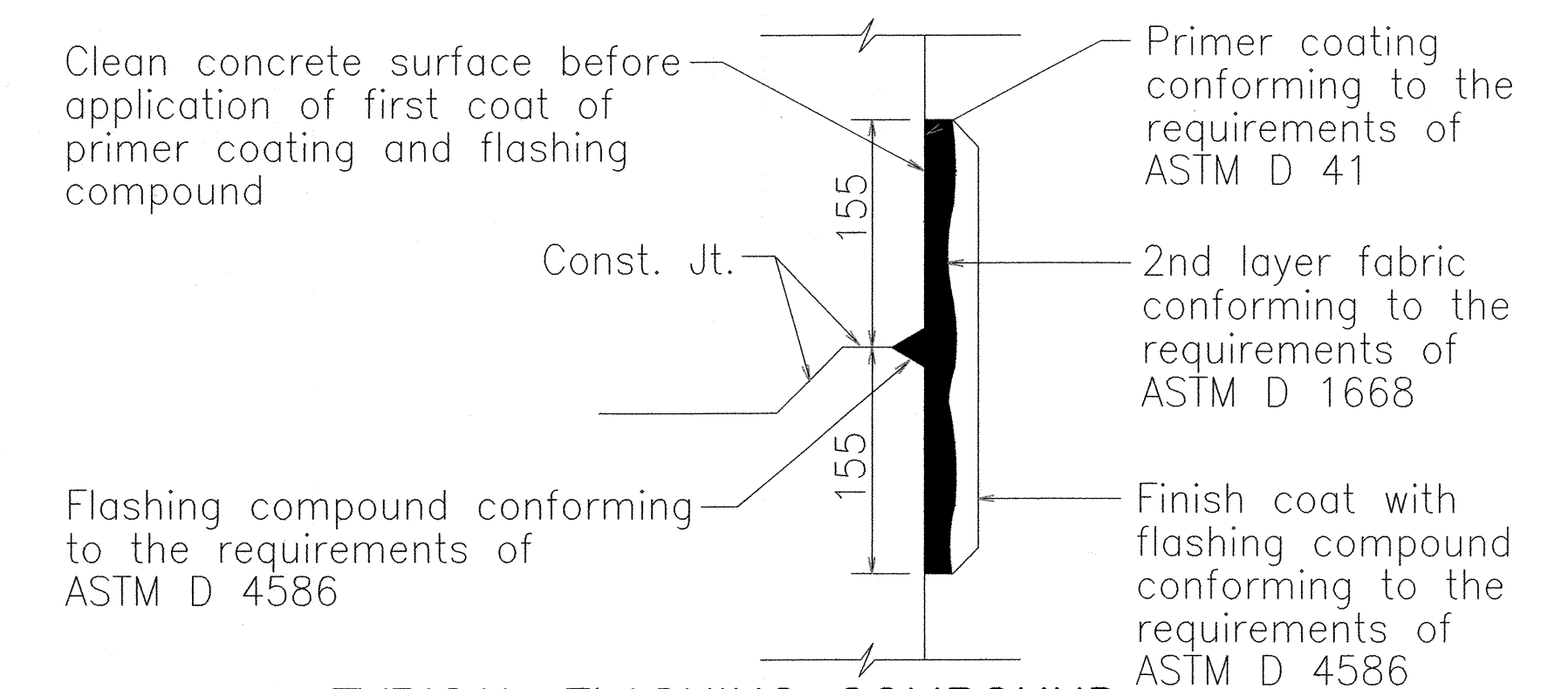
SECTION B-B
TYPE "C" PULLBOX (Old Type "D")

Scale: 1 : 100

**ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN**

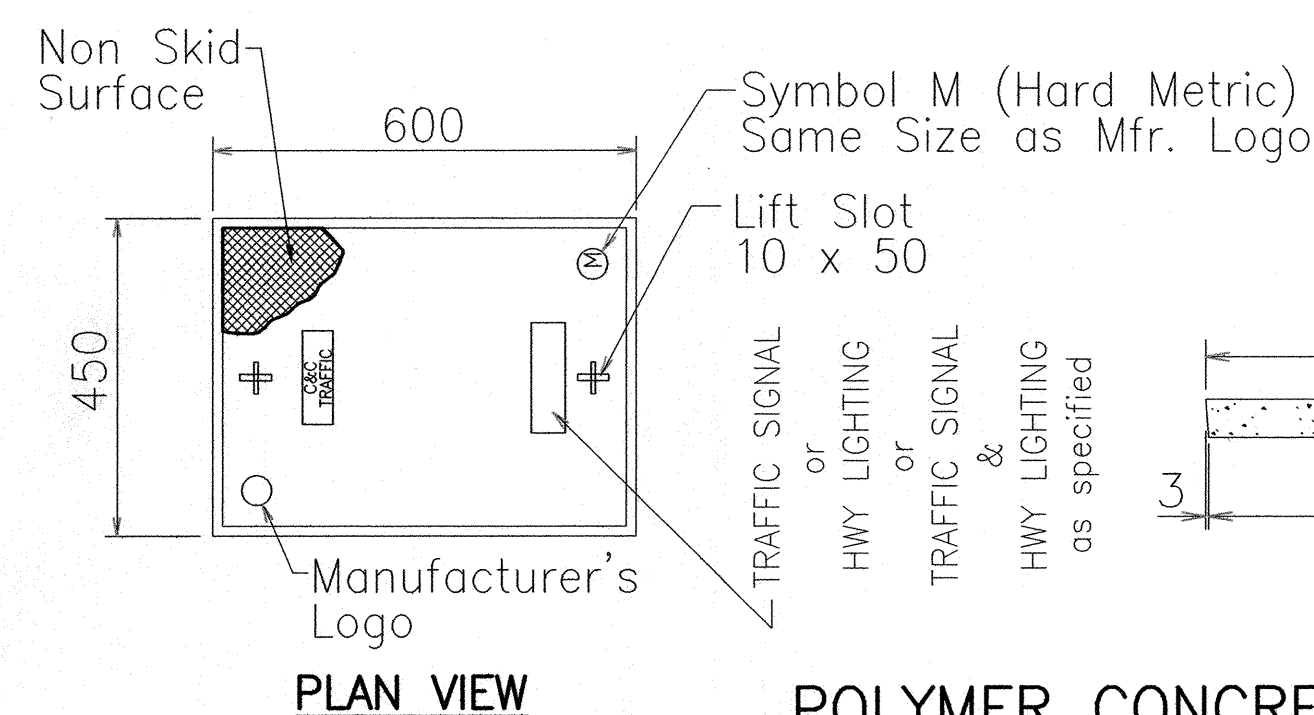
GENERAL NOTES

1. Provide a minimum of one 16 ϕ x 2.5m Copperweld Ground Rod in each pullbox. When directed by the Traffic Signal Inspector/Engineer, install additional Ground Rods. Cost of Ground Rods shall be incidental to the pullboxes.
2. All pre-cast concrete pullboxes shall be manufactured in two pieces.
3. The pullbox with cover shall be capable of supporting an MS 18 Loading.
4. The maximum weight of the pullbox cover shall not exceed 27 kilograms.
5. The openings for the conduits on all pullboxes shall be pre-cast concrete knockouts.
6. After installing the conduits in the openings of the pullboxes, the Contractor shall fill the excess opening in the pre-cast knockouts with concrete mortar.
7. Prior to installing the pullboxes, the Contractor shall level the bottom of the trench and achieve a minimum of 95% relative compaction of the bottom of the trench.
8. All concrete shall be Class A (21MPa or 3000PSI, min.)
9. Rebars shall be Grade 300 and all lapped splices shall be 360mm minimum.
10. The #57 or #67 size aggregate shall conform to latest version of AASHTO M43 (ASTM D 448).
11. Type "C" Pullbox shall be installed in a location protected from vehicular traffic (i.e. raised sidewalk, behind A.C. curbs, traffic signal standard or pipe guards).



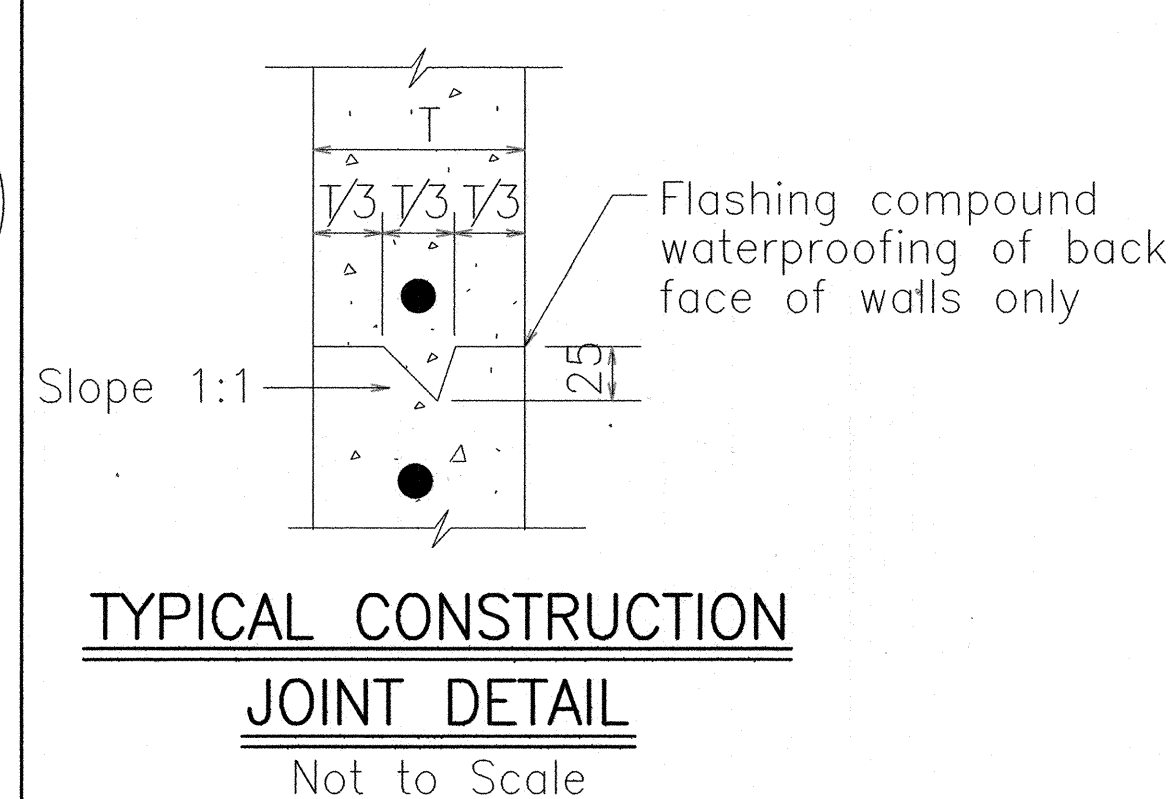
**TYPICAL FLASHING COMPOUND
WATERPROOFING DETAILS**

Not to Scale



POLYMER CONCRETE COVER

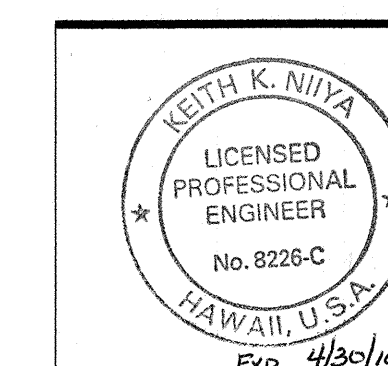
Not to Scale



**TYPICAL CONSTRUCTION
JOINT DETAIL**

Not to Scale

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS
HONOLULU, HAWAII



WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU COMMERCIAL CENTER
KIHAI, MAUI, HAWAII

TITLE: **PULLBOX DETAILS**

DESIGNED BY: KC	CHECKED BY: KKN	DATE: 12/1/09	JOB NUMBER: 04010.10	SHEET: TS-7
DRAWN BY: KC	APPROVED BY:	DATE: MAY 2006		
SCALE: AS SHOWN			DATE: MAY 2006	OF SHEETS

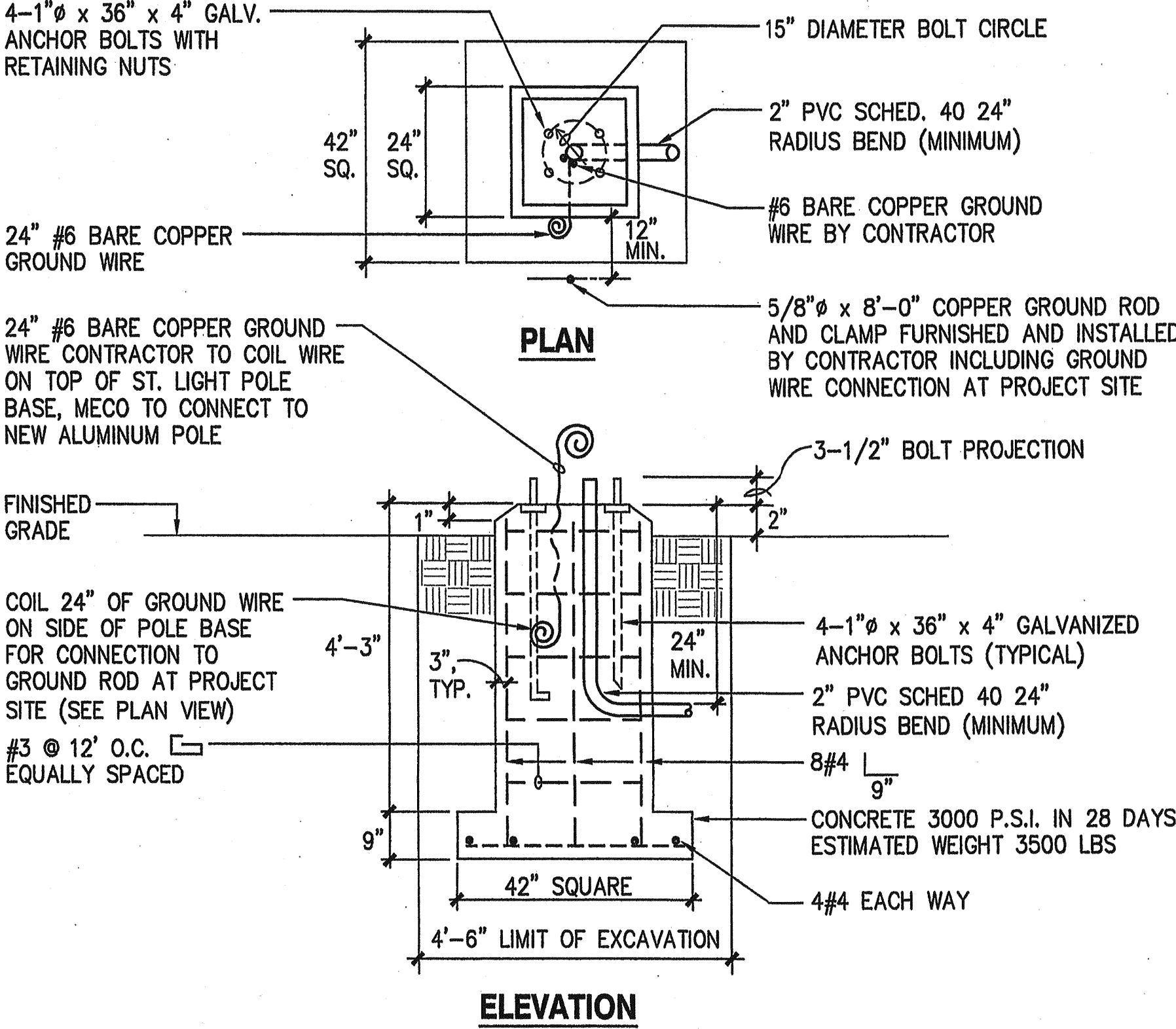
LETTER	DESCRIPTION	DATE

GENERAL NOTES:

1. COORDINATE ALL DUCT WORK WITH RESPECTIVE UTILITY COMPANIES.
2. SEE UTILITY COMPANY STANDARD DRAWINGS FOR ALL DETAILS. COORDINATE DUCT ENTRIES INTO HANDHOLES AND MANHOLES WITH UTILITY COMPANY.
3. CONTRACTOR SHALL EXCLUDE UTILITY COMPANY SERVICE CHARGES. ALL COSTS PAID BY DEVELOPER.
4. HANDHOLES AND MANHOLE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING UTILITY COMPANY STANDARDS.
- a) 2' x 4' MECO HH - PRECAST CONCRETE, PER #30-2005
- b) 3' x 5' MECO HH - PRECAST CONCRETE, PER #18841
- c) 4' x 6' MECO HH - PRECAST CONCRETE, PER #18842
- d) 5' x 7' MECO HH - PRECAST CONCRETE, PER #18843
- e) 6' x 11' MECO HH - PRECAST CONCRETE, PER MECO #18844, 6'-6" DEEP
- f) 2' x 4' TEL HH - PRECAST CONCRETE, PER #435TB
- g) 3' x 5' TEL HH - PRECAST, PER GTE SPEC. #GTS-8395
- h) 4' x 6' TEL HH, TYPE 1 - PRECAST, PER GTE SPEC. #GTS-8395
- i) 4' x 6' TEL MH - PRECAST CONCRETE, PER GTS #8395 #GTE 4x6.5x6.5
- j) 5' x 10' TEL MH - PRECAST CONCRETE, PER GTS #8395 #GTE 5x10.5x6.5
- k) 6' x 12' TEL MH - PRECAST CONCRETE, PER GTS #8395 #GTE 6x12x7
- l) 2' x 4' CATV HH - PRECAST CONCRETE, 24" MINIMUM DEPTH, NON-SKID COVER WITH "CATV" STENCIL

TELEPHONE GENERAL NOTES:

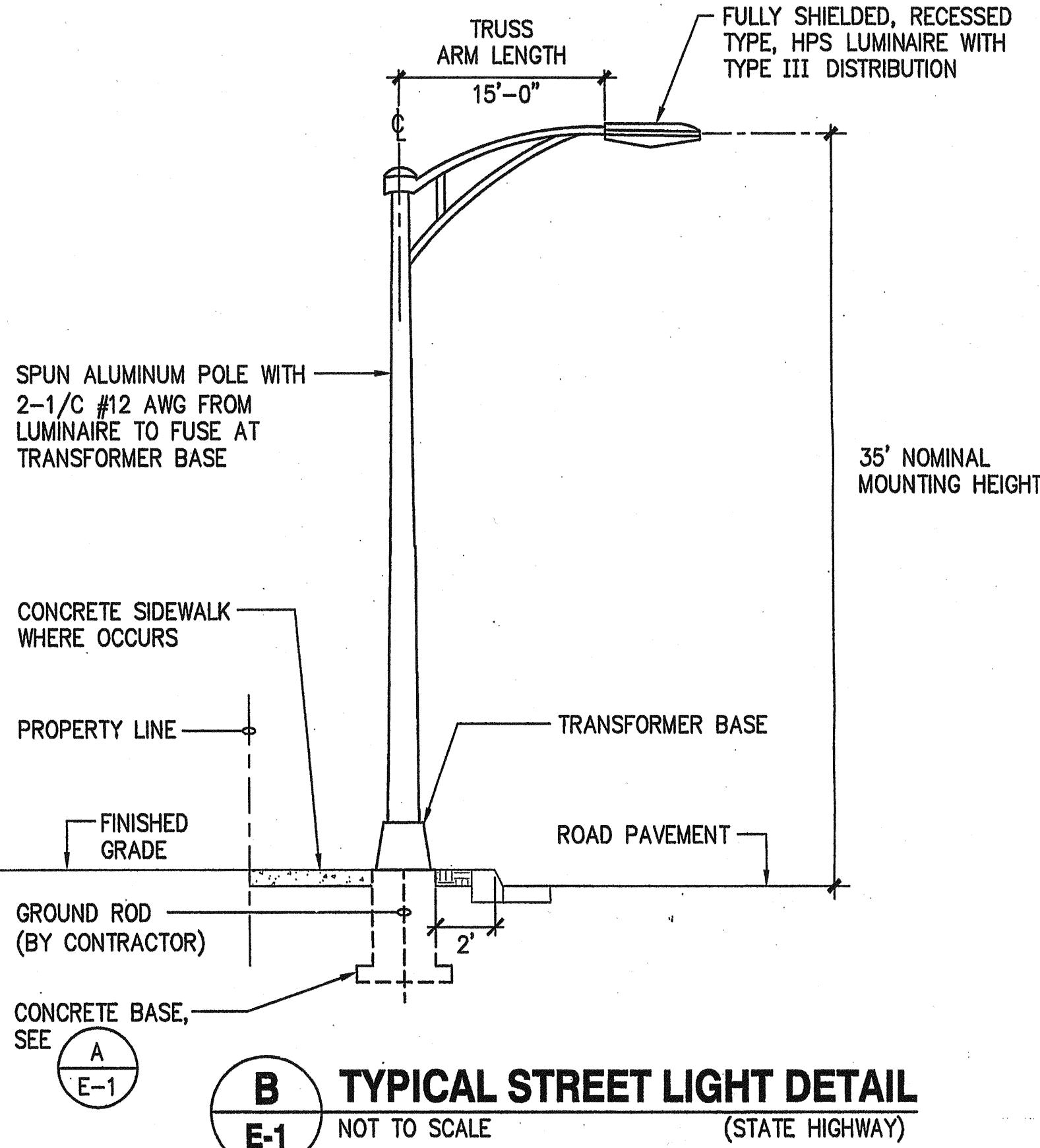
1. INSTALLATION OF TELEPHONE DUCTLINE SYSTEM SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF VERIZON HAWAII'S "STANDARD SPECIFICATIONS FOR PLACING UNDERGROUND TELECOMMUNICATIONS SYSTEM", MAR 1999, UNLESS OTHERWISE MODIFIED IN THESE PLANS. CHECK WITH VERIZON HAWAII PRIOR TO ORDERING MATERIAL FOR THE DUCTLINE SYSTEM INSTALLATION WORK.
2. THE CONTRACTOR WILL PROVIDE A 5/8" x 8' GALVANIZED GROUND ROD IN EACH HANDHOLE AND/OR PULLBOX AND BELOW A TELEPHONE CABINET.
3. ALL CONDUITS WILL ENTER AND LEAVE THE HANDHOLE/PULLBOX AT 90 DEGREES TO THE FACE OF THE BOX.
4. THE MAXIMUM SIZE CONDUIT THAT MAY ENTER THE SIDE WALL OF A 2' x 4' PULLBOX IS 2".
5. ALL CONDUITS WILL BE TERMINATED WITH A BELL END. THE BELL END SHALL BE FLUSH WITH THE INSIDE FACE OF THE PULLBOX WALL. NO PROTRUSION OF THE BELL END WILL BE PERMITTED.
6. ALL ENTRANCES INTO THE PULLBOX WILL BE GROUTED AROUND THE CONDUIT. THE INSIDE SURFACE SHALL BE FINISHED SMOOTH AND FLUSH WITH THE EXISTING WALL SURFACE.
7. ALL CONDUITS SHALL HAVE AN 1800#, POLYESTER MULETAPE (NEPTCO WP1800P, VERIZON HAWAII MATERIAL CODE NO. 571154) INSTALLED THROUGHOUT ITS ENTIRE LENGTH. ALL CONDUITS SHALL BE CAPPED WITH A TEMPORARY CAP TO PREVENT THE ENTRANCE OF FOREIGN MATERIAL DURING CONSTRUCTION. THE TEMPORARY CAPS SHALL REMAIN INSTALLED ON EACH CONDUIT ENTERING A PULLBOX OR HANDHOLE AT THE COMPLETION OF THE INSTALLATION.
8. ALL CONDUIT AND PULLBOXES/HANDHOLES INSTALLED BY THE CONTRACTOR FOR USE BY VERIZON HAWAII WILL BE SUBJECT TO INSPECTION. THE INSPECTION SHALL TAKE PLACE PRIOR TO BACKFILL OR CONCRETE ENCASEMENT. CALL FOR INSPECTION 3 WORKING DAYS PRIOR TO SCHEDULE THE INSPECTION.
9. AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL NOT LESS THAN 12" LONG AND HAVING A DIAMETER OF 1/4" LESS THAN INSIDE DIAMETER OF DUCT, SHALL BE PULLED THROUGH EACH DUCT AFTER WHICH A BRUSH WITH STIFF BRISTLES SHALL BE PULLED THROUGH TO MAKE CERTAIN THAT NO PARTICLES OF EARTH, SAND, OR GRAVEL HAVE BEEN LEFT IN THE LINE.
10. A VERIZON HAWAII STANDBY MAN IS REQUIRED TO BE AT THE JOB SITE ANY TIME NON-UTILITY CO. PERSONNEL WILL BE BREAKING INTO OR ENTERING ANY STRUCTURES THAT CONTAIN COMMUNICATION FACILITIES. THE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION OR STANDBY MAN. FIVE WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR UNDERGROUND CABLE LOCATING AND MARKING.
11. THE DEVELOPER WILL BE RESPONSIBLE FOR ALL REVISIONS REQUIRED ON TELEPHONE DESIGN, DUE TO FIELD CONDITIONS.
12. MINIMUM BENDING RADIUS SHALL BE 24" FOR 2" DUCT, 36" FOR 4" DUCT.
13. MINIMUM HORIZONTAL CURVE FOR 4" DUCT IS 25' RADIUS, MINIMUM VERTICAL CURVE FOR 4" DUCT IS 20' RADIUS.
14. ALL PULLBOXES INSTALLED IN NON-SIDEWALK AREAS WILL REQUIRE A 10" CONCRETE COLLAR, 5" THICK AROUND THE ENTIRE COVER FEATHERED TO FINISHED GRADE.
15. ONE PIECE 2' x 4' PULLBOXES WILL BE ACCEPTED ONLY IN AREAS WITH CURBS AND GUTTERS, STANCHIONS, OR BERMS.
16. THE APPROVAL OF THE SUBJECT DRAWING(S) IS GOOD FOR A PERIOD OF 180 DAYS. IF CONSTRUCTION ACTIVITIES HAVE NOT COMMENCED WITHIN THE 180 DAYS OF VERIZON HAWAII'S APPROVED DATE, THE APPROVAL WILL BE VOID. SHOULD THIS OCCUR, THE GENERAL CONTRACTOR WILL BE NOTIFIED UPON RECEIPT OF REQUEST FOR INSPECTION OF UNDERGROUND TELEPHONE SUPPORT STRUCTURES.



NOTES:

1. THIS ITEM PREFABRICATED BY WALKER INDUSTRIES AT MAUI CONCRETE AND AGGREGATE.
2. MECO SHALL PROVIDE 1" x 36" x 4" ANCHOR BOLTS (4 EACH) AS FURNISHED BY MANUFACTURER, PICK-UP BY CONTRACTOR AT MECO'S KAHULUI WAREHOUSE.
3. INSPECTION BY MECO INSPECTOR REQUIRED PRIOR TO FABRICATION OF FOOTING, CONTACT MECO INSPECTOR (PHONE: 871-8461).

A STREET LIGHT BASE DETAIL
E-1 NOT TO SCALE



STREET LIGHT NOTES:

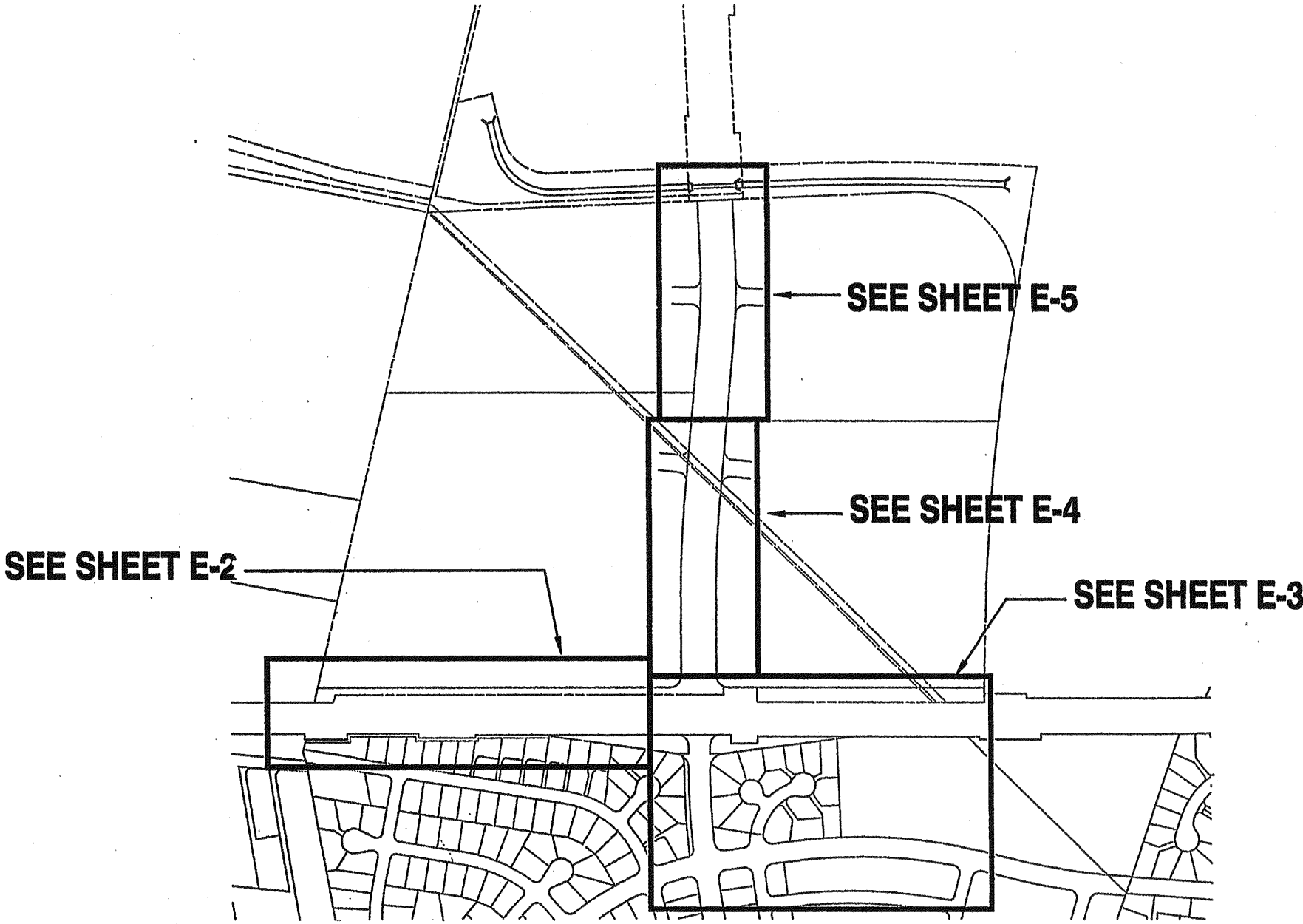
1. CONTRACTOR SHALL CONSTRUCT AND INSTALL CONCRETE STREET LIGHT FOOTING AND PROVIDE NECESSARY MATERIALS.
2. MECO SHALL PROVIDE THE 1" x 36" x 4" GALVANIZED ANCHOR BOLTS TO BE INSTALLED BY CONTRACTOR.
3. MECO SHALL PROVIDE AND INSTALL ALL NECESSARY ELECTRICAL WIRES, ALUMINUM POLES AND FIXTURES.
4. CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS.
5. OTHER TRADES SHALL BE ALLOWED AMPLE TIME TO PERFORM THEIR WORK.

APPROVED:

Gregorynn Gaudin 11/20/08 DATE
MECO
HAWAIIAN TELCOM
OCEANIC CABLEVISION
12/03/08 DATE
12/10/08 DATE

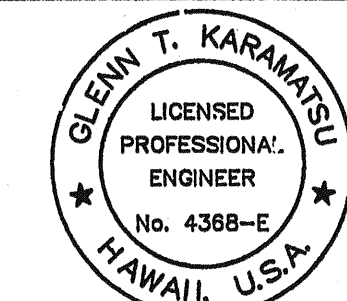
ELECTRICAL SYMBOL LIST

SYMBOLS	DESCRIPTION
	STREET LIGHT BASE FOR MECO STREET LIGHT PER A E-1
	EXISTING STREET LIGHT
	2' x 4' MECO PULLBOX
	MANHOLE, TYPE AS NOTED
	UTILITY HANDHOLE GROUP, TYPE AS NOTED
	PME SWITCH CONCRETE PAD, SEE E-6
	1# MECO TRANSFORMER PAD IN MECO EASEMENT
	STUB-OUT WITH CAP AND CONCRETE MARKER FOR FUTURE
	UNDERGROUND ELECTRICAL DUCTLINE, SEE DUCT SCHEDULE E-6, CONCRETE ENCASED
	EXISTING DUCTLINE
	MECO DUCTS
	TEL DUCTS
	CATV DUCTS
	STREET LIGHT DUCT, 2" PVC SCHEDULE 40, WIRING BY MECO, DIRECT BURIED
	DUCT SCHEDULE INDICATOR. 1=DUCT TYPE, A=DUCT SECTION TYPE
	DETAIL INDICATOR TOP HALF: DETAIL LETTER BOTTOM HALF: SHEET ON WHICH SHOWN
	CABLE TELEVISION (OCEANIC CABLEVISION)
	GROUND FAULT CIRCUIT INTERRUPTER
	GROUND
	HANDHOLE GROUP
	MAUI ELECTRIC COMPANY
	NIGHT LIGHT
	TELEPHONE (HAWAIIAN TELCOM)



OVERALL PLAN

SCALE: 1" = 500'



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PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2008

EXPIRATION DATE OF THE LICENSE

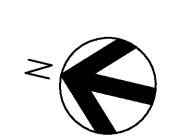
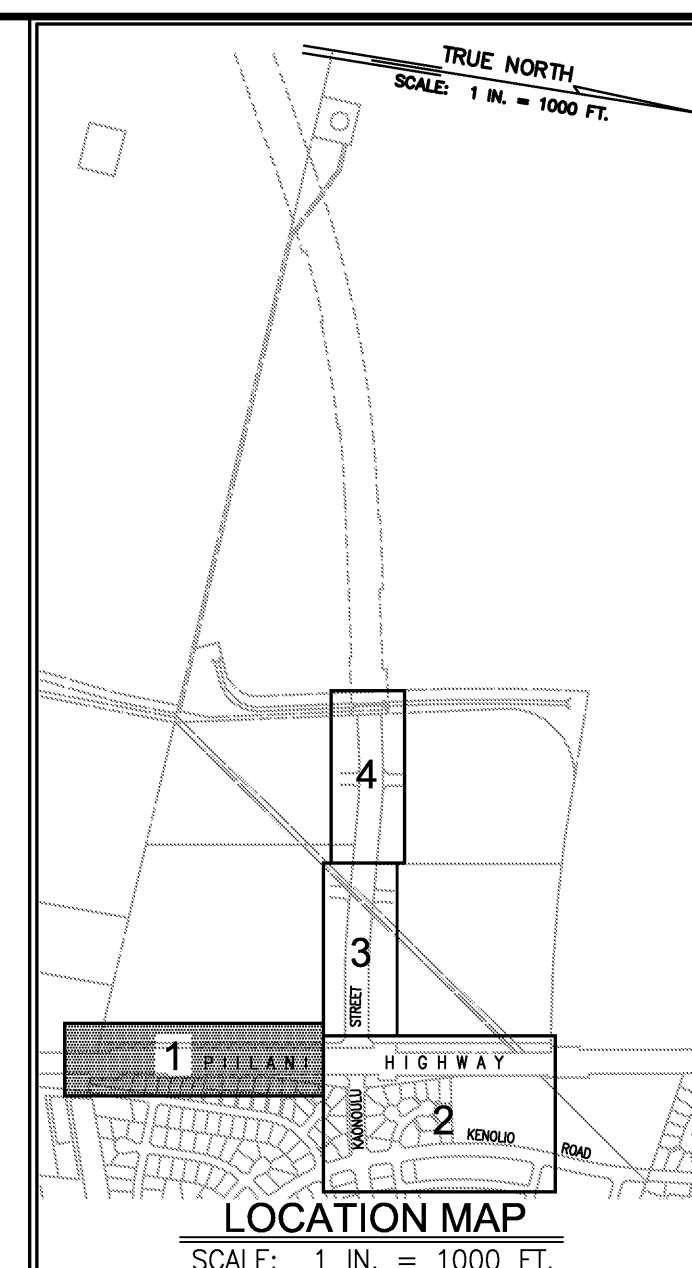
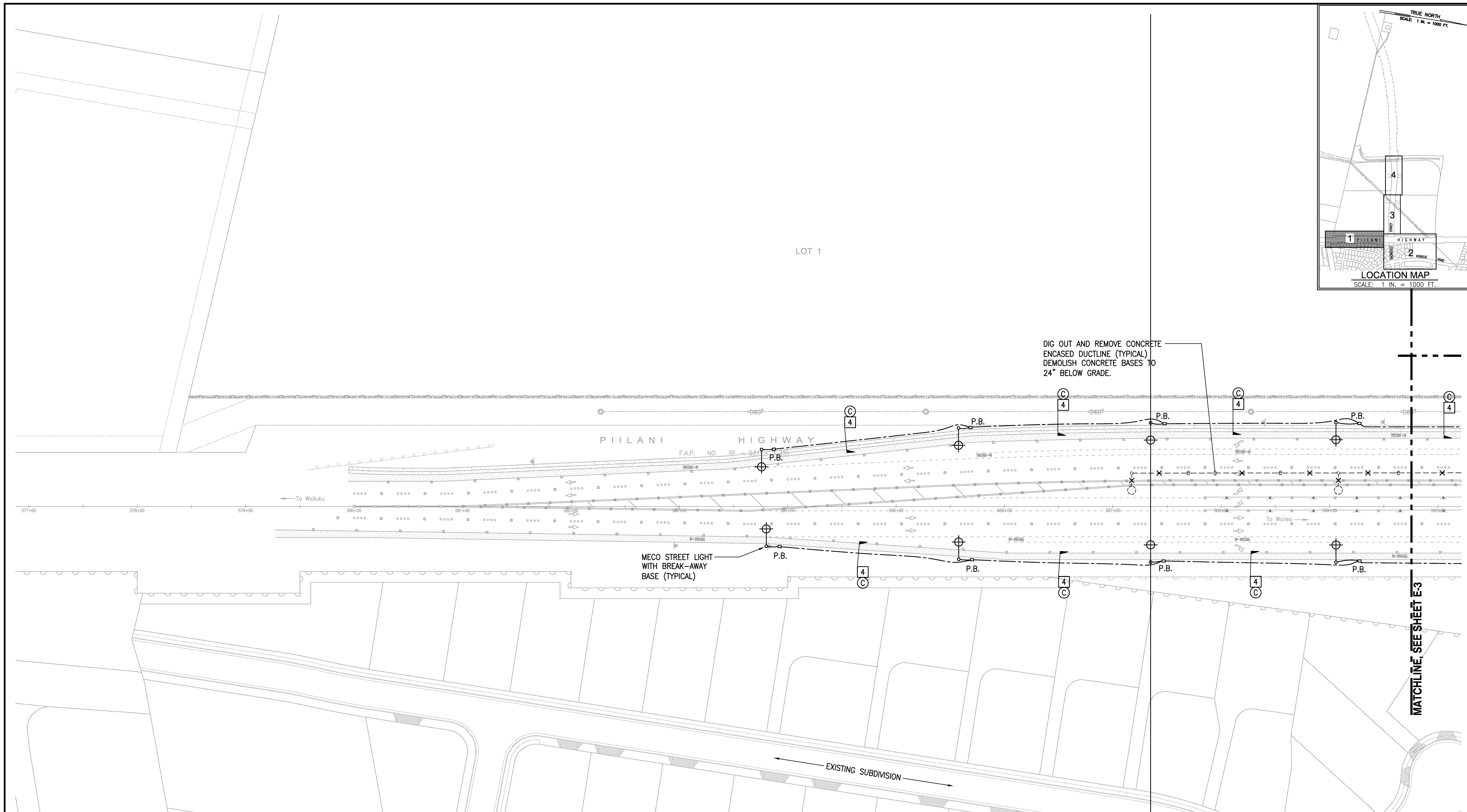
WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE

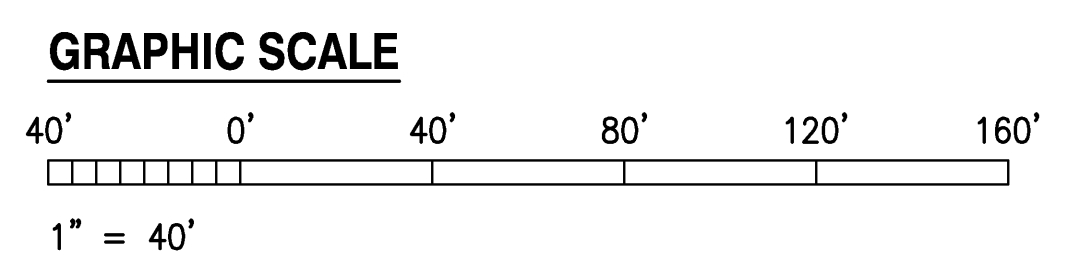
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE ELECTRICAL NOTES AND SYMBOLS

DESIGNED BY GK	CHECKED BY GK	04010.10 JOB NUMBER	E-1
DRAWN BY CS	APPROVED BY GK	10-10-08 DATE	SHEET
SCALE AS NOTED	DATE 10-10-08	OF SHEETS	



PARTIAL ELECTRICAL SITE PLAN - 1
SCALE: 1" = 40'



LETTER	DESCRIPTION	DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Glenn Karamatsu
PROJECT ENGINEER for ECS, Inc.
APRIL 30, 2010
EXPIRATION DATE OF THE LICENSE

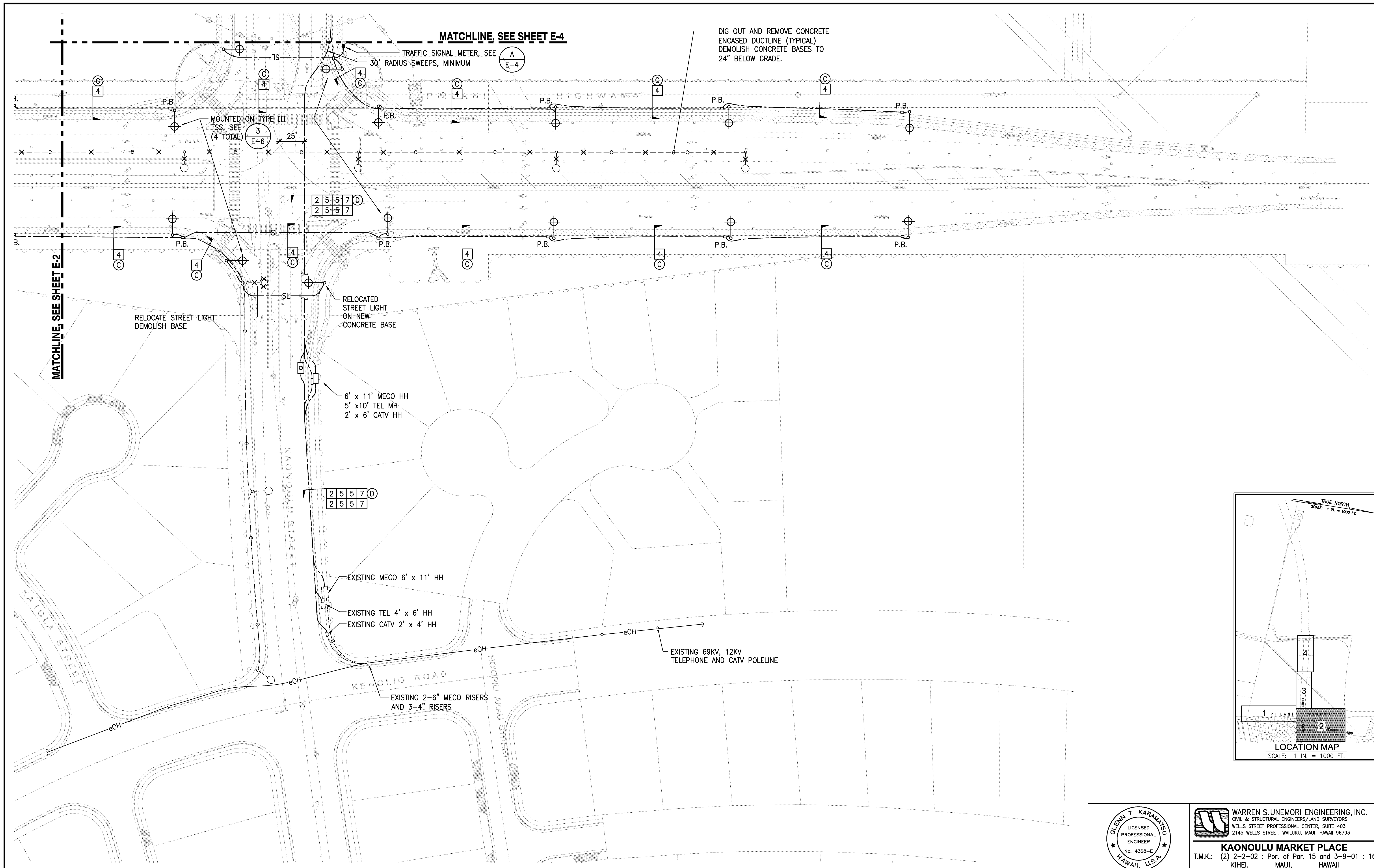
WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE: PARTIAL ELECTRICAL SITE PLAN - 1

DESIGNED BY CK	CHECKED BY CK	JOB NUMBER 04010.10	E-2 SHEET
DRAWN BY CS	APPROVED BY CK	11-5-08	
SCALE: AS NOTED			DATE 11-5-08

OF SHEETS



MATCHLINE, SEE SHEET E-4

DIG OUT AND REMOVE CONCRETE
ENCASED DUCTLINE (TYPICAL)
DEMOLISH CONCRETE BASES TO
24" BELOW GRADE.

MATCHLINE, SEE SHEET E-2



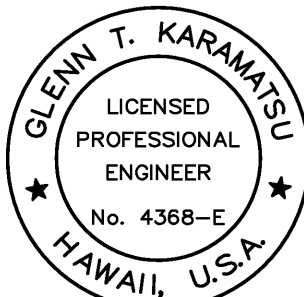
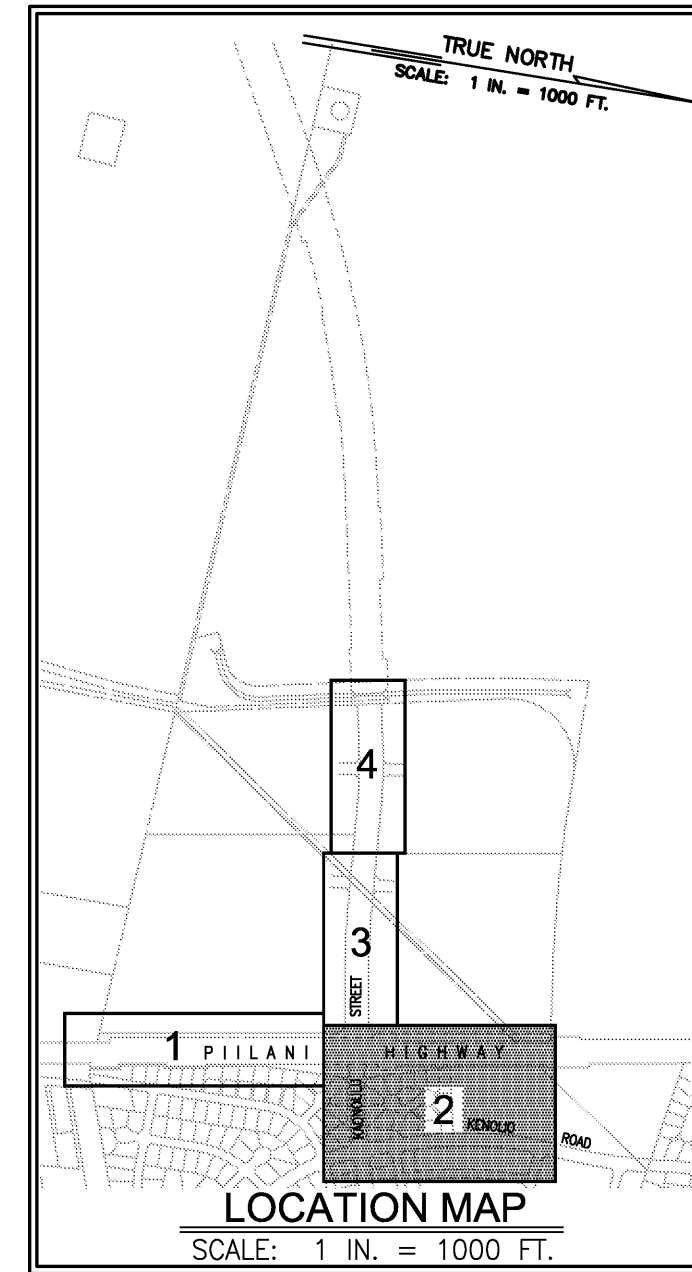
PARTIAL ELECTRICAL SITE PLAN - 2

SCALE: 1" = 40'

GRAPHIC SCALE

40' 0' 40' 80' 120' 160'

1" = 40'



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OR UNDER MY SUPERVISION.

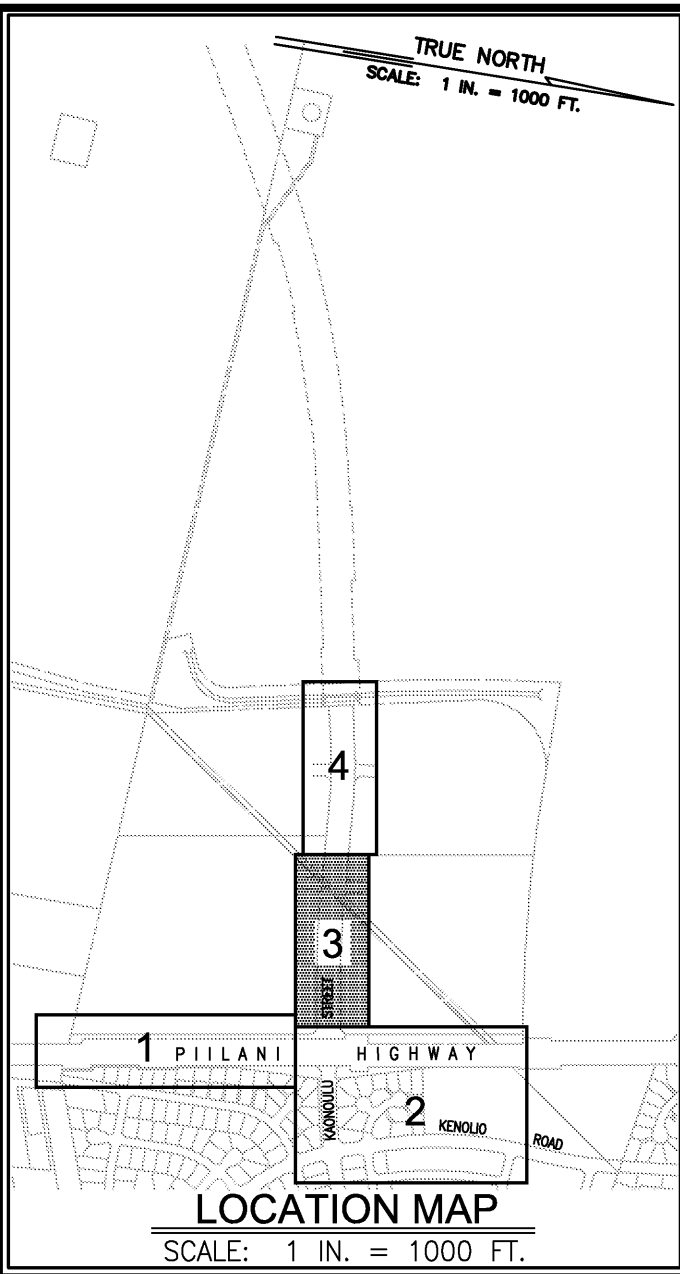
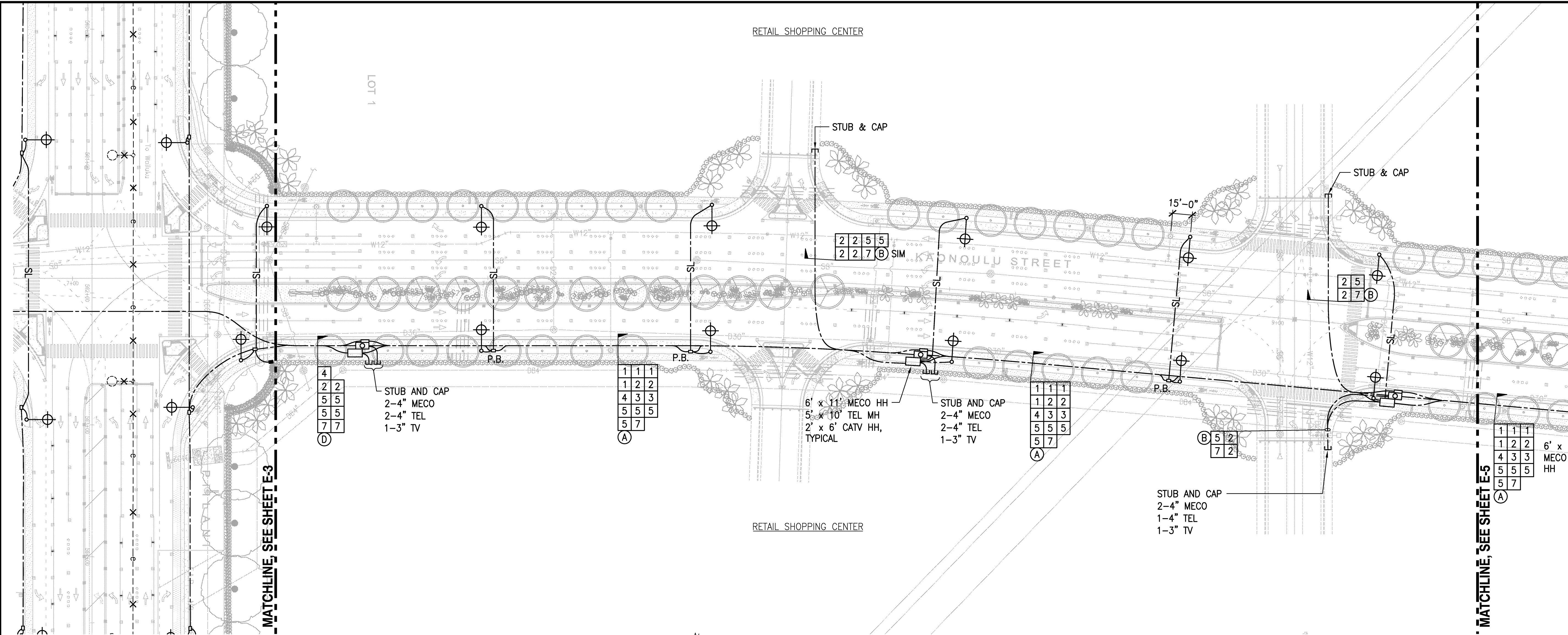
Glenn Karamatsu
PROJECT ENGINEER for ECS, Inc.
APRIL 30, 2010
EXPIRATION DATE OF THE LICENSE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE: PARTIAL ELECTRICAL SITE PLAN - 2

DESIGNED BY GK	CHECKED BY GK	JOB NUMBER 04010.10	E-3 SHEET OF SHEETS
DRAWN BY CS	APPROVED BY GK	DATE 11-5-08	
SCALE AS NOTED		DATE	

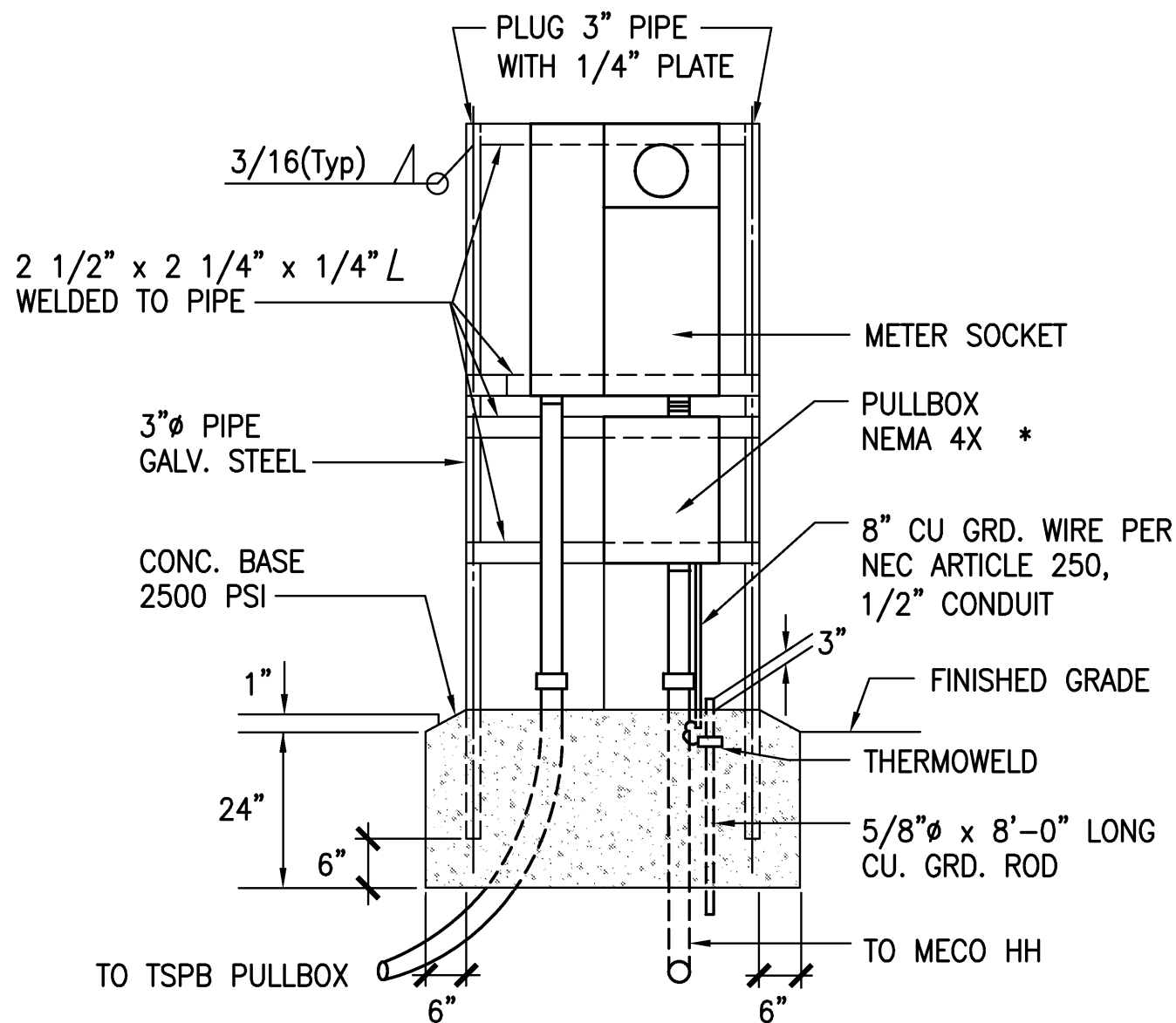


PARTIAL ELECTRICAL SITE PLAN - 3
SCALE: 1" = 40'

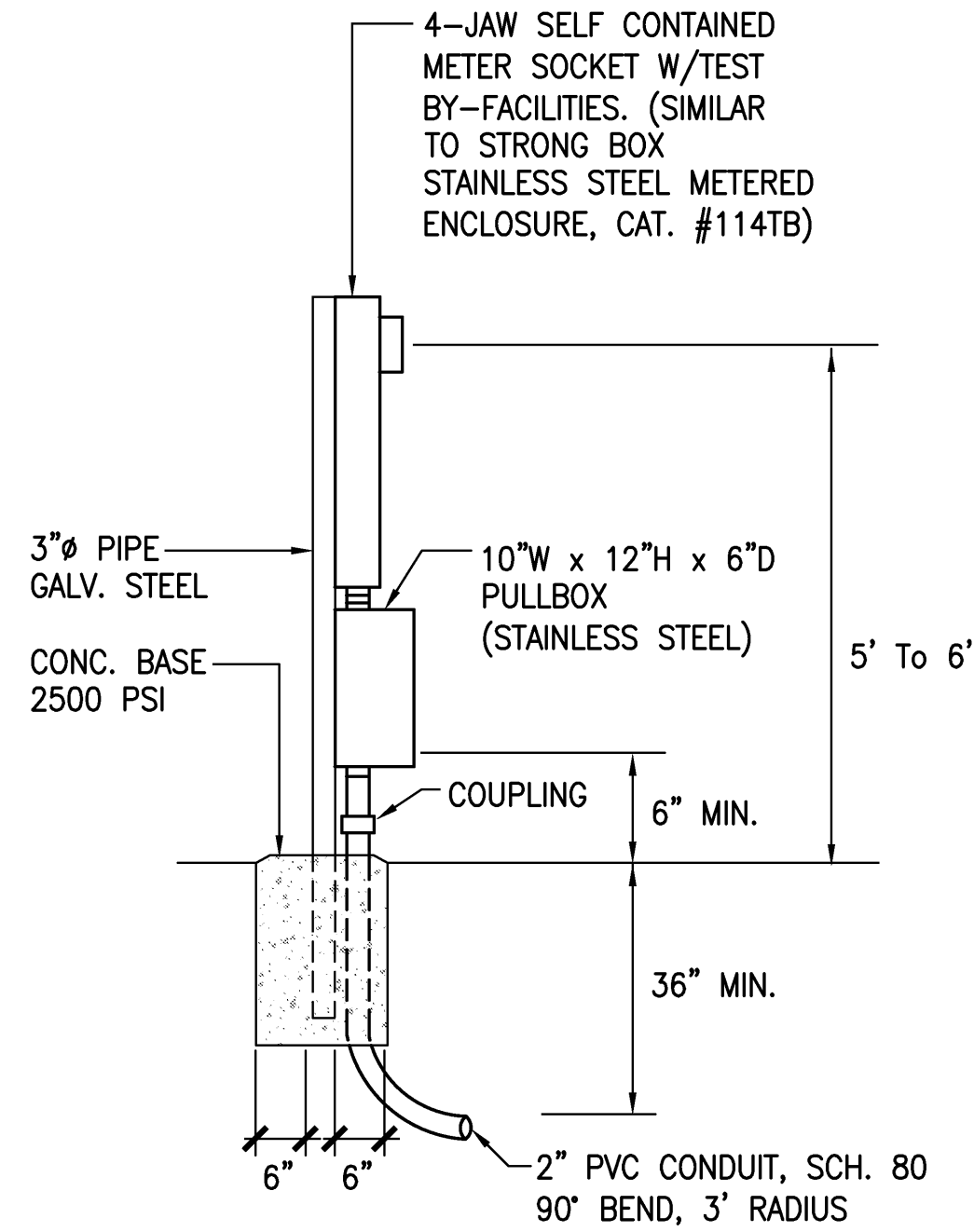
NOTES:

PEDESTAL SHALL BE HOT-DIPPED GALV. AFTER FABRICATION. ALL FASTENING BOLTS, NUTS, & WASHERS SHALL BE STAINLESS STEEL. PROVIDE 4 FT. CL. IN FRONT OF METER.

- * SEALABLE STAINLESS STEEL ENCLOSURE 10"W x 12"H x 6"D.

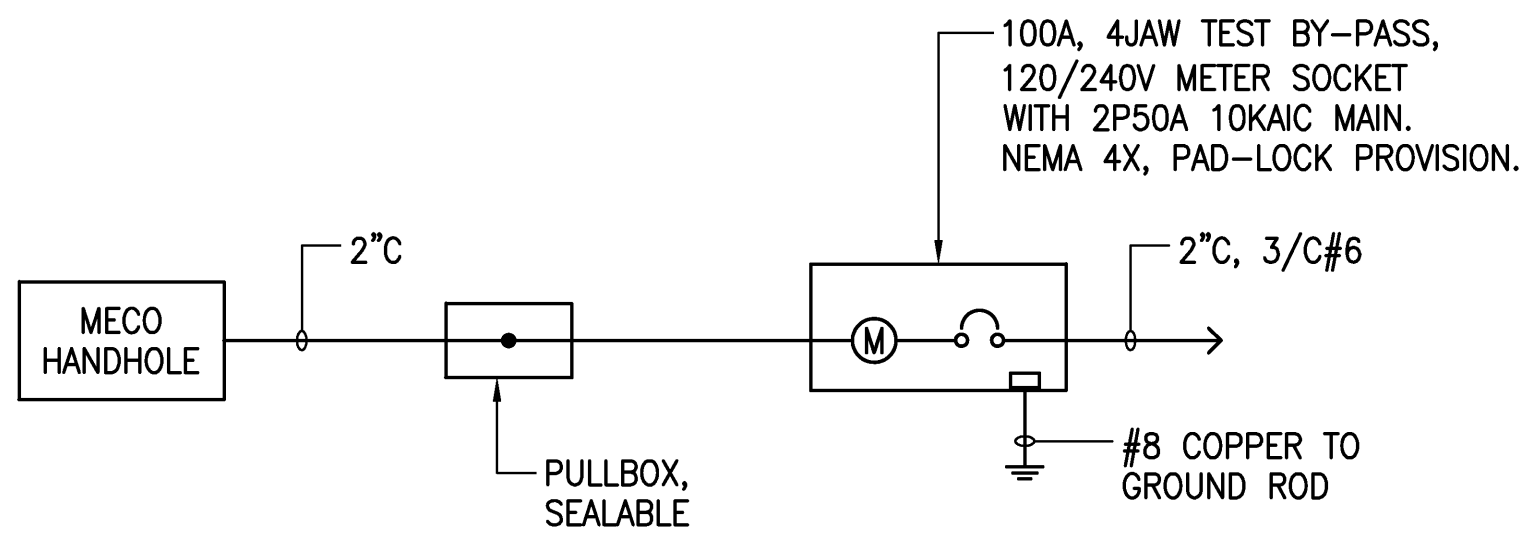


FRONT ELEVATION



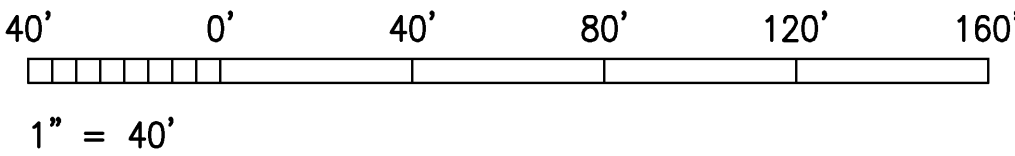
SIDE ELEVATION

A METER PEDESTAL FOR UNDERGROUND SERVICE DETAIL
E-4 NOT TO SCALE



1 TRAFFIC SIGNAL ONE LINE DIAGRAM
E-4 NO SCALE

GRAPHIC SCALE



GLENN T. KARAMATSU
LICENSED PROFESSIONAL ENGINEER
No. 4368-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

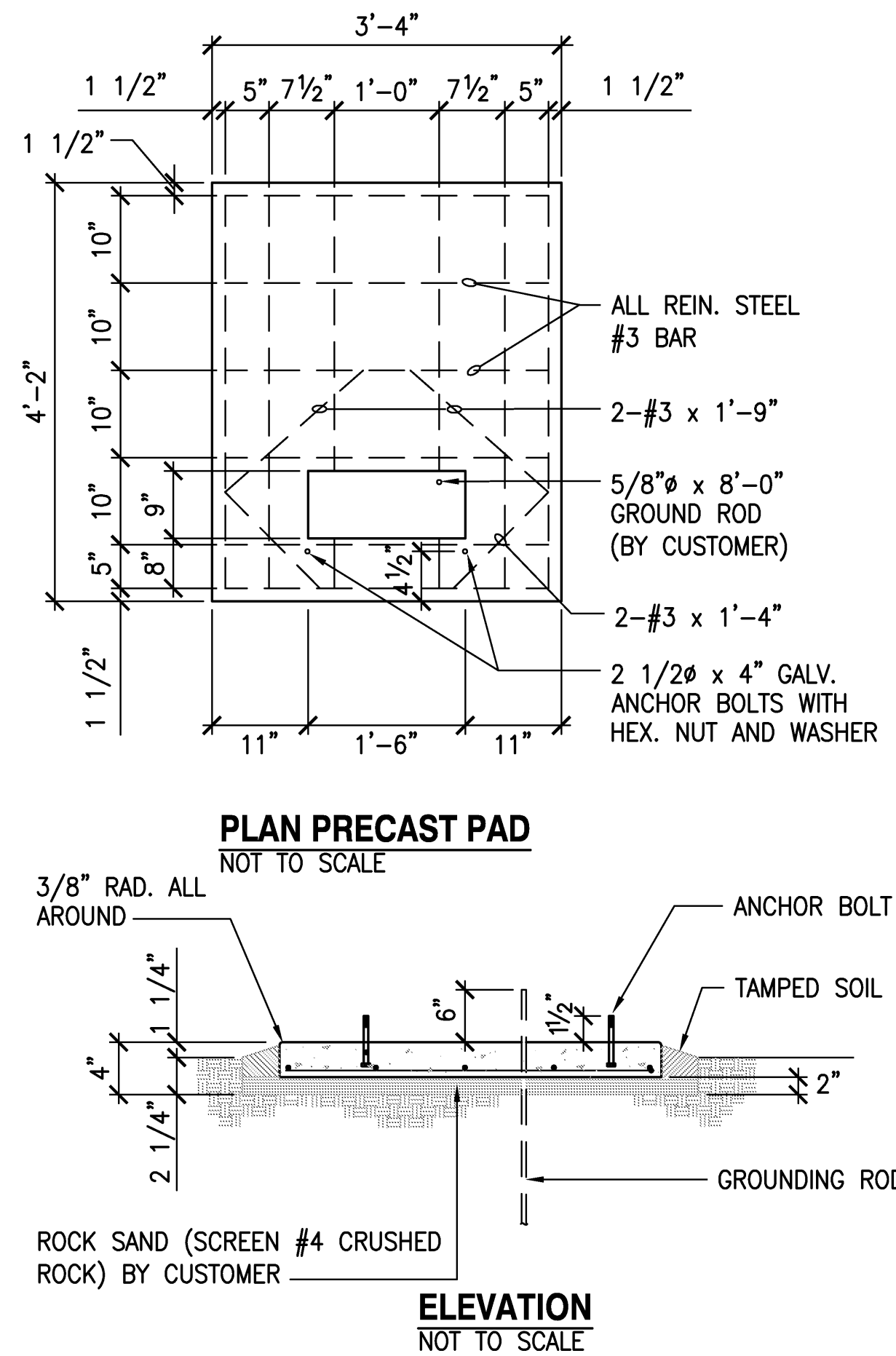
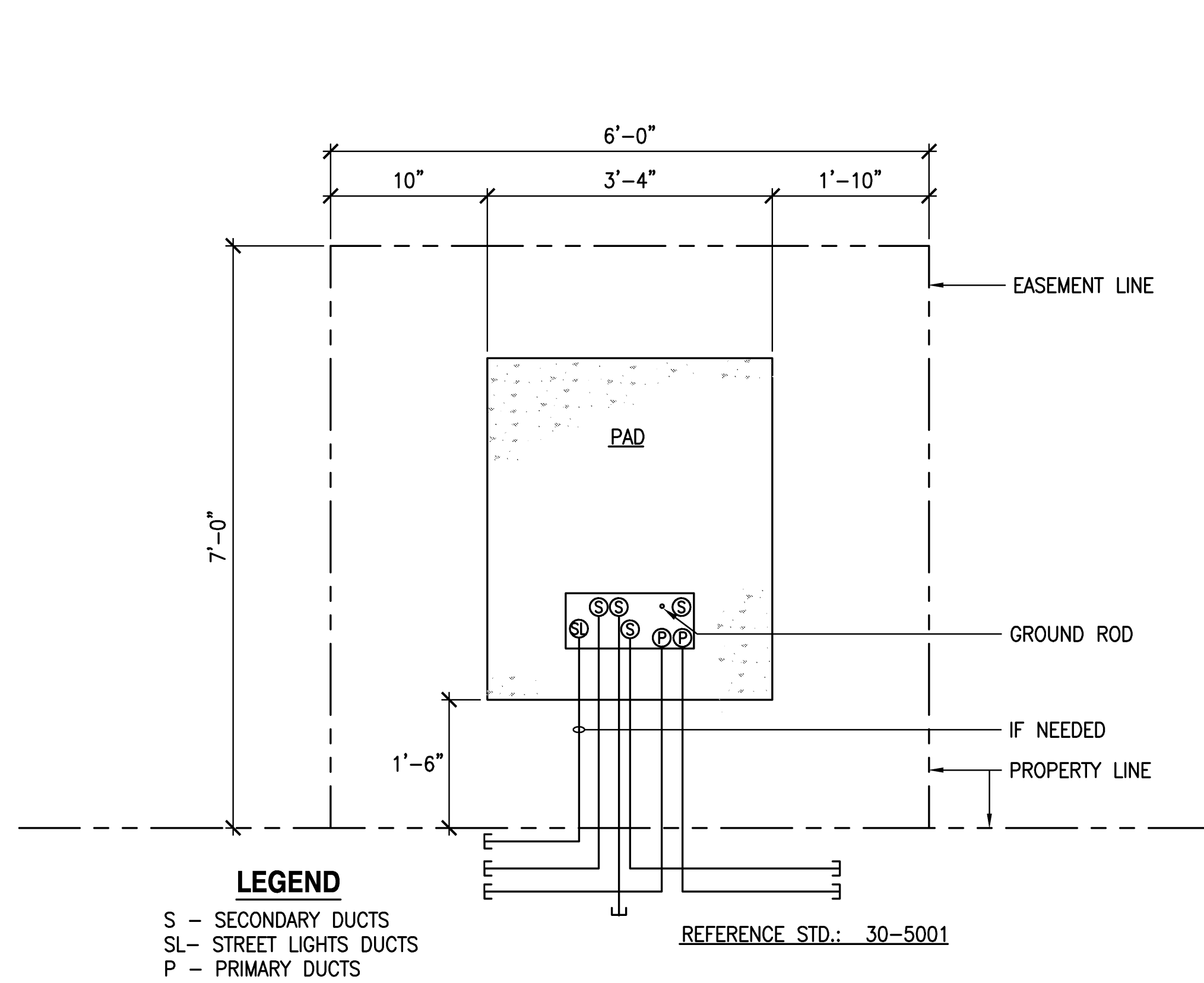
Glenn Karamatsu
PROJECT ENGINEER for ECS, Inc.
APRIL 30, 2010
EXPIRATION DATE OF THE LICENSE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

KAONOULU MARKET PLACE
T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16
KIHEI, MAUI, HAWAII

TITLE: PARTIAL ELECTRICAL SITE PLAN - 3

DESIGNED BY GK	CHECKED BY GK	JOB NUMBER 04010.10	E-4 SHEET OF SHEETS
DRAWN BY CS	APPROVED BY GK	12-26-08	
SCALE AS NOTED		DATE	

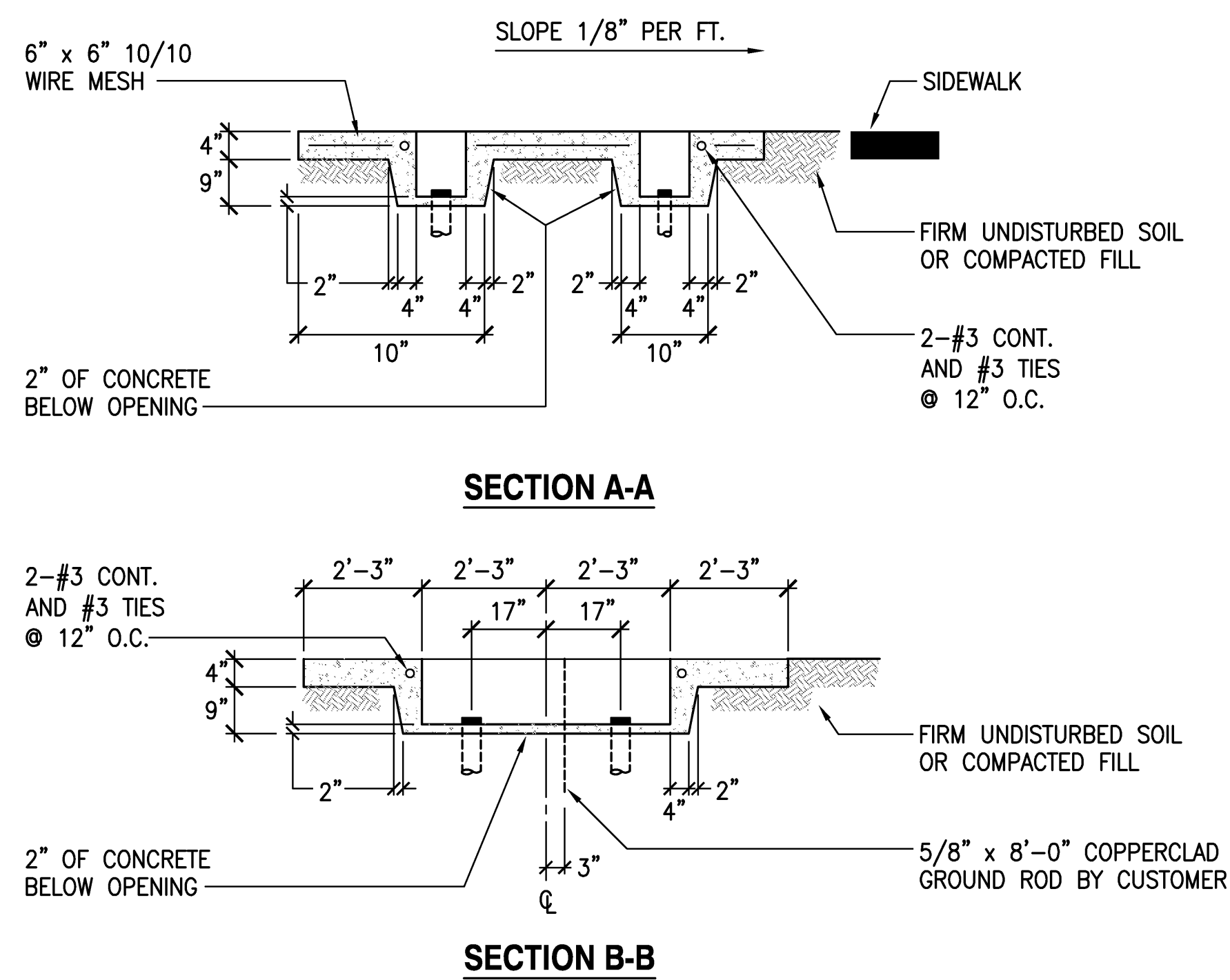
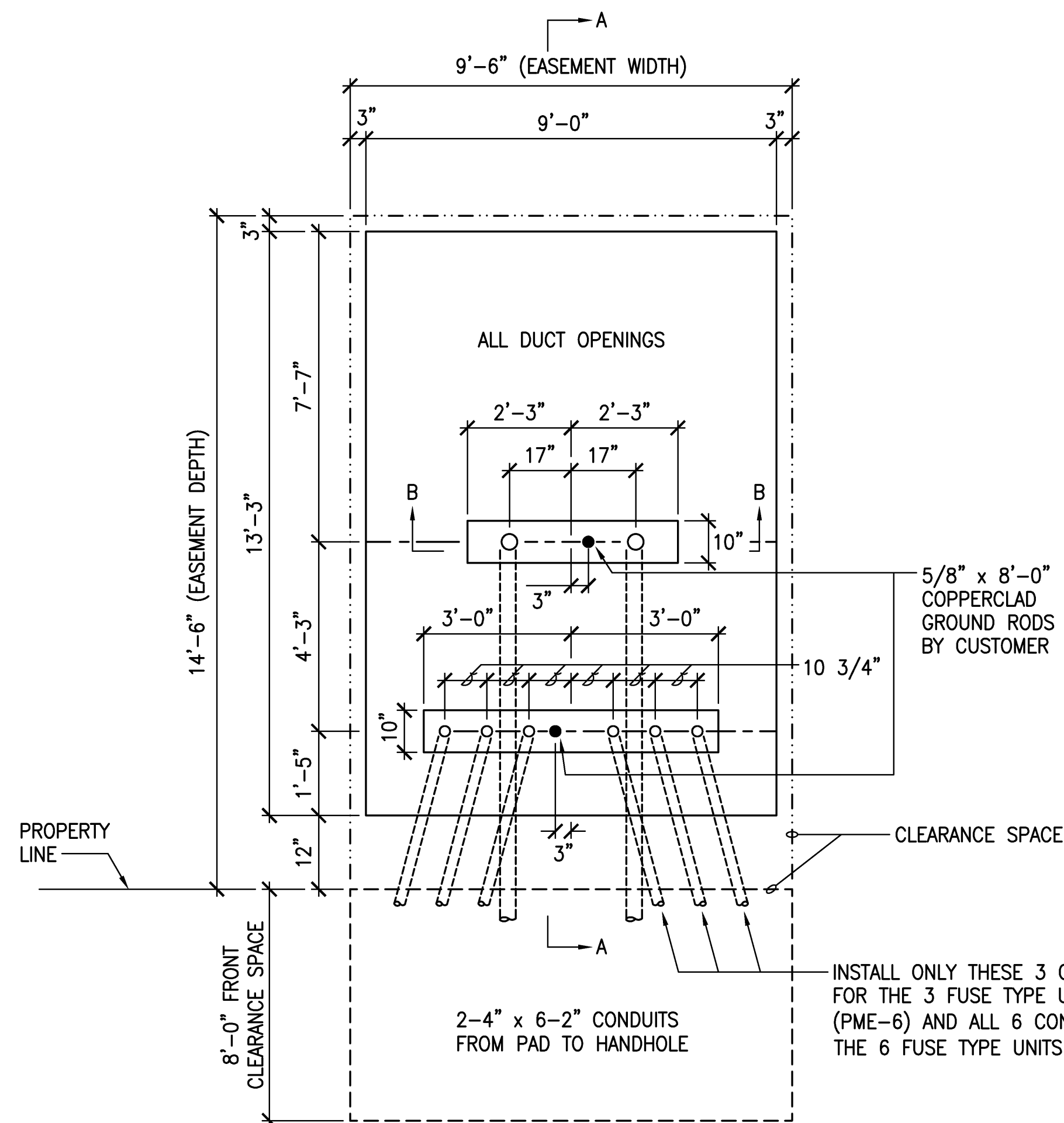


TRANSFORMER PAD NOTES:

- COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3,000 P.S.I. AT 28 DAYS
- TOP OF PAD SHALL BE SMOOTH, TRUE, LEVEL AND OTHER EXPOSED SURFACES SHALL BE SMOOTH AND FREE FROM DEFECTS.
- CONCRETE SHALL BE CURED BY APPROVED METHOD (ASTM A15)
- REINFORCING BARS SHALL BE CLEAN DEFORMED BARS.
- PRECAST PAD MADE BY AMERON, MAUI.
- ALL ITEMS SHALL BE FURNISHED IN PLACE COMPLETE BY CUSTOMER.
- PAD SITE SHALL BE GRADED AND COMPACTED. COMPACTION SHALL MEET THE REQUIREMENTS OF THE COUNTY OF MAUI "STANDARD SPECIFICATIONS FOR COMPACTING SIDEWALK AREA." THE HIGHER FRONT OR SIDEWALK CORNER SHALL MATCH THE ADJACENT SIDEWALK GRADE. SLOPE SHALL BE TOWARDS THE SIDEWALK OR ROAD, NOT EXCEEDING 1/2" PER FOOT.
- AREA SURROUNDING THE TRANSFORMER SITE SHALL BE SUFFICIENTLY GRADED OR A SUITABLE RETAINING WALL BUILT TO PREVENT FUTURE FILLING IN THE LOT.
- AN AREA 3'-8" X 4'-6" AND 2" DEEP SHALL BE EXCAVATED AFTER COMPACTION. THIS AREA SHALL BE FILLED WITH THE 2" BASE MATERIAL AND COMPACTED (SEE ELEVATION).

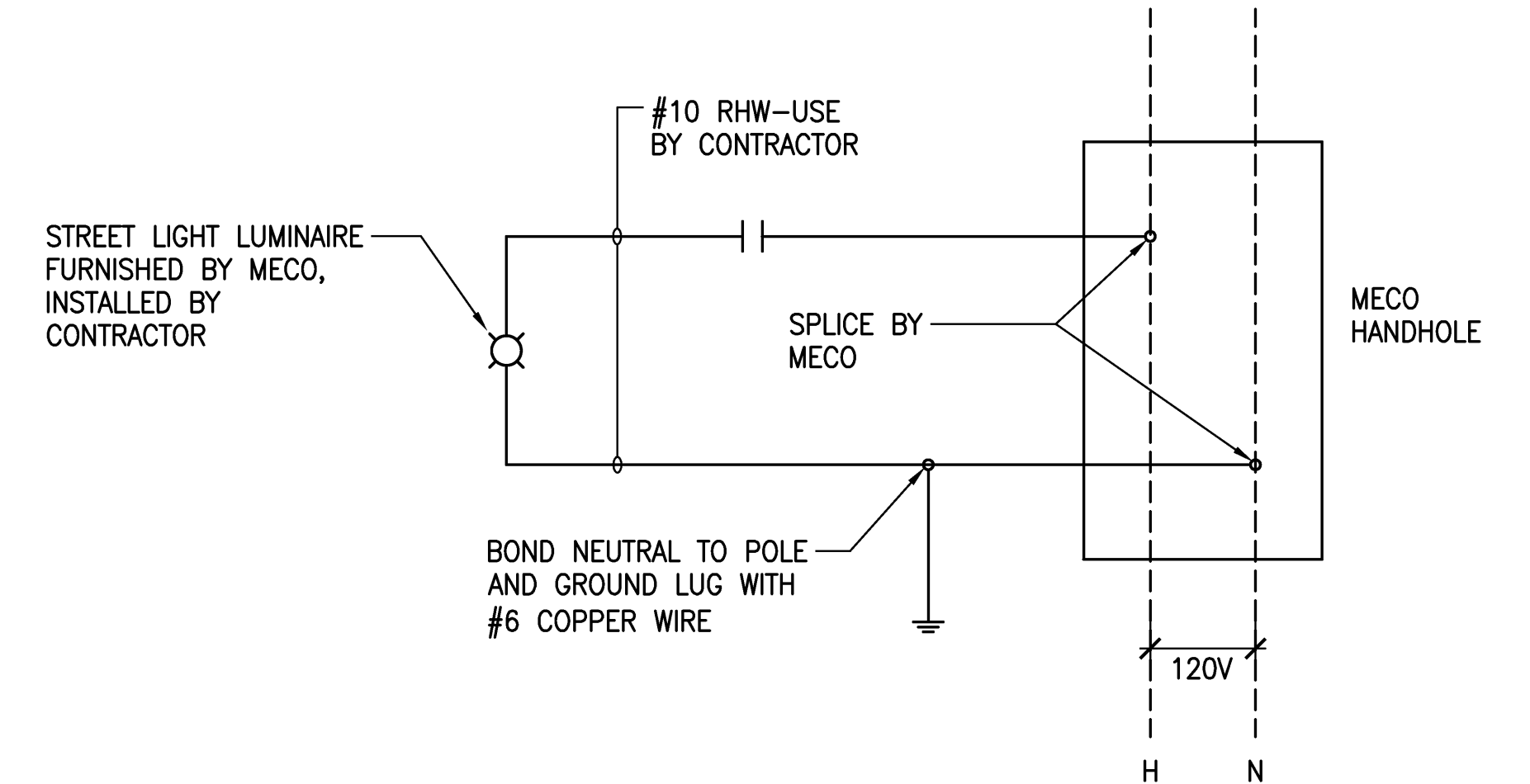
1 CONCRETE PAD FOR PADMOUNT TRANSFORMER

E-6 NOT TO SCALE



PME PAD NOTES

- CONCRETE COMPRESSIVE STRENGTH: 3000 P.S.I. IN 28 DAYS
- REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS AND 6x6/10x10 WIRE MESH
- TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE. OTHER EXPOSED SURFACES TO BE SMOOTH AND FREE FROM DEFECTS SIDEWALK FINISH AS PER COUNTY OF MAUI SPECIFICATIONS

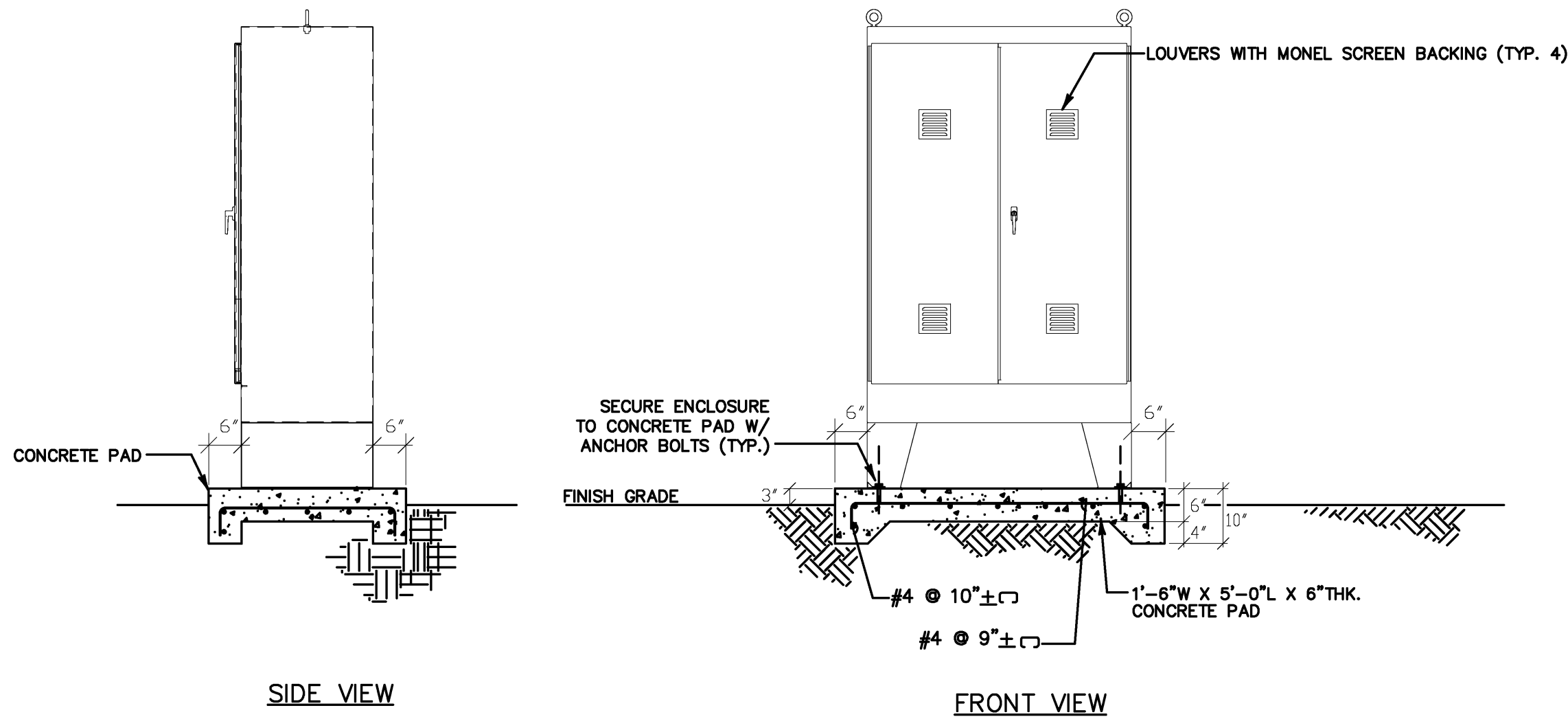


3 STREET LIGHT WIRING DIAGRAM FOR TYPE III TRAFFIC SIGNAL STANDARD

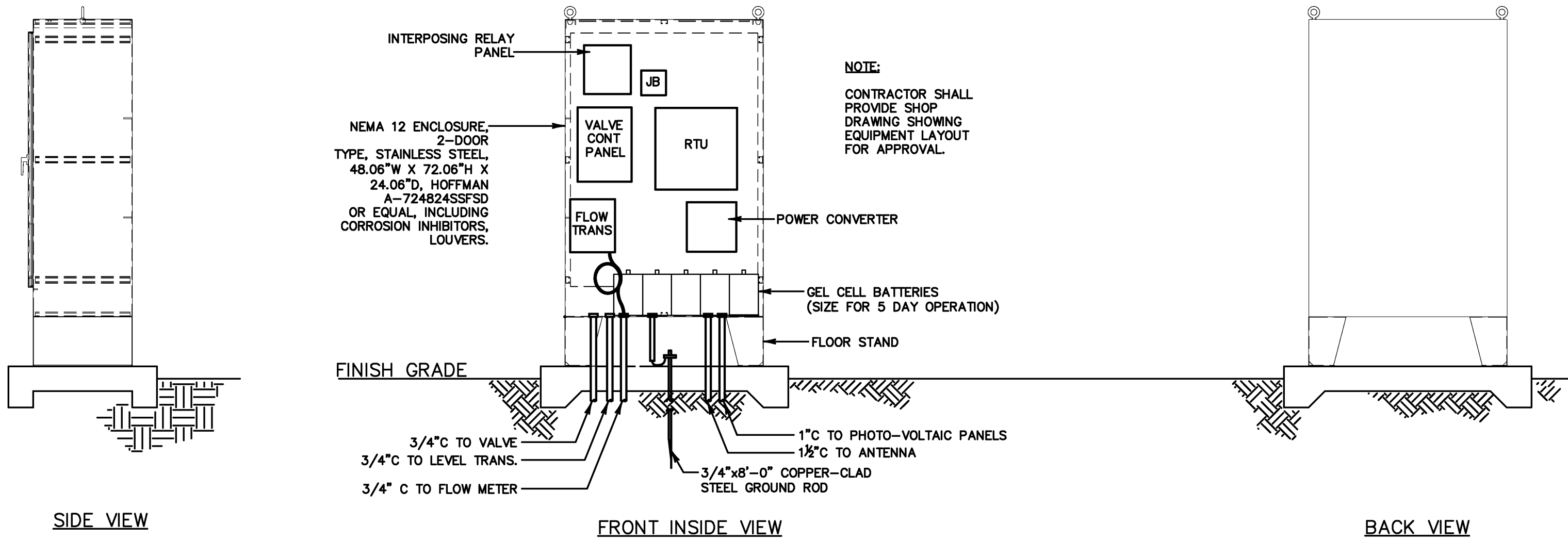
E-6 N.T.S.

		WARREN S. UNEMORI ENGINEERING, INC. CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS WELLS STREET PROFESSIONAL CENTER, SUITE 403 2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793	
KAONOLU MARKET PLACE T.M.K.: (2) 2-2-02 : Por. of Par. 15 and 3-9-01 : 16 KIHAI, MAUI, HAWAII			
TITLE: MISCELLANEOUS DETAILS			
DESIGNED BY: GK DRAWN BY: CS	CHECKED BY: GK APPROVED BY: GK	JOB NUMBER: 04010.10 DATE: 11-5-08	SHEET: E-6 OF SHEETS:
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. PROJECT ENGINEER for ECS, Inc. APRIL 30, 2010 EXPIRATION DATE OF THE LICENSE		SCALE: AS NOTED	

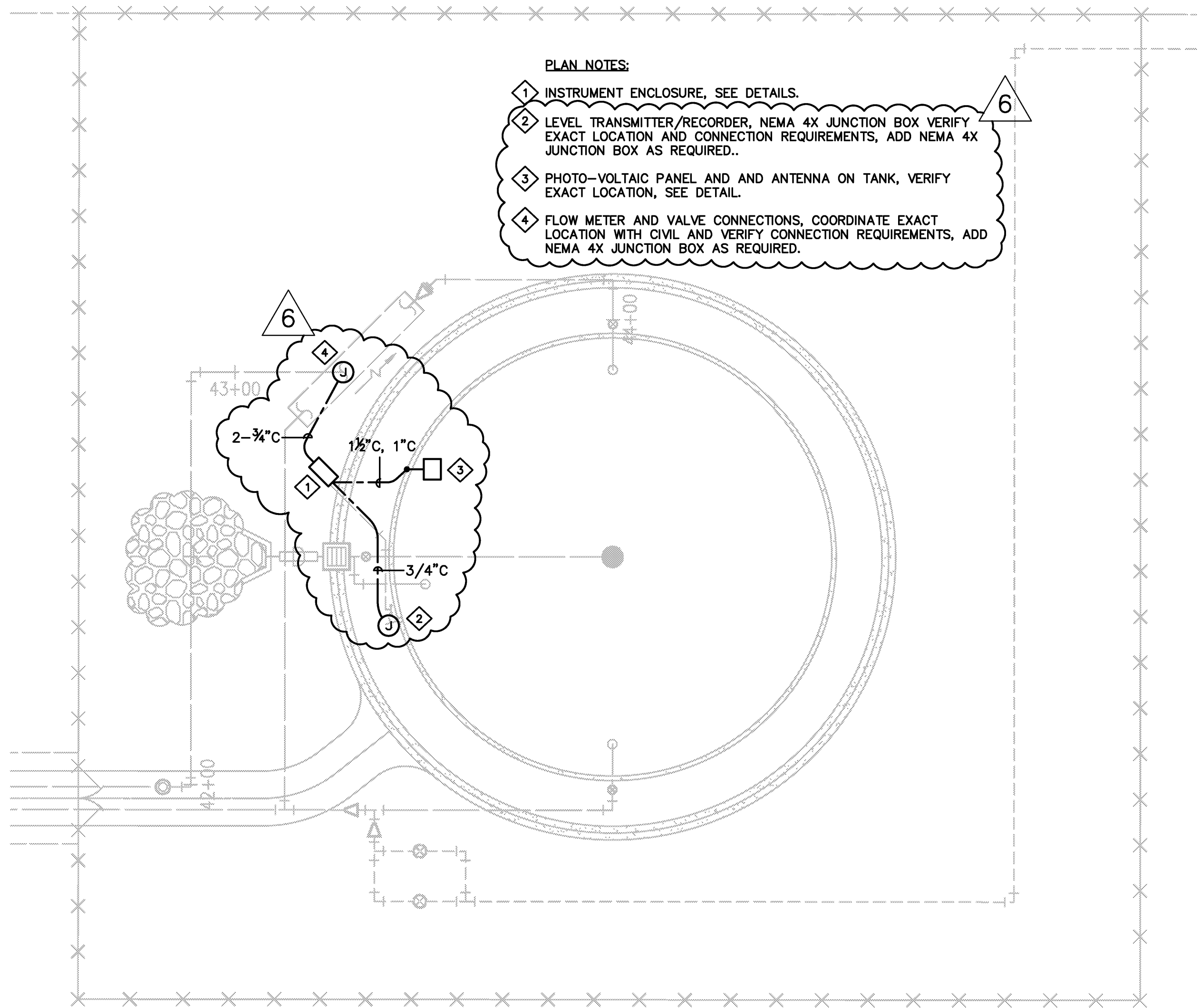
LETTER	DESCRIPTION	DATE



INSTRUMENT ENCLOSURE/PAD DETAIL
NOT TO SCALE



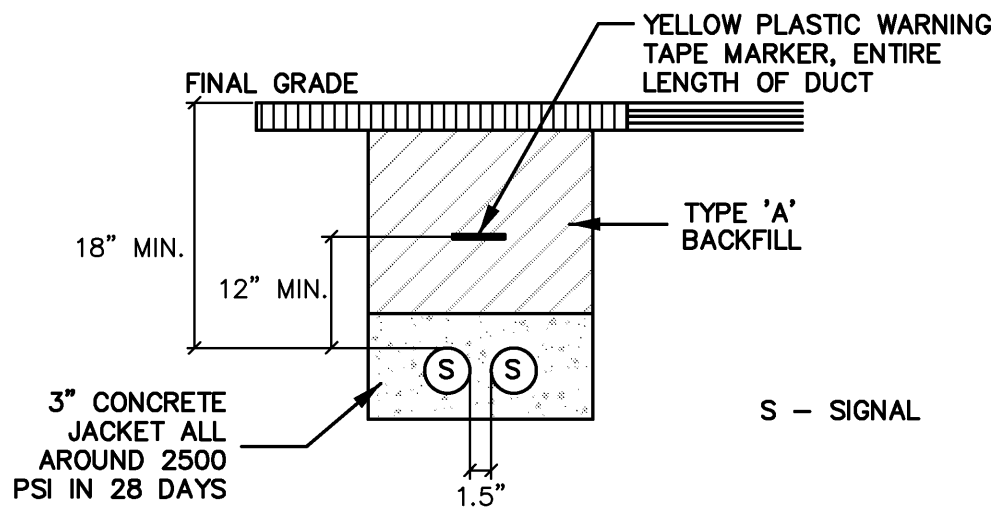
INSTRUMENT ENCLOSURE ELEVATION DETAIL
NOT TO SCALE



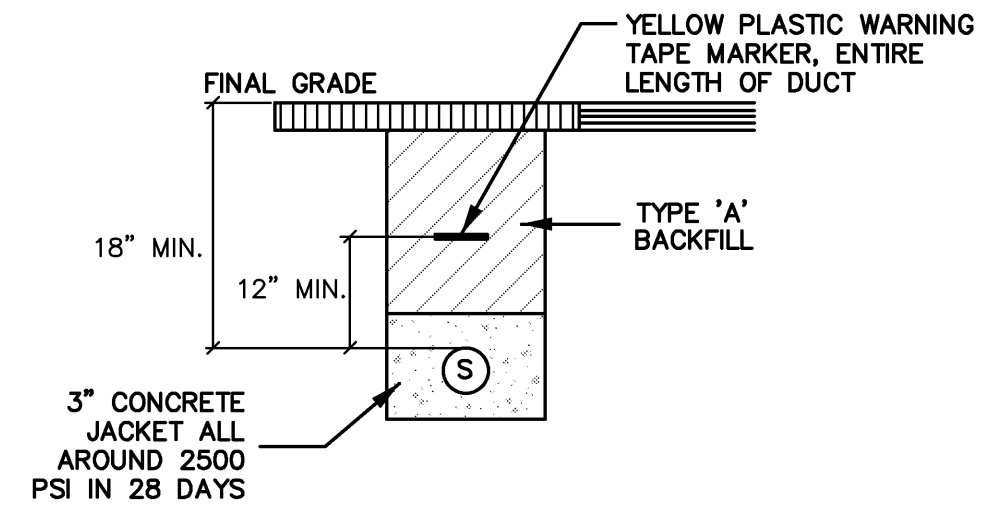
WATER TANK - ELECTRICAL PLAN
SCALE: 1" = 20'-0"

TYPE "A" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MAXIMUM ROCK SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES.

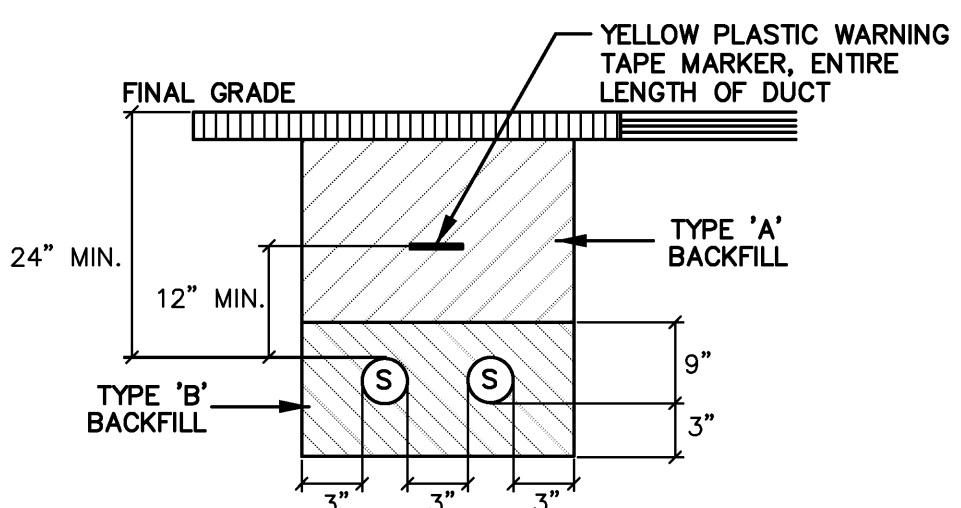
TYPE "B" - BEACH SAND, EARTH, OR EARTH AND GRAVEL. IF EARTH AND GRAVEL, THE MIXTURE MUST PASS A 1/2" MESH SCREEN AND CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. CORAL OR CORAL WASTE WILL NOT BE ACCEPTABLE.



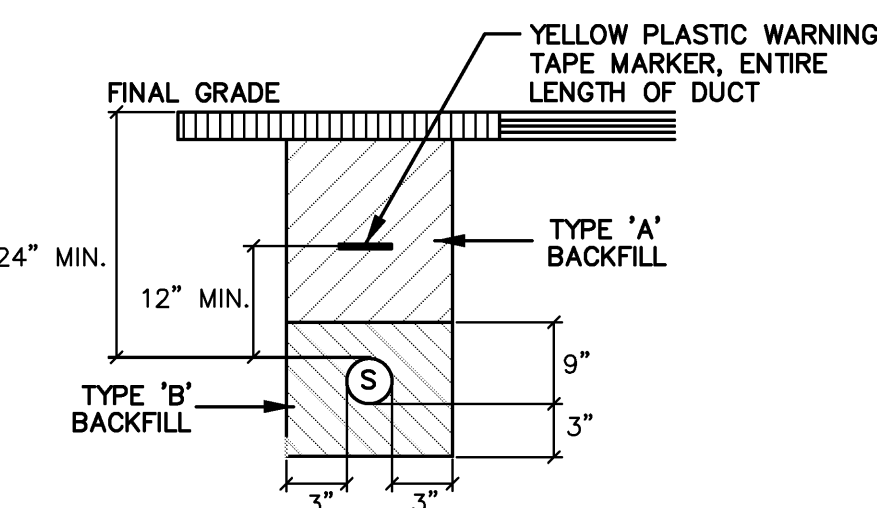
TYPICAL DUCT SECTION THRU DRIVEWAY



TYPICAL DUCT SECTION THRU DRIVEWAY



TYPICAL DUCT SECTION THRU NON-TRAFFIC AREAS



TYPICAL DUCT SECTION THRU NON-TRAFFIC AREAS

ECM Inc.
Electrical Engineering Consultants

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180 North Market Street
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Phone: (808)848-8070
Fax: (808)848-8030
E-mail: ecm@ecm-maui.com

TERAL M. FUKUDA
LICENSED PROFESSIONAL ENGINEER
No. 10378-E
HAWAII, U.S.A.

APRIL 2002
EXPIRATION DATE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION (SUPERVISION OF CONSTRUCTION AS DEFINED UNDER SECTION 16-82-2 OF CHAPTER 82: RULES OF THE BOARD OF PROFESSIONAL ENGINEERS, ARCHITECTS AND LAND SURVEYORS, STATE OF HAWAII.)
Note: Contractor shall check and verify all dimensions at job before proceeding with work.

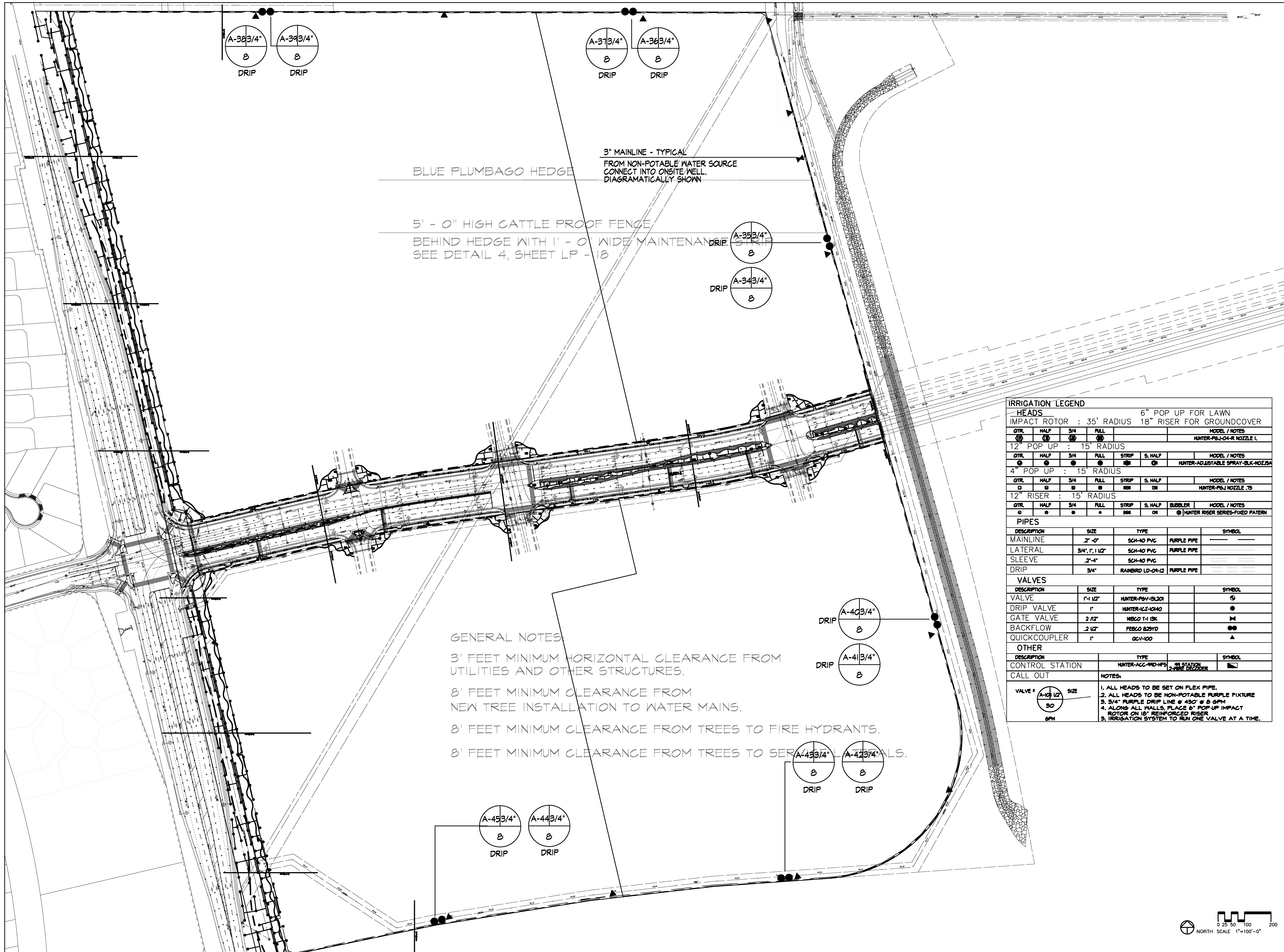
REVISIONS	NO	DATE	DESCRIPTION	
			COMMENTS	
	1	10-16-09	DWS	
	2			
	3			

JOB NO. 28085
DATE: 2/09
DRAWN BY: RMB
DESIGNED BY: JMF
CHECKED BY: JMF

ELECTRICAL PLANS FOR:
**KAONOULU MARKET PLACE
WATER TANK**
TMK: (2) 2-2-02: POR. OF 15 & 3-9-01:16
KIHU, MAUI, HAWAII

SHEET NO.
EM-1
1 OF 2 SHEETS

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IRRIGATION LEGEND									
HEADS				6" POP UP FOR LAWN					
IMPACT ROTOR : 35' RADIUS				18" RISER FOR GROUNDCOVER					
QTR	HALF	3/4	FULL	MODEL / NOTES					
⊙	⊙	⊙	⊙	HUNTER-PSJ-04-R NOZZLE 1					
12" POP UP : 15' RADIUS									
QTR	HALF	3/4	FULL	STRIP	S. HALF	MODEL / NOTES			
⊙	⊙	⊙	⊙	⊙	⊙	HUNTER-ADJUSTABLE SPRAY-BLK-NOZZ/5A			
4" POP UP : 15' RADIUS									
QTR	HALF	3/4	FULL	STRIP	S. HALF	MODEL / NOTES			
⊙	⊙	⊙	⊙	⊙	⊙	HUNTER-PSJ NOZZLE 75			
12" RISER : 15' RADIUS									
QTR	HALF	3/4	FULL	STRIP	S. HALF	BUBBLER	MODEL / NOTES		
⊙	⊙	⊙	⊙	⊙	⊙	⊙	HUNTER RISER SERIES-FIXED PATTERN		
PIPES									
DESCRIPTION		SIZE		TYPE		SYMBOL			
MAINLINE		2" - 6"		SCH-40 PVC		PURPLE PIPE		_____	
LATERAL		3/4", 1", 1 1/2"		SCH-40 PVC		PURPLE PIPE		_____	
SLEEVE		2" - 4"		SCH-40 PVC		PURPLE PIPE		_____	
DRIPI		3/4"		RAINBIRD LD-04-12		PURPLE PIPE		_____	
VALVES									
DESCRIPTION		SIZE		TYPE		SYMBOL			
VALVE		1" - 1 1/2"		HUNTER-PSV-BL201		⊙			
DRIPI VALVE		1"		HUNTER-ICE-1040		⊙			
GATE VALVE		2 1/2"		HBCO T-1 13K		⊙			
BACKFLOW		2 1/2"		FEBCO B25VD		⊙			
QUICKCOUPLER		1"		QCV-100		▲			
OTHER									
DESCRIPTION		TYPE		SYMBOL					
CONTROL STATION		HUNTER-ACC-4HD-4FS		41 STATION		⊙			
CALL OUT				2-WIRE DECODER		⊙			
NOTES:									
VALVE #				1. ALL HEADS TO BE SET ON FLEX PIPE.					
				2. ALL HEADS TO BE NON-POTABLE PURPLE FIXTURE					
				3. 3/4" PURPLE DRIPI LINE @ 450' @ 8 GPM					
				4. ALONG ALL WALLS, PLACE 6" POP-UP IMPACT ROTOR ON 18" REINFORCED RISER					
				5. IRRIGATION SYSTEM TO RUN ONE VALVE AT A TIME.					

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SIGNATURE

KAONOULU MARKET PLACE

Kihei, Maui, Hawaii

(2) 2-2-02 Por of 15 and (2) 3-9-01:16

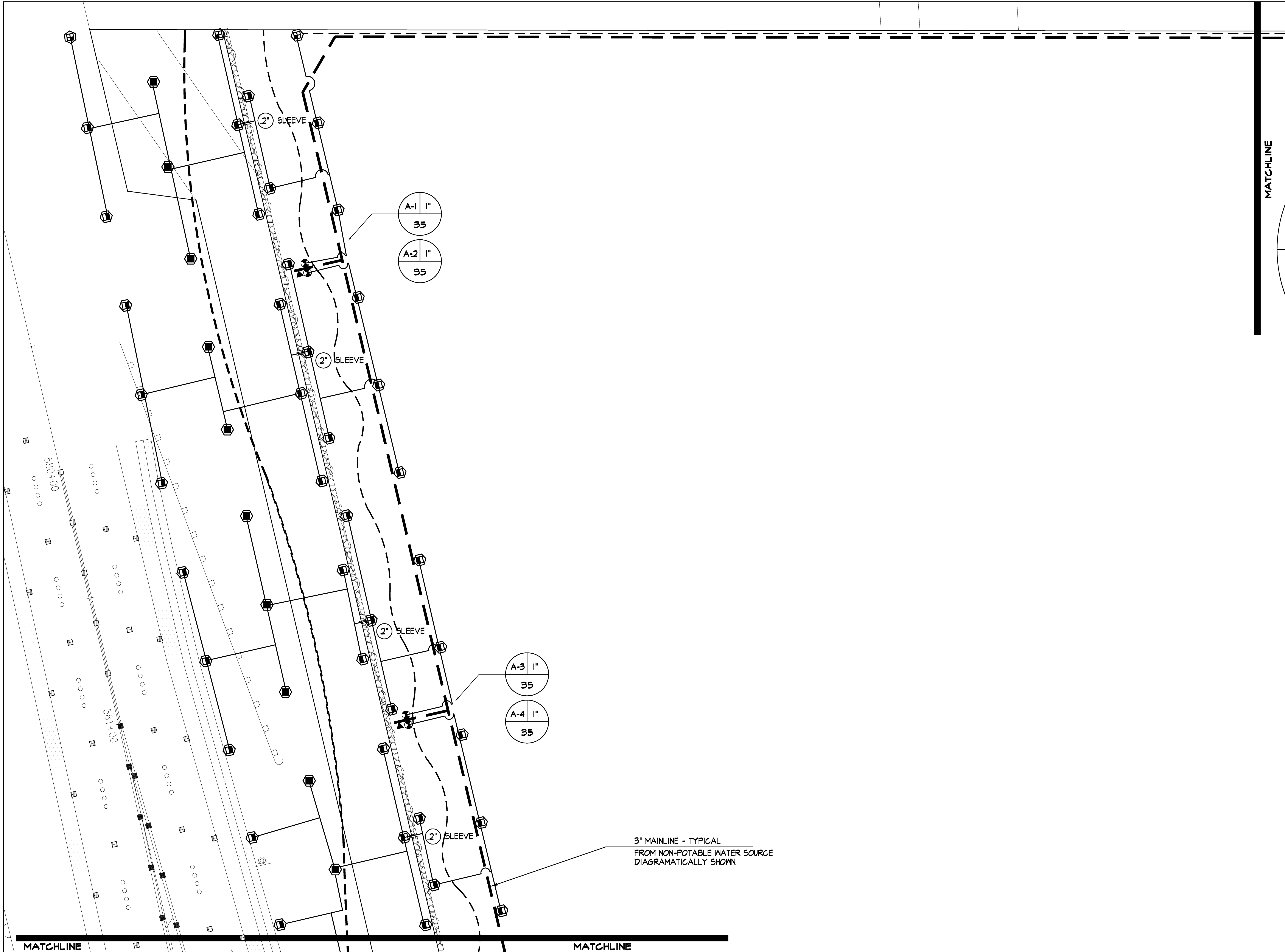
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Landscape Irrigation Plan
Sheet Layout

NO.	DESCRIPTION	DATE	BY
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2	DWS Comments	12/17/2008	MDG
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JOB NUMBER 2775	DATE 1 May 2006
PROJECT DIRECTOR BPM	DESIGNED BY JCW
DRAWN BY JCW	CHECKED BY JCW/BPM
CAD FILE x 2775-i	

Scale: 1" = 0' = 100'

Sheet Number
LI - Site
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BRYAN P. MAXWELL
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No. LA 8901
HAWAII, USA

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SIGNATURE *[Signature]*

KAONOULU MARKET PLACE
Kihei, Maui, Hawaii
(2) 2-2-02 For of 15 and (2) 3-9-01:16

Sheet Title
Landscape Irrigation Plan
Area 1
-

REVISIONS			
NO	DESCRIPTION	DATE	BY
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JOB NUMBER 2775 DATE 1 May 2006

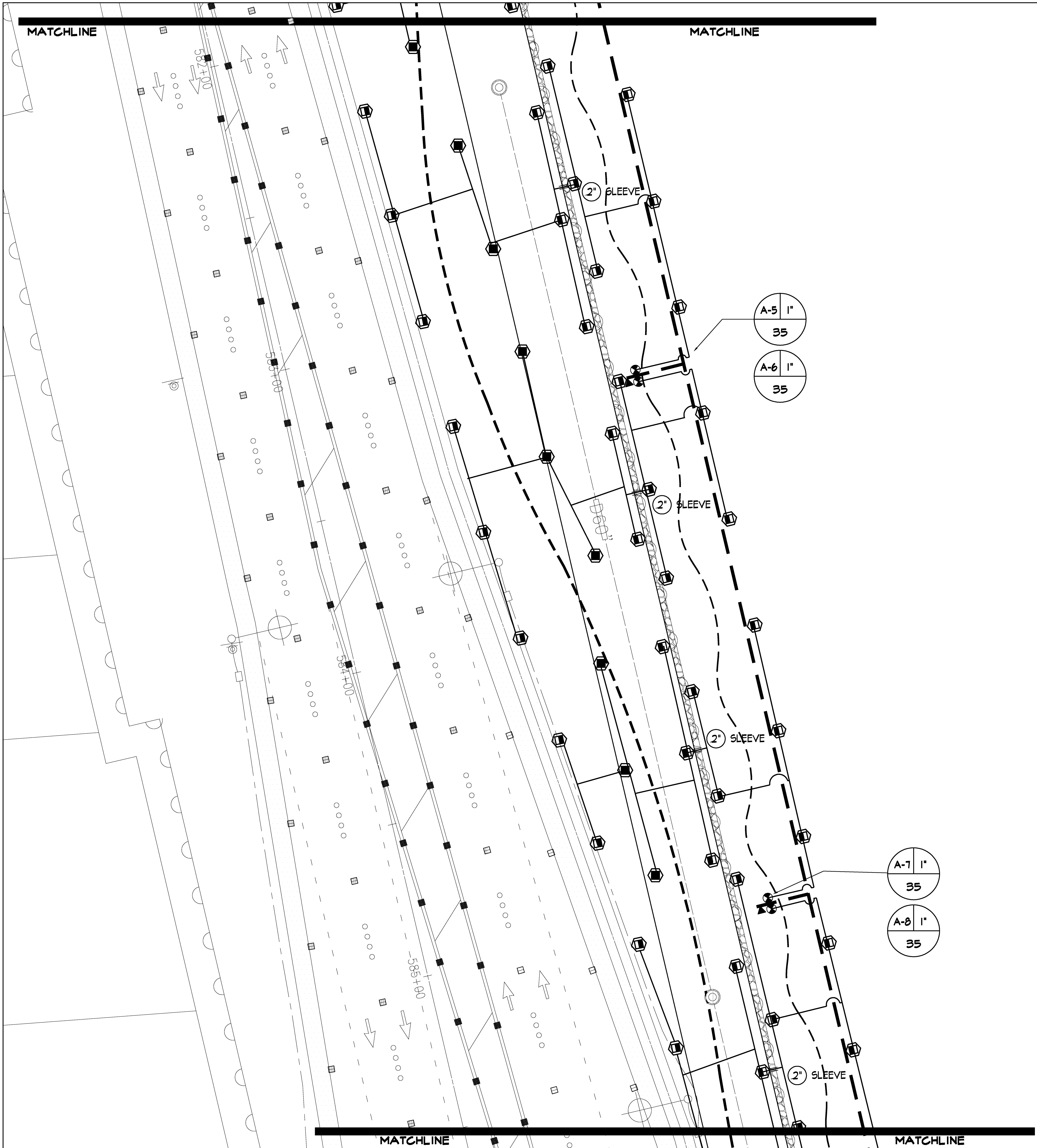
PROJECT DIRECTOR DESIGNED BY
BPM JCW

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JCW JCW/BPM

CAD FILE
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Scale: 1/16"=1'-0"

Sheet Number
LI - 1
- - of -






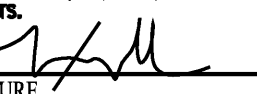
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SIGNATURE 

KAONOULU MARKET PLACE

Kihei, Maui, Hawaii

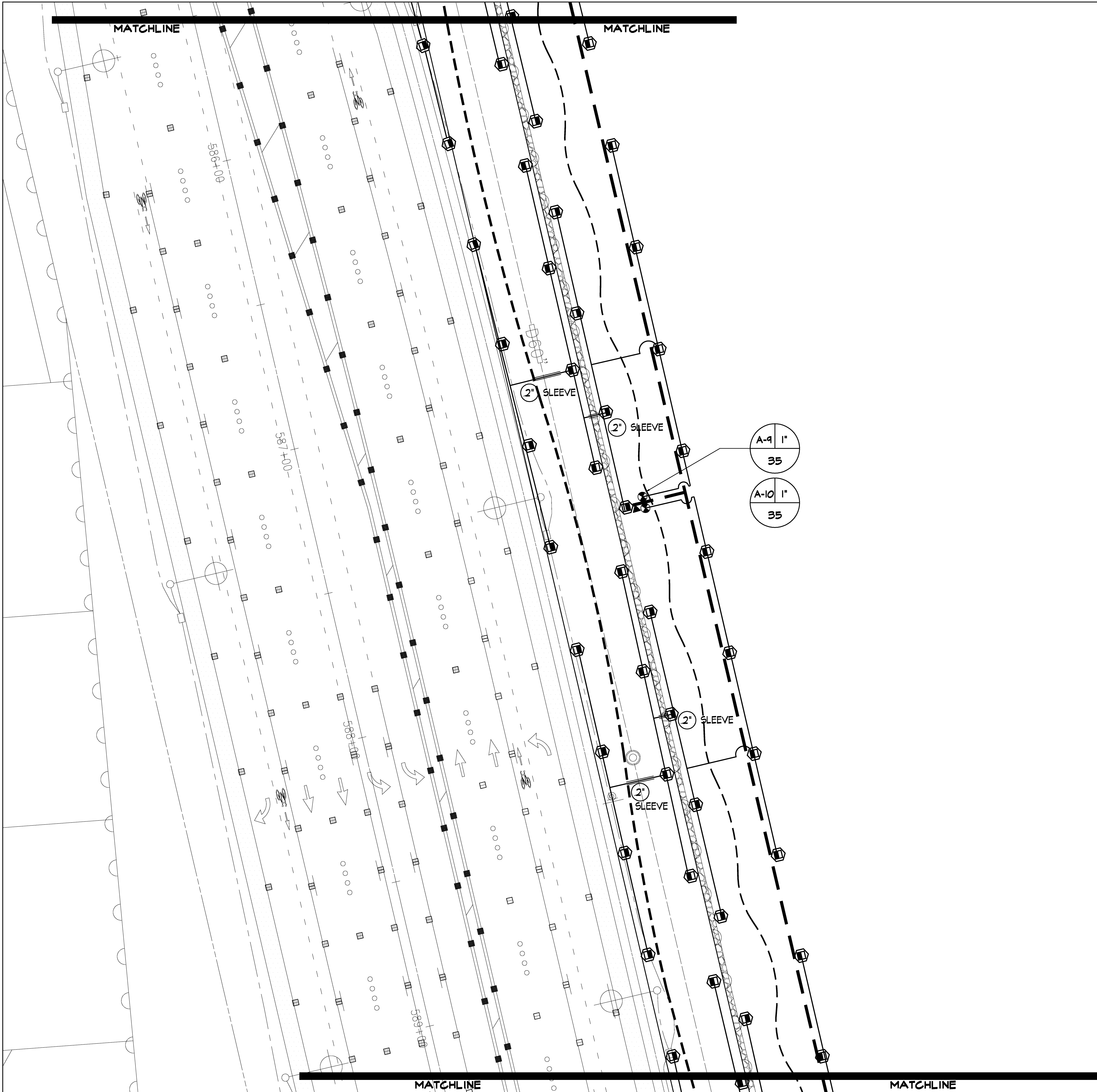
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Sheet Title
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Area 2

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JOB NUMBER 2775	DATE 1 May 2006
PROJECT DIRECTOR BPM	DESIGNED BY JCW
DRAWN BY JCW	CHECKED BY JCW/BPM
CAD FILE x2775-i	
Scale: 1/16"=1'-0"	

Sheet Number
LI - 2
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[Signature]
SIGNATURE

KAONOULU MARKET PLACE

Kihei, Maui, Hawaii

(2) 2-2-02 Por of 15 and (2) 3-9-01:16

Sheet Title

Landscape Irrigation Plan
Area 3

REVISIONS			
NO	DESCRIPTION	DATE	BY
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2	DWS Comments	12/17/2006	MDG
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4			
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JOB NUMBER
2775

DATE
1 May 2006

PROJECT DIRECTOR
BPM

DESIGNED BY
JCW

DRAWN BY
JCW

CHECKED BY
JCW/BPM

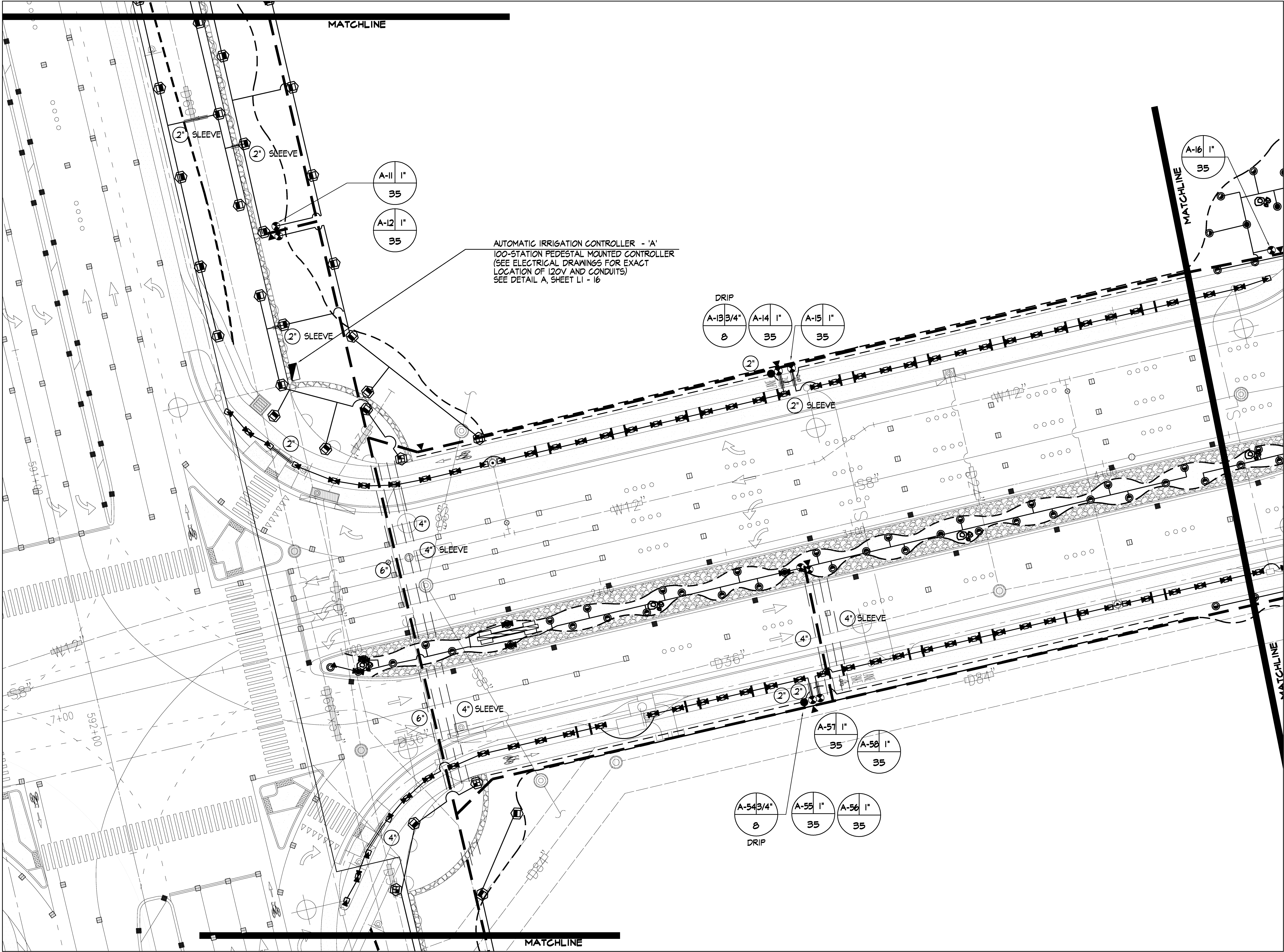
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Sheet Number

LI - 3

- - of -






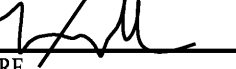
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KAONOULU MARKET PLACE

Kihei, Maui, Hawaii

(2) 2-2-02 Por of 15 and (2) 3-9-01:16

Sheet Title
Landscape Irrigation Plan
Area 4

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2	DWS Comments	12/17/2008	MDG

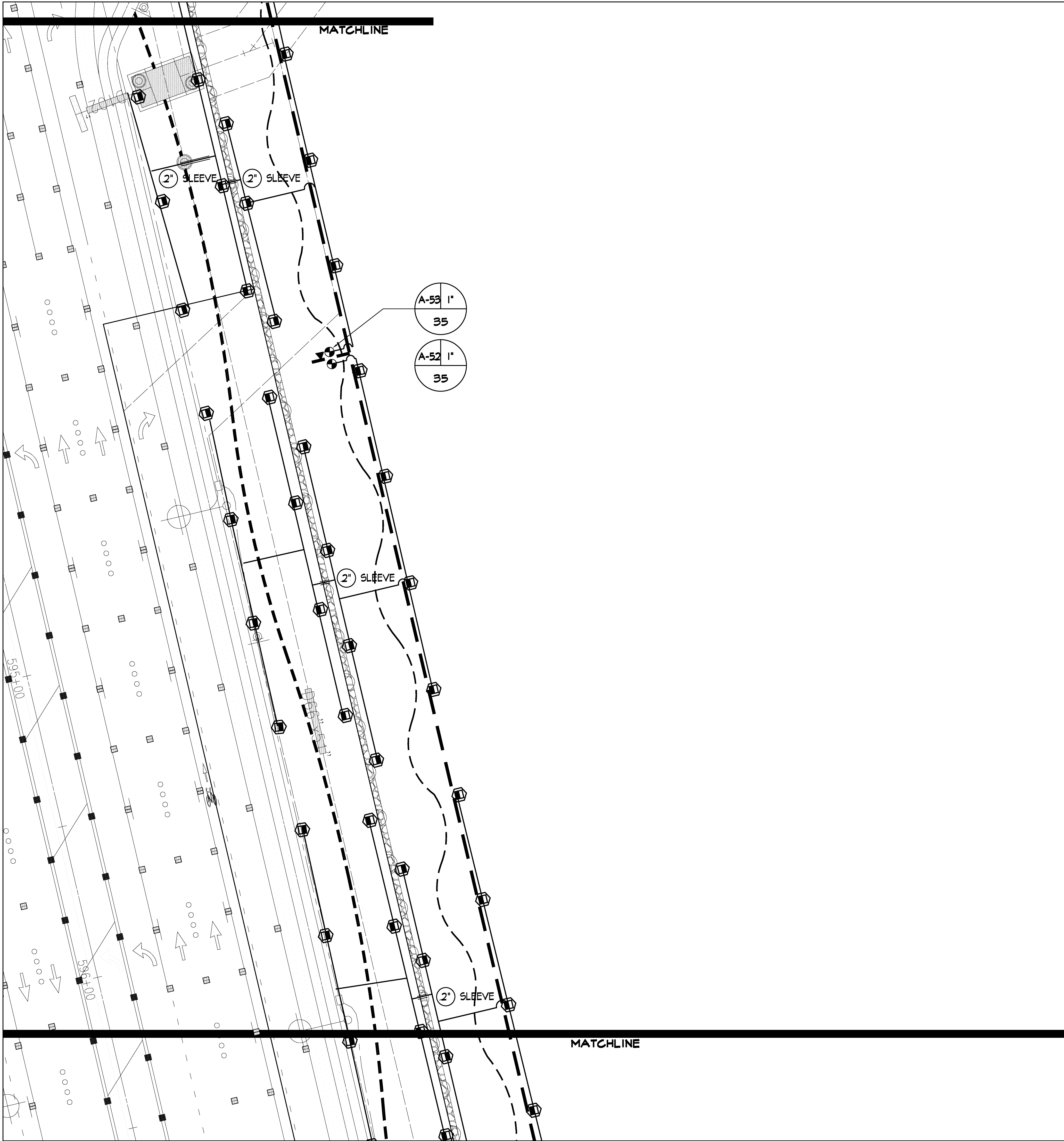
JOB NUMBER	DATE
2775	1 May 2006
PROJECT DIRECTOR	DESIGNED BY
BPM	JCW
DRAWN BY	CHECKED BY
JCW	JCW/BPM
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Scale: 1/16"=1'-0"

Sheet Number

LI - 4

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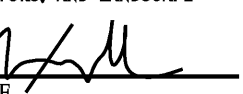
Maui, Hawaii

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KAONOULU MARKET PLACE

Kihei, Maui, Hawaii

(2) 2-2-02 Por of 15 and (2) 3-9-01:16

Sheet Title

Landscape Irrigation Plan
Area 5

NO	DESCRIPTION	DATE	BY
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JOB NUMBER	DATE
2775	1 May 2006

PROJECT DIRECTOR	DESIGNED BY
BPM	JCW

DRAWN BY	CHECKED BY
JCW	JCW/BPM

CAD FILE	
x2775-i	

Scale: 1/16"=1'-0"

Sheet Number

LI - 5

- - of -