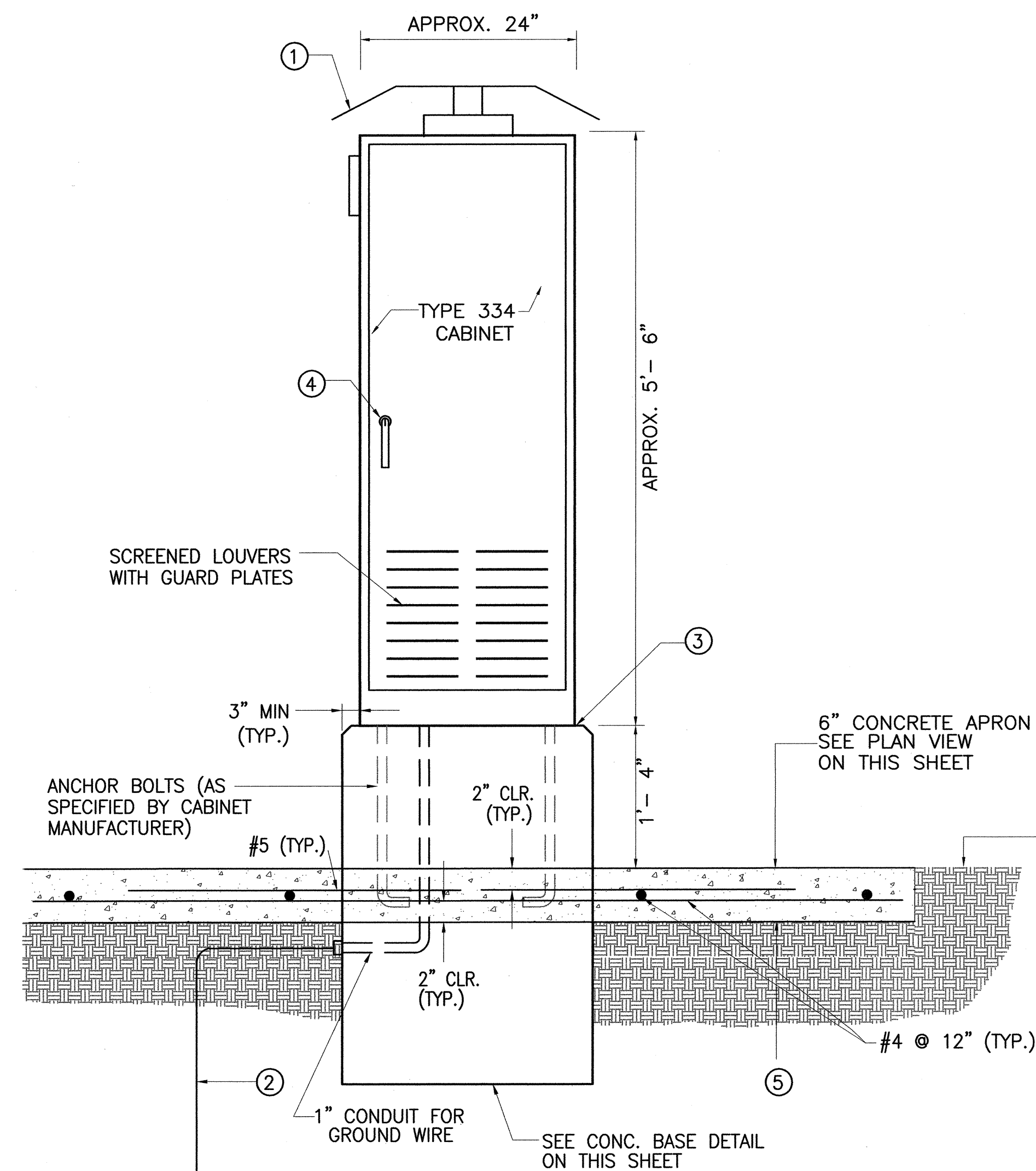
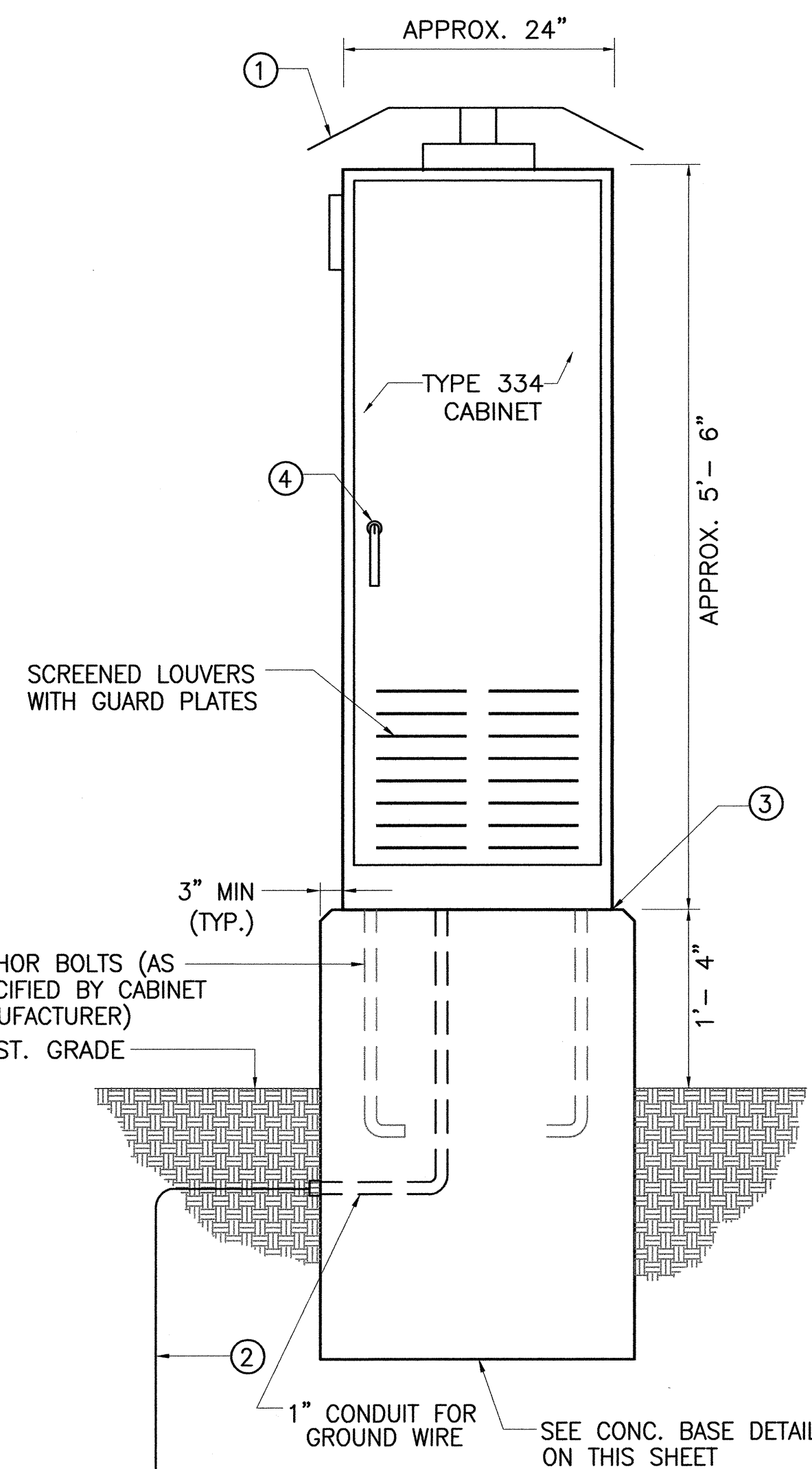


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	21	83



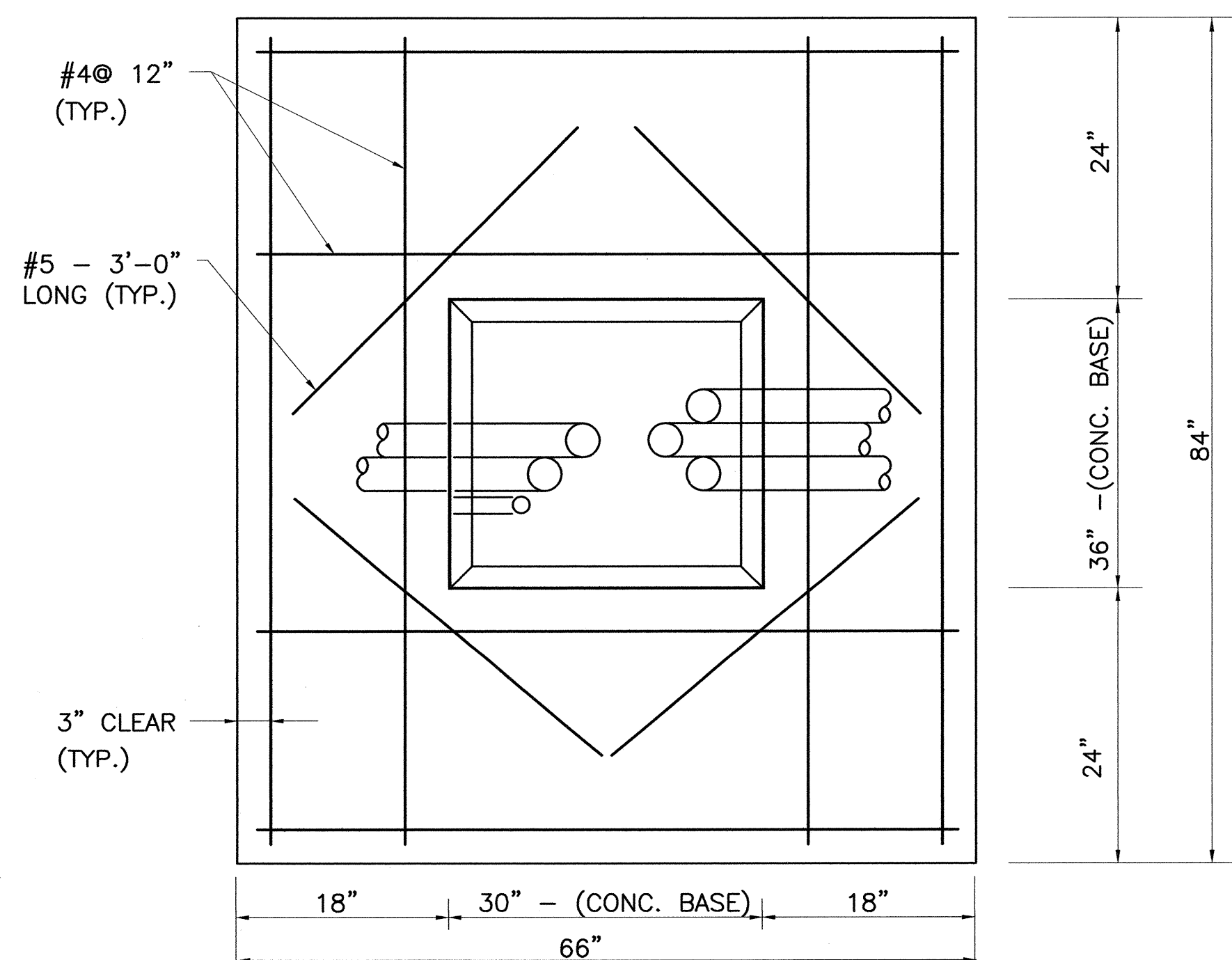
EQUIPMENT CABINET, TYPE 1
NOT TO SCALE

C-4, C-5, C-6, C-8, C-9
C-11, C-12, C-13, C-14

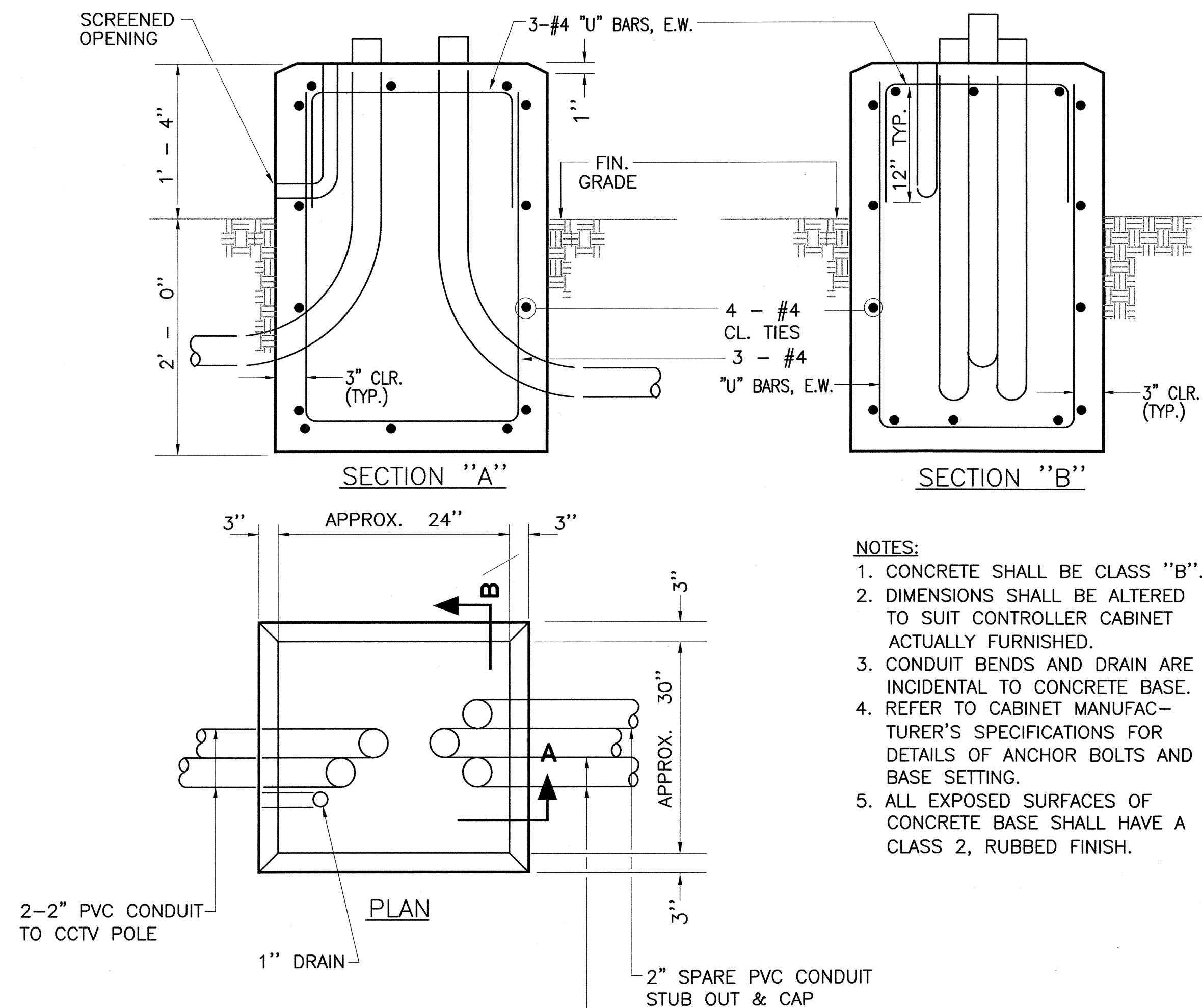


EQUIPMENT CABINET, TYPE 2
NOT TO SCALE

C-10



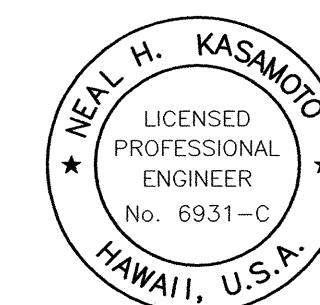
PLAN VIEW OF CONCRETE APRON FOR EQUIPMENT CABINET, TYPE 1
NOT TO SCALE



CONCRETE BASE FOR EQUIPMENT CABINETS
NOT TO SCALE

- NOTES:**
1. CONCRETE SHALL BE CLASS "B".
 2. DIMENSIONS SHALL BE ALTERED TO SUIT CONTROLLER CABINET ACTUALLY FURNISHED.
 3. CONDUIT BENDS AND DRAIN ARE INCIDENTAL TO CONCRETE BASE.
 4. REFER TO CABINET MANUFACTURER'S SPECIFICATIONS FOR DETAILS OF ANCHOR BOLTS AND BASE SETTING.
 5. ALL EXPOSED SURFACES OF CONCRETE BASE SHALL HAVE A CLASS 2, RUBBED FINISH.

- NOTES:**
1. SUNSHIELDS ON TOP AND SOUTH SIDE OF CABINET.
 2. GROUND ROD, 3/4" DIA. X 8' MIN. IF SUBSURFACE CONDITIONS EXIST, WHICH PROHIBIT THE PLACEMENT OF THE GROUND ROD IN A VERTICAL POSITION, AT THE DIRECTION OF THE ENGINEER, THE ROD MAY BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM VERTICAL OR BURIED IN A TRENCH AT LEAST 30" DEEP. CONNECTION TO GROUND ROD SHALL BE CADCWELDED.
 3. SILICONE CAULK BETWEEN CABINET AND BASE AND APRON AND BASE
 4. DOOR LOCK
 5. CONC. APRON SHALL BE CLASS B



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV CABINET DETAILS

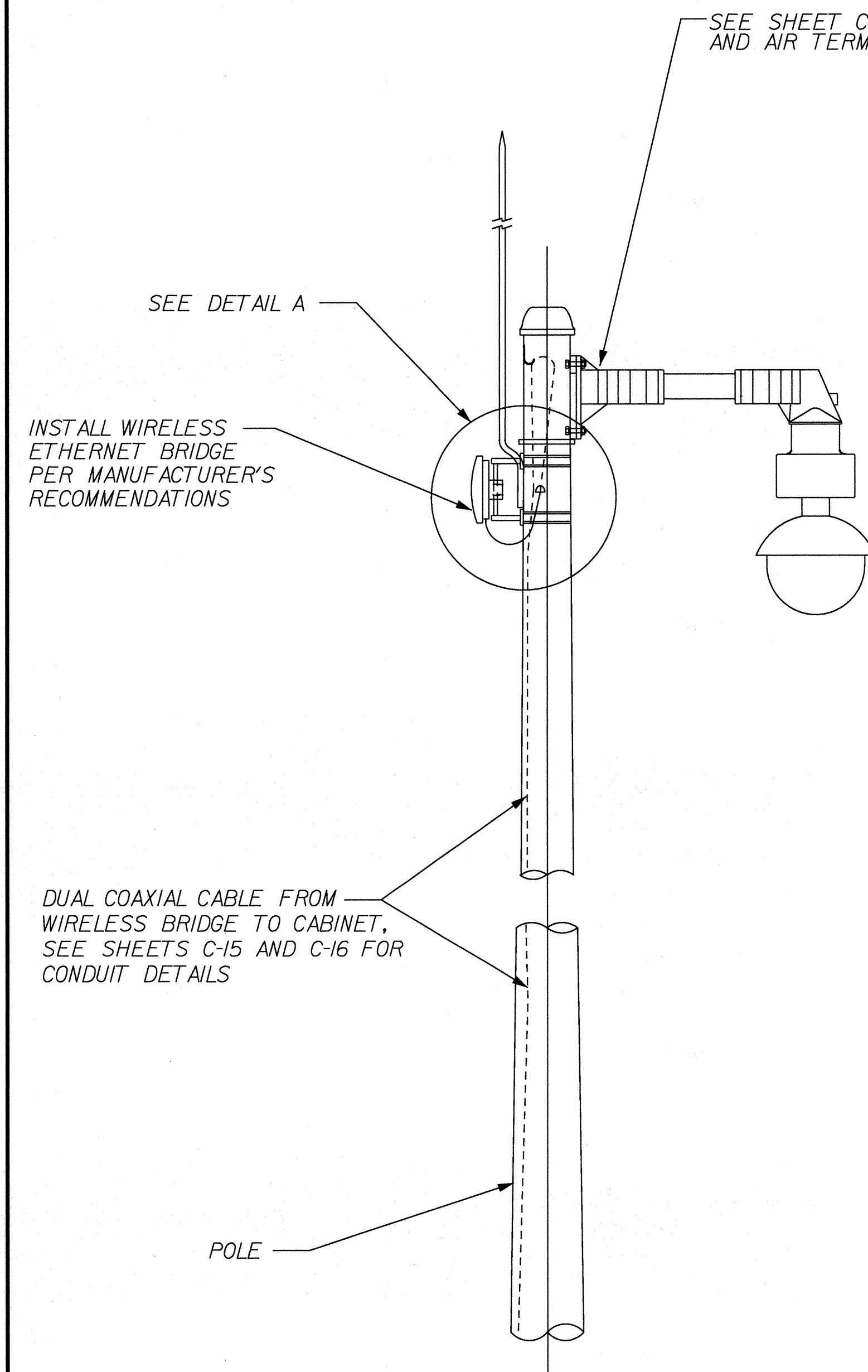
TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1

F.A.P. NO. NH-0300(107)

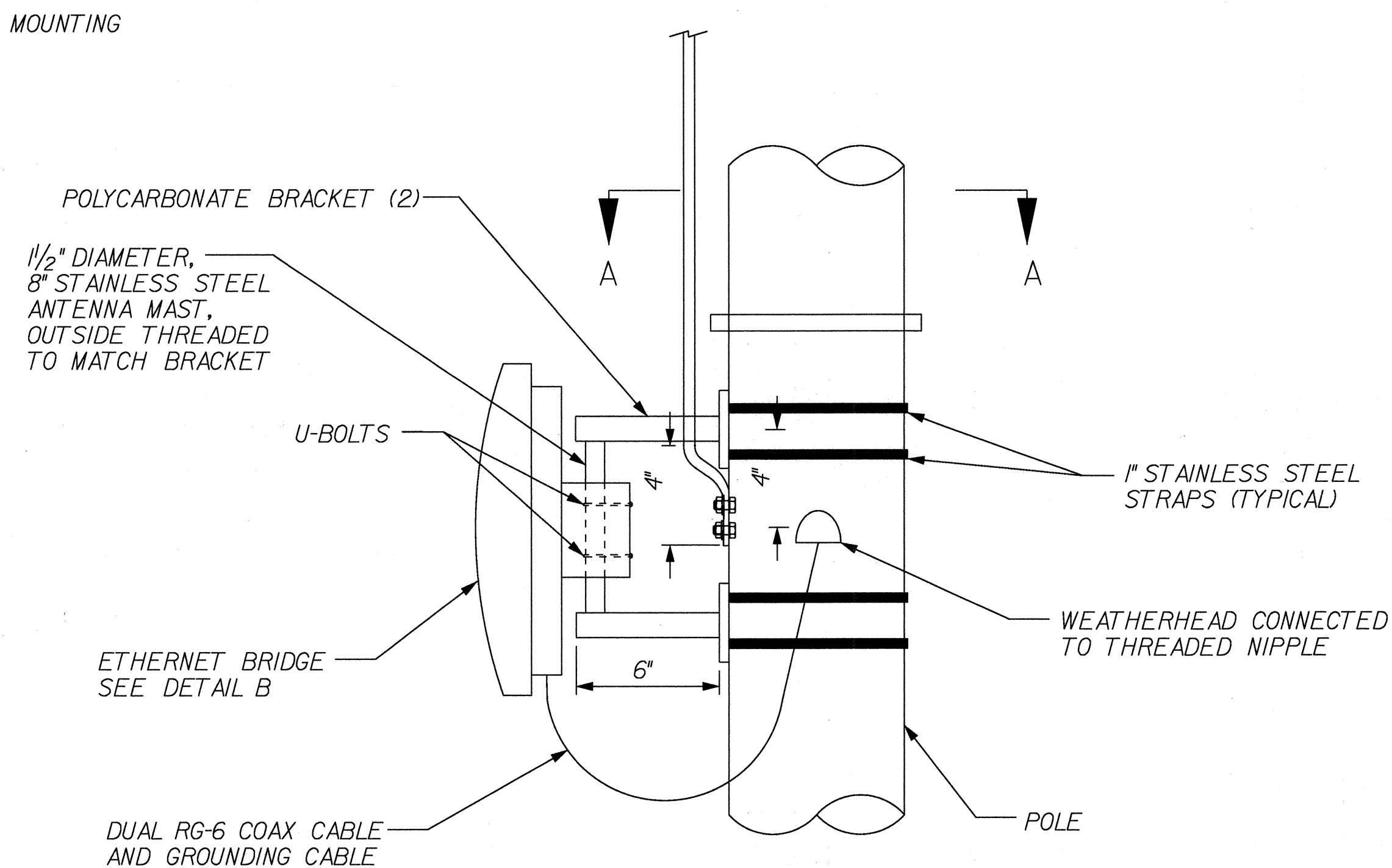
SCALE: NTS DATE: 08-15-06

SHEET No. C-16 OF 21 SHEETS

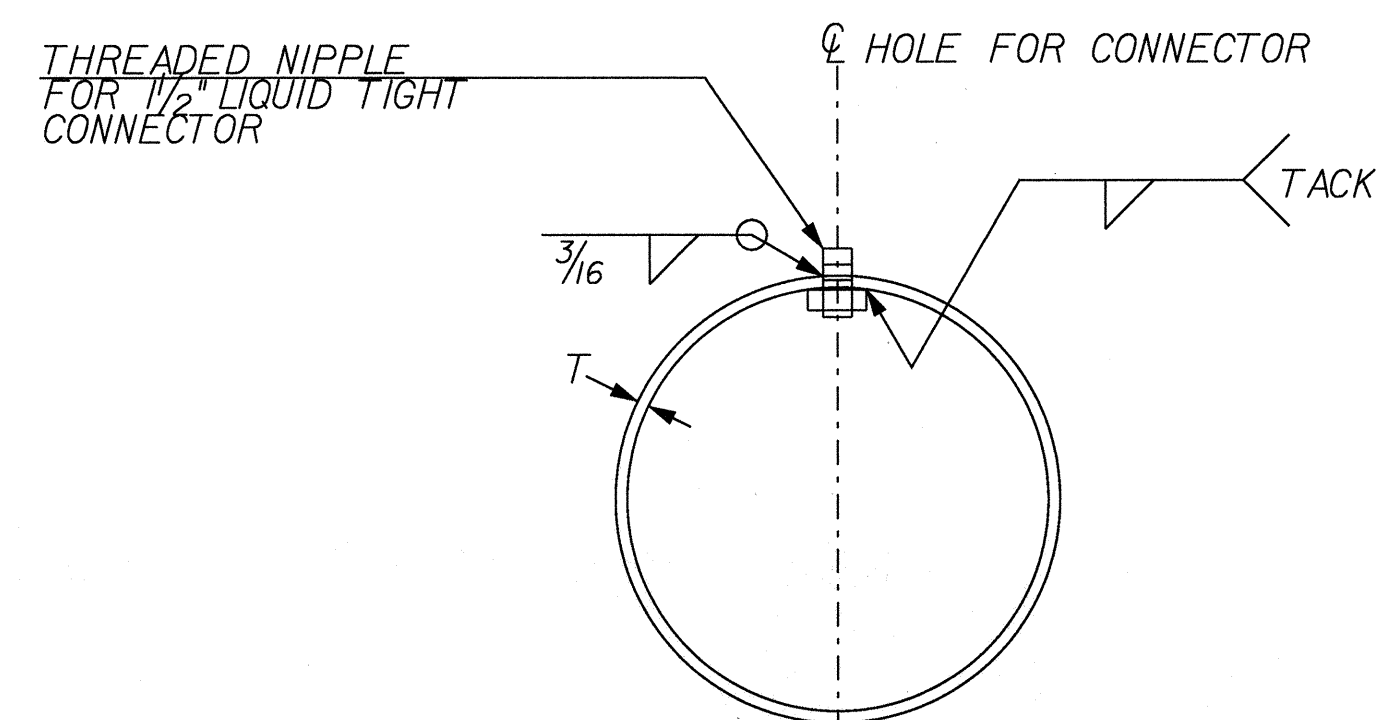
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	22	83



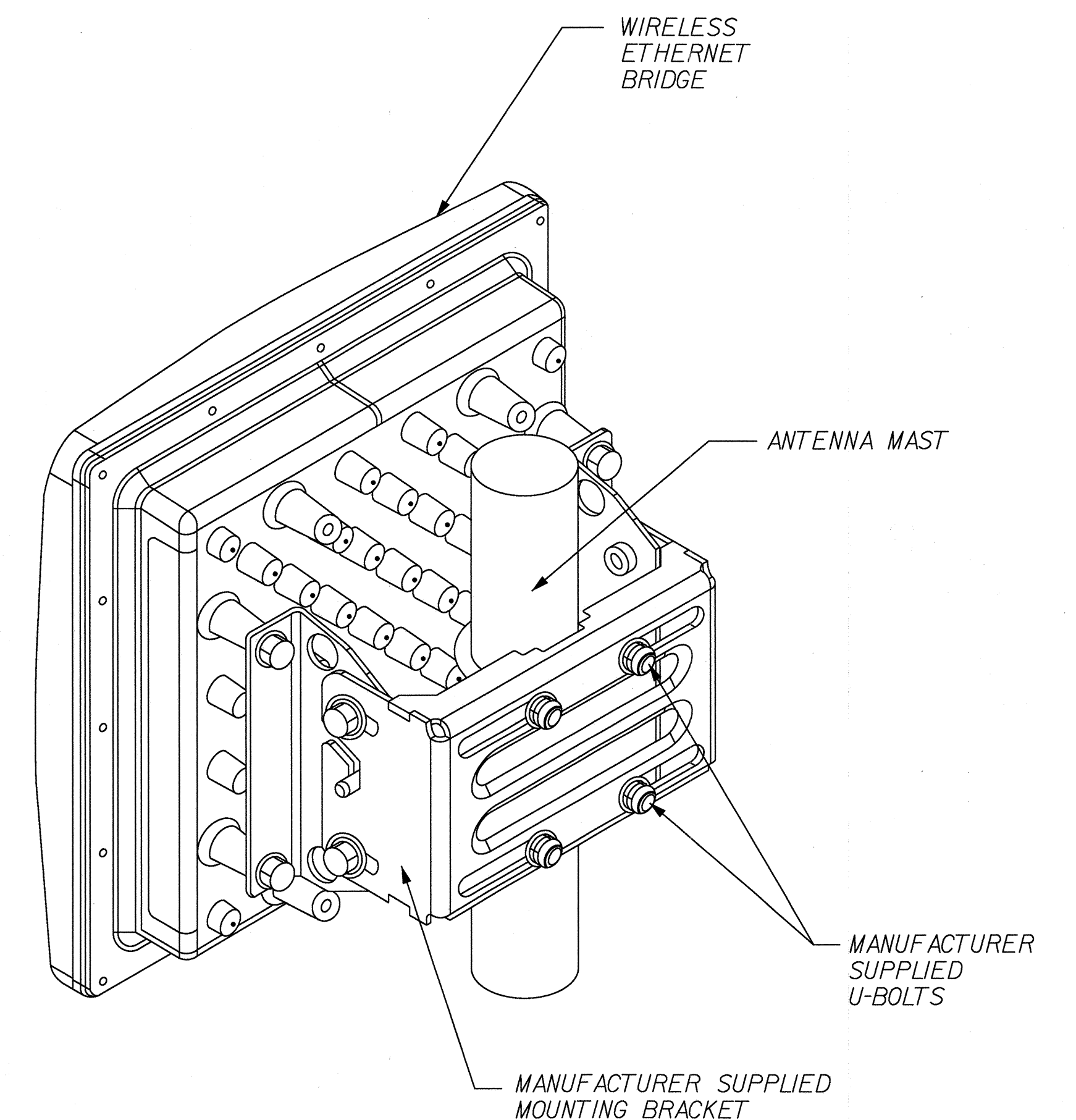
WIRELESS ETHERNET BRIDGE MOUNTED ON CCTV POLE
(NTS)



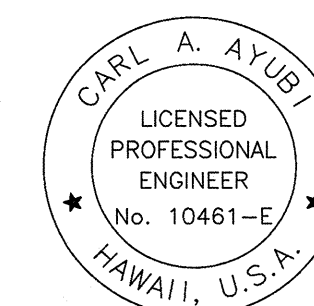
DETAIL A
POLYCARBONATE BRACKET
(NTS)



SECTION A-A
(NTS)



DETAIL B
ETHERNET BRIDGE *
(NTS)



[Signature] 1/18/07
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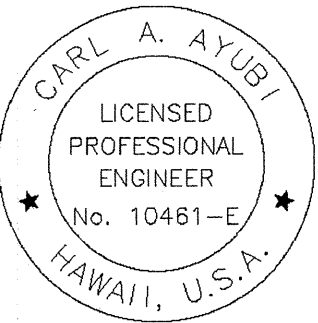
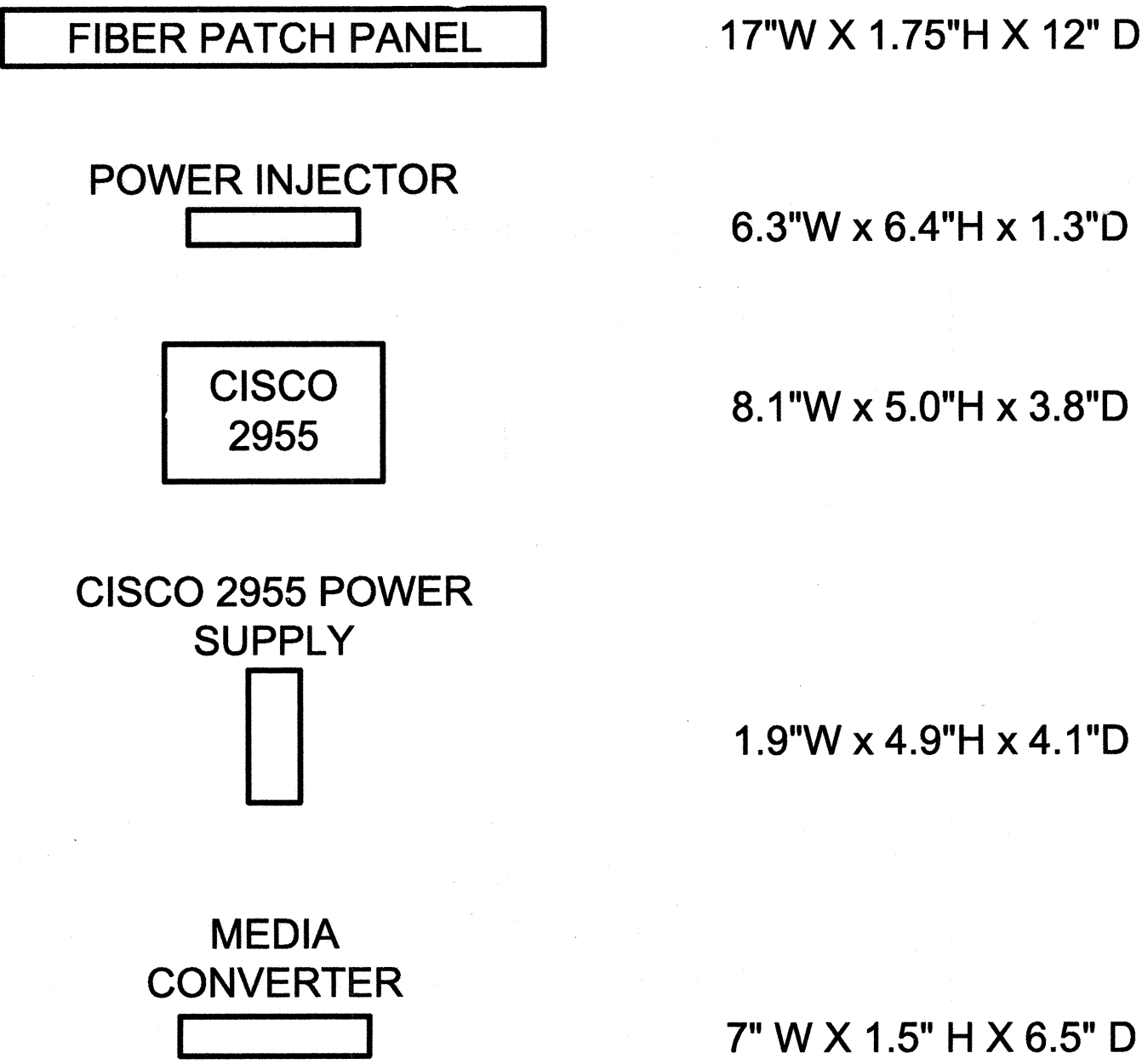
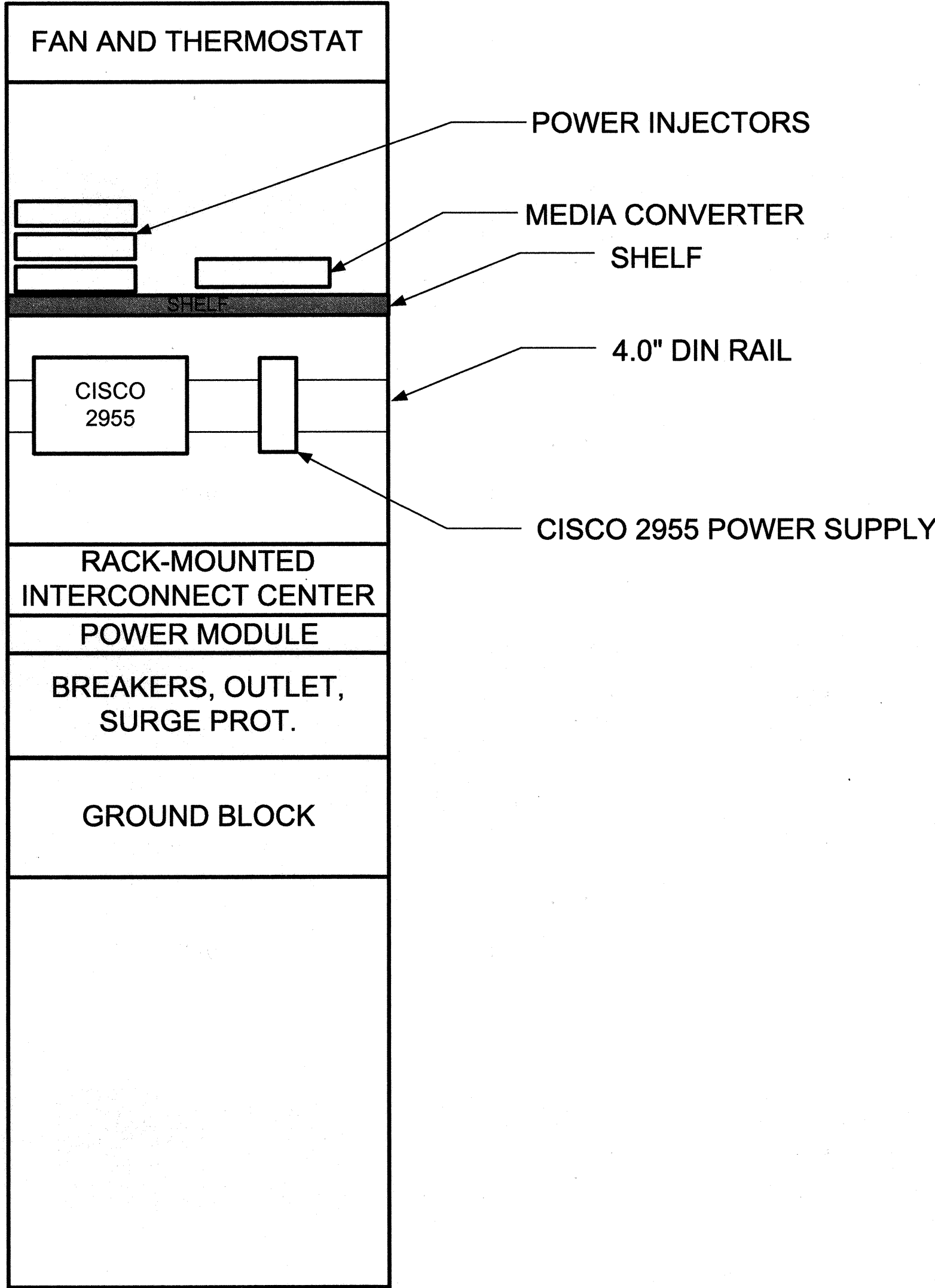
* GOVERNMENT FURNISHED EQUIPMENT

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CCTV WIRELESS DETAILS	
TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1	
F.A.P. No. NH-0300(107)	
SCALE:	DATE: 01-17-07
SHEET No. C-17 OF 21 SHEETS	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	23	83

NOTES:
1. ALL DEVICES RACK MOUNTED UNLESS OTHERWISE SHOWN

2. EQUIPMENT LAYOUT AND WIRING IN RACK SHALL BE PER THE SPECIFICATIONS



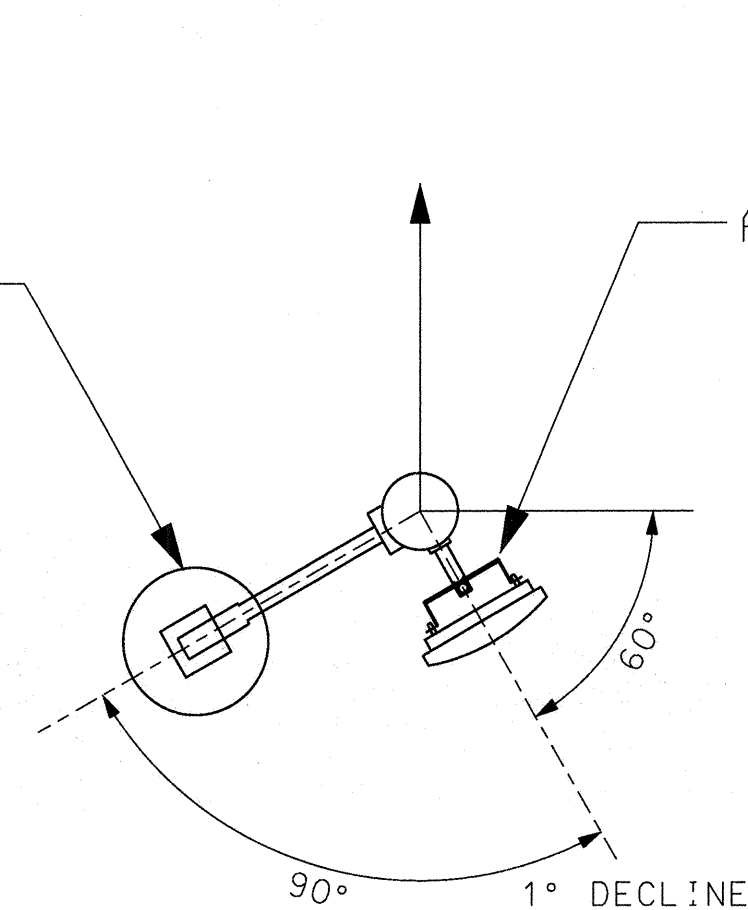
Carl A. Ayubi 1/18/07
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**CABINET DEVICE
LAYOUT DETAIL**
TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1
F.A. PROJ. NO. NH-0300(107)
SCALE: NTS DATE: 01-17-07
SHEET No. C-18 OF 21 SHEETS

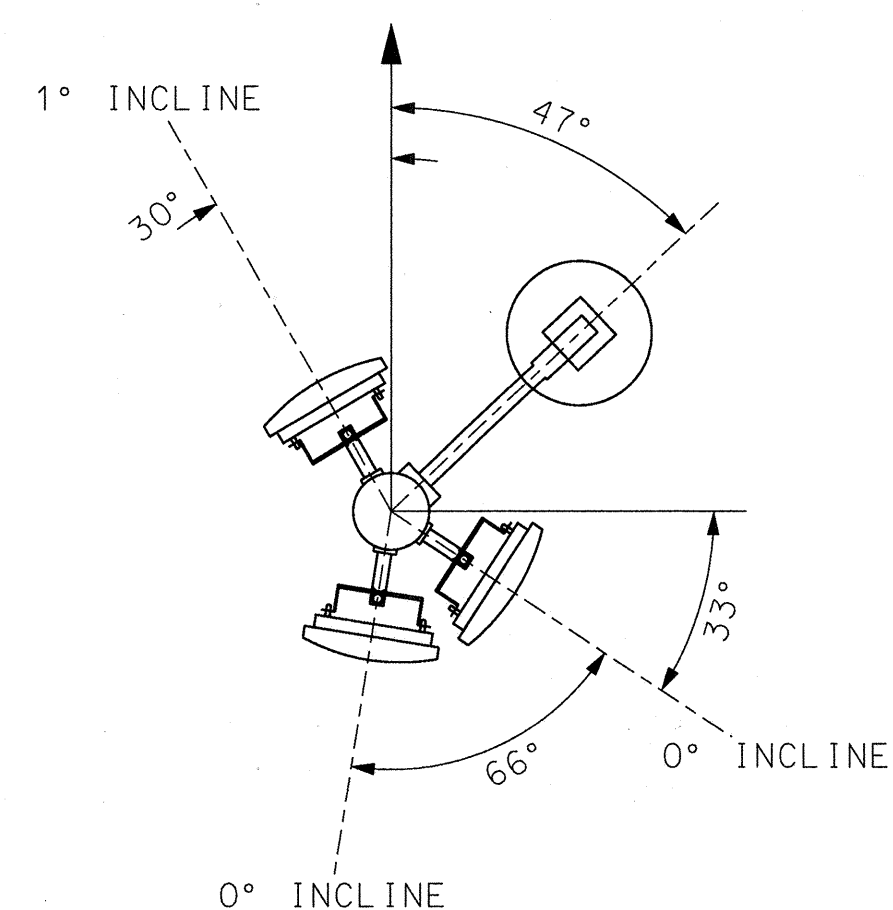
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	24	83

CAMERA
(TYP.)

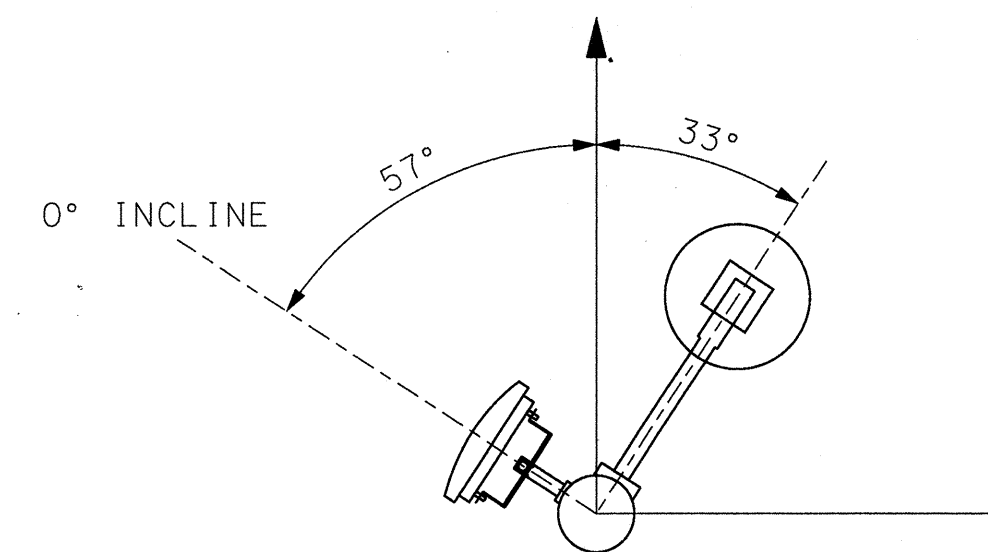
ANTENNA
(TYP.)



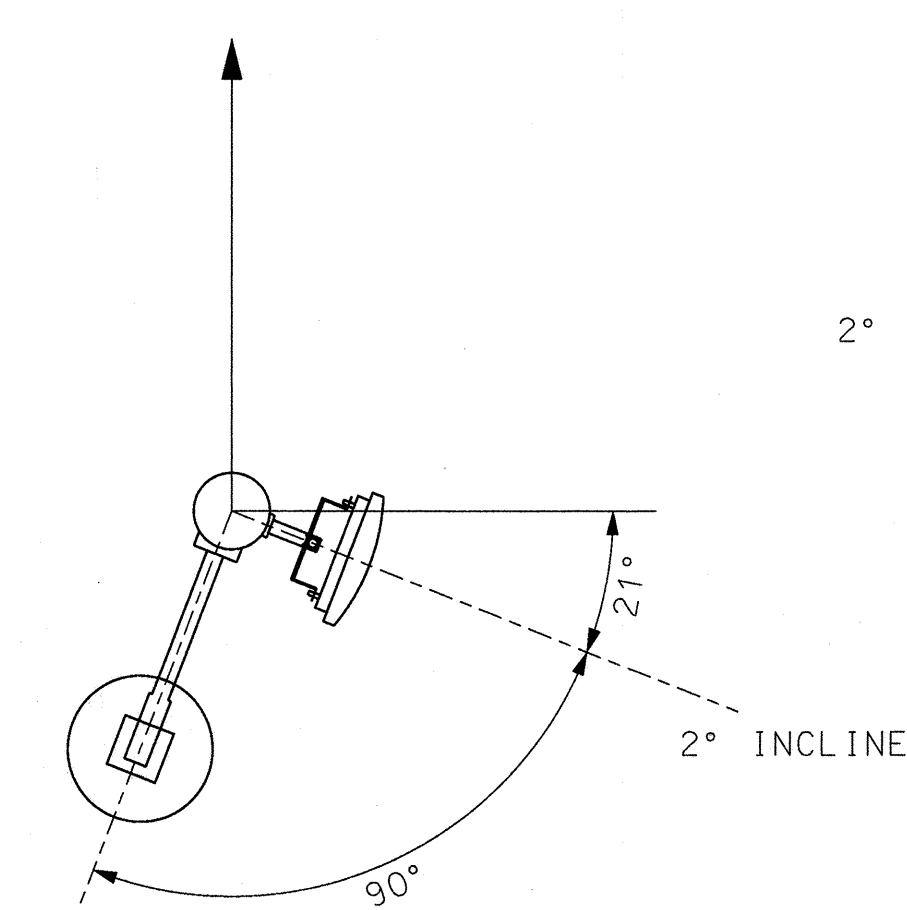
KAAMILO



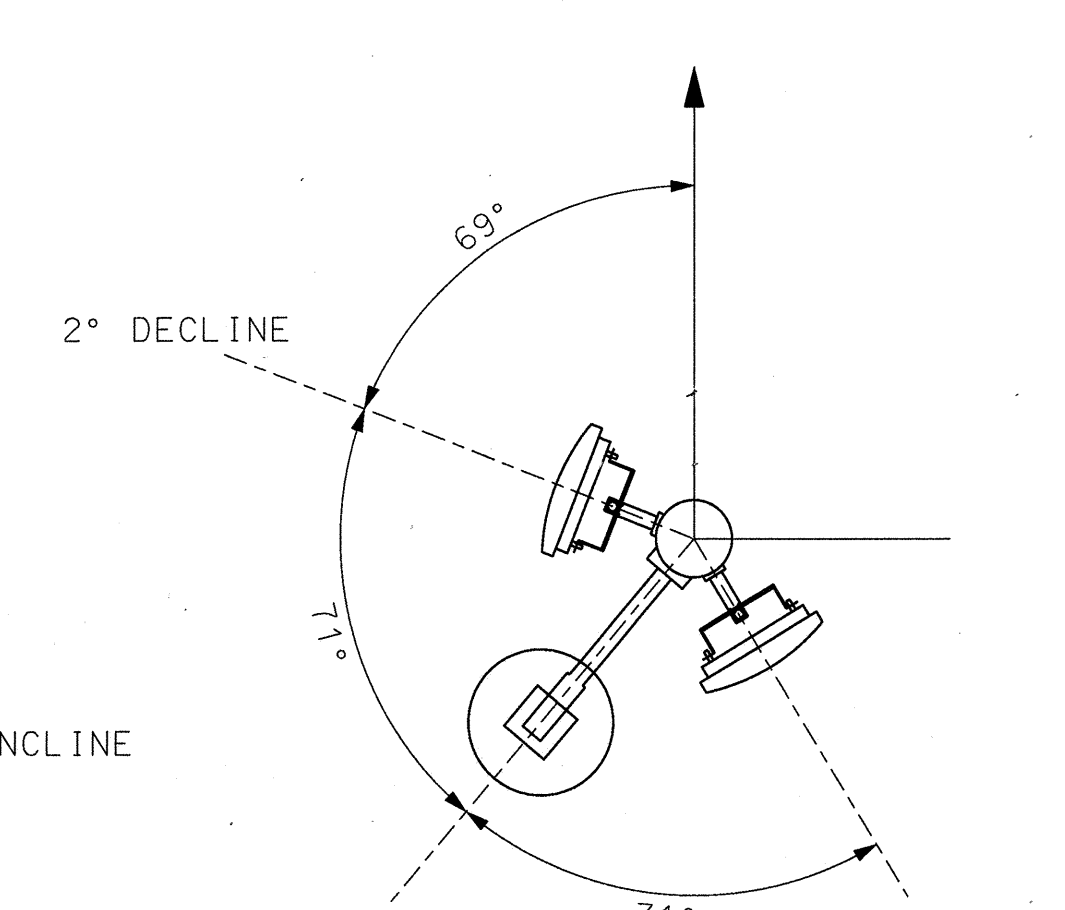
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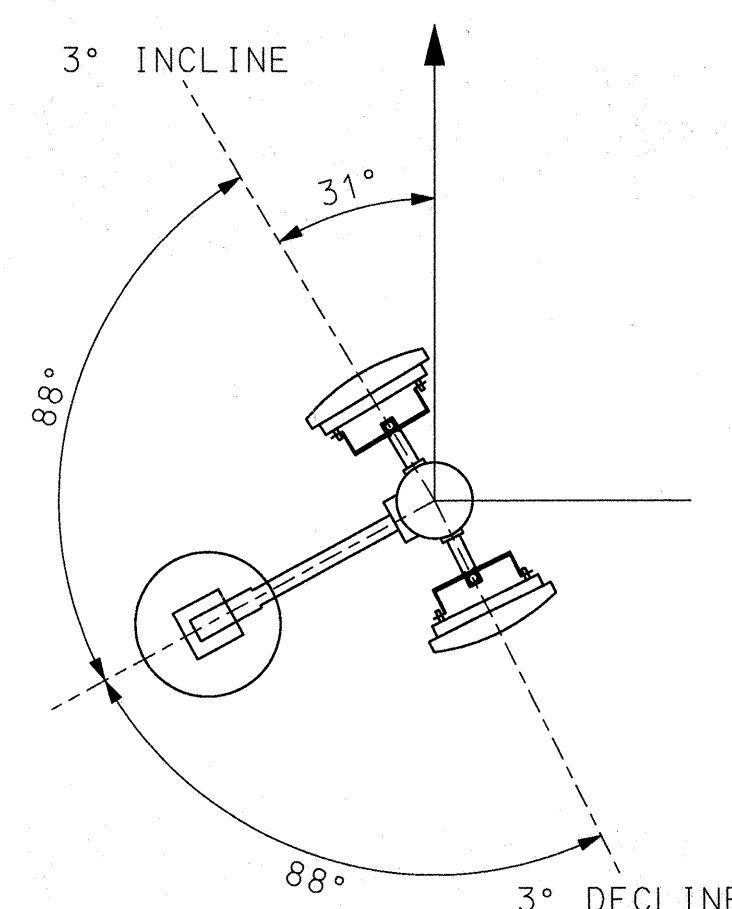
ULUNE



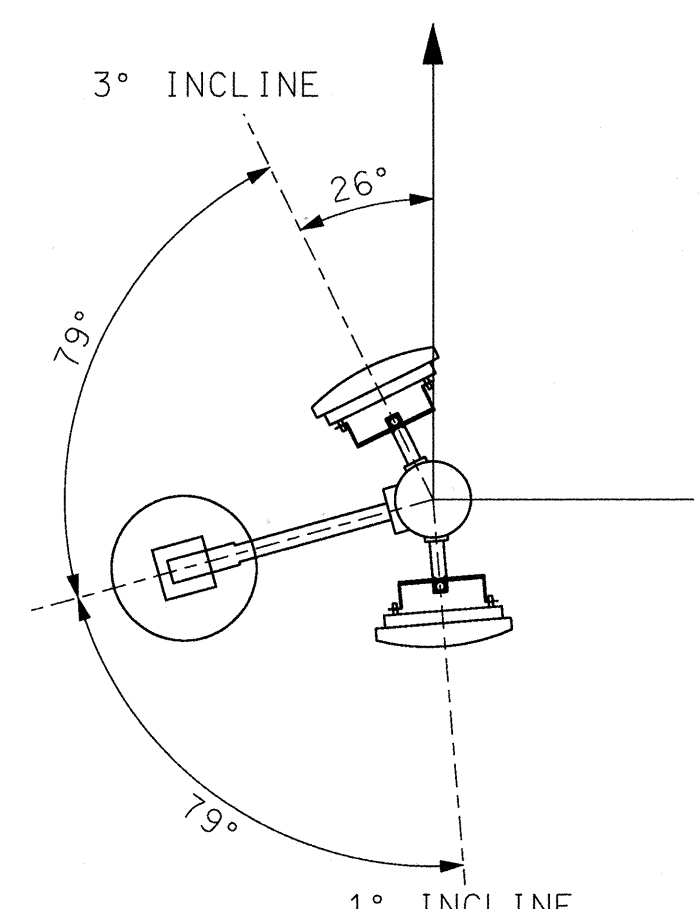
RED HILL



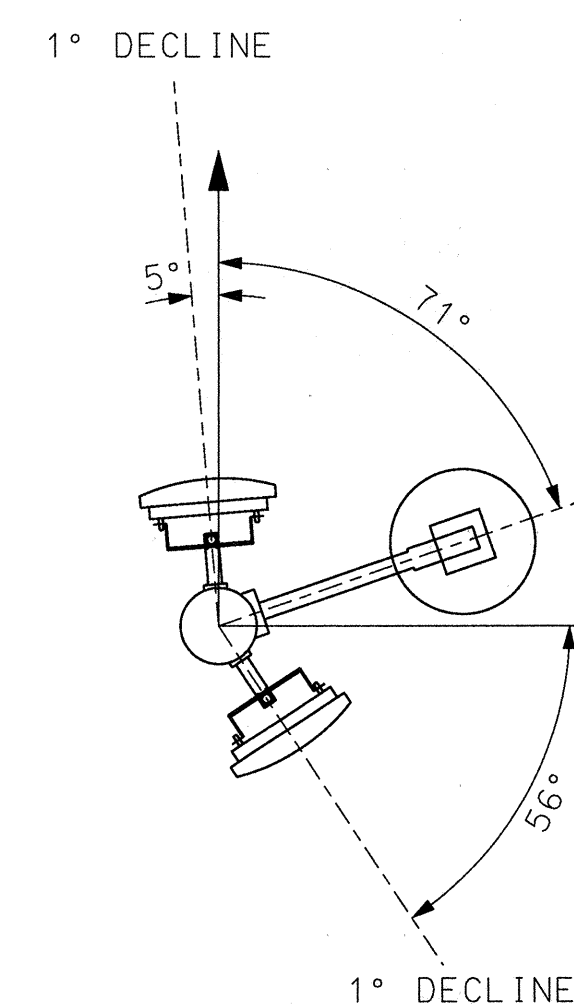
ALA KAPUNA



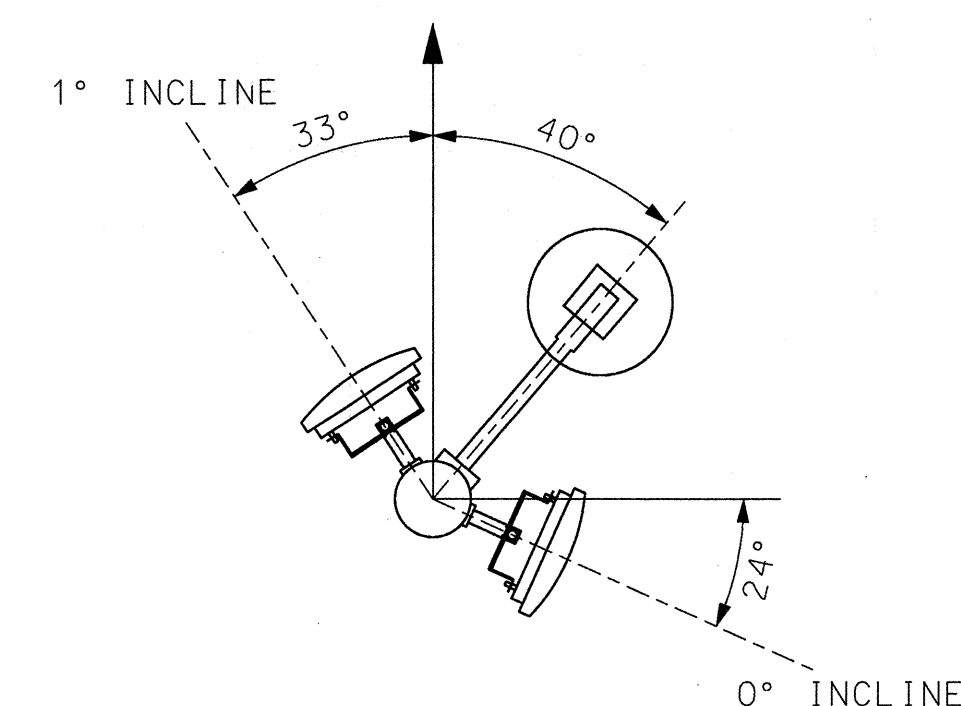
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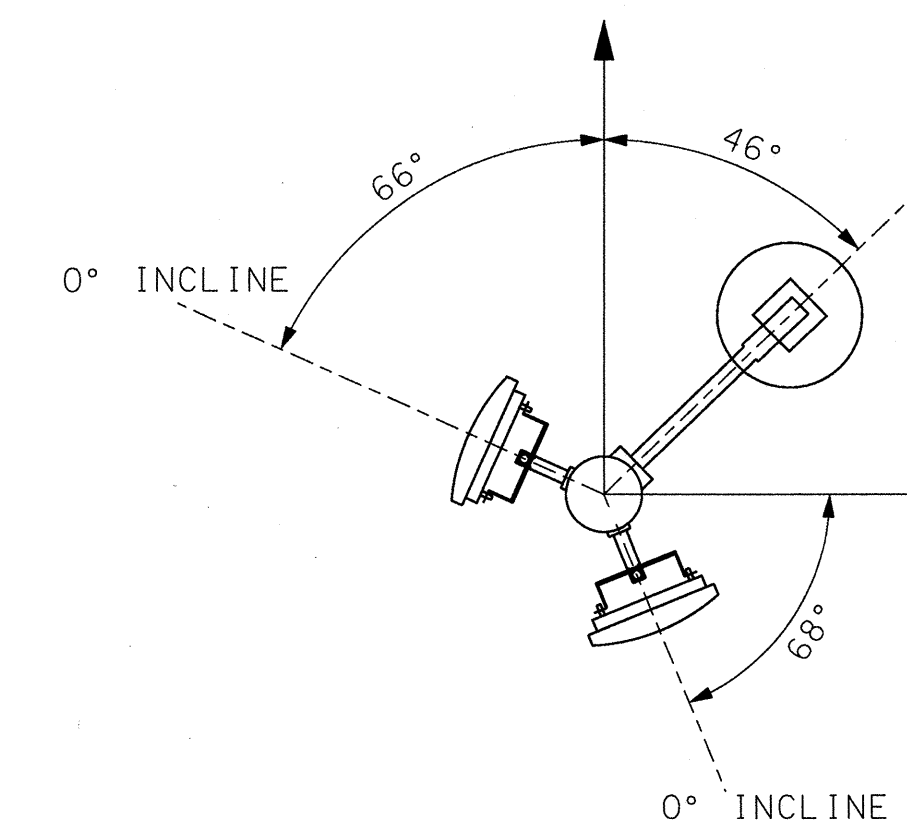
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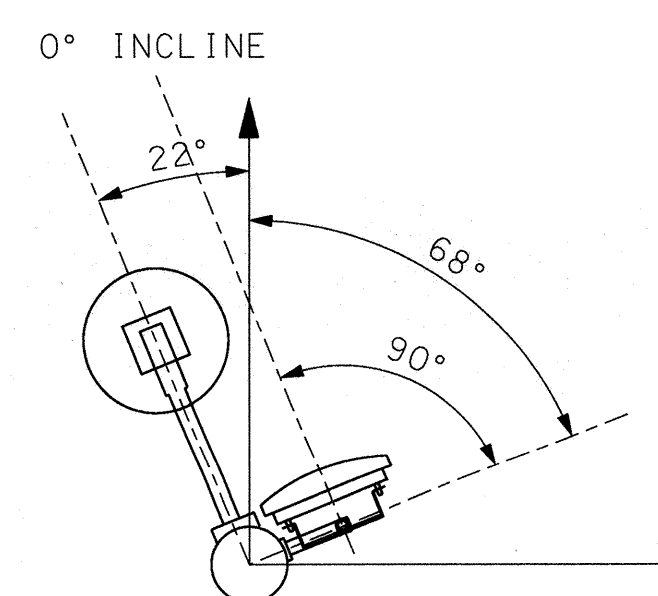
PUULOLO



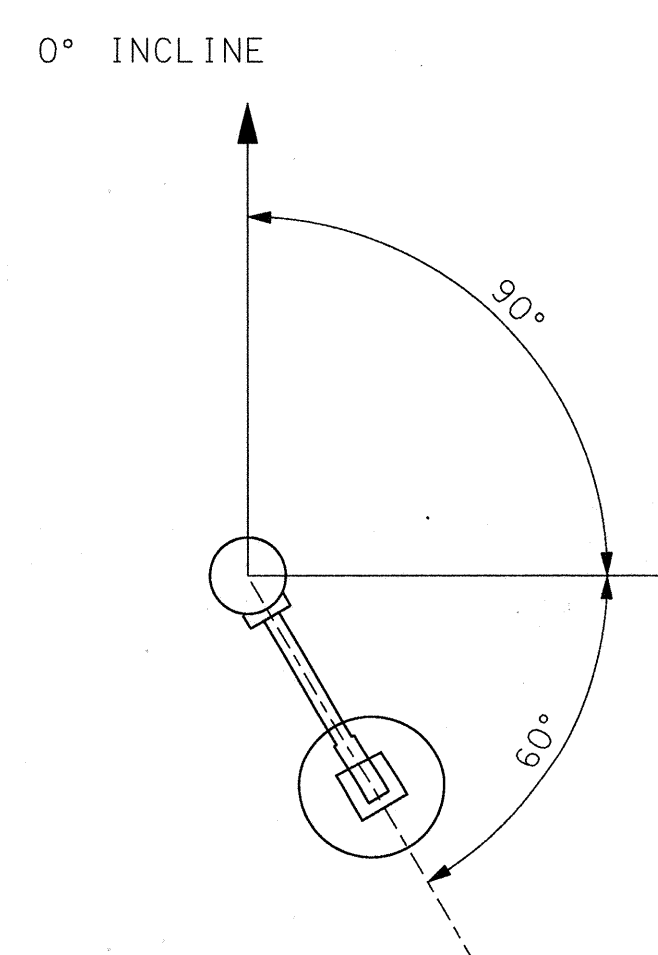
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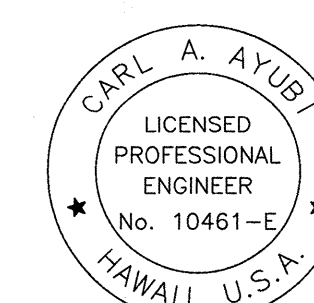
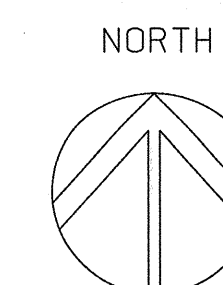
FUNSTON -
FORT SHAFTER



MIDDLE ST.



HOUGHTAILING ST.



Carl A. Ayubi 1/18/07
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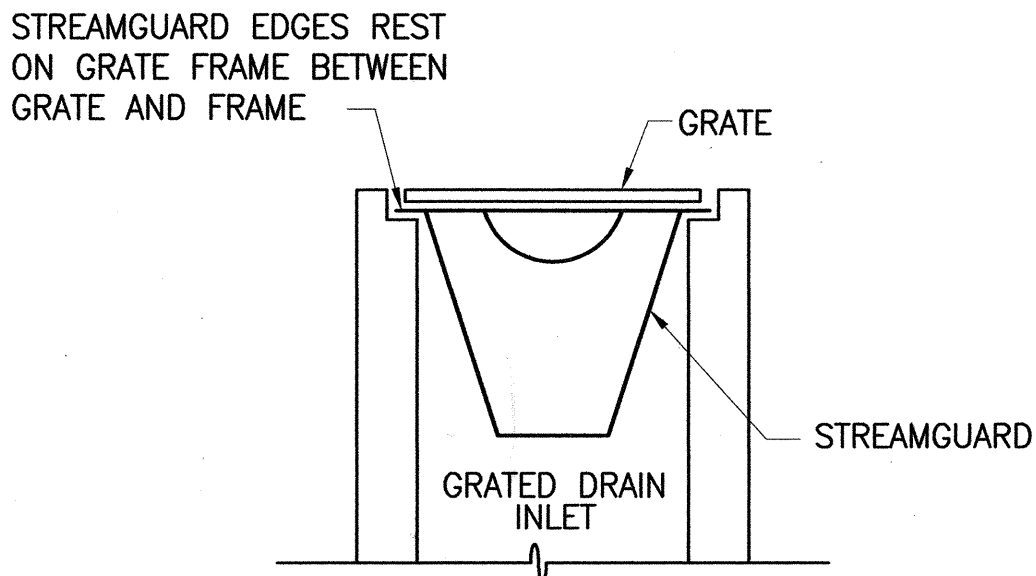
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**CAMERA AND ORIENTATION
DETAILS**

TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1
F.A.P. No. NH-0300(107)

SCALE: DATE: 01-17-07

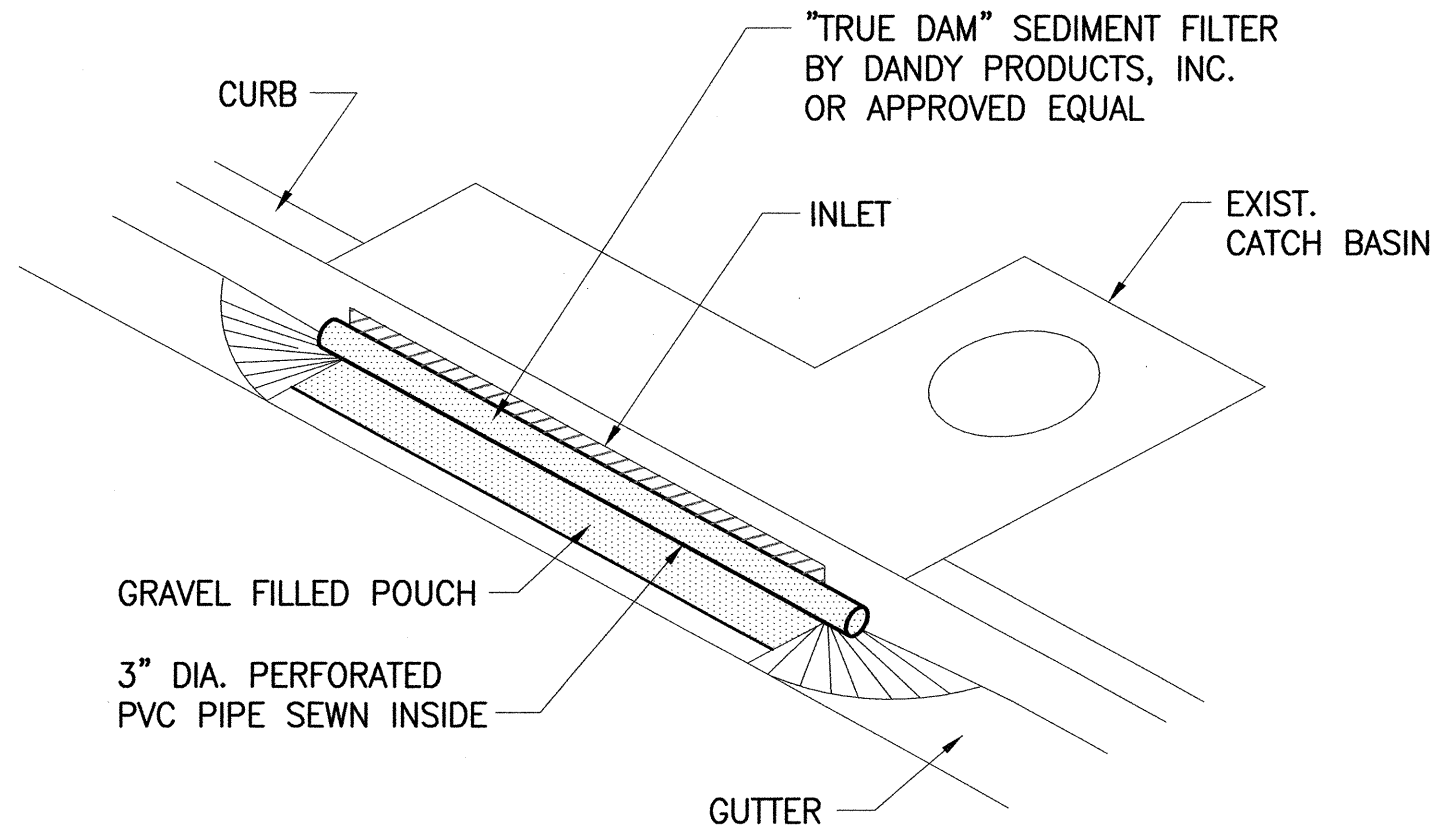
SHEET No. C-19 OF 21 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	25	83



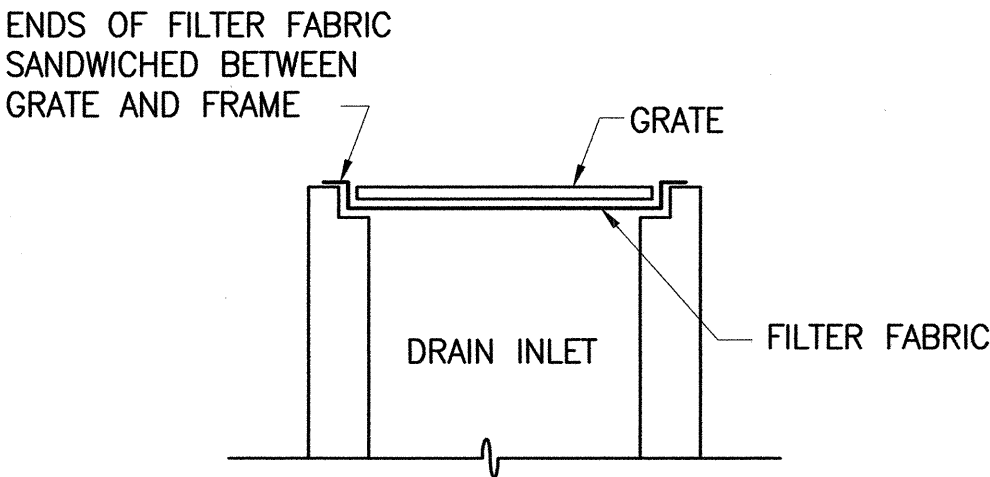
- NOTES:
1. GRATED DRAIN INLET FILTER SHALL BE "STREAMGUARD" SEDIMENT INSERT BY BOWHEAD OR APPROVED EQUAL.
 2. CONTRACTOR SHALL CHECK THE CONDITION OF THE FILTER AT THE BEGINNING AND ENDING OF EACH WORK DAY AND REPAIR/CLEAN AS NECESSARY.
 3. THE CONTRACTOR SHALL REMOVE INLET FILTERS DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND REPLACE THEM WHEN THE EVENT HAS PASSED.

**TEMPORARY SEDIMENT FILTER
AT GRATED DRAIN INLET**
NOT TO SCALE



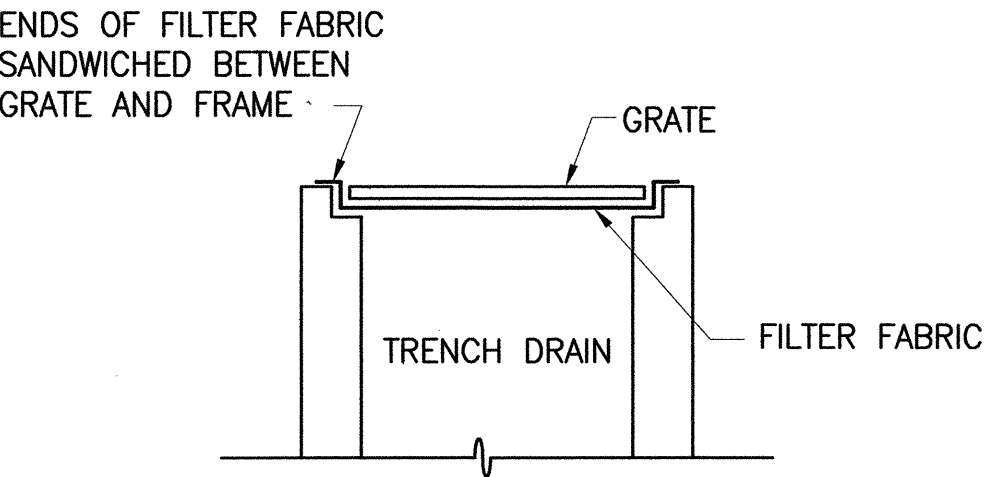
- NOTES:
1. THE CONTRACTOR SHALL REMOVE INLET FILTERS DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND REPLACE THEM WHEN THE EVENT HAS PASSED.

SEDIMENT CONTROL FILTER AT CATCH BASIN
NOT TO SCALE



- NOTES:
1. FILTER FABRIC SHALL BE 15 MIL (MIN.) "ENVIROFENCE #10800" BY NICOLON CORP. OR APPROVED EQUAL.
 2. CONTRACTOR SHALL CHECK THE CONDITION OF THE FILTER AT THE BEGINNING AND ENDING OF EACH WORK DAY AND REPAIR/CLEAN AS NECESSARY.
 3. THE CONTRACTOR SHALL REMOVE INLET FILTERS DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND REPLACE THEM WHEN THE EVENT HAS PASSED.

**TEMPORARY SEDIMENT BARRIER
AT DRAIN INLET**
NOT TO SCALE



- NOTES:
1. FILTER FABRIC SHALL BE 15 MIL (MIN.) "ENVIROFENCE #10800" BY NICOLON CORP. OR APPROVED EQUAL.
 2. CONTRACTOR SHALL CHECK THE CONDITION OF THE FILTER AT THE BEGINNING AND ENDING OF EACH WORK DAY AND REPAIR/CLEAN AS NECESSARY.
 3. THE CONTRACTOR SHALL REMOVE INLET FILTERS DURING TIMES OF ABOVE NORMAL RAINFALL EVENTS AND REPLACE THEM WHEN THE EVENT HAS PASSED.

**TEMPORARY SEDIMENT BARRIER
AT TRENCH DRAIN**
NOT TO SCALE

ENVIRONMENTAL PROTECTION NOTES

1. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE EFFECTIVE MEASURES FOR THE CONTROL OF FUGITIVE DUST EMISSIONS FROM THE PROJECT AND SURROUNDING AREAS CAUSED BY HIS OPERATIONS. THESE MEASURES SHALL MEET THE REQUIREMENTS OF STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, AIR POLLUTION CONTROL (11-60.1).
2. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE GRADING ORDINANCE TO PREVENT VIOLATION OF THE STATE ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS (11-54, 11-55) DUE TO EROSION AND RUN OFF TO STATE WATERS.
3. GRUB MATERIAL, DEMOLITION WASTES, AND CONSTRUCTION WASTES SHALL BE DISPOSED OF AT AN AUTHORIZED SITE HAVING A DEPARTMENT OF HEALTH SOLID WASTE MANAGEMENT PERMIT. OPEN BURNING IS PROHIBITED.
4. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE.

TEMPORARY DUST CONTROL MEASURES

1. THE GRADED OR PROJECT SITE THAT IS CLEARED OF VEGETATION SHALL BE KEPT DAMP FOR SEVEN (7) DAYS A WEEK. AT THE END OF EACH DAY, THE SITE SHALL BE SUFFICIENTLY DAMPENED SO THAT THE SITE WILL REMAIN MOSTENED DURING THE NIGHT.
2. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO THAT EXCAVATION, EMBANKMENT, AND IMPORTED MATERIAL SHALL BE DAMPENED TO PREVENT DUST PROBLEMS.

TEMPORARY EROSION CONTROL MEASURES

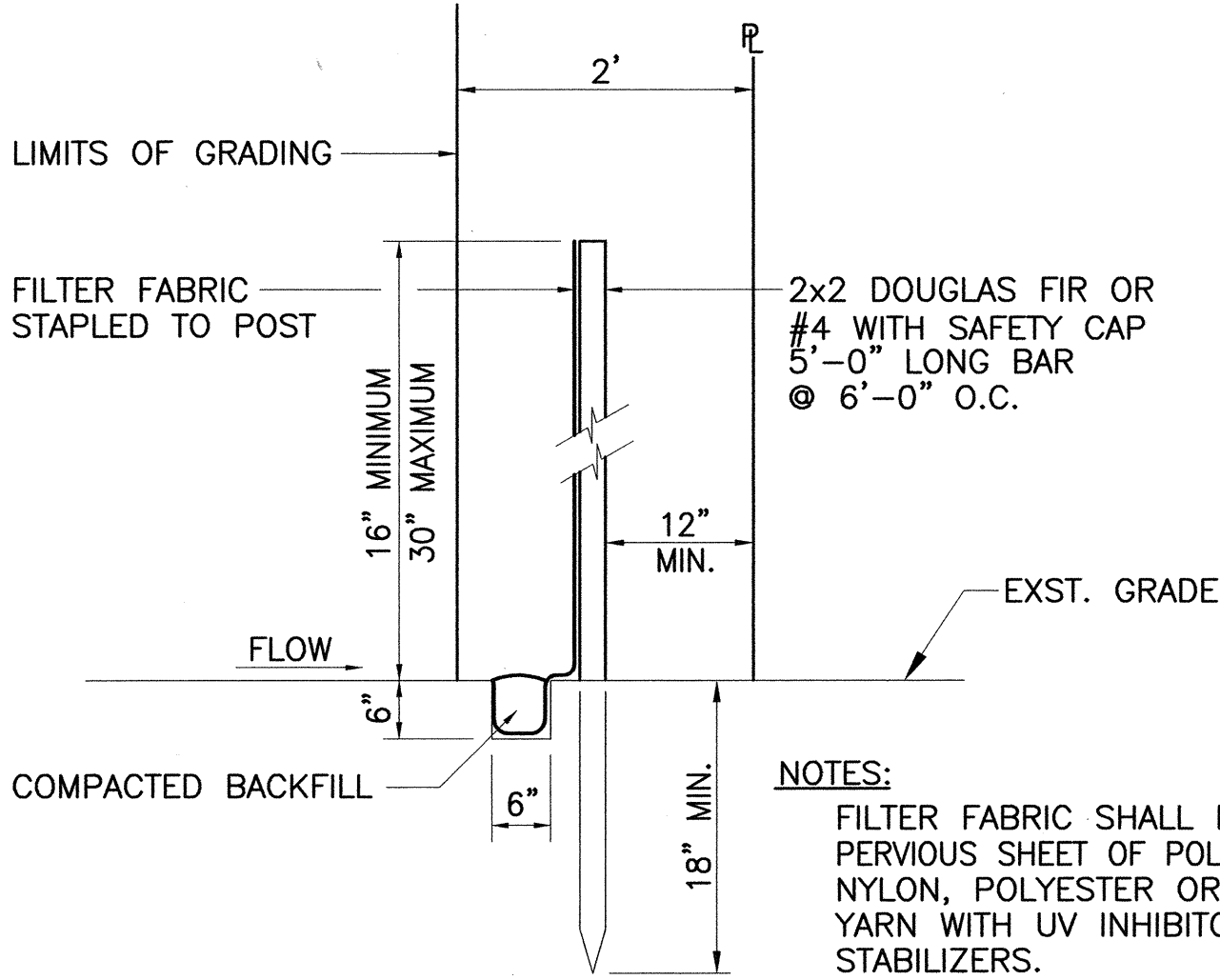
1. TEMPORARY VEGETATIVE COVER SHALL BE PLANTED OR FIBERMULCH APPLIED AS SOON AS FINAL GRADES ARE ACHIEVED, OR IF FINAL GRADING OF THE SITE WILL BE SUSPENDED FOR MORE THAN 21 CALENDAR DAYS.
2. TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 40 LBS, COMMON RYE GRASS SEED PER ACRE, 400 LBS, PER ACRE 10-10-10 OR EQUIVALENT FERTILIZER WORKED INTO THE SOIL CONCURRENTLY WITH ALL PLANTINGS. PLANTING AND MAINTENANCE OF GRASS SHALL CONFORM TO THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 2005.

PERMANENT EROSION CONTROL MEASURES

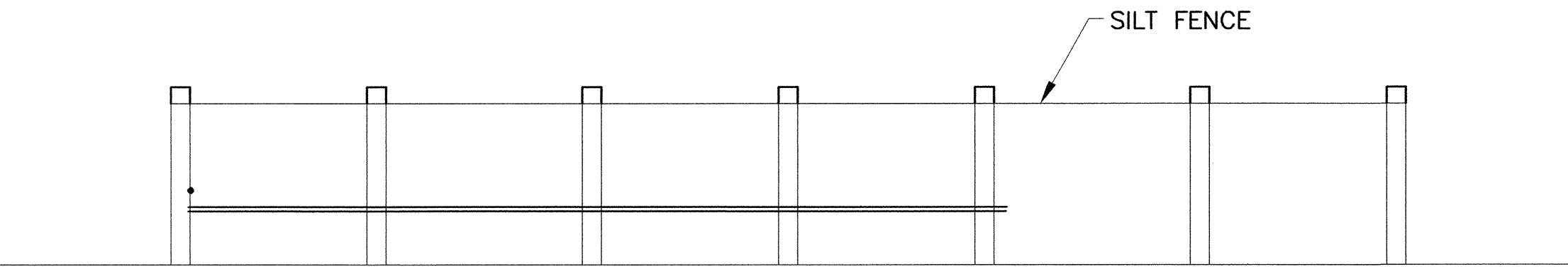
1. THE CONTRACTOR SHALL GRASS THE ENTIRE PROJECT SITE, EXCEPT PAVED AND CONCRETE AREAS, WITH SPECIFIED GRASSING. THE GRASS SHALL BE PLANTED, FERTILIZED, AND MAINTAINED IN ACCORDANCE WITH THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 2005.
2. THE CONTRACTOR SHALL GRASS ALL EXPOSED AREAS AS SOON AS FINAL GRADES ARE ACHIEVED.

EROSION CONTROL/BEST MANAGEMENT PRACTICES NOTES

1. EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO START OF CONSTRUCTION AND BE MAINTAINED UNTIL COMPLETION OF ALL CONSTRUCTION ACTIVITIES.
2. THE FINAL LIFT OF EACH DAY'S WORK SHALL BE COMPACTED TO PREVENT EROSION OF FILL MATERIAL.
3. CATCH BASIN AND DRAIN INLET FILTERS SHALL REMAIN UNTIL COMPLETION OF CONSTRUCTION WORK. CONTRACTOR SHALL PERIODICALLY INSPECT CATCH BASIN AND INLET FILTERS, ESPECIALLY DURING HEAVY RAINFALL, TO ENSURE DRAINAGE THROUGH FILTER MATERIAL IS MAINTAINED.
4. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF ROADWAYS FROM MUD, DIRT, AND DEBRIS.
5. AT THE END OF GRADING OPERATIONS AND AT THE COMPLETION OF PROJECT, CONTRACTOR SHALL INSPECT ALL CATCH BASIN, DRAIN INLET AND DRAIN MANHOLE SURROUNDING THE PROJECT SITE. ANY ACCUMULATED SEDIMENT AND DEBRIS FOUND IN THE STORM DRAIN STRUCTURES SHALL BE REMOVED. PLEASE NOTE THAT FLUSHING INTO THE DRAIN STRUCTURES ARE PROHIBITED.

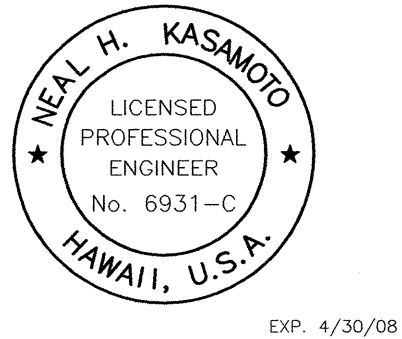


SECTION



ELEVATION

SILT FENCE DETAIL
NOT TO SCALE

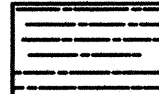



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TEMPORARY WATER
POLLUTION, DUST AND
EROSION CONTROL**
TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1
F.A.P. NO. NH-0300(107)
SCALE: NOT TO SCALE DATE: 08-15-06
SHEET No.C-20 OF 21 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-0300(107)	2006	26	83

STATE RIGHT-OF-WAY BACKFILL NOTES

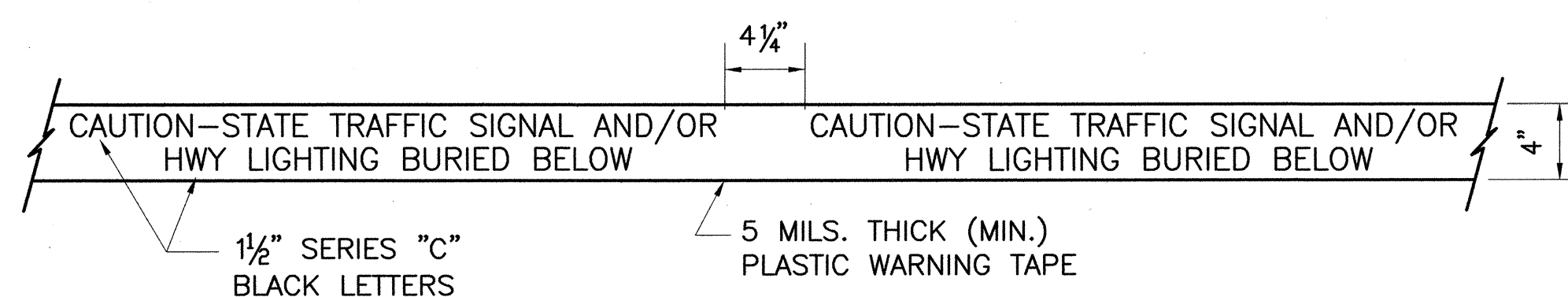
 CONTROLLED LOW STRENGTH MATERIAL (CLSM)
APPROXIMATELY 50-150 PSI COMPRESSIVE
STRENGTH AT 28 DAYS. CLSM SHALL
COMPLY WITH SECTIONS 314 AND 601 OF
THE SPECIAL PROVISIONS.

 CONCRETE
3000 PSI COMPRESSIVE STRENGTH
@ 28 DAYS.

NOTE: BASE COURSE & SUB-BASE COURSE PER
2005 STATE STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION.

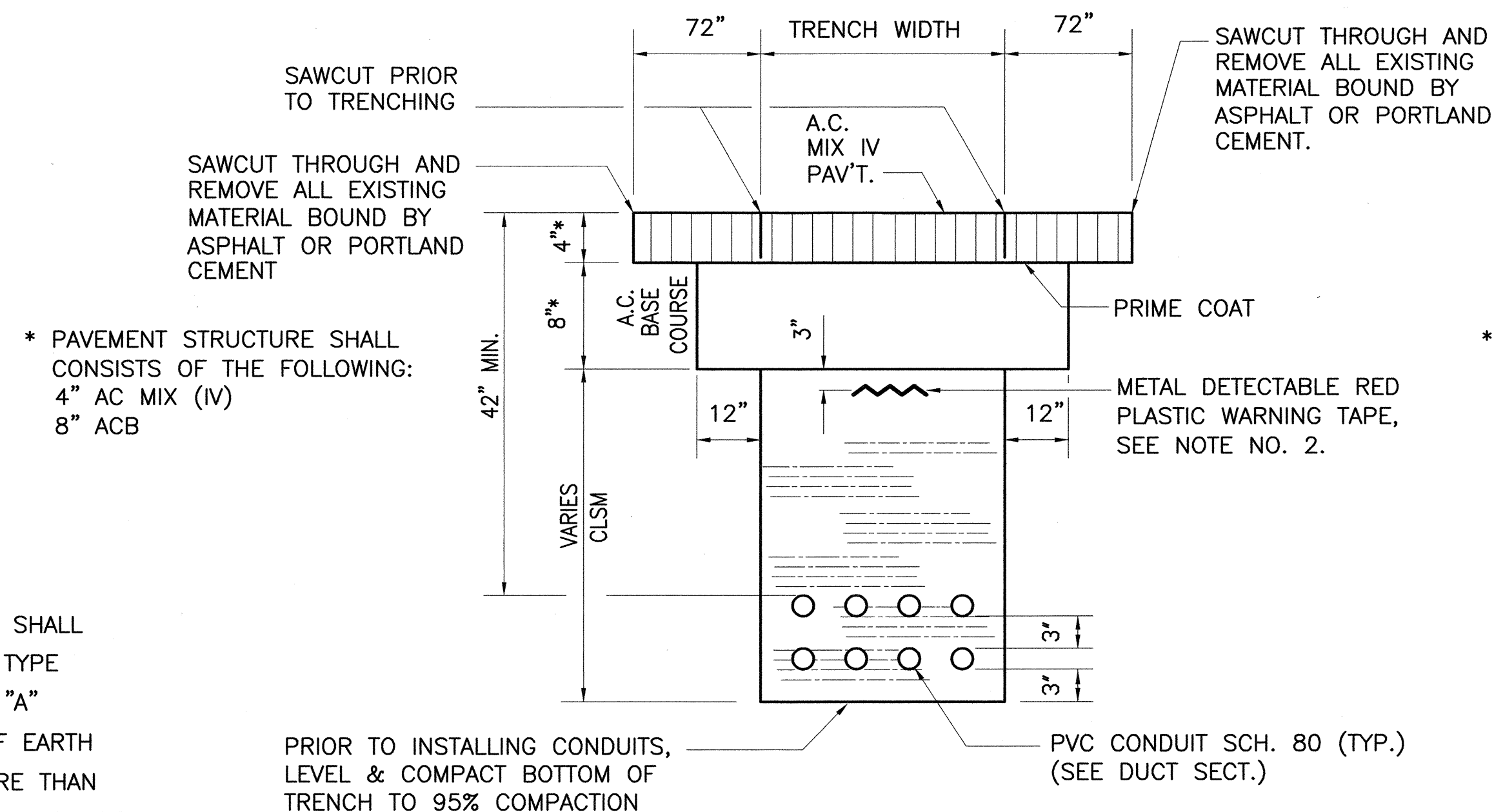
GENERAL NOTES

- IF TRENCH IS LOCATED ON UNPAVED AREA, THE CONTRACTOR SHALL REPLACE 8" 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 90% COMPACTION FOR EACH LIFT. ROCK SHALL NOT EXCEED 1" ϕ .)
- 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 1/2 INCHES SERIES "C" BLACK LETTERING. THE MESSAGE WILL BE REPEATED WITH A 4 1/4" SPACING BETWEEN TOP LINE OF MESSAGE AND START OF NEXT REPEAT.
- 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.
- 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.
- FOR DIRECT BURIED DUCT SECTIONS, THE CONCRETE JACKET REQUIRED AT THE CONDUIT BY-PASS FOR VARIOUS UTILITIES, SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 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.

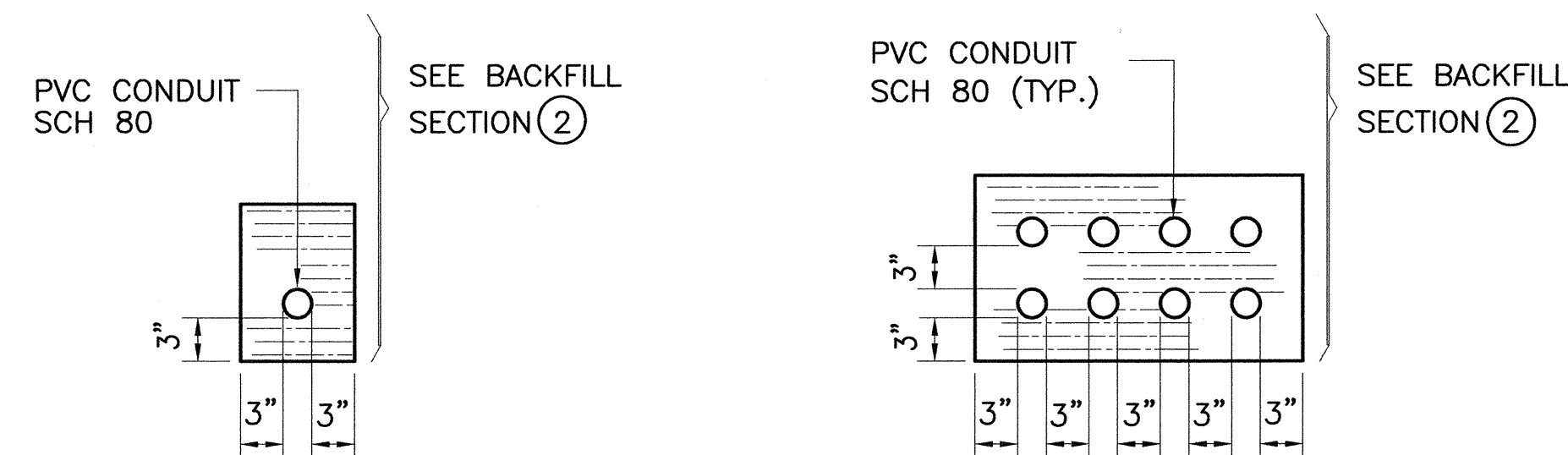


FOR ADDITIONAL INFORMATION SEE NOTE NO.2.

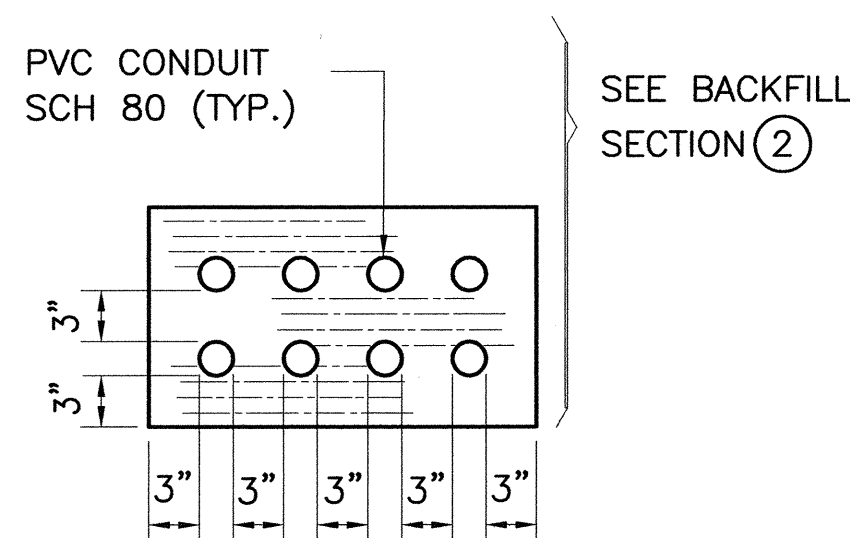
METAL DETECTABLE RED PLASTIC WARNING TAPE



② TYPICAL BACKFILL SECTION
DIRECT BURIED DUCTS

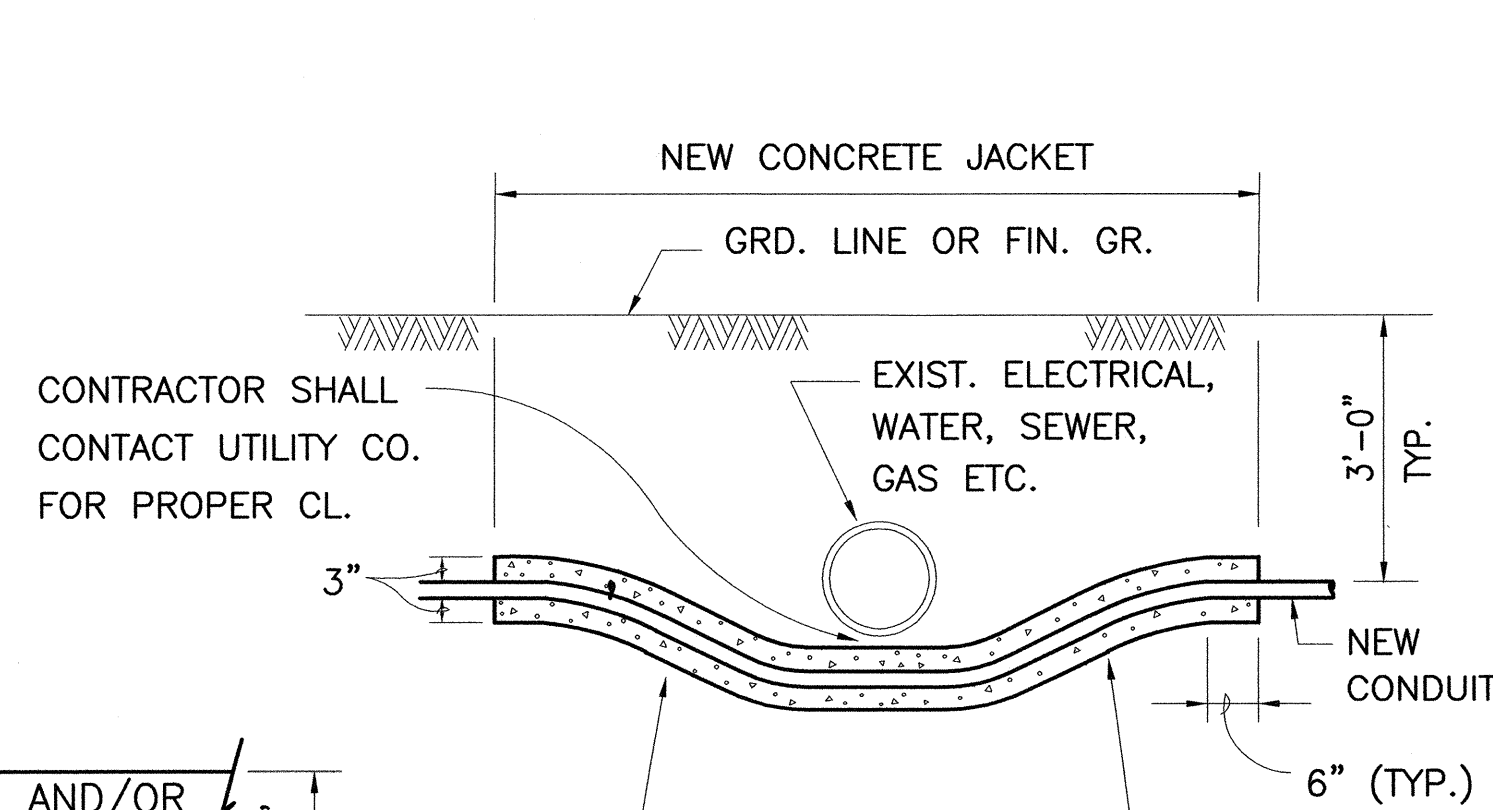


SINGLE CONDUIT



MULTIPLE CONDUIT

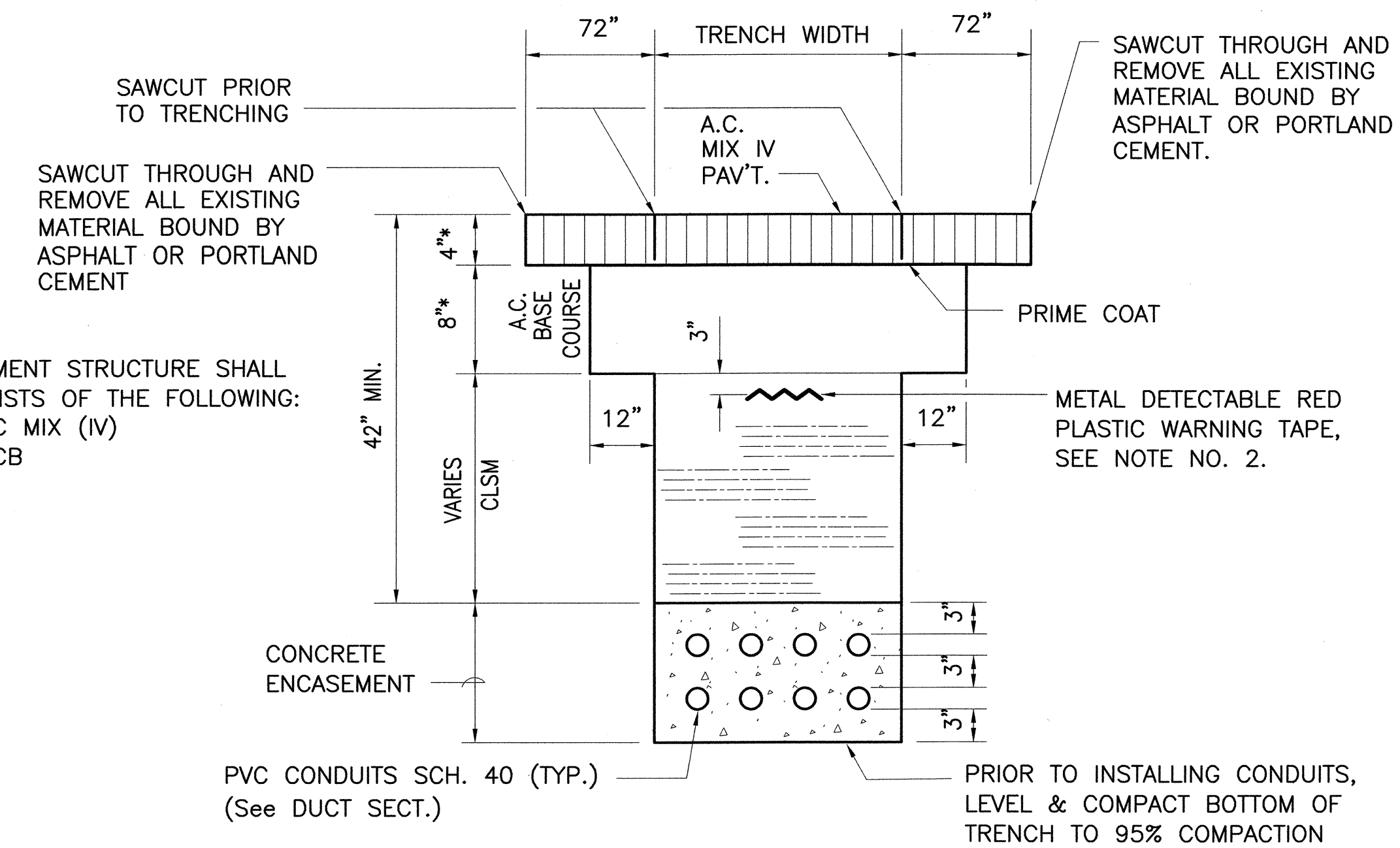
DUCT SECTIONS - DIRECT BURIED



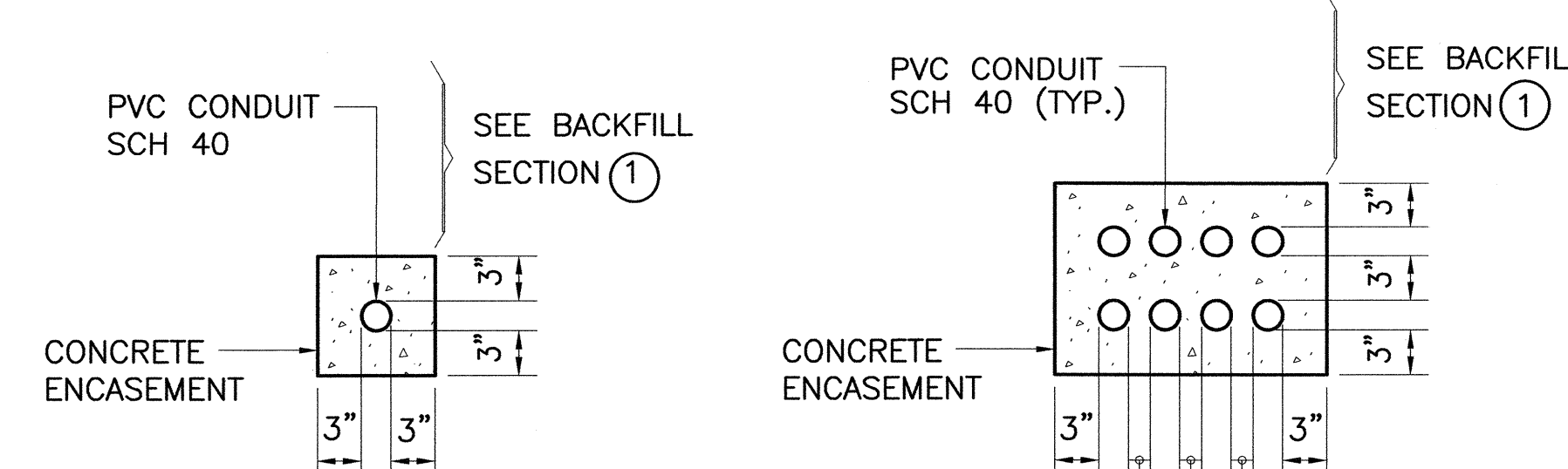
* TO BE DETERMINED BY THE ENGINEER

CONDUIT BY-PASS DETAIL AT VARIOUS UTILITIES

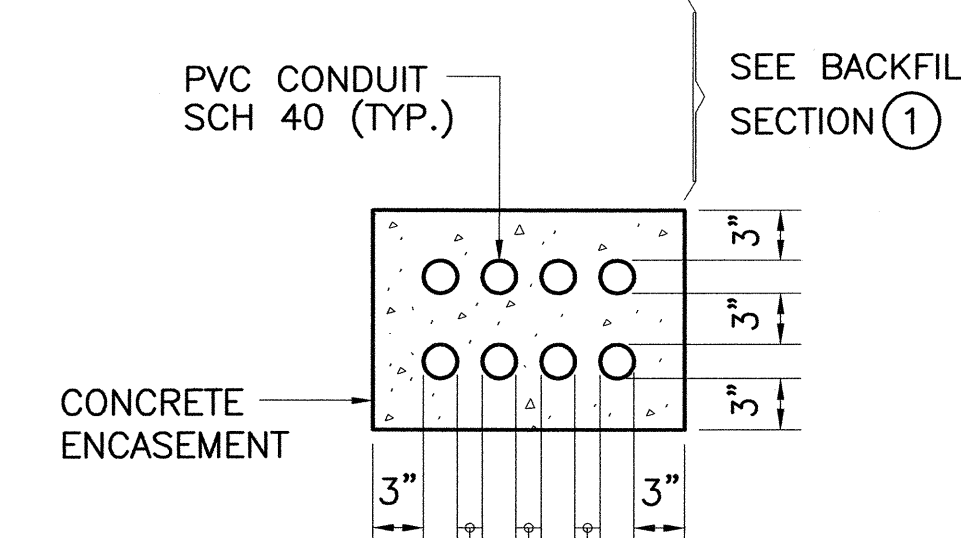
NOT TO SCALE



① TYPICAL BACKFILL SECTION
WITH CONCRETE ENCASED DUCTS

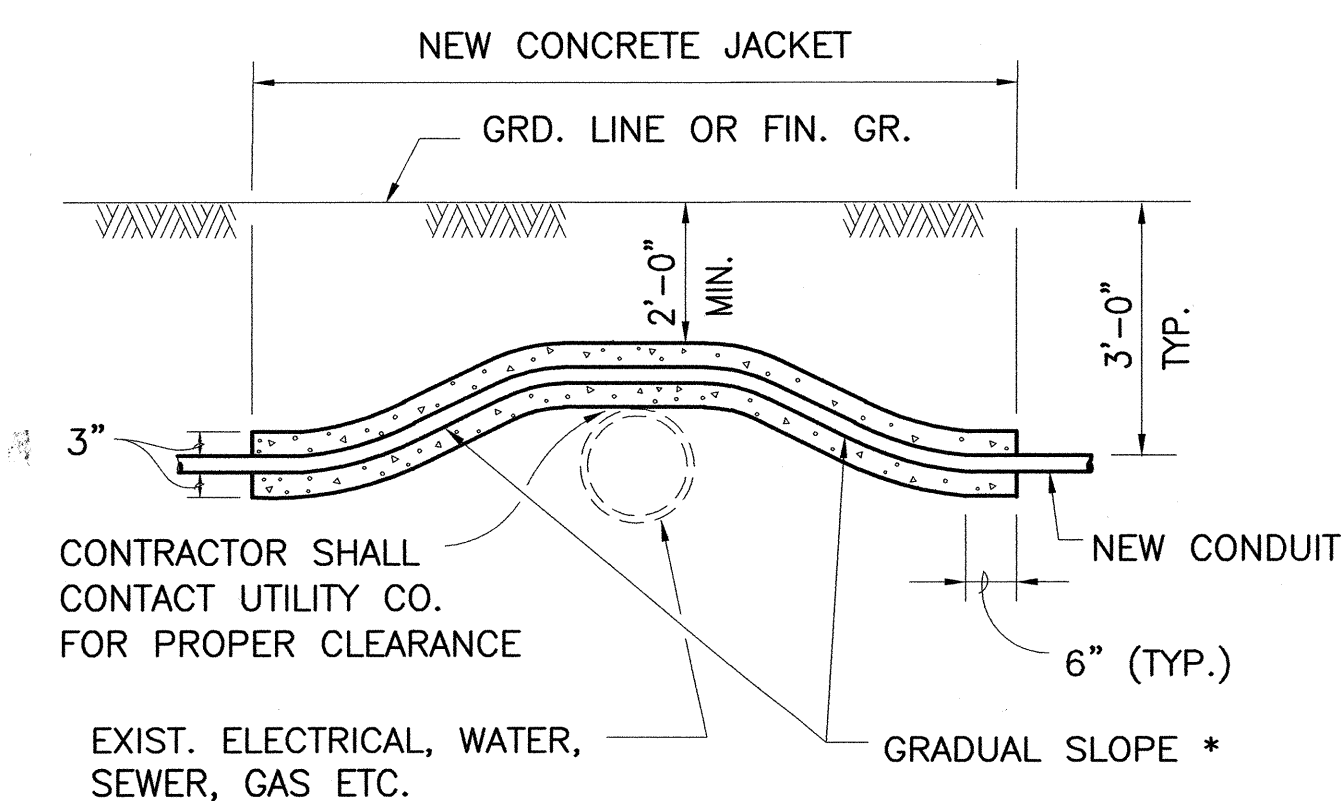


SINGLE CONDUIT



MULTIPLE CONDUIT

DUCT SECTIONS - CONC. ENCASED



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRENCH DETAILS

TRAFFIC MANAGEMENT SYSTEM CCTV PHASE 1

F.A.P. NO. NH-0300(107)

SCALE: AS SHOWN DATE: 08-15-06

SHEET No. C-21 OF 21 SHEETS