

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-22M	2022	9	15

GENERAL:

- A.

WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE STATE BUILDING CODE OF HAWAII (IBC, 2012 EDITION AS AMENDED BY THE COUNTY OF MAUI). HOWEVER, WHERE REFERENCE IS MADE TO PERFORMANCE CONFORMING TO OTHER STANDARDS THE MORE STRINGENT SHALL APPLY.
- B.

THE CONTRACTOR SHALL COMPARE ALL THE CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- C.

THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND VERIFY FIELD CONDITIONS AND SHALL COMPARE SUCH FIELD MEASUREMENTS AND CONDITIONS WITH THE DRAWINGS BEFORE COMMENCING WORK. REPORT IN WRITING TO THE ENGINEER ALL INCONSISTENCIES AND OMISSIONS.
- D.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR METHODS OF CONSTRUCTION, WORKMANSHIP AND JOB SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING AS REQUIRED FOR STABILITY OF STRUCTURAL MEMBERS AND SYSTEMS.
- E.

CONSTRUCTION LOADING SHALL NOT EXCEED DESIGN LIVE LOAD UNLESS SPECIAL SHORING IS PROVIDED. ALLOWABLE LOADS SHALL BE REDUCED IN AREAS WHERE THE STRUCTURE HAS NOT ATTAINED FULL DESIGN STRENGTH.
- F.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES DURING THE CONSTRUCTION PERIOD.
- G.

DETAILS NOTED AS TYPICAL ON THE STRUCTURAL DRAWINGS SHALL APPLY IN ALL CONDITIONS UNLESS SPECIFICALLY SHOWN OR NOTED.
- H.

THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS MUST SUBMIT IN WRITING ANY REQUESTS FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS.

DESIGN CRITERIA:

- A.

DESIGN LIVE LOADS
- A.

ROOF 20 PSF

STRUCTURAL STEEL:

- A.

FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION.
- B.

STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
- C.

STEEL WIDE FLANGE SECTIONS SHALL CONFORM TO ASTM A992.
- D.

STEEL CHANNELS, S, M AND HP SHAPES SHALL CONFORM TO ASTM A36.
- E.

BOLTS FOR STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO ASTM A307, GRADE A UNLESS OTHERWISE NOTED.
- F.

WELDS AND WELDING PROCEDURES SHALL CONFORM TO THE STRUCTURAL WELDING CODE AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
- G.

WELDING SHALL BE PERFORMED BY WELDERS PREQUALIFIED FOR WELDING PROCEDURES TO BE USED.
- H.

WELDING ELECTRODES SHALL BE E70XX.
- I.

ALL STEEL SHALL BE PRIME PAINTED IN THE SHOP.

STRUCTURAL COLD-FORMED METAL FRAMING:

- A.

FABRICATION AND ERECTION OF GAGE METAL STRUCTURES SHALL BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE SPECIFICATIONS, LATEST EDITION.
- B.

COLD-FORMED STEEL MEMBERS AND ACCESSORIES SHALL BE OF THE TYPE AND GAGE CALLED FOR ON THE DRAWINGS. MEMBER DESIGNATIONS ARE PER STEEL STUD MANUFACTURER'S ASSOCIATION.
- C.

ALL MEMBERS 16, 14, AND 12 GAGE SHALL MEET THE REQUIREMENTS OF ASTM A 653 SQ GRADE 50. ALL MEMBERS 20 AND 18 GAGE SHALL MEET THE REQUIREMENTS OF ASTM A 653 SQ GRADE 33.
- D.

PREFABRICATED FRAMING HARDWARE SHALL BE SIMPSON STRONG TIE GALVANIZED, OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- E.

SCREWS SHALL BE SELF-DRILLING, SELF-TAPPING, GAGE METAL SCREWS. MINIMUM EDGE DISTANCE AND CENTER TO CENTER SPACING SHALL BE 3/4 INCH.
- F.

SCREWS FASTENING GYPBOARD SHEATHING INTO LIGHT GAUGE STEEL SHALL BE MINIMUM #6 SCREWS BY 1", UNLESS OTHERWISE NOTED.
- G.

PLACE A LAYER OF 30# ROOFING FELT BETWEEN ALL COLD-FORMED METAL MEMBERS AND CONCRETE OR MASONRY SURFACES.

EPOXIED ANCHOR INSTALLATIONS:

- A.

EPOXY USED FOR ANCHORING THREADED RODS INTO EXISTING CONCRETE SHALL BE HILTI HIT-RE 500 V3 SYSTEM, SIMPSON SET-3G SYSTEM, POWERS PURE 110+, OR APPROVED EQUAL, AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- B.

ANCHORS SHALL BE INSTALLED WITH THE MINIMUM EMBEDMENT REQUIREMENTS AS INDICATED ON THE DRAWINGS.

SPECIAL INSPECTION:

- A.

CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SPECIAL INSPECTION OF PORTIONS OF THE WORK, AS REQUIRED BY THE BUILDING CODE OF THE COUNTY OF MAUI, IS MADE AT THE APPROPRIATE TIME. THE CONTRACTOR SHALL GIVE TIMELY NOTICE OF WHEN AND WHERE INSPECTIONS ARE TO BE MADE AND PROVIDE ACCESS FOR THE INSPECTOR. THE CONTRACTOR SHALL CORRECT DEFECTIVE WORK AT NO ADDITIONAL COST TO THE STATE AND PAY FOR RE-INSPECTION.
- B.

GENERAL. WHERE APPLICATION IS MADE FOR CONSTRUCTION AS DESCRIBED IN THIS SECTION, THE CONTRACTOR SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER IBC SECTION 1704. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN THE IBC SECTION 109.

A.

STATEMENT OF SPECIAL INSPECTIONS. THE PERMIT APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH THE IBC SECTION 106.1 AS A CONDITION FOR PERMIT ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH IBC SECTION 1705.

B.

REPORT REQUIREMENT. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.
- SPECIAL INSPECTION (CONT'D):
- C.

STEEL CONSTRUCTION. THE SPECIAL INSPECTIONS FOR STEEL ELEMENTS OF BUILDINGS AND STRUCTURES SHALL BE AS REQUIRED BY THE IBC SECTION 1704.3 AND TABLE 1704.3.

A.

WELDING. WELDING INSPECTION SHALL BE IN COMPLIANCE WITH AWS D1.1. THE BASIS FOR WELDING INSPECTOR QUALIFICATION SHALL BE AWS D1.1.

B.

DETAILS. THE SPECIAL INSPECTOR SHALL PERFORM AN INSPECTION OF THE STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS, SUCH AS BRACING, STIFFENING, MEMBER LOCATIONS AND PROPER APPLICATION OF JOINT DETAILS AT EACH CONNECTION.

C.

HIGH-STRENGTH BOLTS. INSTALLATION OF HIGH-STRENGTH BOLTS SHALL BE PERIODICALLY INSPECTED IN ACCORDANCE WITH AISC SPECIFICATIONS.

1.

GENERAL. WHILE THE WORK IS IN PROGRESS, THE SPECIAL INSPECTOR SHALL DETERMINE THAT THE REQUIREMENTS FOR BOLTS, NUTS, WASHERS AND PAINT; BOLTED PARTS AND INSTALLATION AND TIGHTENING IN SUCH STANDARDS ARE MET. DETERMINE THAT ALL PLIES OF CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER AND PROPERLY SNUGGED AND MONITOR THE INSTALLATION OF BOLTS TO VERIFY THAT THE SELECTED PROCEDURE FOR INSTALLATION IS PROPERLY USED TO TIGHTEN BOLTS. FOR JOINTS REQUIRED TO BE TIGHTENED ONLY TO THE SNUG-TIGHT CONDITION, THE SPECIAL INSPECTOR NEED ONLY VERIFY THAT THE CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER AND PROPERLY SNUGGED.

2.

PERIODIC MONITORING. MONITORING OF BOLT INSTALLATION FOR PRETENSIONING IS PERMITTED TO BE PERFORMED ON A PERIODIC BASIS WHEN USING THE TURN-OF-NUT METHOD WITH MATCHMARKING TECHNIQUES, THE DIRECT TENSION INDICATOR METHOD OR THE ALTERNATE DESIGN FASTENER (TWIST-OFF BOLT) METHOD. JOINTS DESIGNATED AS SNUG TIGHT NEED BE INSPECTED ONLY ON A PERIODIC BASIS.

3.

CONTINUOUS MONITORING. MONITORING OF BOLT INSTALLATION FOR PRETENSIONING USING THE CALIBRATED WRENCH METHOD OR THE TURN-OF-NUT METHOD WITHOUT MATCHMARKING SHALL BE PERFORMED ON A CONTINUOUS BASIS.

D.

SPECIAL CASES. SPECIAL INSPECTIONS SHALL BE REQUIRED FOR PROPOSED WORK THAT IS, IN THE OPINION OF THE ARCHITECT, UNUSUAL IN ITS NATURE, SUCH AS, BUT NOT LIMITED TO, THE FOLLOWING EXAMPLES:

A.

CONSTRUCTION MATERIALS AND SYSTEMS THAT ARE ALTERNATIVES TO MATERIALS AND SYSTEMS PRESCRIBED BY THE IBC.

B.

UNUSUAL DESIGN APPLICATIONS OF MATERIALS DESCRIBED IN THE IBC.

C.

MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE IBC OR IN STANDARDS REFERENCED BY THE IBC SUCH AS, BUT NOT LIMITED TO, THE FOLLOWING EXAMPLES:

1.

DRILLED AND EPOXIED THREADED RODS AND REINFORCING STEEL INTO CONCRETE.

E.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE OWNER, LICENSED ENGINEER OR ARCHITECT OF RECORD, AND OTHER OWNER-DESIGNATED PERSONS. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT TO THE OWNER AND LICENSED ENGINEER OR ARCHITECT OF RECORD, STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THIS CODE. PRIOR TO THE FINAL INSPECTION REQUIRED UNDER THE BUILDING CODE SECTION 109.3.10 THE LICENSED ENGINEER OR ARCHITECT OF RECORD SHALL SUBMIT A WRITTEN STATEMENT VERIFYING RECEIPT OF THE FINAL INSPECTION REPORTS AND DOCUMENTING THAT THERE ARE NO UNRESOLVED CODE REQUIREMENTS THAT CREATE SIGNIFICANT PUBLIC SAFETY DEFICIENCIES.

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION (BASED ON AISC 360)			
VERIFICATION OF HIGH STRENGTH BOLTS, NUTS AND WASHERS	CONTINUOUS*	PERIODIC**	REFERENCED STANDARD
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	---	X	APPLICABLE ASTM MATERIAL SPECIFICATIONS; AISC 360, SECTION A3.3
B. MANUFACTURERS CERTIFICATE OF COMPLIANCE REQUIRED.	---	X	---
2. INSPECTION OF HIGH-STRENGTH BOLTING:			
A. BEARING-TYPE CONNECTIONS.	---	X	AISC 360, SECTION M2.5
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL:			
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	---	---	ASTM A 6 OR ASTM A 568
B. MANUFACTURERS' CERTIFIED MILL TEST REPORTS.	---	---	ASTM A 6 OR ASTM A 568
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:			
A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	---	---	AISC 360, SECTION A3.5
B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	---	---	---
5. INSPECTION OF WELDING: A. STRUCTURAL STEEL:			
1. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.	X	---	AWS D1.1
2. SINGLE-PASS FILLET WELDS ≤ 5/16"	---	X	

SPECIAL INSPECTION TABLE LEGEND

X

REQUIRED FOR INSPECTION

NOT REQUIRED FOR INSPECTION

*

CONTINUOUS SPECIAL INSPECTION IS DEFINED AS "THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING DONE." PER THE IBC 2006

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PERIODIC SPECIAL INSPECTION IS DEFINED AS "THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK." PER THE IBC 2006

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL STRUCTURAL NOTES

MAUI DISTRICT ADMINISTRATION
BUILDING ROOF REPAIR
PROJECT NO. HWY-M-03-22M

SCALE: Date: 08/31/2021

SHEET NO.S-1 OF 15 SHEETS