

CERTIFICATE OF APPROVAL
for
HAU HAU MARKET

Site Address:
412 12th Avenue South
Seattle, WA 980144

Parcel: 817010-0195

Date: August 3rd, 2006

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PROJECT INFORMATION:

Project Name: Hau Hau Market

Property Owner: Guo Investments LLC

Site Address: 412 12th Avenue S. Seattle, WA 98144

Tax ID: 817010-0195

Zone: DMR/C75/75-95

Lot Size: 12,000 SF (0.28 Arce)

EXISTING SITE DESCRIPTION:

The project site is in a zone Downtown DMR/C75/75-95, where both commercial and residential development is generally allowed. The 12,000 SF corner lot is located at the intersection of 12th Avenue South and South King Street. The lot is rectangular, approximately 120 feet wide by 100 feet in depth, slopes slightly downward toward East. There are existing concrete sidewalks with trees along the street frontage.

The project site is classified and established as International District called Little Saigon. This Internal District is the urban focal point for the Asian American community, was established to promote, preserve and perpetuate the cultural, economic, historical, and otherwise beneficial qualities of the area, particularly the features derived from its Asian heritage.

However, the site vicinity has grappled with homelessness, and open-air drug markets that are highly concentrated in the 12th Avenue South and South Jackson Street corridors of Little Saigon. The neighborhood has struggled with persistent encampments, property crime, and the impacts of the illicit drug trade. Due to persistent street crime and retail theft, the property is fully fenced after business hours.

EXISTING BUILDING DESCRIPTION:

A three story mixed retail and office structure with underground and street level parking spaces, located at 412 12th Avenue South Seattle, Washington. The building was built in 1992, a mixed-use structure also known as podium construction; consists of concrete framing from the basement to the street level, with a three story timber framing above the street level, and a flat roof timber framing made up with fire retardant built-up roofing material. The building is primarily used as a grocery store and storage for the Hau Hau market.

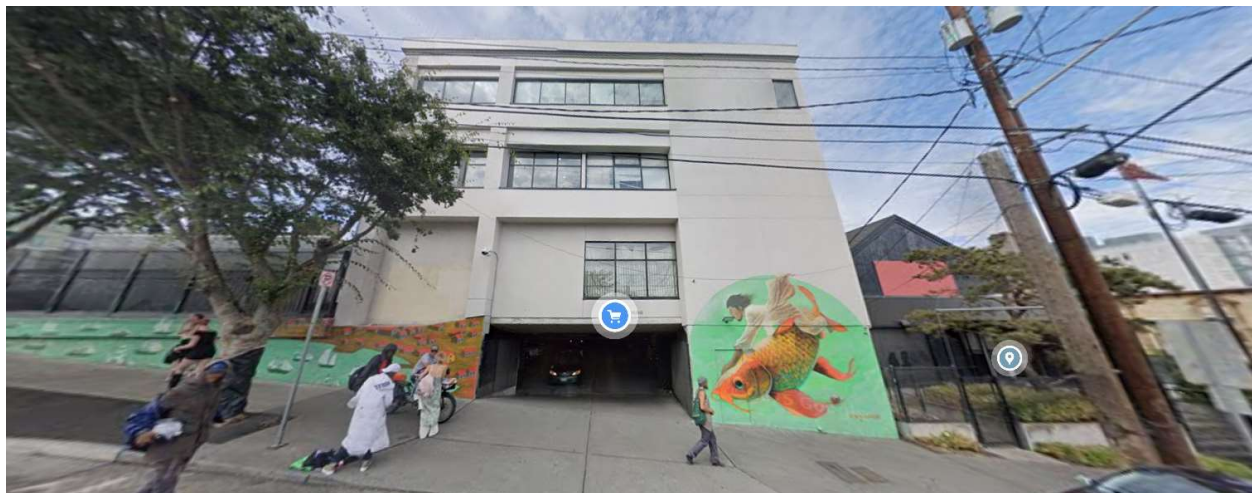
At the street level along 12th Avenue South, the onsite parking spaces are used to showcase and store produce. The outdoor produce display area is temporarily covered with tie-down blue roof tarp, providing shade and protecting the area from the weather.



Existing Bird's-Eye View Along 12th Avenue S.



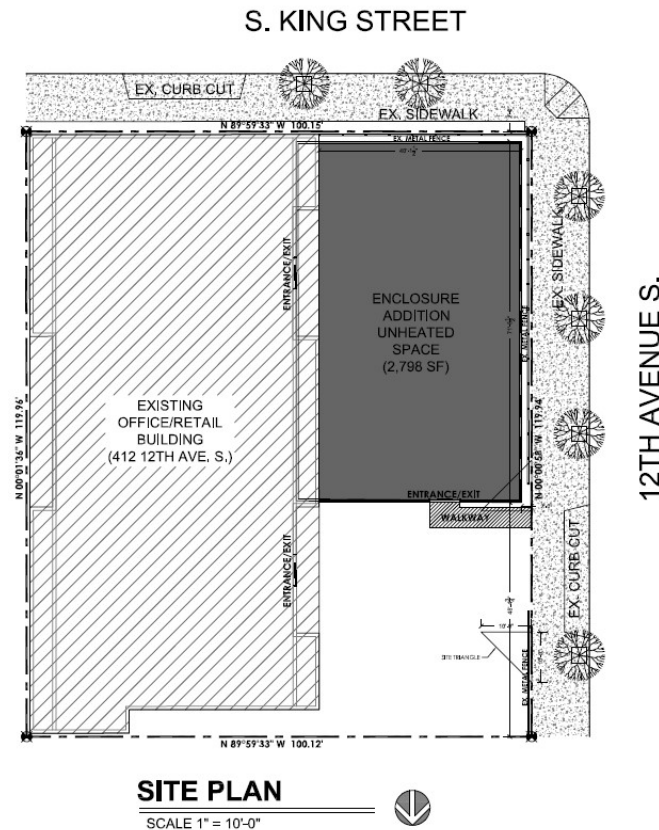
Existing West Facade Along 12th Avenue S.



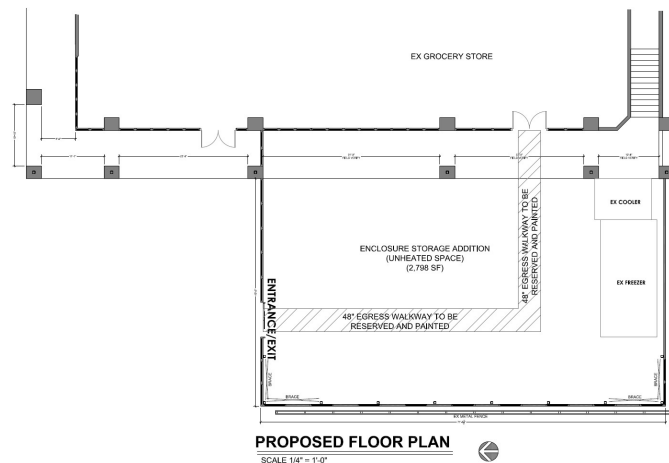
Existing South Façade Along S. King Street

DESCRIPTION OF PROPOSED WORK:

This is an accessory storage addition project for an existing tenant, Hau Hau Market. The use of the current space is M-Occupancy (Mercantile), no change in occupancy. The scope of work includes 2,798 SF unheated enclosed storage with roof cover, and interior finishes.

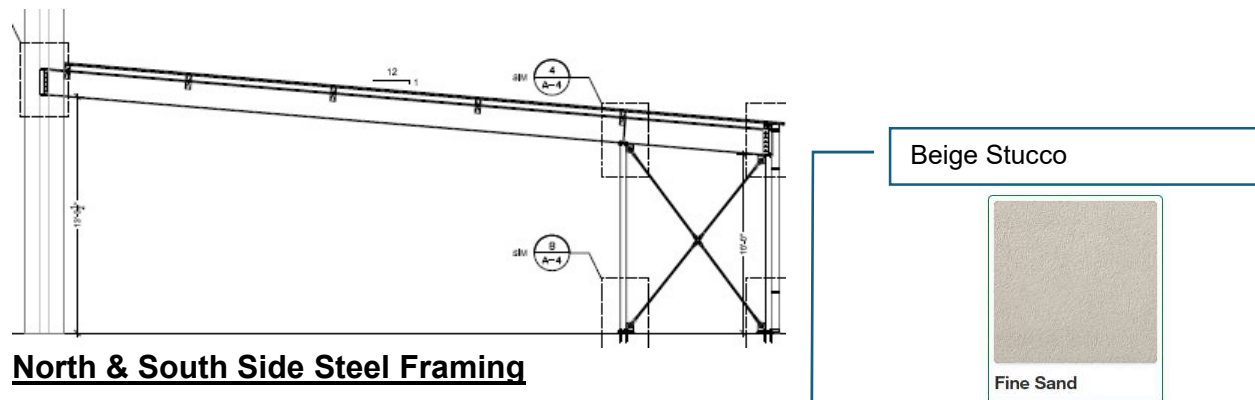
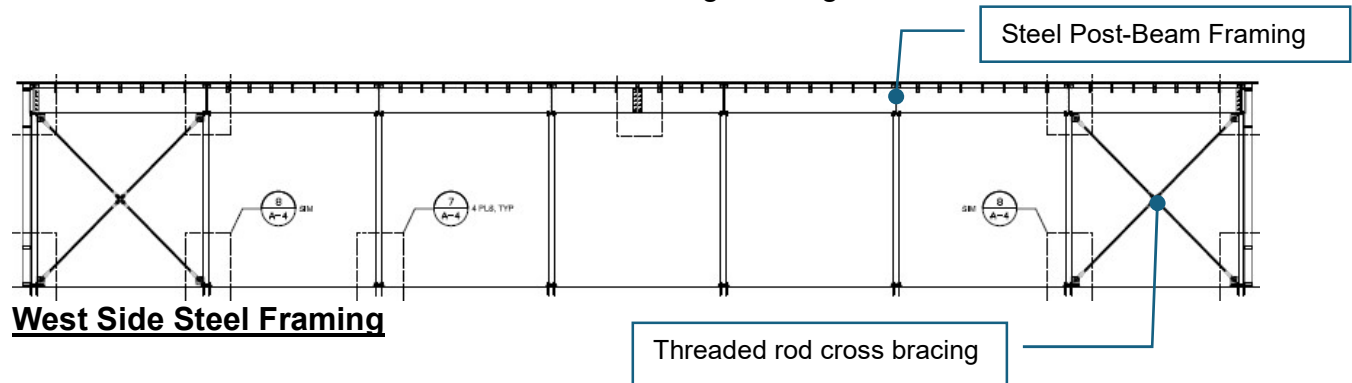


Interior space: The new 2,798 SF enclosed interior space consists of storage space for the produce, weather protection for the existing walk-in freezer and cooler, and a walkway to the grocery store and storage space in the upper level.



Exterior Walls: The 3 sides of the enclosed space will be steel frame posts and beams, with threaded rod cross bracing to resist seismic and wind lateral loadings.

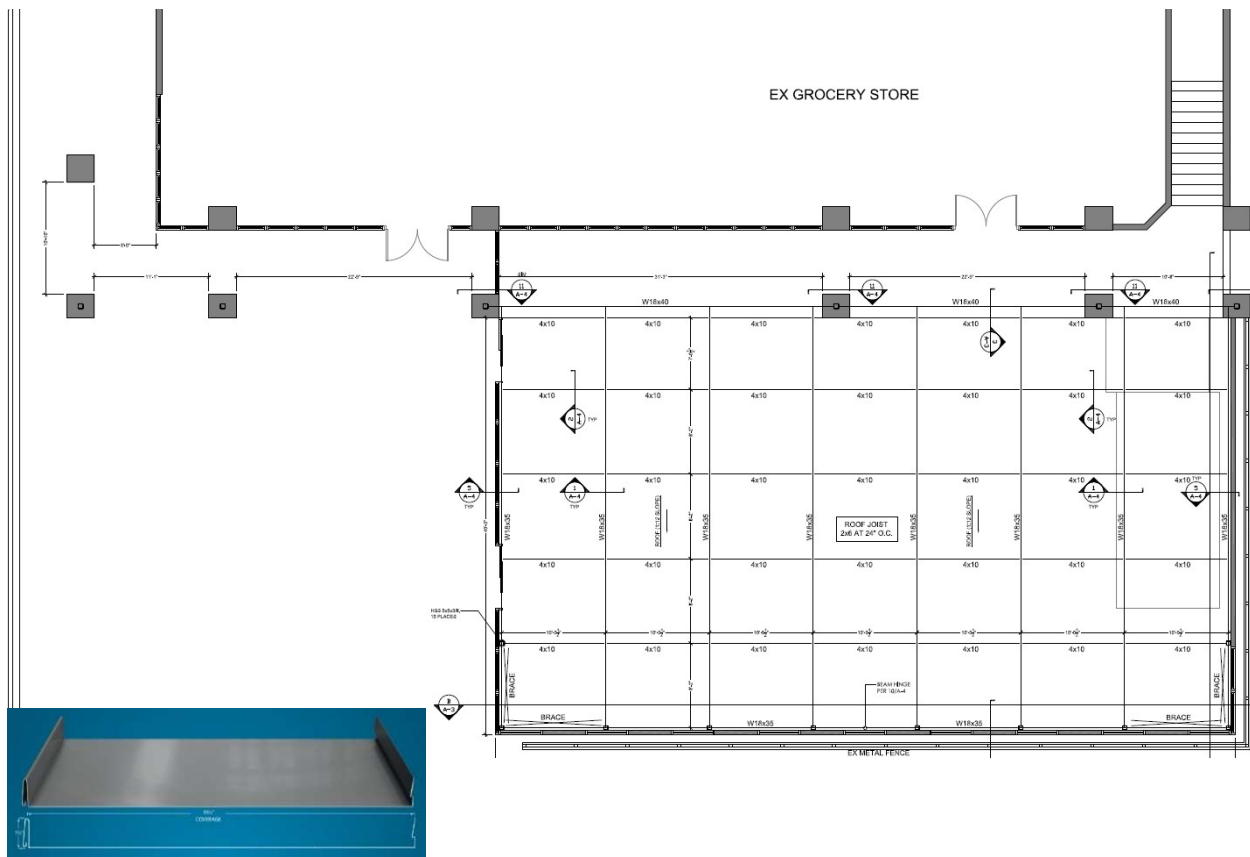
The North side of the storage space, in front of the steel frame, aluminum storefront glazing will be connected from the existing parking concrete floor to the new roof steel framing. On the West side of the storage space facing 12th Avenue South, there will be 50% aluminum storefront glazing and 50% light gauge metal stud wall with stucco finish to match the existing building. And the South side of the storage space facing South King Street, due to the exposed walk-in freezer, only partial aluminum storage glazing will be provided for natural lighting, and the remaining wall will be light gauge metal stud wall with stucco finish to blend in with the existing building.





12th Ave. S. and S. King Street Corner

Roofing: The roof framing consists of steel beams, timber roof purlins and sub purlins, and plywood sheathings. The new storage roof's finish will be standing seam metal roof, to be painted black to blend in with the existing black metal fence.



Standing Seam Metal Roof

PROPOSED WORK SUMMARY:

The proposed 2,798 SF enclosed storage addition to the Hau Hau Market is a perfect complement to the Little Saigon neighborhood. It will provide an inviting and aesthetic space, promote community engagement and culture-based enrichment, and prevent retail theft and street crime. The new enclosed storage addition will also eliminate the existing unpleasant tie-down blue roof tarp.

The building materials, accent color palettes, and finishes were selected to echo the natural textures of the surrounding environment and neighborhood.

This proposed enclosed storage addition project meets the International District Mixed Zone goals and objectives: To maintain and protect the Asian culture; To protect, preserve, and promote small retail and commercial businesses; To encourage the rehabilitation of existing buildings; And to assure new development compatible in scale and character with existing buildings.



Existing Facade



Proposed Facade

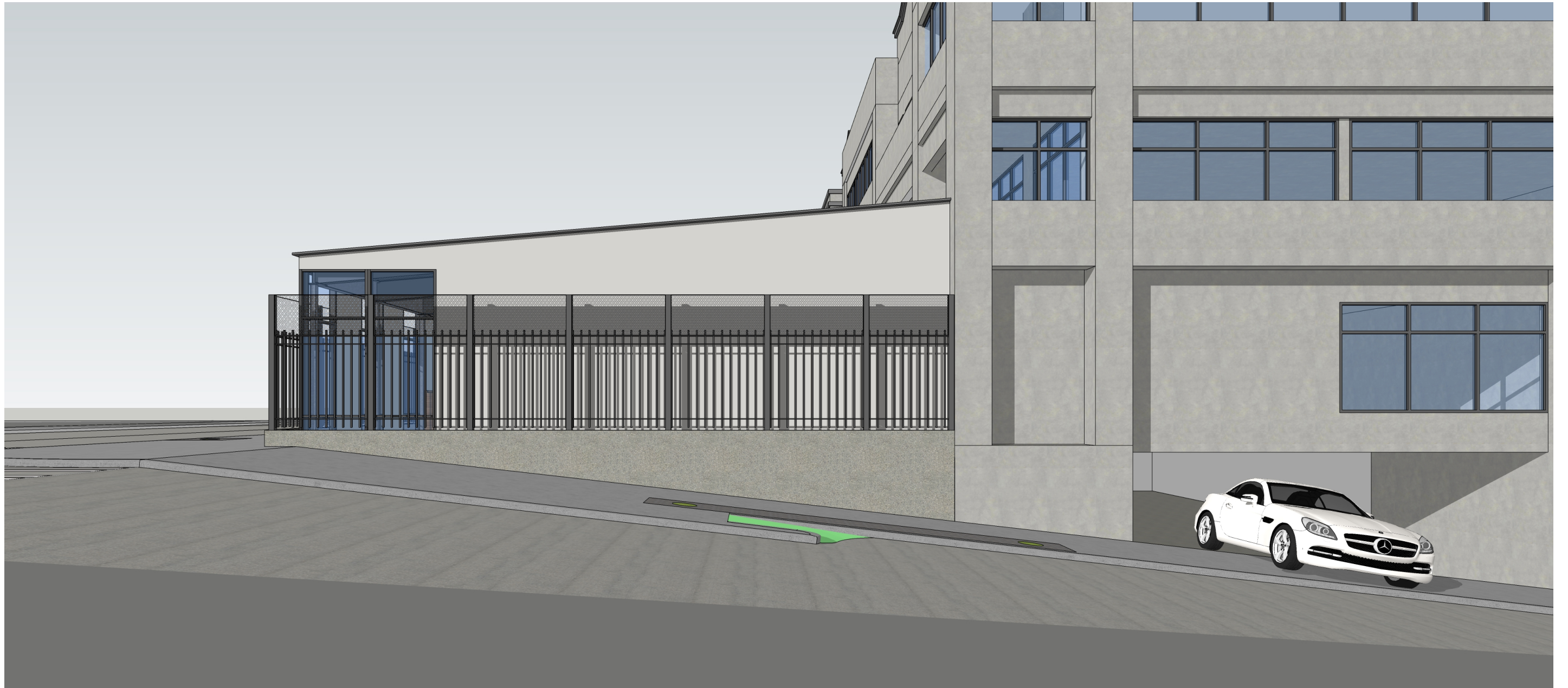
Building 3D Model and Rendering













Building Permit Set of Drawings

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HOW HOW MARKET

412 12TH AVENUE S.

SEATTLE, WA 98144

ADDITION PERMIT SET

GENERAL NOTES

- THE WORK DESCRIBED IN THESE PLANS SHALL COMPLY WITH THE 2021 EDITION OF THE INTERNATIONAL BUILDING CODE, MECHANICAL, FIRE, AND PLUMBING CODES. THE CURRENT WASHINGTON STATE ENERGY, VENTILATION AND INDOOR AIR QUALITY CODES AS AMENDED BY WASHINGTON STATE AND THE LOCAL JURISDICTION.
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS. IN THE EVENT OF CONFLICTS OR CHANGES BETWEEN DETAILS OR BETWEEN THE PLANS AND SPECIFICATIONS NOTIFY THE ARCHITECT IMMEDIATELY.
- SPECIAL INSPECTIONS SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO CONSTRUCTION.
- ALL DIMENSIONS ARE TO FACE OF CONCRETE, MASONRY, FACE OF FRAMING OR COLUMN CENTER LINES UNLESS NOTED OTHERWISE.
- ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED WOOD OF ANY SPECIES OR FOUNDATION GRADE CEDAR OR REDWOOD. ALL MARKED BY AN APPROVED TESTING AGENCY.
- ALL WOOD FORMS USED FOR CONCRETE, IN THE GROUND OR BETWEEN FOUNDATION SILLS AND THE GROUND SHALL BE REMOVED.
- PROVIDE (1) 2A-10BC FIRE EXTINGUISHER (WALL MOUNTED), PER 3000 SQUARE FEET OF FLOOR AREA. MAXIMUM TRAVEL DISTANCE SHALL BE 75 FEET TO AN EXTINGUISHER TO CABINET @ 60" A.F.F. MAX.
- PROVIDE FIRE ALARM AND DETECTION SYSTEMS AS REQUIRED BY THE FIRE MARSHALL.
- ALL DECORATION MATERIALS ARE REQUIRED TO BE MAINTAINED IN A FLAME-RETARDANT CONDITION. POST "NO SMOKING" SIGNS IN ACCORDANCE WITH THE WASHINGTON CLEAN INDOOR AIR ACT H.B. 62.
- PROVIDE BUILDING ADDRESS ON EXTERIOR FACE OF BUILDINGS FIELD LOCATED AS APPROVED BY THE FIRE MARSHALL BUILDING AND FIRE INSPECTORS. LETTERS AND/OR NUMERALS TO BE 12" HIGH MINIMUM. SYMBOLS SHALL BE OF HIGH DENSITY STYROFOAM OR PLASTIC WITH METALLIC OR LAMINATE FACE.
- PROVIDE ILLUMINATED EXIT SIGNS AS INDICATED ON THE REFLECTED CEILING PLAN AND SPECIFICATION.
- AT BUILDING ENVELOPE WHERE INSULATION IS INDICATED ON PLANS, SECTIONS AND DETAILS, PROVIDE A VAPOR BARRIER AT WARM FACE OF INSULATION WITH A FLAME SPREAD OF 25 OR LESS.
- GROUND FLOOR FINISH FLOOR REFERENCE DATUM EQUALS (0'-0"). REFER TO TOPOGRAPHIC SURVEY FOR ACTUAL SITE ELEVATION.
- THE JOB SUPERINTENDENT SHALL MAINTAIN AT THE JOB SHACK A LIST OF THE CERTIFIED WELDERS' PERFORMING WORK ON THE JOB SITE AND A COPY OF THEIR CERTIFICATIONS. INCLUDED ON THE LIST WILL BE THE NAMES, DATE OF EXPIRATION OF CERTIFICATIONS, AND THE TYPE OF WELDING THE INDIVIDUAL IS QUALIFIED TO PERFORM.
- THE JOB SUPERINTENDENT SHALL MAINTAIN AT THE JOB SHACK A LIST OF THE 'SPECIAL INSPECTORS' CONDUCTING INSPECTIONS ON THE PROJECT. THE LIST SHALL INDICATE THE NAME OF THE INSPECTOR, DATES & TIMES PRESENT ON THE JOB SITE, AND TYPES OF INSPECTIONS BEING CONDUCTED.
- NO BUILDING OR PORTION OF A BUILDING SHALL BE OCCUPIED OR USED FOR STORAGE PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. "NO EXCEPTIONS".
- SEPARATE PERMITS ARE REQUIRED FOR PLUMBING, MECHANICAL, ELECTRICAL, UNDERGROUND OR ABOVE GROUND STORAGE TANKS, AND DEMOLITION AND SHALL BE OBTAINED BY THE GENERAL CONTRACTOR.
- GREASE TRAPS/ OIL WATER SEPARATORS REQUIRE SEPARATE INSPECTIONS DURING INSTALLATION & BEFORE COVERING UP.
- ALL REQUESTED INSPECTIONS SHALL BE CALLED IN.
- ALL REQUESTED CHANGES TO THE APPROVED PLANS SHALL BE PREPARED BY THE PROJECT ARCHITECT AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL. COPIES OF SUCH APPROVALS SHALL BE ON THE JOB SITE PRIOR TO COMMENCEMENT OF WORK. CHANGES INCLUDE BUT NOT NECESSARILY LIMITED TO: PROPANE TANKS, ADDITIONAL OPENINGS IN WALLS, EXTERIOR BUILDING MATERIALS, FENCE LOCATIONS, RETAINING WALLS, ROCKERIES, LANDSCAPING, PARKING LOTS, LOADING DOCKS, ETC.
- THE FINAL SIGNED REPORT FROM THE TESTING LAB SHALL BE RECEIVED BY THE BUILDING OFFICIAL PRIOR TO FINAL INSPECTIONS FOR OCCUPANCY.
- "ALL DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A LETTER INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND HAVE BEEN FOUND IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING." IBC SECTION 107.3.4.1.
- NOTE: AT THE TIME OF FINAL INSPECTION, HVAC SYSTEM SHALL BE BALANCED SHOWING THAT MEETS THE CURRENT MINIMUM INDOOR AIR QUALITY CODE. IN ADDITION A PRELIMINARY COMMISSIONING REPORT BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL.
- ALL REQUIRED FIRE HYDRANTS, WATER SUPPLIES AND FIRE DEPARTMENT ACCESS ROADS SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO ANY CONSTRUCTION, IN ACCORDANCE WITH SECTIONS 9013 AND 8704 OF THE UFC. STAMPPIPS SHALL BE INSTALLED AND MADE SERVICEABLE AS REQUIRED BY SECTION 8704.4.3 OF THE UFC.
- ALL REQUIRED HVAC SMOKE DETECTORS SHALL REPORT TO THE SUPERVISORY SIDE OF THE FIRE ALARM PANEL ONLY.
- AS-BUILT DRAWINGS WILL BE REQUIRED PRIOR TO FINAL INSPECTION AND APPROVAL.

PROJECT DATA

USE: S-2, STORAGE
ZONE: DMR/C 75/75-95
SITE AREA: 12,000 SF (0.28 ACRES)
CONSTRUCTION TYPE: V-A OVER IA - SPRINKLER (BASEMENT PARKING ONLY)

EXISTING RETAIL SPACE
RETAIL STORE: 5,782 SF

PROPOSED ADDITION
UNHEATED ENCLOSURE SPACE: 2,798 SF

SETBACKS	REQ'D	EXISTING
FRONT/SOUTH:	0'-0"	NO CHANGE
REAR/NORTH:	0'-0"	NO CHANGE
SIDE/WEST:	0'-0"	NO CHANGE
SIDE/EAST:	0'-0"	NO CHANGE

BUILDING HEIGHT (35'-0" MAX.)	
NORTH ELEVATION:	NO CHANGE
SOUTH ELEVATION:	NO CHANGE
EAST ELEVATION:	NO CHANGE
WEST ELEVATION:	NO CHANGE

PARKING REQUIRED
PARKING SPACE PROVIDED: EXISTING, NO CHANGE

CODE ANALYSIS

IBC EDITION: 2021 SEATTLE BUILDING CODE (SBC)
2021 SEATTLE EXISTING BUILDING CODE (SEBC)
OTHER APPLICABLE CODES: 2021 INTERNATIONAL FIRE CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 UNIFORM PLUMBING CODE
2021 WASHINGTON STATE ENERGY CODE

TYPE OCCUPANCY: S-2, ACCESSORY STORAGE
TYPE OF CONSTRUCTION: TYPE V-A

PROJECT DESCRIPTION: THIS IS AN ACCESSORY STORAGE ADDITION FOR AN EXISTING TENANT. THE USE OF THE CURRENT SPACE IS M-OCCUPANCY (MERCANTILE), NO CHANGE IN OCCUPANCY. THE SCOPE OF WORK INCLUDES EXTERIOR STOREFRONT, ROOF COVER, AND FINISHES.

ENERGY CODE CONSIDERATIONS:
THE PROPOSED ACCESSORY STORAGE SPACE IS UNHEATED, THEREFORE ENERGY CODE DOES NOT APPLY.
A VESTIBULE IS NOT APPLICABLE TO THE PROPOSED ACCESSORY STRUCTURE.

OCCUPANT LOAD, EXIT & PLUMBING REQUIREMENT:

OCCUPANT LOAD (TABLE 1004.1.2)	EXIT WIDTH (IBC 1005)		EXITS (IBC 1006)		PLUMBING FIXTURES	
	AREA	SF	REQUIRED	PROVIDED	REQUIRED	PROVIDED
STORAGE	2,798	9.0	2.0'x32" MIN	60"	(1) EXIT	(1) EXITS

WALL PROTECTION PER CONSTRUCTION TYPE: (IBC-TABLE 601):

STRUCTURAL FRAMES:	1-HOUR FIRE RATING REQUIRED
EXTERIOR BEARING WALLS:	1-HOUR FIRE RATING REQUIRED
INTERIOR BEARING WALLS:	1-HOUR FIRE RATING REQUIRED
EXTERIOR NON BEARING WALLS & PARTITIONS:	0-HOUR FIRE RATING REQUIRED
INTERIOR NON BEARING WALLS & PARTITIONS:	0-HOUR FIRE RATING REQUIRED
FLOOR CONSTRUCTION:	1-HOUR FIRE RATING REQUIRED
ROOF CONSTRUCTION:	1-HOUR FIRE RATING REQUIRED

WALL & OPENING PROTECTION PER SEPARATION: (IBC TABLES 602)

NORTH WALL	NO CHANGE
SOUTH WALL	NO FCHANGE
EAST WALL	NO CHANGE
WEST WALL	NO CHANGE

TENANT NOTE

- A CITY OF SEATTLE BUSINESS LICENSE SHALL BE SECURED PRIOR TO OPENING FOR BUSINESS.

LEGAL DESCRIPTION

TAX PARCEL NUMBERS:
817010-0195

PROPERTY DESCRIPTION:
SYNDICATE ADDITIONS, PLAT BLOCK 2, PLAT LOT 17-18.

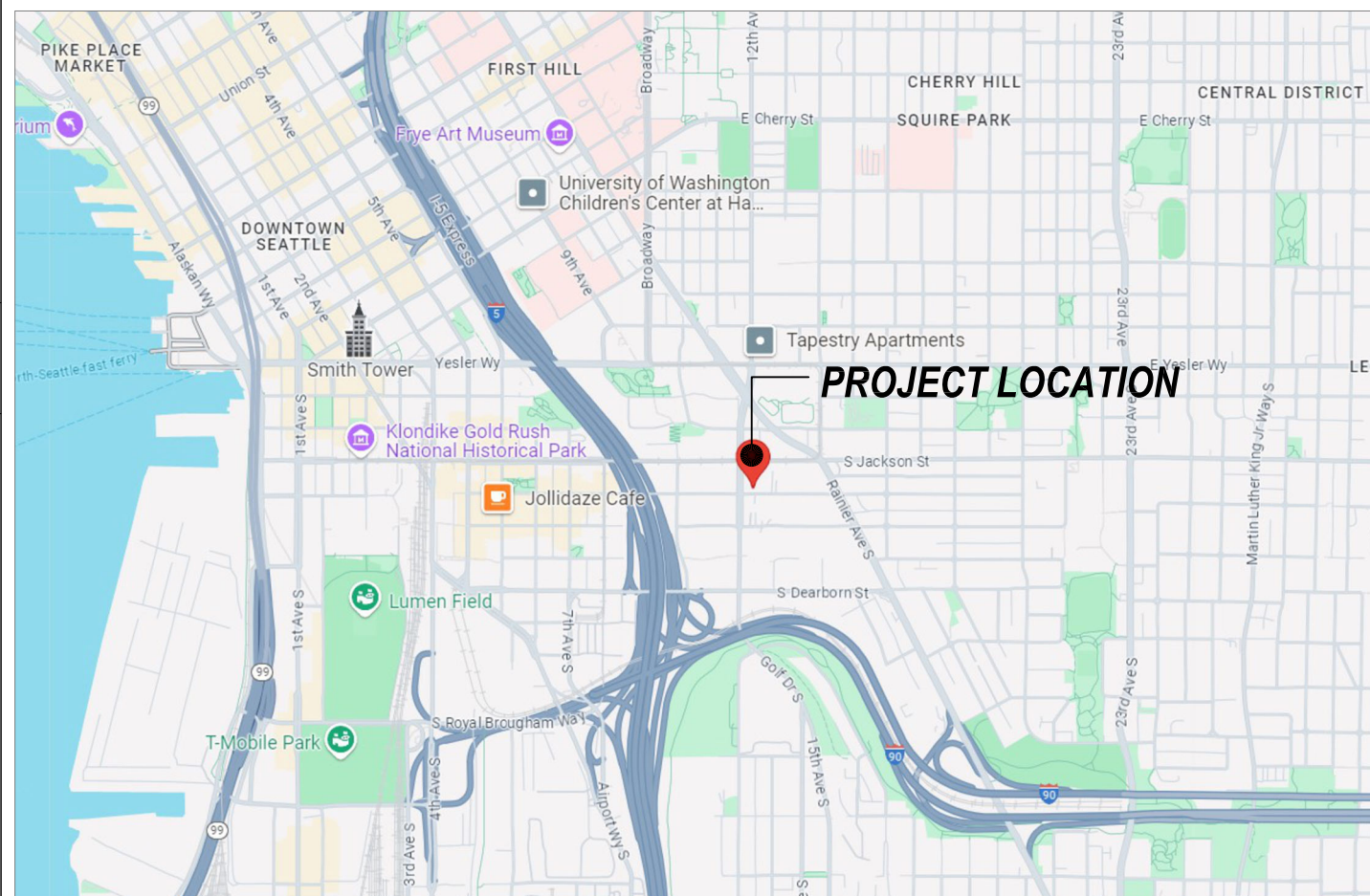
DEFERRED SUBMITTAL

- ☐ FIRE SUPPRESSION PLANS & CALCULATIONS
- ☐ BUILDING PROTECTION
 - ☐ GREASE HOOD
 - ☐ OTHER SPECIAL PROTECTION
- ☐ PLUMBING PLANS
- ☒ FIRE ALARM SYSTEM PLANS AND CALCULATIONS
- ☐ MECHANICAL PLANS & CALCULATIONS (INCLUDING ANY REQUIRED FIRE/SMOKE DAMPERS)
- ☐ ENERGY CODE PLAN REVIEW
- ☐ MECHANICAL
 - ☐ LIGHTING
 - ☐ FIRE RATED ASSEMBLIES:
 - ☐ DOORS AND FRAMES
 - ☐ WINDOWS AND FRAMES
 - ☐ WALLS
 - ☐ FLOOR/CEILINGS
 - ☐ SHAFTS
 - ☐ OTHER PENETRATION PROTECTION
- ☐ TENANT IMPROVEMENT PLANS FOR ALL SUITES
- ☐ OTHER:

ABBREVIATIONS

&	AND	EQ.	EQUAL	O.C.	ON CENTER.
/	ANGLE	EQUIP.	EQUIPMENT	O/	OVER
@	AT	EXIST.	EXISTING	OPP.	OPPOSITE
⌵	CENTERLINE	EXPO.	EXPOSED	PL.	PLATE
⌀	DIAMETER OR ROUND	EXT.	EXTERIOR	PLYWD.	PLYWOOD
⊥	PERPENDICULAR	F.O.I.C.	FURNISHED BY OWNER	P.P.	POWER POLE
#	FOUND OR NUMBER		INSTALLED BY CONTR.	PLAM	PLASTIC LAMINATE
A.B.	ANCHOR BOLT	F.D.	FLOOR DRAIN	R.	RADIUS OR RISER
ACOUS.	ACOUSTICAL	F.E.	FIRE EXTINGUISHER	R.D.	ROOF DRAIN
A.F.F.	ABOVE FINISH FLOOR	F.H.	FIRE HYDRANT	REC.	RECOMMENDED
AGGR.	AGGREGATE	FIN.	FINISH	REF.	REFERENCE
ALUM.	ALUMINUM	FLASH.	FLASHING	REINF.	REINFORCED
ANOD.	ANODIZED	FLR.	FLOOR	REQ'D	REQUIRED
APPROX.	APPROXIMATE	FLUOR.	FLUORESCENT	RM.	ROOM
ARCH.	ARCHITECTURAL	FOUND.	FOUNDATION	S.	SOUTH
ASPH.	ASPHALT	FRM'G	FRAMING	S.C.	SOLID CORE
BD.	BOARD	FT.	FOOT OR FEET	SCHED.	SCHEDULE
BLDG.	BUILDING	FTG.	FOOTING	SHT.	SHEET
BLK.	BLOCK	FURR.	FURRING	SHT'G	SHEATHING
BLK'G	BLOCKING	GA.	GAUGE	SIM.	SIMILAR
BM.	BEAM	GALV.	GALVANIZED	SPEC.	SPECIFICATIONS
BOT.	BOTTOM	G.C.	GENERAL CONTRACTOR	SO.	SQUARE
B.U.R.	BUILT UP ROOF	GL.	GLASS	STD.	STANDARD
CAB.	CABINET	GND.	GROUND	STOR.	STORAGE
C.B.	CATCH BASIN	GR.	GRADE	STRUC.	STRUCTURAL
CEM.	CEMENT	GP.	GROUP	SUSP.	SUSPENDED
CH.	CHANNEL	G.W.B.	GYPSUM WALL BOARD	S & V.	STAIN AND VARNISH
C.J.	CONTROL JOINT	GYP.	GYPSUM	SVC.	SERVICE
CLG.	CEILING	HDWR.	HARDWARE	SYM.	SYMMETRICAL
CLR.	CLEAR	HDCP.	HANDICAP	S/W	SIDEWALK
C.O.	CLEAN OUT	HDWD.	HARDWOOD	T.	TREAD
COL.	COLUMN	H.B.	HOSE BIBB	T.C.	TOP OF CURB
CONC.	CONCRETE	H.C.	HOLLOW CORE	TEL.	TELEPHONE
CONN.	CONNECTION	H.M.	HOLLOW METAL	T & G.	TONGUE AND GROOVE
CONSTR.	CONSTRUCTION	HORIZ.	HORIZONTAL	THK	THICK
CONT.	CONTINUOUS	HT.	HEIGHT	T.O.P.	TOP OF PLATE
C.T.	CERAMIC TILE	INST.	INSTALLATION	T.P.	TOP PAVEMENT
CTR.	CENTER	INSUL.	INSULATION	T.W.	TOP OF WALL
CTSK.	COUNTER SUNK	INT.	INTERIOR	TYP.	TYPICAL
DBL.	DOUBLE	LAM.	LAMINATED	U.B.C.	UNIFORM BUILDING
DEPT.	DEPARTMENT	LB.	POUND	UNF.	UNFINISHED
DET.	DETAIL	LOC.	LOCATION	U.O.N.	UNLESS OTHERWISE
DIA.	DIAMETER	MATL.	MATERIAL		NOTED
DIM.	DIMENSION	MAX.	MAXIMUM		
DN.	DOWN	MFR.	MANUFACTURER	VERT.	VERTICAL
DR.	DOOR	M.H.	MANHOLE	W.	WEST
D.S.	DOWNSPOUT	MECH.	MECHANICAL	W/	WITH
DWG.	DRAWING	MIN.	MINIMUM	WD.	WOOD
E.	EAST	MISC.	MISCELLANEOUS	WDW.	WINDOW
E.A.	EACH	MTD.	MOUNTED	W/O	WITHOUT
E.I.F.S.	EXTERIOR INSULATION	MTL.	METAL	W.P.	WATERPROOF
	FINISH SYSTEM	N.	NORTH	W.R.	WATER RESISTANCE
E.J.	EXPANSION JOINT	N.L.C.	NOT IN CONTRACT	WSCT.	WAINSCOT
ELEV.	ELEVATION	NO.	NUMBER	WT.	WEIGHT
ELEC.	ELECTRICAL				
ELEV.	ELEVATION				
ENCL.	ENCLOSURE				
E.P.	ELECTRICAL PANEL				

VICINITY MAP



SHEET INDEX

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G-3 GENERAL STRUCTURAL NOTES
G-4 GENERAL STRUCTURAL NOTES

A-1 PROPOSED FLOOR PLAN
A-2 PROPOSED ROOF PLAN
A-3 BUILDING ELEVATIONS AND SECTIONS
A-4 STANDARD DETAILS
A-5 STANDARD DETAILS
A-6 STOREFRONT AND WINDOW DETAILS
A-7 EXISTING FACADE PHOTOS AND FENCE SECTION

LEGEND

	SECTION MARKER		CENTER LINE
	SECTION/DETAIL	----	PROPERTY LINE
	INTERIOR ELEVATION MARKER	40	NEW CONTOUR
	EXTERIOR ELEVATION MARKER	40	EXISTING CONTOUR
	ELEVATION MARKER	± 3.0	FINISH GRADE ELEVATION
	NORTH ARROWS	± 3.0	TOP OF CURB
	ROOM SYMBOL ROOM NAME ROOM NUMBER SQUARE FOOTAGE	± 3.0	TOP OF PAVEMENT
	GRID MARKERS LETTERS IN ONE DIRECTION NUMBERS IN THE OTHER		
	WALL SYMBOL WALL IDENTIFICATION		
	WINDOW/DOOR SYMBOL WINDOW/DOOR IDENTIFICATION		
	REVISION SYMBOL REVISION NUMBER		

View Name
 View Scale

TLS DESIGN-BUILD LLC
TEL: 206-853-5728
QUYENSEATTLE@GMAIL.COM

HOW HOW MARKET
412 12TH AVENUE S.
SEATTLE WA 98144

COVER SHEET

REVISIONS:

CADD FILE:

DATE: 10-29-2024

DRAWN BY: QN

CHECKED BY:

G-1

PROJECT NAME: HOW HOW MARKET

PROPERTY OWNER: GUO INVESTEMENTS LLC

SITE ADDRESS:
412 12TH AVENUE S. SEATTLE, WA 98144

LEGAL DESCRIPTION
SYNDICATE ADDITIONS, PLAT BLOCK 2, PLAT LOT 17-18.

PARCEL
817010-0195

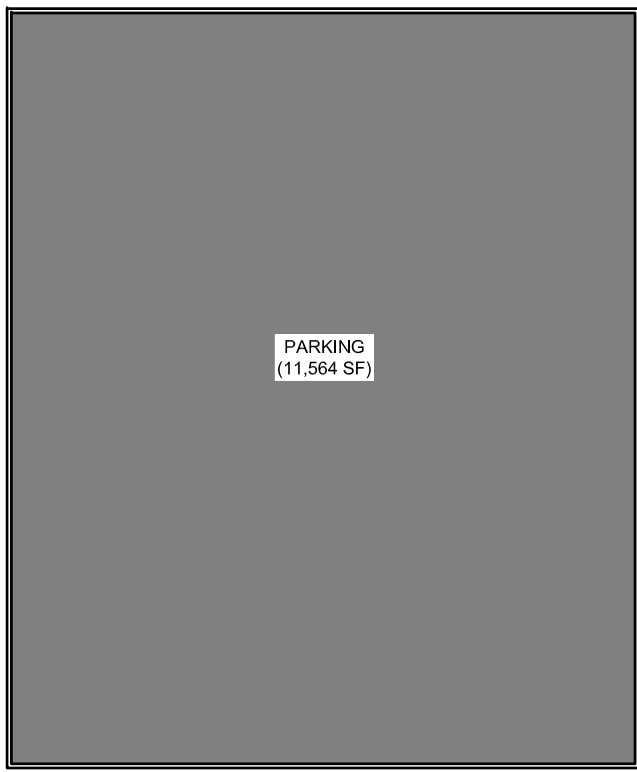
ZONE
DMR/C 75/75-95

LOT AREA
12,000 SF (0.28 ARCE)

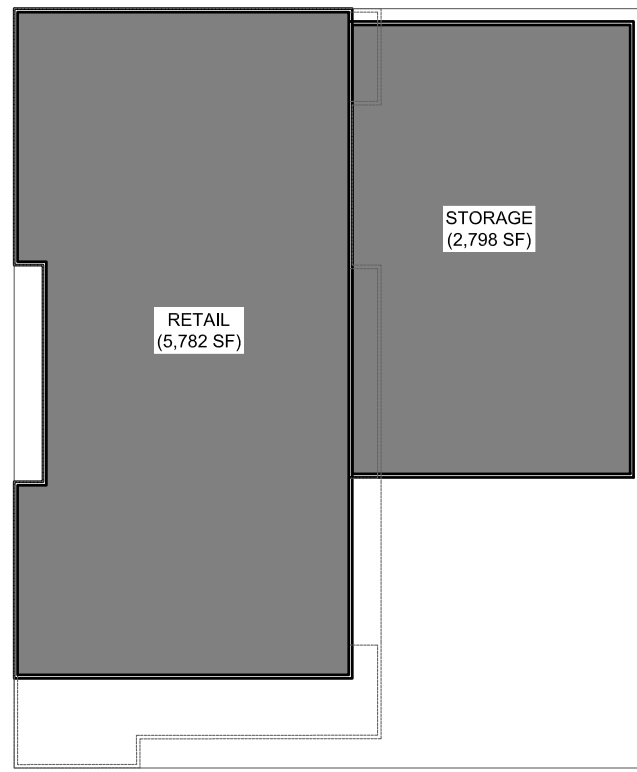
FAR CALCULATIONS

LEVEL	AREA (SF)	EXEMPT (SF)*	CODE REF.	CHARGEABLE AREA (SF)
BASEMENT, PARKING	11,564	11,564	SMC23.49.011.B.1K	0
LEVEL 1, RETAIL	5,782			5,782
LEVEL 1, STORAGE	2,798			2,798
LEVEL 2	5,782			5,782
LEVEL 3	5,782			5,782
TOTAL	31,708			20,144

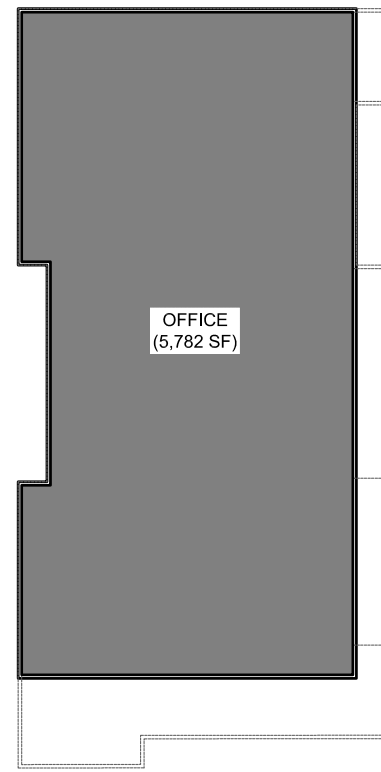
LOT AREA:
BASE F.A.R. (2.5) = 12,000 SF
Maximum F.A.R. (4.5) = 30,000 SF
F.A.R. = 135,000 SF
1.68



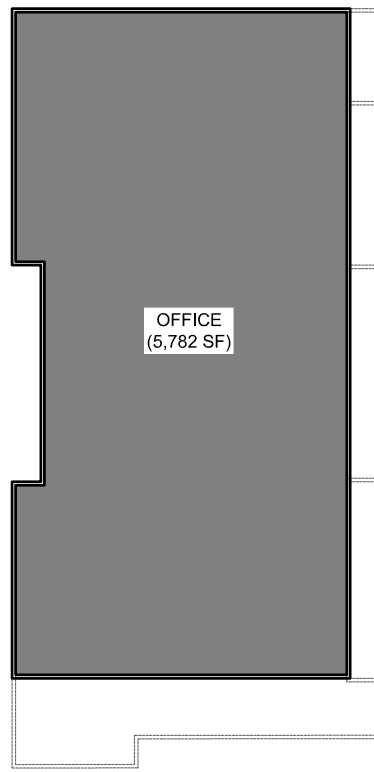
BASEMENT LEVEL



LEVEL 1

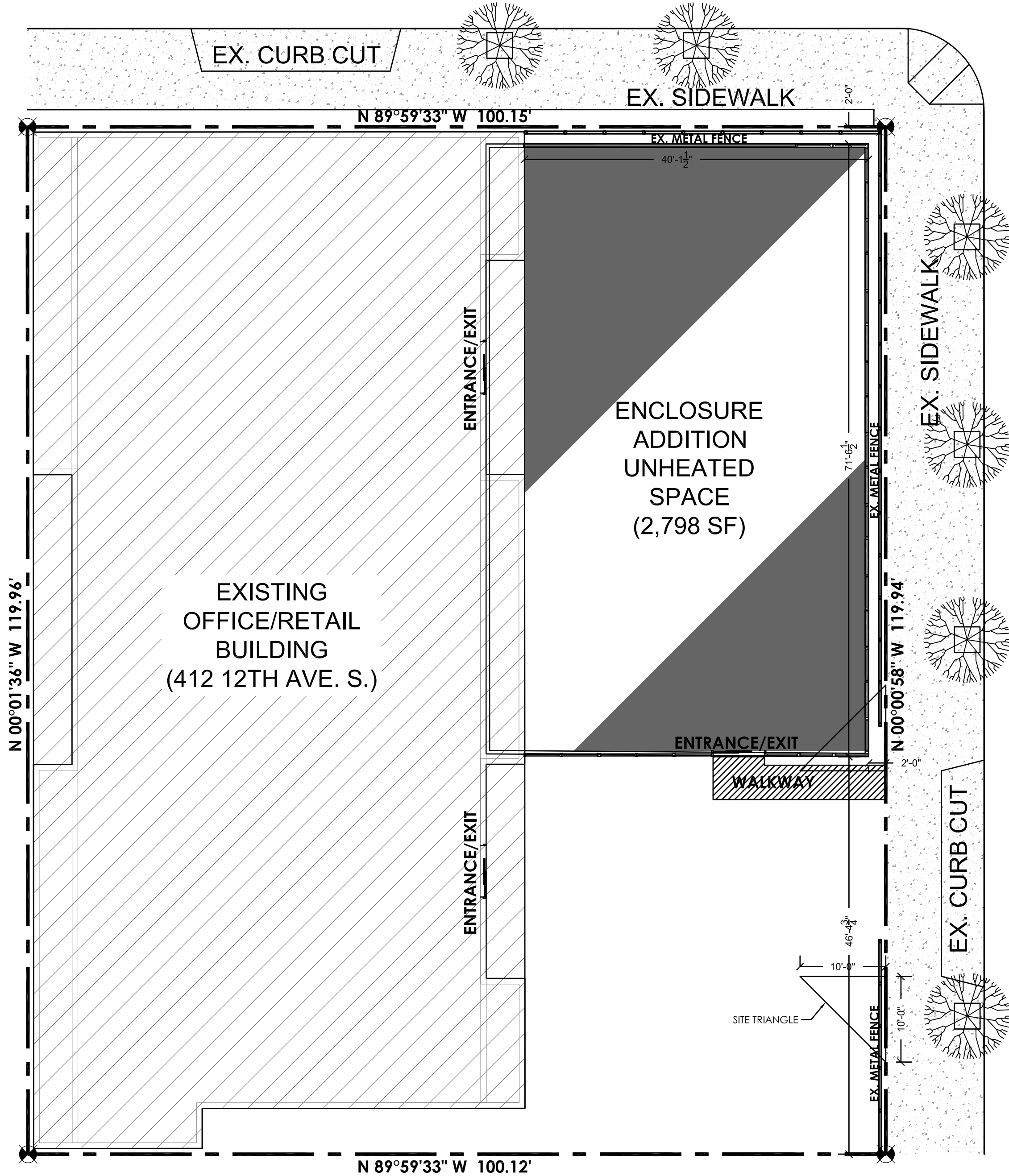


LEVEL 2



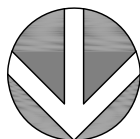
LEVEL 3

S. KING STREET



SITE PLAN

SCALE 1" = 10'-0"



12TH AVENUE S.

TLS DESIGN-BUILD LLC
TEL: 206-853-5728
QUYENSEATTLE@GMAIL.COM

HOW HOW MARKET
412 12th AVENUE S.
SEATTLE, WA 98144

SITE PLAN

REVISIONS:

CADD FILE:

DATE: 10-29-2024
DRAWN BY: QN
CHECKED BY:

G-2

I:\Work\Projects_2024\How Hou 412 12th Ave S Seattle, Design\How Hou_Permit_Sel.dwg, 02-02-24, 9:25pm, quyen.1

GENERAL STRUCTURAL NOTES

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE INTERNATIONAL BUILDING CODE (IBC) (2021 EDITION).
2. DESIGN LOADING CRITERIA
- | | |
|------------------------------------|---|
| PHOTOVOLTAIC (PV) PANEL LOAD | 5 PSF |
| RETAIL FLOOR LIVE LOAD..... | 100 PSF |
| ENVIRONMENTAL LOADS | |
| SNOW | 25 PSF |
| WIND | METHOD - DIRECTIONAL PROCEDURE
Kzt=1.00, GCp=0.18, 100 MPH (RISK CATEGORY II), EXPOSURE "C"
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
LATERAL SYSTEM: STEEL ORDINARY CONCENTRICALLY BRACE FRAME
SDC D, I=1.0, S=1.408, S=0.491, S _{DS} =1.126, S _{0.2} =0.592, R= 3.25, Ω =2.0,
C _s = 3.25, C _e = 0.347, V ₉₈ = 14.7 KIPS. |
| EARTHQUAKE | |
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. PRIMARY STRUCTURAL ELEMENTS NOT DIMENSIONED ON THE STRUCTURAL PLANS AND DETAILS SHALL BE LOCATED BY THE ARCHITECTURAL PLANS AND DETAILS. VERTICAL DIMENSION CONTROL IS DEFINED BY THE ARCHITECTURAL WALL SECTIONS, BUILDING SECTIONS, AND PLANS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN BOTH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. CONFORM TO ASCE 37-02 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION."
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.
7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
9. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERRECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

10. ALLOWABLE SOIL PRESSURE AND LATERAL EARTH PRESSURE ARE ASSUMED AND THEREFORE MUST BE VERIFIED BY A QUALIFIED SOILS ENGINEER OR APPROVED BY THE BUILDING OFFICIAL. IF SOILS ARE FOUND TO BE OTHER THAN ASSUMED, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.
- FOUNDATION SHALL BEAR ON FIRM, UNDISTURBED EARTH AT LEAST 18" BELOW ADJACENT FINISHED GRADE. FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE, UNO.
- BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE.

ALLOWABLE SOIL PRESSURE	2,000 PSF
LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	45 PCF/35 PCF
SEISMIC SURCHARGE	7H
PASSIVE PRESSURE	300 PCF
COEFFICIENT OF FRICTION	0.40

11. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 318 AND ACI 301, INCLUDING TESTING PROCEDURES. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF f_c = 3,000 PSI AND MIX SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. STRUCTURAL DESIGN IS BASED ON A CONCRETE STRENGTH OF f_c = 2,500 PSI, THEREFORE NO CONCRETE STRENGTH TESTING REQUIRED.
- ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIRENTRAINING AGENT CONFORMING TO ASTM C260, C494, AND C618. TOTAL AIR CONTENT FOR FROSTRESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-19, TABLE 4.4.1.
12. THE MINIMUM AMOUNTS OF CEMENT MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE STRUCTURAL ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER AND ADMIXTURES AS WELL AS THE WATER CEMENT RATIO, SLUMP, CONCRETE YIELD AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH ACI 318-19 SECTION 5.3. THE USE OF A PERFORMANCE MIX REQUIRES BATCH PLANT INSPECTION, THE COST OF WHICH SHALL BE PAID BY THE GENERAL CONTRACTOR. REVIEW OF MIX SUBMITTALS BY THE ENGINEER OF RECORD INDICATES ONLY THAT INFORMATION PRESENTED CONFORMS GENERALLY WITH CONTRACT DOCUMENTS. CONTRACTOR OR SUPPLIER MAINTAINS FULL RESPONSIBILITY FOR SPECIFIED PERFORMANCE.
13. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, f_y = 60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, f_y = 40,000 PSI. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064. SPIRAL REINFORCEMENT SHALL BE DEFORMED WIRE CONFORMING TO ASTM A615, GRADE 60, f_y = 60,000 PSI.
14. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 315-99 AND 318-19. LAP ALL CONTINUOUS REINFORCEMENT #6 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318-19, CLASS B. LAP ADJACENT WATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.
15. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
- | | |
|--|---|
| FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH | 3" |
| FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER) | 2" |
| FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#5 BARS OR SMALLER) | 1-1/2" |
| COLUMN TIES OR SPIRALS AND BEAM STIRRUPS | 1-1/2" |
| SLABS AND WALLS (INT FACE) | GREATER OF BAR DIAMETER PLUS 1/8" OR 3/4" |

16. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED USING "SET-XP" EPOXY ADHESIVE AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT ESR-2508. SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED FOR REVIEW WITH CURRENT ICC REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES. SPECIAL INSPECTION OF INSTALLATION IS REQUIRED. RODS SHALL BE ASTM A-36, UNO.
17. HEAVY DUTY THREADED CONCRETE ANCHORS SPECIFIED ON THE DRAWINGS SHALL BE "TITAN HD SCREW ANCHOR" AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY. INSTALL IN STRICT ACCORDANCE WITH ICC-ES REPORT ESR-2713, INCLUDING MINIMUM EMBEDMENT AND EDGE DISTANCE REQUIREMENTS. SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED FOR REVIEW WITH ICC REPORTS INDICATING EQUIVALENT OR GREATER LOAD CAPACITIES.
18. EXPANSION BOLTS INTO CONCRETE AND CONCRETE MASONRY UNITS SHALL BE "STRONG-BOLT" ANCHORS AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY AND INSTALLED IN STRICT CONFORMANCE TO ICC-ES REPORT ESR-1771, INCLUDING MINIMUM EMBEDMENT REQUIREMENTS. BOLTS INTO CONCRETE MASONRY OR BRICK MASONRY UNITS SHALL BE INTO FULLY GROUTED CELLS. SPECIAL INSPECTION IS REQUIRED FOR ALL EXPANSION BOLT INSTALLATION.
19. DRIVE PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE (PDWPL- 300MG, 0.145" DIAMETER, UNO) AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY OR AN APPROVED EQUIVALENT IN STRENGTH AND EMBEDMENT. INSTALL IN STRICT ACCORDANCE WITH ICCES REPORT ESR-2138. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1", UNO. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE EDGE.

20. ALL 2x LUMBER SHALL BE KILN DRIED OR MC-19, AND ALL LUMBER SHALL BE GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO 17. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:
- | | |
|--------------------------------------|---|
| JOISTS (2x AND 3x MEMBERS) | MINIMUM BASE VALUE, F _b = 900 PSI |
| AND BEAMS: DOUGLAS FIR-LARCH NO 2 | |
| (4x MEMBERS) | MINIMUM BASE VALUE, F _b = 900 PSI |
| DOUGLAS FIR-LARCH NO 2 | |
| BEAMS: (6x AND LARGER) | MINIMUM BASE VALUE, F _b = 875 PSI |
| DOUGLAS FIR-LARCH NO 2 | |
| POSTS: (4x MEMBERS) | MINIMUM BASE VALUE, F _e = 1350 PSI |
| DOUGLAS FIR-LARCH NO 2 | |
| (6x AND LARGER) | MINIMUM BASE VALUE, F _e = 600 PSI |
| HEM-FIR NO 2 OR SPRUCE-PINE-FIR NO 2 | |
| STUDS, PLATES AND MISC FRAMING: | |

21. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND ANSI/AITC STANDARDS. EACH MEMBER SHALL BEAR AN AITC OR APA-EWS IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC OR APA-EWS CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, F_b = 2,400 PSI, F_v = 265 PSI. ALL CANTILEVERED AND MULTI-SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, F_b = 2400 PSI, F_v = 265 PSI. CAMBER ALL SIMPLE SPAN GLULAM BEAMS TO 5,000' RADIUS, UNO. GLUED LAMINATED COLUMNS SHALL BE DOUGLAS FIR COMBINATION 3, L2D GRADE, F_c = 2300 PSI, F_b = 2000 PSI, E = 1900 KSI.
22. MANUFACTURED LUMBER, PSL, LVL, AND LSL, SHALL BE MANUFACTURED UNDER A PROCESS APPROVED BY THE NATIONAL RESEARCH BOARD. EACH PIECE SHALL BEAR A STAMP OR STAMPS NOTING THE NAME AND PLANT NUMBER OF THE MANUFACTURER, THE GRADE, THE NATIONAL RESEARCH BOARD NUMBER, AND THE QUALITY CONTROL AGENCY. ALL PSL, LVL, AND LSL LUMBER SHALL BE MANUFACTURED IN ACCORDANCE WITH ICC-ES REPORT ESR-1387 USING DOUGLAS FIR VENEER GLUED WITH A WATERPROOF ADHESIVE MEETING THE REQUIREMENTS OF ASTM D2559 WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBER. THE MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- | | | | |
|-------------------|---------------------------|--------------|--------------------------|
| PSL (2.2E) | F _b = 2900 PSI | E = 2200 KSI | F _v = 290 PSI |
| LVL (2.0E) | F _b = 2600 PSI | E = 2000 KSI | F _v = 285 PSI |
| LSL (1.55E) | F _b = 2325 PSI | E = 1550 KSI | F _v = 310 PSI |
| PSL COLUMN (1.8E) | F _e = 2900 PSI | E = 1800 KSI | F _v = 190 PSI |

- DESIGN SHOWN ON PLANS IS BASED ON LUMBER MANUFACTURED BY THE TRUSS-JOIST CORPORATION. ALTERNATE MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH MEMBERS PROVIDED.
- MANUFACTURED LUMBER PRODUCTS SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%. EXCESSIVE DEFLECTIONS MAY OCCUR IF MOISTURE CONTENT EXCEEDS THIS VALUE.
23. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE TRUSS-JOIST CORPORATION. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE JOIST HANGERS AND OTHER HARDWARE MAY BE SUBSTITUTED FOR ITEMS SHOWN PROVIDED THEY HAVE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. ALL JOIST HANGERS AND OTHER HARDWARE SHALL BE COMPATIBLE IN SIZE WITH PLYWOOD WEB JOIST PROVIDED.
24. PREFABRICATED TIMBER TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH ANSI/TPI 1-2022 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS. WOOD TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES (MITEK, ITW OR OTHER APPROVED TRUSS PLATE MANUFACTURER) UNLESS OTHERWISE NOTED. LOADING SHALL BE AS FOLLOWS:

- ROOF LOADING:
- TOP CHORD LIVE LOAD IN ACCORDANCE WITH CRITERIA SECTION (SNOW OR ROOF LIVE LOAD, SEE DESIGN LOADING CRITERIA). BOTTOM CHORD LIVE LOAD IN ACCORDANCE WITH CRITERIA SECTION (ATTIC LOAD)
- TOP CHORD DEAD LOAD ----- 7 PSF (COMBINE WITH SUPERIMPOSED DEAD LOAD)
- BOTTOM CHORD DEAD LOAD ----- 5 PSF
- BOTTOM CHORD ATTIC LOAD ----- IRC TABLE R301.5
- WIND UPLIFT (TOP CHORD) ----- 15 PSF

- FLOOR LOADING:
- IN ACCORDANCE WITH PLAN NOTES AND DESIGN LOADING CRITERIA.
- SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. SUBMITTED DOCUMENTS SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON.
25. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS-1 OR PS-2. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD. FLAT ROOF SHEATHING SHALL BE 3/4" T&G (NOMINAL) WITH SPAN RATING 48/24
- FLOOR SHEATHING SHALL BE 3/4" T&G (NOMINAL) WITH SPAN RATING 48/24
- WALL SHEATHING SHALL BE 1/2" OR 7/16" (NOMINAL) WITH SPAN RATING 24/0
- REFER TO WOOD FRAMING NOTES BELOW FOR TYPICAL NAILING REQUIREMENTS.

26. ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY.
27. PRESSURE TREATED WOOD (INCLUDES PRESERVATIVE AND FIRE TREATED) SHALL BE TREATED PER AWWA STANDARDS. PRESSURE TREATED WOOD FOR ABOVE GROUND USE SHALL BE TREATED TO RETENTION OF 0.25 PCF. WOOD IN CONTINUOUS CONTACT WITH FRESH WATER OR SOIL SHALL BE TREATED TO A RETENTION OF 0.40 PCF. SODIUM BORATE (SBX) TREATED WOOD SHALL NOT USED WHERE EXPOSED TO WEATHER. FASTENERS WITHOUT AMMONIA IN DIRECT CONTACT WITH ACQ-A (UP TO A RETENTION LEVEL OF 0.40 PCF), CBA-A (UP TO A RETENTION LEVEL OF 0.41 PCF), CA-B (UP TO A RETENTION LEVEL OF 0.21 PCF), SHALL BE G185 OR A185 HOT DIPPED OR CONTINUOUS HOT-GALVANIZED PER ASTM A653. FASTENERS AND TIMBER CONNECTORS WITH AMMONIA IN DIRECT CONTACT WITH ACQ-A (OVER A RETENTION LEVEL OF 0.40 PCF), CBA-A (OVER A RETENTION LEVEL OF 0.41 PCF), CA-B (OVER A RETENTION LEVEL OF 0.21 PCF), OR WITH ACZA TREATED WOOD SHALL BE TYPE 304 OR 316 STAINLESS STEEL.
28. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-2015. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- ALL 2x JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS. ALL TJ JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS. ALL DOUBLE-JOIST BEAMS SHALL BE CONNECTED TO FLUSH BEAMS WITH "MIU" SERIES JOIST HANGERS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER.
- ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

29. WOOD FASTENERS
- A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:
- | SIZE | TYPE | LENGTH | DIAMETER |
|------|--------|--------|----------|
| 8d | COMMON | 2-1/2" | 0.131" |
| 10d | GUN | 3" | 0.131" |
| 12d | GUN | 3-1/4" | 0.131" |
| 16d | GUN | 3-1/2" | 0.131" |
- B. IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS, THEY SHALL SUBMIT NAIL SPECIFICATIONS TO THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.
- C. NAILS - PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED.
- D. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG BOLTS BEARING ON WOOD. INSTALLATION OF LAG SCREWS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (2012 EDITION) WITH A LEAD BORE HOLE OF 60-70% OF THE SHANK DIAMETER. LEAD HOLES ARE NOT REQUIRED FOR 3/8" AND SMALLER LAG SCREWS. BOLT HOLES SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE BOLT DIAMETER. HOLES SHALL BE ACCURATELY ALIGNED IN MAIN MEMBERS AND SIDE PLATES/MEMBERS. BOLTS SHALL NOT BE FORCIBLY DRIVEN.
- E. SDS SERIES WOOD SCREWS CALLED OUT ON PLAN SHALL BE "SIMPSON STRONG-DRIVE" WOOD SCREWS BY SIMPSON COMPANY, AND INSTALLED IN STRICT ACCORDANCE TO ICC-ES REPORT ESR-2236. EQUIVALENT SCREWS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. LAG SCREWS ARE NOT AN EQUIVALENT SUBSTITUTION.

30. WOOD FRAMING NOTES - THE FOLLOWING APPLY UNLESS NOTED OTHERWISE ON THE PLANS:
- A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE IBC, THE AITC "TIMBER CONSTRUCTION MANUAL", AND THE A&P&A "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION". MINIMUM NAILING, SHALL CONFORM TO TABLE 2304.9.1. OF THE IBC, UNO. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
- B. WALL FRAMING: REFER TO ARCHITECTURAL DRAWINGS FOR THE SIZE OF ALL WALLS. ALL STUDS SHALL BE SPACED AT 16"oc, UNO. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS, AND AT BEAM OR HEADER BEARING LOCATIONS. TWO 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS THRU STRUCTURAL WALLS, UNO. NAIL MULTI-MEMBER HEADERS WITH TWO ROWS 10d AT 12"oc. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS SOLID BLOCKING AT MID-HEIGHT OF ALL STUD WALLS OVER 10'-0" IN HEIGHT.
- ALL WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE AND BOTTOM PLATE TO EACH STUD WITH THREE 10d NAILS. FACE NAIL DOUBLE TOP PLATES WITH 10d AT 12"oc and LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE TWELVE 10d NAILS AT 4"oc EACH SIDE OF A JOINT. AT TOP PLATE INTERSECTIONS PROVIDE THREE 10d FACE NAILS.
- ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH TWO ROWS OF 10d NAILS AT 16"oc, OR ATTACHED TO CONCRETE BELOW WITH 5/8" DIAMETER ANCHOR BOLTS AT 4'-0"oc EMBEDDED 7" MINIMUM, UNO. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PLATE SECTION WITH ONE BOLT LOCATED NOT MORE THAN 12" OR LESS THAN 4'-1/2" FROM EACH END OF THE PLATE SECTION. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH TWO ROWS OF 10d AT 16"oc. UNLESS NOTED OTHERWISE, GYPSUM WALLBOARD SHALL BE FASTENED TO THE INTERIOR SURFACE OF ALL STUDS AND PLATES WITH #6 x 1-1/4" TYPE S OR W SCREWS AT 8"oc. UNLESS NOTED OTHERWISE, 1/2" (NOMINAL) APA RATED SHEATHING (SPAN RATING 24/0) SHALL BE NAILED TO ALL EXTERIOR SURFACES WITH 8d NAILS AT 6"oc AT PANEL EDGES AND TOP AND BOTTOM PLATES (BLOCK UNSUPPORTED EDGES) AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8d NAILS AT 12"oc. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND PANEL ENDS.

- C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS, UNO. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. TOENAIL JOISTS TO SUPPORTS WITH THREE 10d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI-JOIST BEAMS TOGETHER WITH TWO ROWS 10d AT 12"oc. TOENAIL RIM JOIST TO TOP PLATE WITH 10d AT 8"oc. TOENAIL BLOCKING BETWEEN JOISTS TO TOP PLATE WITH THREE 10d NAILS. UNLESS NOTED OTHERWISE ON THE PLANS, PLYWOOD ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND WALLS AS SHOWN ON NAILS TO FRAMED PANEL EDGES, STRUTS AND OVER NAILS TO FRAMED PANEL EDGES AND AT 12"oc TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 10d AT 12"oc, UNO.

31. NOTCHES AND HOLES IN WOOD FRAMING:
- A. SAWN LUMBER JOISTS AND RAFTERS: NOTCHES AT THE ENDS OF JOISTS SHALL NOT EXCEED 1/4 THE JOIST DEPTH. NOTCHES IN THE TOP OR BOTTOM OF JOISTS SHALL NOT EXCEED 1/6 THE JOIST DEPTH, BE LONGER THAN 1/3 THE JOIST DEPTH, OR BE LOCATED IN THE MIDDLE 1/3 OF SPAN. HOLES SHALL NOT BE WITHIN 2" OF THE TOP OR BOTTOM OF THE JOIST AND THE DIAMETER SHALL NOT EXCEED 1/3 THE JOIST DEPTH. SPACING BETWEEN HOLES SHALL BE A MINIMUM OF (2)TIMES THE DIAMETER OF THE LARGEST HOLE OR 2" AND SHALL BE LOCATED A MINIMUM OF 2" FROM ANY NOTCH. B. EXTERIOR AND BEARING WALLS: WOOD STUDS ARE PERMITTED TO BE NOTCHED TO A DEPTH NOT EXCEEDING 1/4 OF ITS WIDTH. A HOLE NOT GREATER IN DIAMETER THAN 40% OF THE STUD WIDTH IS PERMITTED IN WOOD STUDS. HOLES SHALL NOT BE WITHIN 5/8" TO THE EDGE OF THE STUD. SPACING BETWEEN HOLES SHALL BE A MINIMUM OF (2)TIMES THE DIAMETER OF THE LARGEST HOLE OR 2" AND SHALL NOT BE LOCATED AT THE SAME SECTION AS A NOTCH.
- C. CUTS, NOTCHES, AND HOLES IN MANUFACTURED LUMBER, PREFABRICATED PLYWOOD WEB JOISTS, AND PREFABRICATED TRUSSES ARE PROHIBITED EXCEPT WHERE NOTED ON STRUCTURAL PLANS OR PERMITTED BY MANUFACTURER'S RECOMMENDATIONS.

- STRUCTURAL STEEL:
- STRUCTURAL STEEL HIGH STRENGTH BOLTS
- WELDING
- WELDER CERTIFICATION
- STEEL DECKING

- AISC 360 - SPECIFICATION FOR STRUCTURAL STEEL BUILDING. RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS.
- AWS D1.1, TYPICAL, AWS D1.3 STEEL DECK AND COLD-FORMED FRAMING, AWS D1.8 FOR SUPPLEMENTAL SEISMIC PROVISIONS
- AWS PREQUALIFIED JOINT DETAILS.
- WASHINGTON ASSOCIATION OF BUILDING OFFICIALS (WABO), STEEL DECKING INSTITUTE PUBLICATION NO. 31 AISI S100-NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

- STEEL MATERIALS
- WIDE FLANGE SHAPES (W AND WT)
- PLATES (PL), BARS, ANGLES (L), CHANNELS (C AND MC)
- STRUCTURAL BOLTS
- STEEL PIPE
- ANCHOR RODS
- THREADED RODS WELDING
- ELECTRODES
- ASTM A992
- ASTM A36, UNLESS NOTED OTHERWISE.
- ASTM A572, GRADE 50 WHERE NOTED, ASTM A500, GRADE C.
- ASTM A53, GRADE B.
- ASTM A490 WHERE NOTED, ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE ASTM F1554, GRADE 105 WHERE NOTED.
- ASTM A36.
- 70 KSI, LOW HYDROGEN, TYPICAL.
- 60 KSI, MINIMUM, STEEL DECK AND COLD-FORMED FRAMING.

- STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL CONFORM TO THE REQUIREMENTS OF IBC CHAPTER 22. ALL MEMBERS ARE TO BE ERRECTED WITH NATURAL MILL CAMBER OR INDUCED CAMPER UP, UNLESS OTHERWISE NOTED ON THE PLANS. SUBSTITUTION OF MEMBER SIZES OR STEEL GRADE WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ARCHITECT. BOLTED CONNECTIONS ARE TO BE OF HIGH STRENGTH ASTM A325 BOLTS AS SHOWN, UNLESS NOTED OTHERWISE. A MINIMUM OF TWO BOLTS IS REQUIRED FOR ALL BEAM CONNECTIONS. ALTERNATIVE CONNECTIONS TO THOSE SHOWN ON THE THESE DRAWINGS WILL REQUIRE PRIOR APPROVAL OF THE ARCHITECT.
- STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SUBMIT CERTIFICATES OF COMPLIANCE TO THE BUILDING OFFICIAL AT THE COMPLETION OF FABRICATION.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS AND JOINT PREPARATIONS THAT INCLUDE, BUT ARE NOT LIMITED TO, ERECTION ANGLES, LIFT HOLES AND OTHER AIDS, WELDING PROCEDURES, REQUIRED ROOT FININGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES, AND UNEQUAL PARTS.
- GALVANIZING: STRUCTURAL STEEL AND CONNECTIONS, INCLUDING PLATES AND OTHER STEEL ITEMS EMBEDDED IN CONCRETE, WHICH ARE EXPOSED TO WEATHER AND NOT TO BE PAINTED SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A123. ALL FIELD WELDS ON GALVANIZED MATERIAL SHALL BE COATED WITH BRUSH APPLIED ZINC-RICH PAINT COMPLYING WITH THE SPECIFICATIONS.

- WELDING: ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS, AND SHALL BE PERFORMED BY WABO - CERTIFIED WELDERS USING 70 KSI ELECTRODES AND LOW HYDROGEN PROCESSES. ONLY WELDS THAT ARE PREQUALIFIED, AS DEFINED BY AWS, OR QUALIFIED BY TESTING SHALL BE USED. SHOP DRAWINGS SHALL SHOW ALL WELDING WITH AWS A2.4 SYMBOLS. WELDS SHOWN ON THE DRAWINGS ARE MINIMUM, INCREASE WELD SIZE TO AWS MINIMUM SIZES BASED ON THICKNESS MINIMUM SIZES. WELD SIZE SHALL BE 3/16-INCH, UNLESS NOTED OTHERWISE. THE WELDS SHOWN ARE FOR THE FINAL CONNECTIONS. FIELD WELDING SYMBOLS ARE SHOWN WHERE FIELD WELDS ARE REQUIRED BY THE STRUCTURAL DESIGN. WHERE FIELD WELD IS NOT INDICATED, THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING IF A WELD SHOULD BE SHOP OR FIELD-WELDED IN ORDER TO FACILITATE THE STRUCTURAL STEEL ERECTION.
- WELDING OF THE SEISMIC FORCE-RESISTING SYSTEM SHALL BE EXECUTED IN ACCORDANCE WITH THE PROVISIONS OF AWS D1.8 "STRUCTURAL WELDING CODE - SEISMIC SUPPLEMENT". WELDS ASSOCIATED WITH THE SEISMIC FORCE - RESISTING SYSTEM ARE IDENTIFIED WITHIN THESE DRAWINGS AS FOLLOWS:

- D1.8 INDICATES WELDS SUBJECT TO THE REQUIREMENTS OF D1.8.
- D1.8-DCW INDICATES DEMAND CRITICAL WELDS SUBJECT TO ADDITIONAL SPECIFIC REQUIREMENTS WITHIN D1.8.
- THE LOWEST ANTICIPATED SERVICE TEMPERATURES FOR DETERMINATION OF REQUIRED NOTCH TOUGHNESS LEVEL ARE AS FOLLOWS:
- | | |
|--------------|------------|
| 50 DEGREES F | RESTAURANT |
| 0 DEGREES F | CONIOPIES |
- FIREPROOFING: EXCEPT WHERE PAINED OR GALVANIZED, STRUCTURAL STEEL SHALL BE FIREPROOFED PER THE SPECIFICATIONS. FIREPROOFING SHALL BE MONOKOTE BY W.R. GRADE OR APPROVED EQUAL. THICKNESS SHALL BE AS INDICATED ON ICC REPORT NO. ESR-1186. PRIMARY STRUCTURAL FRAME CONSISTS OF ALL COLUMNS, GIRDERS AND BEAMS ATTACHED TO COLUMNS, AND ANY BEAM CARRYING GREATER THAN 500 SQUARE FEET OF FLOOR OR ROOF AREA. ALL OTHER FRAMING IS TO BE CONSIDERED SECONDARY. STRUCTURAL MEMBERS SHALL BE ASSUMED TO BE IN A THERMALLY UNRESTRAINED CONDITION FOR THE PURPOSES OF DETERMINING FIREPROOFING THICKNESS.

- ALL ARCHITECTURALLY EXPOSED STRUCTURAL STEEL BEAM AND COLUMNS SHALL BE PROTECTED WITH INTUMESCENT FIRE PROTECTION (1-HOUR) COATING.
- ANCHORS
- POST-INSTALLED ANCHORS: PROVIDE POST-INSTALLED ANCHORS PER THE FOLLOWING SCHEDULE UNLESS NOTED OTHERWISE AS SPECIFIED IN THESE DRAWINGS.
- | ANCHOR IN CONCRETE | | |
|--------------------|--------------------|-------------------|
| ANCHOR TYPE | APPROVED ANCHOR(S) | EVALUATION REPORT |
| ADHESIVE | * | * |
| MECHANICAL | * | * |
- | ANCHOR IN MASONRY | | |
|-------------------|----------------------|-------------------|
| ANCHOR TYPE | APPROVED ANCHOR(S) | EVALUATION REPORT |
| ADHESIVE | HILTI HIT-HY 150 MAX | ICC-ES ESR-2262 |

- USE OF ALTERNATIVE PRODUCTS, OR OF POST-INSTALLED ANCHORS AT LOCATIONS NOT SHOWN IN THESE DRAWINGS, IS SUBJECT TO THE APPROVAL OF THE ARCHITECT. SUBMIT PROPOSED ANCHORS TO THE ARCHITECT WITH AN ICC-ES OR IAPMO UES REPORT VALID FOR THE IBC. SUBMITTED ICC-ES AND IAPMO UES REPORTS SHALL DEMONSTRATE THAT THE ANCHORS ARE SUITABLE FOR USE IN CRACKED CONCRETE OR UNCRACKED, FULLTY GROUTED REINFORCED CONCRETE MASONRY UNITS. WHERE ANCHORS RESIST SEISMIC LOADS, SUBMITTED ICC-ES AND IAPMO UES REPORTS SHALL DEMONSTRATE THAT THE ANCHORS ARE SUITABLE FOR THE RESISTANCE OF SEISMIC LOADS.
- ADHESIVES SHALL NO BE INSTALLED PRIOR TO THE CONCRETE REACHING AN AGE OF 21 DAYS AS REQUIRED BY ACI.



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GENERAL STRUCTURAL NOTES

REVISIONS:

CADD FILE:

DATE: 10-29-2024

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HEADED SHEAR STUDS AND DEFORMED BAR ANCHORS: ALL HEADED SHEAR STUDS SHALL CONFORM TO ASTM A108 AND SHALL BE 3/4-INCH DIAMETER HEADED STUDS, UNLESS NOTED OTHERWISE. STUD LENGTHS AFTER WELD SHALL BE AS SHOWN ON THE DRAWINGS. DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A496 AND SHALL BE OF THE SIZE AND LENGTH SHOWN ON THE DRAWINGS. ALL STUDS AND DEFORMED BAR ANCHORS SHALL BE AUTOMATICALLY END WELDED IN SHOP OR FIELD WITH EQUIPMENT RECOMMENDED BY MANUFACTURER.

COLD-FORMED STEEL

COLD-FORMED STEEL FRAMING MEMBERS SHALL BE OF THE TYPE, SHAPE, SIZE, GAUGE, AND SPACING AS SHOWN ON THE DRAWINGS. MEMBER TYPES AND SIZES SHOWN ON THE DRAWINGS REFER TO MEMBERS AS DEFINED BY THE STEEL STUD MANUFACTURERS ASSOCIATION (SSMA). MEMBERS EQUIVALENT IN SHAPE, SIZE, STIFFNESS, AND STRENGTH BY OTHER MANUFACTURERS MAY BE SUBSTITUTED FOR FRAMING MEMBERS SHOWN. ALTERNATE MEMBERS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FABRICATION AND ERECTION. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI S100 - "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS". ALL STUDS, TRACKS AND JOISTS SHALL BE GALVANIZED. FASTENINGS SHALL BE AS SHOWN ON THE DRAWINGS. FASTENING NO SHOWN SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

COLD-FORMED STEEL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3 "SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES". WELDERS SHALL BE QUALIFIED BY WABO SHEET STEEL WELDER CERTIFICATION PROGRAM.

SPECIAL INSPECTION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION AND TESTING PER IBC SECTION 1705. THIS WORK SHALL BE PERFORMED BY A SPECIAL INSPECTOR CERTIFIED BY THE CITY OF SEATTLE TO PERFORM THE TYPES ON INSPECTIONS AND TESTS SPECIFIED. THE FREQUENCY OF INSPECTIONS AND TESTING SHALL BE AS OUTLINED IN THE IBC TABLE ITEMS LISTED BELOW. DEFICIENCIES SHALL BE REPORTED DAILY TO THE CONTRACTOR. SUMMARY REPORTS SHALL BE DISTRIBUTED WEEKLY TO THE OWNER, ARCHITECT, CONTRACTOR, BUILDING OFFICIAL, AND STRUCTURAL ENGINEER. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTION AND TESTING.

ITEM	DESCRIPTION (REFER TO IBC SECTION 1705)	IBC TABLE REQUIREMENTS
STRUCTURAL AND WELDING	STRUCTURAL STEEL THAT IS PART OF THE STRUCTURE.	SECTION 1705.2
HIGH STRENGTH BOLTING	SEE SPECIFICATIONS FOR SECTION 1705.2 FOR INSPECTION AND TESTING.	SECTION 1705.2
ANCHORS INSTALL IN HARDENED CONCRETE	INSTALLATION OF MECHANICAL AND ADHESIVE ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE REQUIREMENTS OF THE ICC-ES REPORT FOR THE PRODUCT INSTALLED.	TABLE 1705.3, ITEM 4

DEMOLITION GENERAL NOTES:

THESE GENERAL NOTES APPLY TO ALL DEMOLITION PLANS AND SHOULD BE APPLIED TO ENTIRE DEMOLITION SCOPE.

1. GENERAL

A. SUBMIT TO THE OWNER AND ARCHITECT A SELECTIVE DEMOLITION SCHEDULE FOR REVIEW. INCLUDING SCHEDULE FOR CAPPING AND CONTINUING UTILITY SERVICE.

B. REVIEW WASTE DIVERSION PLAN & DECONSTRUCTION AND SALVAGE ASSESSMENT PREVIOUSLY SUBMITTED FOR PERMIT. MAKE ANY NECESSARY ALTERATIONS AND RESUBMIT TO BUILDING DEPARTMENT AS NEEDED.

C. USE ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE COMPLETELY FAMILIAR WITH THE DOCUMENTS SO AS TO ENSURE THE PROPER PERFORMANCE OF THE WORK.

D. ALL WORK SHALL COMPLY WITH THE RULES AND REGULATIONS OF WISHA, OSHA AND ALL OTHER LOCAL STATE AND FEDERAL AGENCIES AND AUTHORITIES HAVING JURISDICTION.

E. OBTAIN AND PAY FOR ALL PERMITS AND FEES REQUIRED TO PERFORM THE DEMOLITION WORK AS REQUIRED BY ALL AGENCIES AND AUTHORITIES HAVING JURISDICTION.

F. DEMOLITION CONTRACTOR SHALL PROVIDE, MAINTAIN, AND MODIFY ANY NECESSARY PROTECTIONS OF PERSONS, PROPERTY, TRAFFIC CONTROL, BARRICADES, TEMPORARY LIGHTING, ETC. FOR THE DURATION OF THE DEMOLITION CONTRACT. ALL IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION (A.H.J.).

G. GENERAL CONTRACTOR TO PROVIDE AND ADHERE TO A SCHEDULE FOR DEMOLITION OF SPECIFIC ITEMS TO CONFORM WITH SCHEDULING FOR OTHER TRADES REQUIRED TO COMPLETE OR PERFORM A DIRECTLY RELATED PORTION OF WORK COORDINATE WITH OWNER AND ABUTTERS REGARDING DEMOLITION, NOISE, ETC.

H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OF THE WORK TO BE REMOVED, DEMOLISHED, CUT, PATCHED OR ALTERED FOR THE FULL COMPLETION OF THE PROJECT.
2. HANDLING

A. WHEN THE NATURE OF DEMOLITION WORK REQUIRES THEIR USE, ERECT AND MAINTAIN DUST CHUTES & BARRIERS FOR THE DISPOSAL OF MATERIALS, RUBBISH AND DEBRIS.

B. REMOVE SALVAGE AND DEBRIS FROM THE SITE AS IT ACCUMULATES ON A DAILY BASIS. DO NOT STORE, SELL, BURN, OR OTHERWISE DISPOSE OF DEBRIS ON THE SITE. REMOVE ALL MATERIALS IN SUCH A MANNER AS TO PREVENT SPILLAGE, KEEP ALL PAVEMENTS AND AREAS ADJACENT TO AND LEADING FROM THE SITE, CLEAN AND FREE OF MUD, DIRT AND DEBRIS AT ALL TIMES. ALL MATERIALS SHALL BE DISPOSED OF IN A LEGAL MANNER OFF-SITE.

C. COMPLY WITH OSHA AND LOCAL BY LAWS. ERECT AND MAINTAIN TEMPORARY BRACING, SHORING, LIGHTS, BARRICADES, WARNING SIGHS, LIGHTS, AND GUARDS NECESSARY TO PROTECT ADJACENT BUILDING OCCUPANTS, THE PUBLIC, AND WORKERS FROM INJURY AND/OR DAMAGE, ALL IN ACCORDANCE WITH APPLICABLE RULES AND REGULATIONS.

D. DO NOT DAMAGE BUILDING ELEMENTS AND IMPROVEMENTS INDICATED TO REMAIN. ITEMS OF SALVAGE VALUE WHICH ARE NOT INCLUDED ON SCHEDULE OF SALVAGE ITEMS TO BE RETURNED TO OWNER TO BE REVIEWED WITH OWNER AS TO WHETHER THEY CAN BE REMOVED FROM THE PREMISES. STORAGE OR SALE OF ITEMS AT PROJECT SITE IS PROHIBITED. DEMOLISHED MATERIAL SHALL BE COMPLETELY REMOVED FROM THE SITE AND DISPOSED OF USING LEGAL METHODS.

E. DO NOT CLOSE OR OBSTRUCT THE MEANS OF EGRESS, CORRIDORS, OR OTHER OCCUPIED SPACES. REVIEW ANY SEQUENCE OR PHASING ISSUES WITH ARCHITECTS AND THE OWNER'S PROJECT REPRESENTATIVE. DO NOT INTERRUPT UTILITIES WITHOUT THE WRITTEN PERMISSION OF THE OWNER OR AUTHORITIES HAVING JURISDICTION. IF NECESSARY, PROVIDE TEMPORARY UTILITIES.

F. CEASE OPERATIONS IF PUBLIC SAFETY OR REMAINING STRUCTURES ARE ENDANGERED. PERFORM TEMPORARY CORRECTIVE MEASURES UNTIL OPERATIONS CAN BE CONTINUED PROPERLY.

G. SORT DEBRIS FOR RECYCLING TO THE GREATEST EXTENT POSSIBLE. REMOVE OR ARRANGE FOR THE REMOVAL AND TRANSPORT OF SORTED MATERIALS SCHEDULED TO BE RECYCLED TO APPROPRIATE OFF-SITE FACILITIES EQUIPPED FOR THE RECYCLING OF SPECIFIC MATERIALS AS REQUIRED. PROVIDE CONTAINERIZED DUMPSTER FOR THE SORTING OF DEMO WASTES AS PROVIDED BY LOCAL COMPANIES.

H. PRIOR TO THE WORK COORDINATE WITH THE OWNER. ALL ITEMS OR EQUIPMENT TO BE SALVAGED FOR RE-USE, RELOCATION, OR DELIVERY TO THE OWNER.
3. SEQUENCING AND EXECUTION

A. BY CAREFUL STUDY OF THE CONTRACT DOCUMENTS, DETERMINE THE LOCATION AND EXTENT OF SELECTIVE DEMOLITION TO BE PERFORMED.

B. VISIT THE SITE AND VERIFY THE EXTENT AND LOCATION OF SELECTIVE DEMOLITION REQUIRED PRIOR TO STARTING THE WORK.

1. CAREFULLY IDENTIFY LIMITS OF SELECTIVE DEMOLITION.

2. MARK INTERFACE SURFACES AS REQUIRED TO ENABLE WORKMAN TO ALSO IDENTIFY ITEMS TO BE REMOVED, ITEMS TO BE LEFT IN PLACE INTACT, TEMS TO BE SALVAGED AND/OR FOR REUSE AND RELOCATION, AND ITEMS TO BE REMOVED AND SORTED FOR RECYCLING.

C. PREPARE AND FOLLOW AN ORGANIZED PLAN FOR DEMOLITION AND REMOVAL OF ITEMS.

1. SHUT OFF, CAP, AND OTHERWISE PROTECT EXISTING UTILITY LINES IN ACCORDANCE WITH THE REQUIREMENTS OF THE PUBLIC AGENCY OR UTILITY HAVING JURISDICTION. NOTIFY LOCAL UTILITY NOTIFICATION CENTER ("CALL BEFORE YOU DIG") AND A.H.J. PRIOR TO EXCAVATION.

2. COMPLETELY REMOVE ITEMS SCHEDULED TO BE DEMOLISHED AND REMOVED, LEAVING SURFACES CLEAN, SOLID, AND READY TO RECEIVE NEW MATERIALS SPECIFIED ELSEWHERE. IN ALL ACTIVITIES, COMPLY WITH PERTINENT REGULATIONS & GOVERNMENTAL AGENCIES HAVING JURISDICTION.

3. CLEARLY IDENTIFY ANY WALL, FLOOR, OR FLOOR STRUCTURE IDENTIFIED TO REMAIN BY THE ARCHITECT AND STRUCTURAL ENGINEER.

4. SHORE AND BRACE EXISTING CONDITIONS AS REQUIRED FOR THE REMOVAL OF EXISTING CONSTRUCTION OR INSTALLATION OF NEW WORK TO ENSURE THE STRUCTURAL INTEGRITY OF THE BUILDING. SHORING DESIGN WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

5. DEMOLISH ALL ITEMS IN SMALL SECTIONS. LOWER HEAVY SECTIONS OF WALL, FLOOR, AND ROOF CAREFULLY SO AS NOT TO DISTURB THE STRUCTURAL INTEGRITY OF THE WORK SCHEDULED TO REMAIN.

6. REFER TO ENGINEERED CIVIL, STRUCTURAL AND MEP/FP DRAWINGS FOR RELATED DEMOLITION REQUIREMENTS.

D. USE MEANS NECESSARY TO PREVENT DUST FROM BECOMING A NUISANCE TO WORKERS IN THE BUILDING, THE PUBLIC, NEIGHBORING BUILDINGS, AND TO OTHER WORK BEING PERFORMED.

E. SCHEDULE & EXECUTE DEMOLITION WORK TO ENSURE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY WIND-BLOWN OR FALLING DEBRIS.

F. IN THE EVENT UNSCHEDULED DEMOLITION OF ITEMS OCCURS, PROMPTLY REPLACE SUCH ITEMS TO THE APPROVAL OF THE ARCHITECT AT NO ADDITIONAL INCREASE IN COST OR TIME TO THE OWNER.

G. WHERE EXISTING CONSTRUCTION TO REMAIN IS AFFECTED BY DEMOLITION OR INSTALLATION OF NEW WORK, PATCH, REPAIR OR REPLACE THE WORK AT SURFACES WHICH HAVE BEEN DAMAGED AND FINISH TO MATCH EXISTING (T.M.E.) ADJACENT CONSTRUCTIONS UNLESS NOTED OTHERWISE.

H. FINISH NEW AND EXISTING SURFACES AS SCHEDULED. CLEAN EXISTING SURFACES OF DIRT, GREASE AND LOOSE PAINT BEFORE REFINISHING.

I. COORDINATE THE REMOVAL OF ALL SCHEDULED EXISTING, PLUMBING, HVAC, FIRE ALARM, SECURITY AND ELECTRICAL SYSTEMS, EQUIPMENT AND APPURTENANCES - INCLUDING BUT NOT LIMITED TO: UTILITY LINES, DUCTS, CONNECTIONS, PANELS, VENTS, FANS, PIPING, DEVICES, CONTROLS, OUTLETS, AND CONDUIT DURING CONSTRUCTION AS REQUIRED, AS SCHEDULED, OR AS SPECIFIED IN ACCORDANCE WITH ALL LOCAL MUNICIPAL AND STATE CODES TO SUIT THE WORK COORDINATING INCLUDES THE WORK OF THE OWNER'S SUBCONTRACTORS OR VENDORS AND NOTIFYING THE A.H.J. AND LOCAL OFFICIALS INVOLVED.

J. IF UNANTICIPATED STRUCTURAL ELEMENTS THAT CONFLICT WITH INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, INVESTIGATE AND MEASURE BOTH NATURE AND EXTENT OF CONFLICT. SUBMIT REPORT TO THE OWNER AND ARCHITECT IN WRITTEN, ACCURATE DETAIL. PENDING RECEIPT OF DIRECTIVE FROM OWNER'S REPRESENTATIVE, REARRANGE SELECT DEMOLITION SCHEDULE AS NECESSARY TO CONTINUE OVERALL JOB PROGRESS WITHOUT UNDUE DELAY.

4. SCOPE ITEMS TO BE DEMOLISHED AND REMOVED - INCLUDING BUT NOT LIMITED TO:

A. EXISTING WALL CONSTRUCTION AS INDICATED TO BE REMOVED ON THE DRAWINGS.

B. COORDINATE ALL EXISTING MECHANICAL, ELECTRICAL & PLUMBING WORK TO BE DEMOLISHED W/ MEP DRAWINGS & SPECIFICATIONS.

C. EXISTING TOILET ROOM FIXTURES, VANITIES AND ACCESSORIES AS INDICATED ARE TO BE REMOVED ON THE DRAWINGS.

D. EXISTING SUSPENDED CEILING SOFFITS AND RELATED LIGHTING AS NOTED ON THE DRAWINGS.

E. EXISTING DOORS AND FRAMES.

F. EXISTING FLOORING SYSTEMS AS REQUIRED TO ACCEPT NEW WORK.
5. EXISTING CONSTRUCTION TO REMAIN - INCLUDING BUT NOT LIMITED TO:

A. EXISTING BUILDING EXTERIOR SHELL SCHEDULED TO REMAIN, INCLUDING BUT NOT LIMITED TO: FOUNDATION SYSTEMS, SUPERSTRUCTURE, WALLS, ROOF AND RELATED CONSTRUCTION, ETC.

B. EXISTING ARCHITECTURAL AND STRUCTURAL SYSTEMS AND RELATED ACCESSORIES SCHEDULED TO REMAIN, OR NOT NOTED OR SCHEDULED TO BE DEMOLISHED.
6. ITEMS TO BE SALVAGED FOR REUSE OR TO BE SORTED FOR RECYCLING:

A. ALL METAL PRODUCTS, INCLUDING BUT NOT LIMITED TO MISCELLANEOUS METALS, METAL DOORS AND FRAMES, STRUCTURAL STEEL & DUCTWORK.

B. MEP ITEMS PER DWG'S AND SPECS. ALL ALUMINUM PRODUCTS, INCLUDING BUT NOT LIMITED TO: ALUMINUM DOORS, FRAMES, AND DUCTWORK.

C. ALL GLASS, INCLUDING MIRRORS.

D. BRICK/MASONRY AS NEEDED FOR INFILL AND PATCHING.

E. WOOD DECKING AS NEEDED FOR FLOOR PATCHING THROUGHOUT.

F. ANY OTHER ITEMS DEEMED RECYCLABLE BY THE GC OWNER OR ARCHITECT PRIOR TO THE START OF DEMOLITION.
7. REMOVAL OF HAZARDOUS MATERIAL:

A. IN THE EVENT THAT HAZARDOUS MATERIAL IS UNCOVERED DURING DEMOLITION, THE GC SHALL BE RESPONSIBLE FOR COORDINATING THE ABATEMENT OF ALL HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO: LEAD PAINT, PCB'S, ASBESTOS, ETC., IN ACCORDANCE WITH CH. 296-843 WAC. THIS ALSO INCLUDES INDOOR AIR QUALITY TESTING AND COORDINATION AS PER THE CODE OF FEDERAL REGULATIONS 29.
8. REPAIR OF DAMAGES DONE DURING DEMO/CONSTRUCTION:

A. WHERE EXISTING CONSTRUCTION-TO-REMAIN IS AFFECTED BY DEMOLITION OR INSTALLATION OF NEW WORK, PATCH & REPAIR OR REPLACE THE WORK AT SURFACES THAT HAVE BEEN DAMAGED TO MATCH EXISTING (T.M.E.) ADJACENT CONSTRUCTION - INCLUDING RE-FINISHING, FINISH NEW AND EXISTING SURFACES. REMOVE DIRT, GREASE AND LOOSE PAINT BEFORE REFINISHING.

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GENERAL STRUCTURAL
NOTES

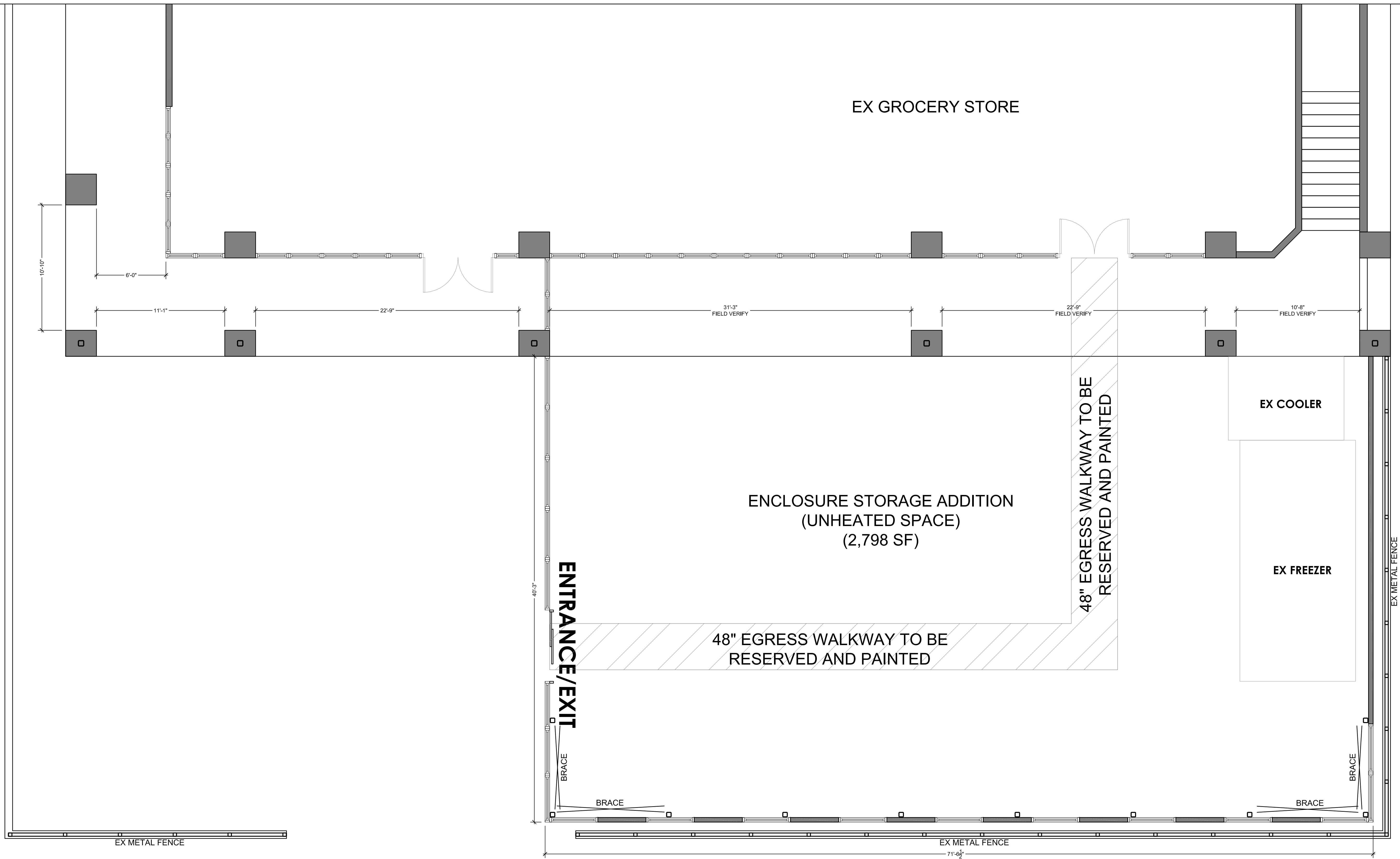
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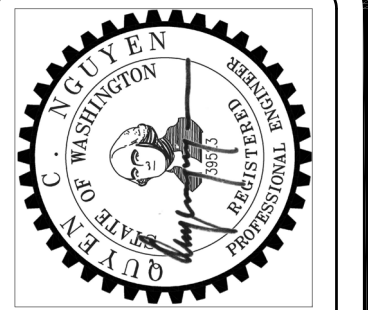
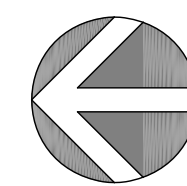
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NOTE:
All food processing for human consumption, custom and craft work involving the use of mechanical equipment, and light manufacturing activities shall be conducted wholly within an enclosed structure.

PROPOSED FLOOR PLAN

SCALE 1/4" = 1'-0"



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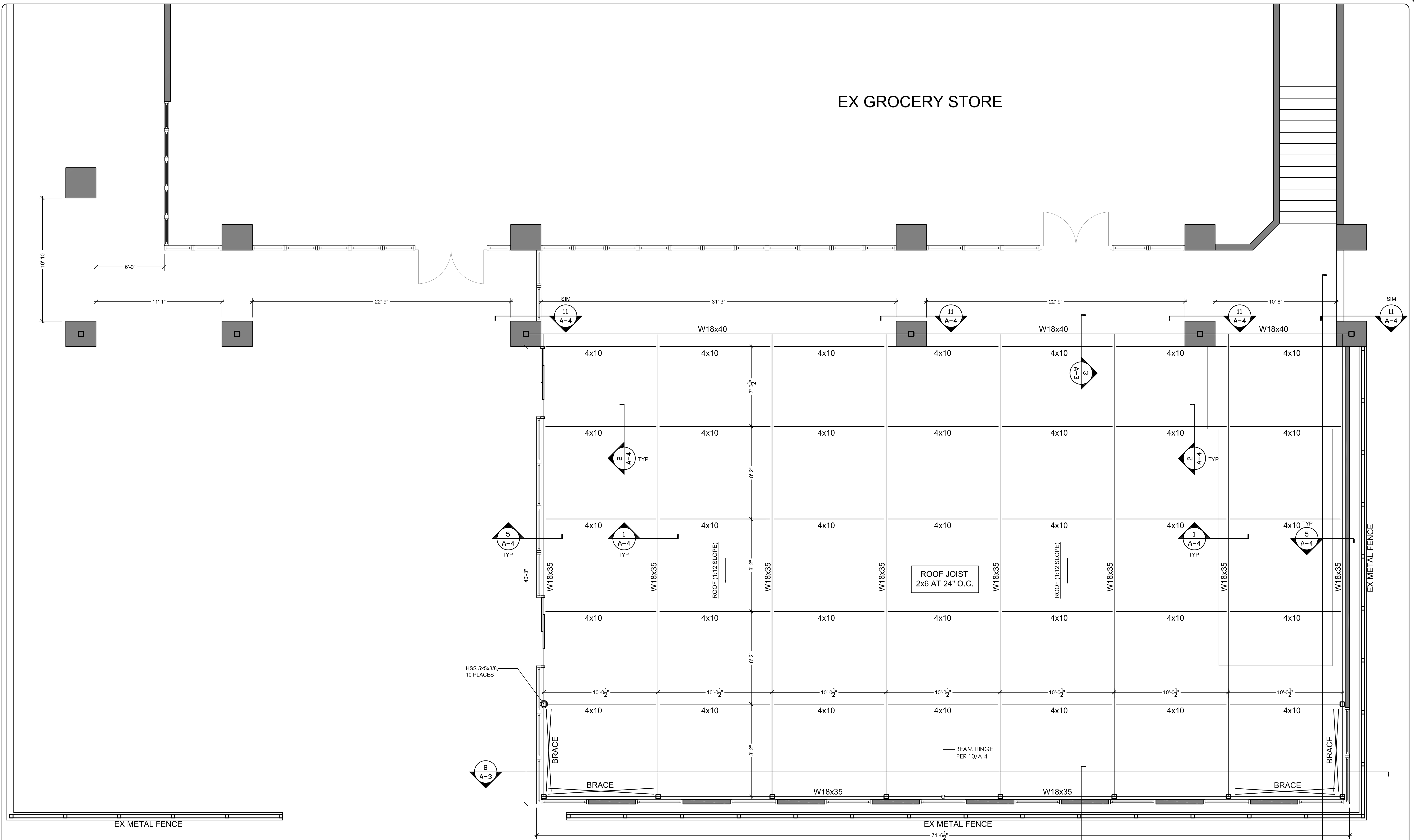
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PROPOSED FLOOR PLAN

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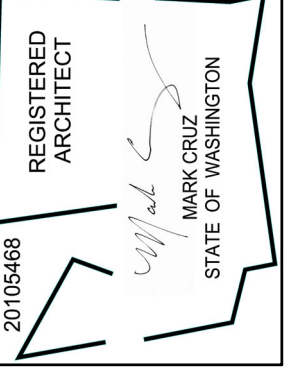


NOTE:

All food processing for human consumption, custom and craft work involving the use of mechanical equipment, and light manufacturing activities shall be conducted wholly within an enclosed structure.

PROPOSED ROOF PLAN

SCALE 1/4" = 1'-0"



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PROPOSED ROOF PLAN

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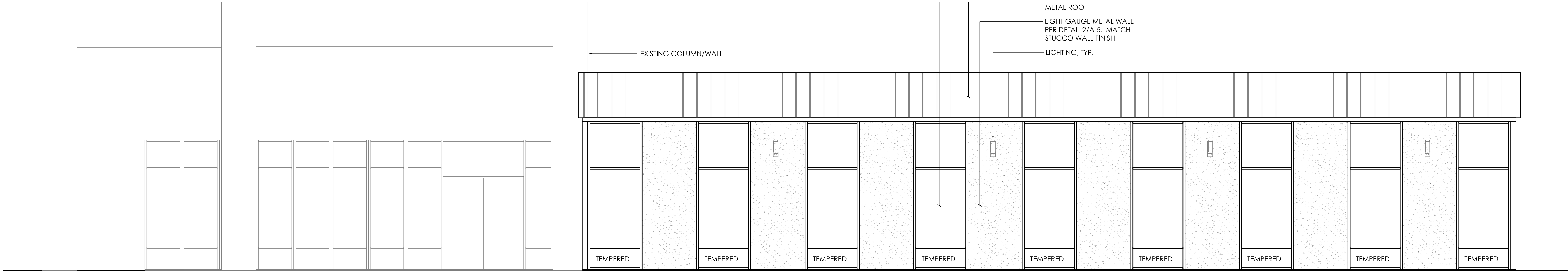
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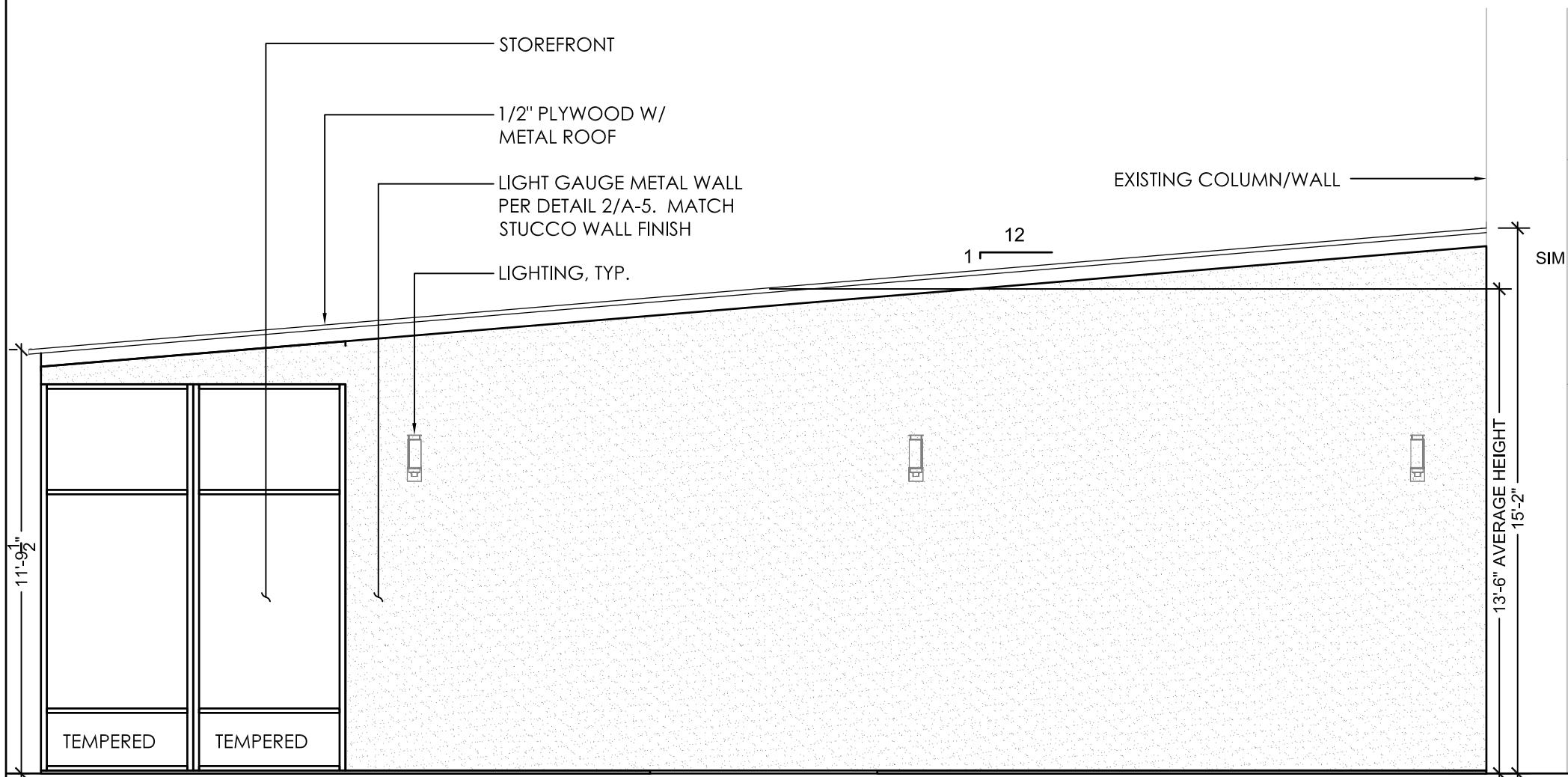
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WEST ELEVATION

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

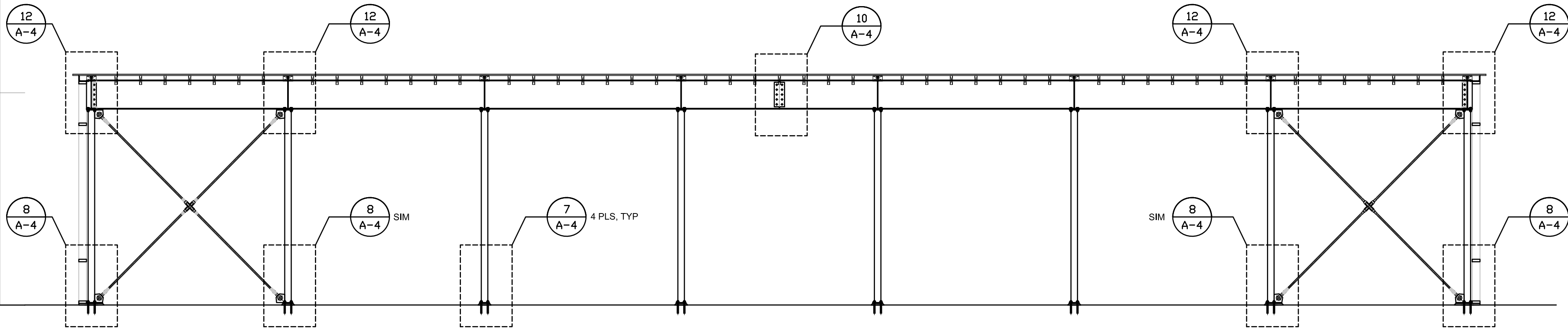
GLAZING CALCULATIONS:
WALL AREA = 811 SF
GLAZING AREA = 47.5x9 = 428
% OF GLAZING = (428/811)x100 = 52.8%



SOUTH ELEVATION

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

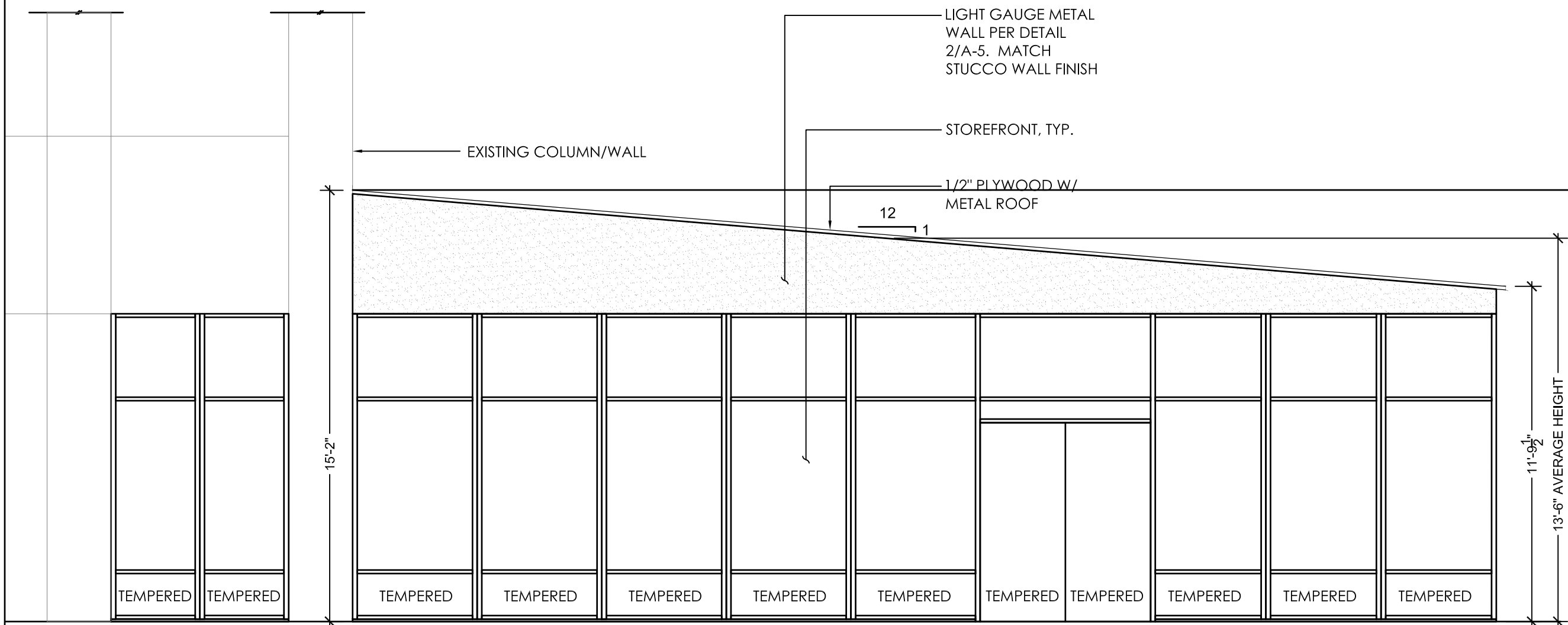
GLAZING CALCULATIONS:
WALL AREA = 520 SF
GLAZING AREA = 46x2 = 92
% OF GLAZING = (92/520)x100 = 17.7%



BUILDING SECTION

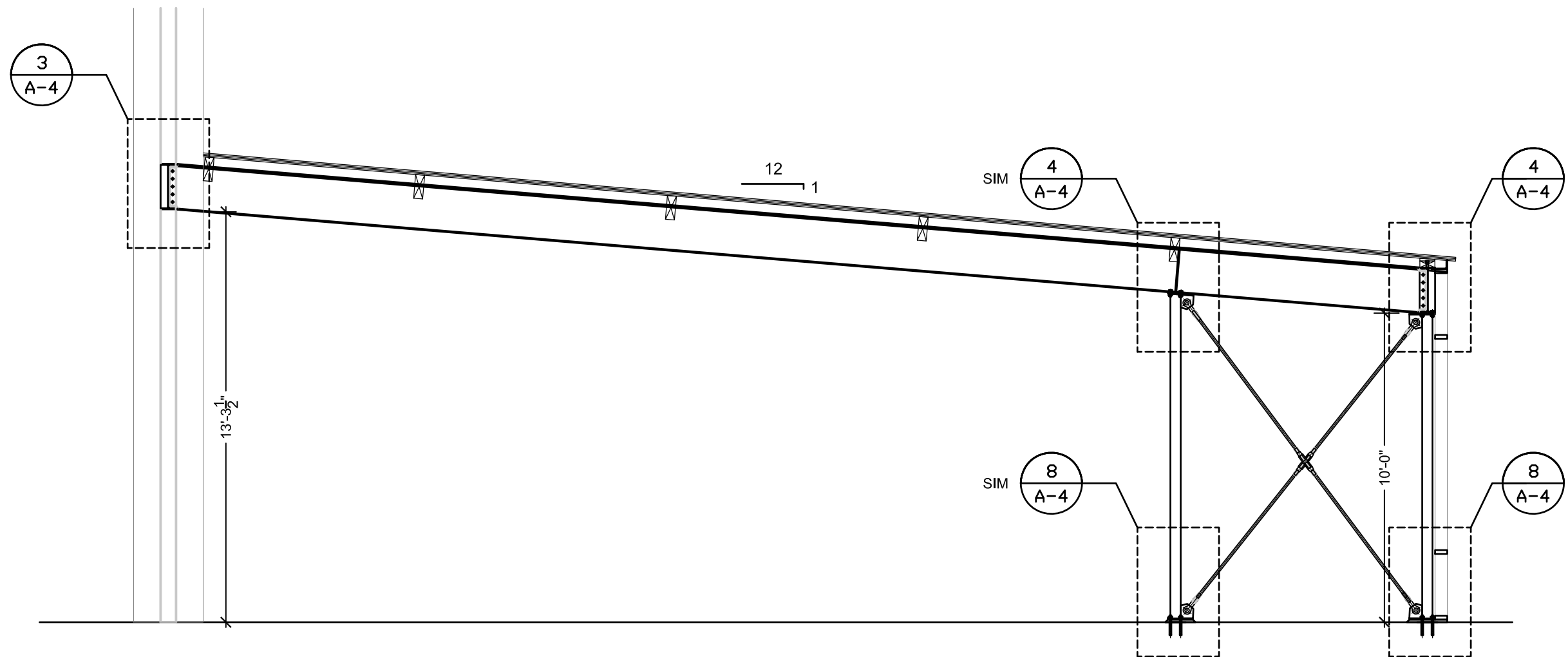
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NORTH ELEVATION

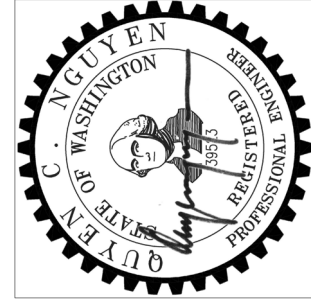
SCALE: 1/4" = 1'-0"



BUILDING SECTION

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

A
A-3



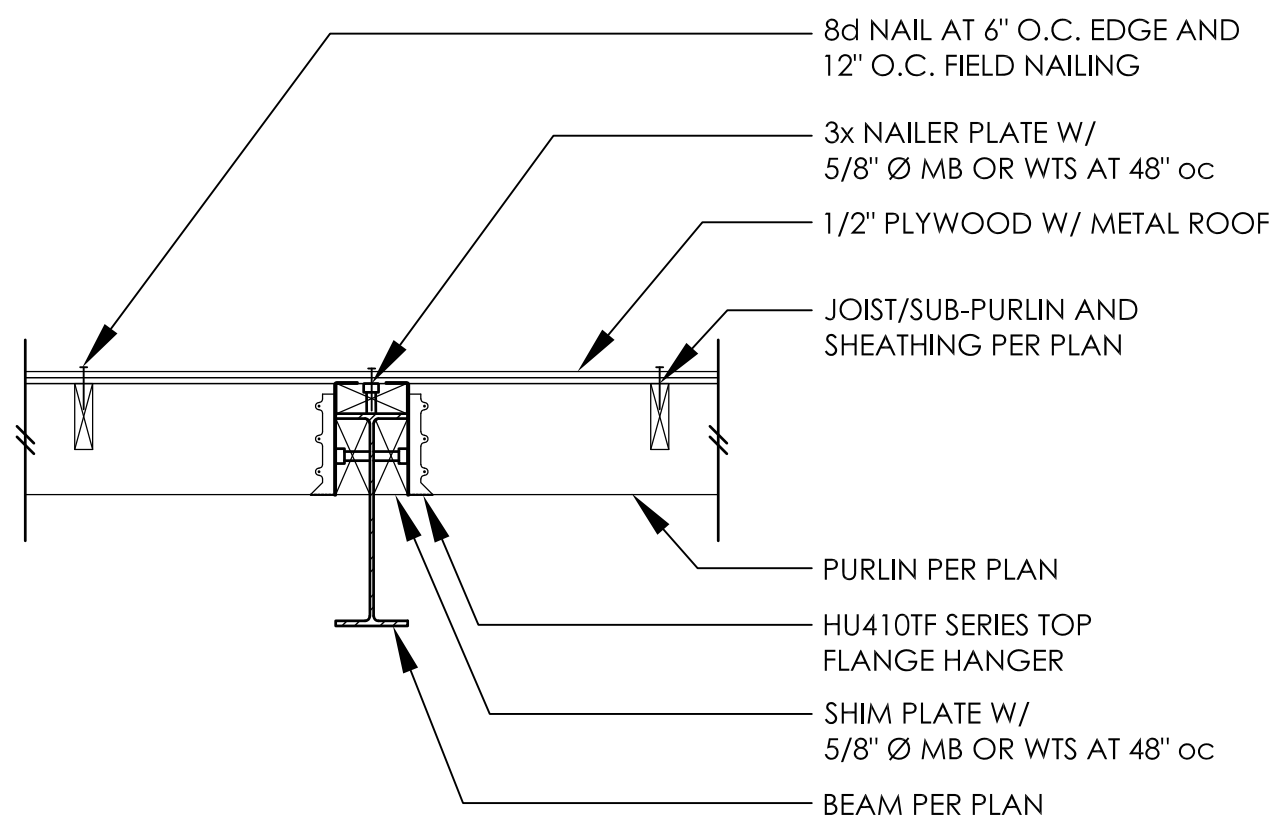
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TEL: 206-853-5728
QUYENSEATTLE@GMAIL.COM

HOW HOW MARKET
412 12th AVENUE S.
SEATTLE, WA 98144

**BUILDING ELEVATIONS
AND SECTIONS**

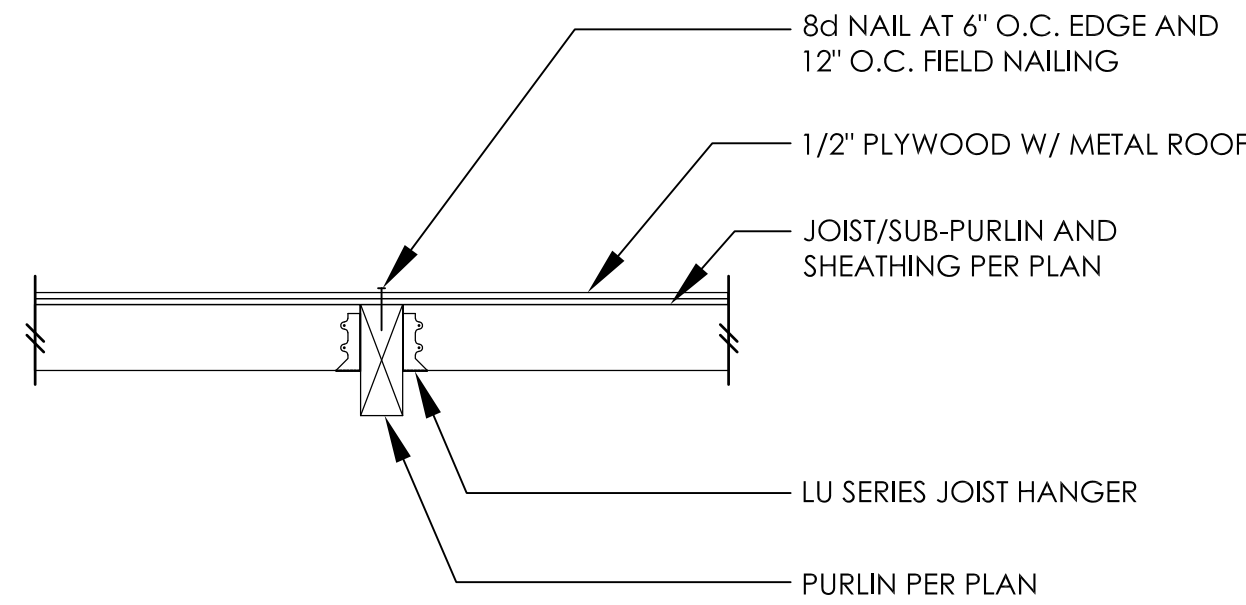
REVISIONS:	
CADD FILE:	
DATE:	10-29-2024
DRAWN BY:	QN
CHECKED BY:	

A-3



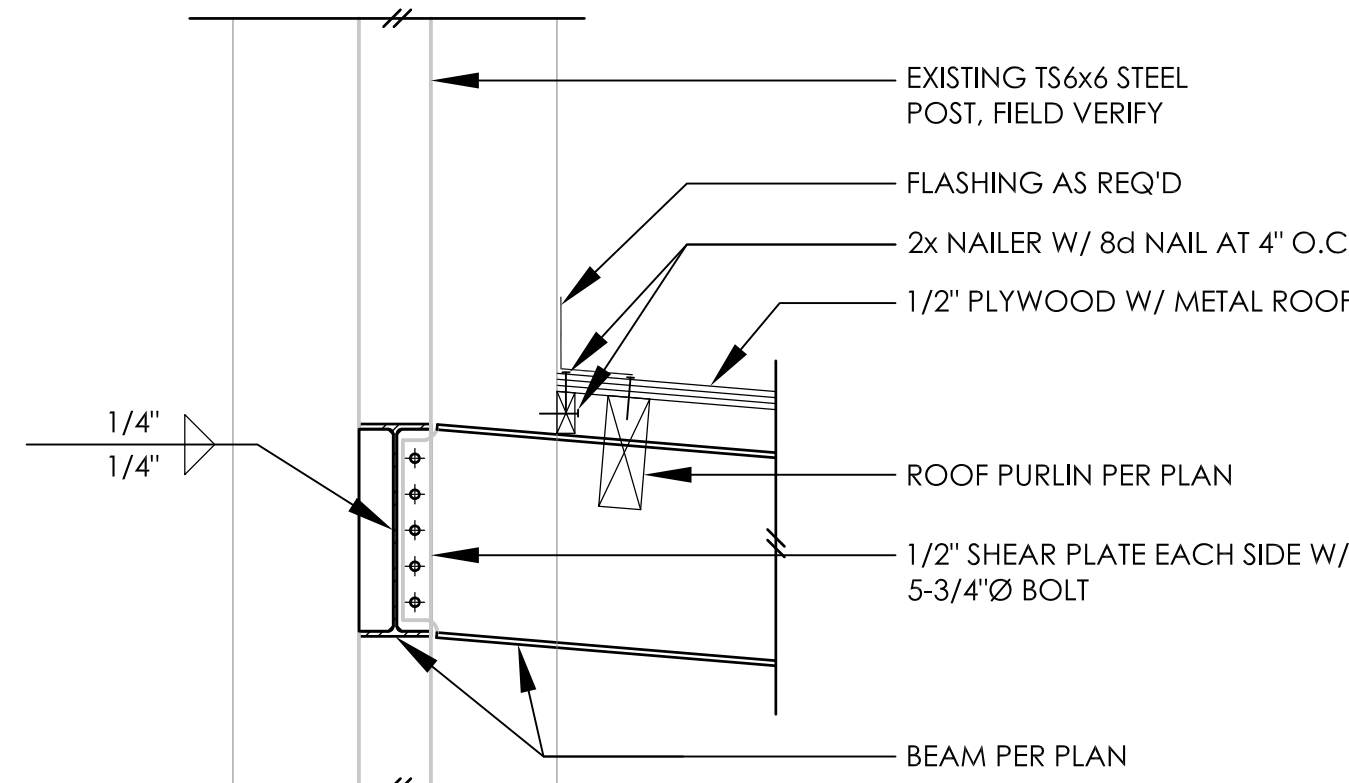
PURLIN TO WF BEAM

1



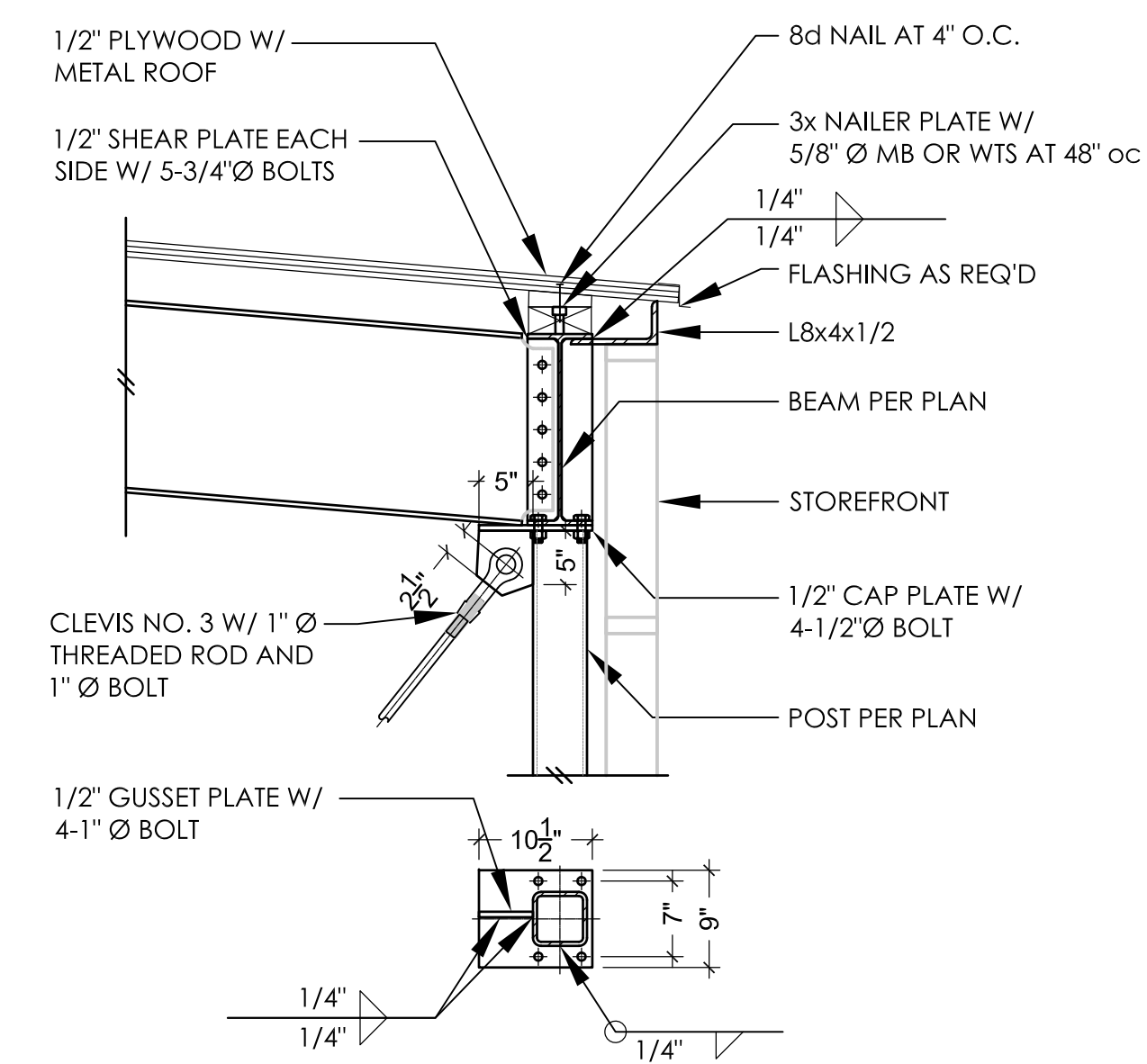
JOIST TO PURLIN

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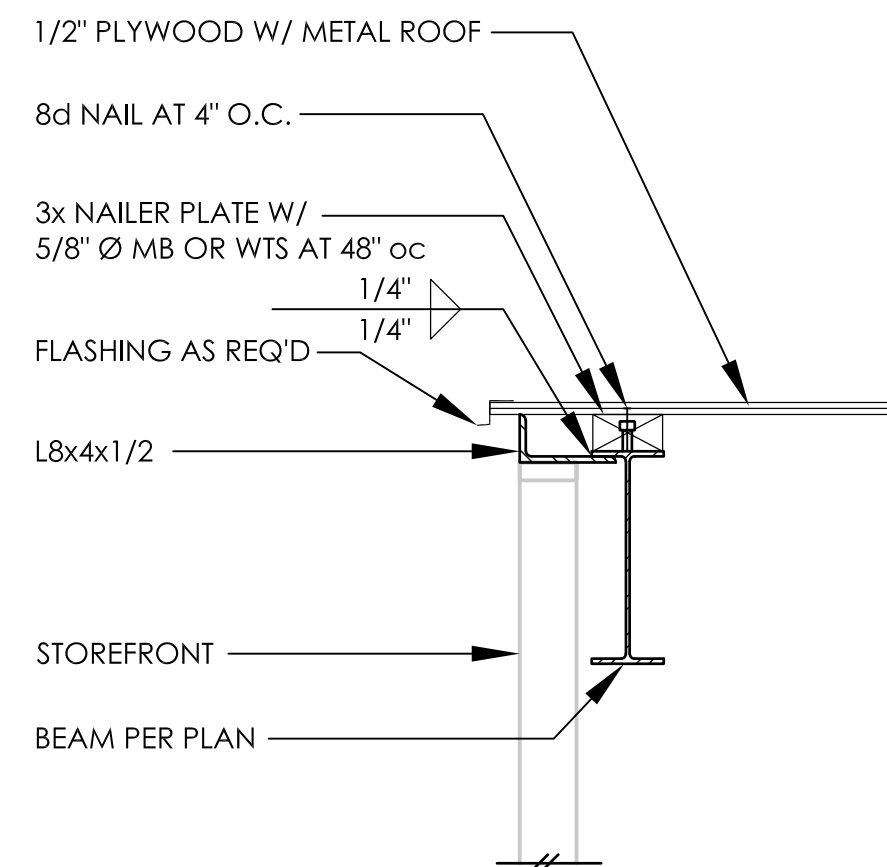
WF BEAM TO WF BEAM

3



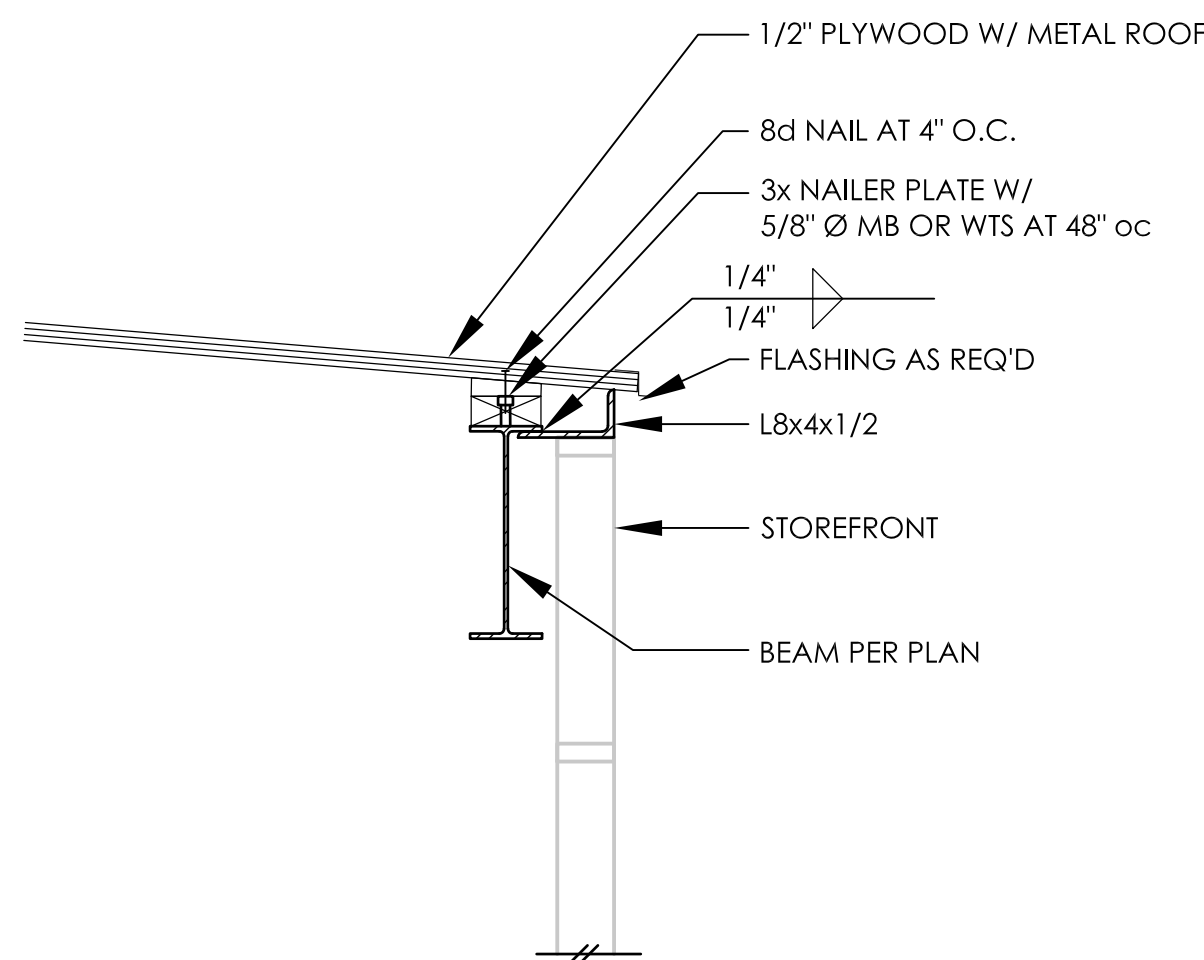
WF BEAM TO HSS POST

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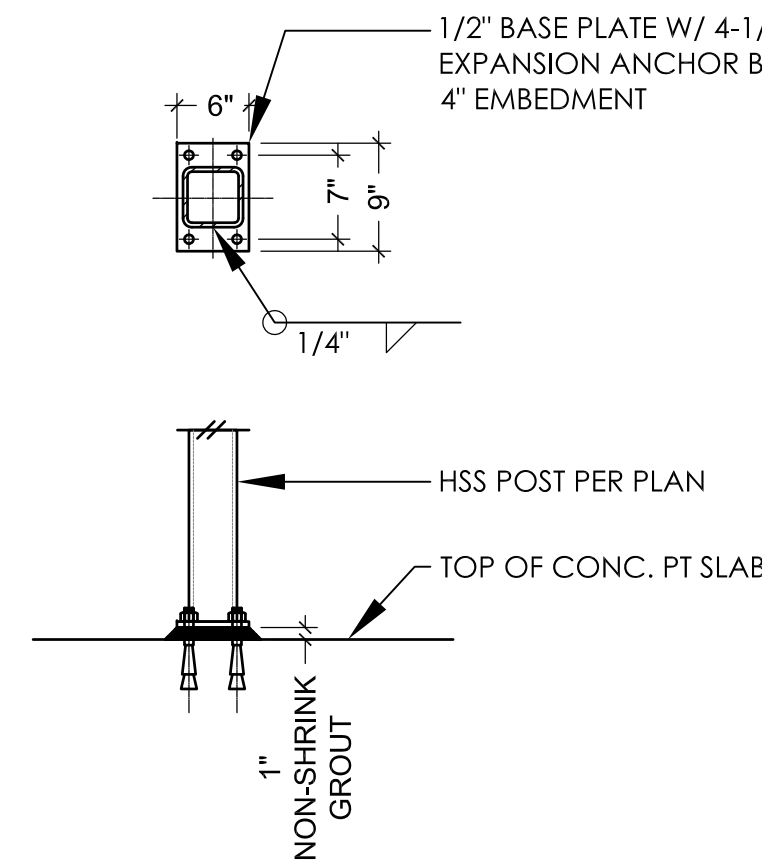
STOREFRONT TO WF BEAM

5



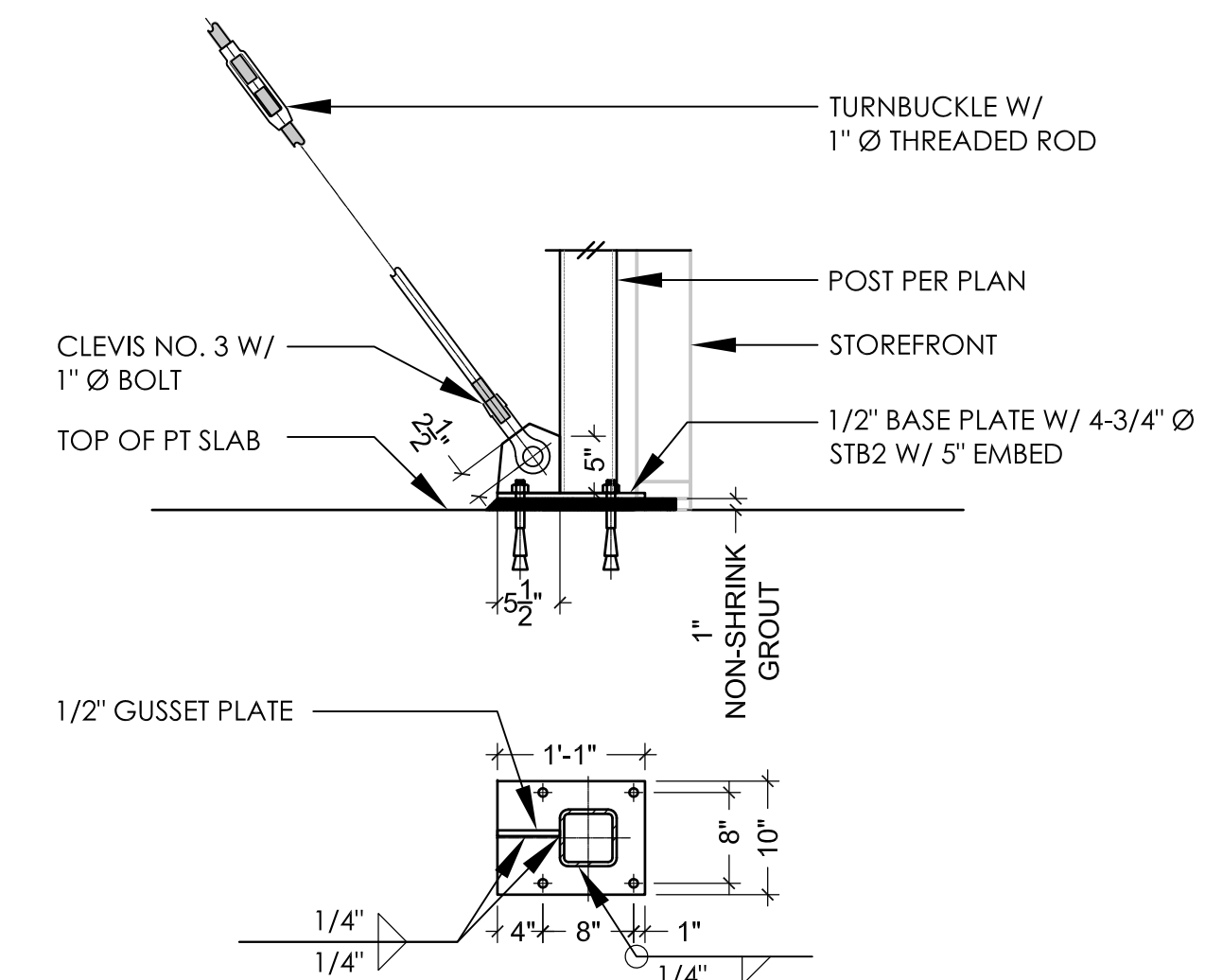
WF BEAM TO WF BEAM

6



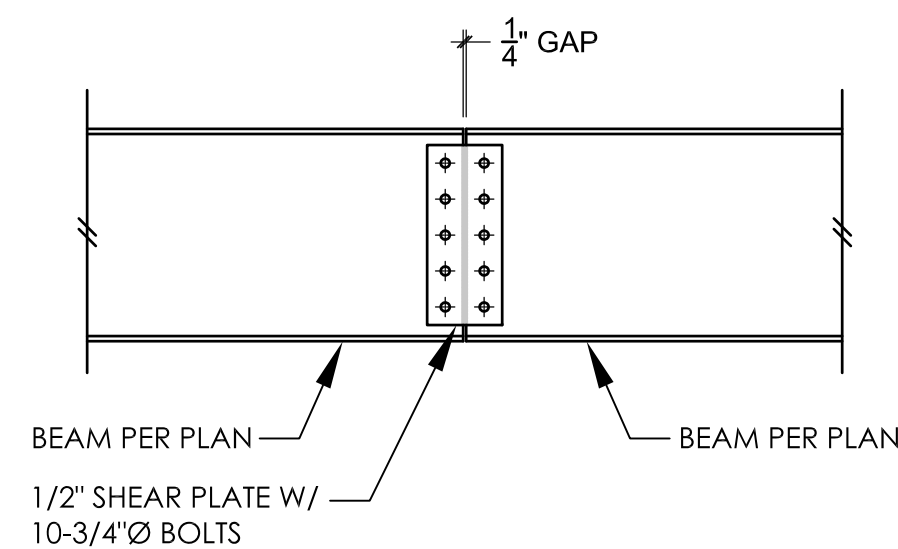
HSS POST BASE

7



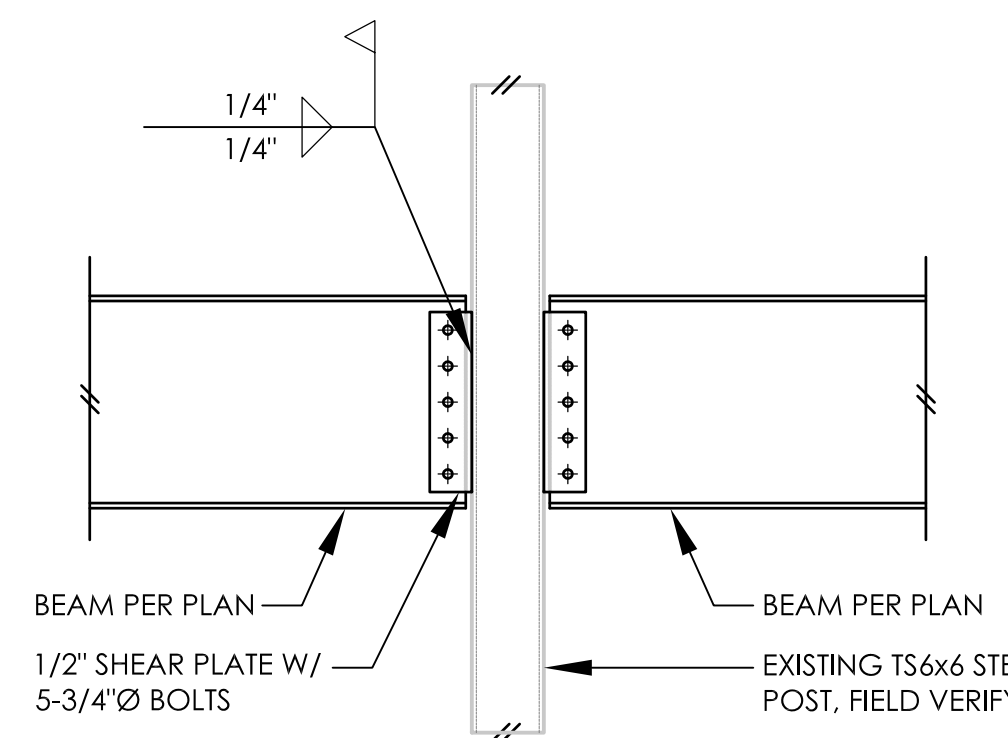
BRACE TO HSS POST BASE

8



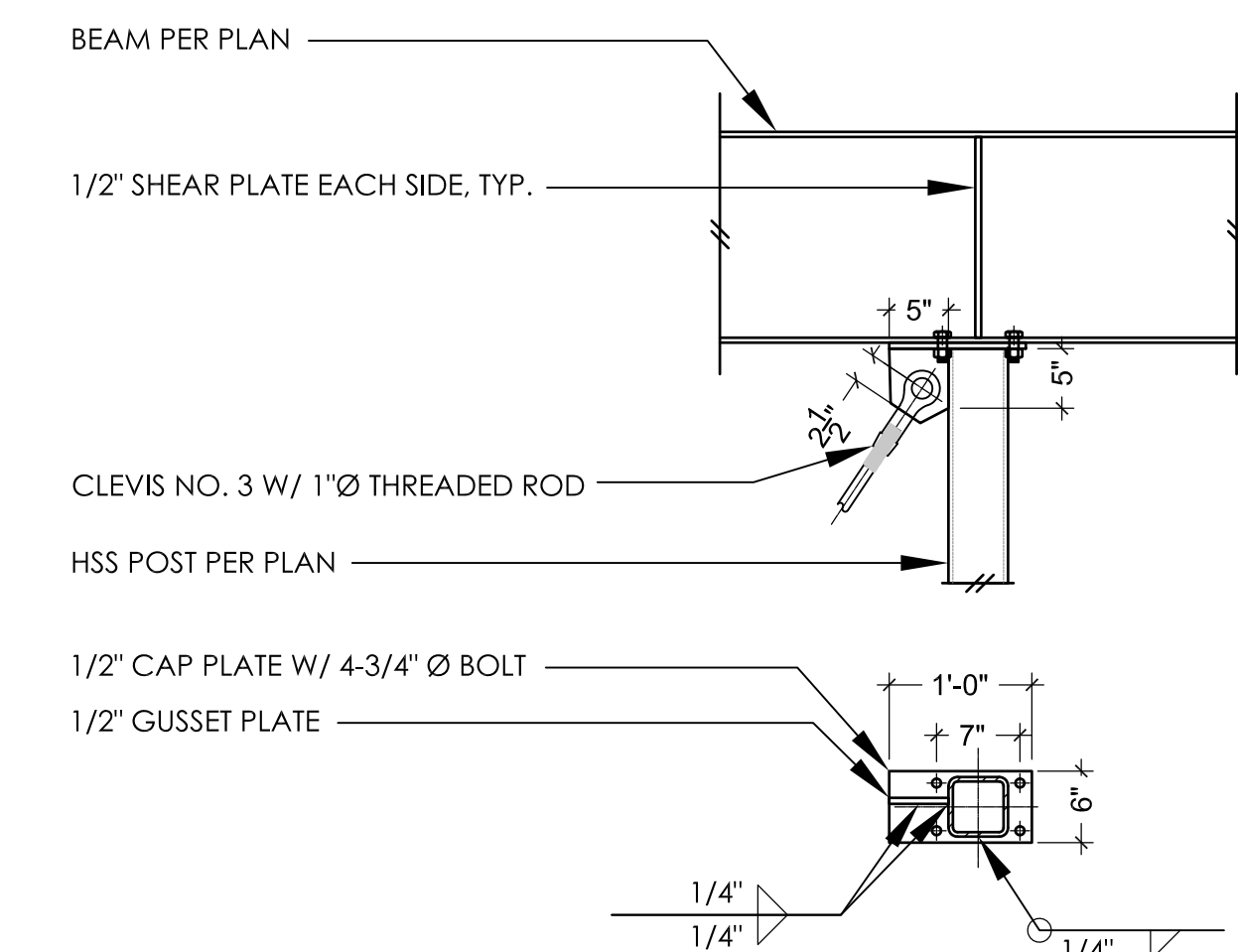
WF BEAM HINGE AT MIDSPAN

10



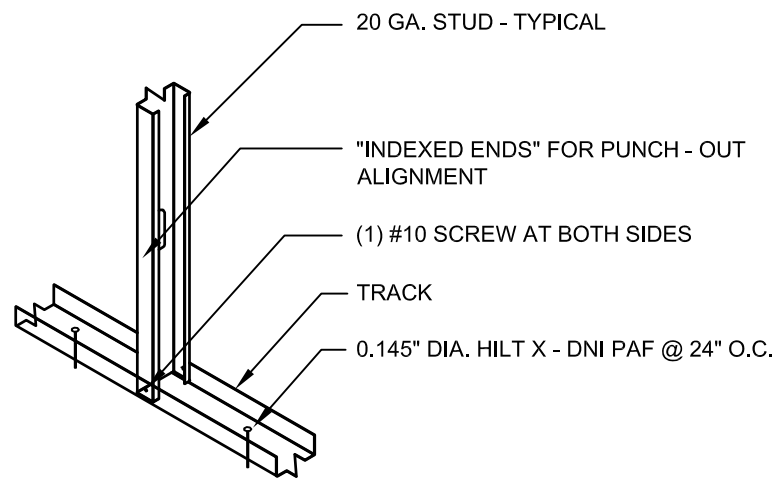
WF BEAM TO EXISTING POST

11

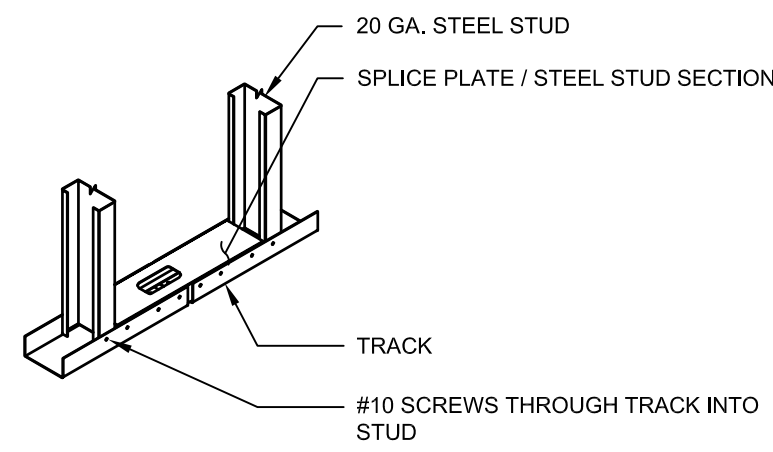


BRACE TO HSS POST & WF BEAM

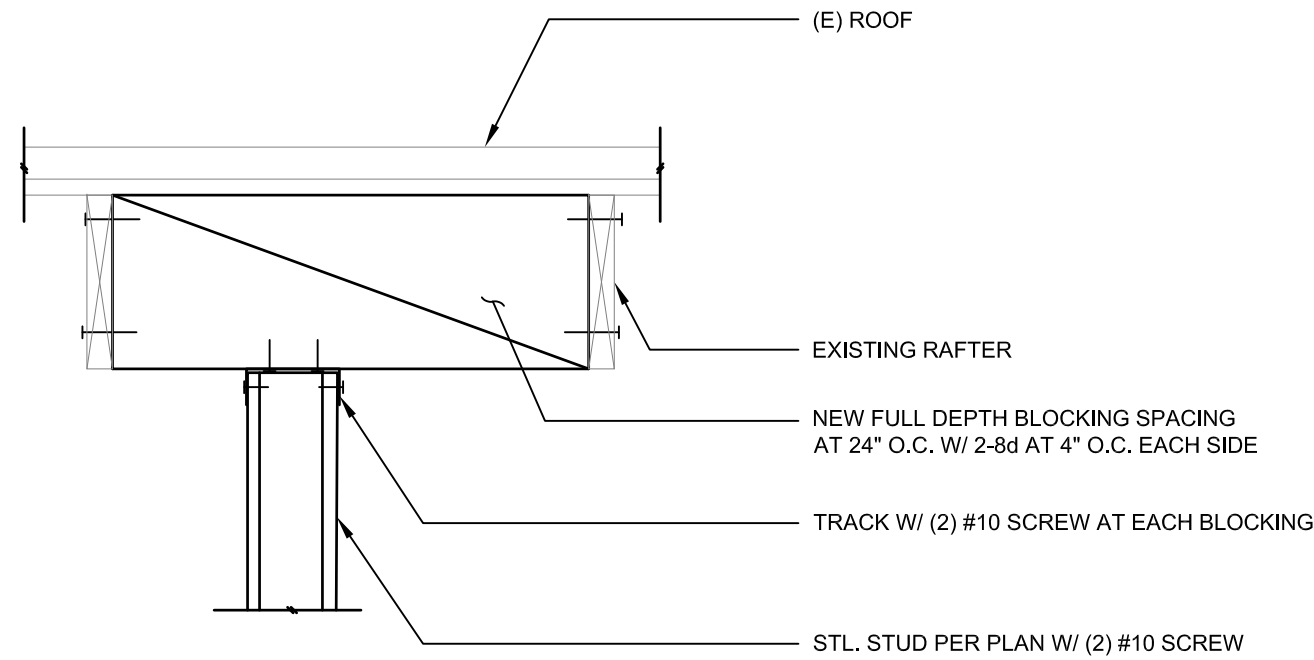
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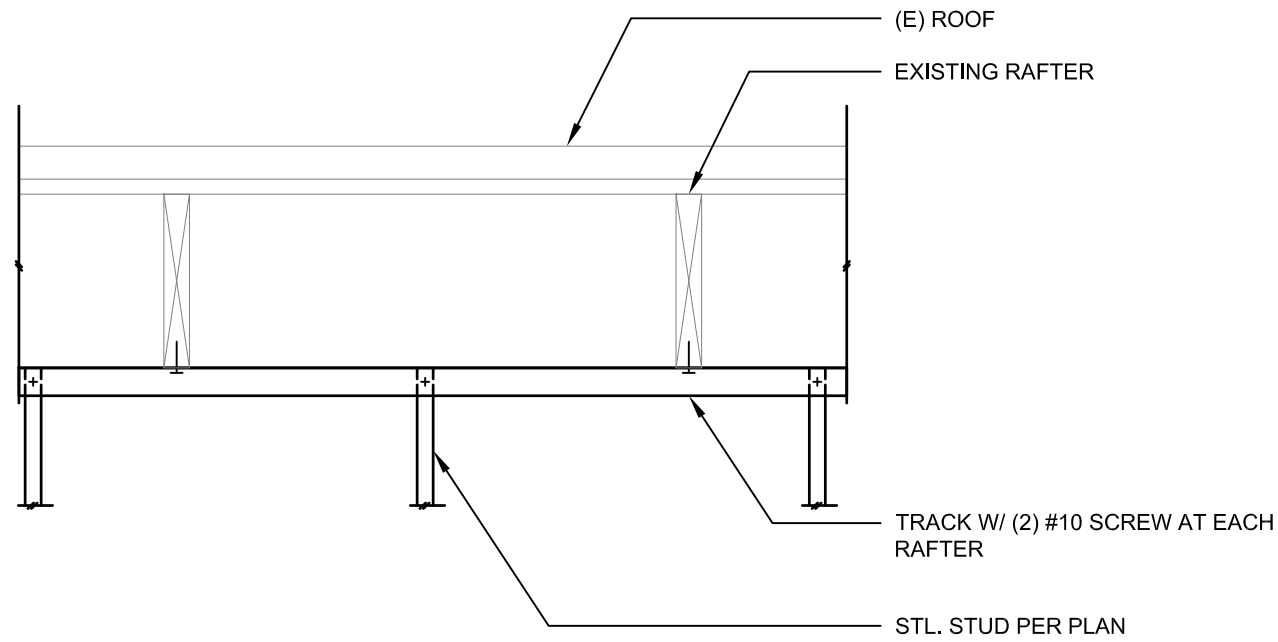
TRACK TO SLAB



TRACK SPLICE



TRACK PARALLEL TO RAFTER



TRACK PERPENDICULAR TO RAFTER

TYPICAL TRACK DETAILS

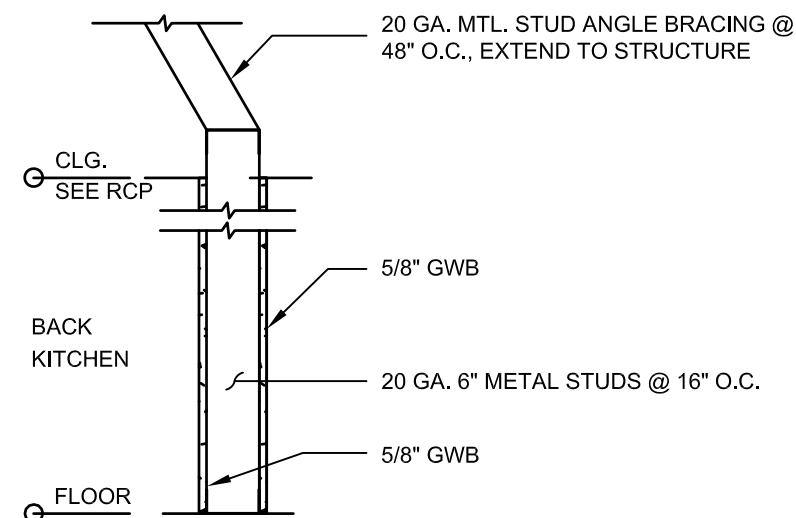
NTS

9

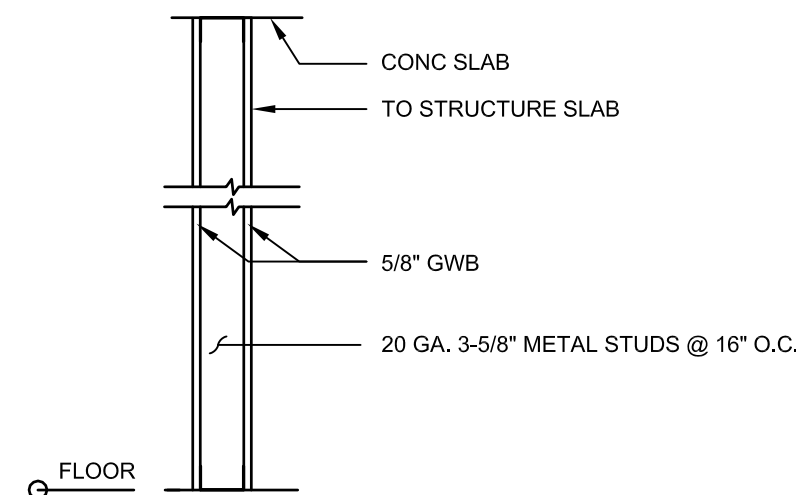
TYPICAL TRACK DETAILS

NTS

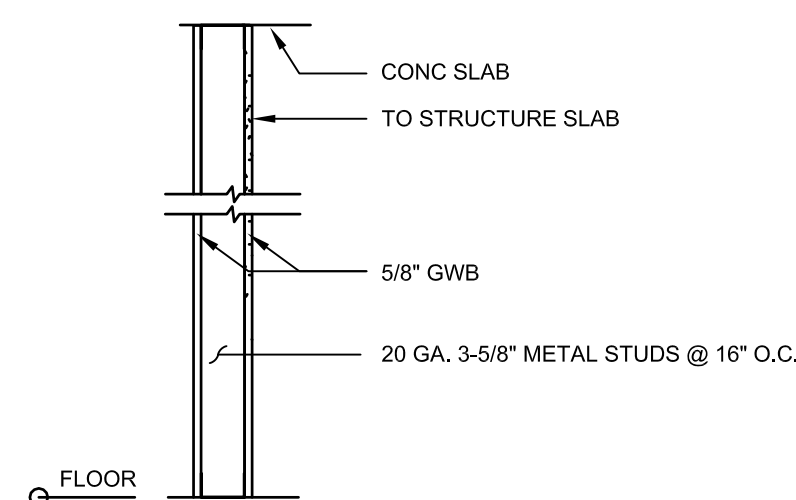
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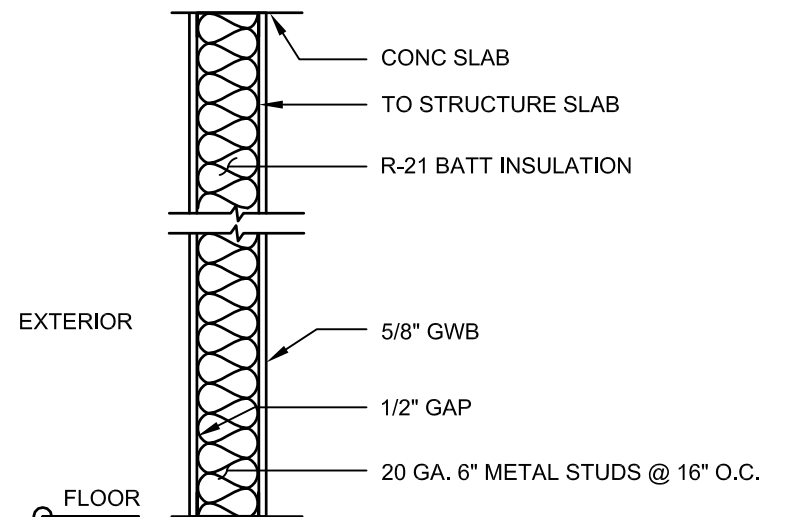
W1 INTERIOR PARTITION



W2 INTERIOR PARTITION



W3 INTERIOR PARTITION



W4 EXTERIOR FUR-WALL

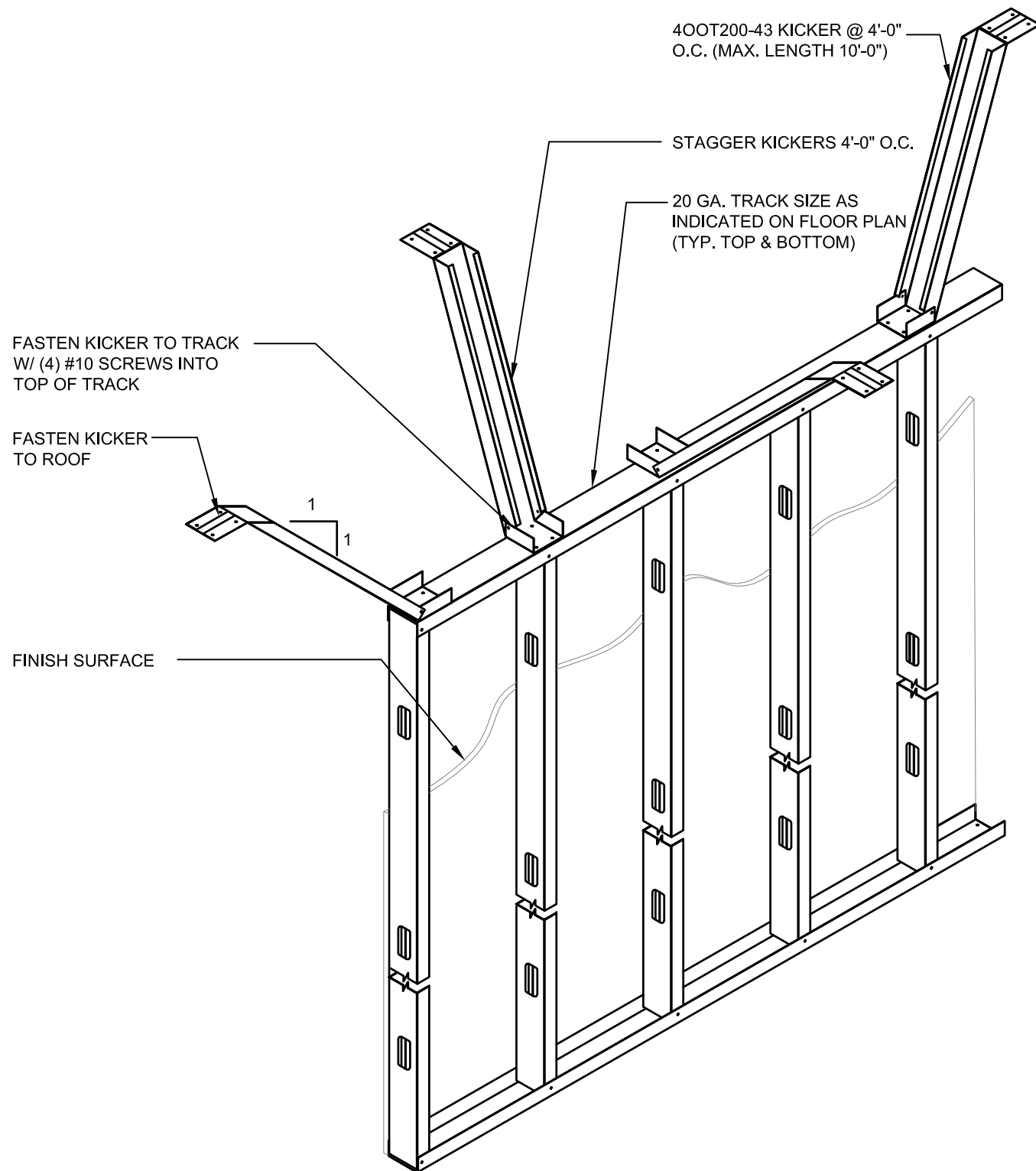
WALL NOTES

- ALL STUD WALLS AND PARTITIONS REQUIRE GYP. BOARD ON BOTH SIDES FOR THE FULL HEIGHT OF THE STUDS UNLESS SPECIFICALLY DETAILED OTHERWISE.
- ALL SUSPENDED WALLS SHALL HAVE GYP. BOARD WHICH EXTENDS 4" ABOVE THE SUSPENDED CEILING UNLESS SHOWN AND/OR NOTED OTHERWISE BY THE ARCHITECT.
- FIRE RETARDANT PLYWOOD MAY SUBSTITUTE FOR GYP. BOARD WHERE SO DIRECTED BY THE ARCHITECT.
- ALL STUDS SHALL BE "CEE" STUDS WITH FLANGE STIFFENERS.
- THE MATERIALS AND DETAILS SHOWN ARE FOR TYPICAL INSTALLATIONS. WHERE THE STUD MANUFACTURER'S RECOMMENDATIONS OR LOCAL ORDINANCES ARE MORE RESTRICTIVE, THEY SHALL APPLY.
- TYPICAL FASTENER (UNLESS NOTED OTHERWISE):
 - STEEL STUDS TO STEEL STUDS OR TRACKS:
 - 20 GAUGE #8 - 18 x 1/2" TEKS WITH PHILIPS PAN HEAD MIN. 2 PER CONNECTION
 - 18/16 GAUGE #10 - 16 x 3/4" TEKS WITH PHILIPS PAN HEAD MIN. 3 PER CONNECTION
 - STEEL STUDS OR TRACKS TO WOOD PURLINS, GIRDERS AND BEAMS:
 - #14 - 10 x 1-1/2" H.W.H. TYPE "S" METAL TO WOOD TEKS AT 12" O.C., 2" FROM EACH END
 - STEEL STUDS OR TRACKS TO STRUCTURAL STEEL (TUBE/WIDE FLANGE COL'S, BM'S, GIRDER'S, ETC.)
 - 0.145" DIA. HILTI X-EDNI FASTENERS, 5/8" MIN. LENGTH AND MIN. OF 2 PER CONNECTION, OR 2 ROWS AT 16" O.C. FOR CONTINUOUS APPLICATIONS SUCH AS TRACKS, U.O.N.
 - PLYWOOD TO STEEL STUDS:
 - #10 - 24 x 1-1/4" TEKS/3 (PLYMETALTEKS) WITH THIN WAFER HEAD - 24" O.C. FIELD, 12" O.C. PERIMETER
 - GYPSUM BOARD TO STEEL STUDS:
 - #7 x 1-1/4" HI-LOW TYPE "S" BUGLE HEAD SCREWS FOR 3/8" TO 5/8" GYPSUM BOARD TO 25 GAUGE OR 20 GAUGE STUDS
 - #6 x 1-1/4" TYPE S-12 BUGLE HEAD SCREWS FOR 3/8" TO 5/8" TO 18 GAUGE OR 16 GAUGE STUDS OR TRACKS
 - FIELD - 12" O.C. CEILINGS, 24" O.C. WALLS
 - BUTT JOINTS 12" O.C.
 - STEEL STUDS OR TRACKS TO CONCRETE:
 - 0.145" DIA. HILTI X-DNI FASTENER, 1" MIN. LENGTH, 2 ROWS AT 16" O.C.

STUD SIZE FOR REFERENCE

SIZE	GAUGE	MATERIAL DESIGN THICKNESS (MILS)	ICC	MAX. HEIGHT @ 12" O.C.	MAX. HEIGHT @ 16" O.C.	MAX. HEIGHT @ 24" O.C.
1 5/8"	20	30	162S162-33	9'-3"	8'-5"	7'-4"
2 1/2"	20	30	259S162-33	12'-9"	11'-7"	10'-2"
3 5/8"	20	33	363S162-33	19'-3"	17'-6"	15'-4"
3 5/8"	18	43	363S162-43	21'-0"	19'-1"	16'-8"
6"	20	33	600S162-33	28'-7"	26'-0"	22'-8"
6"	18	43	600S162-43	31'-2"	28'-4"	24'-9"
8"	18	43	800S162-33	39'-3"	35'-8"	31'-2"
8"	16	54	800S162-43	42'-2"	38'-4"	33'-6"

- ALL HEIGHTS REFER TO UNSUPPORTED HEIGHTS.
- RUNNER TRACK TO BE SAME GAUGE AS STUD, HEADER TRACK TO BE ONE GAUGE HIGHER.
- BASED ON INTERIOR LIMITING WALL HEIGHT TABLES. PARTITIONS W/ ONE LAYER GYP. BD. EACH SIDE (L/240 DEFLECTION - 5 PSF LOAD) PER 2012 SSMA PRODUCT TECHNICAL INFORMATION BULLETIN (ICC ESR #3064P), REFER TO SPECIFICATION SECTION 09260.
- WALLS OVER 12'-0" HIGH TO BE Laterally Braced Vertically With 1-1/2" (16 GA) COLD - ROLLED CHANNELS CLIP ANCHORED TO METAL STUDS.
- METAL STUD NON-STRUCTURAL WALL SYSTEMS TO FOLLOW ASTM C754 & ASTM 645.
- MATERIAL DESIGN THICKNESS IS THE BASE METAL THICKNESS IN MILS. MINIMUM ALLOWED BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.



TYPICAL 45° KICKER BRACING

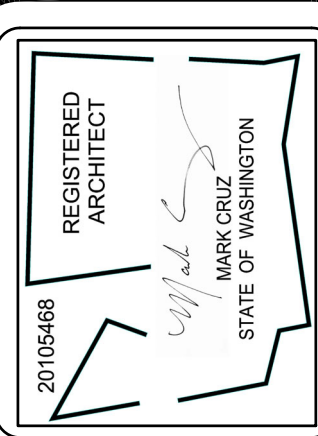
NTS

2

3

TYPICAL WALL DETAIL

NTS



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SEATTLE WA 98144

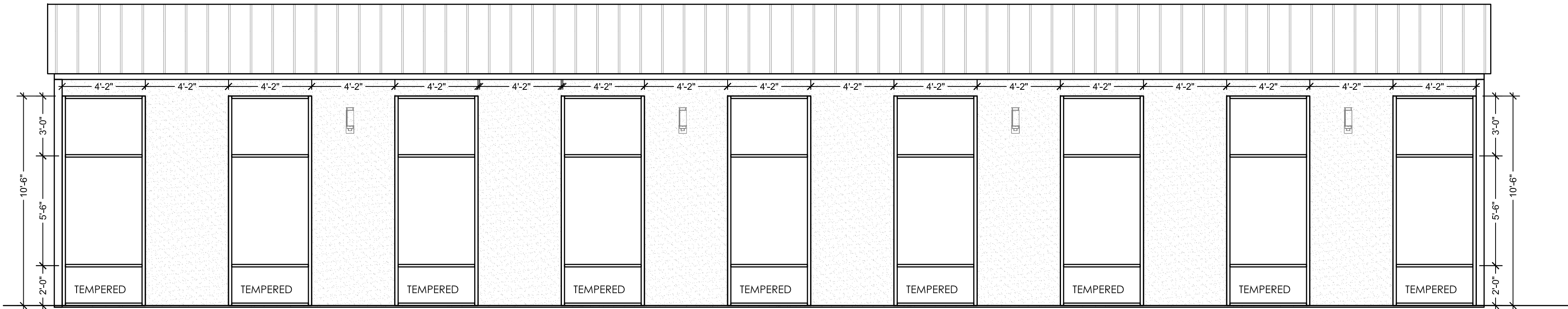
STANDARD DETAILS

REVISIONS:

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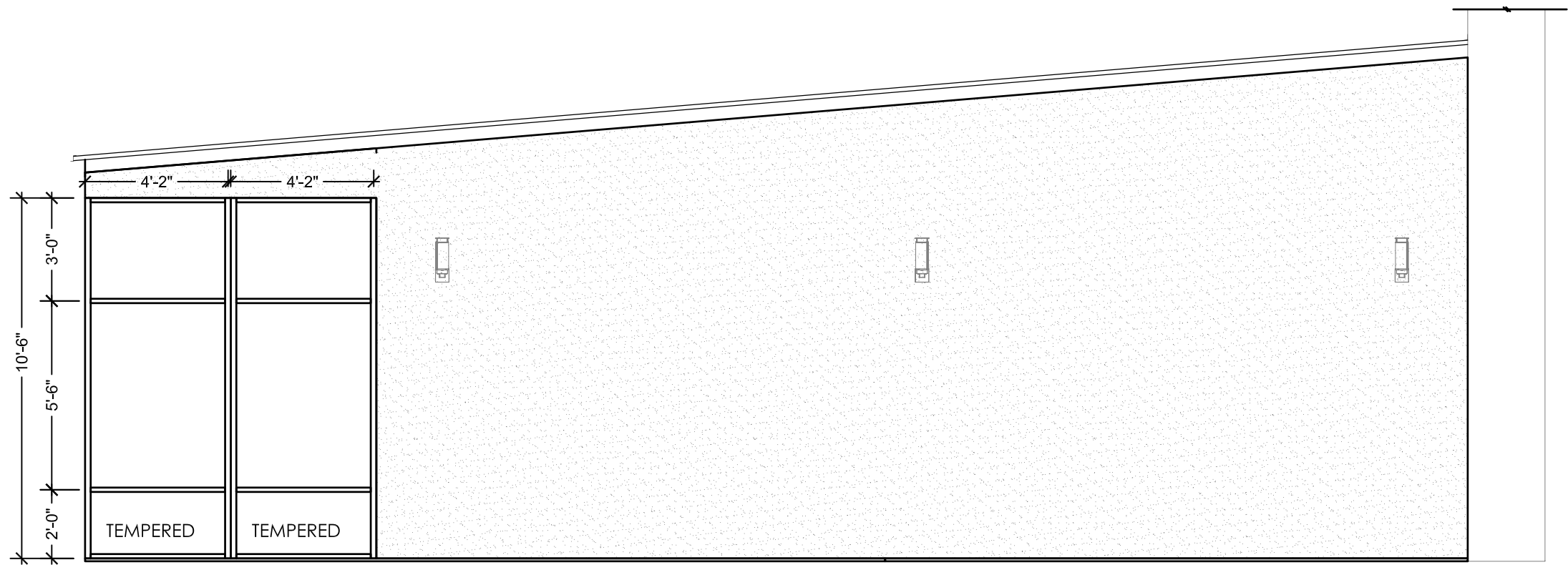
DATE: 10-29-2024
DRAWN BY: QN
CHECKED BY:

A-5



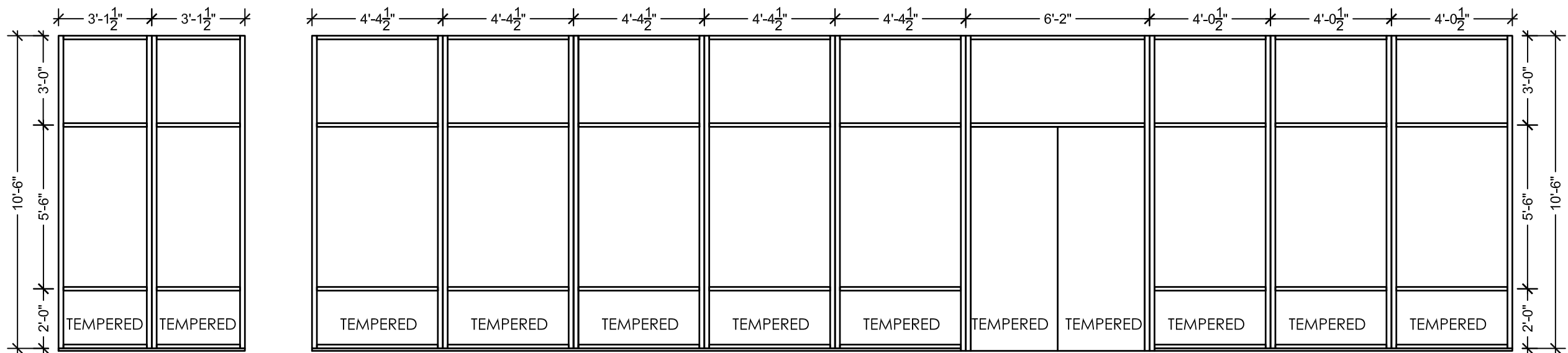
WEST FACE WINDOWS

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



SOUTH FACE WINDOWS

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



NORTH FACE STOREFRONT

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

GENERAL WINDOW NOTES:

- 1. ALL WINDOW ELEVATIONS DRAWN IN THESE SCHEDULES ARE VIEWED FROM THE EXTERIOR. SEE ELEVATIONS TO VERIFY OPERABILITY OF ALL WINDOWS.
- 2. WINDOWS SHALL BE DESIGNED, MANUFACTURED, AND INSTALLED TO WITHSTAND WIND EFFECTS AS DESCRIBED IN SBC SECTION 2404.
- 3. WINDOWS DIMENSIONS ARE TO ROUGH OPENINGS. CONTRACTOR / MANUFACTURER SHALL PLAN FOR FRAME DIMENSIONS ACCORDINGLY.
- 4. ALL TEMPERED GLAZING SHALL BE DESIGNED AS SAFETY GLAZING PER SBC 2406.
- 4. ALL WINDOWS AND GLAZED DOORS SHALL BE NFRC CERTIFIED AND LABELED.
- 5. ALL WINDOWS SHALL BE INSTALLED WITH A FLEXIBLE MEMBRANE FLASHING.

GENERAL DOOR NOTES:

- 1. ALL FIRE-RATED DOORS AND FRAMES SHALL BEAR A LABEL FROM A RECOGNIZED RATING AGENCY.
- 3. ALL GLAZING IN DOORS SHALL BE SAFETY GLAZING PER SBC 2406.
- 4. ALL WINDOWS AND GLAZED DOORS SHALL BE NFRC CERTIFIED AND LABELED.

TLS DESIGN-BUILD LLC
TEL: 206-853-5728
QUYENSEATTLE@GMAIL.COM

HOW HOW MARKET
412 12th AVENUE S.
SEATTLE WA 98144

STOREFRONT &
WINDOW DETAILS

REVISIONS:

CADD FILE:

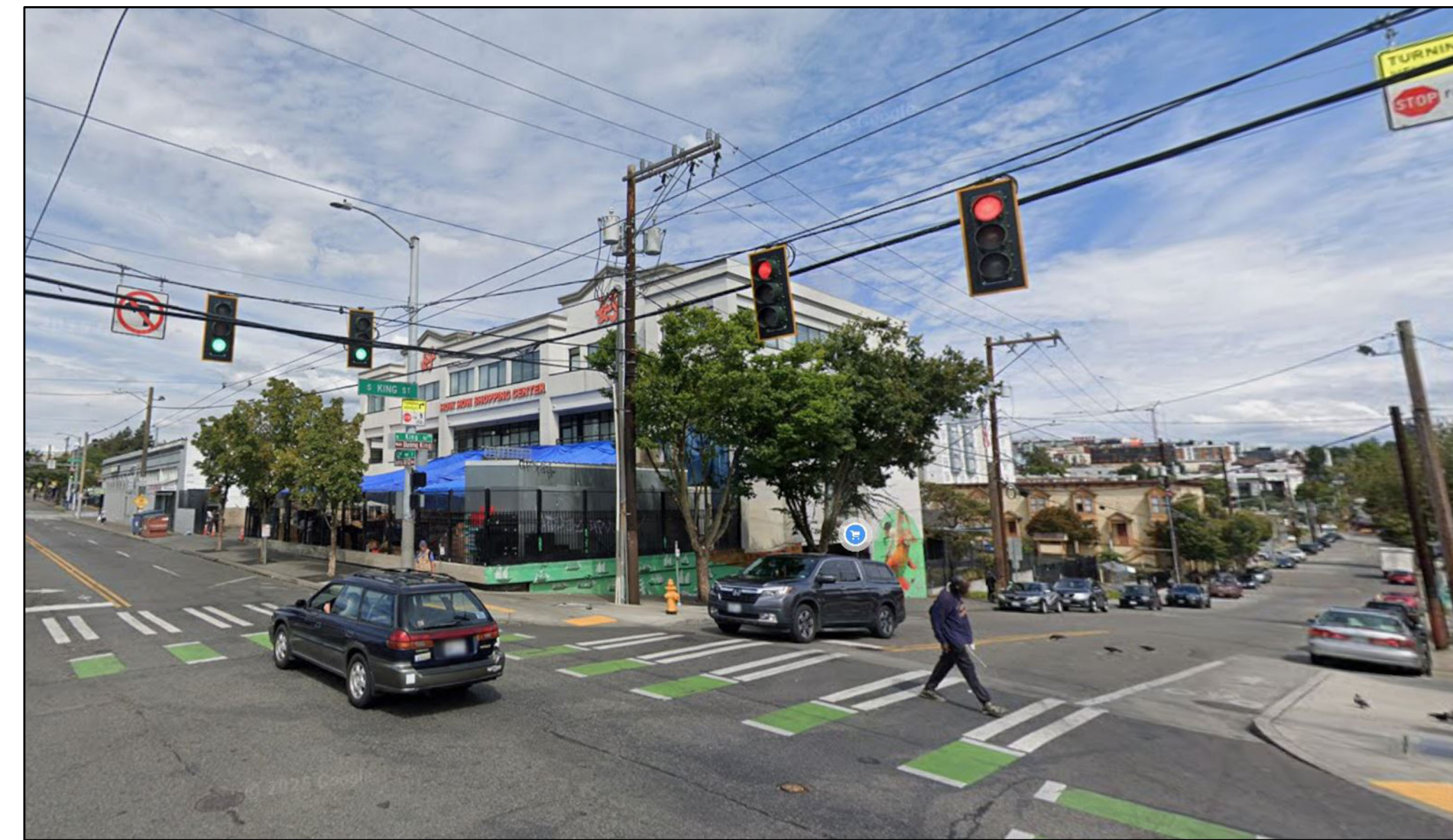
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DRAWN BY: QN
CHECKED BY:

A-6



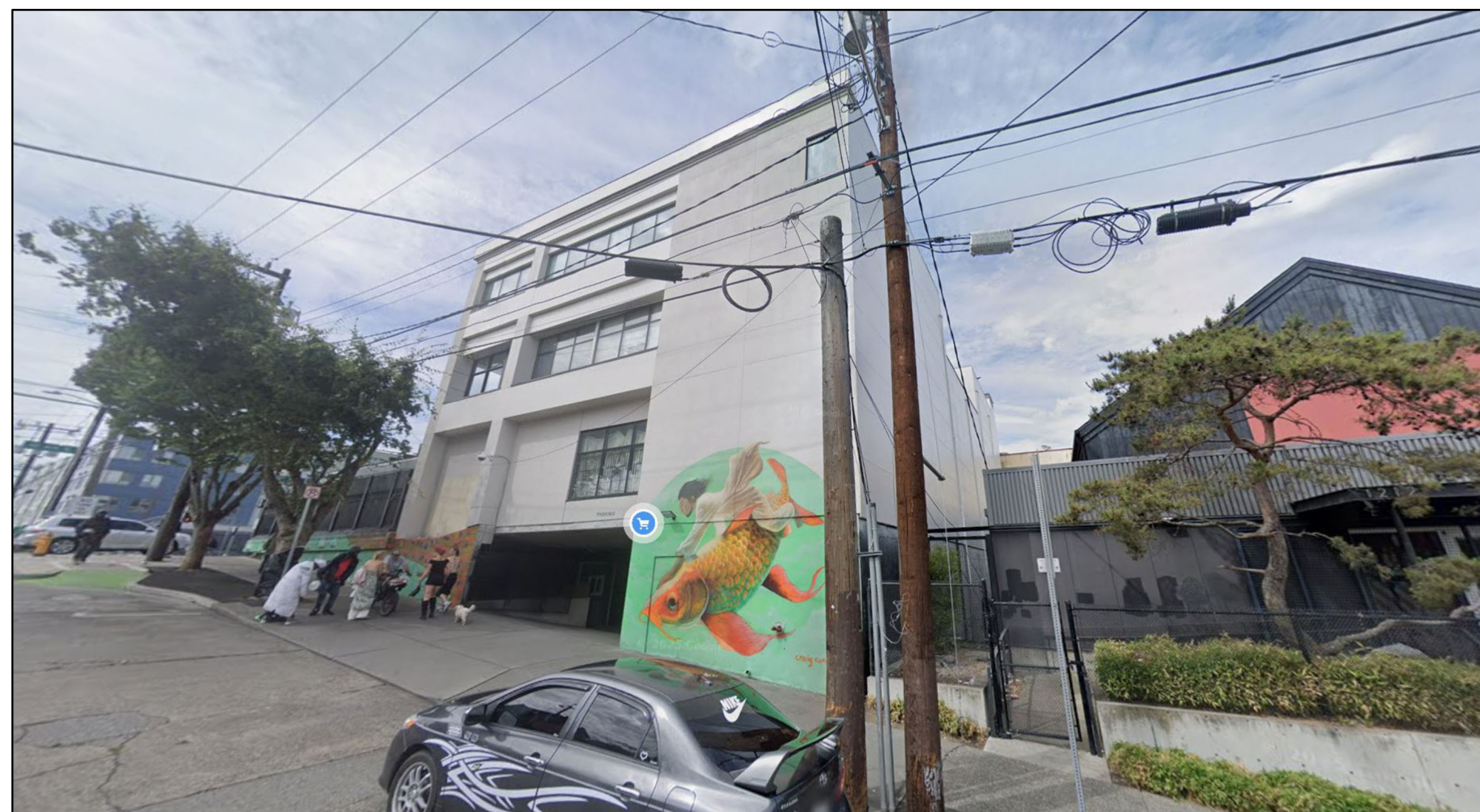
WEST FACADE

SCALE: NTS



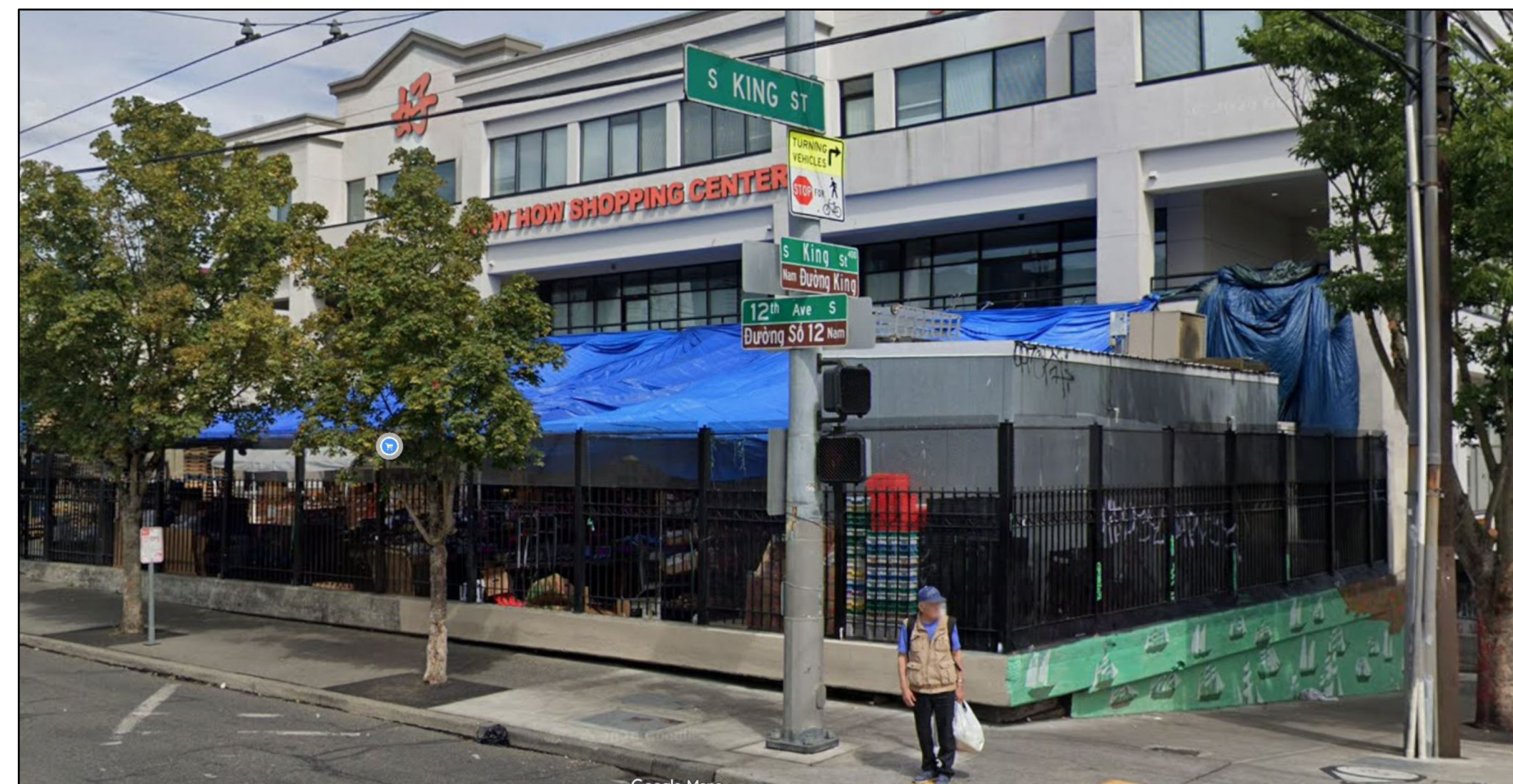
SOUTHWEST FACADE

SCALE: NTS



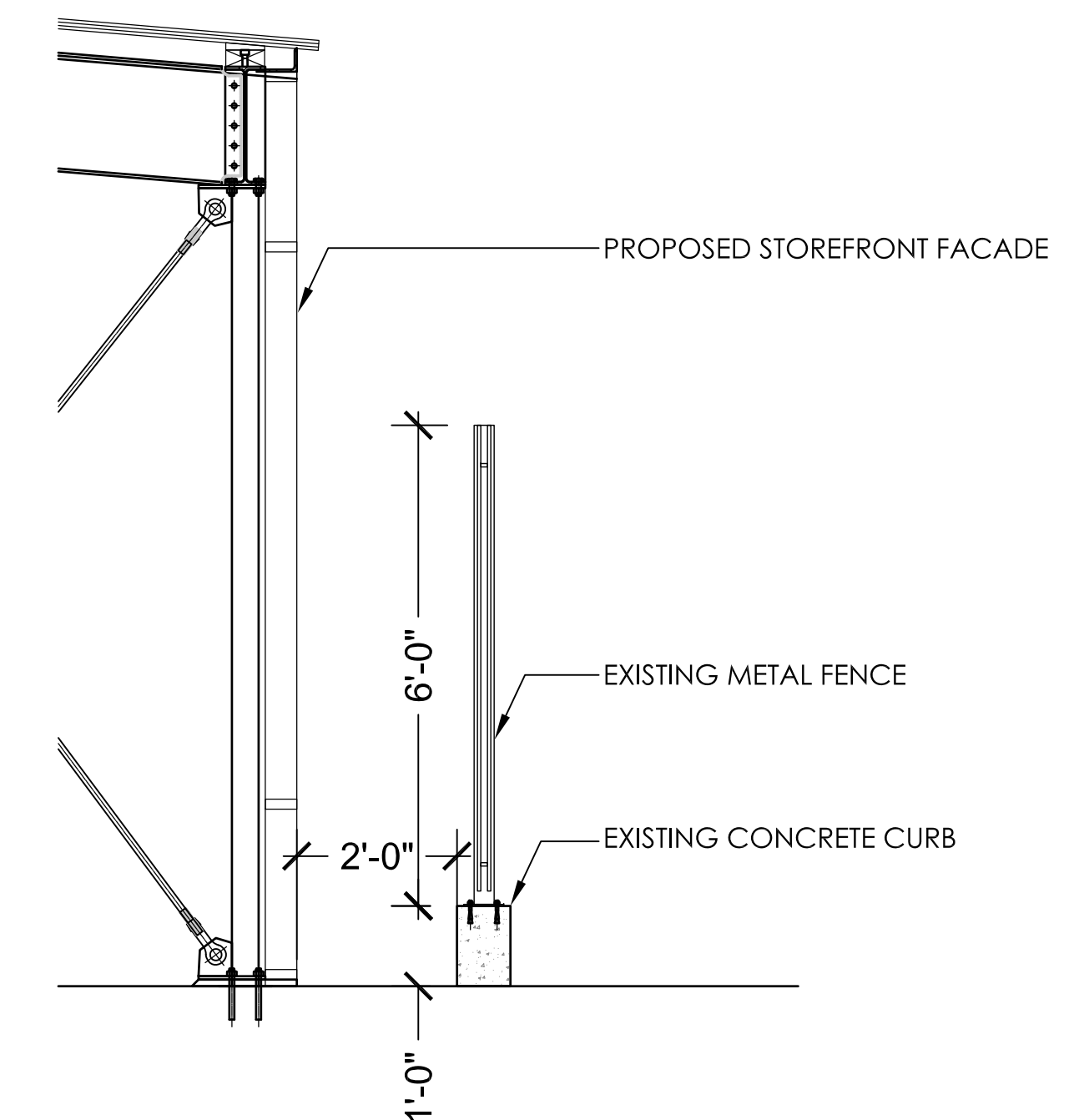
SOUTHEAST FACADE

SCALE: NTS



EXISTING METAL FENCE

SCALE: NTS



(E) FENCE & FACADE SECTION

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



HOW HOW MARKET
412 12th AVENUE S.
SEATTLE, WA 98144

(EX) FACADES PHOTOS &
FENCE SECTION

REVISIONS:

CADD FILE:

DATE: 10-29-2024

DRAWN BY: QN

CHECKED BY:

A-7

Building Structural Calculations

HOW HOW MARKET STRUCTURAL CALCULATIONS

412 12th Avenue S.
Seattle, WA 98144

Date:
February 3rd, 2026



By:

TLS Design-Build LLC
Normandy Park, WA 98166
206-853-5728

DESIGN CRITERIA

SNOW LOAD ----- 25 PSF

FLOOR LIVE ----- 100 PSF

PHOTOVOLTAIC (PV) PANEL LOAD ----- 5 PSF

GUARDRAILS/BALCONY RAILS ----- 50 PLF, 200 LBS

WIND:

DIRECTIONAL PROCEDURE ----- 100 MPH, EXP. B, $K_{zt} = 1.00$

SEISMIC: EQUIVALENT LATERAL FORCE PROCEDURE

**ORDINARY CONCENTRICALLY BRACE FRAME --- $S_S = 1.408$, $S_1 = 0.491$
 $S_{DS} = 1.126$, $S_{D1} = 0.592$
 $I_E = 1.0$, $R = 3.25$, $\Omega = 2.0$, $C_d = 3.25$
Site Class D**

SOIL BEARING ----- 4,000 PSF

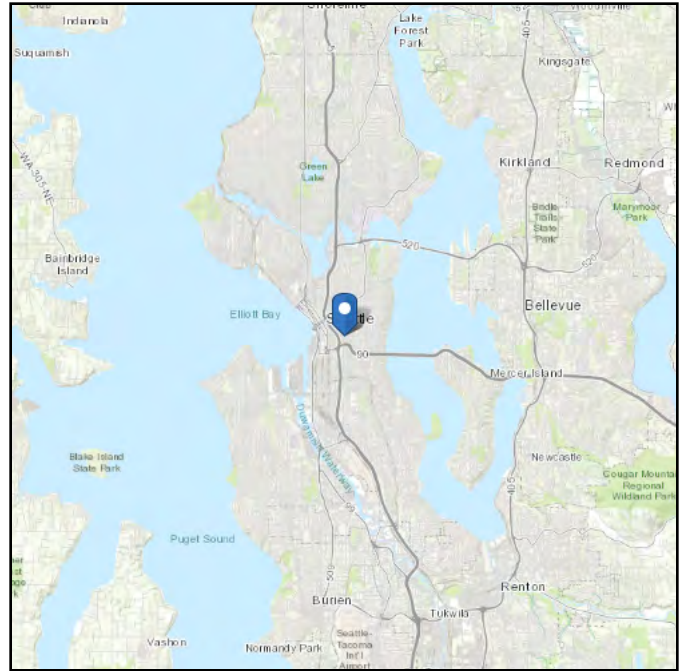
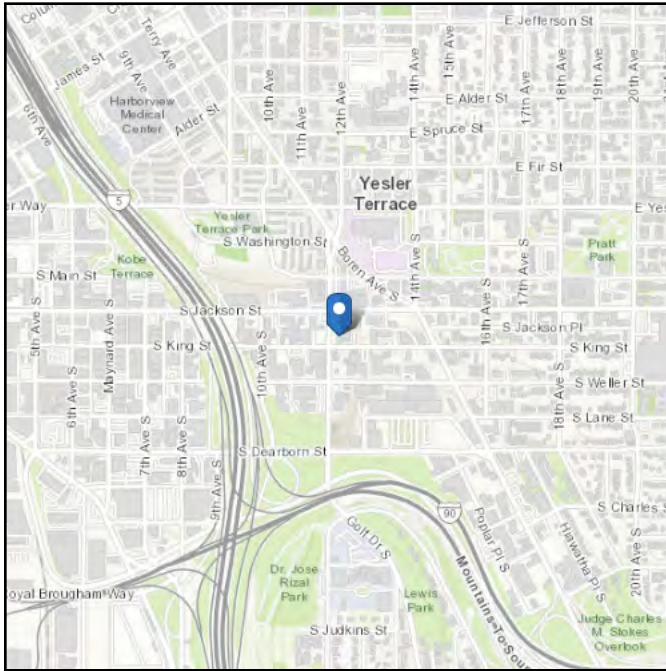
LATERAL CALCULATIONS

ASCE Hazards Report

Address:
412 12th Ave S
Seattle, Washington
98144

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 47.598587
Longitude: -122.316869
Elevation: 169.9116903879613 ft
(NAVD 88)



Wind

Results:

Wind Speed	98 Vmph
10-year MRI	67 Vmph
25-year MRI	74 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Wed Aug 20 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.408	S_{D1} :	N/A
S_1 :	0.491	T_L :	6
F_a :	1.2	PGA :	0.601
F_v :	N/A	PGA_M :	0.721
S_{MS} :	1.689	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.126	C_v :	1.382

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Wed Aug 20 2025

Date Source: [USGS Seismic Design Maps](https://www.seismicdesignmaps.com/)

SEISMIC CRITERIA ASCE 7-16 Ch. 11 & Ch. 12

Imp. Factor = 1.0
R Value = 3.25 Table 12.2-1
Risk Category = II
Site Class = D

S_s = 1.408
 S_1 = 0.491
 F_a = 1.200 Table 11.4-2
 F_v = 1.809 Table 11.4-1
 S_{MS} = 1.690
 S_{M1} = 0.888
 S_{DS} = 1.126
 S_{D1} = 0.592

C_t = 0.02 Table 12.8-2
 h (ft) = 14
 x = 0.75 Table 12.8-2
 C_u = 1.4 Table 12.8-1
 T_L = 6
 $T = C_t h^x = 0.145 < C_u$ (12.8-7)
 $C_s = S_{DS}/(R/I) = 0.347$ (12.8-2)
 $C_{s, \max} = 1.259$ (12.8-3) or (12.8-4)
 $C_{s, \min} = 0.044 * S_{DS} * I = 0.050 > 0.01$ (12.8-5)
 $C_{s, \text{ULT}} = 0.347$
 $C_{s, \text{ALL}} = 0.243$

DESIGN CRITERIA IBC 2021

ROOF DEAD LOAD		FLOOR DEAD LOAD	
Composition	2.5 psf	Flooring	1.0 psf
3/4" Plywood	2.4 psf	3/4" Plywood	2.4 psf
Roof Truss@24"	3.8 psf	2x10 @16"	3.1 psf
Insulation	1.0 psf	Insulation	1.0 psf
5/8" GWB	2.8 psf	5/8" GWB	2.8 psf
MEP	1.0 psf	MEP	1.0 psf
Total	13.5 psf	Total	11.3 psf
Use	15.0 psf	Use	12.0 psf
ROOF LIVE LOAD		FLOOR LIVE LOAD	
Snow	25 psf	Floor	40 psf
		Deck	60 psf

SEISMIC DESIGN CRITERIA ASCE 7-16 Ch. 11 & Ch. 12

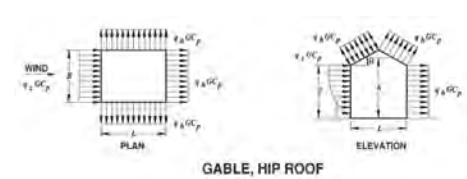
Imp. Factor =	1.0		
R Value =	3.25	Table 12.2-1	
Risk Category =	D		
Site Class =	D		
S_s =	1.408	C_t =	0.02
S_1 =	0.491	h (ft) =	14.0
F_a =	1.20	x =	0.75
F_v =	1.809	$T = C_t h^x =$	0.145
S_{DS} =	1.126	$C_s = S_{DS}/(R/I) =$	0.347
S_{D1} =	0.592	$C_{s, max} = S_{D1}/(T^*R/I) =$	1.259
		$C_{s, min} = 0.044 * S_{D1}^* I =$	0.026
$C_{s, ULT}$ =	0.347		
$C_{s, ALL}$ =	0.243		

Seismic Weight

Partitions =	20 psf
*Roof Weight = 1/2 Partition + Roof DL	
*Floor weight = Full Partition + Floor DL	
Roof =	25 psf
Floor =	32.0 psf

WIND DESIGN CRITERIA ASCE 7-16 Ch. 27 Directional Procedure

V =	100.0 mph	K_e =	1.0
Exposure =	B	K_d =	0.85
h =	14.0 ft	G =	0.85
		K_{ZT} =	1.38
Roof Slope =	1 :12	4.8°	



Pressure Coefficient (C_p)

Windward Wall =	0.8	Windward Roof =	0.3
Leeward Wall =	-0.5	Leeward Roof =	-0.6

Pressure (PSF) $q = 0.00256 K_z K_{zt} K_d K_e V^2$

Ht	K_z	q_z	$0.6 * q_z$ (ASD)	q_h	P_{ww}	P_{lw}	P_{wall}	P_{roof}
0-15	0.57	17.116	10.270	10.26985	6.983	5.135	12.118	0.768
15-20	0.62	18.618	11.171	N/A	7.596	5.135	12.731	N/A
20-25	0.66	19.819	11.891	N/A	8.086	5.135	13.221	N/A
25-30	0.70	21.020	12.612	N/A	8.576	5.135	13.711	N/A
30-35	0.76	22.822	13.693	N/A	9.311	5.135	14.446	N/A
35-40	0.81	24.323	14.594	N/A	9.924	5.135	15.059	N/A
40-45	0.85	25.524	15.315	N/A	10.414	5.135	15.549	N/A
45-50	0.89	26.726	16.035	N/A	10.904	5.135	16.039	N/A

LATERAL ANALYSIS

Seismic (ASD/Allowable)

Level	Area (ft ²)	Unit Wt. (psf)	Weight (kips)	Avg. h (ft)	Wi*h	Distribution (%)	Shear, V (kips)
Roof	2820	15	42.3	14	592.2	100%	10.27
Main Level	0	0	0.0	0	0.0	0%	0.00
			42.3			100%	10.27

Diaphragm Force (ASD/Allowable)

ΣF_i (kips)	w_{px} (kips)	Σw_i	F_{px} (kips)	$F_{px, min}$ (kips)	$F_{px, max}$ (kips)	F_{px} (kips)
10.27	42.3	42.3	10.27	6.67	13.34	10.27
0.00	0.0	0.0	0.00	0.00	0.00	0.00

Base Shear	$V = C_s W$	V (kips)	
$C_{s,ULT} =$	0.347	14.68	Ultimate
$C_{s,ALL} =$	0.243	10.27	Allowable
$S_{DS} =$	1.126		
$I_e =$	1.00		

North-South Exposure

Level	Trib. (ft)	Wind Load (plf)	Length (ft)	Shear, V (kips)	E (kips)
Roof	8	12.12*(8) = 96.96 plf	40.5	3.93	10.27
Main Level	0		40.5	0.00	0.00
				3.93	10.27

Seismic Controls

East-West Exposure

Level	Trib. (ft)	Wind Load (plf)	Length (ft)	Shear, V (kips)	E (kips)
Roof	8	12.12*(8) = 96.96 plf	71.5	6.93	10.27
Main Level	0		71.5	0.00	0.00
				6.93	10.27

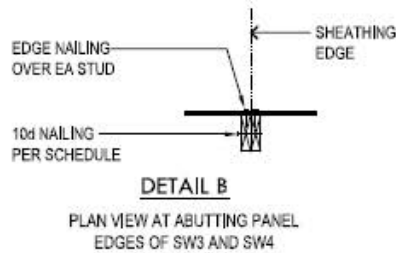
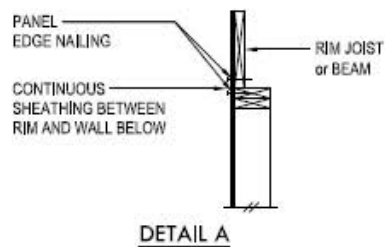
Seismic Controls

Table 4.3A Nominal Unit Shear Capacities for Wood-Frame Shear Walls^{1,3,6,7}

Wood-based Panels⁴

Sheathing Material	Minimum Nominal Panel Thickness (in.)	Minimum Fastener Penetration in Framing Member or Blocking (in.)	Fastener Type & Size	A SEISMIC								B WIND				
				Panel Edge Fastener Spacing (in.)								Panel Edge Fastener Spacing (in.)				
				6		4		3		2		6	4	3	2	
				v _s (plf)	G _s (kips/in.)	v _s (plf)	G _s (kips/in.)	v _s (plf)	G _s (kips/in.)	v _s (plf)	G _s (kips/in.)	v _w (plf)	v _w (plf)	v _w (plf)	v _w (plf)	
Wood Structural Panels - Structural ^{1,4,5}	5/16	1-1/4	Nail (common or galvanized box) 6d	OSB PLY		OSB PLY		OSB PLY		OSB PLY						
	3/8 ²			400	13	600	18	780	23	1020	35	22	560	840	1090	1430
	7/16 ²	1-3/8	8d	460	19	720	24	920	30	1220	43	24	645	1010	1290	1710
	15/32			510	16	790	21	1010	27	1340	40	24	715	1105	1415	1875
	15/32	1-1/2	10d	560	14	880	18	1100	24	1460	37	23	785	1205	1540	2045
Wood Structural Panels - Sheathing ^{1,5}	5/16	1-1/4	6d	680	22	1020	29	1330	36	1740	51	28	950	1430	1860	2435
	3/8			360	13	540	18	700	24	900	37	18	505	755	980	1260
	3/8 ²	1-3/8	8d	400	11	600	15	780	20	1020	32	17	560	840	1090	1430
	7/16 ²			440	17	640	25	820	31	1060	45	20	615	895	1150	1485
	15/32	1-1/2	10d	480	15	700	22	900	28	1170	42	21	670	980	1260	1640
Plywood Siding	5/16	1-1/4	Nail (galvanized casing) 6d	520	13	780	19	980	25	1280	39	20	730	1065	1370	1790
	3/8	1-3/8	8d	620	22	920	30	1200	37	1540	52	23	870	1290	1680	2155
	7/16 ²			680	19	1020	26	1330	33	1740	48	22	950	1430	1860	2435
	15/32															
	15/32	1-1/2	10d													
Particleboard Sheathing - (M-S "Exterior Glue" and M-2 "Exterior Glue")	5/16	1-1/4	Nail (common or galvanized box) 6d	280	13	420	16	550	17	720	21		390	590	770	1010
	3/8	1-3/8	8d	320	16	480	18	620	20	820	22		450	670	870	1150
	3/8		6d	240	15	360	17	460	19	600	22		335	505	645	840
	1/2		8d	260	18	380	20	480	21	630	23		365	530	670	880
Structural Fiberboard Sheathing	1/2		10d	280	18	420	20	540	22	700	24		390	560	755	980
	5/8			370	21	550	23	720	24	920	25		520	770	1010	1290
				400	21	610	23	790	24	1040	26		560	855	1105	1455
	25/32		Nail (galvanized roofing) 11 ga. galv. roofing nail (0.120" x 1-1/2" long x 7/16" head)			340	4.0	460	5.0	520	5.5			475	645	730
			11 ga. galv. roofing nail (0.120" x 1-3/4" long x 3/8" head)			340	4.0	460	5.0	520	5.5			475	645	730

- Nominal unit shear values shall be adjusted in accordance with 4.3.3 to determine ASD allowable unit shear capacity and LRFD factored unit resistance. For general construction requirements see 4.3.6. For specific requirements, see 4.3.7.1 for wood structural panel shear walls, 4.3.7.2 for particleboard shear walls, and 4.3.7.3 for fiberboard shear walls. See Appendix A for common and box nail dimensions.
- Shears are permitted to be increased to values shown for 15/32 inch sheathing with same nailing provided (a) studs are spaced a maximum of 16 inches on center, or (b) panels are applied with long dimension across studs.
- For species and grades of framing other than Douglas-Fir-Larch or Southern Pine, reduced nominal unit shear capacities shall be determined by multiplying the tabulated nominal unit shear capacity by the Specific Gravity Adjustment Factor = $[1 - (0.5 - G)]$, where G = Specific Gravity of the framing lumber from the NDS (Table 11.3.2A). The Specific Gravity Adjustment Factor shall not be greater than 1.
- Apparent shear stiffness values G_s are based on nail slip in framing with moisture content less than or equal to 19% at time of fabrication and panel stiffness values for shear walls constructed with either OSB or 3-ply plywood panels. When 4-ply or 5-ply plywood panels or composite panels are used, G_s values shall be permitted to be increased by 1.2.
- Where moisture content of the framing is greater than 19% at time of fabrication, G_s values shall be multiplied by 0.5.
- Where panels are applied on both faces of a shear wall and nail spacing is less than 6" on center on either side, panel joints shall be offset to fall on different framing members. Alternatively, the width of the nailed face of framing members shall be 3" nominal or greater at adjoining panel edges and nails at all panel edges shall be staggered.
- Galvanized nails shall be hot-dipped or tumbled.

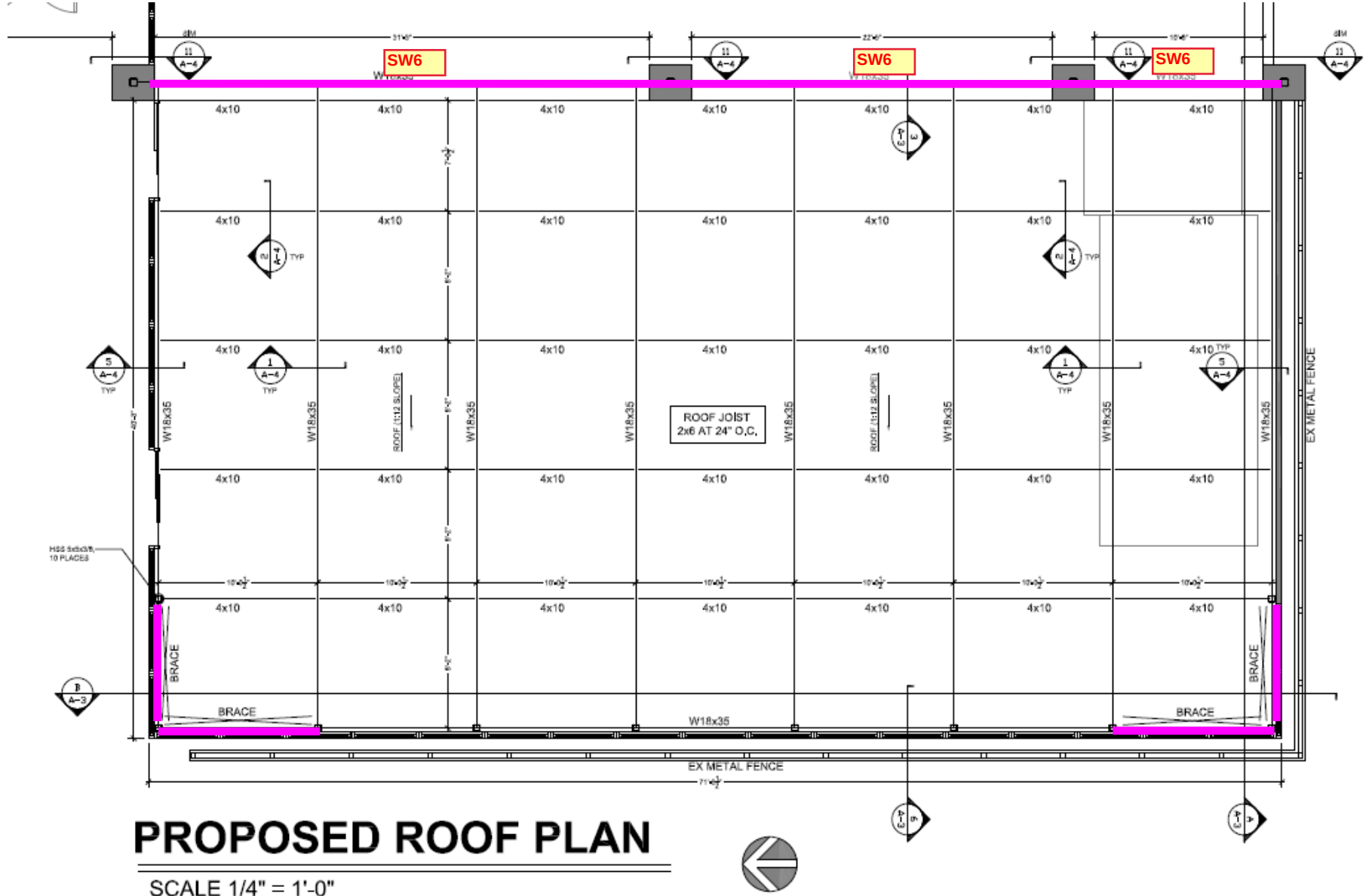


SHEARWALL SCHEDULE ①②③④⑤⑥⑦

MARK	SHEATHING	PANEL EDGE NAILING	TOP PLATE CONNECTION		BASE PLATE CONNECTION	
			TJI/2x	RIM/BEAM ⑧	AT WOOD	AT CONCRETE
SW6	1/2" PLY or 7/16" OSB	8d AT 6"oc	10d AT 6"oc	A35 AT 30"oc	12d AT 6"oc	5/8"Ø AB AT 48"oc
SW4	1/2" PLY or 7/16" OSB	8d AT 4"oc	10d AT 4"oc	A35 AT 18"oc	12d AT 4"oc	5/8"Ø AB AT 42"oc
SW3 ④	1/2" PLY or 7/16" OSB	8d AT 3"oc	(2)ROWS 10d AT 6"oc	A35 AT 16"oc	12d AT 3"oc	5/8"Ø AB AT 36"oc
SW2 ④	1/2" PLY or 7/16" OSB	8d AT 2"oc	(2)ROWS 10d AT 4"oc	A35 AT 12"oc	(2)ROWS 12d AT 4"oc	5/8"Ø AB AT 24"oc

242 plf (340 plf)
353 plf (495 plf)
456 plf (637 plf)
595 plf (832plf)

- ① BLOCK PANEL EDGES WITH 2x4 LAID FLAT AND NAIL PANELS TO INTERMEDIATE SUPPORTS WITH 8d AT 12"oc.
- ② 8d NAILS SHALL BE 0.131"Ø x 2-1/2", 10d NAILS SHALL BE 0.131"Ø x 3", AND 12d NAILS SHALL BE 0.131"Ø x 3-1/4".
- ③ EMBED ANCHOR BOLTS AT LEAST 7". ALL BOLTS SHALL HAVE 3" x 3" x 0.229" PLATE WASHERS. THE PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE WITH SHEATHING.
- ④ 3x STUDS OR DBL STUDS NAILED TOGETHER w/ 10d NAILING IS REQD AT ABUTTING PANEL EDGES OF SW3 AND SW4. REFER TO DETAIL B. WHERE 3x STUDS ARE USED, STAGGER NAILS AT ADJOINING PANEL EDGES.
- ⑤ TWO STUDS MINIMUM OR POST PER PLAN ARE REQUIRED AT EACH END OF ALL SHEARWALLS AND ALL END STUDS SHALL RECEIVE PANEL EDGE NAILING.
- ⑥ ALL EXTERIOR WALLS SHALL BE SW1, UNLESS NOTED OTHERWISE.
- ⑦ NAILS SHALL NOT BE SPACED LESS THAN 3/8" FROM EDGES OF SHEATHING. SHEATHING NAILS SHALL BE DRIVEN SO THEIR HEADS ARE FLUSH WITH SHEATHING (NOT COUNTERSUNK).
- ⑧ LTP4's INSTALLED OVER SHEATHING WITH 8d (0.131"Ø x 2-1/2") NAILS MAY BE SUBSTITUTED FOR A35's AT CONTRACTORS OPTION.
- ⑨ A35's OR LTP4's MAY BE ELIMINATED PER DETAIL A WHEN WALL SHEATHING LAPS RIM JOIST.



SHEAR DISTRIBUTION ANALYSIS

North-South / Front-Back Direction

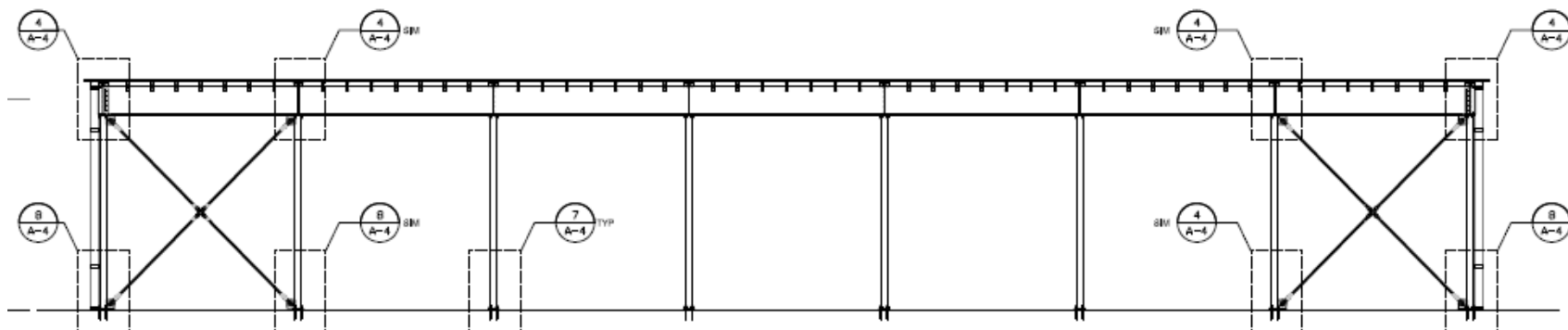
Direct Shear

Roof:	$V_{1, \text{ seismic }} = ((10.27) * 1000 * (10.5 / 40.5)) / (71.5) =$	37.2 plf	SW6	
	$V_{2, \text{ seismic }} = ((10.27) * 1000 * (30 / 40.5)) / (10 + 10) =$	380.4 plf	SW3	Use Steel X-Brace
	$V_{1, \text{ wind }} = ((3.93) * 1000 * (10.5 / 40.5)) / (71.5) =$	14.3 plf	SW6	
	$V_{2, \text{ wind }} = ((3.93) * 1000 * (30 / 40.5)) / (10 + 10) =$	145.6 plf	SW6	
Result:	Use SW6	Capacity = 242 plf (seismic) Capacity = 340 plf (wind)		
	Use SW3	Capacity = 456 plf (seismic) Capacity = 595 plf (wind)		

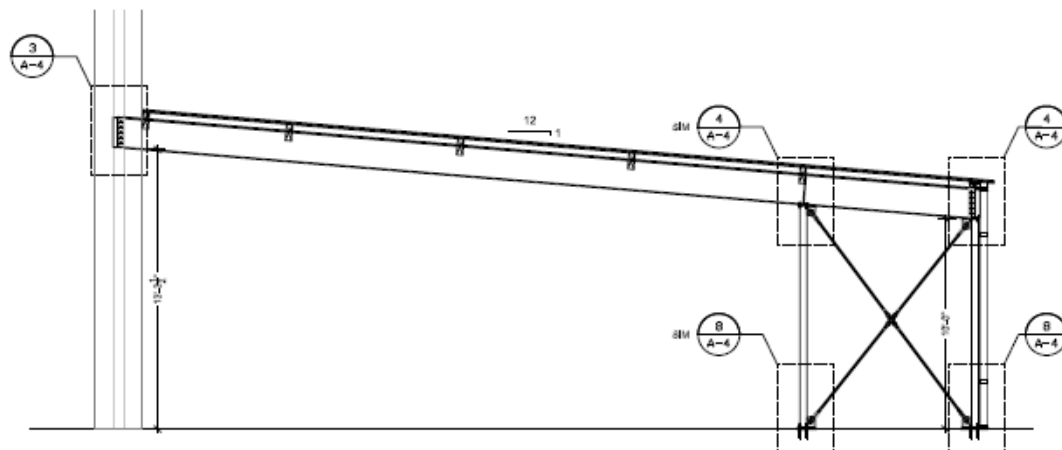
East-West / Side-Side Direction

Direct Shear

Upper Roof:	$V_{1, \text{ seismic }} = ((10.27) * 1000 * (35.75 / 71.5)) / (8) =$	641.9 plf	2SW4	Use Steel X-Brace
	$V_{2, \text{ seismic }} = ((10.27) * 1000 * (35.75 / 71.5)) / (8) =$	641.9 plf	2SW4	Use Steel X-Brace
	$V_{1, \text{ wind }} = ((6.93) * 1000 * (35.75 / 71.5)) / (8) =$	433.1 plf	SW4	
	$V_{2, \text{ wind }} = ((6.93) * 1000 * (35.75 / 71.5)) / (8) =$	433.1 plf	SW4	
Result:	Use SW4	Capacity = 353 plf (seismic) Capacity = 495 plf (wind)		
	Use 2SW4	Capacity = 706 plf (seismic) Capacity = 990 plf (wind)		



NORTH-SOUTH DIRECTION



EAST-WEST DIRECTION

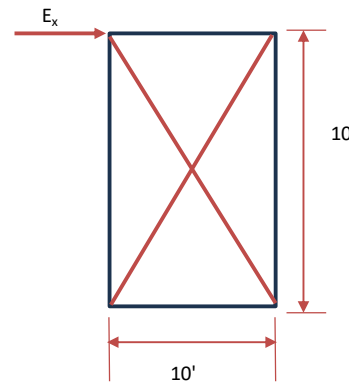
North-South Direction

Design Tension Brace Member (AISC341 14.2)

Check 1" diameter threaded rod:

$E_x =$	5.43 kips	(LRFD)		
$P_{t,max} =$	7.69 kips	(LRFD)		
$\phi_t =$	0.90			
$\phi_t =$	0.75			
$F_y =$	55 ksi			
$F_u =$	75 ksi			
$A_g =$	0.785 in ²			
$\phi_t P_n =$	38.9 kips	$>$	$P_{t,max} =$	7.69 kips
$\phi_t P_u =$	44.2 kips	$>$	$P_{t,max} =$	7.69 kips

1" threaded rod is adequate

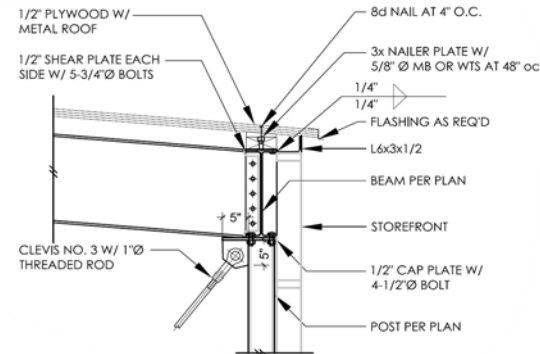


Design Bracing Connection (AISC41 14.4)

Check brace to gusset plate:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	15.4 kips			
$R_y =$	1.1	Table I-6-1		
$F_y =$	55 ksi			
$A_g =$	0.785 in ²			
$R_y F_y A_g =$	47.5 kips	$>$	$\Omega P_{t,max} =$	15.4 kips

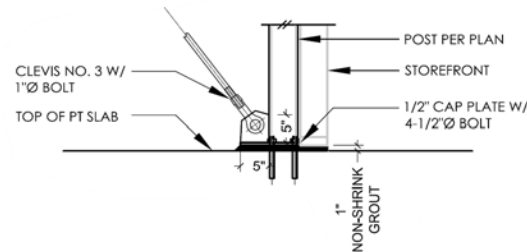
Clevis No. 3 with 1" diameter bolt are adequate



Check 1/2" gusset plate:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	15.4 kips			
$\phi_t =$	0.90			
$\phi_t =$	0.75			
$F_y =$	36 ksi			
$F_u =$	58 ksi			
$A_g = A_n =$	2.438 in ²			
$\phi_t P_n =$	79.0 kips	$>$	$\Omega P_{t,max} =$	15.4 kips
$\phi_t P_u =$	106.0 kips	$>$	$\Omega P_{t,max} =$	15.4 kips

1/2" gusset plate is adequate



Check 1/4" welding:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	15.4 kips			
$\Omega P_{t,y} =$	10.9 kips			
$\Omega P_{t,x} =$	10.9 kips			
$F_{EXX} =$	70.0 ksi			
$l =$	10.0 in			
$\phi R_n =$	55.7 kips	$>$	$\Omega P_{t,x \text{ or } y} =$	10.9 kips

1/4" fillet weld is adequate

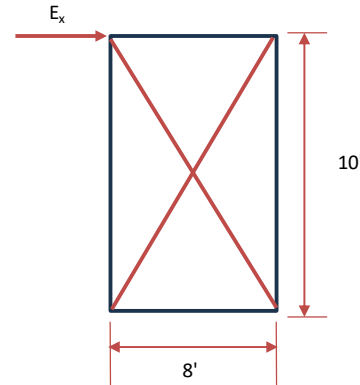
East-West Direction

Design Tension Brace Member (AISC341 14.2)

Check 1" diameter threaded rod:

$E_x =$	7.34 kips	(LRFD)		
$P_{t,max} =$	11.74 kips	(LRFD)		
$\phi_t =$	0.90			
$\phi_t =$	0.75			
$F_y =$	55 ksi			
$F_u =$	75 ksi			
$A_g =$	0.785 in ²			
$\phi P_n =$	38.9 kips	$>$	$P_{t,max} =$	11.74 kips
$\phi P_n =$	44.2 kips	$>$	$P_{t,max} =$	11.74 kips

1" threaded rod with clevis No. 3 and turnbuckle is adequate

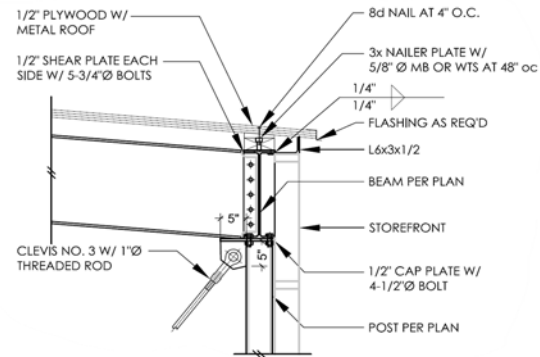


Design Bracing Connection (AISC41 14.4)

Check brace to gusset plate:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	23.5 kips			
$R_y =$	1.1	Table I-6-1		
$F_y =$	55 ksi			
$A_g =$	0.785 in ²			
$R_y F_y A_g =$	47.5 kips	$>$	$\Omega P_{t,max} =$	23.5 kips

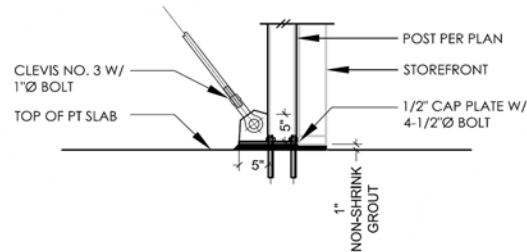
Clevis No. 3 with 1" diameter bolt are adequate



Check 1/2" gusset plate:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	23.5 kips			
$\phi_t =$	0.90			
$\phi_t =$	0.75			
$F_y =$	36 ksi			
$F_u =$	58 ksi			
$A_g = A_n =$	2.438 in ²			
$\phi_t P_n =$	79.0 kips	$>$	$\Omega P_{t,max} =$	23.5 kips
$\phi_t P_u =$	106.0 kips	$>$	$\Omega P_{t,max} =$	23.5 kips

1/2" gusset plate is adequate

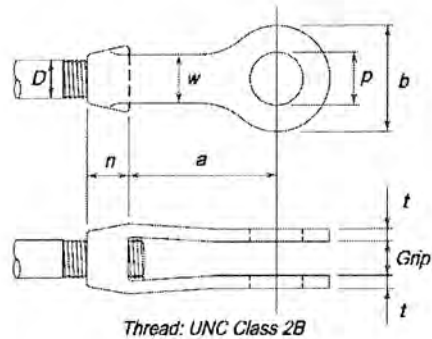


Check 1/4" welding:

$\Omega =$	2.0			
$\Omega P_{t,max} =$	23.5 kips			
$\Omega P_{t,y} =$	16.6 kips			
$\Omega P_{t,x} =$	16.6 kips			
$F_{EXX} =$	70.0 ksi			
$l =$	10.0 in			
$\phi R_n =$	55.7 kips	$>$	$\Omega P_{t,x \text{ or } y} =$	16.6 kips

1/4" fillet weld is adequate

Table 15-4
Dimensions and Weights
of Clevises



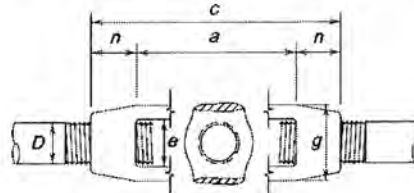
Clevis Number	Dimensions, in.							Weight, lb	Available Strength, kips*	
	Max. D	Max. p	b	n	a	w	t		ASD	LRFD
2	5/8	3/4	1 7/16	5/8	3 9/16	1 1/16	5/16 (+1/32, -0)	1	5.83	8.75
2 1/2	7/8	1 1/2	2 1/2	1	4	1 1/4	5/16 (+1/32, -0)	2.5	12.5	18.8
3	1 3/8	1 3/4	3	1 1/4	5 1/16	1 1/2	1/2 (+1/16, -1/32)	4	25.0	37.5
3 1/2	1 1/2	2	3 1/2	1 1/2	6	1 3/4	1/2 (+1/16, -1/16)	6	30.0	45.0
4	1 3/4	2 1/4	4	1 3/4	5 15/16	2	1/2 (+1/16, -1/16)	9	35.0	52.5
5	2 1/8	2 1/2	5	2 1/4	7	2 1/2	5/8 (+3/32, -0)	16	62.5	93.8
6	2 1/2	3	6	2 3/4	8	3	3/4 (+3/32, -0)	26	90.0	135
7	3	3 3/4	7	3	9	3 1/2	7/8 (+1/8, -1/16)	36	114	171
8	4	4 1/4	8	4	10 1/8	4	1 1/2 (+1/8, -1/16)	90	225	338

Notes:

Weights and dimensions of clevises are typical; products of all suppliers are essentially similar. User shall verify with the manufacturer that product meets available strength specifications above.

* Tabulated available strengths are based on $\phi = 0.50$, $\Omega = 3.00$. Strength at service load corresponds to a 3:1 safety factor using maximum pin diameter.

Table 15-6
Dimensions and Weights of Turnbuckles



Threads: UNC and 4UN Class 2B

Diameter D , in.	Dimensions, in.					Weight (lb) for Length a , in.						Available Strength, kips	
	a	n	c	e	g	6	9	12	18	24	26	ASD	LRFD
												R_n/Ω^*	ϕR_n^*
$3/8$	6	$9/16$	$7/8$	$9/16$	$1/32$	0.42						2.00	3.00
$1/2$	6	$25/32$	$7/8$	$1/16$	$15/16$	0.65	0.90	1.20				3.67	5.50
$5/8$	6	$15/16$	$7/8$	$13/16$	$1/2$	0.98	1.35	1.58	2.43			5.83	8.75
$3/4$	6	$1/16$	$8/8$	$15/16$	$123/32$	1.45	1.84	2.35	3.06	4.25		8.67	13.0
$7/8$	6	$15/16$	$85/8$	$13/32$	$17/8$	1.85		3.02	4.20	5.43		12.0	18.0
1	6	$17/16$	$87/8$	$19/32$	$21/32$	2.60		4.02	4.40	6.85	10.0	15.5	23.3
$11/8$	6	$19/16$	$9/8$	$113/32$	$29/32$	4.06		4.70	6.10			19.3	29.0
$11/4$	6	$19/16$	$9/8$	$19/16$	$217/32$	4.00		6.49	7.13	11.3	13.1	25.3	38.0
$13/8$	6	$113/16$	$95/8$	$111/16$	$23/4$	6.15						29.0	43.5
$11/2$	6	$17/8$	$93/4$	$127/32$	$31/32$	6.15		9.70	9.13	16.8	19.4	35.0	52.5
$15/8$	6	$21/2$	11	$131/32$	$39/32$	9.80						40.9	61.3
$13/4$	6	$21/2$	11	$21/8$	$39/16$	9.80		15.3	16.0	19.5		47.2	70.8
$17/8$	6	$213/16$	$115/8$	$23/8$	4	14.0		15.3				62.0	93.0
2	6	$213/16$	$115/8$	$23/8$	4	14.0		15.3		27.5		62.0	93.0
$21/4$	6	$35/16$	$125/8$	$211/16$	$45/8$	19.6		30.9		43.5		80.0	120
$21/2$	6	$33/4$	$131/2$	3	5	23.3		30.9		42.4		100	150
$23/4$	6	$43/16$	$143/8$	$31/4$	$55/8$	31.5				54.0		125	188
3	6	$45/16$	$145/8$	$35/8$	$61/8$	39.5						161	242
$31/4$	6	$57/16$	$167/8$	$37/8$	$63/4$	60.5		79.5				203	305
$31/2$	6	$57/16$	$167/8$	$37/8$	$63/4$	60.5	70.0	79.5				203	305
$33/4$	6	6	18	$45/8$	$81/2$	95.0						280	420
4	6	6	18	$45/8$	$81/2$	95.0						280	420
$41/4$	9	$63/4$	$221/2$	$51/4$	$93/4$		152					390	585
$41/2$	9	$63/4$	$221/2$	$51/4$	$93/4$		152					390	585
$43/4$	9	$63/4$	$221/2$	$51/4$	$93/4$		152					390	585
5	9	$71/2$	24	6	10		200					491	737

Notes:

Weights and dimensions of turnbuckles are typical; products of all suppliers are essentially similar. Users shall verify with the manufacturer that product meets strength specifications above.

* Tabulated available strengths are based on $\phi = 0.50$, $\Omega = 3.00$.

Table 7-1
Available Shear
Strength of Bolts, kips

Nominal Bolt Diameter, d , in.					$\frac{5}{8}$		$\frac{3}{4}$		$\frac{7}{8}$		1	
Nominal Bolt Area, in. ²					0.307		0.442		0.601		0.785	
ASTM Desig.	Thread Cond.	F_{nv}/Ω (ksi)	ϕF_{nv} (ksi)	Load- ing	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n
		ASD	LRFD		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Group A	N	27.0	40.5	S	8.29	12.4	11.9	17.9	16.2	24.3	21.2	31.8
				D	16.6	24.9	23.9	35.8	32.5	48.7	42.4	63.6
	X	34.0	51.0	S	10.4	15.7	15.0	22.5	20.4	30.7	26.7	40.0
				D	20.9	31.3	30.1	45.1	40.9	61.3	53.4	80.1
Group B	N	34.0	51.0	S	10.4	15.7	15.0	22.5	20.4	30.7	26.7	40.0
				D	20.9	31.3	30.1	45.1	40.9	61.3	53.4	80.1
	X	42.0	63.0	S	12.9	19.3	18.6	27.8	25.2	37.9	33.0	49.5
				D	25.8	38.7	37.1	55.7	50.5	75.7	65.9	98.9
A307	—	13.5	20.3	S	4.14	6.23	5.97	8.97	8.11	12.2	10.6	15.9
				D	8.29	12.5	11.9	17.9	16.2	24.4	21.2	31.9
Nominal Bolt Diameter, d , in.					$1\frac{1}{8}$		$1\frac{1}{4}$		$1\frac{3}{8}$		$1\frac{1}{2}$	
Nominal Bolt Area, in. ²					0.994		1.23		1.48		1.77	
ASTM Desig.	Thread Cond.	F_{nv}/Ω (ksi)	ϕF_{nv} (ksi)	Load- ing	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n	r_n/Ω	ϕr_n
		ASD	LRFD		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Group A	N	27.0	40.5	S	26.8	40.3	33.2	49.8	40.0	59.9	47.8	71.7
				D	53.7	80.5	66.4	99.6	79.9	120	95.6	143
	X	34.0	51.0	S	33.8	50.7	41.8	62.7	50.3	75.5	60.2	90.3
				D	67.6	101	83.6	125	101	151	120	181
Group B	N	34.0	51.0	S	33.8	50.7	41.8	62.7	50.3	75.5	60.2	90.3
				D	67.6	101	83.6	125	101	151	120	181
	X	42.0	63.0	S	41.7	62.6	51.7	77.5	62.2	93.2	74.3	112
				D	83.5	125	103	155	124	186	149	223
A307	—	13.5	20.3	S	13.4	20.2	16.6	25.0	20.0	30.0	23.9	35.9
				D	26.8	40.4	33.2	49.9	40.0	60.1	47.8	71.9
ASD	LRFD	For end loaded connections greater than 38 in., see AISC Specification Table J3.2 footnote b.										
$\Omega = 2.00$	$\phi = 0.75$											



**Anchor Designer™ for
Concrete Software**
Version 3.4.2506.1

Company:	TLS Design-Build LLC	Date:	9/7/2025
Engineer:	QCN	Page:	1
Project:	Hau Hau Market		
Address:	412 12th Ave S Seattle, WA		
Phone:			
E-mail:			

1. Project information

Project description: Anchor Bolt Design

Location:

Design name: Design

Comment:

2. Input Data & Anchor Parameters

General

Design method: ACI 318-19

Units: Imperial units

Anchor Information:

Anchor type: Torque controlled expansion anchor

Material: Carbon Steel

Diameter (inch): 0.750

Nominal Embedment depth (inch): 5.000

Effective Embedment depth, h_{ef} (inch): 4.250

Code report: ICC-ES ESR-3037

Anchor category: 1

Anchor ductility: Yes

h_{min} (inch): 7.48

c_{ac} (inch): 7.08

c_{min} (inch): 6.00

s_{min} (inch): 3.50

Base Material

Concrete: Normal-weight

Concrete thickness, h (inch): 12.00

State: Cracked

Compressive strength, f'_c (psi): 5000

$\Psi_{c,v}$: 1.2

Reinforcement condition: A tension, B shear

Supplemental edge reinforcement: Not applicable

Reinforcement provided at corners: Yes

Ignore concrete breakout in tension: No

Ignore concrete breakout in shear: No

Ignore 6do requirement: Not applicable

Build-up grout pad: No

Base Plate

Length x Width x Thickness (inch): 10.00 x 13.00 x 0.50

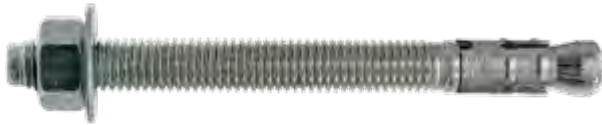
Yield stress: 36000 psi

Profile type/size: 5X5X3/8

Recommended Anchor

Anchor Name: Strong-Bolt® 2 - 3/4"Ø STB2, h_{nom} : 5" (127mm)

Code Report: ICC-ES ESR-3037





Anchor Designer™ for
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Phone:			
E-mail:			

Load and Geometry

Load factor source: ACI 318 Section 5.3

Load combination: $U = 0.9D + 1.0E$

Seismic design: No

Anchors subjected to sustained tension: Not applicable

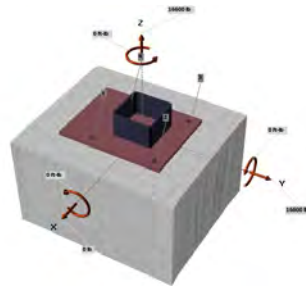
Apply entire shear load at front row: No

Anchors only resisting wind and/or seismic loads: Yes

Service level loads:

	D	E	L	S	<i>Strength level loads</i>
N_a [lb]:	0	8300	0	0	16600
V_{ax} [lb]:	0	0	0	0	0
V_{ay} [lb]:	0	8300	0	0	16600
M_x [ft-lb]:	0	0	0	0	0
M_y [ft-lb]:	0	0	0	0	0
M_z [ft-lb]:	0	0	0	0	0

<Figure 1>

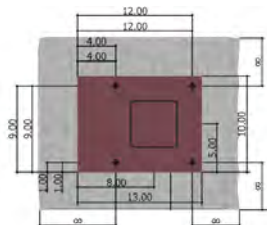


Input data and results must be checked for agreement with the existing circumstances, the standards and guidelines must be checked for plausibility.



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<Figure 2>



3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2 + (V_{uay})^2}$ (lb)
1	4150.0	0.0	4150.0	4150.0
2	4150.0	0.0	4150.0	4150.0
3	4150.0	0.0	4150.0	4150.0
4	4150.0	0.0	4150.0	4150.0
Sum	16600.0	0.0	16600.0	16600.0

Maximum concrete compression strain (‰): 0.00

Maximum concrete compression stress (psi): 0

Resultant tension force (lb): 16600

Resultant compression force (lb): 0

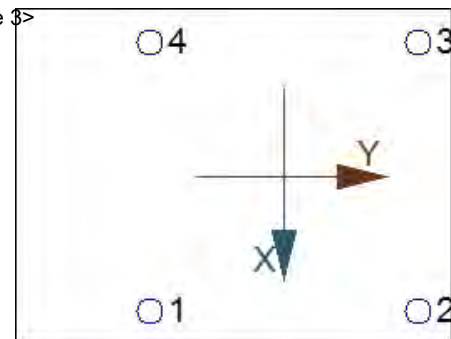
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00

Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00

Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00

Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>





Anchor Designer™ for Concrete Software Version 3.4.2506.1

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4. Steel Strength of Anchor in Tension (Sec. 17.6.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
29700	0.75	22275

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.6.2)

$$N_b = k_c \lambda_a \sqrt{f'_c} h_{ef}^{1.5} \text{ (Eq. 17.6.2.2.1)}$$

k_c	λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
17.0	1.00	5000	4.250	10532

$$\phi N_{cbg} = \phi (A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b \text{ (Sec. 17.5.1.2 & Eq. 17.6.2.1a)}$$

A_{Nc} (in ²)	A_{Nco} (in ²)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕN_{cbg} (lb)
430.56	162.56	-	1.000	1.000	1.00	1.000	10532	0.75	20922

6. Pullout Strength of Anchor in Tension (Sec. 17.6.3)

$$\phi N_{pn} = \phi \Psi_{c,P} \lambda_a N_p (f'_c / 2,500)^n \text{ (Sec. 17.5.1.2, Eq. 17.6.3.1 & Code Report)}$$

$\Psi_{c,P}$	λ_a	N_p (lb)	f'_c (psi)	n	ϕ	ϕN_{pn} (lb)
1.0	1.00	7010	5000	0.50	0.65	6444

7. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout} \phi V_{sa}$ (lb)
14480	1.0	0.65	9412

8. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$$\phi V_{cpq} = \phi K_{cp} N_{cbg} = \phi K_{cp} (A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b \text{ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)}$$

K_{cp}	A_{Nc} (in ²)	A_{Nco} (in ²)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpq} (lb)
2.0	430.56	162.56	1.000	1.000	1.000	1.000	10532	0.70	39054

9. Results

Interaction of Tensile and Shear Forces (Sec. R17.8)

Tension	Factored Load, N _{ua} (lb)	Design Strength, ϕN _n (lb)	Ratio	Status	
Steel	4150	22275	0.19	Pass	
Concrete breakout	16600	20922	0.79	Pass (Governs)	
Pullout	4150	6444	0.64	Pass	
Shear	Factored Load, V _{ua} (lb)	Design Strength, ϕV _n (lb)	Ratio	Status	
Steel	4150	9412	0.44	Pass (Governs)	
Pryout	16600	39054	0.43	Pass	
Interaction check	(N _{ua} /ϕN _{ua}) ^{5/3}	(V _{ua} /ϕV _{ua}) ^{5/3}	Utilization Ratio	Permissible	Status
Sec. R17.8	0.68	0.26	93.5%	1.0	Pass

3/4"Ø STB2, hnom:5" (127mm) meets the selected design criteria.



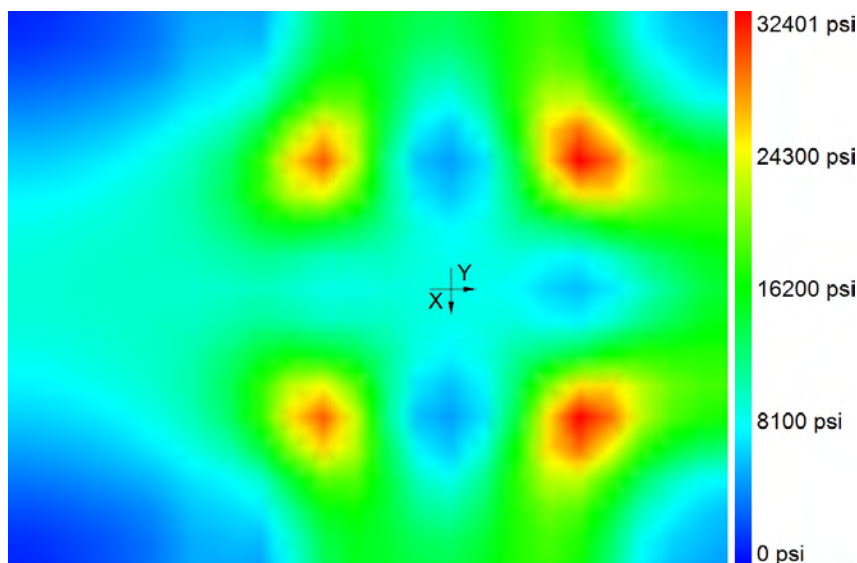
Anchor Designer™ for
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Base Plate Thickness

Steel	36000 psi
Maximum stress	32401 psi
Calculated plate thickness	0.598 inch

Stress distribution



For ACI and CSA design methods, maximum base plate stress is limited to 0.9 times yield stress.

For ETAG and EN-1992-4 design method, maximum base plate stress is limited to yield stress divide by 1.5.

Plate stress is derived using Von Mises theory.

$$\sigma_{xx} = \frac{F_{xx}}{t} + \frac{6M_{xx}}{t^2} (@ \text{ bottom}) \text{ or } \sigma_{xx} = \frac{F_{xx}}{t} - \frac{6M_{xx}}{t^2} (@ \text{ top})$$

$$\sigma_{yy} = \frac{F_{yy}}{t} + \frac{6M_{yy}}{t^2} (@ \text{ bottom}) \text{ or } \sigma_{yy} = \frac{F_{yy}}{t} - \frac{6M_{yy}}{t^2} (@ \text{ top})$$

$$\sigma_{xy} = \frac{F_{xy}}{t} + \frac{6M_{xy}}{t^2} (@ \text{ bottom}) \text{ or } \sigma_{xy} = \frac{F_{xy}}{t} - \frac{6M_{xy}}{t^2} (@ \text{ top})$$

$$\sigma_{xz} = \frac{V_x}{t}$$

$$\sigma_{yz} = \frac{V_y}{t}$$

$\sigma_{xx}, \sigma_{yy}, \sigma_{xy}$ as follows:

$$S_1 = \frac{\sigma_{xx} + \sigma_{yy}}{2} + \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^2}$$

$$S_2 = \frac{\sigma_{xx} + \sigma_{yy}}{2} - \sqrt{\left(\frac{\sigma_{xx} - \sigma_{yy}}{2}\right)^2 + \sigma_{xy}^2}$$

$$S_3 = 0$$

$$\sigma_{\text{Von Mises}} = \sqrt{\frac{(S_1 - S_2)^2 + (S_1 - S_3)^2 + (S_2 - S_3)^2}{2}}$$

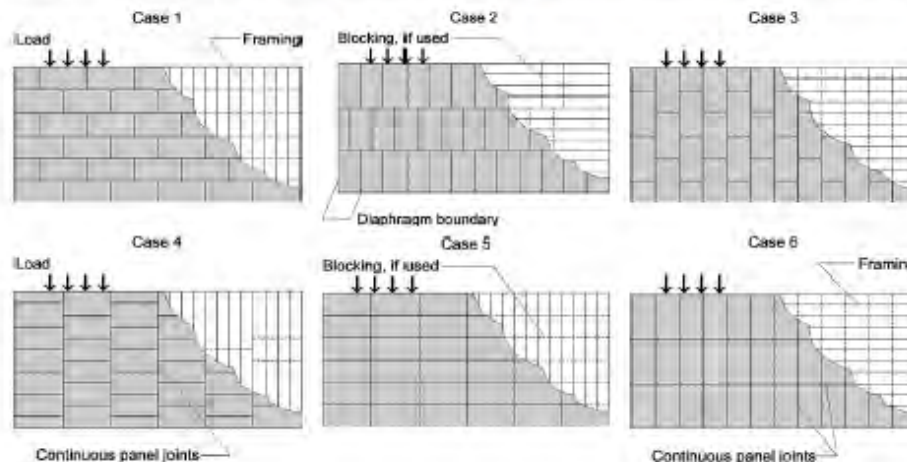
10. Warnings

- Designer must exercise own judgement to determine if this design is suitable.
- Refer to manufacturer's product literature for hole cleaning and installation instructions.

Table 4.2A Nominal Unit Shear Capacities for Wood-Frame Diaphragms**Blocked Wood Structural Panel Diaphragms^{1,2,3,4}**

Sheathing Grade	Common Nail Size	Minimum Fastener Penetration in Framing Member or Blocking (in.)	Minimum Nominal Panel Thickness (in.)	Minimum Nominal Width of Nailed Face at Adjoining Panel Edges and Boundaries (in.)	A SEISMIC										B WIND					
					Nail Spacing (in.) at diaphragm boundaries (all cases), at continuous panel edges parallel to load (Cases 3 & 4), and at all panel edges (Cases 5 & 6)										Nail Spacing (in.) at diaphragm boundaries (all cases), at continuous panel edges parallel to load (Cases 3 & 4), and at all panel edges (Cases 5 & 6)					
					6		4		2-1/2		2		6		4		2-1/2		2	
					Nail Spacing (in.) at other panel edges (Cases 1, 2, 3, & 4)										Nail Spacing (in.) at other panel edges (Cases 1, 2, 3, & 4)					
					6		4		2-1/2		2		6		4		2-1/2		2	
					v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)	v_s (plf)	G_s (kips/in.)
Structural I	6d	1-1/4	5/16	2	OSB	PLY	OSB	PLY	OSB	PLY	OSB	PLY	OSB	PLY	OSB	PLY				
				3	370	15	500	8.5	750	12	840	9.5	520	700	1050	1175	1330			
				3	420	12	560	7.0	840	9.5	950	17	590	785	1175	1330				
	8d	1-3/8	3/8	2	540	14	720	9.0	1060	13	1200	21	755	1010	1485	1680				
				3	600	12	800	7.5	1200	10	1350	18	840	1120	1680	1890				
				3	640	24	850	15	1280	20	1460	31	895	1190	1790	2045				
Sheathing and Single-Floor	6d	1-1/4	5/16	2	720	20	960	12	1440	16	1640	26	1010	1345	2015	2295				
				3	340	15	450	9.0	670	13	760	21	475	630	940	1065				
				3	380	12	500	7.0	760	10	860	17	530	700	1065	1205				
				3	370	13	500	7.0	750	10	840	18	520	700	1050	1175				
				3	420	10	560	5.5	840	8.5	950	14	590	785	1175	1330				
				3	480	15	640	9.5	960	13	1090	21	670	895	1345	1525				
	8d	1-3/8	3/8	2	540	12	720	7.5	1080	11	1220	18	755	1010	1510	1710				
				3	510	14	680	8.5	1010	12	1150	20	715	950	1415	1610				
				3	570	11	760	7.0	1140	10	1290	17	800	1065	1595	1805				
				3	540	13	720	7.5	1060	11	1200	19	755	1010	1485	1680				
				3	600	10	800	6.0	1200	9.0	1350	15	840	1120	1680	1890				
				3	580	25	770	15	1150	21	1310	33	810	1080	1610	1835				
10d	1-1/2	15/32	19/32	2	650	21	860	12	1300	17	1470	28	910	1205	1820	2060				
				3	640	21	850	13	1280	18	1460	28	895	1190	1790	2045				
				3	720	17	960	10	1440	14	1640	24	1010	1345	2015	2295				
				3																

- Nominal unit shear capacities shall be adjusted in accordance with 4.2.3 to determine ASD allowable unit shear capacity and LRFD factored unit resistance. For general construction requirements see 4.2.6. For specific requirements, see 4.2.7.1 for wood structural panel diaphragms. See Appendix A for common nail dimensions.
- For species and grades of framing other than Douglas-Fir-Larch or Southern Pine, reduced nominal unit shear capacities shall be determined by multiplying the tabulated nominal unit shear capacity by the Specific Gravity Adjustment Factor = $[1 - (0.5 - G)]$, where G = Specific Gravity of the framing lumber from the NDS (Table 11.3.2A). The Specific Gravity Adjustment Factor shall not be greater than 1.
- Apparent shear stiffness values, G_s , are based on nail slip in framing with moisture content less than or equal to 19% at time of fabrication and panel stiffness values for diaphragms constructed with either OSB or 3-ply plywood panels. When 4-ply or 5-ply plywood panels or composite panels are used, G_s values shall be permitted to be increased by 1.2.
- Where moisture content of the framing is greater than 19% at time of fabrication, G_s values shall be multiplied by 0.5.



CHECK DIAPHRAGM

15/323 sheathing w/ 8d@6" o.c. at edge

15/323 sheathing w/ 8d@6" o.c. at field

SDPWS Table 4.2A: $v_c = 0.93 (540/2) = 251$ plf (Seismic)

$v_c = 0.93 (755/2) = 351$ plf Wind)

Where 0.93 is the specific gravity adjustment factor

Due to diaphragm irregularity, force shall be increased by 25% for connection to vertical elements and to collectors per ASCE 12.3.3.4.

Diaphragm Force (ASD/Allowable)

Level	ΣF_i (kips)	w_{px} (kips)	Σw_i	F_{px} (kips)	$F_{px, min}$ (kips)	$F_{px, max}$ (kips)	F_{px} (kips)
Roof	10.27	42.3	42.3	10.27	6.67	13.34	10.27
Main Level	0.00	0.0	0.0	0.00	0.00	0.00	0.00

North-South Direction

Roof: $w_{Seismic} = 1.25 * (10.27) * (30/40.5) = 9.51$ k (worst case)

$w_{Wind} = (3.93) * (30/40.5) = 2.91$ k

$v_{seismic} = ((9.51) * 1000) / 71.5 = 133.0$ plf

$v_{wind} = ((2.91) * 1000) / 71.5 = 40.7$ plf

Result: OK to use **8d@6" o.c.** Capacity = 251 plf (seismic)
Capacity = 351 plf (wind)

East-West Direction

Roof: $w_{Seismic} = 1.25 * (10.27) * (35.75/71.5) = 6.42$ k (worst case)

$w_{Wind} = (6.93) * (35.75/71.5) = 3.47$ k

$v_{seismic} = ((6.42) * 1000) / 40.5 = 158.5$ plf

$v_{wind} = ((3.47) * 1000) / 40.5 = 85.7$ plf

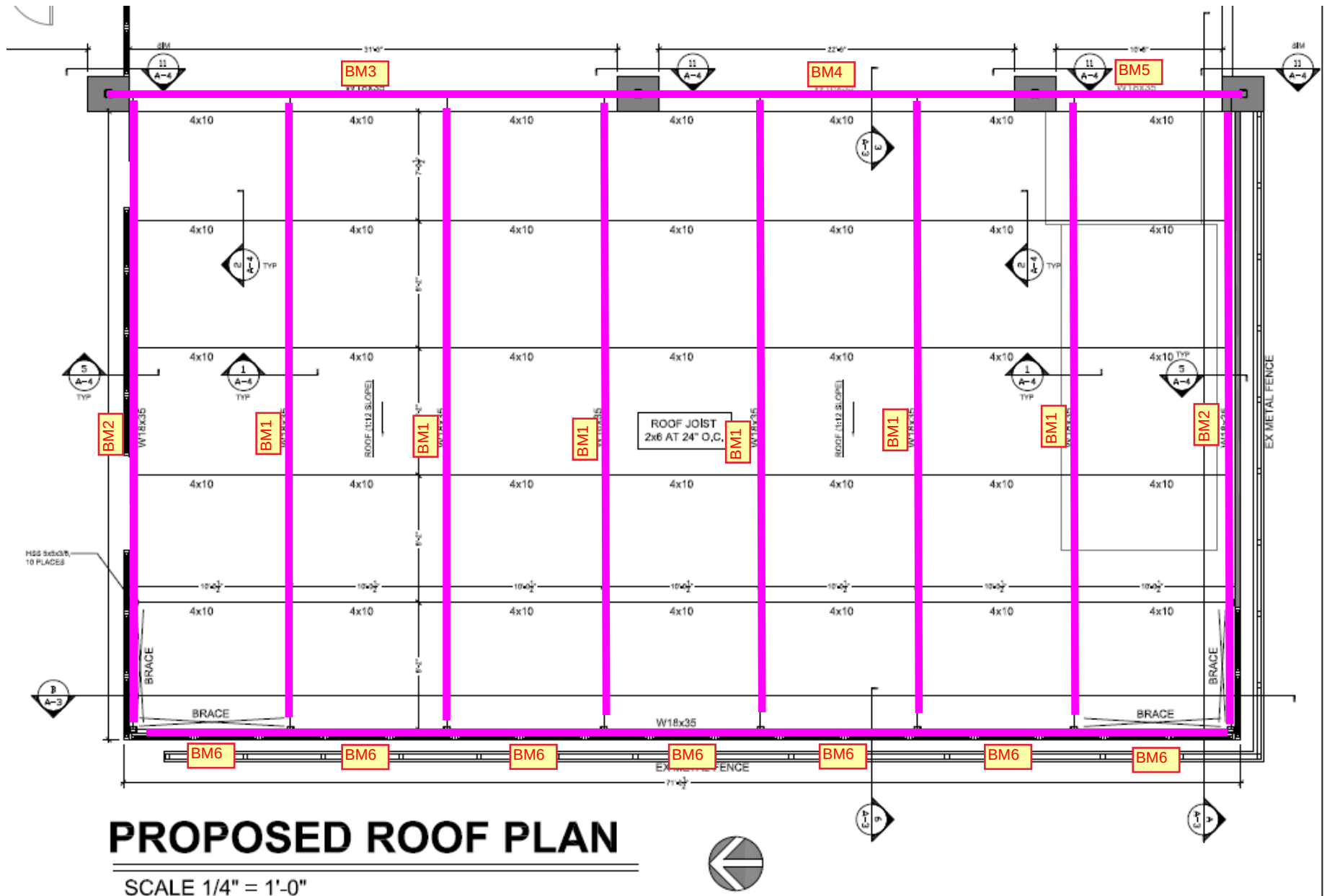
Result: OK to use **8d@6" o.c.** Capacity = 251 plf (seismic)
Capacity = 351 plf (wind)

GRAVITY CALCULATIONS

LOAD TAKEOFF

ROOF:

ROOFING -----	2.0 PSF
3/4" PLYWOOD -----	2.4 PSF
ROOF TRUSS @24" O.C. -----	3.8 PSF
INSULATION -----	1.0 PSF
5/8" GWB -----	2.8 PSF
MISC. -----	1.0 PSF
MECH. ELECT. -----	<u>1.0 PSF</u>
	14.0 PSF
	<u>USE 15.0 PSF</u>



Scope :

Timber Beam & Joist

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Description Roof Framing

Timber Member Information

		Purlin	Sub Purlin
Timber Section		4x10	2x6
Beam Width	in	3.500	1.500
Beam Depth	in	9.250	5.500
Le: Unbraced Length	ft	2.00	0.00
Timber Grade		Douglas Fir-South, No.2	Douglas Fir-South, No.2
Fb - Basic Allow	psi	850.0	850.0
Fv - Basic Allow	psi	180.0	180.0
Elastic Modulus	ksi	1,200.0	1,200.0
Load Duration Factor		1.000	1.000
Member Type		Sawn	Sawn
Repetitive Status		Repetitive	Repetitive

Center Span Data

Span	ft	10.00	8.00
Dead Load	#/ft	120.00	30.00
Live Load	#/ft	200.00	50.00

Results	Ratio =	0.8236	0.7992
----------------	---------	--------	--------

Mmax @ Center	in-k	48.00	7.68
@ X =	ft	5.00	4.00
fb : Actual	psi	961.7	1,015.5
Fb : Allowable	psi	1,167.7	1,270.8
		Bending OK	Bending OK
fv : Actual	psi	62.9	51.7
Fv : Allowable	psi	180.0	180.0
		Shear OK	Shear OK

Reactions

@ Left End	DL	lbs	600.00	120.00
	LL	lbs	1,000.00	200.00
	Max. DL+LL	lbs	1,600.00	320.00
@ Right End	DL	lbs	600.00	120.00
	LL	lbs	1,000.00	200.00
	Max. DL+LL	lbs	1,600.00	320.00

Deflections	Ratio OK	Deflection OK
--------------------	----------	---------------

Center DL Defl	in	-0.097	-0.111
L/Defl Ratio		1,231.2	866.6
Center LL Defl	in	-0.162	-0.185
L/Defl Ratio		738.7	519.9
Center Total Defl	in	-0.260	-0.295
Location	ft	5.000	4.000
L/Defl Ratio		461.7	325.0

Scope :

Steel Beam Design

Page 1

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Description Roof Beam BM1

General Information

Steel Section : W18X35

Center Span 40.00 ft
 Left Cant. 0.00 ft
 Right Cant 0.00 ft
 Lu : Unbraced Length 10.00 ft

Pinned-Pinned
 Bm Wt. Added to Loads
 LL & ST Act Together

Fy 50.00 ksi
 Load Duration Factor 1.00
 Elastic Modulus 29,000.0 ksi

Distributed Loads

Note! Short Term Loads Are WIND Loads.

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.150							k/ft
LL	0.250							k/ft
ST								k/ft
Start Location								ft
End Location	40.000							ft

Summary

Beam OK
 Static Load Case Governs Stress

Using: W18X35 section, Span = 40.00ft, Fy = 50.0ksi
 End Fixity = Pinned-Pinned, Lu = 10.00ft, LDF = 1.000

	Actual	Allowable		
Moment	86.997 k-ft	109.128 k-ft	Max. Deflection	-1.694 in
fb : Bending Stress	18.124 ksi	22.735 ksi	Length/DL Defl	666.3 : 1
fb / Fb	0.797 : 1		Length/(DL+LL Defl)	283.3 : 1
Shear	8.700 k	106.200 k		
fv : Shear Stress	1.638 ksi	20.000 ksi		
fv / Fv	0.082 : 1			

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	87.00 k-ft	37.00	87.00				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	8.70 k	3.70	8.70				k
Shear @ Right	8.70 k	3.70	8.70				k
Center Defl.	-1.694 in	-0.720	-1.694	-1.694	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	20.000 ft	-0.720	-1.694	-1.694	0.000	0.000	in
Reaction @ Left	8.70	3.70	8.70	8.70			k
Reaction @ Rt	8.70	3.70	8.70	8.70			k

Fa calc'd per Eq. E2-2, $K^*L/r > C_c$ I Beam, Major Axis, $(102,000 * C_b / F_y)^{.5} \leq L/r \leq (510,000 * C_b / F_y)^{.5}$, Fb per Eq. F1-6

Scope :

Steel Beam Design

Page 2

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Description Roof Beam BM1**Section Properties W18X35**

Depth	17.700 in	Weight	34.99 #/ft
Web Thick	0.300 in	Ixx	510.000 in4
Width	6.000 in	Iyy	15.300 in4
Flange Thick	0.425 in	Sxx	57.600 in3
Area	10.30 in2	Syy	5.120 in3
Rt	1.490 in	R-xx	7.040 in
Values for LRFD Design....		R-yy	1.220 in
J	0.510 in4	Zx	66.500 in3
Cw	1,140.00 in6	Zy	8.060 in3
		K	0.827 in

Scope :

Multi-Span Steel Beam

Page 1

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Description Roof Beam BM2**General Information**

Fy - Yield Stress 50.00 ksi Load Duration Factor 1.00
 Spans Considered Continuous Over Supports

Span Information

Description	Span 1	Span 2
Span ft	8.00	32.50
Steel Section	W18X35	W18X35
End Fixity	Pin-Fix	Fix-Pin
Unbraced Length ft	8.00	8.00

Loads

Live Load Used This Span ?	Yes	Yes
Dead Load k/ft	0.075	0.075
Live Load k/ft	0.125	0.125

Results

Mmax @ Cntr	k-ft	0.90	14.85
@ X =	ft	2.99	20.37
Max @ Left End	k-ft	0.00	-26.41
Max @ Right End	k-ft	-1.60	0.00
fb : Actual	psi	333.2	5,498.7
Fb : Allowable	psi	26,550.4	26,550.4
		Bending OK	Bending OK
fv : Actual	psi	188.3	765.1
Fv : Allowable	psi	20,000.0	20,000.0

Reactions & Deflections

Shear @ Left	k	0.60	4.06
Shear @ Right	k	1.00	2.44
Reactions...			
DL @ Left	k	0.22	1.52
LL @ Left	k	0.37	2.54
Total @ Left	k	0.60	4.06
DL @ Right	k	0.37	0.91
LL @ Right	k	0.62	1.52
Total @ Right	k	1.00	2.44
Max. Deflection	in	-0.001	-0.141
@ X =	ft	3.36	18.85
Span/Deflection Ratio		185223.6	2,762.6

Query Values

Location	ft	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shear	k	0.60	4.06	0.00	0.00	0.00	0.00	0.00	0.00
Moment	k-ft	0.00	-26.41	0.00	0.00	0.00	0.00	0.00	0.00
Max. Deflection	in	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Scope :

Steel Beam Design

Page 1

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Description Roof Beam BM3**General Information****Steel Section : W18X40**

Center Span	33.00 ft	Pinned-Pinned	Fy	50.00 ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads	Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	10.00 ft			

Distributed Loads

Note! Short Term Loads Are WIND Loads.

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.300							k/ft
LL	0.500							k/ft
ST								k/ft
Start Location								ft
End Location	33.000							ft

Summary**Beam OK**
Static Load Case Governs StressUsing: W18X40 section, Span = 33.00ft, Fy = 50.0ksi
End Fixity = Pinned-Pinned, Lu = 10.00ft, LDF = 1.000

	Actual	Allowable		
Moment	114.356 k-ft	131.950 k-ft	Max. Deflection	-1.263 in
fb : Bending Stress	20.062 ksi	23.149 ksi	Length/DL Defl	774.5 : 1
fb / Fb	0.867 : 1		Length/(DL+LL Defl)	313.5 : 1
Shear	13.861 k	112.770 k		
fv : Shear Stress	2.458 ksi	20.000 ksi		
fv / Fv	0.123 : 1			

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	114.36 k-ft	46.29	114.36				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	13.86 k	5.61	13.86				k
Shear @ Right	13.86 k	5.61	13.86				k
Center Defl.	-1.263 in	-0.511	-1.263	-1.263	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	20.000 ft	-0.485	-1.198	-1.198	0.000	0.000	in
Reaction @ Left	13.86	5.61	13.86	13.86			k
Reaction @ Rt	13.86	5.61	13.86	13.86			k

Fa calc'd per Eq. E2-2, $K^*L/r > C_c$ I Beam, Major Axis, $(102,000 * C_b / F_y)^{.5} \leq L/r \leq (510,000 * C_b / F_y)^{.5}$, Fb per Eq. F1-6

Scope :

Steel Beam Design

Page 2

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Description Roof Beam BM3**Section Properties W18X40**

Depth	17.900 in	Weight	40.08 #/ft
Web Thick	0.315 in	Ixx	612.000 in4
Width	6.015 in	Iyy	19.100 in4
Flange Thick	0.525 in	Sxx	68.400 in3
Area	11.80 in2	Syy	6.350 in3
Rt	1.520 in	R-xx	7.210 in
Values for LRFD Design....		R-yy	1.270 in
J	0.810 in4	Zx	78.400 in3
Cw	1,440.00 in6	Zy	9.950 in3
		K	0.927 in

Scope :

Steel Beam Design

Page 1

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Description Roof Beam BM4

General Information

Steel Section : W18X40

Center Span	25.00 ft	Pinned-Pinned	Fy	50.00 ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads	Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	10.00 ft			

Distributed Loads

Note! Short Term Loads Are WIND Loads.

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.300							k/ft
LL	0.500							k/ft
ST								k/ft
Start Location								ft
End Location	25.000							ft

Summary

Beam OK
Static Load Case Governs StressUsing: W18X40 section, Span = 25.00ft, Fy = 50.0ksi
End Fixity = Pinned-Pinned, Lu = 10.00ft, LDF = 1.000

	Actual	Allowable		
Moment	65.631 k-ft	131.950 k-ft	Max. Deflection	-0.416 in
fb : Bending Stress	11.514 ksi	23.149 ksi	Length/DL Defl	1,781.4 : 1
fb / Fb	0.497 : 1		Length/(DL+LL Defl)	721.1 : 1
Shear	10.501 k	112.770 k		
fv : Shear Stress	1.862 ksi	20.000 ksi		
fv / Fv	0.093 : 1			

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	65.63 k-ft	26.57	65.63				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	10.50 k	4.25	10.50				k
Shear @ Right	10.50 k	4.25	10.50				k
Center Defl.	-0.416 in	-0.168	-0.416	-0.416	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	20.000 ft	-0.100	-0.247	-0.247	0.000	0.000	in
Reaction @ Left	10.50	4.25	10.50	10.50			k
Reaction @ Rt	10.50	4.25	10.50	10.50			k

Fa calc'd per Eq. E2-2, $K^*L/r > C_c$ I Beam, Major Axis, $(102,000 * C_b / F_y)^{.5} \leq L/r \leq (510,000 * C_b / F_y)^{.5}$, Fb per Eq. F1-6

Scope :

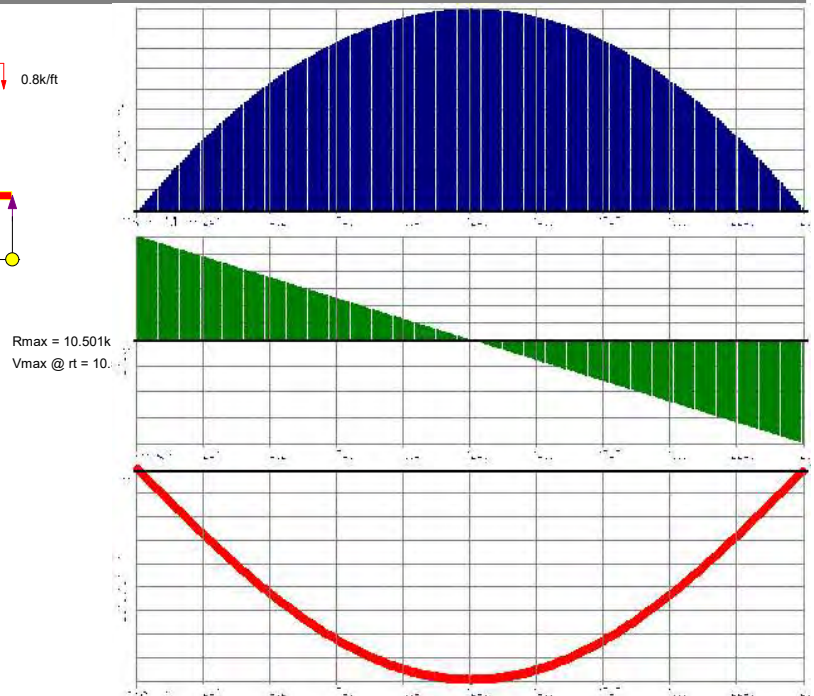
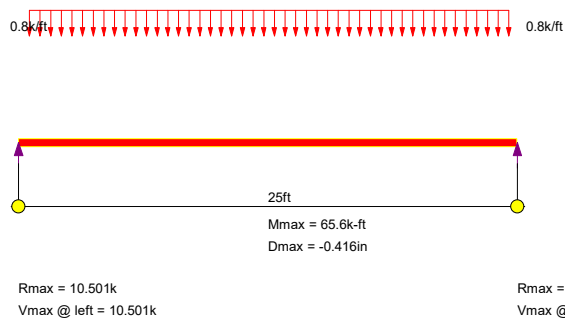
Steel Beam Design

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Description Roof Beam BM4**Section Properties W18X40**

Depth	17.900 in	Weight	40.08 #/ft
Web Thick	0.315 in	Ixx	612.000 in4
Width	6.015 in	Iyy	19.100 in4
Flange Thick	0.525 in	Sxx	68.400 in3
Area	11.80 in2	Syy	6.350 in3
Rt	1.520 in	R-xx	7.210 in
Values for LRFD Design....		R-yy	1.270 in
J	0.810 in4	Zx	78.400 in3
Cw	1,440.00 in6	Zy	9.950 in3
		K	0.927 in

Sketch & Diagram

Scope :

Steel Beam Design

Page 1

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Description Roof Beam BM5

General Information

Steel Section : W18X40

Center Span	13.00 ft	Pinned-Pinned	Fy	50.00 ksi
Left Cant.	0.00 ft	Bm Wt. Added to Loads	Load Duration Factor	1.00
Right Cant	0.00 ft	LL & ST Act Together	Elastic Modulus	29,000.0 ksi
Lu : Unbraced Length	10.00 ft			

Distributed Loads

Note! Short Term Loads Are WIND Loads.

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	
DL	0.300							k/ft
LL	0.500							k/ft
ST								k/ft
Start Location								ft
End Location	13.000							ft

Summary

Beam OK
Static Load Case Governs StressUsing: W18X40 section, Span = 13.00ft, Fy = 50.0ksi
End Fixity = Pinned-Pinned, Lu = 10.00ft, LDF = 1.000

	Actual	Allowable		
Moment	17.747 k-ft	131.950 k-ft	Max. Deflection	-0.030 in
fb : Bending Stress	3.113 ksi	23.149 ksi	Length/DL Defl	12,669.1 : 1
fb / Fb	0.134 : 1		Length/(DL+LL Defl)	5,128.7 : 1
Shear	5.461 k	112.770 k		
fv : Shear Stress	0.968 ksi	20.000 ksi		
fv / Fv	0.048 : 1			

Force & Stress Summary

<<-- These columns are Dead + Live Load placed as noted -->>

	Maximum	DL Only	LL @ Center	LL+ST @ Center	LL @ Cants	LL+ST @ Cants	
Max. M +	17.75 k-ft	7.18	17.75				k-ft
Max. M -							k-ft
Max. M @ Left							k-ft
Max. M @ Right							k-ft
Shear @ Left	5.46 k	2.21	5.46				k
Shear @ Right	5.46 k	2.21	5.46				k
Center Defl.	-0.030 in	-0.012	-0.030	-0.030	0.000	0.000	in
Left Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
Right Cant Defl	0.000 in	0.000	0.000	0.000	0.000	0.000	in
...Query Defl @	20.000 ft	0.000	0.000	0.000	0.000	0.000	in
Reaction @ Left	5.46	2.21	5.46	5.46			k
Reaction @ Rt	5.46	2.21	5.46	5.46			k

Fa calc'd per Eq. E2-2, $K^*L/r > C_c$ I Beam, Major Axis, $(102,000 * C_b / F_y)^{.5} \leq L/r \leq (510,000 * C_b / F_y)^{.5}$, Fb per Eq. F1-6

Scope :

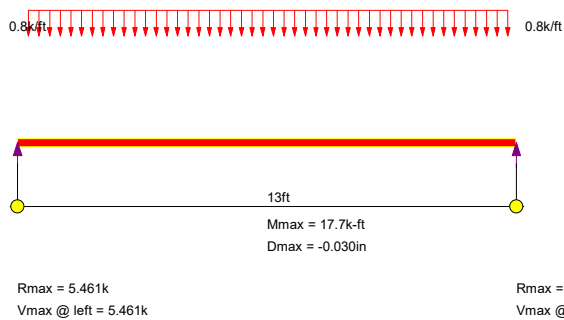
Steel Beam Design

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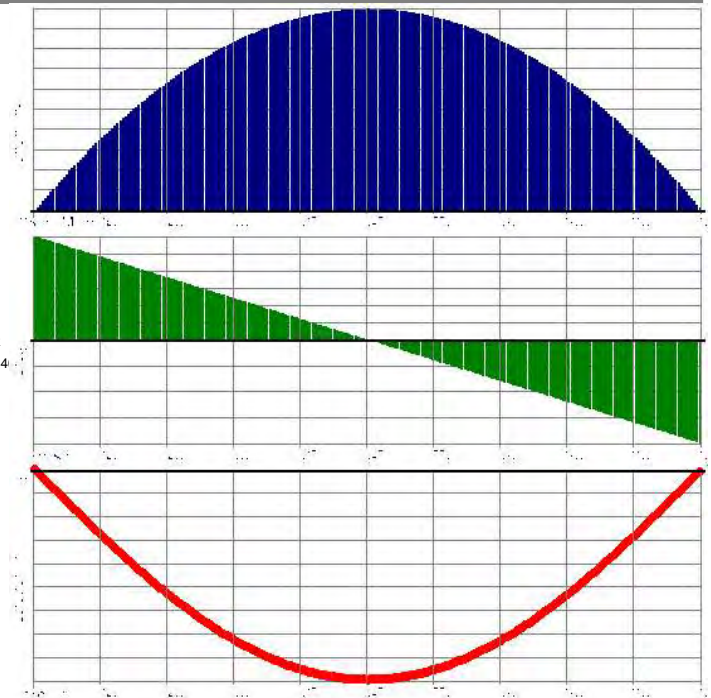
hauhau.ecw:Calculations

Description Roof Beam BM5**Section Properties W18X40**

Depth	17.900 in	Weight	40.08 #/ft
Web Thick	0.315 in	Ixx	612.000 in4
Width	6.015 in	Iyy	19.100 in4
Flange Thick	0.525 in	Sxx	68.400 in3
Area	11.80 in2	Syy	6.350 in3
Rt	1.520 in	R-xx	7.210 in
Values for LRFD Design....		R-yy	1.270 in
J	0.810 in4	Zx	78.400 in3
Cw	1,440.00 in6	Zy	9.950 in3
		K	0.927 in

Sketch & Diagram

Rmax = 5.461k
Vmax @ rt = 5.4



Scope :

Multi-Span Steel Beam

Page 1

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Description Roof Beam BM6

General Information

Fy - Yield Stress 50.00 ksi Load Duration Factor 1.00
 Spans Considered Continuous Over Supports

Span Information

Description	Span 1	Span 2	Span 3	Span 4 Cantilever
Span	10.00	10.00	10.00	5.00
Steel Section	W18X35	W18X35	W18X35	W18X35
End Fixity	Pin-Fix	Fix-Fix	Fix-Fix	Fix-Free
Unbraced Length	8.00	8.00	8.00	2.00

Loads

Live Load Used This Span ?	Yes	Yes	Yes	Yes
Dead Load	0.090	0.090	0.090	0.090
Live Load	0.150	0.150	0.150	0.150

Results

Mmax @ Cntr	k-ft	1.69	1.00	1.00	0.00
@ X =	ft	3.73	5.00	5.00	0.00
Max @ Left End	k-ft	0.00	-2.00	-2.00	3.00
Max @ Right End	k-ft	-3.00	-2.00	-2.00	0.00
fb : Actual	psi	624.7	416.5	416.5	624.7
Fb : Allowable	psi	26,550.4	26,550.4	26,550.4	33,000.0
		Bending OK	Bending OK	Bending OK	Bending OK
fv : Actual	psi	282.5	226.0	226.0	226.0
Fv : Allowable	psi	20,000.0	20,000.0	20,000.0	20,000.0

Reactions & Deflections

Shear @ Left	k	0.90	1.20	1.20	1.20
Shear @ Right	k	1.50	1.20	1.20	0.00
Reactions...					
DL @ Left	k	0.34	0.45	0.45	0.45
LL @ Left	k	0.56	0.75	0.75	0.75
Total @ Left	k	0.90	1.20	1.20	1.20
DL @ Right	k	0.56	0.45	0.45	0.00
LL @ Right	k	0.94	0.75	0.75	0.00
Total @ Right	k	1.50	1.20	1.20	0.00
Max. Deflection	in	-0.002	-0.001	-0.001	-0.002
@ X =	ft	4.20	5.00	5.00	5.00
Span/Deflection Ratio		79,028.7	164391.8	164391.8	54,777.8

Query Values

Location	ft	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shear	k	0.90	1.20	1.20	1.20	0.00	0.00	0.00	0.00
Moment	k-ft	0.00	-2.00	-2.00	-3.00	0.00	0.00	0.00	0.00
Max. Deflection	in	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Scope :

Concrete Rectangular & Tee Beam DesignPage 1
hauhau.ecw:Calculations**Description** Check Existing Beam BM8**General Information**

Span	21.00 ft	f _c	5,000 psi
Depth	30.000 in	F _y	60,000 psi
Width	20.000 in	Concrete Wt.	145.0 pcf
Flange @ Both Sides		Seismic Zone	4
Flange Thickness	12.000 in	End Fixity	Fixed-Fixed
Web Spacing	30.000 ft	Live Load acts with Short Term	
Tee beam weight calc'd using Depth * Width			

Reinforcing**Rebar @ Center of Beam...**

Count	Size	'd' from Top
#1	3	9
#2		

Rebar @ Left End of Beam...

Count	Size	'd' from Top
#1	3	9
#2	2	5

Rebar @ Right End of Beam...

Count	Size	'd' from Top
#1	2	9
#2	2	5

Load Factoring**Uniform Loads**

	Dead Load	Live Load	Short Term	Start	End
#1	3.021 k	1.425 k	k	0.000 ft	21.000 ft

Concentrated Loads

	Dead Load	Live Load	Short Term	Location
#1	0.224 k	0.374 k	-8.300 k	20.000 ft
#2	2.404 k	3.164 k	8.300 k	12.000 ft

Summary**Beam Design OK**

Span = 21.00ft, Width= 20.00in Depth = 30.00in 'T' Beam with Flange= 12.00in thick @ Both Sides, Web spac= 30.00ft

Maximum Moment : Mu	-307.11 k-ft	Maximum Deflection	-0.0326 in
Allowable Moment : Mn*phi	324.31 k-ft		
Maximum Shear : Vu	65.18 k	Max Reaction @ Left	58.43 k
Allowable Shear : Vn*phi	113.00 k	Max Reaction @ Right	57.00 k

Shear Stirrups...

Stirrup Area @ Section	0.440 in ²						
Region	0.000	3.500	7.000	10.500	14.000	17.500	21.000 ft
Max. Spacing	14.000	14.000	Not Req'd	14.000	14.000	14.000	14.000 in
Max Vu	65.179	57.458	32.514	32.514	36.195	61.138	58.076 k

Bending & Shear Force Summary

Bending...	Mn*Phi	Mu, Eq. C-1	Mu, Eq. C-2	Mu, Eq. C-3
@ Center	373.10 k-ft	137.91 k-ft	171.15 k-ft	90.57 k-ft
@ Left End	441.89 k-ft	-261.22 k-ft	-302.13 k-ft	-149.76 k-ft
@ Right End	324.31 k-ft	-267.80 k-ft	-307.11 k-ft	-150.05 k-ft
Shear...	Vn*Phi	Vu, Eq. C-1	Vu, Eq. C-2	Vu, Eq. C-3
@ Left End	113.00 k	57.16 k	65.18 k	31.93 k
@ Right End	113.00 k	0.87 k	58.08 k	23.33 k

Deflection

Deflections...	Upward		Downward	
DL + [Bm Wt]	0.0000 in	at	0.0000 ft	-0.0113 in at 10.5840 ft
DL + LL + [Bm Wt]	0.0000 in	at	0.0000 ft	-0.0244 in at 10.5840 ft
DL + LL + ST + [Bm Wt]	0.0000 in	at	0.0000 ft	-0.0326 in at 10.6680 ft
Reactions...	@ Left		@ Right	
DL + [Bm Wt]	39.012 k		39.745 k	
DL + LL + [Bm Wt]	55.222 k		56.997 k	
DL + LL + ST + [Bm Wt]	58.434 k		53.785 k	

Scope :

Concrete Rectangular & Tee Beam DesignPage 2
hauhau.ecw:Calculations**Description** Check Existing Beam BM8**Section Analysis**

Evaluate Moment Capacity...	Center	Left End	Right End
X : Neutral Axis	0.840 in	3.190 in	2.310 in
a = beta * Xneutral	0.672 in	2.552 in	1.848 in
Compression in Concrete	57.120 k	216.920 k	157.080 k
Sum [Steel comp. forces]	0.000 k	0.000 k	0.000 k
Tension in Reinforcing	-180.000 k	-217.200 k	-157.200 k
Find Max As for Ductile Failure...			
X-Balanced	16.571 in	16.867 in	16.8673 in
Xmax = Xbal * 0.75	12.429 in	12.651 in	12.651 in
a-max = beta * Xbal	13.257 in	13.494 in	13.494 in
Compression in Concrete	2,662.200 k	860.235 k	860.235 k
Sum [Steel Comp Forces]	0.000 k	0.000 k	0.000 k
Total Compressive Force	2,662.200 k	860.235 k	860.235 k
AS Max = Tot Force / Fy	44.370 in ²	14.337 in ²	14.337 in ²
Actual Tension As	3.000 OK	3.620 OK	2.620 OK

Additional Deflection Calcs

Neutral Axis	4.055 in	Mcr	169.90 k-ft
Igross	73,662.97 in ⁴	Ms:Max DL + LL	219.36 k-ft
Icracked	14,297.56 in ⁴	R1 = (Ms:DL+LL)/Mcr	0.775
Elastic Modulus	4,030.5 ksi	Ms:Max DL+LL+ST	219.36 k-ft
Fr = 7.5 * f _c ^{0.5}	530.330 psi	R2 = (Ms:DL+LL+ST)/Mcr	0.775
Z:Cracking	137.935 k/in	I:eff... Ms(DL+LL)	41,878.841 in ⁴
		I:eff... Ms(DL+LL+ST)	41,878.841 in ⁴
Eff. Flange Width	63.00 in		

ACI Factors (per ACI 318-02, applied internally to entered loads)

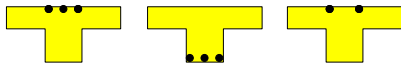
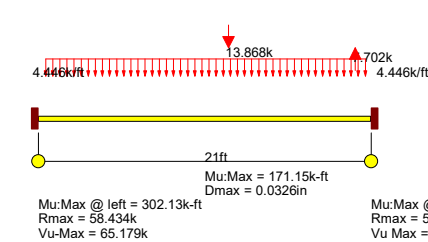
ACI C-1 & C-2 DL	1.200	ACI C-2 Group Factor	0.750	Add'l "1.4" Factor for Seismic	1.400
ACI C-1 & C-2 LL	1.600	ACI C-3 Dead Load Factor	0.900	Add'l "0.9" Factor for Seismic	0.900
ACI C-1 & C-2 ST	1.600	ACI C-3 Short Term Factor	1.200		
....seismic = ST * :	1.100				

Scope :

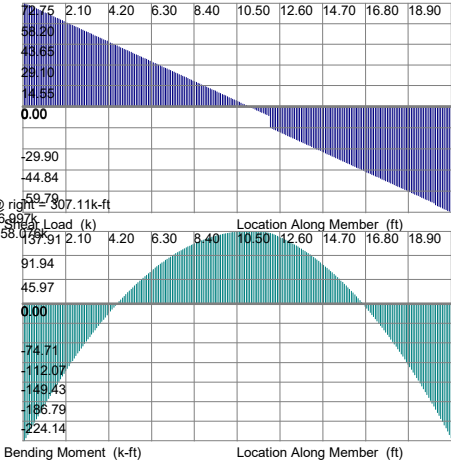
Concrete Rectangular & Tee Beam Design

Description Check Existing Beam BM8

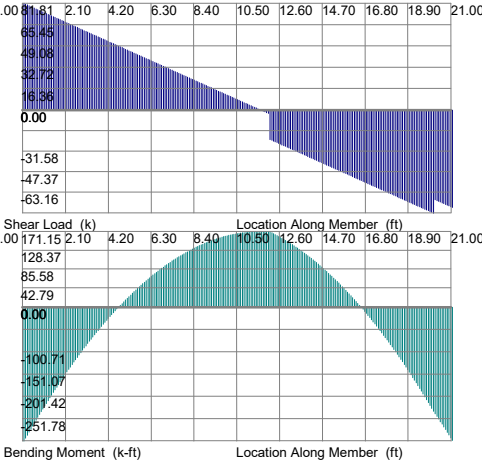
Sketch & Diagram



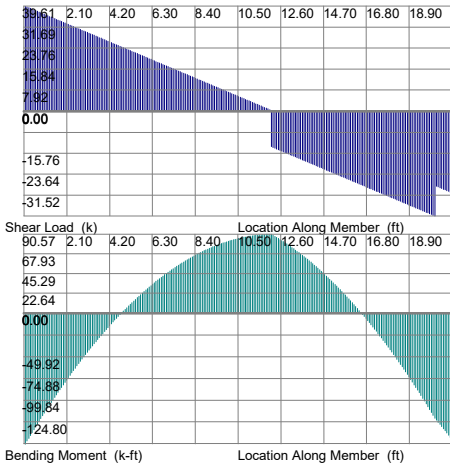
Beam Sketch



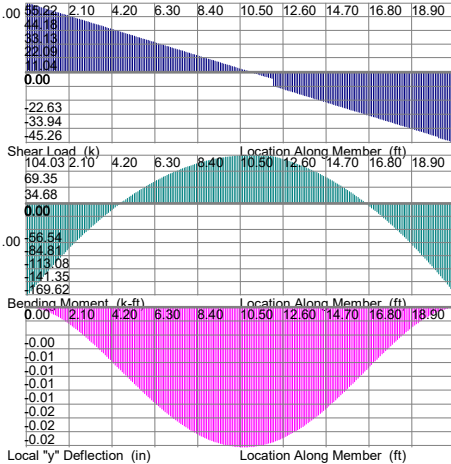
Stresses for ACI C-1 Combination



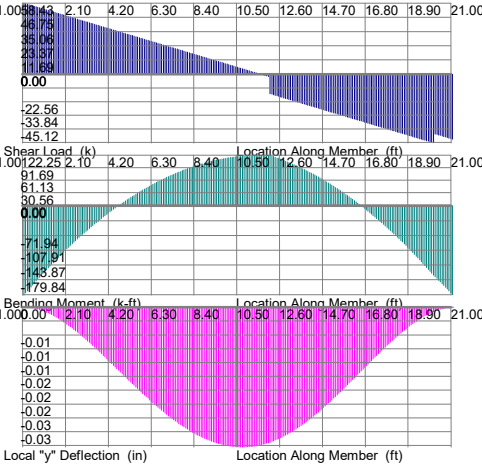
Stresses for ACI C-2 Combination



Stresses for ACI C-3 Combination



Stresses for Service Dead + Live Loads



Stresses for Dead+Live+Short Term Loads

Scope :

Steel Column

Page 1

hauhau.ecw:Calculations

Description HSS Post

General Information

Steel Section	HSS5X5X3/8	Fy	46.00 ksi	X-X Sidesway :	Restrained
		Duration Factor	1.000	Y-Y Sidesway :	Restrained
Column Height	10.000 ft	Elastic Modulus	29,000.00 ksi		
End Fixity	Pin-Pin	X-X Unbraced	10.000 ft	Kxx	1.000
Live & Short Term Loads Combined		Y-Y Unbraced	10.000 ft	Kyy	1.000

Loads

Axial Load...			
Dead Load	3.70 k	Ecc. for X-X Axis Moments	0.000 in
Live Load	5.00 k	Ecc. for Y-Y Axis Moments	0.000 in
Short Term Load	5.45 k		

Summary

Column Design OK

Steel Section Capacities . . .	.85 * Pn :	171.718 k	0.9 * Mn-x :	36.471 k-ft
			0.9 * Mn-y :	36.570

Factored Load Combinations

$$\text{AISC H1-1 a \& b : } (P_u / \phi P_n) + B * (M_u / \phi M_n) \leq 1.0$$

If $P_u / \phi P_n > 0.2$, $A = 1$, $B = 8/9$; If $P_u / \phi P_n < 0.2$, $A = 2$, $B = 1$

(1) 1.4D	$P_u =$	5.180 k	$M_u-x =$	0.000 k-ft	Eq. H1 Results =	0.015 : 1.0
			$M_u-y =$	0.000		
(2) 1.2D + 1.6L . . .	$P_u =$	12.440 k	$M_u-x =$	0.000 k-ft	Eq. H1 Results =	0.036 : 1.0
			$M_u-y =$	0.000		
(3) 1.2D + 0.5L + 1.0E . . .	$P_u =$	12.390 k	$M_u-x =$	0.000 k-ft	Eq. H1 Results =	0.036 : 1.0
			$M_u-y =$	0.000 k-ft		

Stresses

Allowable & Actual Stresses	Dead	Live	DL + LL	DL + Short
Fa : Allowable	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fa : Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:xx : Allow [F3.1]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fb : xx Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:yy : Allow [F3.1]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fb : yy Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi

Scope :

Steel Column

Page 2

hauhau.ecw:Calculations

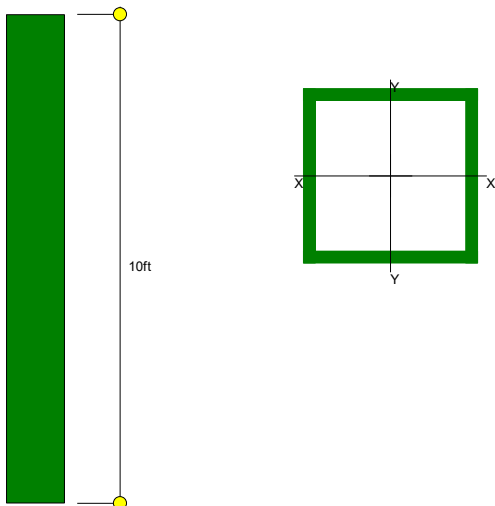
Description HSS Post**Section Properties** HSS5X5X3/8

Depth	5.000 in	Weight	20.99 #/ft	Values for LRFD Design....	
Web Thick	0.349 in	Ixx	21.700 in4	J	36.100 in4
Width	5.000 in	Iyy	21.700 in4	Cw	14.90 in6
Flange Thick	0.349 in	Sxx	8.680 in3	Zx	10.600 in3
Area	6.18 in2	Syy	8.680 in3	Zy	10.600 in3
Rt	0.000 in	Rxx	1.870 in		0.000
		Ryy	1.870 in		

Section Type = HSS-Square

Sketch & Diagram

Axial DL = 3.7k
 Axial LL = 5k
 Axial ST = 5.45k



Scope :

Steel ColumnPage 1
hauhau.ecw:Calculations**Description** Check Existing Column HSS6x6**General Information**

Steel Section	TS6X6X1/4	Fy	46.00 ksi	X-X Sidesway :	Restrained
		Duration Factor	1.000	Y-Y Sidesway :	Restrained
Column Height	9.000 ft	Elastic Modulus	29,000.00 ksi		
End Fixity	Pin-Pin	X-X Unbraced	9.000 ft	Kxx	1.200
Live & Short Term Loads Combined		Y-Y Unbraced	9.000 ft	Kyy	1.200

Loads

Axial Load...				
Dead Load	5.28 k	Ecc. for X-X Axis Moments	0.000 in	
Live Load	16.90 k	Ecc. for Y-Y Axis Moments	0.000 in	
Short Term Load	k			

Summary**Column Design OK**

Steel Section Capacities85 *Pn : 162.556 k 0.9 * Mn-x : 38.637 k-ft
 0.9 * Mn-y : 39.966

Factored Load Combinations**AISC H1-1 a & b : (Pu / AphiPn) + B*(Mu/phiMn) <= 1.0**

If Pu/phiPn > 0.2, A = 1, B = 8/9; If Pu/phiPn < 0.2, A = 2, B = 1

(1) 1.4D	Pu = 7.385 k	Mu-x = 0.000 k-ft	Eq. H1 Results =	0.023 : 1.0
		Mu-y = 0.000		
(2) 1.2D + 1.6L . . .	Pu = 33.376 k	Mu-x = 0.000 k-ft	Eq. H1 Results =	0.205 : 1.0
		Mu-y = 0.000		
(3) 1.2D + 0.5L + 1.0E . . .	Pu = 14.782 k	Mu-x = 0.000 k-ft	Eq. H1 Results =	0.045 : 1.0
		Mu-y = 0.000 k-ft		

Stresses

Allowable & Actual Stresses	<u>Dead</u>	<u>Live</u>	<u>DL + LL</u>	<u>DL + Short</u>
Fa : Allowable	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fa : Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:xx : Allow [F1-6]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:xx : Allow [F1-7] & [F1-8]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fb : xx Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:yy : Allow [F1-6]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
Fb:yy : Allow [F1-7] & [F1-8]	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi
fb : yy Actual	0.00 ksi	0.00 ksi	0.00 ksi	0.00 ksi

Scope :

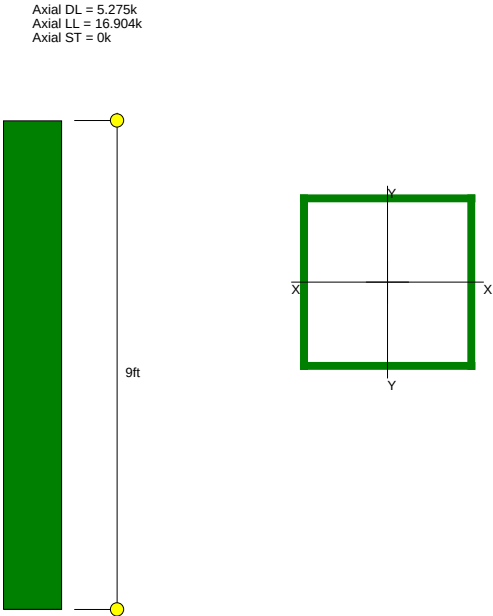
Steel Column

Page 2

hauhau.ecw:Calculations

Description Check Existing Column HSS6x6

Section Properties		TS6X6X1/4			
Depth	6.000 in	Weight	18.99 #/ft	Values for LRFD Design....	
Thickness	0.250 in	Ixx	30.300 in4	J	48.500 in4
Width	6.000 in	Iyy	30.300 in4		0.00
		Sxx	10.100 in3	Zx	11.900 in3
Area	5.59 in2	Syy	10.100 in3	Zy	11.900 in3
Rt	3.000 in	Rxx	2.330 in		0.000
		Ryy	2.330 in		
Section Type = TS-Square					
Sketch & Diagram					



Footing Design

Footing Type F9.5

K4

	DL	LL/SL	Total
Roof	12863	21438	34300
Level 3	10290	42875	53165
Level 2	10290	42875	53165
Level 1	69458	85750	155208
Storage's Roof BM3&4	9.86	14.5	24.4
	102910	192952	295862

14"x14" Column DL

1940

Required Footing Area

74.45 ft²

Required Footing Width

8.63 ft

Provided Footing Area

90.25 ft²

Bearing

3300 psf

<

4000 psf

Footing Design

Footing Type F11.0

H5

	DL	LL/SL	Total
Roof	11025	18375	29400
Level 3	8820	36750	45570
Level 2	8820	36750	45570
Level 1	59535	73500	133035
Storage's Roof BM3	5.61	8.25	13.9
	88206	165383	253589

14"x14" Column DL

1940

Required Footing Area

63.88 ft²

Required Footing Width

7.99 ft

Provided Footing Area

121 ft²

Bearing

2112 psf

<

4000 psf

REFERENCE

3.6 Hollow-Core Load Tables (cont.)

Strand Pattern Designation

76-S

 S = straight
 Diameter of strand in 16ths
 Number of strand (7)

Safe loads shown include dead load of 10 lb/ft² for untopped members and 15 lb/ft² for topped members. Remainder is live load. Long-time cambers include superimposed dead load but do not include live load.

Capacity of sections of other configurations are similar. For precise values, see local hollow-core manufacturer.

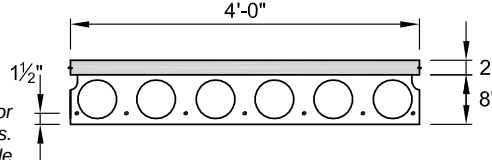
Key

385– Safe superimposed service load, lb/ft²

0.1 – Estimated camber at erection, in.

0.2 – Estimated long-time camber, in.

4'-0" × 8"
Normalweight Concrete



$$f'_c = 5000 \text{ psi}$$

$$f_{pu} = 270,000 \text{ psi}$$

Section Properties

No Topping

2 in. topping

A	=	215 in. ²	-
I	=	1666 in. ⁴	3071 in. ⁴
y _b	=	4.00 in.	5.29 in.
y _t	=	4.00 in.	4.71 in.
S _b	=	417 in. ³	581 in. ³
S _t	=	417 in. ³	652 in. ³
wt	=	224 lb/ft	324 lb/ft
DL	=	56 lb/ft ²	81 lb/ft ²
V/S	=	1.92 in.	

4HC8

Table of safe superimposed service load, lb/ft², and cambers, in.

No Topping

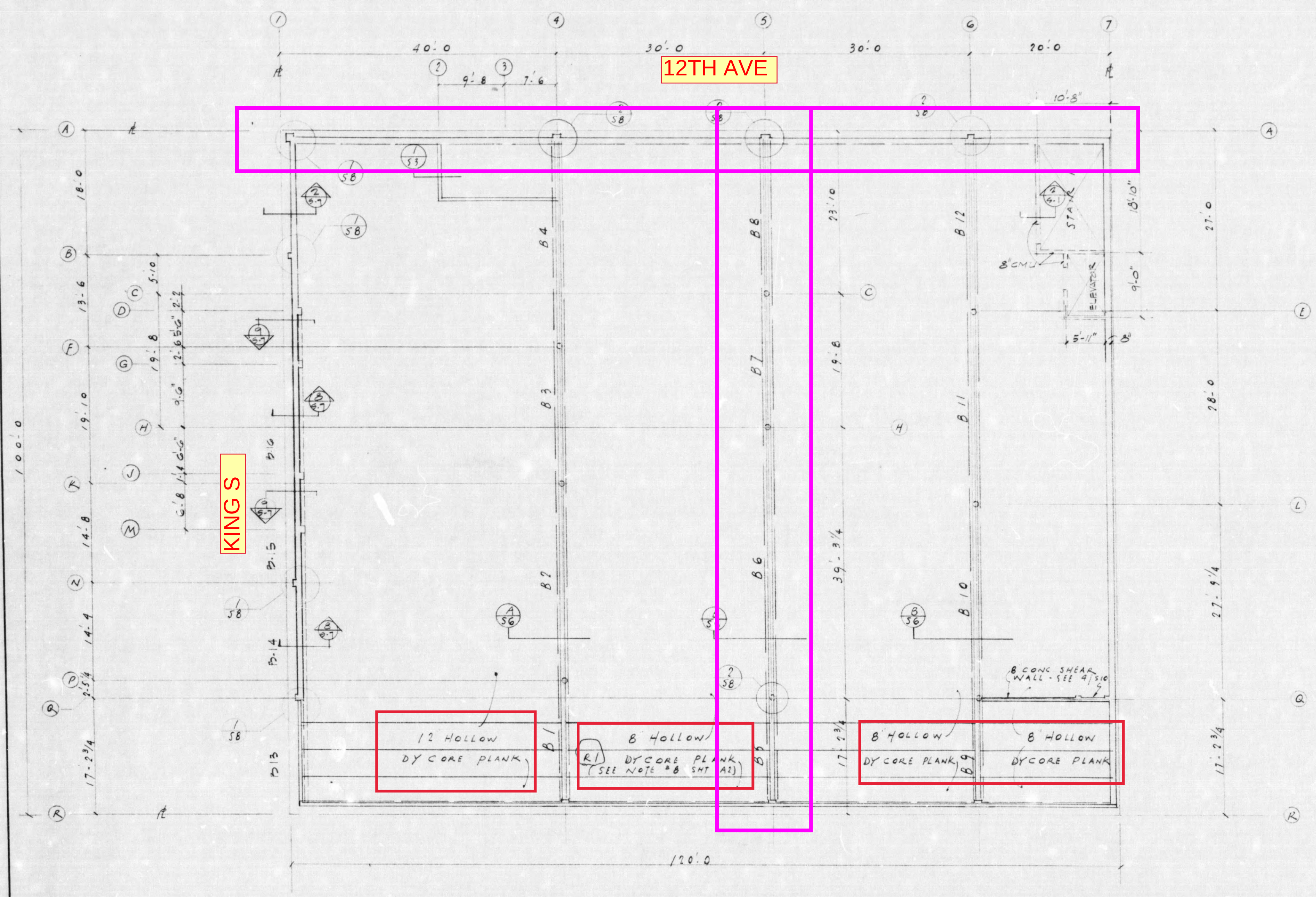
Strand designation code	Span, ft																																							
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
66-S	385	345	313	283	260	240	223	204	179	158	140	124	110	98	87	77	69	61	54	48	43	38	33	29																
	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.0	-0.1	-0.2	-0.3	-0.5	-0.6																
	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.0	-0.1	-0.2	-0.3	-0.5	-0.7	-0.9	-1.4																	
76-S	449	407	367	334	309	285	263	242	213	188	167	149	133	119	106	95	86	77	69	62	55	50	44	39	35	31	26													
	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.0	-0.1	-0.2	-0.4	-0.5	-0.7	-0.9													
	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1	0.0	-0.1	-0.2	-0.4	-0.6	-0.8	-1.1	-1.4	-1.7	-2.0														
58-S	422	380	346	316	290	267	247	231	216	202	190	179	169	160	144	130	118	107	97	88	80	72	66	60	54	48	42	37	32	28										
	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.3	0.2	0.1	0.0	-0.4	-0.3	-0.5	-0.7	-0.9											
	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.2	0.0	-0.2	-0.4	-0.6	-0.9	-1.2	-1.6	-2.0	-2.4										
68-S	476	430	393	361	332	309	286	269	253	235	223	209	200	180	165	153	142	132	121	110	101	92	84	77	70	63	56	51	45	40										
	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.4	0.2	0.1	-0.1	-0.3										
	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.4	0.2	0.0	-0.2	-0.5	-0.8	-1.1	-1.5									
78-S	488	442	402	370	341	318	295	275	259	241	229	215	203	195	180	168	157	144	135	126	118	110	101	92	84	77	70	64	58	52										
	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.3										
	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.1	1.0	0.8	0.7	0.5	0.3	0.0	-0.3	-0.7										

4HC8 + 2

Table of safe superimposed service load, lb/ft², and cambers, in.

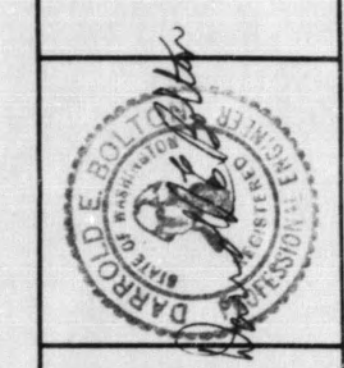
2 in. Normalweight Topping

Strand designation code	Span, ft																																							
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40												
66-S	400	365	333	308	282	256	224	197	173	153	135	119	105	93	82	68	56	45	36	26	62 psf 81 psf																			
	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.0	-0.0	-0.1	-0.2	-0.3																				
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	-0.1	-0.2	-0.3	-0.4	-0.6	-0.7	-0.9	-1.2					-1.4															
76-S	474	435	396	366	340	304	267	235	208	184	164	146	130	116	103	88	74	62	51	41	31																			
	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.1	-0.0	-0.1	-0.2																			
	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.0	-0.1	-0.2	-0.4	-0.5	-0.7	-0.9	-1.2					-1.4														
58-S	445	405	374	342	318	298	275	260	243	228	217	196	177	159	143	126	110	95	82	70	59	49	40	32																
	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.1	0.3	0.2	0.1	0.0	-0.1																
	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.1	-0.1	-0.2	-0.4	-0.6	-0.9	-1.2	-1.5					-1.8											
68-S	463	426	393	366	342	319	299	282	267	251	239	216	195	177	158	140	124	110	97	84	73	62	53	44	36	28														
	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.4	0.2	0.1					-0.1									
	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.4	0.3	0.2	0.0	-0.2	-0.4	-0.6	-0.9	-1.2	-1.6	-2.0					-2.4									
78-S	472	435	402	375	348	325	305	288	273	257	245	232	220	207	186	167	149	133	119	106	94	83	73	64	55	46	38													
	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	0.9	0.9	0.7	0.6	0.5					0.3								
	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.4	0.3	0.1	-0.1	-0.3	-0.6	-0.9					-1.3	-1.7	-2.2						



FIRST FLOOR FRAMING
SCALE 1/8" = 1'-0"

WILLIAM S. TSAO & CO., P.S.
ENGINEERS & ARCHITECTS
2201 6TH AVENUE, SUITE 1008
SEATTLE, WASHINGTON 98121 U.S.A. (206) 441-6688



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VITO LABELLA
S. KING & 12TH S. SEATTLE, WASH.

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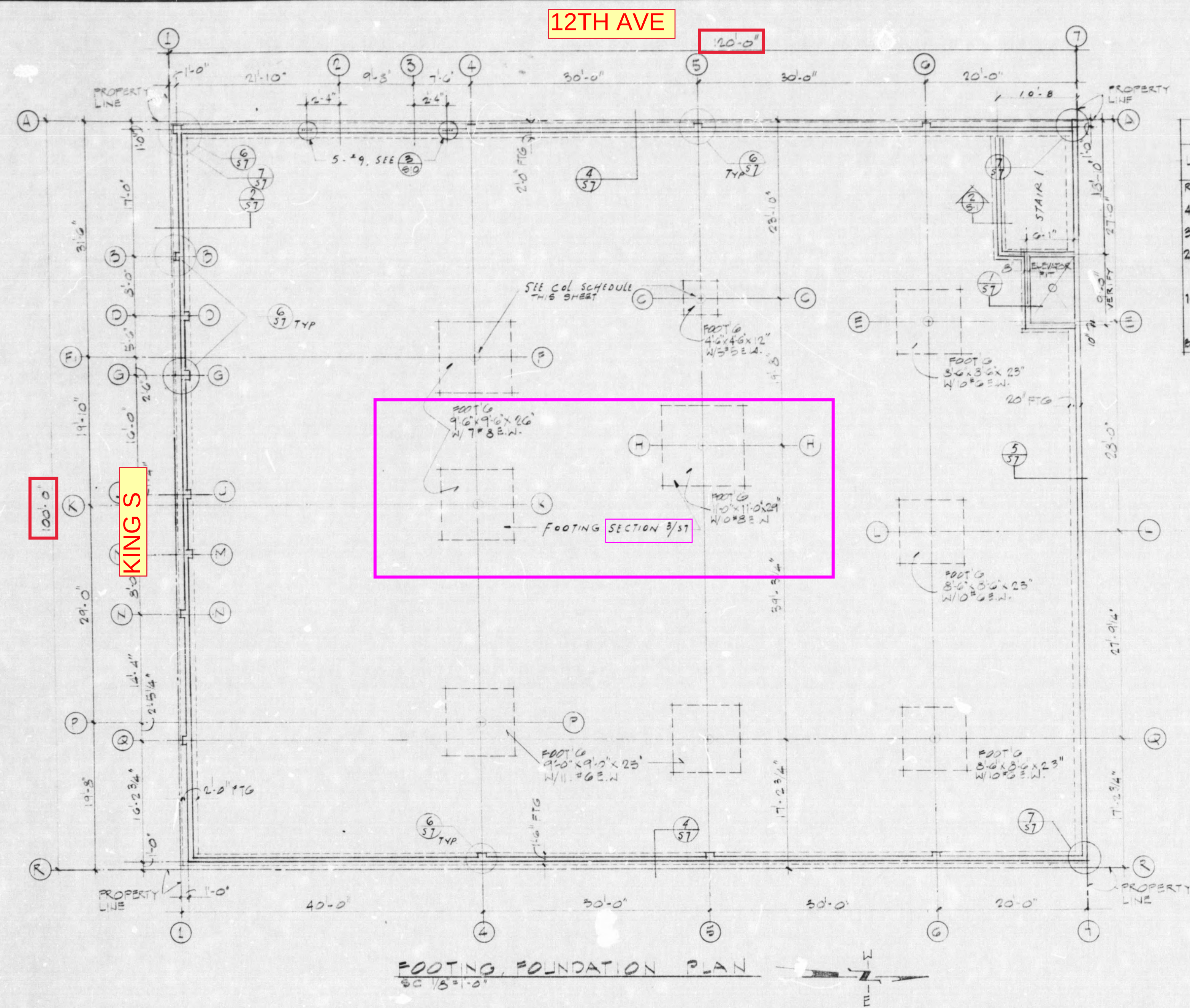
FIRST
FLOOR
FRAMING
PLAN

PROJ. NO. 8528
SHEET 52 OF 10

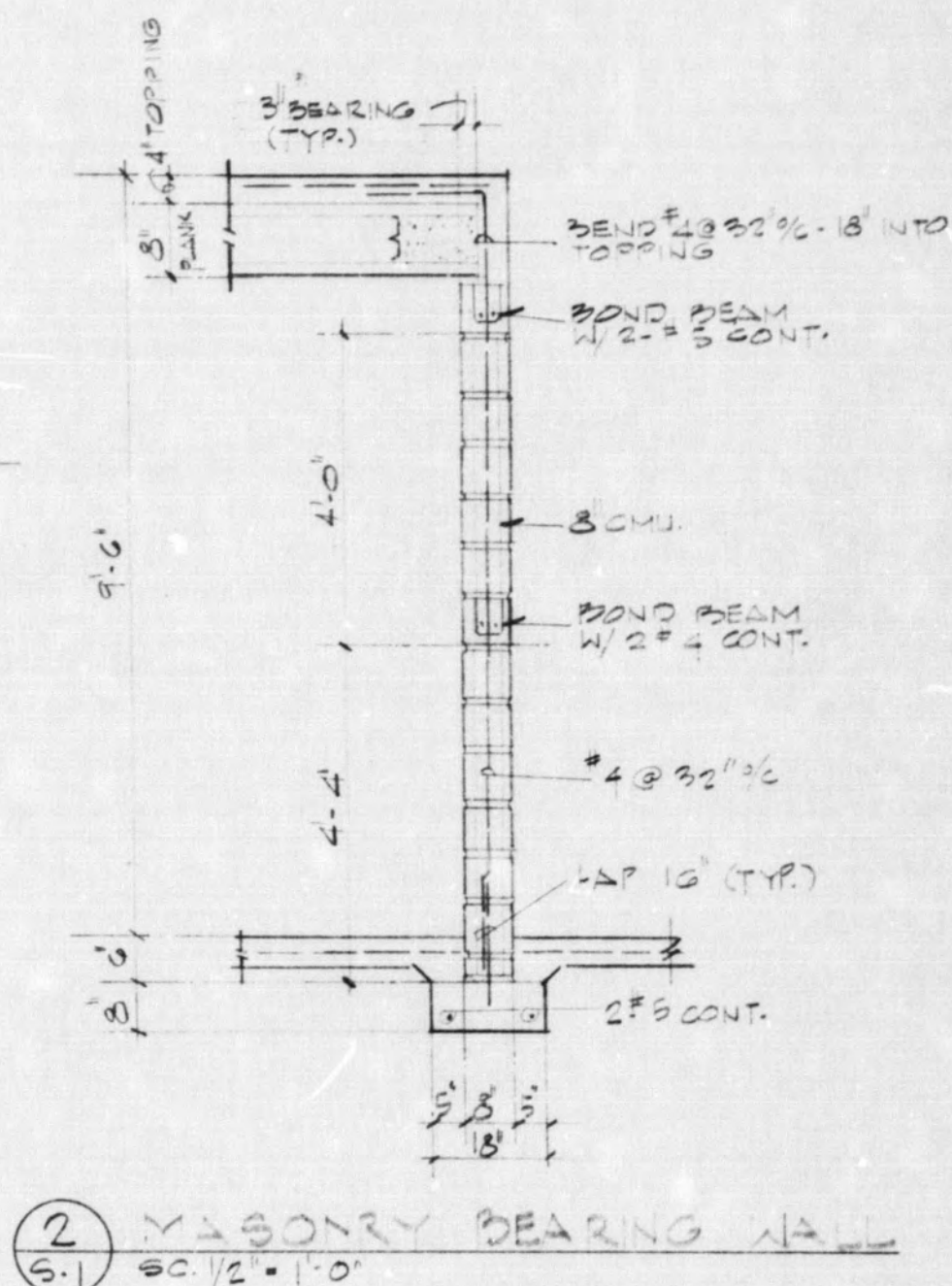
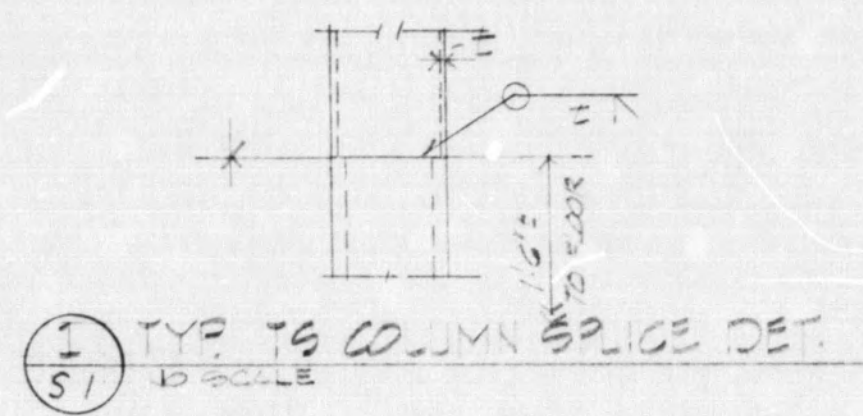
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COLUMN SCHEDULE		LOCATION											
LEVEL	SECTION	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
ROOF		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12
4th		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12
3RD FL		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12
2ND FL		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12
1ST FL		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12
BASEMENT		T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12	T85x12



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APR 24 1987
By *Butman*

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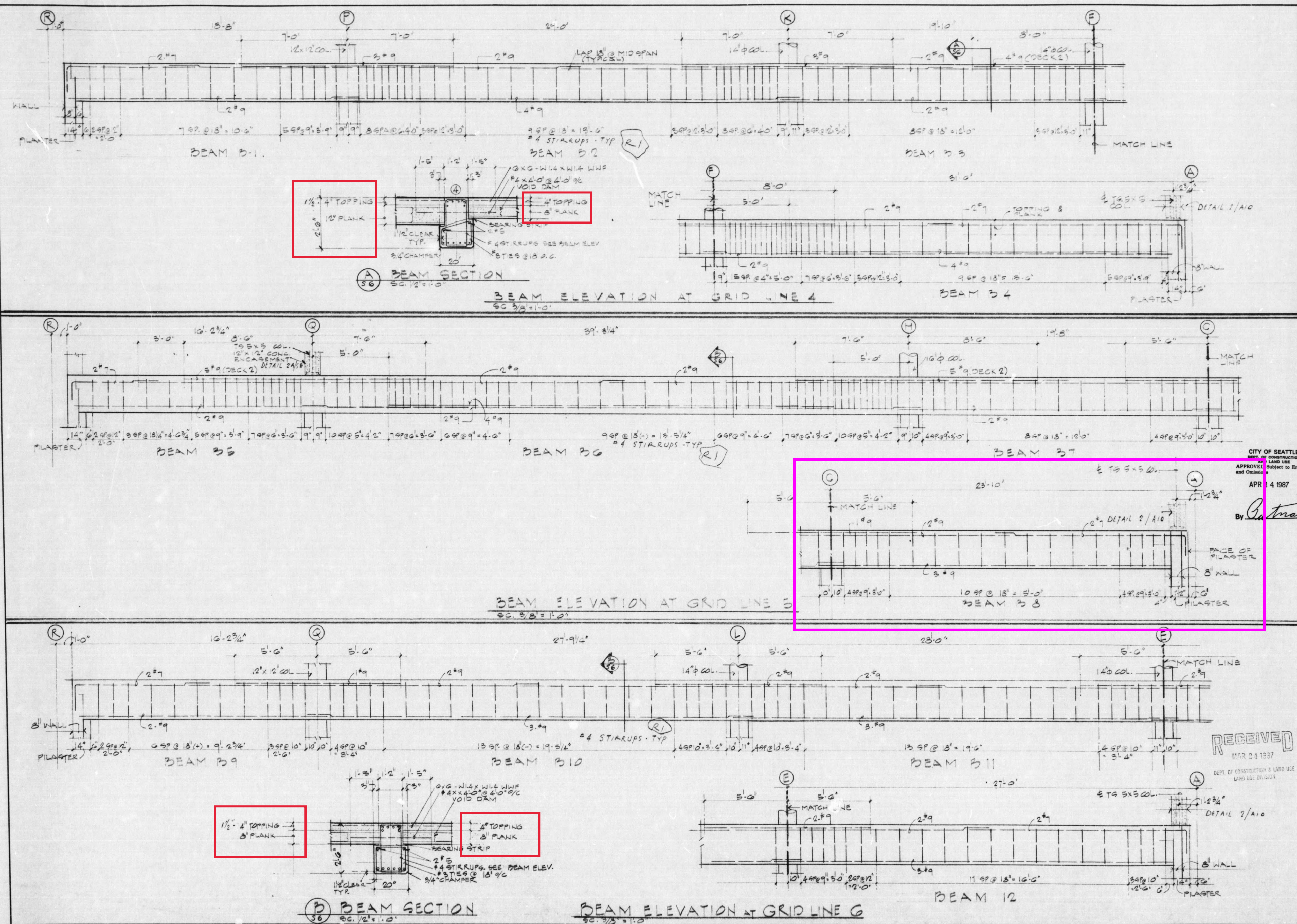
REVISIONS
DATE July 20 86

FOOTING,
FOUNDATION
PLAN &
COLUMN
SCHEDULE

PROJ. NO. 3523
SHEET 11 OF 10

NOTE: If the microfilmed document is less clear than this notice, it is due to the quality of the original document.





WILLIAM S. TSAO & CO., P.S.
 ENGINEERS & ARCHITECTS
 2201 6TH AVENUE, SUITE 1008
 SEATTLE, WASHINGTON 98121 U.S.A. (206) 441-6688



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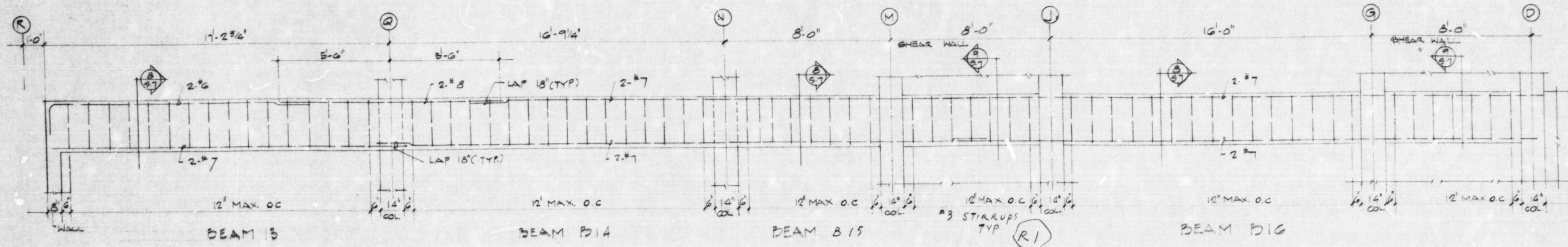
OFFICE BUILDING
 FOR
 LA BELLA KATE
 VITO
 SOUTH KING STREET & 15TH AVE SOUTH SEATTLE WA.

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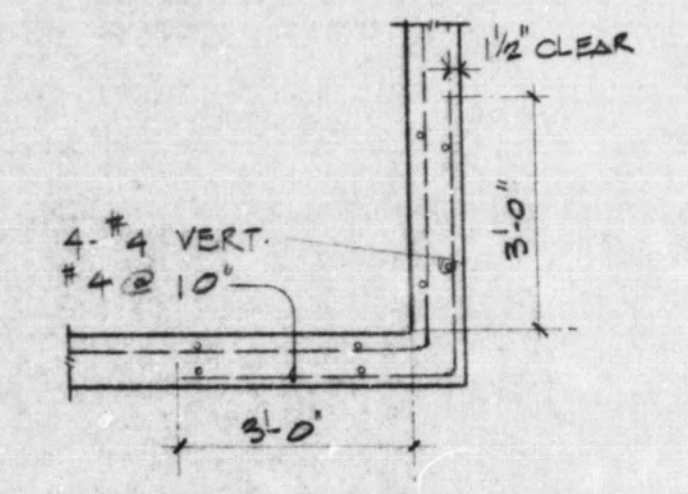
STRUCTURAL DETAILS

PROJ. NO. 8523
 SHEET OF
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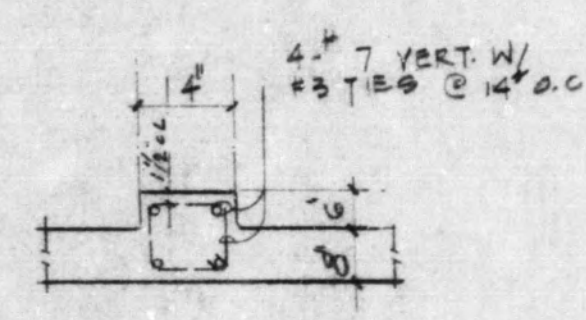
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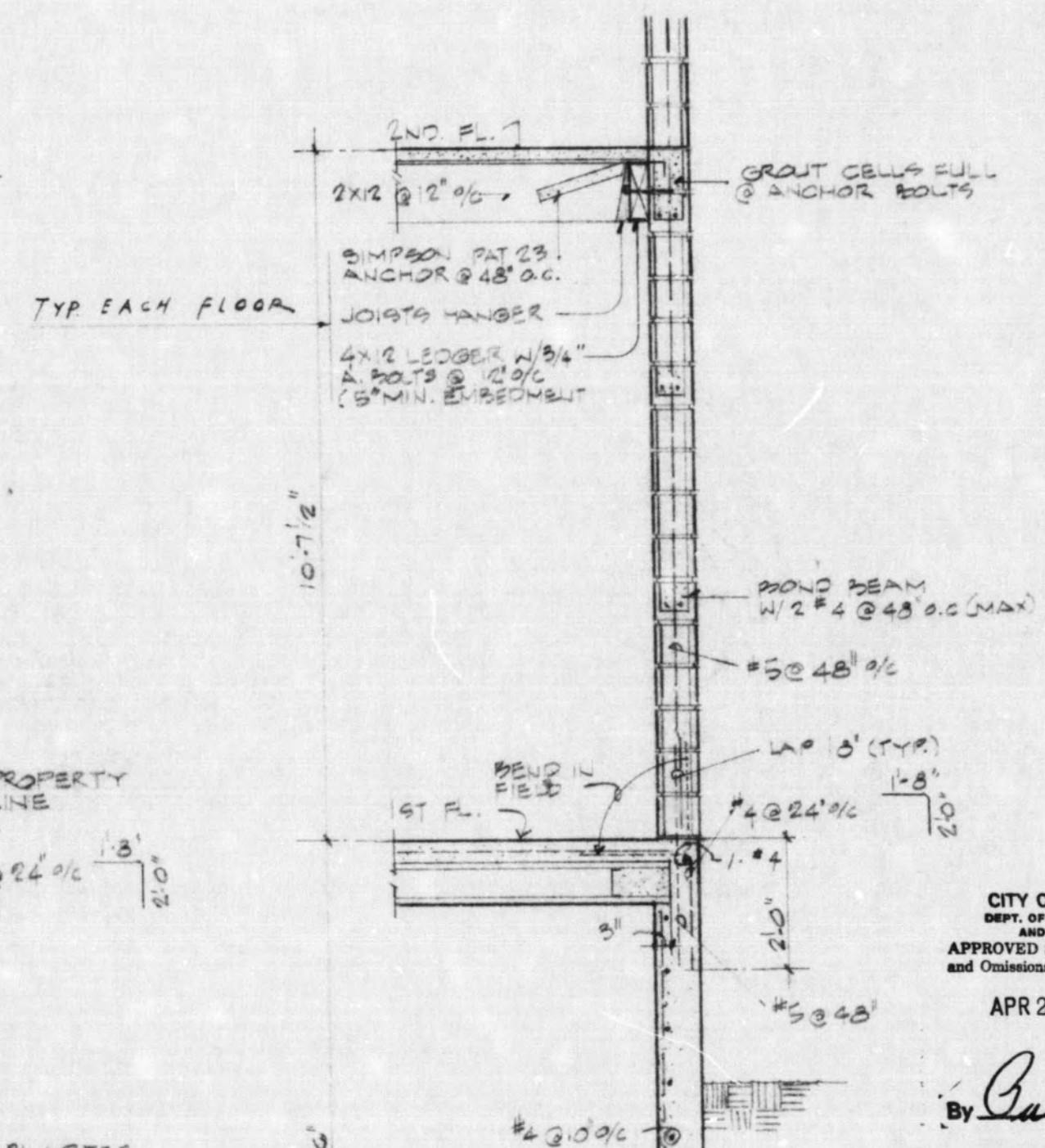
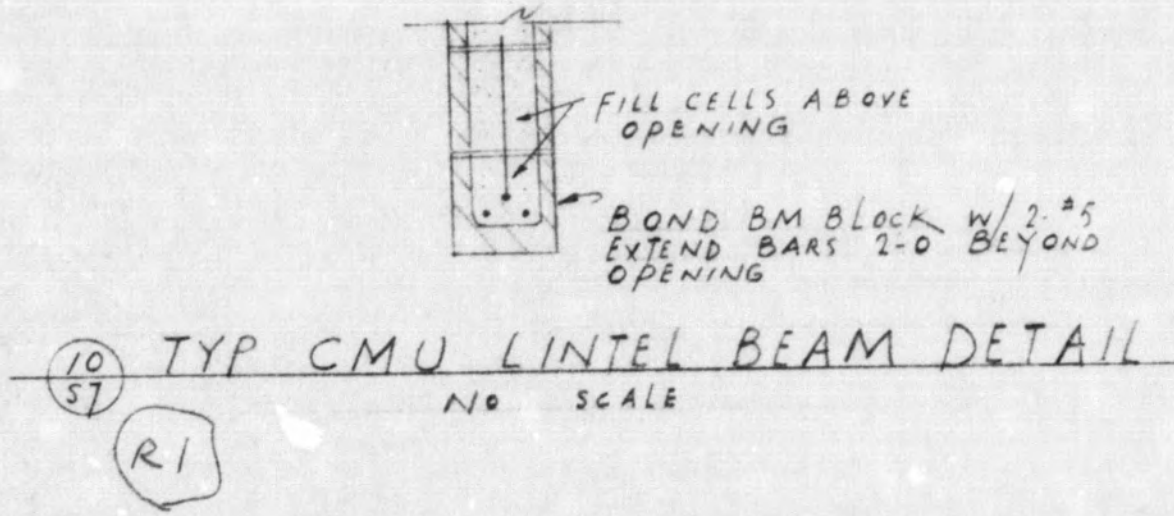
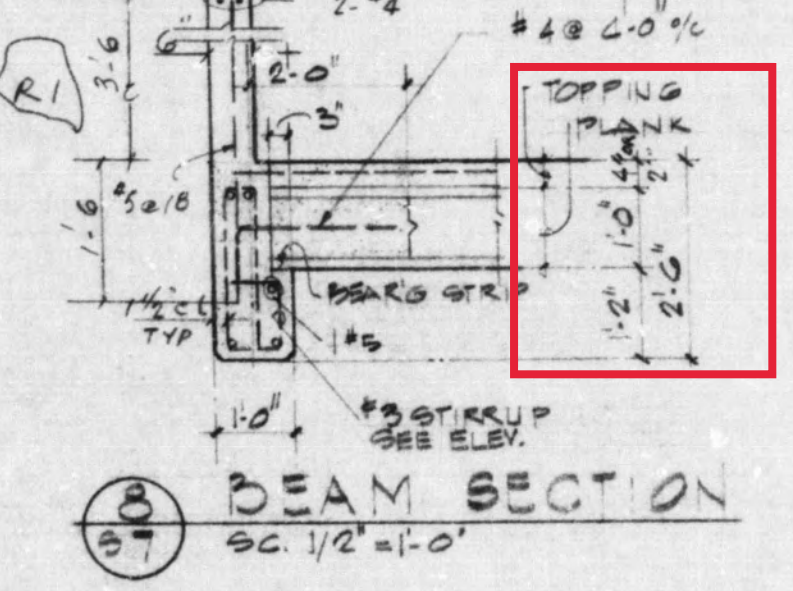
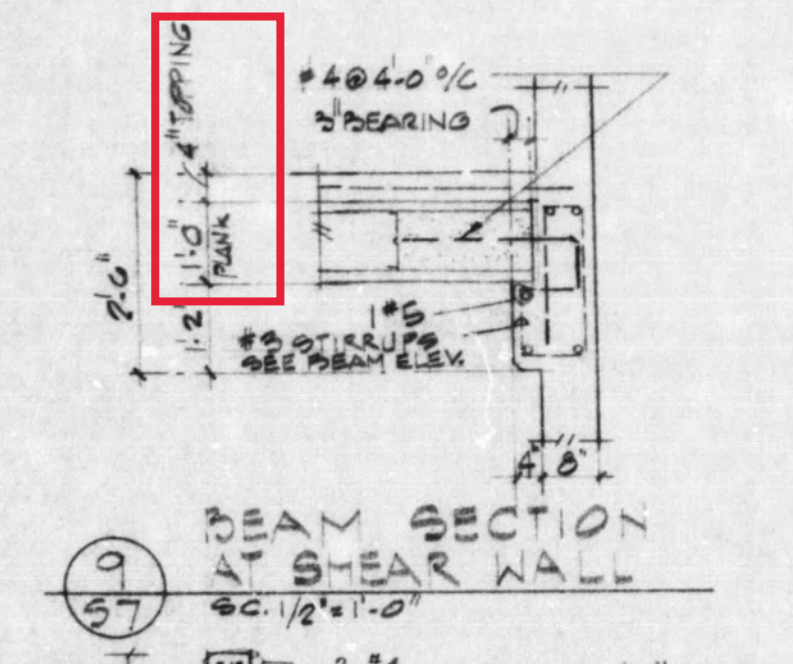
BEAM ELEVATION AT GRID LINE 1 PLUS 1.0
SCALE 3/8"=1'-0"



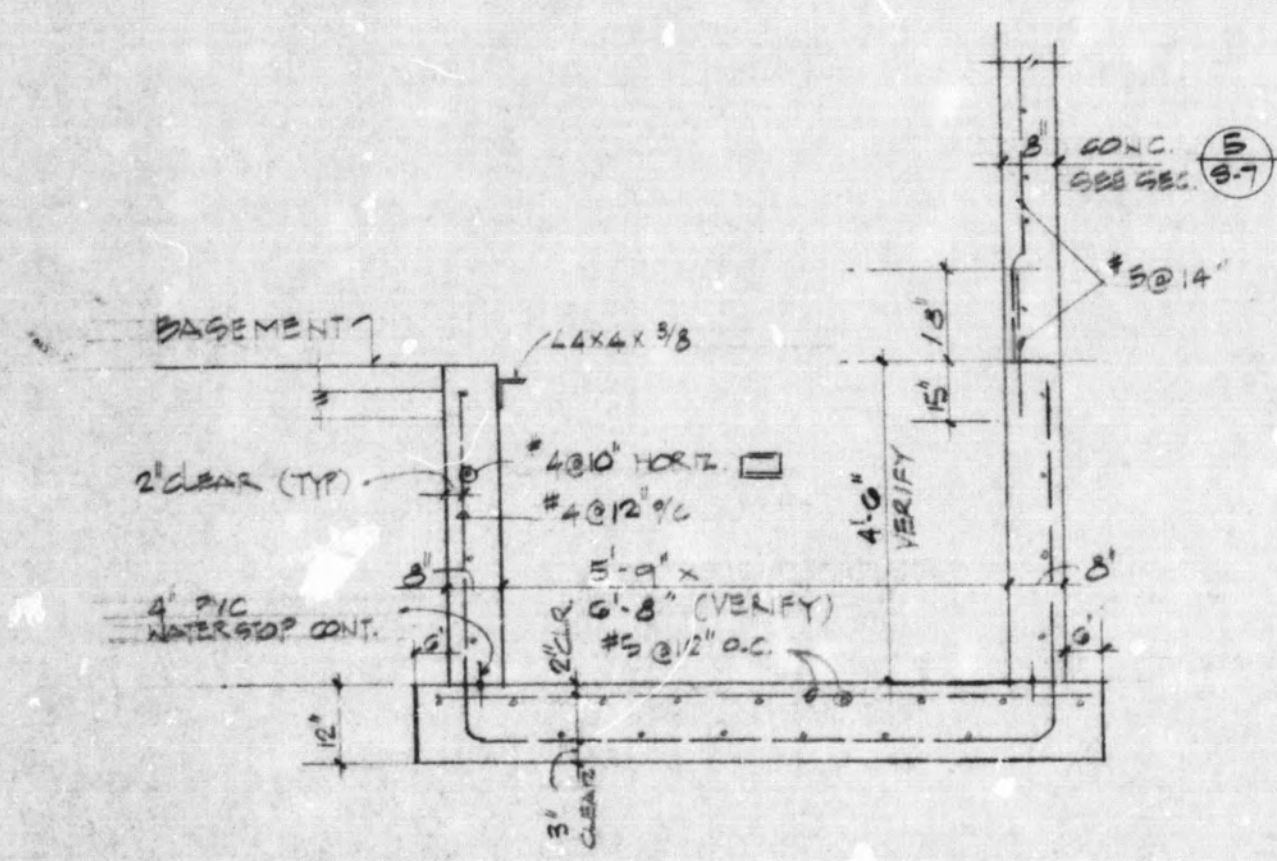
7 OUTSIDE CORNER
SC 1/2"=1'-0"



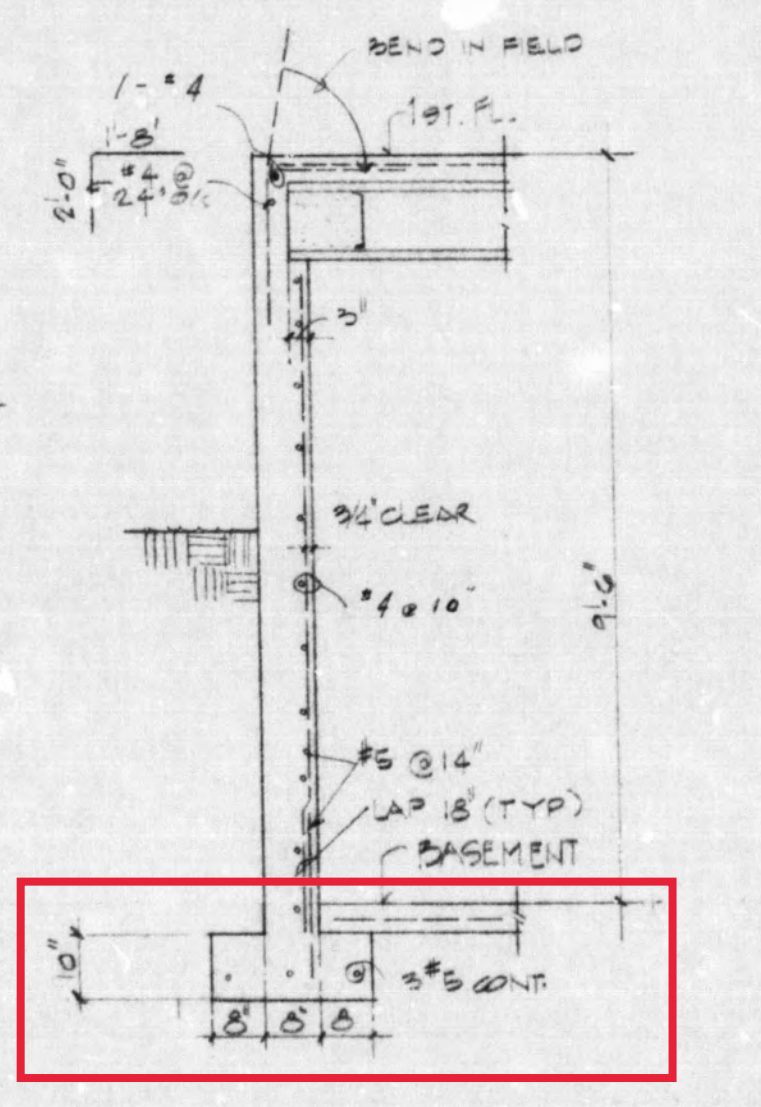
6 TYP PILASTER
SC 1/2"=1'-0"



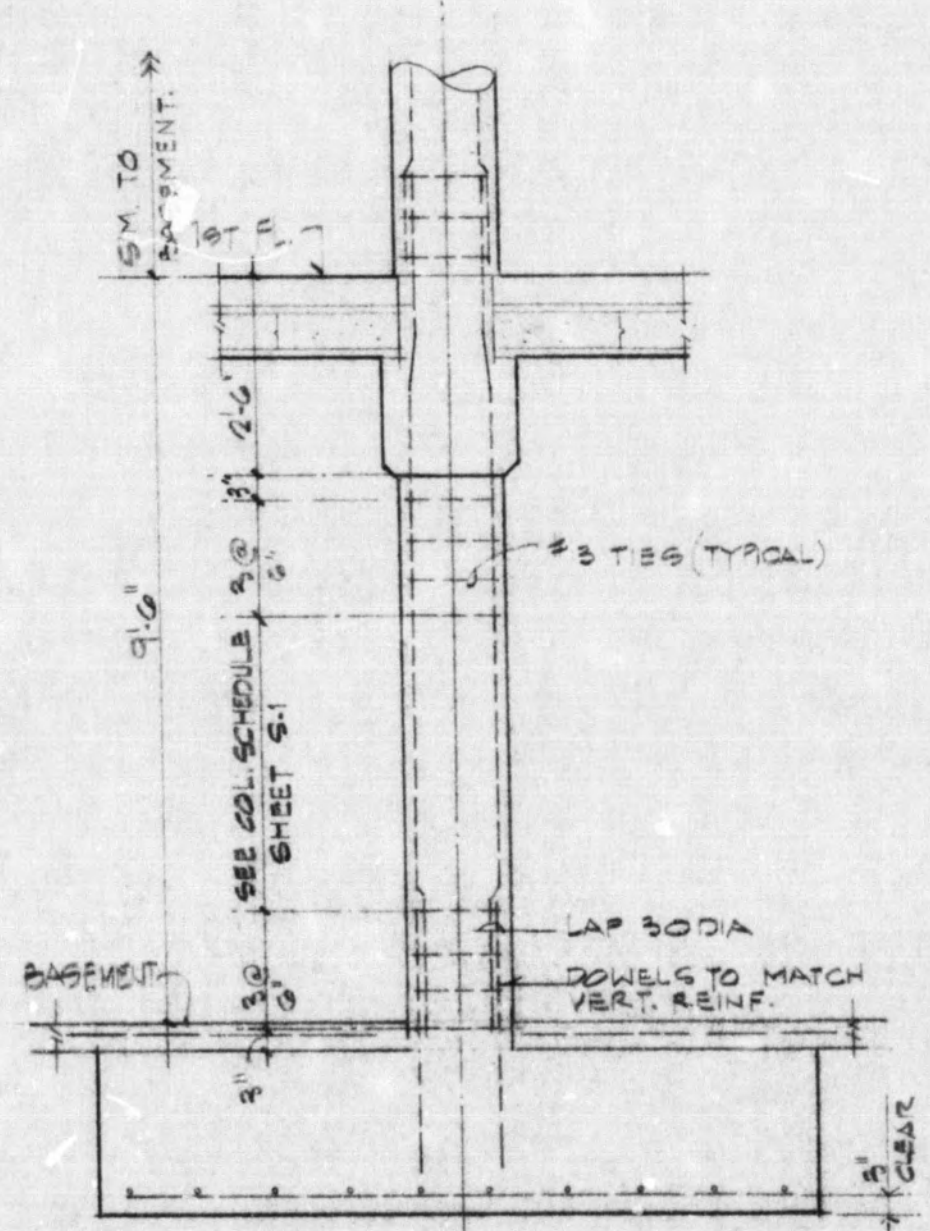
5 NORTH WALL SECTION
SC 1/2"=1'-0"



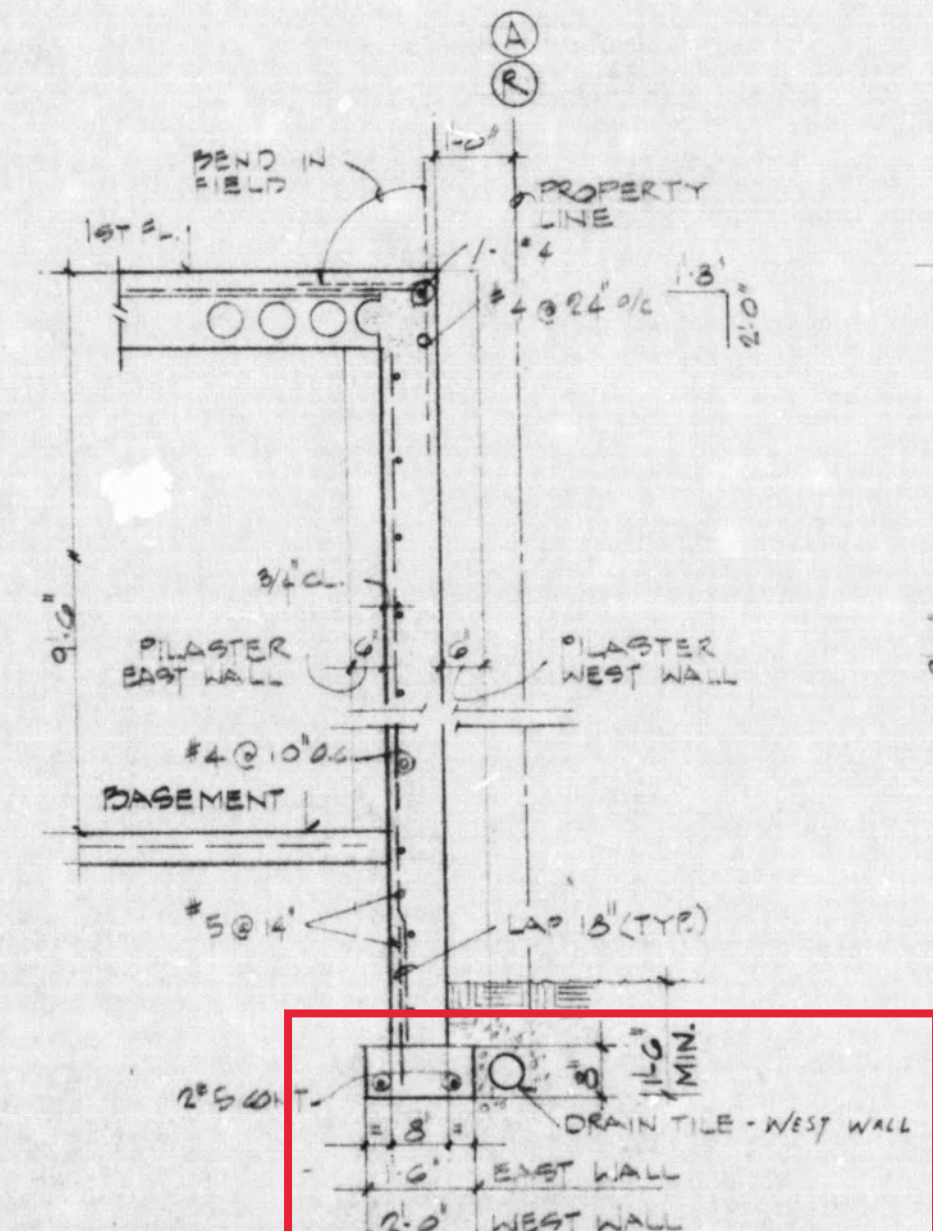
7 ELEVATOR PIT SECTION
SC 1/2"=1'-0"



8 SOUTH WALL SECTION
SC 1/2"=1'-0"



3 INTERIOR CO. PARTG SECTION
SC 1/2"=1'-0"



4 EAST WEST WALL SECTION
SC 1/2"=1'-0"

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SEATTLE, WASHINGTON 98121 U.S.A. (206) 441-6688



OFFICE BUILDING
FOR
VITO LABELLARTE
SOUTH KING STREET & 17TH SOUTH SEATTLE WA

REVISIONS
580
R1 JAN 27 87
DATE July 20, 86

STRUCTURAL
DETAILS

PROJ. NO. 8528
SHEET 10 OF 10
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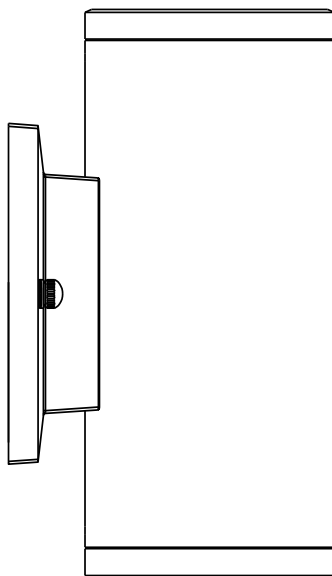


Lighting Specifications and Manual

USE AND CARE GUIDE



LED EXTERIOR WALL LANTERN



Questions, problems, missing parts? Before returning to the store,
call Home Decorators Collection Customer Service
8 a.m. - 7 p.m., EST, Monday - Friday, 9 a.m. - 6 p.m., EST, Saturday

1-800-986-3460

HOMEDEPOT.COM/HOMEDECORATORS

THANK YOU

We appreciate the trust and confidence you have placed in Home Decorators Collection through the purchase of this exterior wall lantern. We strive to continually create quality products designed to enhance your home. Visit us online to see our full line of products available for your home improvement needs. Thank you for choosing Home Decorators Collection!

Table of Contents

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Safety Information



WARNING: Carefully read and understand the information given in this manual before beginning the assembly and installation. Failure to do so could lead to electric shock, fire or other injuries which could be hazardous or even fatal.



WARNING: Be sure the electricity to the wires you are working on is shut off. Either remove the fuse or turn the circuit off.

NOTICE: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTICE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warranty

WHAT IS COVERED

The manufacturer warrants this lighting fixture to be free from defects in materials and workmanship for a period of five (5) years from date of purchase. This warranty applies only to the original consumer and only to products used in normal use and service. If this product is found to be defective, the manufacturer's only obligation, and your exclusive remedy, is the repair or replacement of the product at the manufacturer's discretion, provided that the product has not been damaged through misuse, abuse, accident, modifications, alterations, neglect or mishandling.

WHAT IS NOT COVERED

This warranty shall not apply to any product that is found to have been improperly installed, set-up, or used in any way not in accordance with the instructions supplied with the product. This warranty shall not apply to a failure of the product as a result of an accident, misuse, abuse, negligence, alteration, or faulty installation, or any other failure not relating to faulty material or workmanship. This warranty shall not apply to the finish on any portion of the product, such as surface and/or weathering, as this is considered normal wear and tear.

The manufacturer does not warrant and specially disclaims any warranty, whether express or implied, of fitness for a particular purpose, other than the warranty contained herein. The manufacturer specifically disclaims any liability and shall not be liable for any consequential or incidental loss or damage, including but not limited to any labor / expense costs involved in the replacement or repair of said product.

Contact the Customer Service Team at 1-800-986-3460 or visit www.HomeDepot.com/HomeDecorators

Pre-Installation

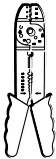
PLANNING INSTALLATION

Read all instructions before assembly. Before starting installation of this fixture or removal of a previous fixture, disconnect the power by turning off the circuit breaker or by removing the fuse from the fuse box. To avoid damaging this product, assemble it on a soft, non-abrasive surface such as carpet or cardboard.



NOTE: Keep your receipt and these instructions for proof of purchase.

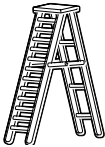
TOOLS REQUIRED



Wire Strippers



Safety Goggles



Ladder



Gloves



Flathead Screwdriver



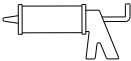
Phillips Screwdriver



Electrical Tape



Wire Cutters



Caulk

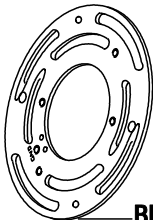
HARDWARE INCLUDED



NOTE: Hardware not shown to actual size.



AA



BB



CC



DD

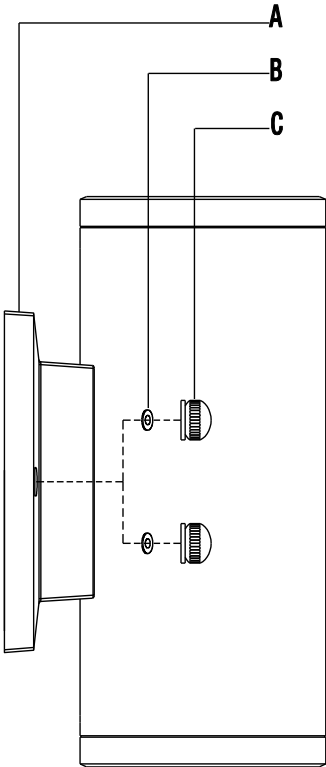


EE

Part	Description	Quantity
AA	Wire Connector	3
BB	Mounting Plate	1
CC	Ground Screw	1
DD	Outlet Box Screw (15 mm)	2
EE	Mounting Screw (20 mm)	2

Pre-Installation (continued)

PACKAGE CONTENTS

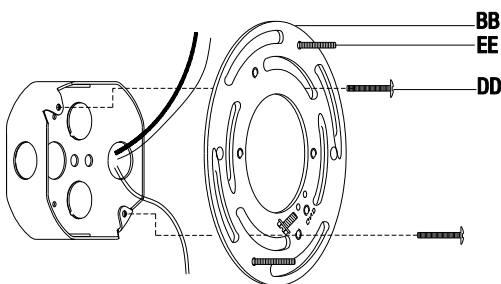


Part	Description	Quantity
A	Wall Plate	1
B	Washer	2
C	Lock Nut	2

Installation

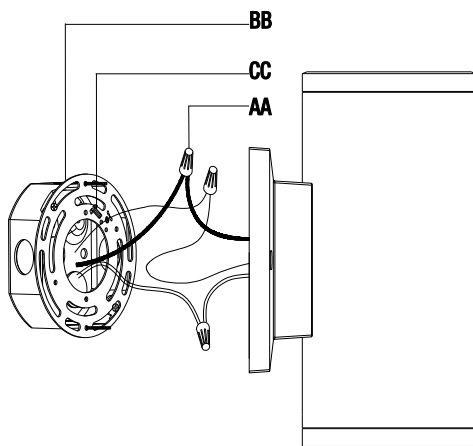
1 Attaching the mounting plate to the outlet box

- Screw the mounting screws (EE) into the mounting plate (BB).
- Mount the mounting plate (BB) to the outlet box (not included) using the two outlet box screws (DD).
- Make sure the threads of the mounting screws (EE) are facing out when the mounting plate (BB) is attached to the outlet box.



2 Connecting the electrical wires

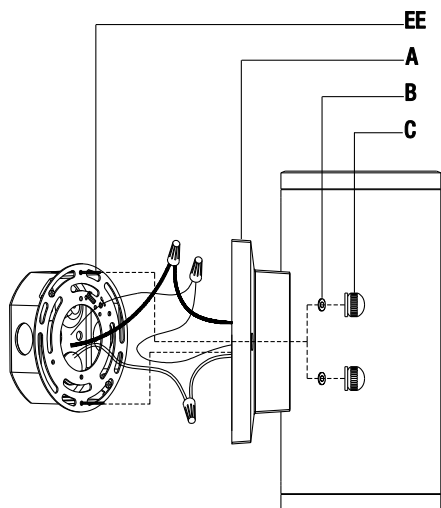
- Wrap the ground wire from the fixture around the ground screw (CC) on the mounting plate (BB). Use a wire connector (AA) to connect the ground wire from the fixture to the ground wire from the outlet box.
- Use a wire connector (AA) to connect the white wire from the fixture to the white wire (neutral wire) from the outlet box.
- Use a wire connector (AA) to connect the black wire from the fixture to the black wire (live wire) from the outlet box.
- Wrap the three wire connections with electrical tape for a more secure connection.
- Position the wires inside the outlet box.



Installation (continued)

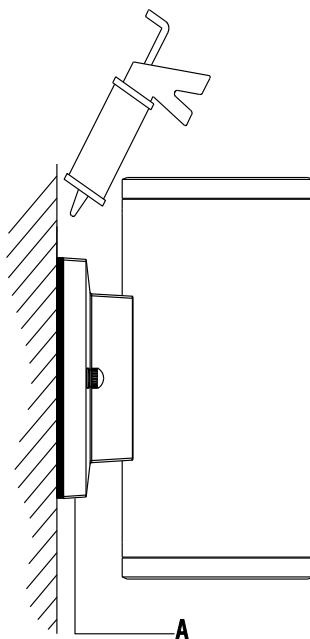
3 Securing the fixture to the wall

- Align the mounting screws (EE) to protrude through the holes on the wall plate (A).
- Place a washer (B) onto each of the mounting screws (EE).
- Secure the fixture to the wall by screwing the lock nuts (C) onto the protruding mounting screws (EE).



4 Applying caulk

- Once the fixture is mounted on the wall, caulk the space between the wall and the upper 3/4 area of the wall plate (A) to prevent water seeping into the outlet box..
- Leave the bottom 1/4 area uncaulked for drainage of any water which might leak into the enclosure.



Care and Cleaning

- Clean the fixture with a soft, dry cloth.
- Do not use any cleaners with chemicals, solvents or hash abrasives.



WARNING: Before attempting to clean the fixture, disconnect the power to the fixture by turning the breaker off or removing the fuse from the fuse box.

Troubleshooting

Problem	Possible Cause	Solution
The fixture will not light.	□ The power is off.	□ Ensure the power supply is On.
	□ The circuit breaker is off.	□ Ensure the circuit breaker is in the On position.
The fuse blows or circuit breaker trips when the light is turned on.	□ Crossed wires or power wire is grounding out.	□ Check the wire connections. □ Contact a qualified electrician or call the Customer Service Team at 1-800-986-3460.

HOME DECORATORS COLLECTION

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8 a.m. - 7 p.m., EST, Monday - Friday, 9 a.m. - 6 p.m., EST, Saturday

1-800-986-3460

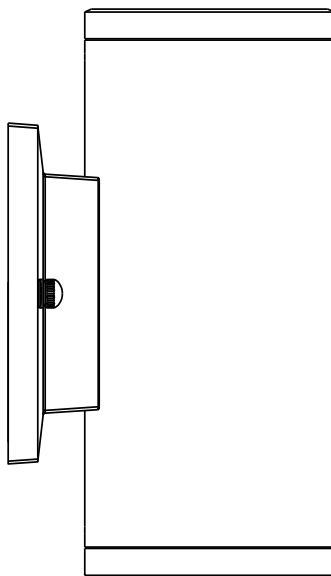
HOMEDEPOT.COM/HOMEDECORATORS

Retain this manual for future use.

GUÍA DE USO Y MANTENIMIENTO



LANTERNA DE PARED LED EXTERIOR



Preguntas, problemas o piezas faltantes? Antes de regresar a la tienda, llama al Servicio al Cliente de Home Decorators Collection de Lunes a Viernes entre 8 a.m. y 7 p.m., El Sábado entre 9 a.m. y 6 p.m., (hora del Este de EE. UU.)

1-800-986-3460

HOMEDEPOT.COM/HOMEDECORATOR

GRACIAS POR TU COMPRA

Agradecemos la confianza que ha tenido en Home Decorators Collection a través de la compra de este farola de pared para exteriores. Nos esforzamos para continuamente crear productos de calidad diseñados para mejorar tu hogar. Visítanos por Internet para ver nuestra línea completa de productos disponibles para las necesidades de mejoras de tu hogar. Gracias por elegir Home Decorators Collection!

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Información de Seguridad



ADVERTENCIA: Lea cuidadosamente y entienda la información dada en este manual antes de empezar el proceso de ensamble e instalación. Si falla en hacerlo, puede ocasionar un choque eléctrico, incendio u otros daños que pueden ser perjudiciales o fatales.



ADVERTENCIA: Asegúrese de que la electricidad que llega a los cables con los que se encuentra trabajando estén apagados. Remueva el fusible o apague el interruptor.

ANUNCIO: Cualquier cambio o modificación que no se encuentre expresamente aprobada por el proveedor responsable del cumplimiento puede revocar la autorización del usuario a utilizar el equipo.

NOTA: Este equipo ha sido probado y se encuentra que cumple con los límites de dispositivos de la Clase B, y cumple con la arte 15 de la regla del FCC.

Estos límites están diseñados para suministrar una protección razonable contra interferencia perjudicial en una instalación residencial.

Este equipo genera, utiliza y puede irradiar energía de frecuencia radial, si no se instala e utiliza según las instrucciones, puede causar interferencia dañina en las comunicaciones de radio.

Sin embargo, no hay garantía de que la interferencia no ocurrirá en una instalación en particular.

Si el equipo causa interferencia perjudicial a la radio o a la recepción del televisor, lo cual puede determinar apagando el equipo, se le invita al usuario a intentar corregir la interferencia con una de las siguientes medidas:

- Reorientar o reubicar la antena receptora.

- Aumente la separación entre el equipo y el receptor.

- Conecte el equipo en el enchufe de un circuito diferente a aquel donde se encuentra conectado el receptor.

- Consulte al distribuidor o a un técnico experto en radio/TV para solicitar ayuda.

Garantía

LO QUE ESTA CUBIERTO

El fabricante garantiza que esta lámpara no presentará defectos materiales o de fabricación por un período de cinco (5) años a partir de la fecha de compra. Esta garantía es válida sólo para el comprador original y sólo cubre los productos en uso y funciones normales. Si se descubre algún defecto en este producto, la única obligación y solución exclusiva del fabricante, a criterio del mismo, será reparar o reemplazar el producto siempre y cuando el defecto no sea resultado de un mal uso, abuso, accidente, modificaciones, alteraciones, negligencia o manejo indebido.

LO QUE (NO) ESTA CUBIERTO

Esta garantía no cubre ningún producto instalado, configurado o usado incorrectamente sin seguir las instrucciones adjuntas al producto. Esta garantía no cubre fallas del producto a consecuencia de un accidente, mal uso, abuso, negligencia, modificaciones o instalaciones defectuosas, o cualquier otra falla no relacionada con defectos materiales o de fabricación. Esta garantía no se aplica al acabado de ninguna parte del producto, como por ejemplo el de la superficie, ni al deterioro por condiciones ambientales, ya que eso se considera un desgaste normal.

El fabricante no garantiza y rechaza especialmente cualquier garantía, expresa o implícita, de idoneidad para un propósito en particular, distinta de la garantía indicada aquí. El fabricante se exime específicamente de cualquier obligación y no es responsable por daños o pérdidas directas o indirectas, lo que incluye cualquier costo de mano de obra o gastos relacionados con el reemplazo o reparación de dicho producto.

Comuníquese con el Equipo de Servicio al Cliente al 1-800-986-3460 o visita www.HomeDepot.com/HomeDecorators

PLANIFICACIÓN DE LA INSTALACIÓN

Lee todas las instrucciones antes de ensamblar. Antes de comenzar la instalación o de quitar la instalación anterior, desconecte la alimentación apagando el interruptor del circuito o quitando el fusible en la caja de fusible. Para evitar dañar el artículo, ensámblalo sobre una superficie suave, no abrasiva, como por ejemplo una alfombra o cartón.

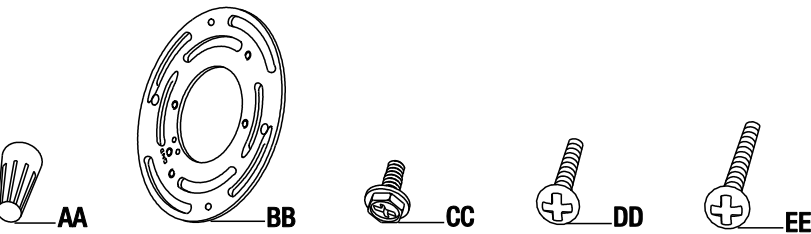
**NOTA:** Conserva el recibo y estas Instrucciones como Comprobante de Compra.

HERRAMIENTAS NECESARIAS



HARDWARE INCLUIDO

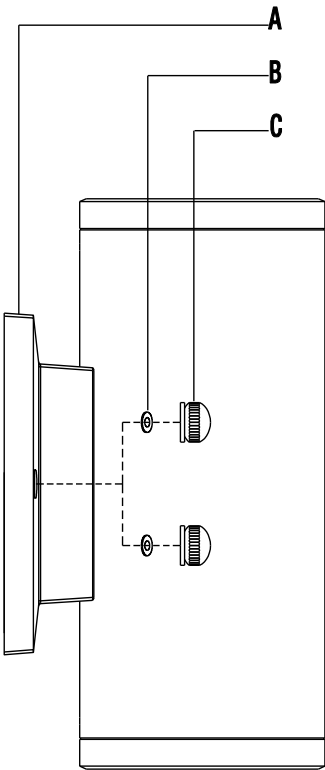
**NOTA:** El objeto no se muestra en su tamaño real.



Pieza	Descripción	Cantidad
AA	Conector de Cable	3
BB	Placa de Montaje	1
CC	Tornillo de Terre	1
DD	Tornillo de la Boîte de Sortie (15 mm)	2
EE	Tornillo de Montage (20 mm)	2

Pre-Instalación (continuación)

CONTENIDO DEL PAQUETE

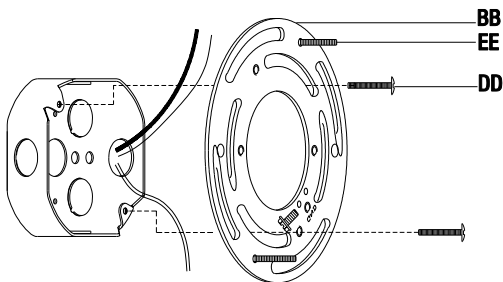


Pieza	Descripción	Cantidad
A	Placa de la Pared	1
B	Junta	2
C	Tuerca de Cierre	2

Instalación

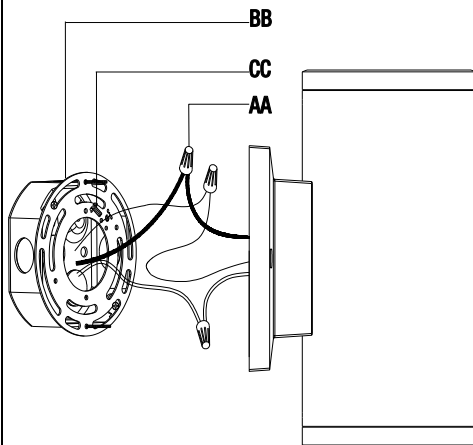
1 Coloque la placa de montaje en la caja de salida

- Atornille los tornillos de montaje (EE) en la placa de montaje (BB).
- Monte la placa de montaje (BB) en la caja de salida (no incluida) con los dos tornillos de la caja de salida (DD).
- Asegúrese de que las roscas de los tornillos de montaje (EE) miran hacia fuera cuando la placa de montaje (BB) esté unida a la caja de salida.



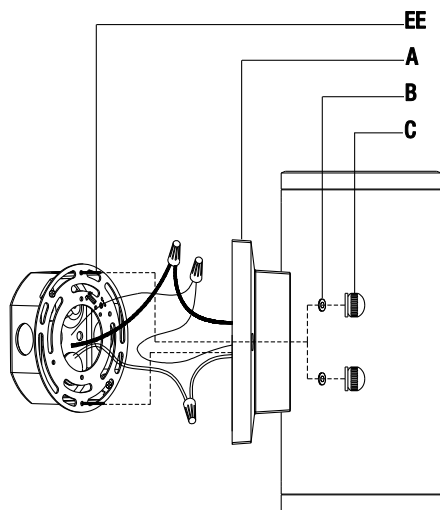
2 Conexión de los cables eléctricos

- Ajuste el cable de tierra del dispositivo al tornillo de tierra (CC) sobre la placa de montaje (BB). Utilice un conector de cable (AA) para conectar el cable de tierra de la luminaria al cable de tierra de la caja de salida.
- Utilice un conector de cable (AA) para conectar el cable blanco del dispositivo al cable blanco (cable neutro) de la caja de salida.
- Utilice un conector de cable (AA) para conectar el cable negro de la luminaria al cable negro (cable de alta tensión) de la caja de salida.
- Envuelva las tres conexiones de los cables con cinta aislante para una conexión más segura.
- Posicione los cables de vuelta al interior de la caja de salida.



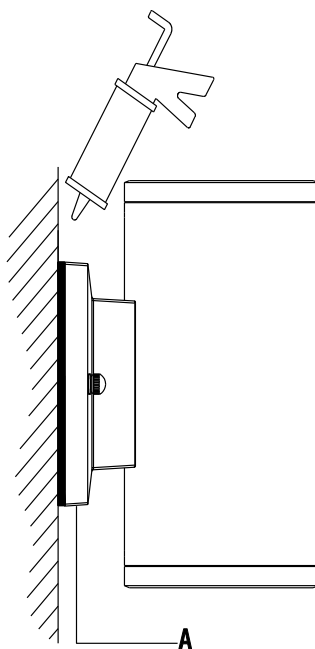
3 Fijar la instalación en la pared

- Alinee los tornillos de montaje (EE) a través de los agujeros que hay en la placa de la pared (A).
- Coloque una junta (B) en cada uno de los tornillos de montaje (EE).
- Apriete la instalación contra la pared atornillando las tuercas de cierre (C) en los tornillos protuberantes de montaje (EE).



4 Aplicar el calafateado

- Una vez que la instalación haya sido montada en la pared, calafatear el espacio entre la pared y la 3/4 partes del área superior de la placa de la pared (A) para prevenir que el agua se filtre en la caja de salida.
- Deje 1/4 parte del área inferior si calafatear para el drenaje de posible agua que haya podido filtrarse en el recinto.



Mantenimiento y Limpieza

- Limpia la lámpara con un paño suave y seco.
- No uses limpiadores con químicos, solventes, o productos abrasivos.



PRECAUCIÓN: Antes de intentar limpiar la pieza, desconéctela o apague el interruptor o remueva el fusible de la caja de fusibles.

Solución de Problemas

Problema	Causa Posible	Solución
El accesorio no iluminará.	☐ La electricidad está apagada.	☐ Asegúrate de que el suministro de electricidad esté encendido.
	☐ El cortacircuito está apagado.	☐ Verifica que el cortacircuitos esté en la posición de “ON” (encendido).
El fusible se funde o el cortacircuito se activa cuando se enciende la luz.	☐ El fusible se funde o el cortacircuito se activa cuando se enciende la luz.	☐ Compruebe las conexiones del cableado. ☐ Contacta a un electricista calificado olama al equipo de Servicio al Cliente al 1-800-986-3460.

HOME DECORATORS COLLECTION

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llama al Servicio al Cliente de Home Decorators Collection
de lunes a Viernes entre 8 a.m. y 7 p.m., El sábado entre 9 a.m. y 6 p.m., (hora del Este de EE. UU.)

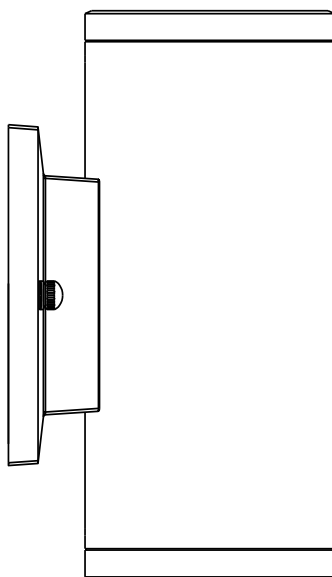
1-800-986-3460

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Conserva este manual para referencias futuras.

GUIDE D'UTILISATION ET D'ENTRETIEN

LANTERNE DEL MURALE D'EXTERIEUR



Questions, problèmes, pièces manquantes? Avant de retourner au magasin, veuillez communiquer avec le service à la clientèle Home Decorators Collection entre 8h00 et 19h00 (HNE) du lundi au vendredi, entre 9h00 et 18h00 (HNE) du samedi

1-800-986-3460

HOMEDEPOT.COM/HOMEDECORATORS

MERCI

Nous vous remercions de la confiance que vous avez place en Home Decorators Collection en achetant ce luminaire extérieur. Nous nous efforçons en permanence de créer des produits de qualité conçus pour perfectionner votre maison. Vous pouvez visiter notre site en ligne pour consulter notre gamme complète de produits pour vos besoins de rénovation résidentielle. Merci d'avoir choisi Home Decorators Collection!

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Consignes de sécurité



AVERTISSEMENT: Veuillez soigneusement lire et comprendre les informations contenues dans ce manuel avant de commencer l'assemblage et l'installation. Vous vous exposez, dans le cas contraire, à des risques dangereux ou mortels d'électrocution, d'incendie ou d'autres blessures.



AVERTISSEMENT: Enlevez les fusibles concernés ou désactivez le disjoncteur afin de vous assurer de mettre hors tension les fils électriques à manipuler.

REMARQUE: Tout changement ou modification non expressément approuvé par le parti responsable de la conformité peut annuler le droit par l'utilisateur d'utiliser le matériel.

REMARQUE: Cet appareil a été testé conformément à la partie 15 de la réglementation de la FCC (Commission fédérale des communications). Il répond aux critères d'un appareil numérique de classe B.

Ces critères ont été déterminés pour obtenir une protection raisonnable contre les interférences gênantes dans les installations à caractère résidentiel.

Si cet appareil est installé ou utilisé de manière non conforme aux instructions, il peut générer, utiliser ou émettre de l'énergie de radiofréquence pouvant causer des interférences qui gêneraient les communications radio.

Il n'est toutefois pas garanti qu'aucune interférence ne subsistera dans certains cas.

Si l'utilisation de l'appareil cause des interférences et gêne ainsi la réception de radio ou de télévision (allumer et éteindre l'appareil pour vérifier), l'utilisateur doit essayer de les faire disparaître à l'aide des méthodes suivantes:

- En réorientant ou en changeant l'antenne de réception de place.
- En augmentant la distance entre l'appareil et le récepteur.
- En connectant l'appareil à la sortie d'un circuit autre que celui du récepteur.
- En se renseignant auprès du vendeur ou d'un spécialiste radio/TV.

Garantie

CE QUI EST COUVERT

Le fabricant garantit que ce luminaire sera exempt de défauts de fabrication et de matériaux pendant une période d'un cinq (5) ans à compter de la date d'achat. Cette garantie ne vise que l'acheteur original et uniquement un usage et un entretien normaux des produits. Si ce produit est défectueux, la seule obligation du fabricant, et votre seul recours, est de remplacer ou de réparer le produit, au choix du fabricant, pourvu que le produit n'ait pas été endommagé par une utilisation inadéquate ou abusive, par un accident, une modification, une altération, la négligence ou une mauvaise manipulation.

CE QUI EST COUVERT (ET PAS)

Cette garantie ne s'applique pas à un produit qui est déclaré avoir été mal installé, mal posé ou utilisé d'une façon non conforme aux instructions qui l'accompagnent. Cette garantie ne s'applique pas à un défaut du produit qui découle d'un accident, d'un mauvais usage, d'un usage abusif, d'une négligence, d'une modification ou d'une installation incorrecte, ou à tout défaut étranger à un défaut de matériaux ou de fabrication. Cette garantie ne s'applique pas au fini de toute partie du produit, comme la surface, ni à l'altération par le climat, puisqu'il s'agit d'une usure normale.

Le fabricant ne garantit aucunement, et réfute expressément toute garantie, explicite ou tacite, d'adaptation à un usage particulier autre que celui exprimé aux présentes. Le fabricant réfute expressément toute responsabilité et ne peut être tenu responsable de toute perte ou de tout dommage indirect ou accessoire, y compris mais non de façon limitative, tous les frais de main-d'œuvre ou autres encourus pour le remplacement ou la réparation dudit produit.

Communiquez avec l'équipe du service à la clientèle au 800-986-3460 ou visitez le site

HOMEDEPOT.COM/HOMEDECORATORS

Pré-Installation

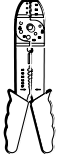
PLANIFICATION DE L'INSTALLATION

Lisez toutes les instructions avant de procéder à l'assemblage. Avant de commencer à installer ce luminaire ou d'enlever l'ancien luminaire, déconnectez le courant en éteignant le disjoncteur ou en enlevant le fusible correspondant du coffret à fusibles. Pour éviter d'endommager ce produit, assemblez-le sur une surface molle et non abrasive telle qu'un tapis ou un carton.



REMARQUE: Conservez le reçu, ainsi que ces instructions, à titre de preuve d'achat.

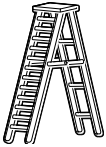
OUTILS REQUIS



Dénudeur
de Câbles
Électriques



Lunettes de
Protection



Echelle



Gants




Tournevis à
Tête Plate



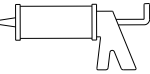

Tournevis à
Croisillon



Electrical
Tape



Ruban
Adhésif
Isolant



Silicone

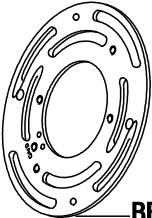
LE MATÉRIEL INCLUS



REMARQUE: Le matériel n'est pas illustré à sa taille réelle..



AA



BB



CC



DD

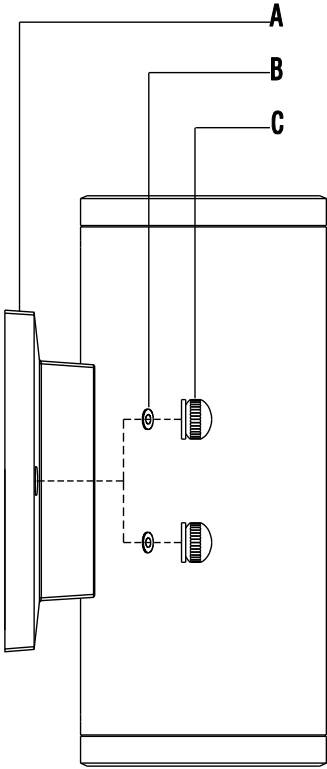


EE

Pièce	Description	Quantité
AA	Connecteur de Fils	3
BB	Plaque d'Assemblage	1
CC	Vis de Terre	1
DD	Vis de la Boîte de Sortie (15 mm)	2
EE	Vis d'Assemblage (20 mm)	2

Pré-Installation (suite)

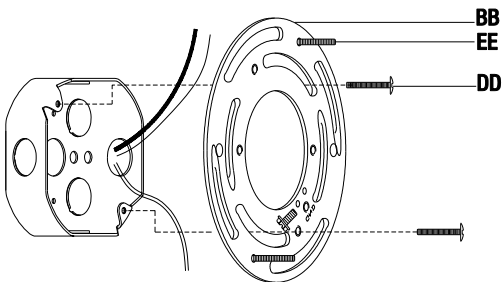
CONTENU DE L'EMBALLAGE



Pièce	Description	Quantité
A	Plaque Murale	1
B	Rondelle	2
C	Écrou de Verrouillage	2

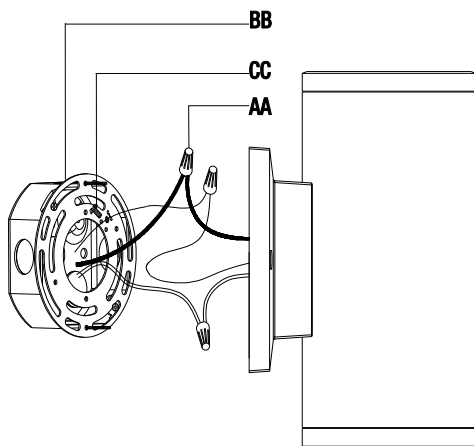
1 Fixer la plaque d'assemblage sur la boîte de sortie

- Visser les vis d'assemblage (EE) sur la plaque d'assemblage (BB).
- Monter la plaque d'assemblage (BB) sur la boîte de sortie (non incluse) à l'aide des deux vis de la boîte de sortie (DD).
- S'assurer que le filetage des vis d'assemblage (EE) est orienté vers l'extérieur lorsque la plaque d'assemblage (BB) est fixée sur la boîte de sortie.



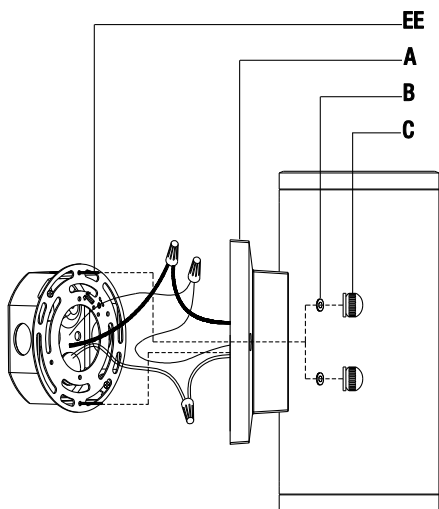
2 Brancher les fils électriques

- Enrouler le fil de terre de l'appareil autour de la vis de terre (CC) de la plaque d'assemblage (BB). Utiliser un connecteur de fils (AA) pour raccorder le fil de terre du luminaire au fil de terre de la boîte de sortie.
- Utiliser un connecteur de fils (AA) pour raccorder le fil blanc du luminaire au fil blanc (fil neutre) de la boîte de sortie.
- Utiliser un connecteur de fils (AA) pour raccorder le fil noir du luminaire au fil noir (fil sous tension) de la boîte de sortie.
- Enrouler du ruban isolant autour des trois raccordements de fil pour sécuriser le raccordement.
- Remplacer les fils dans la boîte de sortie.



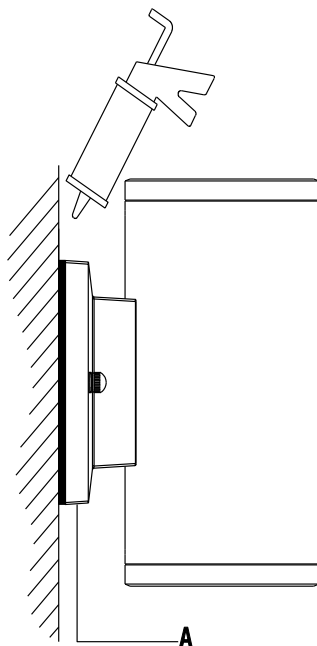
3 Fixer le luminaire au mur

- Aligner les vis de montage (EE) au travers des trous sur le plaque murale (A).
- Placer une rondelle (B) sur chacune des vis de montage (EE).
- Fixer le luminaire au mur en vissant les écrous de verrouillage (C) sur les vis de montage protubérantes (EE).



4 Appliquer le silicone

- Une fois le luminaire fixé au mur, silicone l'espace entre le mur et la partie 3/4 supérieure de la corps du luminaire (A) pour empêcher l'infiltration d'eau dans la boîte de sortie.
- Ne pas silicone la partie 1/4 inférieure pour pouvoir évacuer l'eau ayant pu pénétrer dans le boîtier.



Entretien et Nettoyage



AVERTISSEMENT: Débrancher l'alimentation électrique avant de nettoyer le luminaire en enlevant les fusibles concernés ou en désactivant le disjoncteur.

- Nettoyez la lampe avec un linge doux, sec.
- N'utilisez jamais de nettoyant contenant des produits chimiques, des solvants ou des abrasifs.

Dépannage

Problème	Cause possible	Solution
Le luminaire ne s'allume pas.	☐ Le courant est coupé.	☐ Assurez-vous que la source de courant électrique est sous tension.
	☐ Le disjoncteur est déclenché.	☐ Vérifiez que le disjoncteur est dans la position Enclench.
Le fusible grille ou le disjoncteur se déclenche lorsque la lumière est allumée.	☐ Les fils électriques sont croisés ou le fil électrique n'est plus sous terre.	☐ Vérifiez les connexions des câbles. ☐ Contactez un électricien qualifié ou communiquez avec l'équipe du service à la clientèle au 1-800-986-3460.

HOME DECORATORS COLLECTION

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[HOMEDEPOT.COM/HOMEDECORATORS](https://www.homedepot.com/homedecorators)

Conservez ce guide pour un usage ultérieur.

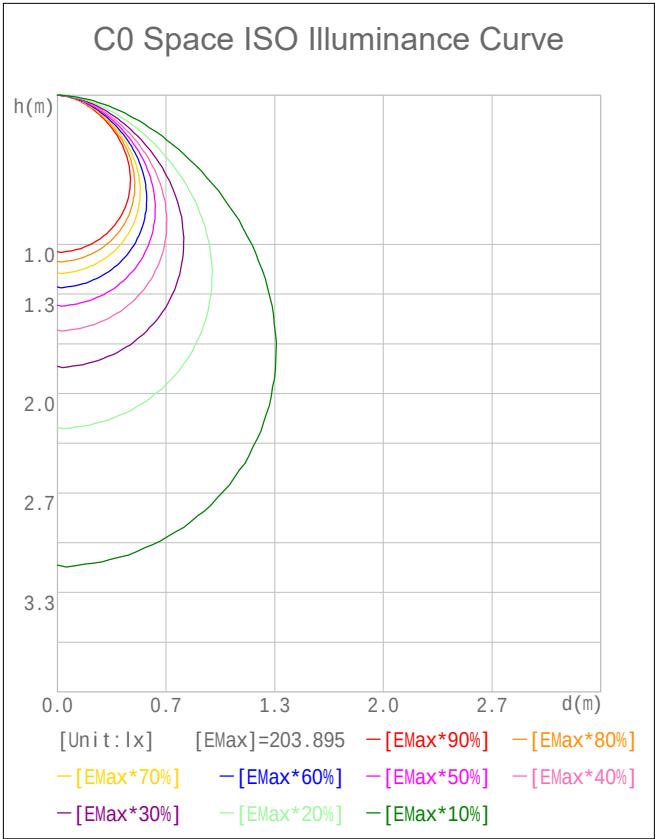
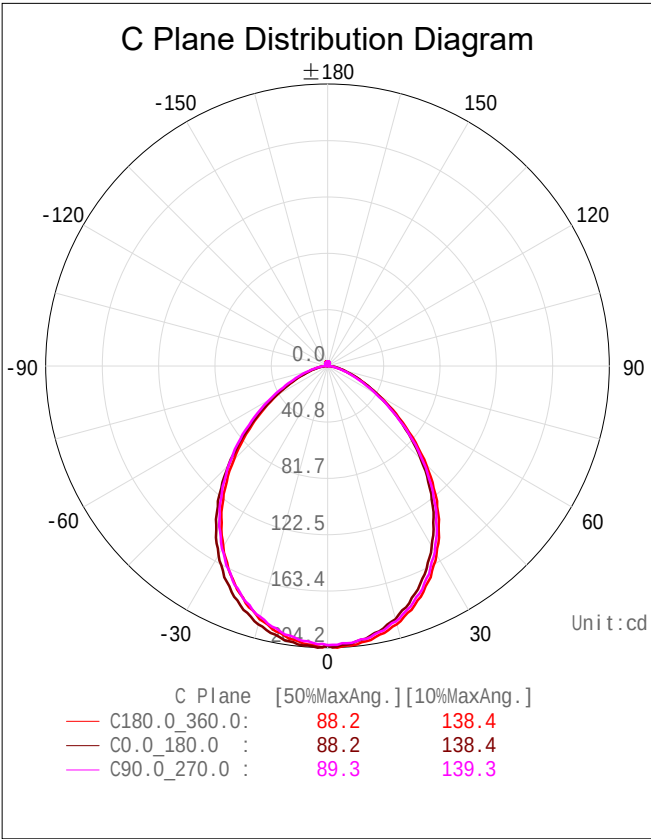
Indoor Luminaire Photometric Data

Description Information

Luminary Name:	Lum. Catalog: 1	Test ID:
Lamp Name: LED	Lamp Catalog: 1	Test Date: 2020/03/02
Manufacture: YH	Shld.Ang(°):	Test Machine:GON-2000
Test Lab:	Frequency(Hz):	Lamp CCT(K): Ra:
Lum.Size(W*L*H):0.000m*0.000m*0.000m	Lum.Area(m2):0.000	Lum.W(kg):
Test System: C, γ	Test Step: C=30.0 γ=1.0	Temp.(°C): 25
		Humidity(%): 50.0

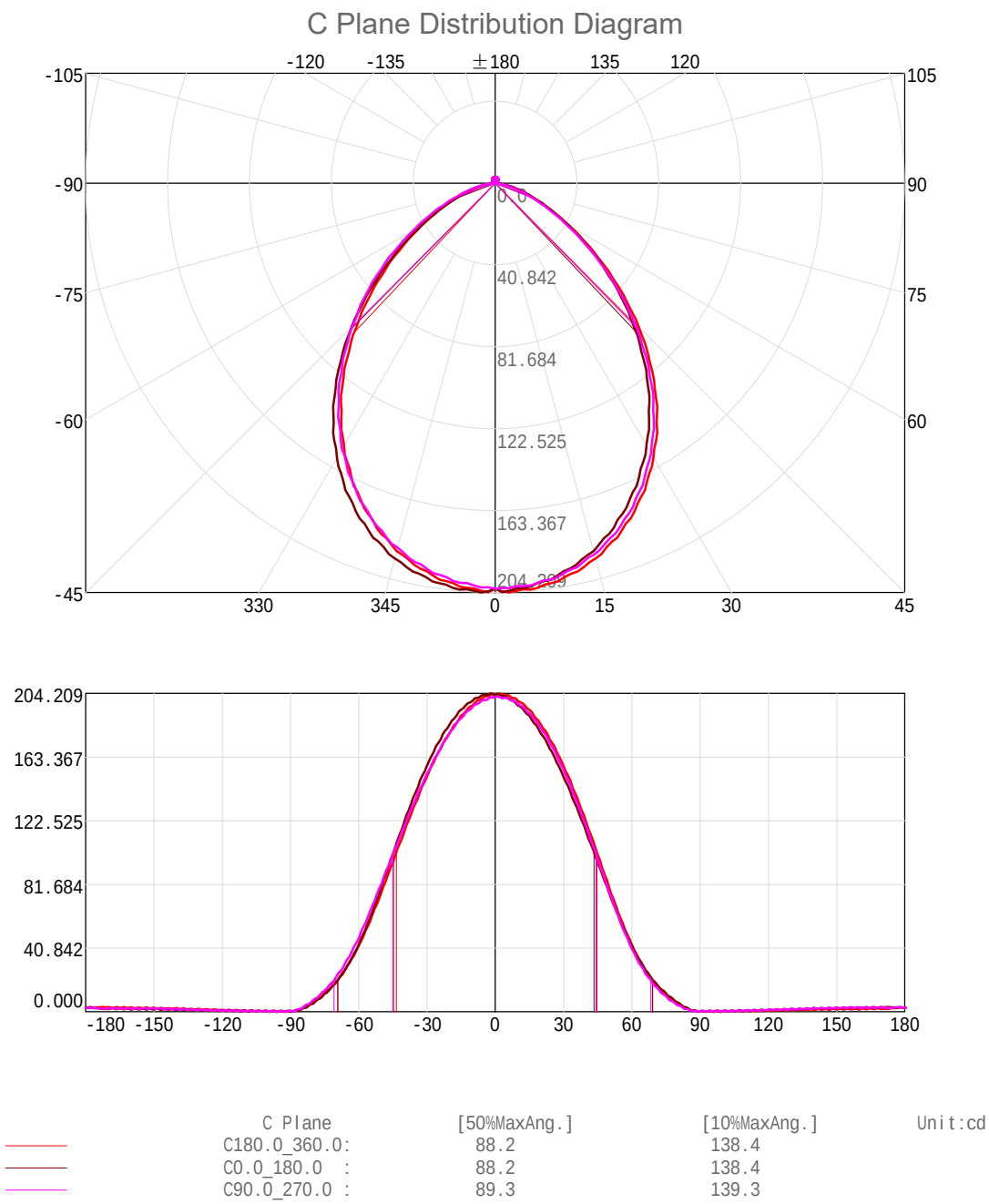
Character Parameter

Lamp Speciality Parameter	Luminaire Speciality Parameter	
Rated Flux(lm): 1.000	Luminary Flux(lm): 418.053	Field Angle(10%Imax): 138.4(°)
Rated Power(W):	Luminary Efficiency: 41805.35%	Down Lumens&Percent: 410.246lm 98.13%
Rated Voltage(V):	Luminary EER(lm/W): 80.349	Up Lumens&Percent: 7.808lm 1.87%
Tested Power(W): 5.203	Max.Candela(cd): 204.209	S/MH: C0_a180=1.148 C90_270=1.145
Lamps' Inside: 1	Max Cand@Ang.(°): C=180.0 γ=2.0	CIE Type: Semi-Direct
Tested Electrics(V,A,pf):120.8,0.044,0.970	Beam Angle(50%Imax): 88.2(°)	ErP Φuse(90°): 275.612lm
Lamp Size(W*L*H):0.000m*0.000m*0.000m	Left=-43.5°,Right=44.7°	IRF(%): 132.493



2D Plane Light Intensity Distribution Curve

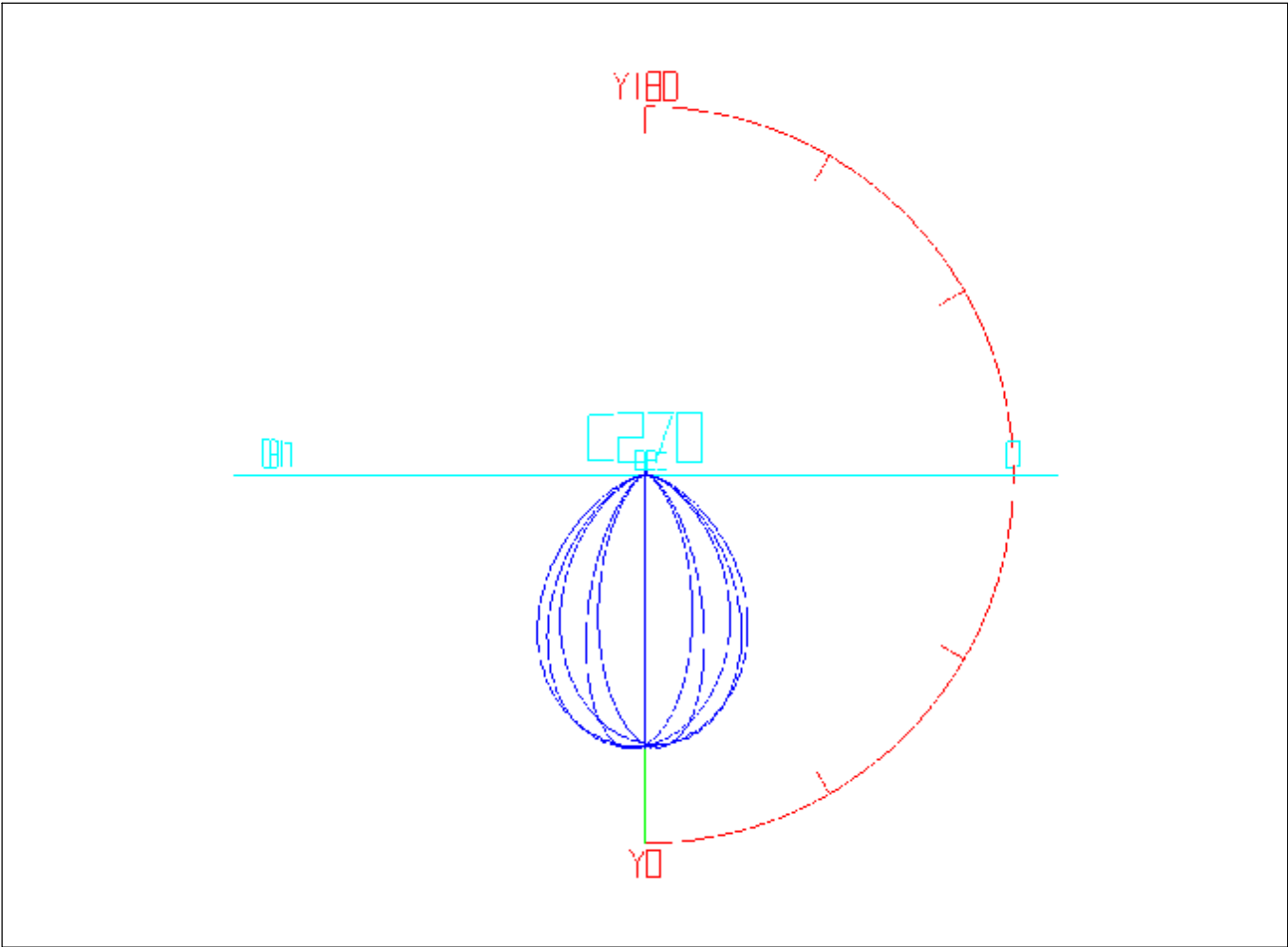
Lum.Name:	Lum.Catalog: 1	Test ID:
Lamp Name: LED	Lamp Catalog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02



3D Light Intensity Distribution Modal

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02

3D Light Intensity Distribution Modal



Curves: 3D Model — Fixture — Vert. HUD — Hori. HUD —
View Angles: Orient:0 Tilt:0 Roll:0 Spin:0

IES Indoor Report
Photometric Filename:IZC1691L-2.IES

Zonal Flux Tabulation

Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp	Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
0.0-1.0	0.19	0.19	19.34	19.34	44.0-45.0	7.74	7.74	774.09	774.09
1.0-2.0	0.58	0.77	58.01	77.35	45.0-46.0	7.56	15.30	756.37	1530.46
2.0-3.0	0.97	1.74	96.53	173.88	46.0-47.0	7.37	22.68	737.11	2267.56
3.0-4.0	1.35	3.09	134.80	308.68	47.0-48.0	7.18	29.86	717.97	2985.53
4.0-5.0	1.73	4.82	172.95	481.63	48.0-49.0	6.98	36.83	697.67	3683.20
5.0-6.0	2.11	6.92	210.82	692.45	49.0-50.0	6.75	43.58	675.08	4358.28
6.0-7.0	2.48	9.40	248.05	940.50	50.0-51.0	6.52	50.10	651.98	5010.26
7.0-8.0	2.85	12.25	284.91	1225.41	51.0-52.0	6.29	56.39	628.59	5638.84
8.0-9.0	3.22	15.47	321.55	1546.96	52.0-53.0	6.04	62.42	603.55	6242.39
9.0-10.0	3.57	19.04	357.22	1904.18	53.0-54.0	5.78	68.21	578.13	6820.53
10.0-11.0	3.92	22.96	391.96	2296.14	54.0-55.0	5.54	73.74	553.53	7374.06
11.0-12.0	4.26	27.23	426.44	2722.58	55.0-56.0	5.28	79.02	527.99	7902.05
12.0-13.0	4.60	31.83	460.13	3182.71	56.0-57.0	5.01	84.03	501.39	8403.44
13.0-14.0	4.92	36.75	492.30	3675.01	57.0-58.0	4.76	88.79	475.88	8879.32
14.0-15.0	5.24	41.99	523.88	4198.90	58.0-59.0	4.51	93.30	450.76	9330.07
15.0-16.0	5.55	47.54	554.86	4753.75	59.0-60.0	4.25	97.55	424.87	9754.94
16.0-17.0	5.84	53.38	583.91	5337.66	60.0-61.0	4.00	101.55	399.78	10154.72
17.0-18.0	6.12	59.49	611.73	5949.39	61.0-62.0	3.76	105.31	376.15	10530.87
18.0-19.0	6.39	65.89	639.31	6588.70	62.0-63.0	3.52	108.83	352.27	10883.14
19.0-20.0	6.65	72.54	665.07	7253.77	63.0-64.0	3.28	112.11	328.36	11211.50
20.0-21.0	6.89	79.42	688.65	7942.42	64.0-65.0	3.06	115.18	306.48	11517.98
21.0-22.0	7.12	86.54	711.73	8654.15	65.0-66.0	2.86	118.04	285.75	11803.73
22.0-23.0	7.34	93.88	733.60	9387.75	66.0-67.0	2.65	120.68	264.58	12068.31
23.0-24.0	7.53	101.41	753.02	10140.77	67.0-68.0	2.45	123.13	244.65	12312.96
24.0-25.0	7.71	109.12	771.25	10912.02	68.0-69.0	2.27	125.40	226.56	12539.51
25.0-26.0	7.89	117.01	788.51	11700.53	69.0-70.0	2.08	127.48	208.26	12747.77
26.0-27.0	8.03	125.04	803.27	12503.80	70.0-71.0	1.90	129.38	190.44	12938.21
27.0-28.0	8.16	133.20	816.17	13319.97	71.0-72.0	1.75	131.13	174.82	13113.03
28.0-29.0	8.28	141.48	828.19	14148.16	72.0-73.0	1.59	132.72	159.47	13272.49
29.0-30.0	8.38	149.86	838.18	14986.34	73.0-74.0	1.44	134.16	143.74	13416.23
30.0-31.0	8.46	158.33	846.17	15832.51	74.0-75.0	1.30	135.46	130.16	13546.39
31.0-32.0	8.53	166.85	852.78	16685.29	75.0-76.0	1.18	136.64	117.61	13664.00
32.0-33.0	8.57	175.43	857.21	17542.50	76.0-77.0	1.04	137.68	104.22	13768.22
33.0-34.0	8.59	184.02	859.48	18401.99	77.0-78.0	0.92	138.60	92.13	13860.35
34.0-35.0	8.61	192.63	860.57	19262.56	78.0-79.0	0.81	139.42	81.44	13941.79
35.0-36.0	8.60	201.22	859.91	20122.46	79.0-80.0	0.70	140.12	70.04	14011.82
36.0-37.0	8.57	209.80	857.06	20979.52	80.0-81.0	0.59	140.71	59.41	14071.23
37.0-38.0	8.53	218.32	852.80	21832.33	81.0-82.0	0.50	141.22	50.38	14121.61
38.0-39.0	8.47	226.79	846.60	22678.93	82.0-83.0	0.41	141.62	40.73	14162.34
39.0-40.0	8.38	235.17	838.05	23516.98	83.0-84.0	0.32	141.94	31.63	14193.97
40.0-41.0	8.28	243.45	828.32	24345.30	84.0-85.0	0.25	142.19	24.68	14218.65
41.0-42.0	8.17	251.63	817.40	25162.70	85.0-86.0	0.18	142.36	17.71	14236.36
42.0-43.0	8.04	259.67	804.18	25966.88	86.0-87.0	0.12	142.48	11.59	14247.95
43.0-44.0	7.90	267.56	789.58	26756.46	87.0-88.0	0.09	142.57	8.73	14256.68

VOLNIC GON-2000 分布光度计

Zonal Flux Tabulation - (Cont.)

Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp	Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
88.0-89.0	0.07	0.07	6.70	6.70	132.0-133.0	0.13	0.13	12.66	12.66
89.0-90.0	0.05	0.11	4.74	11.44	133.0-134.0	0.12	0.25	12.43	25.09
90.0-91.0	0.05	0.16	4.95	16.39	134.0-135.0	0.13	0.38	12.93	38.02
91.0-92.0	0.05	0.22	5.33	21.72	135.0-136.0	0.13	0.51	12.94	50.96
92.0-93.0	0.04	0.26	4.30	26.02	136.0-137.0	0.13	0.64	12.75	63.70
93.0-94.0	0.05	0.31	4.61	30.64	137.0-138.0	0.13	0.77	13.11	76.81
94.0-95.0	0.06	0.36	5.74	36.37	138.0-139.0	0.13	0.90	13.20	90.01
95.0-96.0	0.05	0.41	4.87	41.25	139.0-140.0	0.13	1.03	13.06	103.08
96.0-97.0	0.05	0.46	4.56	45.80	140.0-141.0	0.13	1.16	13.31	116.38
97.0-98.0	0.06	0.52	5.86	51.67	141.0-142.0	0.13	1.30	13.31	129.69
98.0-99.0	0.05	0.57	5.47	57.14	142.0-143.0	0.13	1.43	12.98	142.67
99.0-100.0	0.05	0.62	4.65	61.79	143.0-144.0	0.13	1.56	13.05	155.71
100.0-101.0	0.06	0.68	5.98	67.77	144.0-145.0	0.13	1.69	12.92	168.64
101.0-102.0	0.07	0.74	6.52	74.29	145.0-146.0	0.13	1.81	12.57	181.21
102.0-103.0	0.06	0.80	5.51	79.80	146.0-147.0	0.13	1.94	12.71	193.93
103.0-104.0	0.06	0.86	6.23	86.03	147.0-148.0	0.13	2.07	12.69	206.61
104.0-105.0	0.07	0.93	7.31	93.34	148.0-149.0	0.12	2.19	12.27	218.88
105.0-106.0	0.06	1.00	6.42	99.76	149.0-150.0	0.12	2.31	12.21	231.10
106.0-107.0	0.06	1.06	6.34	106.11	150.0-151.0	0.12	2.43	12.17	243.27
107.0-108.0	0.08	1.14	7.73	113.83	151.0-152.0	0.12	2.55	11.68	254.95
108.0-109.0	0.08	1.22	7.68	121.51	152.0-153.0	0.11	2.66	11.49	266.45
109.0-110.0	0.07	1.29	7.15	128.66	153.0-154.0	0.12	2.78	11.52	277.96
110.0-111.0	0.08	1.37	8.17	136.83	154.0-155.0	0.11	2.89	11.05	289.01
111.0-112.0	0.09	1.46	8.76	145.59	155.0-156.0	0.11	3.00	10.69	299.70
112.0-113.0	0.08	1.54	7.98	153.57	156.0-157.0	0.11	3.10	10.56	310.26
113.0-114.0	0.08	1.62	8.31	161.88	157.0-158.0	0.10	3.20	10.02	320.28
114.0-115.0	0.09	1.71	9.46	171.34	158.0-159.0	0.09	3.30	9.48	329.76
115.0-116.0	0.09	1.81	9.31	180.65	159.0-160.0	0.09	3.39	9.26	339.02
116.0-117.0	0.09	1.90	8.97	189.62	160.0-161.0	0.09	3.48	8.85	347.87
117.0-118.0	0.10	2.00	9.89	199.50	161.0-162.0	0.08	3.56	8.35	356.22
118.0-119.0	0.10	2.10	10.38	209.88	162.0-163.0	0.08	3.64	8.06	364.28
119.0-120.0	0.10	2.20	9.73	219.61	163.0-164.0	0.08	3.72	7.60	371.89
120.0-121.0	0.10	2.30	10.00	229.61	164.0-165.0	0.07	3.79	7.09	378.98
121.0-122.0	0.11	2.41	10.99	240.60	165.0-166.0	0.07	3.86	6.80	385.78
122.0-123.0	0.11	2.51	10.74	251.34	166.0-167.0	0.06	3.92	6.40	392.17
123.0-124.0	0.11	2.62	10.61	261.95	167.0-168.0	0.06	3.98	5.89	398.06
124.0-125.0	0.12	2.74	11.60	273.55	168.0-169.0	0.06	4.04	5.55	403.61
125.0-126.0	0.12	2.85	11.86	285.41	169.0-170.0	0.05	4.09	5.13	408.74
126.0-127.0	0.11	2.97	11.40	296.81	170.0-171.0	0.05	4.13	4.68	413.42
127.0-128.0	0.12	3.09	11.97	308.78	171.0-172.0	0.04	4.18	4.22	417.63
128.0-129.0	0.13	3.21	12.54	321.32	172.0-173.0	0.04	4.21	3.69	421.33
129.0-130.0	0.12	3.33	12.04	333.36	173.0-174.0	0.03	4.25	3.20	424.53
130.0-131.0	0.12	3.46	12.21	345.57	174.0-175.0	0.03	4.27	2.73	427.26
131.0-132.0	0.13	3.58	12.91	358.48	175.0-176.0	0.02	4.30	2.30	429.55

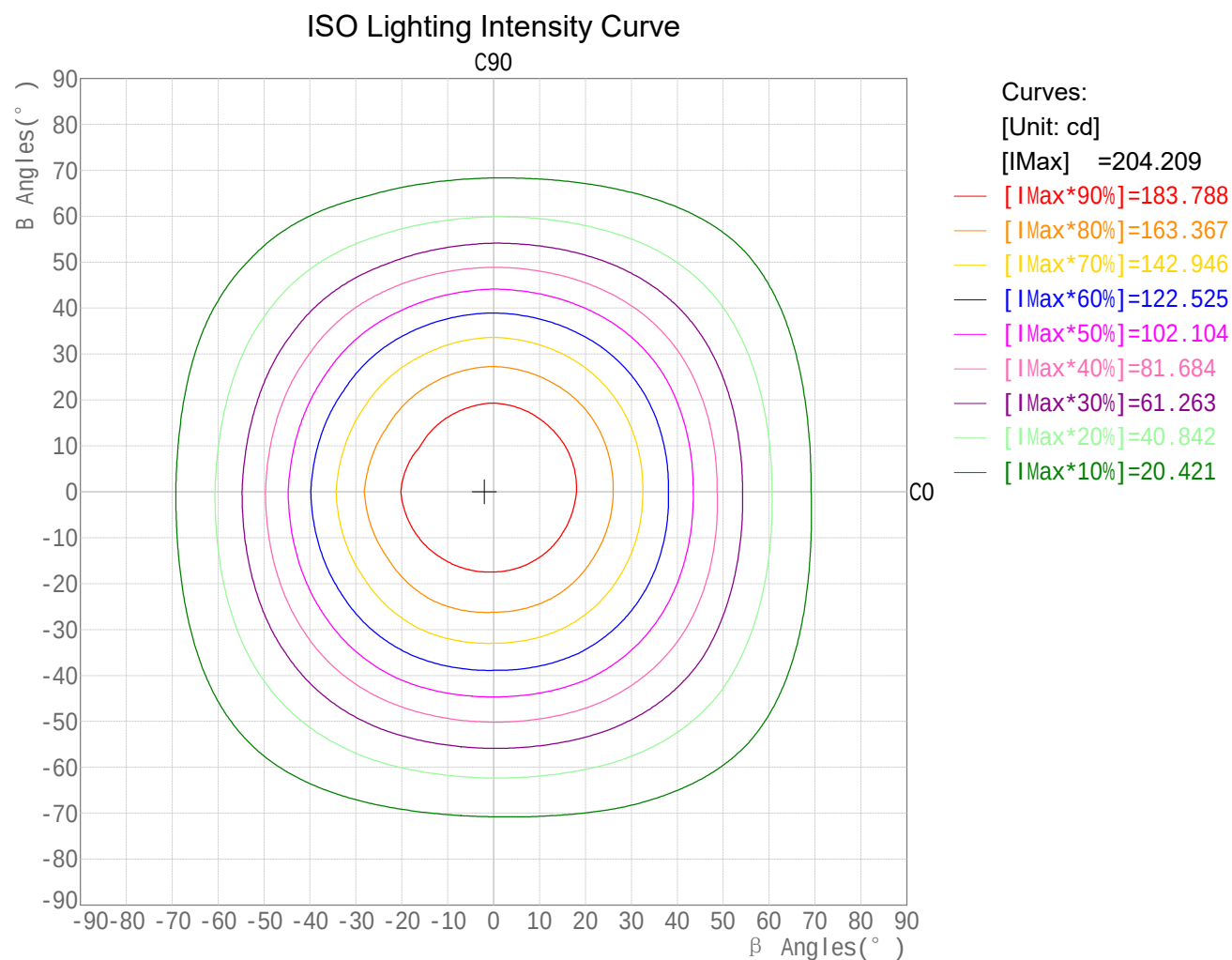
VOLNIC GON-2000 分布光度计

Zonal Flux Tabulation - (Cont.)

Zone(γ)	Zone Flux (lm)	Sums Flux (lm)	Zone%Lamp	Sums%Lamp
176.0-177.0	0.02	0.02	1.80	1.80
177.0-178.0	0.01	0.03	1.32	3.12
178.0-179.0	0.01	0.04	0.80	3.91
179.0-180.0	0.00	0.04	0.26	4.17

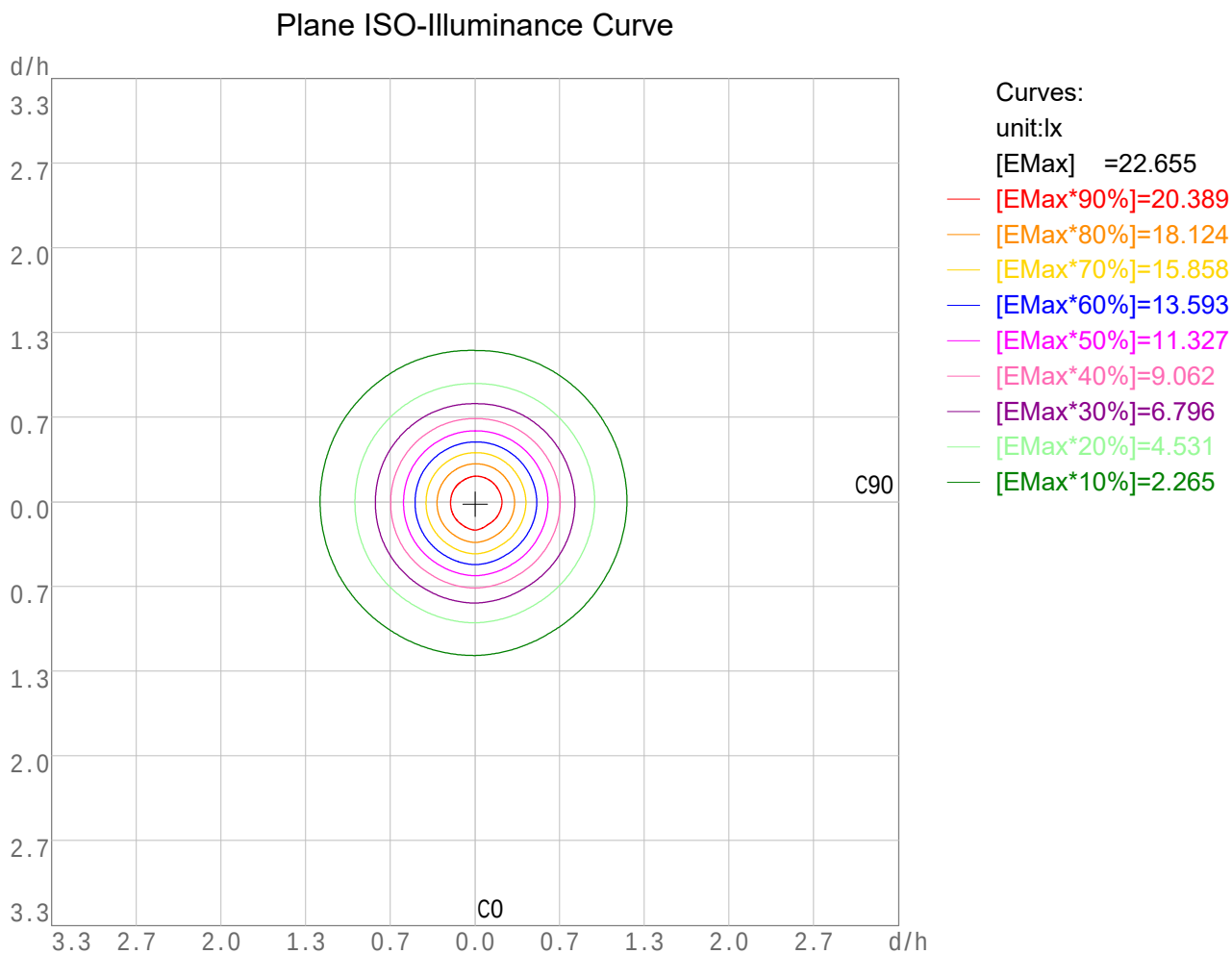
Rectangle ISO Lighting Intensity Diagram

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02



Plane ISO-Illuminance Diagram

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02

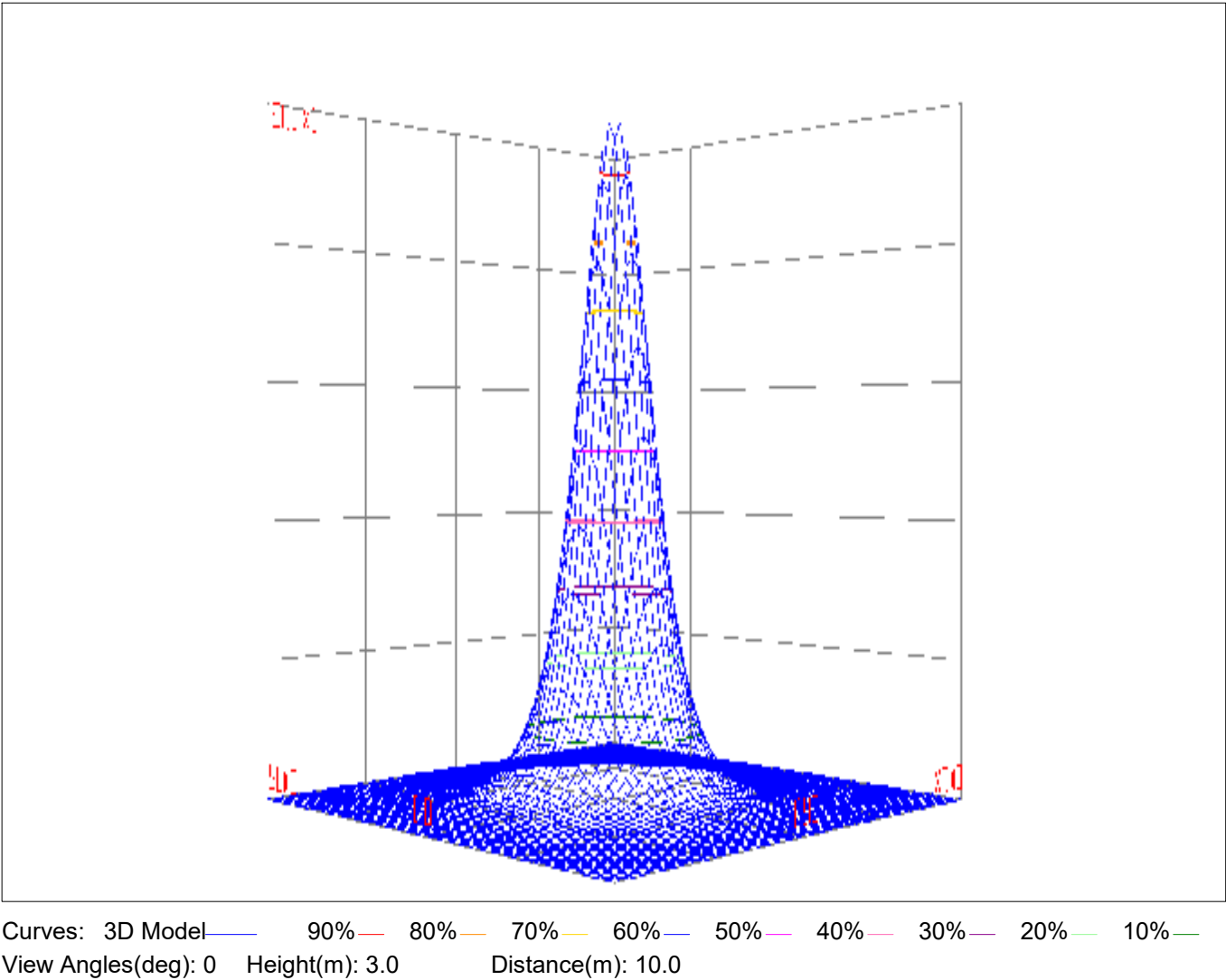


Working Plane Luminaire Mounting Height(m): 3.00
Working Plane Maximum Illuminance(lx): 22.65
Working Plane Maximum Illuminance Position(d/h):H0.0 V0.0

3D Plane ISO Illuminance Diagram

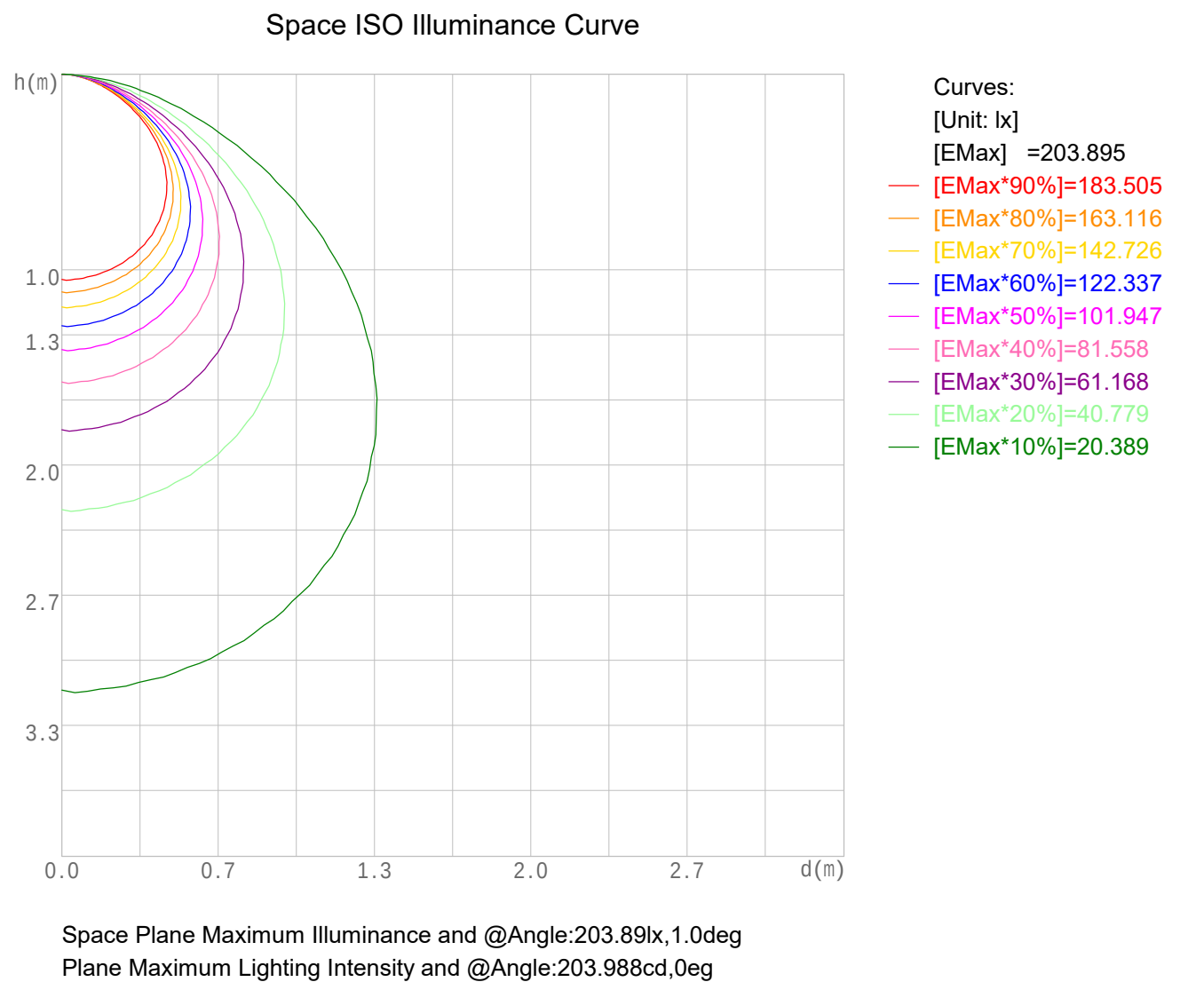
Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02

3D Plane Illuminance Modal



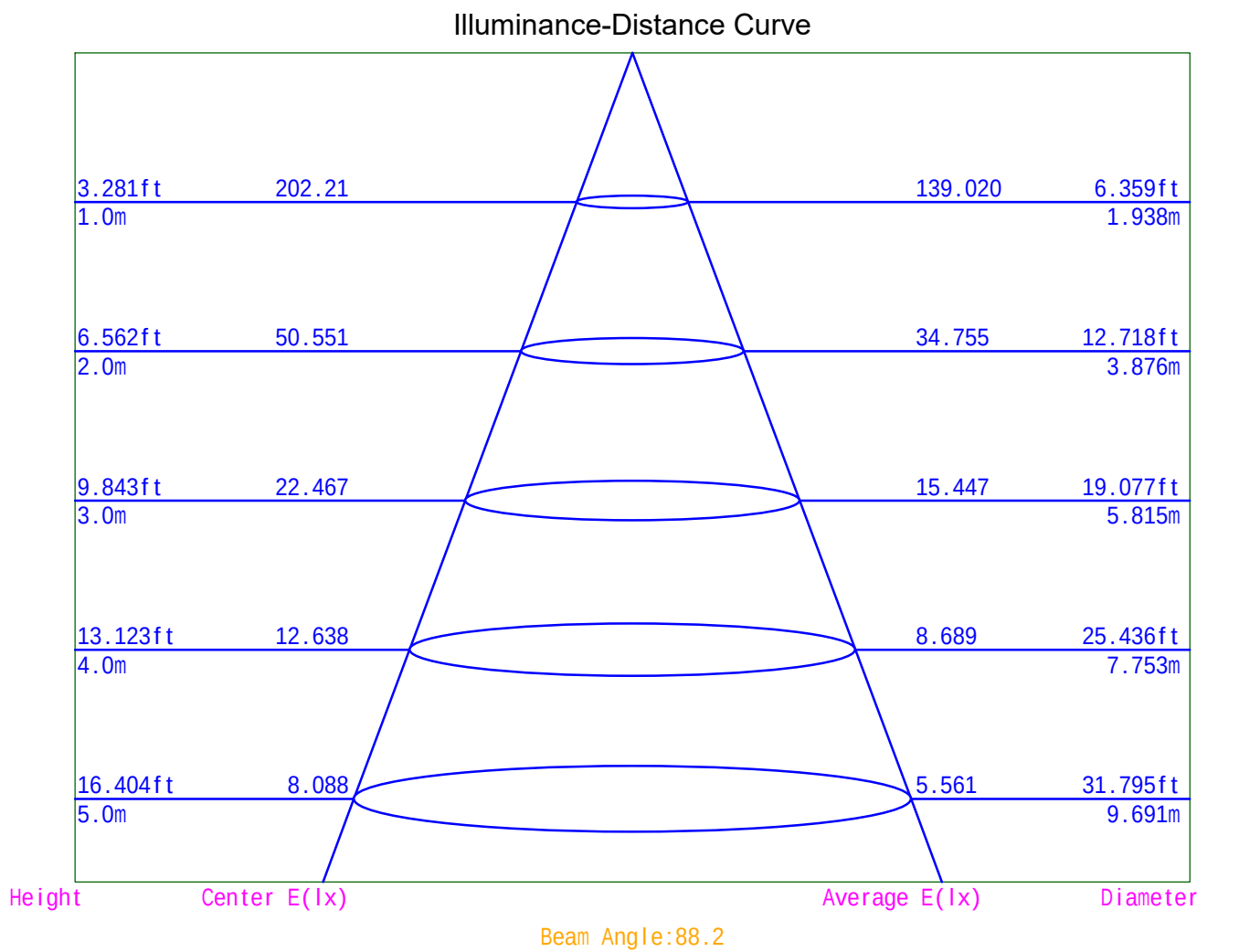
Space ISO Illuminance Diagram

Lum.Name:	Lum.Catalog: 1	Test ID:
Lamp Name: LED	Lamp Catalog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02



Illuminance-Distance Diagram

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02



Indoor Luminance Limiting Curves

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02

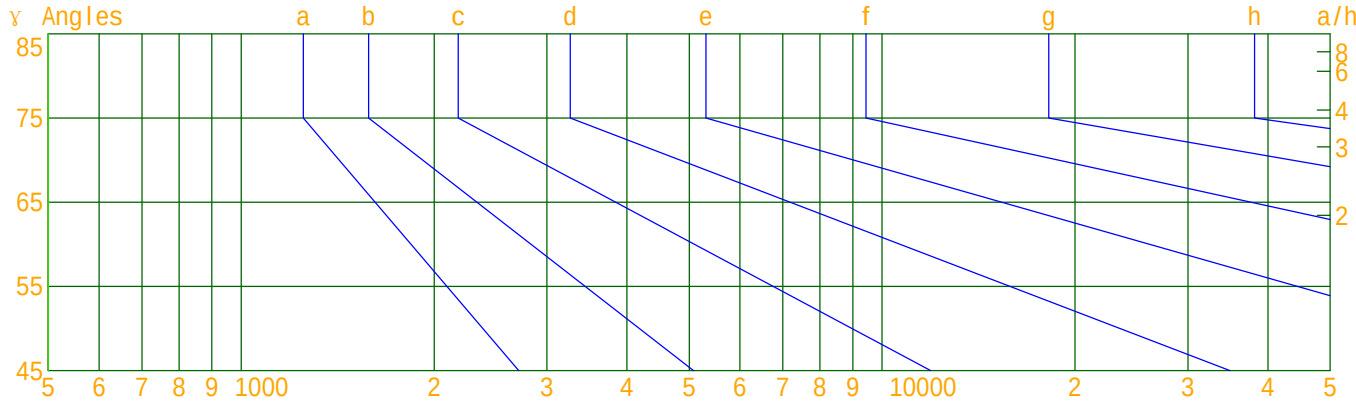
Glare Grade Table

Gl	Quality	Using Illuminance							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E	a				2000	1000	500	<=300
			b	c	d	e	f	g	h

Luminance Table

Gama(deg)	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

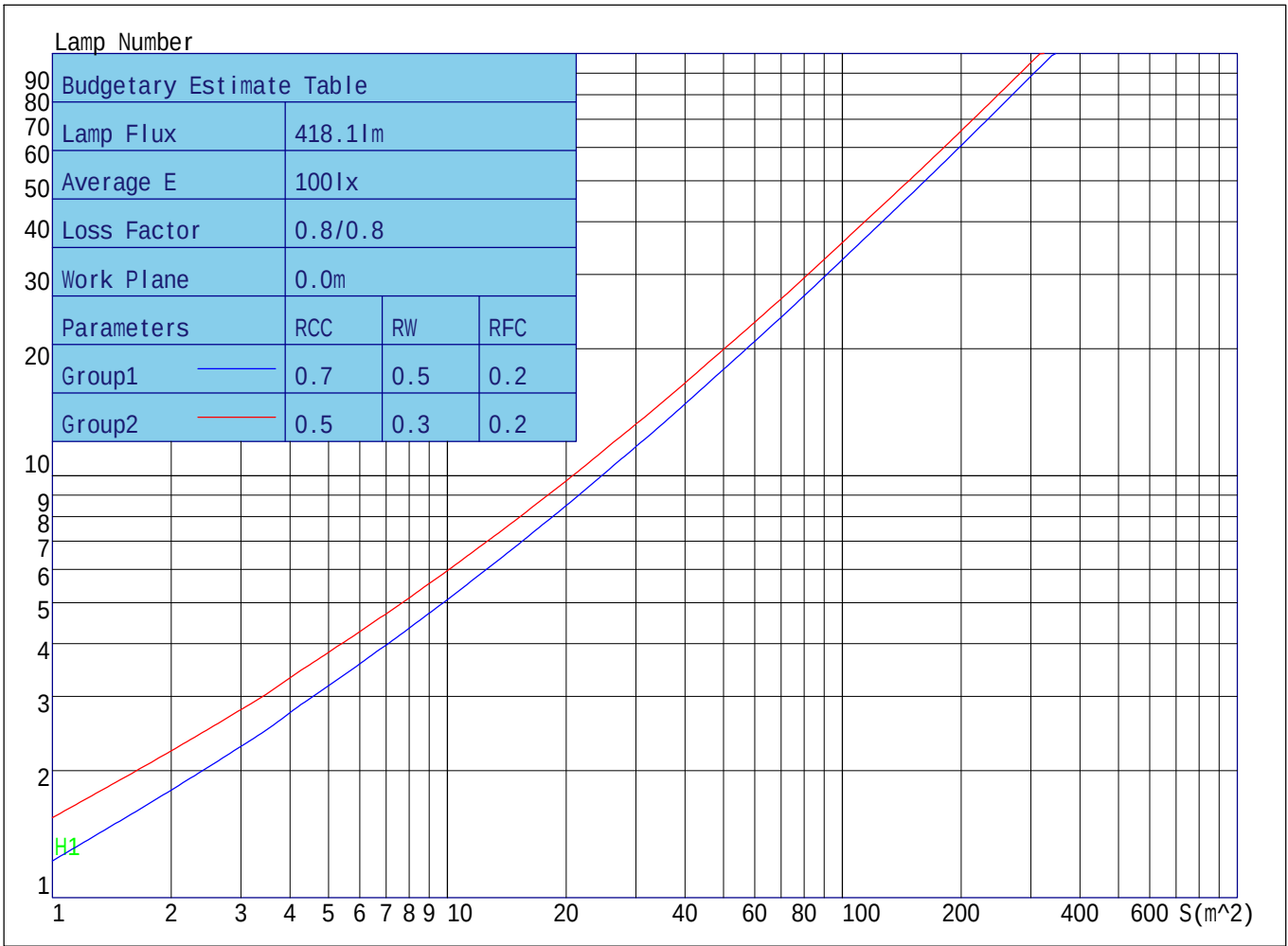
Luminance Limiting Curve



Luminous Size: Length(m)=0.000 Width(m)=0.000 Height(m)=0.000 Area(m^2)=0.000000
Luminous Type: Without Luminous Side
Luminous Curves: C0-C180 Color: C90-C270 Color:

Indoor Budgetary Estimate Table

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02



Parameters1: Rhocc = 0.7 Rhow = 0.5 Rhofc = 0.2 LLF = 0.8
Parameters2: Rhocc = 0.5 Rhow = 0.3 Rhofc = 0.2 LLF = 0.8
Average Illuminance(lx): 100 Cavity Height: H1(m) = 2

Indoor Coefficient of Utilization Table

Lum.Name:	Lum.Catelog: 1	Test ID:
Lamp Name: LED	Lamp Catelog: 1	Test Lab:
Manufacture: YH	Test Machine:GON-2000	Test Date: 2020/03/02

Coefficients of Utilization - Zonal Cavity Method																		
Coef.	Effective Floor Cavity Reflectance RFC=0.20																	
RhoCC(%)	80				70				50			30			10			0
RhoW(%)	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	Coefficient of Utilization(%)																	
0	49582	49582	49582	49582	48339	48339	48339	48339	46017	46017	46017	43892	43892	43892	41941	41941	41941	41025
1	46067	44401	42909	41564	44891	43394	42044	40820	41507	40408	39402	39773	38883	38073	38173	37473	36823	35944
2	42502	39554	37114	35063	41393	38721	36483	34594	37153	35293	33683	35716	34173	32823	34383	33124	32003	31130
3	39203	35363	32383	30013	38164	34663	31912	29704	33356	31022	29093	32144	30172	28513	31022	29362	27942	27085
4	36223	31782	28522	26042	35263	31192	28162	25823	30094	27472	25402	29062	26812	24992	28112	26182	24592	23745
5	33562	28732	25352	22862	32682	28232	25072	22702	27292	24522	22402	26422	24002	22102	25612	23502	21812	20984
6	31172	26112	22712	20272	30372	25692	22492	20162	24892	22054	19932	24142	21634	19712	23442	21230	19491	18689
7	29042	23862	20503	18142	28312	23502	20312	18062	22814	19963	17882	22170	19619	17712	21566	19281	17548	16768
8	27142	21916	18628	16370	26482	21604	18471	16302	21010	18182	16162	20452	17891	16030	19926	17621	15898	15147
9	25442	20223	17021	14862	24838	19952	16901	14814	19435	16654	14704	18948	16414	14596	18489	16182	14490	13769
10	23914	18743	15648	13582	23366	18501	15542	13544	18055	15333	13455	17628	15130	13361	17224	14933	13280	12588

IES Indoor Report
Photometric Filename:IZC1691L-2.IES

Candela Tabulation

V/H	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0	C300.0	C330.0
Y 0.0	202.21	202.21	202.21	202.21	202.21	202.21	202.21	202.21	202.21	202.21	202.21	202.21
Y 1.0	203.99	202.10	202.49	201.98	201.75	201.02	203.58	202.74	201.72	201.41	201.30	201.00
Y 2.0	203.33	202.50	202.14	202.05	201.69	200.75	204.21	201.96	202.29	201.71	201.46	200.49
Y 3.0	202.30	202.30	201.23	201.13	200.92	201.40	203.47	202.29	201.59	200.92	200.38	200.73
Y 4.0	202.28	201.23	201.41	201.40	200.98	200.68	203.01	202.11	200.66	199.92	199.86	200.22
Y 5.0	201.92	201.21	201.37	201.35	201.00	199.84	203.33	200.90	200.75	200.05	199.95	198.92
Y 6.0	200.58	200.88	200.18	200.47	199.91	200.03	202.88	200.85	200.46	199.44	199.03	198.65
Y 7.0	199.90	199.39	199.38	199.48	199.38	199.58	201.66	200.51	198.99	197.98	197.69	198.29
Y 8.0	199.56	199.03	199.18	199.77	199.37	198.23	201.30	198.96	198.06	197.28	197.45	196.80
Y 9.0	198.07	198.53	198.18	198.80	198.09	197.64	201.05	198.38	197.94	196.93	196.65	195.77
Y 10.0	196.44	196.65	196.60	197.26	196.70	197.37	199.44	197.91	196.63	195.40	194.94	195.44
Y 11.0	195.75	195.75	195.74	196.38	196.35	195.54	198.34	196.13	194.81	193.74	193.91	193.99
Y 12.0	194.50	194.97	195.20	195.84	195.17	194.35	197.85	194.91	194.02	193.00	193.09	191.94
Y 13.0	192.43	192.95	193.24	194.07	193.29	193.79	196.39	194.32	193.30	191.73	191.18	191.16
Y 14.0	190.92	191.39	191.55	192.27	192.27	192.00	194.68	192.21	191.14	189.63	189.50	189.96
Y 15.0	189.93	190.44	190.59	191.54	191.29	190.05	193.68	190.49	189.32	188.10	188.58	187.73
Y 16.0	187.46	188.06	188.78	190.04	188.90	189.11	192.35	189.58	188.28	187.08	186.63	186.01
Y 17.0	185.18	186.00	186.34	187.70	187.23	187.23	189.82	187.34	186.38	184.96	184.23	184.77
Y 18.0	183.88	184.80	184.85	185.99	186.16	184.84	187.91	185.07	183.80	182.30	182.88	182.59
Y 19.0	181.68	182.27	183.46	184.58	183.82	183.39	186.91	183.98	182.32	180.92	181.16	179.97
Y 20.0	178.68	179.66	180.68	182.13	181.03	181.60	184.35	181.48	180.68	179.02	178.40	178.29
Y 21.0	176.67	178.10	178.02	179.47	179.47	178.59	181.81	178.72	177.91	176.14	176.36	176.36
Y 22.0	174.63	175.54	176.25	177.77	177.19	176.58	180.30	177.17	175.26	173.86	174.59	173.36
Y 23.0	171.49	172.45	173.94	175.60	174.07	174.76	177.82	174.60	173.60	172.14	171.55	170.92
Y 24.0	168.70	170.51	170.80	172.32	171.81	171.45	174.69	171.44	171.09	169.32	168.79	169.13
Y 25.0	166.68	167.96	168.26	169.79	169.71	168.72	172.46	169.48	167.88	166.11	167.06	166.11
Y 26.0	163.54	164.46	166.05	167.71	166.35	166.60	170.31	166.84	165.55	163.90	164.15	162.82
Y 27.0	159.91	162.08	162.63	164.34	163.15	163.20	166.74	163.36	163.30	161.62	160.88	160.49
Y 28.0	157.29	159.34	159.20	160.88	160.86	159.92	163.78	160.86	159.89	158.09	158.61	158.01
Y 29.0	154.57	155.52	156.75	158.44	157.56	157.54	161.30	158.29	156.45	155.10	155.89	154.43
Y 30.0	150.87	152.67	153.72	155.54	153.83	154.07	157.84	154.41	154.18	152.83	152.17	151.29
Y 31.0	147.57	149.89	149.80	151.57	151.13	150.46	154.14	151.47	151.36	149.54	149.44	148.98
Y 32.0	144.78	145.90	146.59	148.29	147.76	147.61	151.47	148.73	147.50	145.71	146.95	145.39
Y 33.0	140.97	142.50	143.78	145.43	143.42	144.06	148.30	144.64	144.41	142.89	143.12	141.47
Y 34.0	136.90	139.56	139.81	141.48	140.18	139.73	143.99	141.31	141.73	140.12	139.60	138.64
Y 35.0	134.02	135.50	135.76	137.36	137.06	136.60	140.63	138.54	137.82	136.20	136.95	135.73
Y 36.0	130.71	131.63	132.81	134.23	132.82	133.21	137.49	134.39	133.85	132.63	133.26	131.64
Y 37.0	126.44	128.68	129.30	130.85	128.72	128.70	133.19	130.53	131.03	129.87	129.44	128.02
Y 38.0	122.71	124.59	124.69	126.30	125.47	124.82	129.13	127.58	127.77	126.28	126.64	125.20
Y 39.0	119.56	120.31	120.91	122.23	121.17	121.51	125.98	123.35	123.47	122.01	123.25	121.46
Y 40.0	115.39	117.23	117.73	119.00	116.48	116.88	121.72	119.14	119.77	118.75	119.02	117.16
Y 41.0	110.99	113.26	113.44	114.71	113.09	112.59	117.10	116.00	116.62	115.74	115.67	113.88
Y 42.0	107.78	108.81	108.96	110.01	109.13	109.17	113.65	111.84	112.55	111.47	112.61	110.75
Y 43.0	104.23	105.39	105.52	106.38	104.26	104.77	109.73	107.37	108.35	107.64	108.34	106.44

VOLNIC GON-2000 分布光度计

Candela Tabulation - (Cont.)

V/H	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0	C300.0	C330.0
Y 44.0	99.62	101.74	101.71	102.76	100.26	100.03	104.96	104.03	105.13	104.62	104.65	102.47
Y 45.0	95.71	96.96	96.96	97.96	96.53	96.44	101.10	99.99	101.68	100.77	101.63	99.36
Y 46.0	92.47	93.32	92.87	93.51	91.74	92.40	97.44	95.43	97.14	96.42	97.48	95.56
Y 47.0	88.31	89.86	89.54	90.00	87.52	87.54	92.48	92.14	93.05	93.21	93.30	91.24
Y 48.0	84.00	85.28	85.32	85.79	84.10	83.66	88.12	88.44	89.89	90.23	90.28	87.95
Y 49.0	80.64	81.22	80.69	81.08	79.62	80.04	84.74	83.89	85.91	86.14	86.58	85.09
Y 50.0	77.02	78.00	77.07	77.32	74.85	75.34	80.26	80.40	81.57	82.17	82.54	80.79
Y 51.0	72.64	73.77	73.45	73.73	71.37	71.14	75.74	76.69	78.30	79.07	79.18	76.79
Y 52.0	68.90	69.46	69.03	69.24	67.42	67.81	72.36	72.03	74.84	75.30	75.83	73.75
Y 53.0	66.01	66.45	65.22	64.94	62.89	63.66	68.28	68.54	70.37	71.02	71.45	70.16
Y 54.0	62.12	62.59	62.19	61.78	59.46	59.31	63.74	65.19	66.63	67.82	68.27	65.91
Y 55.0	58.06	58.45	58.28	58.00	56.25	56.21	60.56	60.86	63.67	64.74	65.19	62.75
Y 56.0	54.95	55.56	53.98	53.76	52.00	52.83	57.17	57.37	59.81	60.74	61.08	59.85
Y 57.0	52.07	52.23	50.97	50.63	48.28	48.66	52.88	54.44	55.89	57.00	57.78	55.99
Y 58.0	48.27	48.30	48.06	47.67	45.57	45.46	49.63	50.44	53.06	54.23	55.04	52.33
Y 59.0	44.99	45.55	44.17	43.77	42.15	42.80	46.78	47.04	49.90	50.95	51.17	49.68
Y 60.0	42.78	42.82	41.19	40.44	38.49	39.18	42.92	44.59	46.09	47.16	47.79	46.77
Y 61.0	39.76	39.21	38.94	38.08	36.06	35.94	39.83	41.08	43.19	44.36	45.47	43.13
Y 62.0	36.33	36.60	35.64	35.01	33.51	33.78	37.56	37.86	40.80	42.04	42.15	40.42
Y 63.0	34.10	34.45	32.37	31.79	30.20	31.18	34.28	35.77	37.48	38.62	38.90	38.33
Y 64.0	32.07	31.29	30.39	29.77	27.84	27.99	31.33	32.81	34.38	35.55	36.82	35.29
Y 65.0	29.12	28.81	28.22	27.63	26.10	26.02	29.54	29.82	32.47	33.61	34.03	32.26
Y 66.0	26.82	27.25	25.36	24.72	23.56	24.33	27.00	28.18	29.95	31.13	30.98	30.39
Y 67.0	25.39	24.63	23.39	22.71	21.07	21.66	24.25	25.80	27.07	28.12	29.29	28.39
Y 68.0	23.11	22.32	21.97	21.23	19.70	19.50	22.77	23.08	25.27	26.10	27.13	25.62
Y 69.0	20.61	21.05	19.57	18.89	17.92	18.31	20.94	21.67	23.58	24.58	24.35	23.64
Y 70.0	19.36	19.05	17.49	16.78	15.64	16.48	18.46	19.89	21.02	22.14	22.74	22.43
Y 71.0	18.02	16.80	16.46	15.82	14.40	14.35	17.11	17.44	19.03	19.89	21.16	20.18
Y 72.0	15.82	15.76	14.88	14.17	13.48	13.27	15.86	16.29	17.93	18.59	18.72	18.00
Y 73.0	14.38	14.31	12.79	12.11	11.56	12.18	13.74	14.95	15.99	17.09	17.20	16.87
Y 74.0	13.60	12.27	11.77	11.15	10.09	10.24	12.39	12.83	13.99	14.90	16.09	15.61
Y 75.0	11.90	11.40	10.93	10.31	9.52	8.95	11.61	11.86	13.13	13.51	13.98	13.60
Y 76.0	10.24	10.44	9.14	8.50	8.22	8.45	9.83	10.88	11.91	12.73	12.59	12.24
Y 77.0	9.63	8.67	7.94	7.36	6.64	7.14	8.53	9.02	10.01	11.04	11.82	11.59
Y 78.0	8.57	7.76	7.50	6.93	6.07	5.67	8.01	8.11	9.02	9.26	10.11	10.09
Y 79.0	6.90	7.22	6.23	5.59	5.48	5.30	6.69	7.45	8.31	8.59	8.62	8.40
Y 80.0	6.14	5.72	4.82	4.32	4.04	4.68	5.32	5.79	6.71	7.75	8.05	7.79
Y 81.0	5.65	4.66	4.42	4.05	3.19	3.28	5.03	4.95	5.52	6.11	6.80	7.04
Y 82.0	4.20	4.34	3.68	3.29	3.08	2.53	4.05	4.61	5.17	5.10	5.26	5.47
Y 83.0	3.19	3.07	2.35	2.02	2.18	2.42	2.73	3.18	3.96	4.70	4.85	4.47
Y 84.0	2.99	1.95	1.91	1.79	1.08	1.48	2.53	2.36	2.68	3.57	4.01	4.18
Y 85.0	2.00	1.93	1.84	1.60	1.07	0.63	2.03	2.31	2.48	2.19	2.58	3.08
Y 86.0	0.82	1.27	0.85	0.61	1.04	0.83	0.88	1.20	1.87	1.91	2.17	1.71
Y 87.0	0.92	0.34	0.36	0.40	0.30	0.84	0.82	0.59	0.77	1.66	1.76	1.51

IES Indoor Report

Photometric Filename:IZC1691L-2.IES

Candela Tabulation - (Cont.)

V/H	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0	C300.0	C330.0
Y 88.0	0.85	0.63	0.85	0.90	0.25	0.18	0.90	0.92	0.75	0.65	0.63	1.36
Y 89.0	0.13	0.73	0.57	0.40	0.84	0.32	0.18	0.44	0.93	0.29	0.53	0.44
Y 90.0	0.30	0.11	0.08	0.14	0.54	0.88	0.27	0.07	0.25	0.85	0.87	0.23
Y 91.0	0.81	0.42	0.56	0.75	0.01	0.38	0.81	0.68	0.28	0.56	0.23	0.74
Y 92.0	0.34	0.83	0.76	0.56	0.53	0.03	0.25	0.46	0.86	0.02	0.19	0.59
Y 93.0	0.21	0.24	0.16	0.14	0.79	0.68	0.17	0.06	0.36	0.40	0.77	0.02
Y 94.0	0.81	0.26	0.35	0.70	0.24	0.77	0.73	0.59	0.13	0.80	0.30	0.43
Y 95.0	0.59	0.83	0.92	0.80	0.29	0.24	0.37	0.54	0.72	0.25	0.08	0.85
Y 96.0	0.10	0.38	0.48	0.19	0.88	0.48	0.07	0.00	0.53	0.15	0.69	0.28
Y 97.0	0.67	0.13	0.24	0.57	0.55	1.01	0.70	0.47	0.03	0.80	0.45	0.19
Y 98.0	0.76	0.76	0.86	1.00	0.13	0.49	0.55	0.61	0.58	0.63	0.01	0.76
Y 99.0	0.19	0.66	0.71	0.41	0.61	0.21	0.08	0.04	0.77	0.09	0.60	0.58
Y 100.0	0.55	0.15	0.13	0.46	0.87	0.81	0.64	0.43	0.14	0.47	0.65	0.08
Y 101.0	0.98	0.63	0.63	1.03	0.36	0.85	0.73	0.81	0.48	0.85	0.13	0.47
Y 102.0	0.47	0.85	0.97	0.56	0.42	0.28	0.17	0.19	0.87	0.38	0.59	0.86
Y 103.0	0.44	0.28	0.38	0.28	1.03	0.61	0.62	0.43	0.35	0.24	0.83	0.26
Y 104.0	1.03	0.57	0.56	0.96	0.74	1.08	0.89	0.88	0.29	0.86	0.19	0.22
Y 105.0	0.65	1.05	1.14	0.83	0.29	0.60	0.31	0.30	0.90	0.75	0.53	0.91
Y 106.0	0.39	0.53	0.72	0.38	0.84	0.32	0.52	0.38	0.48	0.17	0.94	0.66
Y 107.0	1.04	0.47	0.43	0.99	1.04	0.96	0.98	0.97	0.21	0.55	0.32	0.19
Y 108.0	0.93	1.06	1.08	1.11	0.49	1.05	0.46	0.48	0.87	1.01	0.44	0.61
Y 109.0	0.43	0.82	0.96	0.59	0.61	0.54	0.44	0.43	0.79	0.58	0.98	0.96
Y 110.0	0.94	0.39	0.48	0.90	1.29	0.82	1.06	1.05	0.27	0.35	0.48	0.40
Y 111.0	1.15	0.98	0.92	1.39	0.95	1.28	0.60	0.72	0.84	0.98	0.37	0.45
Y 112.0	0.56	1.16	1.26	0.81	0.53	0.86	0.37	0.42	0.98	0.91	0.98	1.11
Y 113.0	0.88	0.57	0.70	0.85	1.09	0.59	1.00	1.06	0.41	0.35	0.61	0.85
Y 114.0	1.36	0.97	0.88	1.45	1.31	1.22	0.80	0.83	0.73	0.68	0.32	0.33
Y 115.0	0.84	1.41	1.48	1.01	0.75	1.29	0.47	0.40	1.15	1.25	0.96	0.87
Y 116.0	0.81	0.89	1.07	0.79	0.92	0.75	1.07	1.04	0.59	0.81	0.87	1.10
Y 117.0	1.44	0.76	0.86	1.41	1.55	1.10	0.99	0.99	0.68	0.49	0.41	0.57
Y 118.0	1.15	1.42	1.44	1.35	1.25	1.59	0.49	0.48	1.23	1.12	1.00	0.64
Y 119.0	0.81	1.16	1.37	0.89	0.86	1.08	1.10	0.96	0.82	1.22	1.13	1.30
Y 120.0	1.39	0.77	0.89	1.44	1.34	0.85	1.23	1.10	0.56	0.67	0.56	0.96
Y 121.0	1.39	1.38	1.44	1.64	1.60	1.50	0.65	0.50	1.21	0.82	0.97	0.52
Y 122.0	0.87	1.57	1.61	1.08	1.04	1.55	1.08	0.92	1.06	1.43	1.26	1.10
Y 123.0	1.35	0.97	1.12	1.36	1.16	1.03	1.44	1.26	0.59	1.10	0.65	1.28
Y 124.0	1.65	1.28	1.39	1.88	1.75	1.42	0.79	0.71	1.21	0.70	1.02	0.75
Y 125.0	1.08	1.78	1.88	1.33	1.47	1.85	1.06	0.93	1.33	1.20	1.45	0.93
Y 126.0	1.35	1.31	1.34	1.41	1.10	1.35	1.58	1.40	0.84	1.53	0.87	1.53
Y 127.0	1.89	1.10	1.40	1.99	1.60	1.25	1.02	0.87	1.16	0.97	1.03	1.15
Y 128.0	1.50	1.77	2.01	1.56	1.87	1.89	1.02	0.91	1.61	1.07	1.57	0.82
Y 129.0	1.34	1.76	1.63	1.30	1.33	1.74	1.64	1.56	1.00	1.71	1.07	1.38
Y 130.0	2.00	1.25	1.36	2.00	1.49	1.28	1.20	1.10	1.09	1.47	0.94	1.48
Y 131.0	1.80	1.72	2.03	1.83	2.12	1.81	1.01	0.94	1.65	1.01	1.60	0.97

Candela Tabulation - (Cont.)

V/H	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0	C300.0	C330.0
Y 132.0	1.34	2.10	1.90	1.43	1.83	2.15	1.63	1.64	1.27	1.49	1.26	1.20
Y 133.0	1.96	1.55	1.43	2.02	1.43	1.61	1.44	1.32	1.03	1.85	0.96	1.73
Y 134.0	2.06	1.59	1.98	2.14	1.95	1.62	1.00	0.98	1.64	1.31	1.57	1.34
Y 135.0	1.50	2.19	2.17	1.63	2.16	2.19	1.63	1.65	1.54	1.31	1.45	1.07
Y 136.0	1.89	1.93	1.57	2.07	1.64	1.91	1.63	1.53	1.09	1.96	1.06	1.64
Y 137.0	2.35	1.53	1.97	2.41	1.80	1.50	1.17	1.08	1.70	1.80	1.67	1.63
Y 138.0	1.87	2.13	2.37	1.88	2.42	2.07	1.56	1.62	1.84	1.25	1.73	1.12
Y 139.0	1.90	2.38	1.81	2.04	2.09	2.32	1.87	1.69	1.28	1.72	1.17	1.47
Y 140.0	2.53	1.80	1.97	2.57	1.71	1.78	1.27	1.16	1.65	2.17	1.68	1.98
Y 141.0	2.22	1.99	2.55	2.12	2.26	1.98	1.55	1.61	2.11	1.69	1.91	1.55
Y 142.0	1.89	2.56	2.11	1.98	2.43	2.51	2.07	1.89	1.53	1.61	1.34	1.33
Y 143.0	2.50	2.12	1.99	2.63	1.90	2.04	1.46	1.29	1.58	2.23	1.69	1.97
Y 144.0	2.46	1.80	2.66	2.36	2.12	1.85	1.46	1.58	2.16	2.11	2.12	1.92
Y 145.0	1.92	2.44	2.36	1.99	2.67	2.46	2.04	2.08	1.70	1.55	1.54	1.35
Y 146.0	2.37	2.55	2.00	2.63	2.31	2.42	1.70	1.50	1.55	2.00	1.71	1.74
Y 147.0	2.70	1.98	2.62	2.59	2.02	1.91	1.39	1.59	2.18	2.44	2.29	2.22
Y 148.0	2.09	2.30	2.61	2.11	2.55	2.38	2.02	2.21	2.03	1.97	1.74	1.75
Y 149.0	2.31	2.79	2.07	2.57	2.67	2.74	1.97	1.74	1.60	1.83	1.78	1.59
Y 150.0	2.85	2.34	2.58	2.81	2.08	2.20	1.42	1.59	2.17	2.43	2.34	2.20
Y 151.0	2.38	2.11	2.79	2.25	2.40	2.20	1.92	2.27	2.30	2.40	1.97	2.11
Y 152.0	2.26	2.71	2.20	2.66	2.90	2.80	2.18	1.89	1.75	1.82	1.80	1.51
Y 153.0	2.92	2.69	2.55	3.01	2.49	2.46	1.57	1.64	2.15	2.15	2.46	1.89
Y 154.0	2.65	2.18	2.97	2.49	2.23	2.11	1.81	2.27	2.57	2.67	2.15	2.41
Y 155.0	2.30	2.52	2.43	2.57	2.81	2.73	2.27	2.04	1.98	2.23	1.84	1.93
Y 156.0	2.83	3.02	2.56	3.14	2.82	2.78	1.72	1.66	2.10	1.84	2.51	1.80
Y 157.0	2.88	2.49	3.10	2.66	2.22	2.21	1.60	2.22	2.65	2.37	2.41	2.37
Y 158.0	2.29	2.27	2.63	2.55	2.58	2.63	2.22	2.23	2.16	2.35	1.87	2.31
Y 159.0	2.66	2.90	2.44	3.13	3.03	3.03	1.92	1.64	1.84	1.80	2.43	1.70
Y 160.0	3.07	2.90	3.06	2.77	2.56	2.45	1.50	2.09	2.47	2.00	2.45	2.03
Y 161.0	2.55	2.33	2.81	2.40	2.44	2.49	2.11	2.29	2.33	2.53	1.84	2.55
Y 162.0	2.59	2.73	2.38	3.03	2.99	3.05	2.21	1.67	1.80	2.18	2.25	2.05
Y 163.0	3.17	3.17	2.98	2.84	2.79	2.63	1.66	1.95	2.31	1.81	2.56	1.84
Y 164.0	2.76	2.67	2.87	2.38	2.26	2.31	2.03	2.37	2.51	2.33	1.97	2.43
Y 165.0	2.46	2.44	2.37	2.93	2.70	2.98	2.46	1.81	1.88	2.53	2.23	2.40
Y 166.0	3.08	3.01	2.86	3.02	3.01	2.89	1.88	1.88	2.13	1.99	2.64	1.84
Y 167.0	2.96	2.99	3.02	2.44	2.47	2.35	1.95	2.54	2.62	2.19	2.05	2.13
Y 168.0	2.46	2.47	2.43	2.82	2.50	2.84	2.55	2.02	2.14	2.79	2.18	2.65
Y 169.0	2.99	2.76	2.70	3.14	3.07	3.11	2.12	1.90	1.93	2.47	2.69	2.20
Y 170.0	3.15	3.24	3.13	2.59	2.76	2.49	1.86	2.50	2.60	2.01	2.20	1.95
Y 171.0	3.08	2.78	2.88	3.00	3.12	3.01	2.06	1.98	2.12	2.52	2.73	2.27
Y 172.0	3.25	3.17	3.19	2.60	2.86	2.57	1.88	2.49	2.62	2.10	2.23	1.91
Y 173.0	3.26	3.12	3.17	2.57	2.91	2.56	1.96	2.57	2.61	2.22	2.18	1.95
Y 174.0	2.97	3.07	2.92	2.59	2.59	2.35	2.49	2.61	2.78	2.21	2.04	2.10
Y 175.0	3.07	3.18	3.00	2.50	2.83	2.33	2.49	2.82	2.93	2.30	2.10	2.08

Candela Tabulation - (Cont.)

V/H	C0.0	C30.0	C60.0	C90.0	C120.0	C150.0	C180.0	C210.0	C240.0	C270.0	C300.0	C330.0
Y 176.0	2.83	2.48	2.69	3.02	2.78	3.03	2.48	2.16	2.24	3.12	2.75	2.93
Y 177.0	2.60	2.59	2.51	3.19	2.32	2.89	3.05	2.55	2.45	2.47	2.87	2.37
Y 178.0	3.24	3.14	3.04	2.86	2.95	2.44	2.92	2.98	2.97	2.88	2.58	2.53
Y 179.0	2.85	2.38	2.67	2.95	2.60	3.12	2.73	2.79	2.31	2.50	2.80	2.24
Y 180.0	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67