

GROSSMONT UNION HIGH SCHOOL DISTRICT



FOOTHILLS ADULT SCHOOL



DSA BACKCHECK
10/04/2021

PROJECT NO. 2020-06492-000

HED

WWW.HED.DESIGN

Planning
Architecture
Engineering
Interior Architecture
Landscape Architecture
Construction Services
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Title Sheet
G-001

ABBREVIATIONS

A# xxx	DIVISION OF STATE ARCHITECT APPLICATION NUMBER	LAV. LB. L.F. LVR. LT.WT.	LAVATORY POUND LINEAR FOOT (FEET) LOUVER LIGHTWEIGHT
A.C.	ASPHALT CONCRETE		
ACC.	AIR CONDITIONING(ED)		
A.C.C.	ACCESSIBLE		
A.D.	AREA DRAIN		
A/E	ARCHITECT/ENGINEER		
A.F.F.	ABOVE FINISH(ED) FLOOR		
A.F.S.	ABOVE FINISH(ED) SURFACE	MAS.	MASONRY
ALUM.	ALUMINUM	MATL.	MATERIAL
ALT.	ALTERNATE	MAX.	MAXIMUM
AMT.	AMOUNT	M.B.	MACHINE BOLT
ANOD.	ANODIZE(D)	MECH.	MECHANICAL
APPROX.	APPROXIMATE(LY)	MEMBR.	MEMBRANE
ARCH.	ARCHITECT(S)	MFR.	MANUFACTURER
ASPH.	ASPHALT	MIN.	MINIMUM
A/V	AUDIO/VISUAL	MISC.	MISCELLANEOUS
		MT.(D),(G),(MOUNT(ED)(ING)	METAL
BD.	BOARD(S)		
BIT.	BITUMINOUS		
BLDG.	BUILDING		
BLK(G.)	BLOCK(ING)		
BU.(R.)	BUILT-UP (ROOFING)	(N)	NEW
		N/A	NOT APPLICABLE
		N.I.C.	NOT-IN-CONTRACT
C.B.	CATCH BASIN	NO.	NUMBER
C.F.	CUBIC FOOT (FEET)	N.R.C.	NOISE REDUCTION COEFFICIENT
C.J.	CONTROL JOINT		
C.L.	CENTERLINE	N.T.S.	NOT-TO-SCALE
CL.G.	CEILING		
C.L.L.	CONTRACT LIMIT LINE		
CLR.	CLEAR(ANCE)		
C.M.U.	CONCRETE MASONRY UNIT(S)	O.C.	ON-CENTER
C.O.	CLEAN OUT	O.D.	OUTSIDE DIAMETER
COL.	COLUMN	O.H.	OPPOSITE HAND
CONC.	CONCRETE	OPNG.	OPENING
CONST.	CONSTRUCTION	OPP.	OPPOSITE
CONT.	CONTINUOUS		
CONTR.	CONTRACTOR		
CORR.	CORRIDOR, CORRUGATE(D)	PAV.(MT.)	PAVING, PAVEMENT
C.T.	CERAMIC TILE	PC	POWDER COATED
CTR.	COUNTER	P.H.	PANIC HARDWARE
		P.I.P.	PROTECT IN PLACE
		PL.	PLATE
D.	DRAIN	P.LAM.	PLASTIC LAMINATE
(D)	DEMOLISH	PLAS.	PLASTER, PLASTIC
DEMO.	DEMOLISH (DEMOLITION)	PLBG.	PLUMBING
D.F.	DRINKING FOUNTAIN	PLYWD.	PLYWOOD
DIA.	DIAMETER	PNT.	PAINT
DIM.	DIMENSION	PREFAB.	PREFABRICATE(D)
DISP.	DISPENSER, DISPOSAL	PREFIN.	PREFINISH(ED)
DN.	DOWN	P.S.F.	POUNDS PER SQUARE FOOT
DR.	DOOR	P.S.I.	POUNDS PER SQUARE INCH
D.S.	DOWNSPOUT	PTD.	PAINTED
DSA	DIVISION OF STATE ARCHITECT	PVMT.	PAVEMENT
D.T.	DRAIN TILE		
DTL.	DETAIL	QUAL.	QUALITY
DRWG.	DRAWING	QUAN.	QUANTITY
		(R)	REFINISH
(E)	EXISTING	R.B.	RUBBER BASE
EA.	EACH	R.C.P.	REINFORCED CONCRETE PIPE
E.J.	EXPANSION JOINT	R.D.	ROOF DRAIN
EL.	ELEVATION (GRADE)	REF.	REFERENCE
ELEC.	ELECTRIC(AL)	REFRIG.	REFRIGERATOR
ELEV.	ELEVATION, ELEVATOR	REG.	REGISTER
EMER.	EMERGENCY	REQ'D.	REQUIRED
EQUIP.	EQUIPMENT	RET.	RETAINING
E.W.C.	ELECTRIC WATER COOLER	R.L.	ROOF LEADER, RAIN LEADER
EXH.	EXHAUST	RM.	ROOM
EXIST.	EXISTING	RT.	RIGHT
EXTG.	EXISTING		
EXT.	EXTERIOR		
EXP.	EXPAND(SION), EXPOSED	S.C.	SOLID CORE
		SCHED.	SCHEDULE
F.A.	FIRE ALARM	S.D.	SOAP DISPENSER;
F.D.	FIRE DAMPER, FLOOR DRAIN	S.D.	STORM DRAIN
F.E.	FIRE EXTINGUISHER	S.F.	SQUARE FOOT (FEET)
F.E.C.	FIRE EXTINGUISHER CABINET	SHT.	SHEET
F.F.	FINISHED FLOOR	SHTG.	SHEATHING
F.H.	FIRE HOSE	S.M.S.	SHEET METAL SCREW
F.H.C.	FIRE HOSE CABINET	SPEC.	SPECIFICATION
F.H.R.	FIRE HOSE RACK	S.T.C.	SOUND TRANSMISSION CLASS
F.HYD.	FIRE HYDRANT	STD.	STANDARD
F.SP.	FIRE STANDPIPE	STOR.	STORAGE
FIN.	FINISH(ED)	STRUCT.	STRUCTURAL
FLASH.	FLASHING	SUSP.	SUSPENDED
FL.	FLOOR		
FND.	FOUNDATION	T.	TREAD, TILE, TOILET
F.O.C.	FACE OF CONCRETE	TEL.	TELEPHONE
F.O.F.	FACE OF FINISH	TEMP.	TEMPORARY
F.O.M.	FACE OF MASONRY	T.O.	TOP OF
F.O.S.	FACE OF STUDS	T.O.C.	TOP-OF-CURB
F.O.S.H.	FACE OF SHEATHING	T.O.CONC.	TOP-OF-CONCRETE
F.S.	FINISH SURFACE	T.O.M.	TOP-OF-MASONRY
FT.	FOOT, FEET	T.O.P.	TOP-OF-PARAPET
FTG.	FOOTING	T.O.R.	TOP-OF-ROOF
		T.O.S.	TOP-OF-SLAB
GA.	GAUGE	T.O.ST.	TOP OF STEEL
GALV.	GALVANIZED	T.O.W.	TOP-OF-WALL
G.C.	GENERAL CONTRACTOR	TR.	TRENCH
GL.	GLASS/GLAZING	T.S.	TUBE STEEL
GR.	GRADE	TYP.	TYPICAL
GRD.	GUARD		
G.W.B.	GYPSPUM WALL BOARD	U.N.O.	UNLESS NOTED OTHERWISE
GYP.	GYPSPUM	U.O.N.	UNLESS OTHERWISE NOTED
		V.B.	VAPOR BARRIER,
		V.C.T.	VINYL BASE COMPOSITION TILE
H.B.	HOSE BIBB	VERT.	VERTICAL
H.C.	HOLLOW CORE	VEST.	VESTIBULE
HD.	HEAD	V.I.F.	VERIFY IN FIELD
HDWD.	HARDWOOD	V.T.	VINYL TILE
HDWR.	HARDWARE		
H.M.	HOLLOW METAL	W. (W/O)	WITH (WITHOUT)
HORIZ.	HORIZONTAL	W.C.	WATER CLOSET
HT.	HEIGHT	WD.	WOOD
HVAC	HTG., VENTILATION & A/C	W.S.	WOOD SCREW
HYD	HYDRANT	W.W.F.	WELDED WIRE FABRIC
		W.W.M.	WELDED WIRE MESH
I.D.	INSIDE DIAMETER		
INSUL.	INSULATION		
INT.	INTERIOR		
INV.	INVERT		
ISA	INTERNATIONAL SYMBOL OF ACCESSIBILITY	STEEL SHAPES	
		C	CHANNEL
		HP	HP SHAPES
		L	ANGLE
		M	M SHAPES
		MC	MISCELLANEOUS CHANNEL
		S	S SHAPES
		TS	STRUCTURAL TUBE
		W	WIDE FLANGE
J.B.	JUNCTION BOX		
JT.	JOINT		
K.D.	KNOCK DOWN		
KIT.	KITCHEN, KITCHENETTE		
K.O.(P.)	KNOCK OUT (PANEL)		

GENERAL NOTES

- ALL CONSTRUCTION SHALL COMPLY WITH CURRENT APPLICABLE CODES, ORDINANCES, REGULATIONS AND STATUTES.
- THE PROJECT SPECIFICATIONS, BOUND SEPARATELY, ARE A PART OF THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INVESTIGATE, VERIFY, AND BE RESPONSIBLE FOR THE COORDINATION OF THE WORK OF THE PROJECT WITH EXISTING CONDITIONS AND DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY CONDITION REQUIRING CLARIFICATION OR MODIFICATION PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
- PLAN DIMENSIONS ARE TO THE FOLLOWING REFERENCES UNLESS SPECIFICALLY NOTED OTHERWISE IN THE DRAWINGS:

COLUMN LINE / STRUCTURAL GRID

EXTERIOR FACE OF STUDS (FOS) OF EXTERIOR STUD WALLS, OR

(FOS) OF INTERIOR STUD WALLS UNLESS NOTED OTHERWISE

FACE OF MASONRY (FOM)

FACE OF CONCRETE (FOC)

FACE OF FINISH (FOF) OF EXISTING FINISH MATERIALS
- ANY WORK OR MATERIAL NOT DIRECTLY NOTED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT OF THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS, IS IMPLIED. SUCH WORK OR MATERIAL SHALL BE INCLUDED AS IF SPECIFICALLY NOTED OR DESCRIBED IN THE CONTRACT DOCUMENTS.
- ALL MATTERS AND DECISIONS REGARDING COLOR, TEXTURE, DESIGN AND INTERPRETATION OF THE CONTRACT DOCUMENTS SHALL BE REFERRED TO HARLEY ELLIS DEVEREAUX ARCHITECTS & ENGINEERS.
- WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. LARGE SCALE DETAILS TAKE PRECEDENCE OVER SMALLER SCALE DETAILS. ANY DISCREPANCIES OR CONFLICTS WITHIN THE DRAWINGS OR BETWEEN THE DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
- ALL CONSTRUCTION DOCUMENTS FOR THIS PROJECT COMPLEMENT EACH OTHER, AND WHAT IS SHOWN OR SPECIFIED BY ONE SHALL BE BINDING AS IF SHOWN OR SPECIFIED BY ALL. ANY WORK REFERRED TO ON ANY CONSTRUCTION DOCUMENT SHALL BE PROVIDED AS THOUGH IT WERE SHOWN OR SPECIFIED IN ALL RELATED DOCUMENTS, INCLUDING SPECIFICATIONS.
- REMOVE AND DISPOSE OF, ON A DAILY BASIS, ALL RUBBISH AND WASTE MATERIAL GENERATED BY THE CONTRACTOR AND ALL SUBCONTRACTORS AND TRADES. RUBBISH AND WASTE MATERIALS SHALL NOT ACCUMULATE IN THE BUILDING(S) OR ON THE SITE. DISPOSE OF RUBBISH AND WASTE MATERIALS IN ACCORDANCE WITH ALL APPLICABLE ORDINANCES AND REGULATIONS.
- PROVIDE AND INSTALL ALL NECESSARY BACKING, BLOCKING, FRAMING, HANGERS OR OTHER SUPPORT REQUIRED FOR THE INSTALLATION OF FIXTURES, EQUIPMENT, CABINETRY, FURNISHINGS, AND ALL OTHER ITEMS REQUIRING THE SAME. COORDINATE THE SIZE, LOCATION AND INSTALLATION OF BACKING, BLOCKING, FRAMING, HANGERS AND OTHER SUPPORT AMONG THE RESPECTIVE SUBCONTRACTORS AND TRADES.
- ALL MATERIALS AND FINISHES SHALL BE INSTALLED OR APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- TRESPASSING ON ANY ADJOINING PROPERTIES IS PROHIBITED. MATERIALS SHALL NOT BE STORED ON ANY ADJOINING PROPERTY.
- THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FOR USE OF PUBLIC PROPERTY DURING CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN REQUIRED PERMITS FOR AND PROVIDE PEDESTRIAN PROTECTION AS REQUIRED BY THE APPROPRIATE GOVERNING AGENCY(IES). DO NOT STORE MATERIALS ON PUBLIC PROPERTY WITHOUT REQUIRED PERMIT(S).
- PROVIDE TEMPORARY CONSTRUCTION FENCE(S), GATE(S), BARRICADES, OR OTHER PROTECTIVE MEASURES AS REQUIRED BY THE APPROPRIATE GOVERNING AGENCY(IES) AND AS OTHERWISE REQUIRED TO PROTECT THE PUBLIC AND AVOID UNAUTHORIZED ENTRY TO THE CONSTRUCTION SITE.
- THE CONTRACTOR SHALL PRIOR TO STARTING CONSTRUCTION, MEET WITH REPRESENTATIVES OF THE APPROPRIATE GOVERNING AGENCY(IES) TO INSPECT AND DOCUMENT EXISTING WORK ON PUBLIC PROPERTY (I.E. CURBS, GUTTERS, SIDEWALKS, TREES AND LANDSCAPING, ETC.). DAMAGE TO EXISTING WORK ON PUBLIC PROPERTY CAUSED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT SHALL BE REPAIRED AT THE CONTRACTOR'S COST, AND TO THE SATISFACTION OF THE APPROPRIATE GOVERNING AGENCY(IES), PRIOR TO COMPLETION OF THIS PROJECT.
- NO MOTOR VEHICLES ARE TO BE STORED IN THE BUILDING(S) DURING CONSTRUCTION.
- CONTRACTOR OPERATIONS SHALL NOT BLOCK, HINDER, IMPEDE OR OTHERWISE INHIBIT THE USE OF REQUIRED EXITS AT ANY TIME. CONTRACTOR SHALL MAINTAIN UNOBSTRUCTED ACCESS TO FIRE EXTINGUISHERS, FIRE HYDRANTS, TEMPORARY FIRE PROTECTION FACILITIES, STAIRWAYS AND OTHER ACCESS ROUTES FOR FIRE-FIGHTING EQUIPMENT AND/OR PERSONNEL.
- ALL WORK SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
- CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR A CONSTRUCTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
- A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. PROJECT INSPECTOR SHALL HAVE MIN. CLASS 3.

DEMOLITION AND REPAIR GENERAL NOTES

- CONTRACTOR SHALL PROVIDE ALL DEMOLITION NECESSARY TO ACCOMPLISH ALL NEW CONSTRUCTION
- REMOVAL OF ALL DEBRIS SHALL BE DONE CAREFULLY. CONDUCT DEBRIS REMOVAL TO INSURE MINIMUM INTERFERENCE WITH ROADS, WALKS AND OTHER OCCUPIED FACILITIES.
- EXECUTE WORK BY METHODS THAT AVOID DAMAGE TO EXISTING ADJACENT WORK TO REMAIN AND WHICH WILL PROVIDE PROPER SURFACES TO RECEIVE PATCHING AND FINISHING.
- WHERE INDICATED ON PLANS, REMOVE ALL CONSTRUCTION AND EQUIPMENT TO OBTAIN A CLEAN SURFACE FOR NEW CONSTRUCTION.
- DEMOLITION WORK YET TO BE DISCOVERED IN THE AREA OF NEW WORK SHALL BE A PART OF THIS CONTRACT. WORK DISCOVERED IN THE FIELD SHALL BE COORDINATED WITH THE ARCHITECT BEFORE PROCEEDING.
- CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE DISTRICT, THE ARCHITECT AND, AS APPLICABLE, THE CONSTRUCTION MANAGER TO WALK THE JOB AND VERIFY ANY ITEMS TO BE SALVAGED FOR DISTRICT. CONTRACTOR SHALL SECURE ITEMS TO BE RETAINED BY DISTRICT IN A SAFE, DRY PLACE ON SITE.
- IN ADDITION TO DEMOLITION SHOWN, CUT, MOVE OR REMOVE ITEMS AS NECESSARY TO PROVIDE ACCESS OR TO ALLOW ALTERATIONS AND NEW WORK TO PROCEED, INCLUDE SUCH ITEMS AS:

A. REMOVAL OF ABANDONED ITEMS SUCH AS PIPING, CONDUIT AND WIRING.

B. REMOVAL OF UNSUITABLE OR EXTRANEOUS MATERIALS NOT MARKED FOR SALVAGE, SUCH AS ABANDONED FURNISHINGS AND EQUIPMENT AND DEBRIS SUCH AS ROTTED WOOD, RUSTED METALS AND DETERIORATED CONCRETE.

C. CLEANING OF SURFACES, AND REMOVAL OF SURFACE FINISHES AS NEEDED TO INSTALL NEW WORK AND FINISHES.
- PATCH, REPAIR AND REFINISH EXISTING ITEMS TO REMAIN TO THE CONDITION INDICATED IN DRAWINGS OR SPECIFICATIONS.
- DISCOVERIES OF CONSTRUCTION, FURNISHINGS, FIXTURES, EQUIPMENT AND ARTICLES HAVING VALUE SHALL REMAIN IN THE POSSESSION OF THE DISTRICT:

A. PROMPTLY NOTIFY CONSTRUCTION MANAGER.

B. PROTECT DISCOVERY FROM DAMAGE FROM ELEMENTS OR WORK.

C. CONSTRUCTION MANAGER SHALL PROMPTLY TRANSMIT DISTRICT'S DECISION FOR DISPOSITION OF DISCOVERY.

D. CONTRACTOR SHALL SECURE ITEMS TO BE RETAINED BY DISTRICT IN A SAFE, DRY PLACE ON SITE, OR SHALL DISPOSE OF ITEMS WHICH DISTRICT RELEASES.
- PRODUCTS FOR PATCHING, EXTENDING, AND MATCHING:

A. PROVIDE SAME PRODUCT OR TYPES OF CONSTRUCTION AS THAT IN EXISTING STRUCTURE, AS NEEDED, TO PATCH, EXTEND OR MATCH EXISTING WORK.

B. GENERALLY, CONTRACT DOCUMENTS WILL NOT DEFINE PRODUCTS OR STANDARDS OR WORKMANSHIP PRESENT IN EXISTING CONSTRUCTION. CONTRACTOR SHALL DETERMINE PRODUCTS BY INSPECTION AND ANY NECESSARY TESTING, AND WORKMANSHIP BY USE OF THE EXISTING AS A SAMPLE OF COMPARISON.

- PRESENCE OF AN EXISTING PRODUCT, FINISH, OR TYPE OF CONSTRUCTION TO REMAIN, REQUIRES THAT PATCHING, EXTENDING OR MATCHING SHALL BE PERFORMED AS NECESSARY TO MAKE WORK COMPLETE AND CONSISTENT TO THE STANDARD OF QUALITY OF THE EXISTING MATERIAL.
- PATCH AND EXTEND EXISTING WORK USING SKILLED CRAFTS PERSONS WHO ARE CAPABLE OF MATCHING EXISTING QUALITY OF WORKMANSHIP. QUALITY OF PATCHED OR EXTENDED WORK SHALL NOT BE LESS THAN THAT SPECIFIED FOR NEW WORK.
- PATCH OR REPLACE ANY PORTION OF AN EXISTING FINISHED SURFACE WHICH IS FOUND TO BE DAMAGED, LIFTED, DISCOLORED, OR SHOWS OTHER IMPERFECTIONS, WITH MATCHING MATERIAL.

A. PROVIDE ADEQUATE SUPPORT OF SUBSTRATE PRIOR TO PATCHING THE FINISH.

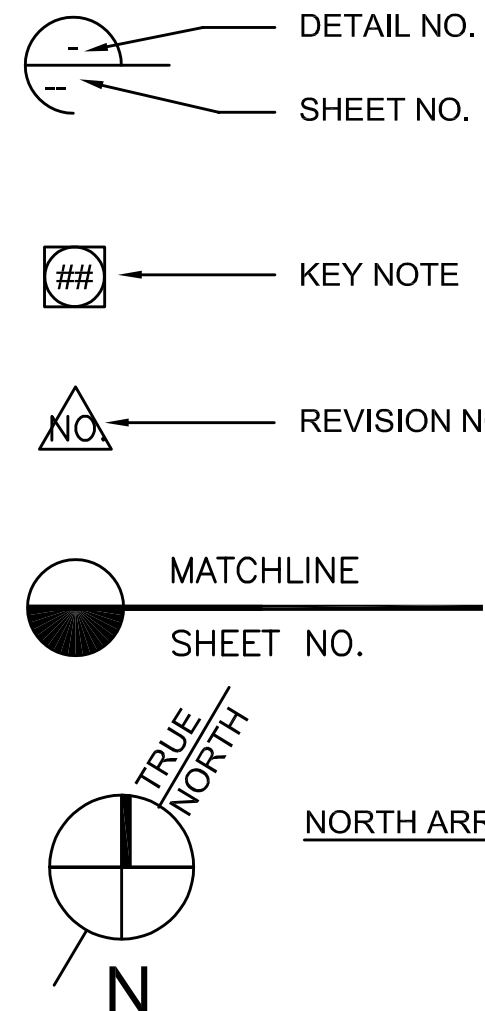
B. REFINISH PATCHED PORTIONS OF PAINTED OR COATED SURFACES IN A MANNER TO PRODUCE UNIFORM COLOR AND TEXTURE OVER ENTIRE SURFACE.

C. WHEN EXISTING SURFACE FINISH CANNOT BE MATCHED, REFINISH ENTIRE SURFACE TO NEAREST INTERSECTIONS.
- WHEN NEW WORK ABUTS OR FINISHES FLUSH WITH EXISTING WORK, MAKE A SMOOTH TRANSITION. PATCH WORK SHALL MATCH EXISTING ADJACENT WORK IN TEXTURE AND APPEARANCE SUCH THAT THE PATCH OR TRANSITION IS NOT NOTICEABLE AT A DISTANCE OF FIVE FEET.

A. WHEN FINISHED SURFACES ARE CUT IN SUCH A WAY THAT A SMOOTH TRANSITION WITH NEW WORK IS NOT POSSIBLE, TERMINATE EXISTING SURFACE IN NEAT MANNER ALONG A STRAIGHT LINE AT A NATURAL LINE OF DIVISION AND PROVIDE TRIM APPROPRIATE TO FINISHED SURFACE.
- ALL ADJACENT WORK DAMAGED DUE TO DEMOLITION OR NEW CONSTRUCTION SHALL BE PROMPTLY REPAIRED AS PART OF THIS CONTRACT AT NO ADDITIONAL COST TO DISTRICT. ADEQUATE PROTECTION BARRICADES & PARTITIONS SHALL BE INSTALLED TO PROTECT ALL FINISHES THAT WILL NOT BE REWORKED IN ORDER TO DISTURB AS LITTLE AS POSSIBLE THE CONTINUOUS OPERATION OF THE EXISTING BUILDING AND TO COMPLY WITH LOCAL BUILDING DEPARTMENT REQUIREMENTS.
- DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY GOVERNMENT REGULATIONS.
- DO NOT USE CUTTING TORCHES FOR REMOVAL UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS INTERIOR OF DUCTS AND PIPE SPACES, VERIFY CONDITION OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN APPROPRIATE PORTABLE FIRE SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.
- MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING DEMOLITION OPERATIONS.

DO NOT INTERRUPT UTILITIES SERVING OTHER FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORITIES HAVING JURISDICTION.
- PROTECTION MEASURES SHALL BE IN EFFECT PRIOR TO COMMENCEMENT OF ANY DEMOLITION WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLETELY ISOLATE CONSTRUCTION WORK FROM ADJACENT IN-SERVICE AREAS OF THE BUILDING.
- UTILITY SHUT-DOWN MUST BE COORDINATED WITH OWNER A MINIMUM OF 48 HOURS IN ADVANCE.
- THE LOCATION AND ACTIVE/INACTIVE STATUS OF ALL EXISTING UTILITIES IN THE IMMEDIATE AREA OF THE WORK MUST BE VERIFIED PRIOR TO ANY CUTTING OPERATIONS.
- DEBRIS FROM DEMOLITION SHALL BE COLLECTED AND REMOVED AT THE BEGINNING OF THE FOLLOWING WORK DAY. ROUTING OF ANY DEBRIS THROUGH ANY PORTION OF THE EXISTING BUILDING SHALL BE DONE UNDER STRICT OBSERVATION OF THE PROJECT INSPECTOR. ONLY THOSE ROUTES AND TIMES DESIGNATED SHALL BE ALLOWED.
- ALL FLOOR, WALL, OR ROOF OPENINGS ABANDONED AND NOT REUSED WILL BE CLOSED IN AND PATCHED TO PROVIDE THE SAME STRUCTURAL CAPACITY, SEPARATION AND MATERIAL CONFIGURATION AND FINISH AS THE ADJACENT SURFACES.
- CONSTRUCTION PROVISIONING MUST BE ACCOMPLISHED ONLY VIA THE INGRESS/EGRESS ROUTES DESIGNED BY OWNER AND AT TIMES SPECIFICALLY ALLOWED.

SYMBOLS AND LEGENDS



PROJECT DESCRIPTION

ROOF SAFETY IMPROVEMENTS INCLUDING THE FOLLOWING:

1. BUILDING "MAIN" WARNING LINES & ROOF HATCH RAILINGS.

2. BUILDING "PARENT ED" WARNING LINES & ROOF HATCH RAILINGS.

NOTE REGARDING DSA REVIEW:
DSA APPROVAL OF BALLASTED GUARDRAILS IS LIMITED TO SEISMIC AND WIND RESTRAINT AND GRAVITY LOAD, AND DOES NOT ADDRESS ANY OSHA FALL PROTECTION REQUIREMENTS.

SHEET INDEX

GENERAL G-001 TITLE SHEET G-002 PROJECT INFORMATION & SHEET INDEX	
ARCHITECTURAL SITE AS101 SITE PLAN	
ARCHITECTURAL A-101 ENLARGED ROOF PLANS A-601 DETAILS	
Grand Total: 5	

VICINITY MAP

1550 MELODY LN, EL CAJON, CA 92019

PROJECT DIRECTORY

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SIGNATURE STATEMENT

Statement of General Conformance
FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS
(Application No. 04-119315 File No. 37-44)

☒ The drawings or sheets listed on the cover or index sheet
☐ This drawing, page of specifications/calculations

have been prepared by other design professionals or consultants who are licensed and/or authorized to prepare such drawings in this state. It has been examined by me for:
1) Design intent and appears to meet the appropriate requirements of Title 24, California Code of Regulations and the project specifications prepared by me, and
2) Coordination with my plans and specifications and is acceptable for incorporation into the construction of the project.

The Statement of General Conformance "shall not be construed as relieving me of my rights, duties, and responsibilities under Sections 17902 and 81138 of the Education Code and Sections 4-338, 4-341 and 4-342 of Title 24, Part 1, (Title 24, Part 1, Section 4-317 [B]).

I find that: <input checked="" type="checkbox"/> All drawings or sheets listed on the cover or index sheet <input type="checkbox"/> This drawing or page	<input type="checkbox"/> I share in general conformance with the project design intent, and <input checked="" type="checkbox"/> I have been coordinated with the project plans and specifications.
Signature: Thomas Christian Date: 10/04/2021	Signature: Date:
Architect or Engineer designated to be in general responsible charge THOMAS ERIK CHRISTIAN Print Name C 18839 License Number 11/30/2021 Expiration Date	Architect or Engineer delegated responsibility for this portion of the work Print Name License Number Expiration Date

CODE REFERENCES

PARTIAL LIST OF APPLICABLE CODES AS OF January 1, 2019:

2019 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR*

2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
(2018 INTERNATIONAL BUILDING CODE VOL.1&2 AND 2018 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR
(2018 NATIONAL ELECTRICAL CODE AND 2018 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 CCR
(2018 IAPMO UNIFORM MECHANICAL CODE AND 2018 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
(2018 IAPMO UNIFORM PLUMBING CODE AND 2018 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR.

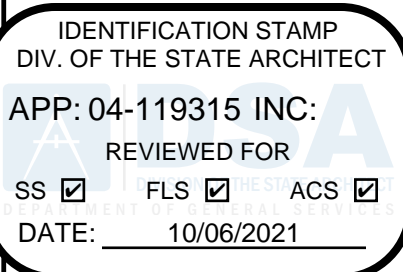
2019 CALIFORNIA FIRE CODE, PART 8, TITLE 24 CCR
(2018 INTERNATIONAL FIRE CODE AND 2018 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA EXISTING BUILDING CODE (CEBC) PART 10, TITLE 24(2018 INTERNATIONAL EXISTING BUILDING CODE & 2019 CALIFORNIA AMENDMENTS)

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24 CCR.

2019 CALIFORNIA REFERENCED STANDARDS, PART 12, TITLE 24 CCR.

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.



GROSSMONT UNION HIGH SCHOOL DISTRICT

FOOTHILLS ADU CENTER ROOF SAFETY REMEDIATION

1550 Melody Lane, El Cajon, CA 92019

Date Issued For
08/04/2021 DSA SUBMITTAL



225 Broadway
Suite 1300
San Diego, California
92101 USA

(619) 318-3800

WWW.HED.DESIGN



2020-06492-000

Project Information & Sheet Index

G-002



1

SITE PLAN

AS101

SCALE: 1/30"= 1'-0"

N

KEYNOTES:

- NOTE: NOT ALL KEYNOTES ARE USED ON EACH PROJECT OR EACH SHEET.
- 1

PROVIDE LADDER BRACKET & DANGER WARNING SIGN AT TOP OF LADDER OR ROOF TOP EQUIPMENT PER DETAIL 3/A-501
- 2

REMOVE (E) GUARDRAIL AT ROOF HATCH
- 3

PROVIDE SIDE ACCESS GATE AT ROOF HATCH RAILING SYSTEM AS SHOWN
- 4

REMOVE AND REPLACE EXISTING SKYLIGHT PER DETAIL 1/A-501
- 5

SELF CLOSING SAFETY GATE PER SPECS.
- 6

LOCATE CENTER OF RAILING OVER BEARING WALL BELOW. DIMENSION SHOWN IS APPROXIMATE. VERIFY LOCATION IN FIELD.
- 7

DIVERSIFIED FALL PROTECTION LONGUARD GUARDRAIL OR EQUAL
- 8

SAFEGUARD INDUSTRIES VERSIRAIL, FREESTANDING GUARDRAIL OR EQUAL

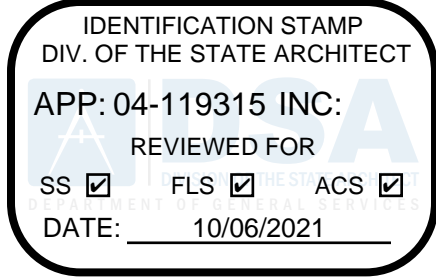
LEGEND:

- NOTE: NOT ALL ITEMS ARE USED ON EACH PROJECT OR EACH SHEET.
- WARNING SAFETY STRIPE REFER DETAIL 4/A-501
- CAUTION SAFETY STRIPE PER SPECIFICATIONS
- BALLASTED RAILING SYSTEM PER SPECIFICATIONS
- BASE PLATE, LOCATE AS SHOWN
PROVIDE SEISMIC RESTRAINT AT EACH BASE PLATE PER DETAIL 6/A-501
(SEISMIC RESTRAINT NOT REQUIRED WHERE ROOF SLOPE IS LESS THAN 1:20 AND BASE PLATE IS GREATER THAN 4'-0" FROM THE ROOF EDGE)

- SITE PLAN
- ENLARGED PLAN
- (E) ROOF HATCH TO RECEIVE RAILING SYSTEM PER DETAIL 2/A-501.
STANDARD FRONT ACCESS GATE U.O.N.

NOTES:

1. ALL DIMENSIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD.
2. ALL ROOFS ARE SINGLE - PLY ROOF MEMBRANE. PROTECT IN PLACE TYP. U.N.O.
3. (E) PIPE AND CONDUIT ON ROOF SHALL BE PROTECTED IN PLACE
4. PRIOR TO BIDDING, CONTRACTOR SHALL BECOME FAMILIAR WITH EXISTING CONDITIONS THROUGH REQUIRED SITE VISIT AND ROOF AERIAL SURVEY. IF CONTRACTOR DOES HAVE ACCESS TO THIS DOCUMENT, THEY CAN BE REQUESTED BY PRE-BID RFI.
5. REMOVE (E) RAILINGS AND EZ-UP POLES AT EACH EXISTING ROOF HATCH WITHIN THE SCOPE OF WORK



GROSSMONT
UNION HIGH
SCHOOL
DISTRICT

FOOTHILLS ADULT
CENTER
ROOF SAFETY
REMEDATION

1550 Melody Lane, El Cajon, CA 92019

Date Issued For
08/04/2021 DSA SUBMITTAL

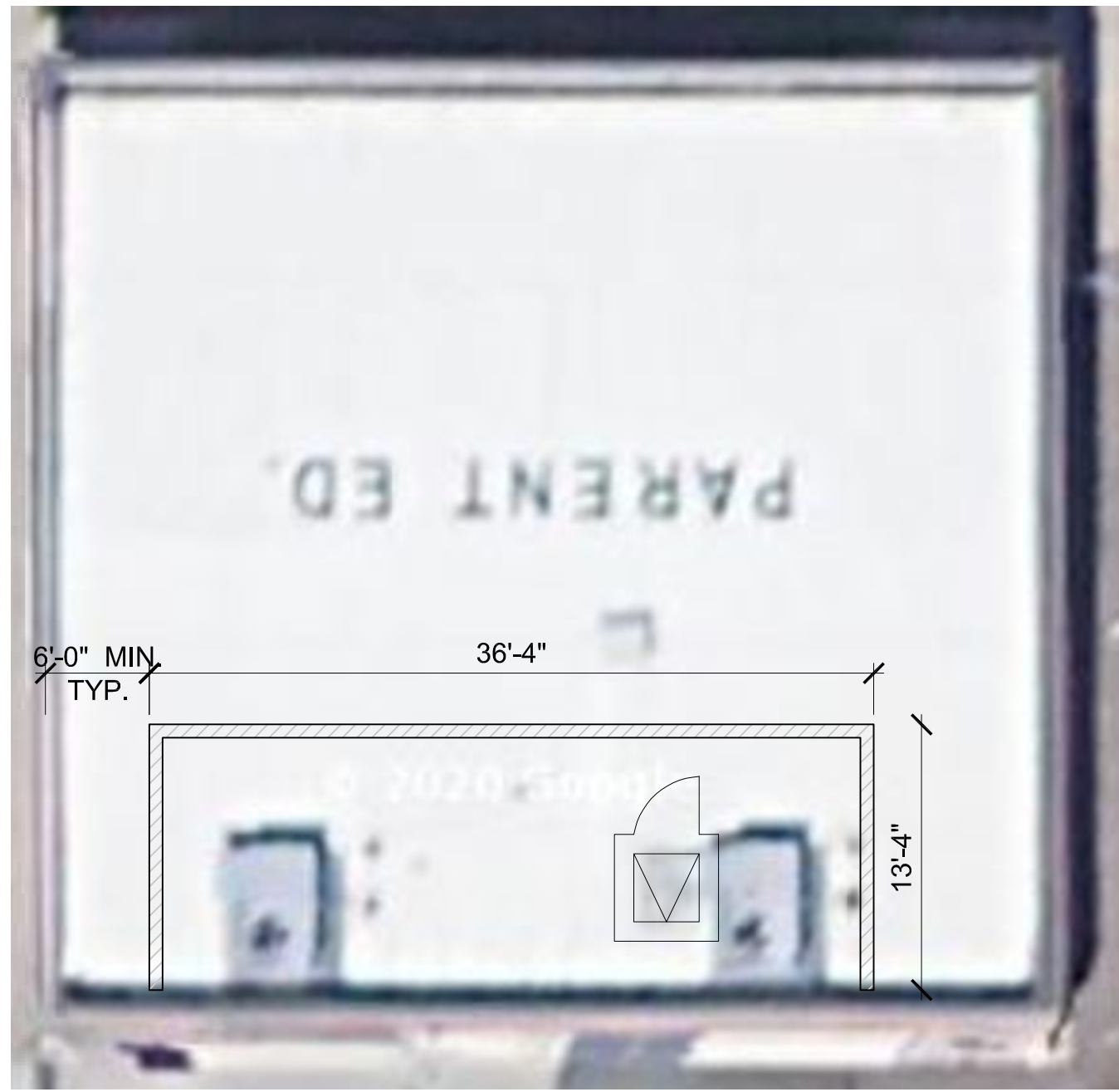
HED

225 Broadway
Suite 1300
San Diego, California
92101 USA
(619) 318-3800
WWW.HED.DESIGN

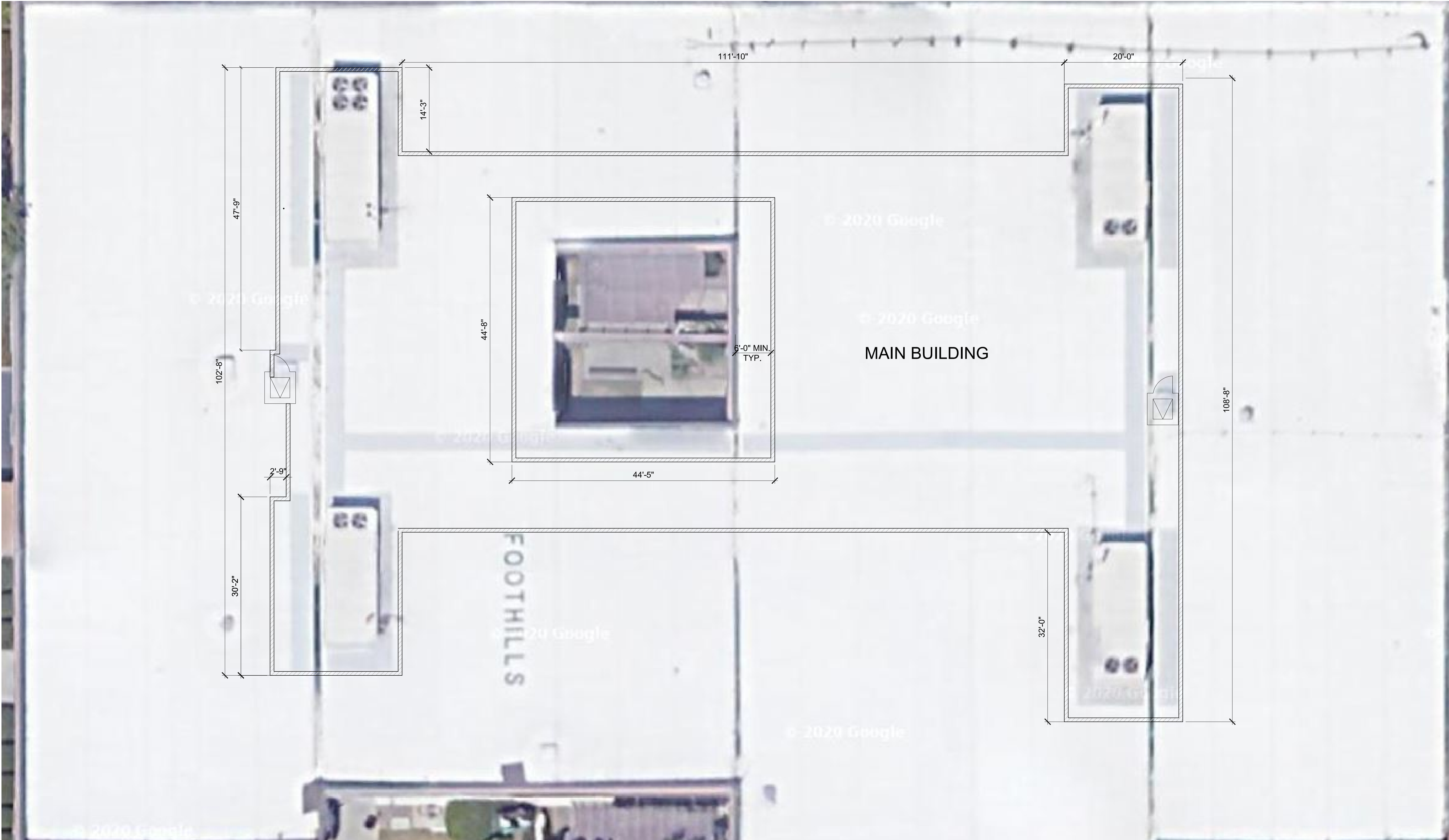


2020-06492-000

Site Plan
AS101



1 ENLARGED ROOF PLAN- BLDG PARENT ED
A-101 SCALE: 1/8"= 1'-0" N



2 ENLARGED ROOF PLAN- MAIN BLDG
A-101 SCALE: 1/8"= 1'-0" N

KEYNOTES:

NOTE: NOT ALL KEYNOTES ARE USED ON EACH PROJECT OR EACH SHEET.

- 1 PROVIDE LADDER BRACKET & DANGER WARNING SIGN AT TOP OF LADDER OR ROOF TOP EQUIPMENT PER DETAIL 3/A-501
- 2 REMOVE (E) GUARDRAIL AT ROOF HATCH
- 3 PROVIDE SIDE ACCESS GATE AT ROOF HATCH RAILING SYSTEM AS SHOWN
- 4 REMOVE AND REPLACE EXISTING SKYLIGHT PER DETAIL 1/A-501
- 5 SELF CLOSING SAFETY GATE PER SPECS.
- 6 LOCATE CENTER OF RAILING OVER BEARING WALL BELOW. DIMENSION SHOWN IS APPROXIMATE. VERIFY LOCATION IN FIELD.
- 7 DIVERSIFIED FALL PROTECTION LONGUARD GUARDRAIL OR EQUAL.
- 8 SAFEGUARD INDUSTRIES VERSIRAIL FREESTANDING GUARDRAIL OR EQUAL.

LEGEND:

NOTE: NOT ALL ITEMS ARE USED ON EACH PROJECT OR EACH SHEET.

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5. REMOVE (E) RAILINGS AND EZ-UP POLES AT EACH EXISTING ROOF HATCH WITHIN THE SCOPE OF WORK

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-119315 INC:
C-19539
REVIEWED FOR
SS ☒ FLS ☒ ACS ☒
DATE: 10/06/2021

CELEBRATING 100 YEARS
GROSSMONT UNION
HIGH SCHOOL DISTRICT
1920 2020
EXCELLENCE IN EDUCATION

GROSSMONT
UNION HIGH
SCHOOL
DISTRICT

FOOTHILLS ADULT
CENTER
ROOF SAFETY
REMEDATION

1550 Melody Lane, El Cajon, CA 92019
Date Issued For
08/04/2021 DSA SUBMITTAL

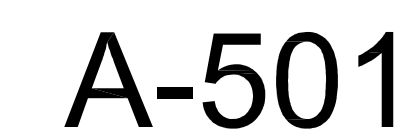
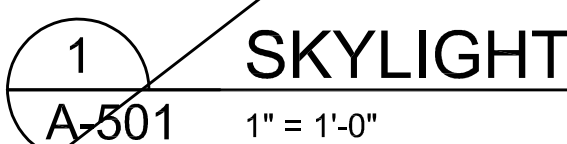
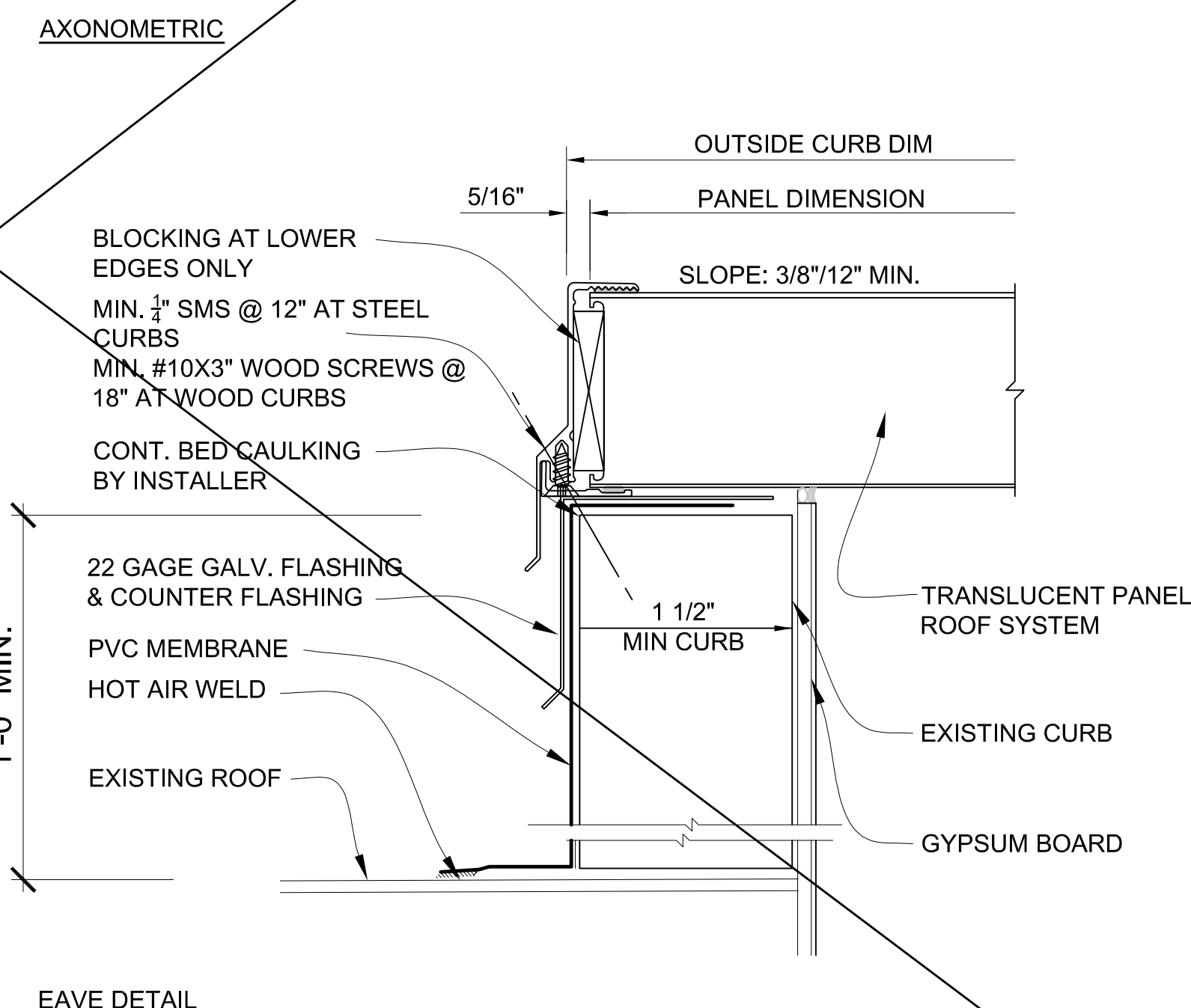
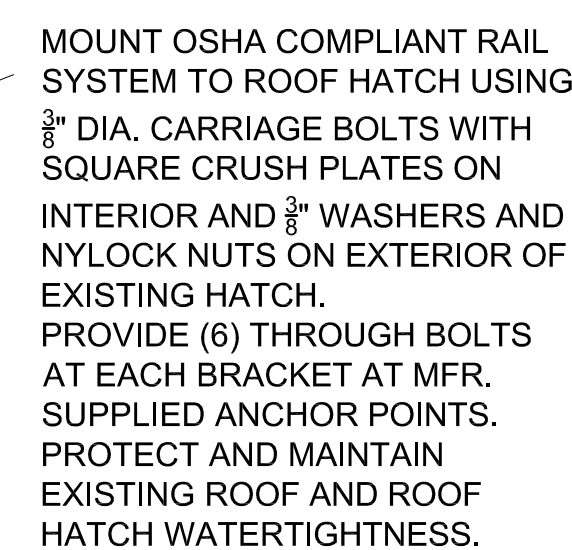
HED

225 Broadway
Suite 1300
San Diego, California
92101 USA
(619) 318-3800
WWW.HED.DESIGN

REGISTERED ARCHITECT
THOMAS ERIK CHRISTIAN
C-19539
REN. 11-30-21
STATE OF CALIFORNIA

© 2020
2020-06492-000

Enlarged
Roof Plans
A-101





GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

PROJECT MANUAL

DSA Backcheck
October 4, 2021

~~A#04-119311 – El Capitan High School~~
~~A#04-119312 – El Cajon Valley High School~~
~~A#04-119313 – Elite Academy~~
~~A#04-119314 – Chaparral High School~~
A#04-119315 – Foothills Adult Center
~~A#04-119316 – Granite Hills High School~~
~~A#04-119317 – Grossmont High School~~
~~A#04-119318 – Helix Charter High School~~
~~A#04-119319 – Monte Vista High School~~
~~A#04-119320 – Mount Miguel High School~~
~~A#04-119321 – Santana High School~~
~~A#04-119322 – Steele Canyon High School~~
~~A#04-119323 – Valhalla High School~~
~~A#04-119324 – West Hills High School~~

PREPARED FOR:

GROSSMONT UNION HIGH SCHOOL DISTRICT
P.O. BOX 1043
LA MESA, CA 91944

PREPARED BY:

HED

225 Broadway, Suite 1300
SAN DIEGO, CA 92101

Project No. 2020-06429-000

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AUGUST 4, 2021

GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION

SECTION 00 01 07

CERTIFICATIONS AND SEALS

ARCHITECT

I hereby certify that the Project Drawings and the Project Manual were prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of California.



STRUCTURAL ENGINEER

I hereby certify that the Project Drawings and the Project Manual were prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of California.



END OF SECTION

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

APP: 04-119315 INC:

REVIEWED FOR

SS ☒ FLS ☒ ACS ☒

DATE: 10/06/2021

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INTRODUCTORY INFORMATION

00 01 01	Project Title Page
00 01 07	Certifications and Seals
00 01 10	Table of Contents

DIVISION 1 GENERAL REQUIREMENTS

01 25 00	Substitution Procedures
01 29 00	Payment Procedures
01 31 13	Project Coordination
01 32 16	Construction Progress Schedule
01 33 00	Submittal Procedures
01 42 19	Reference Standards
01 45 23	Testing and Inspecting Services
01 50 00	Temporary Facilities and Controls
01 56 39	Temporary Tree and Plant Protection
01 73 29	Cutting and Patching
01 74 00	Cleaning and Waste Management
01 77 00	Closeout Procedures
01 78 23	Operation and Maintenance Data
01 78 30	Warranties, Guarantees and Bonds
01 78 39	Project Record Documents

DIVISION 2 SITEWORK

02 41 19	Selective Demolition
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DIVISION 6 WOOD, PLASTICS, AND COMPOSITES

06 10 00	Rough Carpentry
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DIVISION 7 THERMAL AND MOISTURE PROTECTION

07 62 00	Sheet Metal Flashing and Trim
07 72 00	Roof Accessories
07 72 36	Automatic Smoke Vents NOT IN CONTRACT
07 92 00	Joint Sealants

DIVISION 8 OPENINGS

08 45 23	Fiberglass Sandwich Panel Assemblies NOT IN CONTRACT
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DIVISION 9 FINISHES

09 90 00	Painting and Coating
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DIV 10 SPECIALTIES

10 14 00	Signage
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APPENDIX A ROOF AERIAL SURVEY

Roof Aerial Survey by SafeCon Consulting Group

END OF TABLE OF CONTENTS

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SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: General requirements for the proposal of substitutions.

1.02 MATERIAL

- A. Equipment, materials, and articles incorporated into the work shall be new and suitable for the purposes intended.
- B. Reference to equipment, material, article, or patented process by trade name or catalog number shall not be construed as limiting competition.
 - 1. In cases where the Specifications designate a material, product, thing, or service by specific proprietary brand or trade name, and there is only one brand or trade name listed, the item involved is:
 - a. Used as a standard of quality which must be satisfied without compromise, or
 - b. The only brand or trade name known to the Owner and Architect.
 - 2. Wherever in the Contract Documents a material, article, or process is indicated or specified by trade, patent, proprietary name, or name of manufacturer, such indication shall be deemed to be followed by the words, **"or equivalent, as accepted in writing by the Architect"**.
 - a. Contractor shall submit a substitution request for Architect's written acceptance.
 - 3. If the phrase "NO SUBSTITUTIONS" is used, the product is required to be used since it is a unique product application.
- C. The naming of more than one manufacturer in a Section does not imply that all products of named manufacturers are acceptable for use on the Project. Where more than one proprietary name is specified, provide materials or equipment of any one of the manufacturers specified, only if full compliance with other portions of the Specifications can be provided.
- D. Construction shall be in compliance with the cited standards for the materials specified.

1.03 SUBSTITUTIONS

- A. Should the Contractor wish to substitute an item purported to be equal to the one specified, then the Contractor shall, no later than 35 days after Award of Contract, furnish to the Architect the name of the manufacturer, model number, color options and other pertinent data and information respecting the "or equivalent" item which has been proposed in the bid and which the Contractor contemplates incorporating in the work. If the "or equivalent" item is not found by the Architect to be, in fact, equivalent or better, then the item specified in the Contract Documents shall be furnished.
When colors have been indicated prior to Bid, Contractor shall be required to provide a custom color to match. See Section 01 33 00, Submittal Procedures.

- B. When required by the Contract Documents, or when directed by the Owner, furnish full information concerning the material or article proposed for incorporation into the work. Testing of a proposed substitute material to assure compliance with the Specifications may be required by the Owner at the Contractor's expense. When so directed, submit samples for acceptance. Equipment, material, and articles installed or used without required acceptance shall be at the risk of subsequent rejection, and replacement at Contractor's cost.
- C. Substitutions shall comply with, or exceed, requirements of dimension, function, structure, durability, and appearance without exception. Use of accepted substitutions shall in no way relieve the Contractor from responsibility for compliance with the Contract Documents after installation. It shall be incumbent upon the Contractor using accepted substitutions to assume extra costs caused by the use of such substitutions where they affect other work.
- D. Do not substitute materials, equipment, or methods unless such substitution has been reviewed and approved by the Architect. **Substitutions shall be submitted to the Division of the State Architect for approval prior to acceptance by Architect.**
- E. "Or Equivalent":
 - 1. Where the phrase "or equivalent", "or approved equivalent", or "or equivalent as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be accepted as equal unless the item has been specifically accepted, in writing, for the Work by the Architect **and by the Division of the State Architect, Office of Regulation Services for items which "affect health, safety or welfare."**
- F. Failure to place orders for specified equipment or material sufficiently in advance of the scheduled installation date will not be considered a valid reason upon which the Contractor may base his request for substitutions or for deviations from the Drawings and Specifications.
- G. In the event the Contractor requests changes or revisions requiring drawings or services of the Architect or the Architect's consultants, to facilitate installation or erection of any portion of the work, the Contractor shall accept the responsibility to hire and pay for the Architect's or Consultant's services. A standard hourly rate, as agreed upon, shall be paid by the Contractor whether the change is accepted or rejected. In the event the change is approved, this fee shall be deducted, and paid, from the Contract Sum.
- H. Redesigning by the Contractor: Redesigning shall be by an Engineer licensed, in the State of California, to perform such work. In the event approval is required from authorities having jurisdiction, such approval shall be obtained by the Contractor at the Contractor's expense before submitting the revised design or substitution to the Architect.
- I. Revision after Approval: When a submittal has been reviewed by the Architect, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an explanation acceptable to the Architect as to the reason substitution is considered necessary. Changes in Plans and Specifications, which effect safety, health or welfare, shall be made by Addenda or Construction Change Document approved by the Division of the State Architect.

APRIL 9, 2021

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

1.04 SUBSTITUTION REQUEST FORM:

- A. Submittal of the requested information shall be accompanied by the attached Substitution Request Form. Submit six copies of each request to the Architect. Architect will distribute as appropriate.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

ATTACHMENT: Substitution Request Form

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APRIL 9, 2021

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION
SUBSTITUTION REQUEST FORM**

Re: _____
Project Name

Project Manual Section Number

Item

To: _____
Architect

From: _____
Contractor

Reviewed for timeliness and completeness by General Contractor:

We hereby submit for your consideration the following product comparisons of the specified item and the proposed substitution:

A.	Comparison	Specified Item	Substitution
	1. Product Name/Model	_____	_____
	2. Manufacturer	_____	_____
	Address	_____	
	Address	_____	
	Phone Number	_____	
	3. Product Cost	_____	
	Installation/Labor Cost	_____	
	4. Delivery Time	_____	
	Installation Time	_____	
	5. Product Characteristics	_____	
	6. Dimensions	_____	
	Effects	_____	
	7. Guarantee/Warranty	_____	
	8. ICC No.	_____	
	9. UL Rating	_____	

B. Substantiating Data:

Attach manufacturer's literature for both specified item and substitution.

C. Samples: Provide samples for both specified item and substitution, if applicable.

D. Similar Projects for Reference:

1. _____
Name Date

Address

Address

Contact

Telephone

2. _____
Name Date

Address

Address

Contact

Telephone

E. Maintenance Service/Parts/Supplier:

Name

Address

Address

Telephone

F. What effect does this substitution have on applicable code requirements?

APRIL 9, 2021

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

G. Change Data:

Attach complete information for changes to be made to Drawings and Project Manual.

- * Certification of equal performance and assumption of liability for equal performance.
- * The Contractor shall agree to pay for costs involved in changing the building design; including engineering, drafting and detail cost caused by the proposed substitution.

Submitted by:

Signature

Name

Title

Firm Name

Date

Address

Address

City State Zip

Telephone

Remarks:

Signature must be by persons having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

Product substitution of _____

for _____

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

APRIL 9, 2021

Specifications Section _____
(number) (name)

For Use by Owner's Representative:

☐ Accepted ☐ Not Accepted

Owner's Consultant:

By: _____

Date: _____

☐ Accepted ☐ Not Accepted

School District:

By: _____

Date: _____

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Administrative and procedural requirements governing the Contractor's Applications for Payment.
- B. Related Work:
 - 1. The Construction Progress Schedule is included in Section 01 32 16 and shall be coordinated with the work of this Section.
 - 2. **PROJECT RECORD DOCUMENTS:** All requirements for record documents, Specification Section 01 78 39, shall be completed to the Owner's satisfaction prior to Owner's processing of each month's Application for Payment.

1.02 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the Network Analysis Schedule.
- B. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment. Include with initial submission a projected monthly payment request schedule for total cost of project, for Owner's cash flow planning.
- C. Acceptance of the Schedule of Values by the Architect and the District is required prior to approval and payment of the first application for payment.
- D. Format and Content: The Project Manual Table of Contents may be used as a general guide to format the Schedule of Values; specific item numbers may be sequentially numerical.
 - 1. The Schedule of Values shall be a detailed breakdown of the price to provide and install each item of work and material on the project.
 - 2. Each line item on the Schedule of Values shall be presented to allow the Architect to easily find that item of work within the construction during his review of the construction operations and evaluate whether that line item is 100% complete or not.
 - 3. Each line item of the Schedule of Values shall be given a value by the Contractor that, in the opinion of the Contractor, best represents the value of that work, and if required to present evidence of his opinion, the Contractor will be able to substantiate the value by the use of supplier, subcontractor written quotations, labor wages/rates, hourly estimates and/or by industry recognized cost estimating references.
 - 4. Each line item of the Schedule of Values shall be in such detail and coordinated with other line items of work and with the contractor's Construction Schedule, that when making application for payment each month, each line item depicts a

portion of work that can be completed within one month's pay period, reviewed by the Inspector and the Architect; if that line item is 100% complete, recommended to the Owner for payment. If, in the opinion of the Architect, the line item is not 100% complete, the line item will not be recommended for payment.

5. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed. Each sheet of the Schedule of Values shall be titled and numbered sequentially.

- a. Line Item Number
- b. Description of Item.
- c. Quantity.
- d. Unit of Measure.
- e. Unit Price.
- f. Value of Line Item.
- g. Line Item Value Request this month.
- h. Line Item Value previously completed.
- i. At the bottom of each sheet, the Total Amount of Columns f, g, and shall be tabulated and carried forward on each page and the TOTAL AMOUNT presented at the end.

- E. Round amounts off to the nearest whole Dollar; the total shall equal the Contract Sum.
- F. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.03 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
1. The initial Application for Payment, the Application for Payment at the time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is the 15th day of each month. The period of construction Work covered by each Application for Payment is the period ending 15 days prior to the date for each progress payment and starting the day following the end of the preceding period.
- C. Payment Application Forms: Use AIA Document G702 and the form of Schedule of Values accepted by the Architect and approved by the District.
- D. Application Preparation: Complete each entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
1. Entries shall match data on the Network Analysis Schedule. Use updated schedules if revisions have been made.
 2. Include amounts of Owner-approved Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

- E. Transmittal: Submit three (3) executed copies of each Application for Payment to the Architect by means of ensuring receipt within 24 hours; one copy shall be complete, including waivers of lien and similar attachments, when required.
1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.
- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment.
1. Submit each Application for Payment with the Contractor's waiver of mechanics lien for the period covered by the Application.
 2. Submit final Application for Payment with or precede by final waivers from entity involved with performance of Work covered by the application who could lawfully be entitled to a lien.
- G. Initial Application for Payment: Administrative actions and submittals that must precede submittal of the first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule.
 4. Schedule of unit prices, if applicable.
 5. Submittal Schedule.
 6. Copies of permits as may be required to start the Work (encroachment permits, etc., may be obtained as necessary for sequence of construction).
 7. Copies of authorizations and licenses from governing authorities for performance of the Work.
 8. Initial progress report.
 9. Report of pre-construction meeting
 10. Certificates of insurance and insurance policies.
 11. Performance and payment bonds.
- Note: Each preceding item shall be submitted to the Architect, accepted by the Architect and approved by the Owner prior to the certification and approval of the first payment to the Contractor.
- H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work. Administrative actions and submittals that shall proceed or coincide with this application include:

1. Occupancy permits and similar approvals.
 2. Warranties (guarantees) and maintenance agreements.
 3. Test/adjust/balance records.
 4. Maintenance instructions.
 5. Meter readings.
 6. Start-up performance reports.
 7. Change-over information related to Owner's occupancy, use, operation and maintenance.
 8. Final cleaning.
 9. Application for reduction of retainage, and consent of surety.
 10. Advice on shifting insurance coverages.
 11. Final progress photographs.
 12. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion. Each work item value shall be listed and the total amount deducted from amounts owed over and above the retention.
- I. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Written assurance that unsettled claims will be settled.
 4. Written assurance that Work not complete and accepted will be completed without undue delay.
 5. Transmittal of required Project construction records to Owner.
 6. Certified property survey.
 7. Proof that taxes fees and similar obligations have been paid.
 8. Removal of temporary facilities and services.
 9. Removal of surplus materials, rubbish and similar elements.
 10. Change of door locks to Owner's access.

**PART 2 - PRODUCTS
(Not Applicable)**

PART 3 - EXECUTION

APRIL 9, 2021

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

(Not Applicable)

END OF SECTION

Attachments: Application and Certification for Payment – Form G702
Continuation Sheet – Form G702

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APPLICATION AND CERTIFICATE FOR PAYMENT (G702)

TO: GROSSMONT UNION HIGH SCHOOL DISTRICT PROJECT:

APPLICATION NO:
PERIOD TO:
PROJECT NO:
CONTRACT DATE:
CONTRACT FOR:

DISTRIBUTION TO:
OWNER
ARCHITECT
CONTRACTOR
FIELD
OTHER

PHONE:
FROM:

VIA ARCHITECT:

PHONE:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM \$
2. Net Change by Change Orders & Extras \$
3. CONTRACT SUM TO DATE \$
(Line 1 + Line 2)

4. TOTAL COMPLETED & STORED TO DATE \$
(Column G on G703)

5. RETAINAGE:

- a. ____ % of Completed Work ...\$
b. ____ % of Stored Material\$
Total Retainage (Line 5a + 5b)

6. TOTAL EARNED LESS RETAINAGE \$
(Line 3 less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE \$
9. BALANCE TO FINISH, INCLUDING RETAINAGE \$
(Line 3 less Line 6)

CHANGE ORDER SUMMARY

- Total changes approved in
Previous months by Owner \$
Total approved this month \$
NET CHANGES by Change Order \$

State of _____ County of _____
Subscribed and sworn to before me this _____ day of _____, 20____.
Notary Public: _____ My Commission Expires:

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

INSPECTOR:

By: _____ Date: _____

OWNER:

By: _____ Date: _____

AMOUNT CERTIFIED\$

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

PAGE 2 OF 2 PAGES

CONTRACT DATE:

A	B	C	D	E		F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G+C)	BALANCE TO FINISH (C-G)	RETAINAGE
			FROM PREVIOUS APPLICATIONS (D+E)							
TOTAL PAGE 1										

SECTION 01 31 13

PROJECT COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Administrative and supervisory requirements required to ensure orderly progress and timely completion of the Work.
- B. Related Work Described Elsewhere:
 - 1. Additional requirements for coordination are included on Contract Drawings and other Sections of the Specifications. It is intended that all work provided under this Contract shall be complete except where otherwise specified or shown. Any drawing, document, or section, by itself, is not a complete description of the work. Cross references to related work, where given, are provided as a convenience and shall not limit the applicability of other requirements specified or shown unless specifically stated.

1.02 QUALITY ASSURANCE

- A. Familiarity with Contract Documents:
 - 1. Contractor and all Subcontractors shall conduct a study necessary to become completely familiar with all requirements. Applicable requirements indicated or described in the Contract Documents, and the publications referred to, are a part of the Work required as though repeated in each such Section.
 - 2. In the event discrepancies or conflicts are encountered, notify the Architect immediately. Where there is discrepancy between different parts of the contract documents, including referenced codes and standards, the documents requiring the higher quality, the greater quantity, or the more difficult work shall govern, unless determined otherwise by the Architect.
 - 3. Promptly distribute required information to entities concerned and ensure the needed actions are taken.
- B. Reporting: Unless otherwise noted by the Contractor in his transmittals, all of the Contractor's data transmittals to the Architect for the Architect's review will be construed as stipulating that the Contractor has thoroughly and completely reviewed and coordinated the data prior to transmittal.
- C. Interfacing: It shall be solely the responsibility of the Contractor to make sure that each Subcontractor completes in a timely manner the assigned work and that all interfaces are prepared, connected, and function as required.

1.03 REQUEST FOR INFORMATION

- A. The General Contractor shall plan, schedule, coordinate and sequence Work so Requests for Information (RFI), if necessary, may be submitted to the Architect in a timely manner so as not to delay progress of Work. Submission of and responses to RFI(s) with copies to Owner, shall be transmitted via email or owner approved web application.

- B. Telephone conversations requesting information shall be confirmed in writing for prompt reply of all RFIs. Contractor shall coordinate the timing of email and telephone conversations to be made with the Architect's office between the hours of 8:00 a.m. and noon, Monday through Friday.
- C. RFI will be unanswered until Contractor submits a "Construction Schedule". "Construction Schedule" shall be based on Specification Section arrangement, and establish starting and ending dates for Work in each section. "Construction Schedule" shall be updated monthly and delivered to Architect and Owner at "Request for Payment".

If "Construction Schedule" is not received by Architect and Owner by that date, Architect's response to pending RFI(s) will be delayed by the same number of days as the days the "Construction Schedule" is late.
- D. No damages for delay due to RFI response beyond allotted time will be allowed, unless Contractor can show that RFI was not foreseeable with proper planning, scheduling, coordination, and sequencing and the Architect's late response delayed timely purchase or delivery of equipment or material, or limited construction personnel from proceeding with their task(s), within previously listed "Construction Schedule" activity period(s).

**PART 2 - PRODUCTS
(Not Applicable)**

PART 3 - EXECUTION

3.01 PLANNING THE WORK

- A. By thorough advance planning of activities, coordinate the following in addition to other coordination activities required:
 - 1. Materials, services, and equipment purchasing.
 - 2. Shipping.
 - 3. Receipt and storage at the site.
 - 4. Installation, including interface with related items.
 - 5. Inspection and testing, to the extent required under the Contract.
 - 6. Assistance in initial start-up and operational tests.
 - 7. Completion of the Work, including removal and disposal of Contractor's surplus material and equipment, and final cleaning of structures and sites.

3.02 COORDINATION

- A. Coordinate construction activities included under various Sections of these Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.

- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work.

3.03 GENERAL INSTALLATION PROVISIONS

- A. Coordination methods used by the Contractor are at the Contractor's option, except that the Architect may disapprove Work completed by the Contractor or data submitted by the Contractor when, in the Architect's judgment, coordination has been inadequate to ensure the specified quality.
- B. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

END OF SECTION

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SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 SUMMARY

- A. Contractor shall develop and maintain the Construction Schedule for the Work per Special Conditions Article A. TIME OF PERFORMANCE. The purpose of the Construction Schedule shall be to:
 - 1. Assure adequate planning, scheduling, and reporting during execution of the construction and related activities so they may be prosecuted in an orderly and timely manner, within the Contract Time and in accordance with the Milestones stipulated by the Contract;
 - 2. Assure coordination of the work of the Contractor and the various subcontractors and suppliers at all tiers;
 - 3. Assist in the preparation, evaluation and processing of the Contractor's monthly progress payments;
 - 4. Assist in monitoring the progress of the work and evaluating proposed changes to the Contract and the Construction Schedule; and,
 - 5. Assist in detecting problems for the purpose of taking corrective action and to provide a mechanism or tool for determining and monitoring such corrective actions.
- B. The work under this Contract shall be planned, scheduled, executed and reported using the Critical Path Method (hereinafter referred to as CPM). The Contractor shall use scheduling software compatible with Primavera Project Planner (P6) scheduling software.

1.02 DEFINITIONS

- A. Day: As used throughout the Contract, the work "day" means "calendar day" unless otherwise indicated.
- B. Adverse weather that is normal for the area and the season shall be taken into account in the Construction Schedule and as required per special conditions Article "A", Time of Performance.

1.03 QUALITY ASSURANCE

- A. Qualifications of Scheduling Personnel: Employ a project scheduler thoroughly trained and experienced in critical path scheduling on projects of similar size and scope for the duration of the Contract.
- B. Reliance Upon Accepted Schedule:
 - 1. The construction schedule, as accepted by the Architect, shall be an integral part of the contract and will establish interim Contract completion dates for various activities.
 - 2. Should any activity fail to be completed within 10 days after the stipulated schedule date, the Owner shall have the right to order the Contractor to expedite

completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor, and as set forth in the General Conditions of the Contract.

3. Should any activity be 20 or more days behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner may deem appropriate, and as set forth in the General Conditions of the Contract.
4. Costs incurred by the Owner in connection with expediting construction shall be deducted from the Contract amount.
5. Failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means, will not be considered a precedent for any other activities nor a waiver of the Owner's rights to exercise his rights on subsequent occasions.

1.04 SUBMITTALS

- A. Submittal Procedure: Refer to Section 01 33 00 – Submittal Procedures and to Section 01 25 00 – Substitution Procedures.
- B. Preliminary Analysis: Within 10 days after receipt of notice to proceed, submit one reproducible copy of a preliminary Construction Schedule.
- C. Construction Schedule: Within 30 days after receipt of notice to proceed, submit one reproducible copy of the initial construction schedule.
- D. Periodic Reports: On the first working day of each month following submittal of the initial construction schedule, submit one reproducible copy of the updated Construction Schedule.

PART 2 - PRODUCTS

2.01 CONSTRUCTION ANALYSIS

- A. Graphically show the order and interdependence of activities necessary to complete the Work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram. Show all activities on the diagram. Each activity shall indicate work item breakdown noting duration and responsibility for each item, including, but not necessarily limited to:
 1. Project mobilization.
 2. Submittal and review of shop drawings and samples.
 3. Procurement of equipment and critical materials.
 4. Fabrication of special material and equipment. Installation and testing of each by item and by system.
 5. Final Cleanup.
 6. Final inspection and testing.

7. Activities by the Architect that affect progress, required dates for completion, or both, for each part of the work.

PART 3 - EXECUTION

3.01 PRELIMINARY ANALYSIS

- A. Prepare a Preliminary Construction Schedule:
 1. Show all activities of the Contractor under this Contract for the period between receipt of notice to proceed and submittal of initial construction schedule.
 2. Show the Contractor's general approach to remainder of the Work.
 3. Show cost of all activities scheduled for performance before submittal and review of the Construction Schedule.

3.02 INITIAL CONSTRUCTION SCHEDULE

- A. Update the Preliminary Construction Analysis for use as the initial Construction Schedule:
 1. Clearly indicate the critical path and slack where it occurs.
 2. Meet with the Construction Manager and review contents of proposed Construction Schedule.
 3. Make all revisions required by the Construction Manager.

3.03 DETAILED CONSTRUCTION SCHEDULE:

- A. Within twenty-one (21) calendar days of the date of Notice to Proceed. Contractor shall submit to the Construction Manager a detailed Construction CPM Schedule for the Contractor's construction work scope.
- B. The detailed Construction Schedule shall conform with the requirements outlined in this Specification Section.
- C. The Construction Schedule will be reviewed in accordance with the following:
 1. Within 10 calendar days after receipt by the Construction Manager of the detailed Construction Schedule, the Construction Manager will notify the Contractor of any objections the District or its representatives may have in regard to the detailed Construction Schedule.
 2. If the Contractor's proposed activities, logic, or durations, are questioned, the Contractor shall, within 7 calendar days after receipt of the Construction Manager's request, provide a satisfactory revision to, or adequate justification for, these activities, logic, or durations, to the satisfaction of the District.
 3. In the event the Contractor fails to define any element of work, activity or logic and the District review does not detect this omission or error, such omission or error, when discovered by the Contractor or Construction Manager, shall be corrected by the Contractor at the next monthly Schedule Update (discussed hereinafter) and shall not affect the Contract Time.

4. Acceptance of Contractor's Construction Schedule
 - a. Acceptance of the Contractor's Detailed Construction Schedule will be a condition precedent to the making of any progress payments under the Contract.
 - b. Acceptance of the Contractor's Construction Schedule does not relieve the Contractor of any of Contractor's responsibility whatsoever for the accuracy or feasibility of the Construction Schedule, or of the Contractor's ability to meet the Contract completion date(s) or milestone dates, nor does such acceptance acknowledge or admit the reasonableness of the activities, logic, or durations, included in the Contractor's Construction Schedule

3.04 SCHEDULE UPDATING

- A. The term "updated schedule" means dates have been changed without change to the logic sequence by inserting status information reflecting actual progress.
- B. Schedule updating:
 1. On a monthly basis, the Contractor shall meet with the Construction Manager for the purpose of reviewing the updated Construction Progress Schedule. The updating process will be performed by the Contractor making an assessment of actual progress of each activity. Information to be recorded consists of activity actual start and finish dates, and activities' percent complete.
 2. The update information will be provided by the Contractor and submitted to the Construction Manager. This updated actual progress data will be used by the Construction Manager as the basis for processing the Contractor's monthly Application for Payment.
 3. Upon finalization of the computerized schedule update, the Contractor shall submit the required schedule reports as detailed in the "Required Reports" section of this Specification
 4. In addition to these monthly updates, interim updates may be required by the Construction Manager. Contractors will be expected to contribute update data to the Construction Manager as required to complete these interim updates.

3.05 SCHEDULE REVISIONS

- A. The term "revised schedule" means logic and planned activity durations have been changed from the Schedule of Record, or its latest previous revision.
- B. If, as a result of the monthly Schedule Update, it appears the Construction Schedule no longer represents the anticipated actual performance and progress of the work, the Construction Manager will require the Contractor to submit a revision to the Construction Schedule. Such revisions to the Schedule shall not alter any of the Milestone or completion dates.
- C. The Contractor may also request revisions to the Construction Schedule in the event the Contractor's planning for the work is revised. If the Contractor desires to make changes in the Construction Schedule to reflect revisions in the method of operating and scheduling of the work, the Contractor shall notify the Construction Manager in writing, stating the reason for the proposed revision as well as proposed changes. All reasonable requests by the Contractor for revisions will be accepted by the Construction Manager, provided there is no impact to achieving the milestones or completion dates.

- D. If revision to the Construction Schedule is contemplated, the Contractor shall advise the Construction Manager in writing at least 14 calendar days prior to the next Schedule Update meeting, describing the revision and setting forth the reasons thereof. The Contractor shall submit copies of the proposed changes along with a written narrative of the proposed changes. If accepted by the Construction Manager, those revisions may be incorporated into the current Construction Schedule.
- E. The Construction Manager may suggest revisions to the Construction Schedule. The Contractor shall respond in writing within 14 calendar days, either agreeing with the Construction Manager's proposed revision, or setting forth justification why it cannot be accomplished. If the Contractor's justification for not accomplishing the revision is reasonable, such revision will not be incorporated into the Construction Schedule. If the Contractor's justification is not accepted, the Construction Manager-directed revisions shall be incorporated into the Construction Schedule. Should the Contractor's not respond in writing within 14 calendar days, the Construction Manager-suggested revisions will be deemed to be acceptable, and such revisions will be incorporated into the Construction Schedule.

3.06 REQUIRED REPORTS

- A. On a monthly basis as specified above, submit updated Construction Progress Schedule:
 - 1. Indicate "actual" progress in percent completion for each activity.
 - 2. Provide written narrative summary of revisions causing delay in the program. Explain corrective actions taken or proposed.
 - 3. Progress Payments to Prime Contractor (per general conditions section 9.3) shall be contingent on submittal of updated construction progress schedule as required here-in.
- B. Revise accepted construction schedule only when revisions are reviewed and approved in advance by the Construction Manager.

END OF SECTION

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.
2. To help ensure that the specified products are furnished and installed in accordance with design intent, submit design product and data in advance for review by the Architect. Review by the Architect and the design consultants in no way relieves the contractor or subcontractor or supplier from providing the products or construction as described in the Contract Documents.
3. Make submittals required by the Contract Documents. Revise and resubmit when requested to establish compliance with the specified requirements.

B. Related Work Described Elsewhere: Additional requirements for submittals are described in other Sections of these Specifications and the General Conditions.

1.02 QUALITY ASSURANCE

A. Coordination of Submittals: Prior to each submittal, review and coordinate each item being submitted and verify that each item and the submittal conform with the requirements of the Contract Documents. **By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.**

B. Certificates of Compliance:

1. Certify that materials used in the Work comply with specified provisions thereof. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found not to meet specified requirements.
2. Show on each certification the name and location of the Work, name and address of Contractor, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.
3. In addition to the above information, laboratory test reports submitted shall show the date or dates of testing, the specified requirements of which testing was performed, and results of the test or tests.

1.03 SUBMITTALS

- A. Contractor shall submit all shop drawings, samples, requests for substitutions, mix designs, and other items, in accordance with this Section. Submit schedule per Section 01 32 16, Construction Progress Schedule, indicating timing of all required submittals.
- B. Prior to submittal of the Contractor's first application for payment, submit a schedule of all submittals required by the Contract Documents.
- C. Submittals shall be submitted per the following time schedule for the following specific items. Failure to submit by these dates will be considered sufficient grounds to delay Architect's certification of Contractor's Application for Payment until these items are received in proper order.

1. Within **15 calendar days** after Award of Contract:

- a. **All Requests for Substitutions:** After this date, no further requests for substitution will be considered, and Contractor shall be obligated to provide the specified products - **NO EXCEPTIONS.**

2. Within **20 calendar days** after Notice to Proceed:

- a. Concrete mix design, steel connectors to be embedded in concrete foundations and slabs, materials for underground site plumbing, sewer, storm drainage, and underground site electrical.

3. Within **30 calendar days** after Notice to Proceed:

- a. Hollow metal, door hardware, fire alarm system, fire sprinkler system, glu-lam beams and other structural lumber, structural steel, miscellaneous structural connectors, mechanical, plumbing and electrical materials, and equipment and fixtures.
- b. All materials requiring a color selection by the Owner and Architect.
- c. All casework.

4. Within **45 calendar days** prior to installation:

- a. All other items not specifically mentioned in 1, 2 and 3 above.

- D. Provide required submittals for the following products to interface with other portions of the Work. Submit data to verify compliance only.

- 1. For products specified only by reference standard, select product meeting that standard, by manufacturer.
- 2. For products specified by naming several products or manufacturers, select one of the products or manufacturers named.
- 3. For products specified by naming one or more products or manufacturers and stating "or other approved", or "or approved equivalent", or other such wording on drawings or within specifications sections, submit a request for substitutions for product or manufacturer which is not specifically named, but only after submitting bid on specified products and systems.

PART 2 - PRODUCTS

2.01 SHOP DRAWINGS AND COORDINATION DRAWINGS

- A. Scale and Measurements: Make shop drawings to a scale sufficiently large to shown pertinent aspects of the item and its method of connection to the Work.
- B. Type of Prints Required: When contractor desires a reproducible shop drawing, submit shop drawings in the black and white paper and PDF format.
- C. Reproduction of Reviewed Shop Drawings: Printing and distribution of reviewed shop drawings for the Architect's use will be by the Architect.
- D. Review comments of the Architect will be shown on the sepia transparency when it is returned to the Contractor. The Contractor shall make and distribute copies required for his purposes.

2.02 MANUFACTURERS' LITERATURE

- A. General: Where submitted literature from manufacturers includes data not pertinent to the submittal, indicate which portion of the contents is being submitted for review. Submittals not clearly marked will be returned without review.
- B. Number of Copies Required: Nine (9) total, three (3) for Contractor plus six (6) copies to be retained by the Architect. The Architect will distribute stamped copies to the Consultant, D.S.A., the Inspector, and two (2) to the Owner.
- C. The Contractor shall make and distribute copies required for his purposes.

2.03 SAMPLES

- A. Accuracy of Samples: Precise article proposed to be furnished shall be labeled with a submittal number, and project name.
- B. Number of Samples Required: Submit quantity required to be returned plus one each retained by the Architect, the Inspector, D.S.A., and the Owner, unless otherwise noted.
- C. Reuse of Samples: In situations accepted by the Architect, the Architect's retained sample may be used in the construction as one of the installed items.
- D. Size of Samples: Samples shall be 6" x 6", or manufactured width by 12 inches, unless otherwise required by the pertinent Specification section.

2.04 COLORS AND PATTERNS

- A. When the precise color and pattern is not specifically described in the Contract Documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts to the Architect for review and selection. Submit data to verify compliance only. If the color is specifically described in the Contract, submit only that color for verification and approval.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

- A. General: Consecutively number submittals within the respective specification section. Accompany each submittal with transmittal cover letters attached to the end of this Section. Fill out each transmittal cover letter completely, number sequentially, include specification section, name of supplier or installer, and contact person and telephone number.
- B. Internal Identification: On the first page of each copy of each submittal, and elsewhere as required for positive identification, indicate the submittal number.
- C. Resubmittals: When material is resubmitted, transmit under a new letter of transmittal and with same submittal number plus a "alphabetic" suffix indicating its a re-submittal, e.g. 05500-1A, 05500-1B.
- D. Submittal Log: Maintain submittal log for the duration of the Contract. Show current status of submittals, with columns showing "approved", "approved as corrected", etc, to match Architect's categories. Make the submittal log available for the Architect's review upon request. Log shall be available and will be reviewed at each project meeting.

3.02 COORDINATION OF SUBMITTALS

- A. The Contractor's Project Engineer shall be responsible to coordinate and review all submittals prior to forwarding to Architect. All submittals shall be stamped with Contractor's stamp, signed and dated, stating:
 - 1. Contractor has reviewed submittal for compliance with requirements of the Contract Documents.
 - 2. Contractor has reviewed submittal for proper interfacing with other trades.
- B. General: Prior to making submittals, coordinate materials including, but not necessarily limited to:
 - 1. Determine and verify interface conditions, catalog numbers, and similar data,
 - 2. Coordinate with other trades as required,
 - 3. Clearly indicate deviations from requirements of the Contract Documents. Deviations which are not clearly called out as a deviation and which subsequently become a part of an approved submittal can under no circumstances be considered legitimate grounds for an additive change order.
- C. Grouping of Submittals: Make submittals in groups containing associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying and the Contractor shall be strictly liable for occasioned delays.
- D. Color selections for materials in the same space or same elevation shall be submitted at one time. "Piece meal" submission of the color samples or charts is unacceptable and will be returned awaiting a "complete" submission.

3.03 TIMING OF SUBMITTALS

- A. General: Make submittals far enough in advance of dates scheduled for installation to provide time required for reviews; for possible revisions and resubmittals; and for placing orders and securing delivery, and as otherwise required by Part 1.03 of this Section.
- B. Architect's Review Time: In scheduling, allow at least 20 calendar days for review by the Architect following his receipt of the submittal or as otherwise may be required under each Specification section. Allow an additional 10 days for reviews involving Architect's consultants or as otherwise may be required under each Specification section.
- C. Delays: Delays caused by tardiness in making submittals or resubmittals will not be an acceptable basis for extension of the Contract completion time.

3.04 ARCHITECT'S REVIEW

- A. General: Corrections or comments made on Shop Drawings during his review shall not relieve the Contractor from compliance with requirements of the Drawings and Specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.
 - 1. Authority to Proceed: The notations "Furnish as Submitted" or "Furnish as Corrected" authorize the Contractor to proceed with fabrication, purchase, or both or the items so noted, subject to the revisions, if any, required by the Architect's review comments.
 - 2. Revisions: The notation "Revise and Resubmit" or "Submit Specified Item" means make revisions required by the Architect and resubmit. If the Contractor considers required revision to be a change, he shall so notify the Architect as provided for under "Changes" or "Changes in the Work" in the General Conditions. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed by or accepted by the Architect.
 - 3. Rejection: The notation "Rejected" means the submission does not meet requirements of project contract documents. Make new submission meeting project contract documents.

END OF SECTION

Attachment: Contractor's Form - Shop Drawings / Submittal Transmittal Letter
Cover Sheet referenced herewith.

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SHOP DRAWINGS / SUBMITTAL TRANSMITTAL LETTER

School:	Specification Section:
Project:	Submittal No.:
District:	Submittal Description:
DSA Application No.:	Date:

Contractor:	Subcontractor:
Address:	Address:
Phone No.:	Phone No.:
Contact:	Contact:

FIRM NAME

Address

Phone No.

SUBMITTAL HISTORY

ARCHITECT/ENGINEER'S SHOP DRAWING STAMP

REMARKS:

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SECTION 01 42 19

REFERENCE STANDARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and methods for testing and reporting on the pertinent characteristics.
- B. Provide materials and workmanship which meet or exceed the specifically named code or standard.
- C. Deliver to the Architect required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested by the Architect and will generally be required to be copies of a certified report of tests conducted by a testing agency acceptable for that purpose to the Architect.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Specific naming of codes or standards occurs on the Drawings and in other Sections of these Specifications. Comply with laws, ordinances, and regulations of authorities having jurisdiction. Proof of compliance with laws, ordinances, and regulations shall be by the signed approval of the respective authorities having jurisdiction. Costs relative thereto shall be borne by the Contractor.

1.03 QUALITY ASSURANCE

- A. Familiarity with Pertinent Codes and Standards: Verify the requirements of the specifically named codes and standards as well as requirements mandated by law, ordinance and authority. Verify that the items procured and installed in this Work meet or exceed the specified requirements.
- B. Rejection of Noncomplying Items: The Architect reserves the right to reject items incorporated into the Work which fail to meet such minimum requirements.

1.04 APPLICABLE CODES

- A. Work of the project shall conform to the following list of the **2019, Title 24, California Code of Regulations (CCR)**, a List of Codes, copies of which shall be maintained at the job site by the Contractor throughout the duration of the work.

- B. **Applicable Codes as of January 1, 2020:**

All parts of the 2019 California Building Code become effective January 1, 2020 except the effective date for the use of the 2019 Building Energy Efficiency Standards (Title 24, Part 1, Chapter 10) is January 8, 2019 and the effective date for the use of the California Administrative Code (Title 24, Part 1, Chapter 4) is January 8, 2019.

- 1. **2019 California Administrative Code (CAC)**, Part 1, Title 24, California Code of Regulations (CCR).

2. **2019 California Building Code (CBC)**, Volumes 1 and 2, Part 2, Title 24, California Code of Regulations (CCR) with 2019 California Amendments.
3. **2019 California Electrical Code (CEC)**, Part 3, Title 24, California Code of Regulations (CCR) with 2019 California Amendments.
4. **2019 California Mechanical Code (CMC)**, Part 4, Title 24, California Code of Regulations (CCR) with 2019 California Amendments.
5. **2019 California Plumbing Code (CPC)**, Part 5, Title 24, California Code of Regulations (CCR).
6. **2019 California Energy Code**, Part 6, Title 24, California Code of Regulations (CCR).
7. **2019 California Historical Building Code**, Part 8, Title 24, California Code of Regulations (CCR).
8. **2019 California Fire Code**, Part 9, Title 24, California Code of Regulations (CCR).
9. **2019 California Existing Building Code**, Part 10, Title 24, California Code of Regulations (CCR).
10. **2019 California Green Building Standards Code**, Part 11, Title 24, California Code of Regulations (CCR)
11. **2019 California Reference Standards Code**, Part 12, Title 24, California Code of Regulations (CCR). Title 19, CCR, Public Safety, State Fire Marshal Regulations.
12. **Title 19 CCR**, Public Safety, State Fire Marshal Regulations

C. **Partial List of Applicable Standards:**

Reference code section for NFPA Standards, 2019 CBC (SFM) Chapter 35 and California Fire Code Chapter 80

See California Building Code Chapter 35 for State of California amendments to the NFPA standards

NFPA 17	Dry Chemical Extinguishing Systems, 2017 Edition
NFPA 17a	Wet Chemical Extinguishing Systems, 2017 Edition
NFPA 72	National Fire Alarm and Signaling Code, (California Amended) 2016 Edition (Note, see UL Standard 1971 for "Signaling Devices for the Hearing Impaired")
NFPA 80	Standard for Fire Doors and Other Opening Protectives, 2016 Edition
NFPA 2001	Standard on Clean Agent Fire Extinguishing Systems (CA amended), 2015 Edition
UL 464	Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories, 2003 Edition

UL 521	Standard for Heat Detectors for Fire Protective Signaling Systems, 1999 Edition
UL 1971	Standard for Signaling Devices for the Hearing Impaired, 2002 Edition (R2010)

1.05 REFERENCE STANDARDS

- A. Standards referenced in the Specifications are usually referred to by the abbreviation of the organization's name and the designation of the document (e.g., ASTM A36). Documents in common use may be referred to by their own designation (e.g., the California Electrical Code is published by the National Fire Protection Association as NFPA-70 but is referred to as CEC, and is part of a series of documents or standards referred to as the National Fire Code). References are to the latest issue of the publication available on the date stipulated for the receipt of bids.

STANDARDS ORGANIZATIONS

AA	Aluminum Association
AAMA	American Architectural Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute, Inc.
APA	APA-The Engineered Wood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Protection Association
AWPB	American Wood Preservers' Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association

CBC	California Building Code, 2019
CDA	Copper Development Association
CEC	California Electrical Code
CEQA	California Environmental Quality Act
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
CMC	California Mechanical Code - See IAPMO
CPC	California Plumbing Code - See IAPMO
CPSC	Consumer Product Safety Commission
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard of U.S. Dept. of Commerce
CTIOA	Ceramic Tile Institute of America (former CTI)
CSMA	Chemical Specialties Manufacturing Association
FGMA	Flat Glass Marketing Association
FM	Factory Mutual Global (former FMS)
FS	Federal Specification
GA	Gypsum Association
HI	Hydraulic Institute
HRI	Hydraulics Research Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICC	International Code Council (former ICBO)
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society of North America
MIL-STD	Military Specifications (former MIL)
ML/SFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAMM	National Association of Architectural Metal Manufacturers
NIST	National Institute of Standards and Technology (former NBS)

NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers Association
N FLUID PA	National Fluid Power Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NWWDA	National Wood Window and Door Association
PS	Voluntary Product Standard (of NIST former NBS)
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SSPC	The Society for Protective Coatings (former SSPC)
TCNA	Tile Council of North America, Inc. (former TCA)
TSIB	Technical Services Information Bureau (former WLPDIA)
UL	Underwriters Laboratories, Inc.
WI	Woodwork Institute (former WIC)
TITLE	Title 24, California Code of Regulations, Part 1, 2, 3, 4, 5, 6, 8, & 9
TITLE	Title 19, California Code of Regulations

1.06 REFERENCE COPIES

- A. A minimum of one copy of Codes, Regulations, and Standards referenced in the drawings or the specifications, or applicable to the work, shall be furnished to the Owner's Representative at least (2) two weeks prior to the commencement of work affected by such codes, regulations or standards.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

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SECTION 01 45 23

TESTING AND INSPECTING SERVICES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Cooperate with the Owner's selected testing agency, the Owner's assigned Inspector, and others responsible for testing and inspecting the Work, and assist the Owner by coordinating such testing and inspecting services as specified in this Section and/or elsewhere in the Contract Documents.
- B. Related Work Specified Elsewhere:
 - 1. Requirements for testing may be required in other Sections of these Specifications.
 - 2. Where no testing requirements are specified or required by reference standards or authorities having jurisdiction, the Owner may require such testing to be performed under current pertinent standards for testing. Payment for such testing will be made as described herein.
- C. Work Not Included:
 - 1. The Owner will select a pre-qualified independent testing laboratory and Inspector as approved by the Division of the State Architect (DSA), Department of General Services, Architect and Structural Engineer.
 - 2. The Owner will pay for initial services of the testing laboratory as further described hereinafter.

1.02 QUALITY ASSURANCE

- A. The Owner will select an independent testing laboratory to conduct the tests. Selection of the material required to be tested shall be by the laboratory or the Owner's representative and not by the Contractor.
- B. Qualifications of Testing Laboratory: The testing laboratory, approved by DSA, shall be qualified to the Owner's acceptance in accordance with ASTM E329. The testing laboratory shall be qualified by the Division of the State Architect.
- C. Codes and Standards: Testing, when required, will be in accordance with pertinent codes and regulations and with selected standards of the American Society for Testing and Materials and other organizations or agencies which publish recognized codes, standards, or tests. Refer to Article 3.04 - Required Testing of this Section.

1.03 TEST REPORT DISTRIBUTION

- A. Promptly process and distribute required copies of test reports and related instructions to ensure necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.

- B. One copy of Test Reports shall be forwarded to the Division of the State Architect by the testing agency. Such reports shall include tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of Title 24 and with the approved specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with requirements.
- C. Each Testing Agency shall submit to the Division of the State Architect a verified report in duplicate covering tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, including tests up to that time, and at the completion of the project.

1.04 PAYMENT FOR TESTING SERVICES

- A. Initial Services: The Owner will pay for initial testing and inspection except as specifically modified herein- after or as specified otherwise in technical sections, provided the results of inspection indicate compliance with the Contract Documents.
- B. Retesting: When initial tests or inspection indicate noncompliance with the Contract Documents, subsequent retesting or reinspection occasioned by the noncompliance shall be performed by the same testing laboratory or Inspector and the costs thereof will be deducted by the Owner from the Contract Sum. Retesting and reinspection will continue until test or inspection results indicate compliance.
- C. Code Compliance Testing: Inspections and tests required by codes or ordinances, or by authorities having jurisdiction and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Owner, but backcharged to the Contractor in case of retesting due to non-compliance.
- D. Specified Inspections and Tests: Tests and inspections specified in the Specifications, directly or by reference, shall be coordinated by the Contractor at his expense and paid for by the Owner. Corrections of noncompliance and test failures shall be paid for by the Owner, but shall be backcharged to the Contractor. Reinspection and retesting shall be in accordance with paragraph 1.04-B.
- E. Contractor's Convenience Testing: Inspecting or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of and at the expense of the Contractor.

1.05 INSPECTION BY THE OWNER

- A. The Owner and his representatives will have access, for the purpose of inspection, to parts of the work and to the shops wherein the work is in preparation, and the Contractor shall maintain proper facilities and provide safe access for such inspection.
- B. The Owner shall have the right to reject materials and workmanship which are defective, and to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does not correct such rejected work within a reasonable time, fixed by written notice, the Owner may correct rejected work and charge the expense to the Contractor.

- C. Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish necessary facilities, labor and materials. If such work is found to be defective in respect due to fault of the Contractor or his subcontractor, he shall defray expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the additional cost of labor and material necessarily involved in the examination and replacement will be allowed the Contractor.

1.06 OWNER'S INSPECTOR

- A. An Inspector employed by the Owner, approved by DSA in accordance with the requirements of the State of California Administrative Code, Title 24, Part 1, and qualified in accordance with Division of the State Architect will be assigned to the work. Reference DSA IR A-7 and IR A-8 for project Inspector certification and approval and duties and performance rating by DSA. The inspector duties are specifically defined in Title 24, Part 1, Section 4-219, reprinted herein:

" 4-219 Duties of the Project Inspector

- (a) **General.** The project inspector shall act under the direction of the architect or registered engineer and under the supervision of the enforcement agency.

- (b) **Duties.** The general duties of the project inspector in fulfilling project inspection responsibilities are as follows:

1. **Continuous inspection requirement.** The project inspector must have actual personal knowledge obtained by personal and continuous inspection of the work of construction in all stages of its progress that the requirements of the approved plans and specifications are being executed.

Continuous inspection means complete inspection of every part of the work. Work, such as concrete work or masonry work which can be inspected only as it is placed, shall require the constant presence of the project inspector. Other types of work which can be completely inspected after the work is installed may be carried on while the project inspector is not present. In any case, the project inspector must personally inspect every part of the work. In no case shall the inspector have or assume any duties that will prevent him or her from providing continuous inspection.

The project inspector may obtain personal knowledge of the work of construction, either on-site or off-site, from the inspections performed by special inspectors or approved assistant inspectors and from the reporting of others on testing and inspection of materials and workmanship for compliance with the plans, specifications, and applicable standards. The exercise of reasonable diligence to obtain the facts shall be required.

2. **Relations with the architect or engineer.** The project inspector shall work under the general direction of the architect or registered engineer. Any uncertainties in the inspector's comprehension of the plans and specifications shall be reported promptly to the architect

or registered engineer for his/her interpretation and instructions. In no case shall the instructions of the architect or registered engineer be construed to cause work to be done which is not in conformity with the DSA approved plans, specifications and documents authorizing changes.

3. **Job file.** The project inspector shall keep a file of approved plans and specifications (including all approved documents authorizing changes) on the job at all times.
4. **Construction procedure records.** The project inspector shall keep a record of certain construction procedures including, but not limited to the following:
 - A. Concrete pouring operations. The records show the time and date of placing concrete and the time and date of removal of forms in each portion of the structure.
 - B. Welding operations. The record shall include identification marks of welders, lists of defective welds, manner of correction of defects, etc.
 - C. Penetration under the last ten (10) blows for each pile when piles are driven for foundations. All such records of construction procedures shall be kept on the job until the completion of the work. These records shall be made a part of the permanent records of the owner.
5. **Deviations.** The project inspector shall notify the contractor, in writing, of any deviations from the approved plans and specifications which are not immediately corrected by the contractor when brought to the contractor's attention. Copies of such notice shall be forwarded immediately to the architect or registered engineer and to the enforcement agency.

Failure on the part of the project inspector to notify the contractor of deviations from the approved plans and specifications shall in no way relieve the contractor of any responsibility to complete the work covered by his or her contract in accordance with the approved plans and specifications and all laws and regulations.

6. **Verified reports.** The project inspector shall submit to the enforcement agency verified reports as required in Section 4-214.
- (c) **Violations.** Failure, refusal or neglect on the part of the project inspector to notify the contractor of any work which does not comply with the requirements of the approved plans and specifications, or failure, refusal or neglect to report immediately, in writing any such violation to the architect or registered engineer, to the owner and to the enforcement agency shall constitute a violation of the Act and shall be cause for the enforcement agency to take action, which may result in withdrawal of the inspector's approval.

Authority: Health and Safety Code Section 16022.

Reference: Health and Safety Code Section 16017 and 16021. "

- B. The work of construction in stages of progress shall be subject to the personal continuous observation of the Inspector as continuous observation is defined by Title 24. He shall have free access to all parts of the work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from obligation to fulfill this Contract.

1.07 OWNER'S OTHER PERSONNEL

- A. From time to time, other personnel in the employ of the Owner may inspect the Work when the Work is in progress but shall have no authority to direct the Contractor or request changes in the Work except as may be provided elsewhere in the Contract Documents.

1.08 REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT

- A. Architect shall have access to the site in accordance with Title 24.
- B. Field Engineers and Inspectors from DSA. Structural Safety Section, Fire & Life Safety Review and Access Compliance shall have access to the site in accordance with Title 24.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY AND INSPECTORS

- A. Inspectors and representatives of the testing laboratory shall have access to the work. Provide facilities for such access in order that the testing, inspection, and the obtaining of samples may be done properly.
- B. Contractor shall deliver material specimens to the Owner's testing lab, which must by terms of the Contract be tested prior to inclusion in the Project, at least 45 days prior to scheduled delivery to the job site.
- C. Material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.

3.02 TAKING SPECIMENS

- A. Field specimens and samples for testing, unless otherwise provided in these Contract Documents, shall be selected and taken by the Testing Laboratory or Inspector and not the Contractor. Sampling equipment and personnel will be provided by the testing laboratory. Deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory. Soil samples for approval of import fill shall be delivered to the Testing Laboratory by the Contractor, as directed by the Testing Laboratory.

3.03 SCHEDULES FOR TESTING

- A. Establishing Schedule:
 - 1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
 - 2. Provide required time within the Construction Schedule.
- B. Revising Schedule: When changes of construction schedule are necessary during construction, coordinate such changes of schedule with the testing laboratory as required.
- C. Adherence to Schedule: When the testing laboratory is ready to test according to the determined schedules, but is prevented from testing or taking specimens due to incompleteness of the work, extra charges for testing attributable to the delay may be back-charged to the Contractor and will be deducted by the Owner from the Contract Sum.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Construction facilities and temporary controls including:

1. Temporary utilities such as heat, water, electricity, and telephone.
2. Field offices and storage areas.
3. Sanitary facilities for construction personnel.
4. Enclosures such as tarpaulins, barricades, and canopies.
5. Provision of fire safety and fire fighting facilities.

1.02 QUALITY ASSURANCE

A. Conform with the following criteria of the California Fire Code, Chapter 33 – Fire Safety During Construction, And Demolition:

1. Section 3301.1 SCOPE
2. Section 3302 DEFINITIONS
3. Section 3303 TEMPORARY HEATING EQUIPMENT
4. Section 3304 PRECAUTIONS AGAINST FIRE
5. Section 3305 FLAMMABLE AND COMBUSTIBLE LIQUIDS
6. Section 3306 FLAMMABLE GASES
7. Section 3307 EXPLOSIVE MATERIALS
8. Section 3308 OWNER'S RESPONSIBILITY FOR FIRE PROTECTION
9. Section 3309 FIRE REPORTING
10. Section 3310 ACCESS FOR FIRE FIGHTING
11. Section 3311 MEANS OF EGRESS
12. Section 3312 WATER SUPPLY FOR FIRE PROTECTION
13. Section 3313 STANDPIPES
14. Section 3314 AUTOMATIC SPRINKLER SYSTEM
15. Section 3315 PORTABLE FIRE EXTINGUISHERS
16. Section 3316 MOTORIZED CONSTRUCTION EQUIPMENT
17. Section 3317 SAFEGUARDING ROOFING OPERATIONS

END OF CHAPTER 33

1.03 PROJECT CONDITIONS

- A. Make required connections to existing utility systems with minimum disruption to services.
- B. When disruption of the existing service is required, do not proceed without the Owner's and Architect's review and, when required, provide alternate temporary service.
- C. Environmental Requirements: Provide and maintain heat, fuel, materials, and services necessary to protect work and materials against injury from extreme heat, cold, dry winds, dust, or dampness as follows:
 - 1. Suspend operations on work when subject to damage by climatic conditions, flooding, or because of insufficient curing or drying of surfaces or materials.
 - 2. Take necessary action to protect site and Work from wind, flood, and storm damage.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Construction facilities shall be subject to the Architect's review and approval.

2.02 UTILITIES

- A. Water:
 - 1. Provide necessary temporary water lines and water supply and, upon completion of the work, remove temporary facilities.
 - 2. Furnish water needed for construction. Comply with the regulations of local water authority including transport of reclaimed water for construction.
- B. Electricity:
 - 1. Provide necessary temporary wiring and, upon completion of the work, remove temporary facilities.
 - 2. Provide area distribution boxes so located that the individual trades may use 100 feet maximum length extension cords to obtain adequate power and artificial lighting at points where required for the work, for inspection and for safety.
 - 3. Furnish electricity needed for construction.
- C. Heating: Provide and maintain heat needed for proper conduct of operations included in the work.
- D. Telephone: Make necessary arrangements and pay costs for operation and installation of separate telephone service at locations approved by the District's Inspector.
- E. Utilities for Testing: Normal quantities required to make final tests of installed permanent systems shall be furnished at no cost to the Owner.

- F. Temporary facilities in the public right-of-way are subject to approval. Obtain and pay for any permits required.

PART 3 - EXECUTION

3.01 MAINTENANCE AND REMOVAL

- A. Maintain facilities and temporary controls as long as needed for the safe and proper completion of the work.
- B. Remove such construction facilities and temporary controls as rapidly as progress of the work will permit, or as directed by the Architect.

END OF SECTION

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SECTION 01 56 39

TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Site clearing as specified herein.
- B. Principal items of Work included herein:
 - 1. Protection of trees to keep the foliage canopy and branching structure clear from contact by equipment, materials and activities.
 - 2. To preserve roots and soil conditions in an intact and non-compacted state.
 - 3. To identify the Tree Protection Zone (TPZ) in which no soil disturbance is permitted and activities are restricted.

1.01 REFERENCES

- A. Demolition shall be as per 2019 California Fire Code, Title 24, Part 9.

1.02 PROJECT SITE CONDITIONS

- A. The Contractor shall be responsible to furnish and maintain all temporary barricades, warning lights, and other types of protection protect the trees noted on the plans to remain.
- B. The Contractor shall be responsible to protect adjacent properties, roads, right of ways, utilities and other improvements above or below ground from damage in performing the work.
- C. Comply with applicable sections of the storm water pollution prevention plan, including but not limited to, erosion control, soil, waste and maintenance areas.
- D. Salvaged Materials – Contractor shall recycle or compost all tree trimmings. Contractor shall provide certification for all salvaged materials. Certifications may take the form of receipts from recycling facilities, manufacturers, or any other legitimate form of certification.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 EXECUTION

- A. Establish the Tree Protection Zone (TPZ), which is defined as a radius of 10 times greater than the diameter of the tree's trunk or ten feet, whichever is greater by enclosed temporary fencing. Fence shall be a minimum of 6' high.
- B. Provide tree protection as follows:

1. Trees in an open area – enclose the entire area under the canopy or TPZ, which ever is greater throughout the life of the construction project.
 2. Trees in a planting strip - only the planting strip and yard side of the TPZ shall be enclosed with the required chain like protective fencing.
 3. Trees in a tree well or sidewalk planter pit – wrap trees with 2-inches of orange plastic fence from the ground to the first branch and overlay with 2X thick wooden slats bound securely (ensure slats do not dig into bark). Avoid damage to any branches.
- C. Provide a plastic 10-inch by 12-inch sign securely affixed to the fence at a minimum of 20-foot intervals clearly stating “Warning – Tree Protection Zone”.
- D. Duration – Tree fencing and signage shall be erected before demolition, grading or construction begins and remain in place until final inspection of the project except for work specifically allowed in the TPZ. Work or disturbance in the TPZ required approval by the Project Manager and Landscape Architect.
- E. No Storage of materials, top soil, vehicles or equipment shall be permitted within the TPZ.
- F. The ground under the tree canopy shall not be altered, unless specifically noted on the plans.
- G. Trees to be retained shall be irrigated, aerated and maintained as necessary to ensure survival.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Administrative and procedural requirements for cutting and patching.
- B. Related Work Specified Elsewhere:
 - 1. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

1.02 SUBMITTALS

- A. Before commencing alteration or demolition work, submit for review by the Architect and approval of the Owner, a Schedule showing the commencement, the order and the completion dates for the various parts of this work. Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 - 3. List products to be used and firms or entities that will perform Work.
 - 4. Indicate dates when cutting and patching is to be performed.
- B. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted. Before starting work relating to existing utilities (electrical, sewer, water, heat, gas, fire lines, etc.) that will temporarily discontinue or disrupt service to the existing building, notify the Architect and the Owner 72 hours in advance and obtain the Owner's approval in writing before proceeding with this phase of the work.
- C. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure. All cutting of structural elements subject to acceptance of the Structural Engineer and approval of the Division of the State Architect prior to execution.
- D. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the Work found to be unsatisfactory. Subject to approval by the Division of the State Architect.
- E. All cutting and patching of existing hard scape or landscaping for installation or modification, shall be reinstalled in kind. When new utilities are shown or utility modifications are shown on the plans and specific cutting and patching notes are not

shown, the contractor shall assume that the existing hardscape shall be saw cut, material removed and disposed, trenches prepared in accordance with local water district or county regulations, and all existing hardscape shall be returned to existing condition or better.

1.03 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut or notch any structural elements unless specifically detailed on the Drawings.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.
- D. If possible, retain the original installer or fabricator to cut and patch the following categories of exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:

- Processed concrete finishes
- Stonework and stone masonry
- Ornamental metal
- Preformed metal panels
- Window wall system
- Acoustical ceilings
- Wall covering
- HVAC enclosures, cabinets or covers

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use materials that are identical to existing materials. Materials and workmanship employed in the alterations, unless otherwise shown or specified, shall conform to that of the original work, or to new construction as specified elsewhere in these specifications. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.
- B. It is intended that interior finish materials, or existing surfaces to be removed, be re-used insofar as reasonable in areas necessary to match existing surfaces. Care in removal and stockpiling shall be exercised to ensure re-use.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before

proceeding, if unsafe or unsatisfactory conditions are encountered.

- B. Before proceeding, meet at the site with entities involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Make such explorations and probes as are necessary to ascertain required protective measures before proceeding with demolition and removal. Give particular attention to shoring and bracing requirements so as to prevent damage to existing construction.
- C. Provide, erect, and maintain catch platforms, lights barriers, weather protection, warning signs and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.
- D. Provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.
- E. Provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled, or equipment moved.
- F. Take necessary precautions to prevent dust and dirt from rising by wetting demolished masonry, concrete, plaster and similar debris. Protect unaltered portions of the existing building affected by the operations under this Section by dustproof partitions and other adequate means.
- G. Provide adequate fire protection in accordance with local Fire Departments, and with Section 01 50 00.
- H. Do not close or obstruct walkways, passageways or stairways. Do not store or place materials in passageways, stairs, or other means of egress. Conduct operations with minimum traffic interference.
- I. Be responsible for damage to the existing structure or contents by reason of the insufficiency of protection provided.
- J. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
 - 1. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
 - 2. Take precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.03 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
 1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill. Provide pilot holes at corners and do not overcut.
 4. Comply with requirements of applicable Sections of Division 2 where cutting and patching requires excavating and backfilling.
 5. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specific tolerances.
 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken containing the patch, after the patched area has received primer and second coat.
 4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.
- D. Perform demolition, removal and alteration work with due care, including shoring, bracing, etc. Be responsible for damage which may be caused by such work to part or parts of existing structures or items designated for re-use. Perform patching, restoration

and new work in accordance with applicable technical sections of the Specifications.

- E. Materials and/or items designated to become the property of the Owner shall be as shown. Remove such items with care, under the supervision of the trade responsible for reinstallation; protect and store until required. Replace material and/or item damaged in its removal with approved similar and equal new material.
- F. Materials and/or items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the Owner's property. Storage or sale of removed items on site will not be permitted.
- G. Execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.
- H. Where alterations occur, or new and old work join, cut, remove, patch, repair or refinish the adjacent surfaces or so much thereof as is required by the involved conditions, and leave in as a good a condition as existed prior to the commencing of the work. The alteration work shall be performed by the various respective trades which normally perform the particular items of work.
- I. Finish new and adjacent existing surfaces as specified for new work. Clean existing surfaces of dirt, grease, loose paint, etc. before refinishing.
- J. Where existing equipment and fixtures are indicated to be re-used, repair such equipment and fixtures and refinish to put in perfect working order. Refinish as directed.
- K. Cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.
- L. Confine cutting of existing roof areas designated to remain to the limits required for the proper installation of the new work. Cut and fold back existing built-up roofing. Cut and remove insulation, etc. Provide temporary weathertight protection as required until new roofing and flashings are applied.

3.04 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION

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SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Cleaning throughout the construction period, and final project cleaning after acceptance tour "**Punch List**" has been completed.
- B. Related Work Described Elsewhere: In addition to standards specified herein, comply with requirements for cleaning as described in other sections of these Specifications.

1.02 QUALITY ASSURANCE

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the requirements specified herein, comply with pertinent requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

- A. Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

- A. Use cleaning materials and equipment which are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned.
- B. Do not power wash concrete/masonry surfaces.

PART 3 - EXECUTION

3.01 PROGRESS CLEANING

- A. General:
 - 1. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work. Debris shall be removed from the site and disposed of in a lawful manner. Disposal receipts or dump tickets shall be furnished to Architect upon request.
 - 3. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from the job site.

4. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove items to the place designated for their storage. Combustible waste shall be removed from the site. Flammable waste shall be kept in sealed metal containers until removed from the site.
 2. Weekly, and more often if necessary, inspect, arrangements of materials stored on the site; restack, tidy, or otherwise service arrangements to meet the requirements specified above.
 3. Maintain the site in a neat and orderly condition.
- C. Structures:
1. Weekly, and more often if necessary, inspect the structures and pick up scrap, debris, and waste material. Remove items to the place designated for their storage.
 2. Weekly, and more often if necessary, sweep interior spaces clean.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a handheld broom, i.e., "broom-clean".
 3. As required preparatory to installation of succeeding materials, clean the structures of pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the required cleanliness.
 4. Following the installation of finish floor materials, clean the finish floor daily and more often if necessary, and while work is being performed in the space in which finish materials have been installed.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material, i.e., "vacuum clean".

3.02 FINAL CLEANING

- A. Definition: Except as otherwise specifically provided, "clean", for the purpose of the Article, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials, i.e., "scrub and polish clean".
- B. General: Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described above.
- C. Site: Unless otherwise specifically directed by the Architect, water and broom clean paved areas on the site and public paved areas directly adjacent to the site. Remove resultant debris.

D. Structures:

1. Exterior: In areas affected by the work under this contract, visually inspect exterior surfaces and remove traces of soil, waste material, smudges, and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure.

In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.

2. Interior: In areas affected by the work under this contract, visually inspect interior surfaces and remove traces of soil waste material, smudges, and other foreign matter. Remove traces of splashed materials from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only the cleaning materials and equipment instructed by the manufacturer of the surface material.
3. Glass: Clean glass inside and outside.
4. Polished surfaces: On surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished. Glossy surfaces shall be cleaned and shined as intended by the manufacturer.

- E. Timing: Schedule final cleaning after the **Final Punch List** has been completed by the Architect to enable the Owner to accept a completely clean project.

3.03 CLEANING DURING OWNER'S OCCUPANCY

- A. Should the Owner occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be determined by the Architect in accordance with the General Conditions of the Contract.

END OF SECTION

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SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Operations and submittals required to establish Substantial Completions, Project Acceptance, and filing of Notice of Completion.
- B. Contract Completion Date is the day established by the Agreement, the Special Conditions, and the Notice to Proceed as the calendar date by which all Work must be completed in accordance with the Contract Documents. Once established, the Contract Completion Date can only be altered by Change Order. If Work is not complete in accordance with the Contract Documents by the Contract Completion Date, Contractor is obligated to pay liquidated damages to the Owner. In accordance with the terms of the Contract.
- C. Substantial Completion: The Date of Substantial Completion is the date on which the Architect certifies to the Owner that construction is sufficiently complete, in accordance with the Contract Documents, that the District may occupy the Project for the use intended, and all agencies and authorities have provided written acceptance of the portions of the Work over which they have jurisdiction.
- D. Project Acceptance: The District will accept completion of the Contract after the entire Work shall have been completed to the satisfaction of the District and after issuance of the Certificate of Substantial Completion. The Work may only be accepted as complete by formal action of the Governing Board of the School District. Acceptance of the Project by the Governing Board establishes the formal and official Completion Date for the Project, to be compared against the Contract Completion Date. Project Acceptance must occur prior to Contract Completion Date to preclude assessment of liquidated damages.
- E. Notice of Completion: The date of record for the Notice of Completion shall be the date stamped on the Notice by the County Recorder at the time the County Recorder registers the Notice (note: this is normally not the same date as the date the Owner actually files the Notice of Completion with the Recorder office).

1.02 CLOSEOUT SCHEDULE AND PROCEDURE

- A. Requirements Preparatory to Project Acceptance:
 - 1. Contractor shall deliver certifications to Architect that no new materials containing asbestos have been included in the work.
 - 2. Temporary facilities shall be removed from site as specified in Section 01 50 00, Temporary Facilities and Controls.
 - 3. Entire site shall be thoroughly cleaned of all construction debris.
 - 4. Record drawings shall be completed, signed by Contractor and Inspector and submitted to Architect as specified in Section 01 78 39 – Project Record Documents.

5. Guarantees and warranties shall be submitted to Architect as specified in General conditions and Section 01 78 30 – Warranties, Guarantees and Bonds.
6. Contractor's Final Verified Report (Form DSA-6) and other Reports and Affidavits required by the Division of State Architect shall be submitted.
7. Operating and maintenance data shall be submitted and instruction sessions completed as outlined in Section 01 78 23 – Operating and Maintenance Data and as required in CBC 2019 Section 110.3.10.2.
8. Contractor to provide a copy of cleaning and maintenance recommendations for countertops to the underneath side of furniture, in addition to requirements listed above and outlined in Section 01 78 23 – Operating and Maintenance Data.

B. Project Acceptance Requirements, Division of the State Architect:

1. Upon completion of construction of the project, the following reports are required to be submitted before the Division of the State Architect will issue a letter to certificate of compliance of the work:
 - a. A copy of the Notice of Completion filed by the School District.
 - b. Final Verified Report Form DSA 6 A/E certifying all work is 100% complete from the Architect, Structural Engineer, Mechanical Engineer and the Electrical Engineer.
 - c. Contractor's Documents and Field Reports:
 - 1) Final Verified Report Form DSA 6, certifying all work is 100% complete, from the Contractors (or Contractors), the Inspector of Record, and Special Inspector(s).
 - 2) Verified Reports of Testing and Inspection as specified on the approved drawings and specifications (i.e., Final Laboratory Report, Welding, Glued-laminated Timber, etc.).
 - 3) Weighmaster's Certificate (if required by approved drawings and specifications).
 - 4) If responsibility was changed in any area during construction, the change must be supported by appropriate documentation and termination reports filed by the individuals originally charged with responsibility.

C. Procedure for Project Acceptance:

1. Contractor shall complete all Work as required by the Contract Documents, to the best standards of the industry and the trades involved. It shall be the Contractor's responsibility to provide a new, complete, properly operating, professionally finished, detailed, cleaned, high-quality project. There shall be no loose, untrue, or ill-fitting materials, unsightly gaps, voids, or holes, misalignments, mis-adjustments, shoddy workmanship, or damaged, missing, inoperable, or incomplete work. Work shall be free of smudges, spots, stains, dirt, nicks, tears, cracks, scratches, paint runs, flaws, oversprays, and all other unsightly blemishes.

2. Completion lists and correction lists for items described in the paragraph above, as opposed to short lists of a few minor corrective items that may have inadvertently been missed by the Contractor, shall be the responsibility of the Contractor, and not the Architect, Inspector, or District. By entering into this Contract, Contractor agrees that quality control is the responsibility of the Contractor. "Punch" list generated by the Architect is under no circumstances to be considered a vehicle to compel subcontractors to complete contract work.
3. Contractor shall prepare a comprehensive and complete list of corrective items for himself and his subcontractors, and shall verify that these items have been corrected prior to notifying the Architect of completion. Copies of the Contractor's list(s) shall be made available to the Architect and Inspector upon request.
4. Contractor shall notify the Architect *in writing* when Contractor, with concurrence of Inspector, feels the project is one-hundred percent complete and is ready to leave the Project. Architect shall then commence the construction review and prepare a "Punch List", or list of minor corrective items to be issued to Contractor. For convenience, reviews may be phased for various portions of the work, as each distinct portion becomes one-hundred percent (100%) complete.
5. Architect will arrange for Engineering Consultants to make their construction reviews, to be completed before Architect will make his construction review. Contractor and his principal superintendent, authorized to act in behalf of the Contractor, as well as principal subcontractors that the Architect may request to be present, shall accompany the Architect/Engineers during the construction reviews.
6. Excessive amounts of corrective ("punch list") items, as judged by the Architect, shall be grounds to terminate the construction review until such time as the Contractor is deemed sufficiently complete to once again start the review. As a rule of thumb, more than four minor items per typical room will be considered excessive.
7. If Owner elects to occupy the Project after the Contract Completion Date, but before the Contractor has completed the Work, Architect must make a comprehensive construction review prior to Owner's occupancy. Contractor shall reimburse Architect and Engineers for their time in conducting such review, and for the time of their clerical staffs in preparing the review documents, at the Architect's/Engineer's standard hourly rates for extra services. Contractor will be billed at the time of Contractor's Application for Payment. Payments to the Architect not received within 30 days will be deducted from subsequent Contractor's Applications for Payment in accordance with the General Conditions.
8. After completion of "Punch List" work, Contractor shall notify Architect in writing to perform an acceptance tour. Notice shall be issued at least seven (7) days in advance of the time the acceptance tour is to be performed.
9. Contractor and his principal superintendent, authorized to act in behalf of Contractor, as well as principal subcontractors that Architect may request to be present, shall accompany Architect and Inspector on acceptance tour.
 - a. If work has been completed in accordance with Contract Documents, and no further corrective measures are required, Architect will issue a Certificate of Substantial Completion, and recommend that Owner accept Project and file Notice of Completion.

- b. If work is judged to be substantially completed in accordance with Contract Documents, and only a few corrective measures are required, Architect will issue a Certificate of Substantial Completion, (Article 64 of the General Conditions), and recommend that Owner conditionally accept Project and file Notice of Completion. Owner may conditionally accept project and withhold amount for completion per Article 64 of the General Conditions, Contractor shall issue a written notice of intent to complete the corrective measures by a specific named date agreed to by District.
- c. If work has not been substantially completed in accordance with Contract Documents, and several or many corrective measures are still required, Architect will recommend that Owner not accept project and not file Notice of Completion. Instead, based on information gathered from acceptance tour, Contractor will be required to complete corrective measures and then call for another project acceptance tour following procedure outlined above. Contractor will compensate Architect and Inspector for additional acceptance tour and deduct amount paid from final payment to Contractor.
10. After Substantial Completion, Contractor shall issue an Application for Payment in accordance with bid documents. All administrative actions and submittals, including conditions, outlined therein outlined must be complete prior to Owner's release of payment, **and MUST BE COMPLETED PRIOR TO AGENDIZING FOR PROJECT ACCEPTANCE BY THE OWNER'S GOVERNING BOARD.**
11. Upon Contractor completing all administrative actions and submittals, and meeting all conditions, Owner will agendize acceptance of the Work for the next official meeting of the Governing Board. Official action by the Governing Board shall constitute Project Acceptance. Upon acceptance, Contractor shall immediately remove trailers and other remaining temporary facilities.
12. District shall file Notice of Completion with the County Recorder as soon as practicable following Project Acceptance. The date of record for the Notice of Completion shall be the date stamped on the Notice by the Recorder at the time the County Recorder registers the Notice.
13. **The date stamped on the Notice of Completion by the County Recorder shall be the date for commencement of all warranties and guarantees, and the date the Owner becomes responsible for security, maintenance, heating and cooling, utilities, damage to the work (unless done by Contractor's forces working on corrective items), and insurance.**
- Contractor shall remain responsible for these items prior to this date.**
The Owner will inform the Contractor by letter immediately after receiving confirmation in writing from the Recorder's office of registration of the Notice of Completion. Contractor is hereby notified that the process of registering, stamping, and receipt of confirmation from the County has been known to take as much as four weeks from the time of filing.
14. Upon acceptance of Project by Owner, Contractor shall submit his request for final payment in accordance with Specification Section 01 29 00 – Payment Procedures, Part 1.03, I. Payment of retention will not be made by Owner until 35 days after Notice of Completion has been registered by the County Recorder.

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**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

In addition, retention payment will not be made until Contractor has filed the required Form DSA 6 with Division of the State Architect, with copy to the Architect.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION
(Not Applicable)

END OF SECTION

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 SUMMARY:

- A. Related Documents: Drawings and general provisions of the Contract, including General and Supplemental Conditions and Division 1 Specifications Sections, apply to this section, and including all Technical Specifications Sections, and the Operating and Maintenance Requirements of Division 21 through Division 28.
- B. Section Includes:
 - 1. Compilation of product data and related information appropriate for Owner's maintenance and operation of products and equipment furnished under the Contract per CBC 2013 Section 110.3.10.2.
 - 2. Instruction of Owner's personnel in the maintenance of products and in the operation of equipment and systems.

1.02 SUBMITTAL PROCEDURES

- A. Preliminary: Submit one copy of proposed manuals to Architect at least 15 days prior to final inspection or acceptance.
- B. Final: Following the indoctrination and instruction of the Owner's operating and maintenance personnel, review proposed revisions to the manual with the Architect.
 - 1. Submit three copies of accepted data in final form 10 days after final inspection. Approval of submittal is a pre-requisite at Substantial Completion prior to Owner's agendizing project for acceptance by the Governing Board.

PART 2 - PRODUCTS

2.01 FORMAT

- A. Size: Minimum 4 inch, three-ring binders for 8-1/2" x 11" punched pages, completely clear plastic covered for insertion of labels on spines and covers.
- B. Provide identifying tabbed pages. Classify by Division and by Section. All tabbing shall be in numerical order.
- C. Drawings:
 - 1. Provide reinforced punched binder tab. Bind drawings with text.
 - 2. Fan fold larger drawings to size of text pages, for easy foldout.
- D. Cover: Identify each volume with typed or printed label, List:
 - 1. Title of Project
 - 2. Identity of separate structures as applicable.
 - 3. Identity of general subject matter covered in the manual.

- E. Spine: Identify each volume with typed or printed label stating OPERATING AND MAINTENANCE INSTRUCTIONS, GUARANTEES AND SERVICE CONTRACTS and the following information:

1. Title of Project.
2. Divisions and Sections included within volume.
3. Volume number (i.e. "1 of 4")

PART 3 - EXECUTION

3.01 CONTENT OF MANUAL

- A. Table of Contents:
1. List of each product indexed to the content of the volume.
 2. List with each product the name, address, and the telephone number of:
 - a. Subcontractor and installer.
 - b. Maintenance contractor, as appropriate.
 - c. Local sources of supply for parts and replacement.
- B. Product Data: Annotate each sheet to clearly identify the data applicable to the installation. Delete references to inapplicable information.
- C. Drawings:
1. Supplement product data with Drawings as necessary to illustrate the following:
 - a. Relationship of component parts of equipment and systems.
 - b. Control and flow diagrams.
 2. Do not include Project Record Drawings as maintenance drawings.
- D. Instructions: Provide written text, as required to supplement product data for the particular installation.
- E. Warranties, Guaranties, Bonds, and Service Contracts: Include a copy of each warranty, guaranty, bond, and service contract issued.
1. Provide information sheet for Owner's personnel describing the following:
 - a. Proper procedures in the event of failure or emergencies.
 - b. Circumstances under which the validity of warranties, guaranties, or bonds might be compromised.

3.02 MANUAL FOR MATERIALS AND FINISHES

- A. Instructions for Care and Maintenance: Include Manufacturer's data as follows:
1. Recommendations for types of cleaning agents and methods.

2. Cautions against cleaning agents and methods which are detrimental to the product:
 3. Recommended schedule for cleaning and maintenance.
- B. Energy Conservation Features:
1. Provide a list of energy conservation features, materials, components, and mechanical devices installed in the building.

3.03 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Content, for each unit of equipment and system, as appropriate:
1. Description of unit and component parts:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Operating Procedures:
 - a. Start-up, break-in, routine, and normal operating instructions.
 - b. Regulation, control, stopping, shut-down, and emergency instructions.
 - c. Summer and winter operating instructions.
 3. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair, and reassembly.
 - d. Alignment, adjusting, and checking.
 4. Servicing and lubrication schedule including list of lubricants required.
 5. Manufacturers' printed operating and maintenance instructions.
 6. Original manufacture's parts list, illustrations, assembly drawings, and diagrams required for maintenance, including:
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 8. Control diagrams by manufacturer of controls as installed in project.
- current prices, and recommended quantities to be maintained in storage.

3.04 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment, and systems installed in project.
1. Provide services of factory trained instructors from the manufacturer of each major item of equipment or system.

2. Provide for each instruction session or "in-service", and digitally record the session. Recordings shall be clearly labeled as to project, subject, and date.
- B. Operating and maintenance manual shall constitute the basis of instruction.
1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.
 2. Review instructions on how to efficiently use state required, materials, components, and mechanical devices.

END OF SECTION

SECTION 01 78 30

WARRANTIES, GUARANTEES, AND BONDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: General requirements for written warranties, guaranties, and bonds required by the Contract Documents.
- B. Referenced Sections:
 - 1. Section 01 77 00 – Closeout Procedures: Submittal of Final Verified Reports and Notice of Completion, as a condition of project acceptance and payment.
 - 2. Section 01 78 39 – Project Record Documents as a condition of project acceptance and payment.
 - 3. Section 01 78 23 – Operation and Maintenance Data: Incorporation of warranties, guaranties, and bonds into instruction manuals.
- C. **Approval of the warranties, guaranties, and bonds by the Owner is a prerequisite to payment at Substantial Completion and agendaizing for acceptance by the Governing Board of the Owner.**

1.02 TIME PERIOD

- A. Deliver manufacturers' warranties, guaranties, and bonds required by Contract Documents, with Owner named as beneficiary. Where manufacturers' warranty or guaranty extends for a longer time period than the Contractor's warranty and guaranty, deliver manufacturer's warranties or guaranties in same manner.

1.03 WARRANTY/GUARANTY FORM

- A. Submit written warranties and guaranties, except manufacturer's standard printed warranties and guaranties, on the Contractor's, subcontractors', material suppliers', or manufacturers' own letterhead, addressed to Owner, in the form attached to this Section.
- B. Submit warranties and guaranties in duplicate, and in the form indicated, signed by cognizant entities, and by Contractor in every case, with modifications as approved by Owner to suit the conditions pertaining to the warranty or guaranty.

1.04 SUBMITTALS

- A. Collect and assemble written warranties and guaranties into bound booklet form, and deliver bound books to Architect for delivery to Owner for final review and approval.
 - 1. See Sections 01 77 00 and 01 78 23 for additional submittal requirements.

ATTACHMENT: Warranty/Guaranty Form

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WARRANTY/GUARANTY FORM

FOR _____ WORK

We, the undersigned, do hereby warranty and guaranty that the parts of the work described above which we have furnished or installed for:

(PROJECT NAME)

are in accordance with the Contract Documents and that all said work as installed will fulfill or exceed all the Warranty and Guaranty requirements. We agree to repair or replace work installed by us, together with any other work which is displaced or damaged by so doing, that proves to be defective in workmanship, material, or operation within a period of _____ () year(s) from the date Notice of Completion is registered with the San Diego County Recorder, ordinary wear and tear and unusual neglect or abuse excepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable time period determined by the Owner, after notification in writing, we, the undersigned, all collectively and separately, hereby authorize the Owner to have said defective work repaired and/or replaced and made good, and agree to pay to the Owner upon demand all moneys that the Owner may expend in making good said defective work, including all collection cost and reasonable attorney fees.

Date: _____

(Subcontractor, Sub-subcontractor, Manufacturer or Supplier)

By: _____

Title: _____

State License No: _____

Local Representative: For maintenance, repair, or replacement service, contact:

Name: _____

Address: _____

Phone Number _____

END OF SECTION

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SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Requirements for Record Documents.
- B. Throughout progress of the work of the contract, maintain an accurate record of changes in the Contract Documents, as described below.
- C. Upon completion of the work of this Contract, transfer the recorded changes to a set of Record Documents, as described herewith.

1.02 QUALITY ASSURANCE

- A. General: Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as accepted in advance by the Architect.
- B. Accuracy of Records: Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of drawings and other documents where such entry is required to properly show the change. Accuracy of records shall be such that future searches for items shown in the Contract Documents may reasonably rely on information obtained from the accepted Record Documents.
- C. Timing of Entries: Make entries within 24 hours after receipt of information.

1.03 PAYMENT WITHHELD

- A. The Architect reserves the right to withhold certification of payment requests for failure on the part of the Contractor to maintain Record Drawings in conformance with this Section.

1.04 SUBMITTALS

- A. General: The Architect's review of the current status of Record Documents will be a prerequisite to the Architect's review of requests for progress payment and request for final payment under the contract.
- B. Progress Submittals: Prior to submitting each request for progress payment, secure the Architect's review of the Record Documents as currently maintained.
- C. Final Submittal: Prior to submitting request for final payment, submit the final Record Documents to the Architect and secure his acceptance.

1.05 PRODUCT HANDLING

- A. Maintain the job set of Record Documents protected from deterioration and from loss and damage until completion of the work and transfer of the recorded data to the final Record Documents.
- B. In the event of loss of recorded data, use means necessary to again secure the data to the Architect's acceptance; such means shall include, if necessary in the opinion of the

Architect, removal and replacement of concealing materials and, in such case, replacements shall be to the standards originally specified in the Contract Documents.

PART 2 - PRODUCTS

2.01 RECORD DOCUMENTS

- A. Job Set: Secure from the Owner, at no charge to the Contractor, one complete set of Documents comprising the Contract.
- B. Contractor shall provide the architect a pdf copy of all as-builts after the project is completed. As-builts shall include all posted CCDs and RFIs and any other documents issued during construction. As-builts shall be maintained during construction on a daily basis. Any adjustments in location of any item on the plans shall be accurately recorded on the as-built plans.
- C. Before commencing backfilling of utilities or any other underground pipes, ducts, conduits, or structures, take photographs showing relationship of below ground utilities to structure(s) or other physical reference point. Provide thumb-drive or CD containing numbered prints of photos, categorized by locations and indicating utilities shown. Provide a photo(s) of all connections, crossings, stubs, or other critical points. If the Contractor neglects to take such photographs, Contractor shall uncover, at the Contractor's expense, the area(s) so neglected in order to provide the requisite photos.

Provide a hard copy and pdf copy composite Utility Site Plan with the number of each photograph placed on the plan at the location the photo was taken from, and a mark indicating which way the camera was pointed. All numbers and marks shall be in ink, and shall be clear, legible, and neatly done. Photo files and photo plan shall be considered part of the Record Documents.

PART 3 - EXECUTION

3.01 MAINTENANCE OF JOB SET

- A. Identification: Upon receipt of the job set, identify each of the documents with a title "RECORD DOCUMENTS-JOB SET".
- B. Preservation:
 - 1. Considering the contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set for the review of the Architect.
 - 2. Use the job set for no purpose other than entry of new data and for review by the Architect, until start of transfer of data to final Record Documents.
 - 3. Maintain the job set at the site of work as that site is designated by the Architect.
- C. Making Entries on Drawings: Using an erasable colored pencil (not ink nor indelible pencil), clearly describe the change by note and by graphic line, as required. Date entries. Call attention to the entry by a "cloud" around the area or areas affected. In the event of overlapping changes, different colors may be used for each of the changes. In the event of superseding changes to any area of the drawing, erase only that portion of

the preceding change that is affected by the subsequent change before entering the subsequent change.

D. Making Entries on Other Documents:

1. Where changes are caused by directives issued by the Architect, clearly indicate the change by note in ink, colored pencil, or rubber stamp, and reference Division of the State Architect approved addenda and change orders.
2. Where changes are caused by Contractor originated proposals reviewed by the Architect, including inadvertent errors by the Contractor which have been accepted by the Architect, clearly indicate the change by note in erasable colored pencil.
3. Make entries in the pertinent documents as reviewed by the Architect.
4. Reference specifications section 01 77 00, Closeout Procedures, 1.02 (Closeout Schedule and Procedure) paragraph 4. Project Acceptance Requirements, Division of the State Architect for list of documents required at closeout.

E. Conversion of Schematic Layouts:

1. In most cases on the Drawings, arrangement of conduits and circuits, piping, ducts, and other similar items, is shown schematically and is not intended to portray precise physical layout. Final physical arrangement shall be as determined by the Contractor, subject to the Architect's review. However, design of future modifications of the facility may require accurate information as to the final physical arrangement of items and location of utilities which are shown only schematically on the Drawings.
2. Show on the job set of record Drawings, by dimension accurate to within 1 inch, the centerline of each run of items such as are described in the preceding paragraph above. Clearly identify the item by accurate note such as "cast-iron drain", "galvanized water pipe", etc. Show, by symbol or note, the vertical location of the item ("under slab", "in ceiling plenum", "exposed", etc.). Make identification sufficiently descriptive that it may be related reliably to the Specifications.
3. The Architect may waive the requirements for conversion of schematic layouts where, in the Architect's judgment, such conversion serves no beneficial purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect.
4. Timing of Entries: Be alert to changes in the work from how it is shown in the Contract Documents: Promptly, and in no case later than 24 hours after the change has occurred and been made known to the Contractor, make the entry or entries required.

- F. Accuracy of Entries: Use means necessary, including proper instruments or tools for measurement, to determine actual locations of the installed items.

3.02 FINAL RECORD DOCUMENTS

- A. General: The purpose of the final Record Documents is to provide factual information regarding the work, both concealed and visible, which will enable future modification of design to proceed without lengthy and expensive site measurement, investigation, and

examination.

- B. Review of Recorded Data Prior to Transfer: Following receipt of the pdf as-builts described here-in-above, and prior to start of transfer of recorded data thereto, secure a review by the Architect of recorded data. Make required revisions.
- C. Transfer of Data to Drawings: Carefully transfer change data shown on the job set of Record Drawings to corresponding sepias, coordinating the changes as required, and clearly indicating at each affected detail and other drawing the full description of changes made during construction and the actual location of items described above. Call attention to each entry by drawing a cloud around the area or areas affected. Make change entries on the as-builts neatly, consistently, and in ink or crisp black pencil.
- D. Transfer of Data to Other Documents: If the documents other than drawings have been kept clean successfully during progress of the work, and if entries have been sufficiently orderly thereon and reviewed by the Architect, the job set of those documents (other than drawings) will be accepted by the Architect as the final portion of the record documents. If any such document is not so accepted by the Architect, secure a new copy of that document from the Architect at the Architect's usual charge for reproduction carefully transfer the change data to the new copy and obtain the acceptance of the Architect.
- E. Review and Approval: Submit the completed total set of Record Documents in both hard copy and in pdf format to the Architect as described above. Participate in review meeting or meetings as required by the Architect, make required changes in the Record Documents, and promptly deliver the final Record Documents to the Architect.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

- A. The Contractor shall have no responsibility for recording changes in the work subsequent to acceptance of the work by the Owner, except for changes resulting from replacements, repairs, and alterations made by the Contractor as a part of his guarantee. No changes will be allowed without approval of the Division of the State Architect.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Project site and building demolition work to prepare for addition of new improvements, as indicated on the Drawings and specified herein. General and Special Conditions and Division 1 specification sections apply to this section.
- B. Related Sections:
 - 1. Section 01 73 29, Cutting and Patching
 - 2. Section 01 50 00, Temporary Facilities and Controls
 - 3. Section 01 77 00, Closeout Procedures

1.02 DEFINITIONS

- A. "Remove": Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. "Removed and Salvaged": Items to remain the Owner's property shall be removed, cleaned, and packed or crated to protect against damage.
 - 1. Identify contents of containers and deliver to Owner's designated storage area.
- C. "Existing to Remain" Protect construction indicated to remain against damage and soiling during demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.
- D. "Remove and Reinstall": Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in locations indicated.
- E. Salvaged Materials (not wanted by Owner): Items which the Owner does not want and is of salvable value to Contractor may be removed from structure as work progresses. Owner and California Green Building Standards Code require a minimum of 65% (by weight) of all non-hazardous construction and demolition waste be recycled, composted and/or salvaged. Salvage shall conform to the following:
 - 1. Contractor shall submit salvage plan showing how all materials are to be sorted, salvaged and recycled. Plan must include all final destinations for each type of material.
 - 2. Salvaged items must be transported from site as they are removed, unless materials are to be reused on site.
 - 3. Storage or sale of removed items on site will not be permitted, unless materials are to be reused on site.

4. Contractor shall provide certification for all salvaged materials. Certifications may take the form of receipts from recycling facilities, manufacturers, or any other legitimate form of certification. Certification types shall be outlined in salvage plan and approved by Owner.

1.03 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition by the Contractor(s) in a legal disposal area appropriate to the materials being disposed.

1.04 SUBMITTALS

- A. Submit each item in this Article according to the Conditions of the Contract and Specifications Section 01 33 00, unless otherwise indicated.
- B. Proposed Dust Control Measures.
- C. Proposed Noise Control Measures.
- D. Schedule of demolition activities indicating the following:
 1. Detailed sequence of demolition, salvage, and removal work, with starting and ending dates for each activity.
 2. Dates for shutoff, capping, and continuation of utility services.
- E. Salvage Plan - Inventory of items to be removed and salvaged. Salvage plan shall show how all materials are to be sorted, salvaged and recycled. Plan must include all final destinations for each type of material.
- F. Inventory of items to be removed and salvaged, and deliver to Owner's designated storage area.
- G. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and improvements that might be misconstrued as damage caused by demolition operations.
- H. Record drawings at project closeout according to specifications section 01 77 00 - Closeout Procedures shall identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

1.05 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed demolition work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Predemolition Conference: Conduct conference at Project site with Owner, Architect and Construction Manager.

1.06 PROJECT CONDITIONS

- A. Building, where partial wall will be demolished, will be vacated and its use discontinued before start of the Work.
- B. Conditions, existing at time of inspection for bidding purpose, will be maintained by Owner as far as practical.
- C. Hazardous Materials: If applicable, a Hazardous Materials Study was performed on site and a specification for removal of said materials is incorporated into the project documents.

1.07 SCHEDULING

- A. Arrange demolition and salvage schedule so as not to interfere with Owner's on-site operations.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.
- C. Inventory and record the conditions of items to be removed and reinstalled and items to be removed and salvaged.
- D. Survey condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.
- E. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.02 UTILITY SERVICES

- A. Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner, and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to governing authorities.
- C. Provide not less than 72 hours notice to Owner if shutdown of service is required during changeover.

3.03 PREPARATION

- A. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
- C. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to remain.
 - 1. Strengthen or add new supports when required during progress of demolition.

3.04 EXPLOSIVES

- A. The use of explosives will not be permitted.

3.05 POLLUTION CONTROLS

- A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
 - 1. Do not create hazardous or objectionable conditions, such as flooding, and pollution, when using water.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.
- C. Clean adjacent buildings and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

3.06 DEMOLITION

- A. Demolish as required to prepare for new construction, and remove from the site.

- B. Locate demolition equipment throughout the building and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- C. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
- D. Promptly repair damages to adjacent facilities caused by demolition operations.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

- A. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning demolished materials is not allowed.
- C. Transport demolished materials off Owner's property and legally dispose of these materials.

END OF SECTION

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SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Plywood Sheathing, miscellaneous blocking and rough hardware.

1.02 REFERENCE STANDARDS

- A. Softwood Lumber: PS 20 - American Softwood Lumber Standard.
- B. NFPA - National Forest Products Association, National Design Specifications for Stress Grade Lumber and its Fastening.
- C. West Coast Lumber Inspection Bureau (WCLIB), Standard No. 17 Grading Rules for West Coast Lumber.
- D. Chapter 23, Part 2, Section 2303, Title 24, California Building Code, 2019.
- E. Chapters 7, 23 and 35, California Building Code, 2019.
- F. Plywood: U.S. Product Standard PS 1-09.
- G. Lumber: U.S. Product Standard, PS 20-10.

1.03 QUALITY ASSURANCE

- A. Provide lumber with visible grade stamp of an approved agency certified by NFPA.

1.04 DELIVERY, STORING AND HANDLING

- A. Deliver and store materials at job site in a safe area, out of traffic and shored up, off ground surface.
- B. Identify framing lumber by grades and store grades separately from each other.
- C. Protect products with adequate waterproofing.
- D. Exercise care in off-loading lumber to prevent damages, splitting and breaking.
- E. Seasoning:
 - 1. Deliver materials at earliest date possible to allow maximum; drying time on site.
 - 2. Pile and strip lumber at site to allow free circulation of air with pile protected from sun and moisture.
 - 3. Air-season lumber for at least 60 days before covering with finish materials.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Lumber: PS 20 and WCLIB Standard Number 17; Douglas Fir/Larch; graded in accordance with NFPA Grading Rules; maximum moisture content of 19 percent, grades as scheduled on drawings.
 - 1. Douglas fir shall bear WCLIB grade stamp.
 - 2. Pressure treated Douglas fir shall be No. 2 minimum and bear the AWPAs quality mark. Cuts and holes shall be treated per AWPAs Standard U1 (statements such as "or to refusal" are not permitted).
 - 3. Comply with provisions of Title 24, CBC, 2019, Part 2, Section 2303.
- B. Plywood:
 - 1. Plywood for Roofs, Walls, and Floor Sheathing: PS 1-09 Structural I grade, APA C-D, exterior glue, except B-D for electrical and telephone panels.
 - 2. Comply with CBC, 2019, Section 2303.
 - 3. Roof and shearwall plywood shall be nominally 4 ft. x 8ft. in size. Do not use sheets less than 8 square feet, nor less than dimensions noted in paragraph 3.05 Plywood Placement.

2.02 ACCESSORY MATERIALS

- A. Nails, Spikes, and Staples: Common (with standard lengths), except as otherwise indicated, galvanized for exterior locations, high humidity within conditioned spaces, and treated wood; plain finish for other interior locations; size and type to suit application.
- B. Steel Hardware and Stock Framing Products by Connectors: ASTM A36 steel, galvanized for exterior applications, Simpson Strong-Tie Company. Products by KC Metal Products, or other approved manufacturer, may be substituted if shown to be equal and approved by structural engineer. Comply with CBC, 2019, Title 24, Part 2, Chapter 23.
- C. Lag Bolts: ANSI/ASME B18.2.1 and ASME B18.18.1.
- D. Wood Preservative: Wolmanizing treatment at least two weeks prior to delivery to site. Treatment shall meet or exceed AWPAs P5.
- E. Machine Bolts: ASTM A307.
- F. Pressure Treatment: Sills and plates in contact with concrete or masonry within 48 inches of the ground, and wood posts and columns bearing directly on concrete shall be water-borne preservative pressure treated in accordance with paragraph, CBC 2019, Title 24, Part 2, Chapter 23.
 - 1. At cuts, holes, notches and other field operations which expose a surface not factory treated with preservative, field apply preservative material compatible with original material shall bear mark AWPAs Standard U1.

2. Meet local Air Quality Control Board Standards for field applied preservative treatment.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Selection of Lumber: Carefully select members. Ensure that exposed members are free of heart center. Select members so that knots and obvious defects will not interfere with placement of bolts, proper nailing or making proper connections, and not impair achievement of proper finished appearances where to be exposed.
- B. Cut out and discard defects which will render a piece unable to serve its intended function. Lumber may be rejected by Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.

3.02 SHIMMING

- A. Do not shim framing member except where specifically shown or required by drawings.

3.03 BLOCKING

- A. Install blocking required to support items of finish and to cut off concealed draft openings, both vertical and horizontal, between ceiling and floor.

3.04 ALIGNMENT

- A. On framing members to receive a finished surface, align finish sub-surface to vary not more than 1/8-inch from plane of surface of adjacent framing and furring members.

3.05 PLYWOOD PLACEMENT

- A. All installed plywood shall be in 4' x 8' sheets except where restricted by boundaries or changes.
- B. Minimum Plywood Panel Sizes shall be as follows:
 1. In horizontal plywood diaphragms, no panel less than 24 inches wide or 48 inches long shall be used.
 2. In vertical plywood diaphragms, no panel less than 16 inches wide shall be used.
- C. Center joints accurately over support unless otherwise shown on Drawings. Provide gapping of plywood substrate of 1/8-inch at abutting joints at all wall.
- D. Protect plywood from moisture until succeeding component or materials are installed to cover plywood. Delaminating plywood shall be removed and replaced.

3.06 FASTENING

- A. Use only common wire nails or spikes of standard lengths and gages as specified Table 2304.9.1, of the California Building Code, 2019.

- B. For conditions not covered on drawings, Contractor to request clarification or provide penetration into piece receiving point not less than 1/2 length of the nail or spike, provided that 16d nails may be used to connect two pieces of nominal 2 inch thickness as specified by the Architect, and/or Structural Engineer and approved by the Division of the State Architect.
- C. For bolts, drill holes 1/32-inch to 1/16-inch larger in diameter than bolts being used. Drill straight and true from one side only.
- D. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood. Use washers under nuts.
- E. For lag-screws, and wood screws, pre-bore holes in accordance with CBC 2019, Title 24, Part 2, Chapter 23.
- F. Screw, do not drive, lag screws and wood screws.
- G. Nailing schedule shall be per CBC 2019, Title 24, Part 2, Chapter 23.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Flashings, counter flashings, seismic joint covers, vents, and copings for use in situations where patching must occur due to installation of safety remediation. Confirm compatibility with manufacturer for field conditions and roof and coping types.
- B. Related Sections:
 - 1. Joint Sealants; refer to Section 07 92 00.

1.02 REFERENCE STANDARDS

- A. Preform sheet metal work, including fabrications, in strict accordance with Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) Architectural Sheet Metal Manual, and the Aluminum Association.

1.03 SUBMITTALS

- A. Submit copies of standard details covering all sheet metal conditions and fabrications to be necessary on the project. Where standard details do not exist, prepare and deliver such details to Architect.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Fabricate sheet metal items from sheet steel in accordance with ASTM A653, galvanized in accordance with ASTM A653, G90. Galvanizing on exposed surfaces not receiving paint shall receive an appearance grade finish.
- B. Unless shown otherwise on Drawings, provide steel sheet metal of at least 22 gauge steel.
- C. Where sheet aluminum is shown on Drawings, provide 0.032-inch thickness (20 gauge) and in accordance with ASTM B209, for 3003-H14, in color finish as selected by Architect.
- D. Extruded Aluminum: Manufacturer's standard extrusions of sizes and profiles indicated, and in accordance with ASTM B221 for 6063-T52 alloy and temper, AA-C22A41 clear anodized finish; 0.080-inch minimum thickness for primary legs of extrusions that are anodized.
- E. Stainless Steel: AISI Type 302/304, complying with ASTM A167, with No. 2D soft annealed finish, except where harder temper required for forming or performance; 0.0187-inch (.05 mm) thick, except as otherwise indicated.

2.02 ACCESSORIES

- A. Fasteners and Clips: Provide as required and appropriate for the materials being fastened. Where fasteners or clips may be exposed to outside weather conditions, provide stainless steel type.
 - 1. Provide fasteners such as bolts, screws and nails hot-dip galvanized as specified in accordance with ASTM A153.
- B. Where rivets will be used, provide malleable iron type with rust-inhibitive coating.
- C. If drive pins are incorporated into work, provide cadmium plated with neoprene facing, at least one-inch long, with neoprene washers.
- D. Solder: For use with steel or copper, provide 50 - 50 tin/lead solder (ASTM B32) with rosin flux.
- E. Solder: For use with stainless steel, provide 60 - 40 tin/lead solder (ASTM B32) with acid-chloride type flux, except use rosin flux over tinned surfaces.
- F. Bituminous Coating: Solvent-type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.
- G. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- H. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed and complying with requirements for joint sealants as specified in Section 07 92 00 Joint Sealants.
- I. Epoxy Seam Sealer: Two part noncorrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.
- J. Adhesives: Type recommended by flashing sheet manufacturer for waterproof/weather-resistant seaming and adhesive application of flashing sheet metal.
- K. Paper Slip Sheet: 5 lbs. rosin-sized building paper.
- L. Polyethylene Underlayment: Minimum 6-mil carbonated polyethylene film resistant to decay when tested in accordance with ASTM E154.
- M. Reglets: Metal or plastic units of type and profile indicated, compatible with flashing indicated, noncorrosive.
- N. Conductor-Head Guards: 20 gage bronze or nonmagnetic stainless steel mesh or fabricated units, with selvedge edges and noncorrosive fasteners. Select materials for compatibility with gutters and downspouts.
- O. Elastic Flashing Filler: Closed-cell polyethylene or other soft closed-cell material recommended by elastic flashing manufacturer as filler under flashing loops to ensure movement with minimum stress on flashing sheet.

2.03 FABRICATION

- A. General Metal Fabrication: Shop fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. For metal other than aluminum, in edges to be seamed, form seams and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently weather/waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- D. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
- E. Separations: Provide for separation of metal from incompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- F. Aluminum Extrusion Units: Fabricate extruded aluminum running units with formed for extruded aluminum joint covers. Fabricate mitered and welded corner units.

2.04 PREFABRICATED COPINGS AND FLASHINGS

- A. Provide factory prefabricated 0.050" aluminum continuous snap-on type copings with concealed mounting plate at joints. Copings shall be maximum 10' lengths. Mounting plate shall be extended 5 inches minimum beyond space between coping lengths. Secure cover plate according to manufacturers' recommendations. Provide copings manufactured by W.P. Hickman, or others, as approved by Architect. Provide flashing manufactured by Fry Reglet or other as approved by Architect.
 - 1. Pre-finish coping in Kynar 500 coating of custom color as selected by Architect.
 - 2. Copings shall be Factory Mutual Class I-90 certified. Provide certification to Architect.
 - 3. Arched copings shall be factory pre-fabricated true-arch copings, CNC machine cut heli-arc welded and finish ground prior to Kynar 500 finish. Segmented copings shall not be accepted. Arched coping sections shall be fabricated from 0.063" aluminum and not exceed 5' in length."

PART 3 – EXECUTION

3.01 PREPARATION

- A. Inspect substrate conditions prior to installation of sheet metal items. Conditions which could be detrimental to correct and proper installation of sheet metal assemblies are to be called to the attention of the Owner for their disposition prior to sheet metal work being installed.
- B. Coordinate fabrication and installation of sheet metal items with work of others such as roofing, curtainwall and windows, sealants, mechanical and electrical.

3.02 INSTALLATION

- A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. Underlayment: Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.
- C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- D. Install reglets to receive counterflashing in manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division 3 sections. Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division 4 sections.
- E. Install counterflashings in reglets, either by snap-in seal arrangement or by welding in-place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated in depending on degree of sealant exposure.
- F. Install elastic flashing in accordance with manufacture's recommendations. Where required, provide for movement at joints by forming loops or bellows in width of flashing. Locate cover or filler strips at joints to facilitate complete drainage of water for flashing. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.
- G. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches o.c. Fabricate seams at joints between units with minimum 3 inch overlap, to form a continuous, waterproof system.
- H. Conductor Head Guards: Install "bee-hive type" strainer-guard at conductor heads, removable for cleaning downspouts.
- I. Flash around exterior openings in the building where other waterproofing methods are insufficient.

3.03 JOINTS

- A. Typically, provide flat locked joints with sealant between metal surfaces, unless shown otherwise. Where standing seams are required, provide with folded corners.
- B. Provide minimum of 1 inch laps.
- C. Where concealed joints are possible, provide flat locked joints with 3 inch reinforcing behind, set in full bed of sealant
- D. Do not leave sheet metal joint unsealed. See sealant section of these specifications.

3.04 INSPECTION

- A. Immediately following installation of sheet metal work, touch-up areas where primer has been removed during installation operations and where soldering has occurred.
- B. Where architectural coatings are provided, touch-up marred or abraded finishes with compatible coating which can be expected to provide the same serviceability as factory applied coatings.

3.05 CLEANING

- A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

3.06 PROTECTION

- A. Advise Contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION

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SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide materials, labor and equipment necessary for the completion of ladder support brackets, roof hatch guardrail and swing gate, and ballasted and non-ballasted railings, and seismic restraints.
- B. Related work:
 - 1. Sheet Metal Flashing and Trim; refer to Section 07 62 00.
 - 2. Automatic Smoke Vents, refer to Section 07 72 36
 - 3. Warning and safety striping, refer to Section 09 90 00.
 - 4. Signage, refer to Section 10 14 00.

1.02 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane, base flashing, interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions by verifying existing conditions in the field.

1.03 SUBMITTALS

- A. Product Data: For each type of roof accessory.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, finishes, and installation and operation instructions
- B. Shop Drawings: For each type of roof accessory.
 - 1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.
- C. Coordination Drawings: For each type of roof accessory. Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
 - 1. Size and location of roof accessories specified in this Section.
 - 2. Method of attaching roof accessories to roof or building structure.
 - 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
 - 4. Required clearances.

1.04 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.
- B. Warranty: Manufacturer's standard warranty unless noted otherwise.

1.05 PRE-INSTALLATION MEETING

- A. Convene meeting at Project Site within one week of scheduled start of submittals with representatives of the following in attendance: Owner or Owner's designated representative, Inspector, Architect, Contractor, sub-contractor and manufacturer's representatives.
- B. Review existing conditions, requirements of related work, installation instruction, storage and handling procedures and protection measures.
- C. Contractor to provide meeting minutes.

PART 2 - PRODUCTS

2.01 LADDER SUPPORT BRACKET

- A. Provide ladder support brackets and installation per manufacturers installation requirements. Installers must possess industry licenses, be appropriately trained, and comply with all relevant OSHA legislation during installation of the products.
- B. Do not modify or remove any existing structural component or product without prior authorization by architect and engineer. Provide generous bead of silicone around fastener penetrations per manufacturer instructions.
- C. Provide manufacturer standard 10 year warranty.
- D. Do not use on roofs over 20 feet high due to limitations of ladders. Notify architect of height concerns for product modifications.
- E. Basis-of-Design:

Fixfast USA, Kattdock Ladder Support Brack LD401 Wall/Parapet Mount and LD402 Gutter Mount.
www.fixfastusa.com/fixed-ladders/kattdock

3921 Perry Blvd., Whitestown, IN 46075; 888-637-7872
Email: sales@fixfastusa.com

- 1. Features:
 - a. Ladder rung support
 - b. Tie-off points
 - c. Stainless steel construction
 - d. Fixing slots for attachment to structure

- e. Pitch adjustment for attachment to varying roof pitches
 - f. Ladder angle adjustment to keep rung support level
- 2. Weight: wall-mount 2.30kg, gutter/parapet mount 3.70kg
 - 3. Dimensions: wall-mount 480mm (W) x 160mm (D) x 240mm (H), gutter/parapet mount 480mm (W) x 480mm (D) x 70mm (H)
 - 4. Installation: Must be installed by competent and manufacturer accredited persons.
 - 5. Finish: Powder coated. Architect to select from manufacturer's standard colors.

2.02 NOT USED

2.03 ROOF HATCH GUARDRAIL AND SWING GATE

- A. Where indicated in the drawings, provide roof hatch guardrail and swing gate complying with OSHA 29 CFR 1910.23 and installation per manufacturers installation requirements. Installers must possess industry licenses, be appropriately trained, and comply with all relevant OSHA legislation during installation of the products. Remove existing hatch guardrails, E-Z up poles, and swing gates where indicated, including roof-mounted guardrails. Patch hatch and roofing to achieve water-tight assembly. Refer to specifications 01 73 29 Cutting and Patching and 02 41 19 Selective Demolition.
- B. Do not modify or remove any existing structural component or product without prior authorization by architect and engineer. Provide generous bead of silicone around fastener penetrations per manufacturer instructions.
- C. Fastener per manufacturer's instructions and provide weathertight fastening.
- D. Maintain the integrity of the roof and roof hatch.
- E. Notify architect of any concerns with existing roof hatches or mounting concerns.
- F. Field verify all existing roof hatches and provide manufacturer's correct model for each roof hatch based on curb size ranges. Contract shall include custom size roof hatch railings as required to accommodate existing conditions.
- G. Provide full railing around roof hatch opening with self-closing gate at open side of hatch, typical. Where indicated, or as required by existing conditions, provide self-closing gate at side of hatch for safe access to roof. All components to be powder coated or galvanized finish.
- H. Provide manufacturer's standard warranty.
- F. Basis-of-Design:

A-Mezz Industrial Structures, Inc., Roof Hatch Railings
<https://www.amezz.com/roof-hatch-safety-railing.html>

Cleveland, Ohio 44236; 330-650-5561
Email: indsales@amezz.com

1. Size: Varies by location. Contractor to verify in field.
2. Finish: Powder coated. Architect to select from manufacturer's standard colors.
3. Installation: Gasketed connection to bolt directly to roof hatch curb. No piercing of roofing membrane.
4. Design requirements: OSHA Standard 29 CFR 1910.23 (a) (2)
5. Features: four-sided hatch protection with two hand rungs one at each side of the ladder
6. Gate: MLG self-closing gate, hot dipped galvanized finish

2.04 BALLASTED RAILINGS

- A. Verify all conditions in field prior to submittal of shop drawings. Check actual dimensions of existing conditions by accurate field measurements before fabrication. Minimize the number of guardrail units where possible. Field verify for pipes, parapets, equipment and other items which impact the routing and size of the rails prior to fabrication and notify architect of any concerns regarding rail location or feasibility.
- B. Design Requirements:
 1. California Occupational Safety and Health Administration (CAL OSHA):
 - 1620 - Design of Temporary Railing
 - 1621 – Railings and Toe Boards
 - 3209 – Standard Guard rails at Elevated Locations
 - 3212 – Floor Openings, Floor Holes and Roofs
 2. Occupational Safety and Health Administration (OSHA):
 - 29 CFR 1910.28 – Duty to have fall protection & falling object protection
 - 29 CFR 1910.29 – Fall protection systems / criteria & practices
 - 29 CFR 1926.501 – Duty to Have Fall Protection
 - 29 CFR 1926.502 – Fall Protection Systems Criteria and Practices
 - 29 CFR 1926.503 – Training Requirements
- C. Finish: Hot Dipped Galvanized, unless noted otherwise.
- D. Basis-of-Design: Typical guardrail system unless noted otherwise.

Diversified Fall Protection – Lorguard Guard Rail: Provide non-penetrating guard rail system.
www.fallprotect.com

24400 Sperry Drive; Cleveland, OH 44145; 1-844-958-1128
Email: mpittner@fallprotect.com

1. Roof Slope: 1 ½:12 or less
2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.29 (b)(1)(2).
3. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1926.502.

4. Height: 42 inches (1067 mm), minimum.
 5. Railings: 1.66 inch diameter galvanized steel tubing, free of sharp edges and snag points. Available in 6'-0" (34 lbs.), 8'-0" (41 lbs.), and 10'-0" (48 lbs.) lengths. Rails may be spliced in the field as required. The Contractor shall verify existing conditions to locate base plates and railings in coordination with existing conditions. Where railing segments and locations are specifically identified in the plans, no revisions are permitted without review of the architect and structural engineer.
 6. Base Plates: Light weight, 10" x 30" x 5/8", 59 lb. hot dipped galvanized steel plate with non-skid pads manufactured from EPDM rubber, two receiver posts, carrying handle, and radius corners.
 - A. Outline each base plate with a painted stripe to identify the intended base plate location. Refer to painting and coating specification 09 90 00.
 7. Receiver Posts: Shall be welded to the base plate and rail sections shall be secured by set screws. Friction locking systems are not allowed. Receiver posts shall have drain holes.
 8. Installation: Install per manufacturer requirements and OSHA regulations. Base plate shall be no closer than 24" to roof edge, except where parapet occurs.
 9. Warranty: Provide manufacturer's standard two year warranty.
 10. Accessories:
 - a. Outrigger: Each rail system shall have a full rail turnback perpendicular to the leading edge at the beginning and end of each rail in manufacturer's standard lengths, unless otherwise noted. Where continuous railing run exceeds 30'-0", provide intermediate outriggers, not more than 30'-0" per space per manufacturer requirements.
 - b. Safety Swinging Gate: 23" tall x 23"-38" wide, adjustable, self-closing. 36" wide unless otherwise indicated.
 - c. Rail Splice Kit: Available for in the field custom length adjustability. In no circumstance shall the railing be less than 4'-0" in length.
 - d. Ridge Connection: Per manufacturer recommendations, at change in roof slope, tie individual railings together with a pipe mounted to each horizontal rail with Kee Klamp 16-7 pieces.
 11. Additional Details: Product data sheet has been included in specifications with additional product detail, which is required as part of the Contract Documents.
- E. Basis-of-Design: Where indicated on drawings, provide:
- Safeguard Industries – VersiRail: Provide non-penetrating guard rail system.
www.safeguard-industries.com/versirail-for-roofing.html
- 10447 50 Street SE; Calgary, AB T2C 3E3; 1-888-936-0752
Email: mpittner@fallprotect.com
1. Roof Slope: 2:12 or less
 2. Standards: System shall have top and mid rail in accordance with OSHA Standards - 29 CFR 1910.29 (b)(1)(2).

3. Structural Load: 200 lb (90.7 kg), minimum, in any direction to all components in accordance with OSHA Regulation 29 CFR 1926.502.
 4. Railings: 1.57 inch diameter aluminum, corrosion-resistant, free of sharp edges and snag points. Freestanding straight uprights spaced no more than 69" on center with weights totaling 110lbs. on each upright. Railings are available in 3.0m and 6.0m lengths. The weight of each rail is .74kg/m and upright posts are 2kg each. The drawings do not always depict the number of railing segments or base plates required. The Contractor shall verify existing conditions to locate base plates and railings in coordination with existing conditions. Where railing segments and locations are specifically identified in the plans, no revisions are permitted without review of the architect and structural engineer.
 - a. Height: 42 inches (1067 mm), minimum.
 - b. Length of base: 3'-10"
 5. Counterweight: 1'-6" x 1'-1 1/2", 112lb. at each base. Sacrificial layer to be laid under each upright to match existing roof material, size: 4'-10" x 2'-0".
 6. Receiver Posts: Shall have a positive locking system into slots that allow rails to be mounted in any direction. Friction locking systems are not allowed. Receiver posts shall have drain holes.
 7. Installation: Install per manufacturer requirements and OSHA regulations. Where a parapet occurs, the base may be placed directly against the parapet.
 8. Additional Details: Product data sheet has been included in specifications with additional product detail, which is required as part of the Contract Documents.
- F. Basis-of-Design: Where custom roof guardrail system or non-ballasted guardrail systems are indicated on drawings, provide:

FixFast USA – KattGuard GR36 Surface Mounted Aluminum Guardrail
www.fixfastusa.com/roof-guardrail/surface-mount

3921 Perry Blvd., Whitestown, IN 46075; 888-637-7872
Email: sales@fixfastusa.com

1. Finish: Mill finish 6106-T6 aluminum
2. Standards: OSHA 1926.501(b), 1910.28(b)
3. Height: 42 inches minimum.
4. Railings: 1-5/8" kneerail tube and 2" diameter handrail tube, aluminum 6106-T6, free of sharp edges and snag points. Upright posts spaced no more than 10'-0". The Contractor shall verify existing conditions to locate base plates and railings in coordination with existing conditions. Where railing segments and locations are specifically identified in the plans, no revisions are permitted without review of the architect and structural engineer.
 - a. All corners are to be joined by KattGuard adjustable handrail and kneerail elbows.
 - b. All exposed handrail and kneerail ends to be terminated with end caps or closure bends.
 - c. All hardware is to be stainless steel.

5. Anchor System: KATTPPOINT anchor system double stud plate with project specific roof membrane pre-attached to ensure a waterproof connection and maintain the roof warranty. Permanently anchored to the structure. Contractor to verify existing roof membrane type, color and brand with District prior to ordering.
6. Installation: Install per manufacturer requirements and OSHA regulations.
7. Warranty: Provide manufacturer's standard ten year warranty.
8. Additional Details: Product data sheet has been included in specifications with additional product detail, which is required as part of the Contract Documents.

G. Substitutions:

1. Substitution of the basis of design ballasted railings will require the Contractor to provide revised plans and structural engineering calculations for submittal and approval by the Division of the State Architect. Plans and calculations must be stamped and signed by an engineer licensed in the State of California and submitted as a construction change directive. Any added costs resulting from this substitution, including Owner and Architect costs, will be the Contractor's responsibility.

2.05 SEISMIC RESTRAINT AND ANCHOR PLATE

- A. Where seismic restraints are indicated in the drawings, provide an anchor plate for attachment.
- B. Product to be compatible with existing roof material. Contractor to verify existing roof manufacturer and acceptable product.
- C. Warranty: Maintain existing roofing warranty / guarantee.
- D. Installation: Install per manufacturer requirements.
- E. Anchor plate assembly (plate and integrate bolt) shall have testing results stating it is capable of resisting an ultimate load of 900 lb. in tension and 900 lb. in shear. Alternatively, the manufacturer may provide data showing the product can resist an allowable load of 300 lb. in both tension and shear, with a safety factor of 3.
- F. Basis-of-design:

For JohnsManville Roofs:
JohnsManville, ENRGY Anchor
www.jm.com

P.O. Box 5108, Denver, CO 80217
Charles Laughery E-mail: charles.laughery@jm.com

1. Properties: Weight .5 lb., dimensions 11.75" x 11.75", membrane thickness 60 mil., plate dimensions 5.5" round, plate gauge #20, stud 3/8"-16 x 3/4" stainless steel

For Sarnafil Roofs:
Anchor Products, U-Anchor
www.anchorp.com/u-anchors

P.O. Box 1551

Colleyville, TX 76034

1. Properties: Weight 0.36 lb., dimensions 9.75" x 9.75", membrane thickness 60 mil., plate dimensions 3.625" x 3.625", plate thickness .039" G90 galvanized steel, stud 3/8"-16 x 1.5" 304 stainless steel
- G. For alternate products or existing roofs by other manufacturers, Contractor shall verify anchor plate compatibility with existing roofing membrane's manufacturer and submit written statement of compatibility from the manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.
- E. Verification of Conditions: Verify that units are adequately braced for seismic conditions and loads, and that conjunctive roofing, mechanical and electrical operations will provide a watertight and weathertight installation.

3.02 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
 2. Coordinate installation of roof accessories with other construction involving roof accessories to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight.
 3. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 4. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 5. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
- C. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.

D. Roof-Hatch Guardrail Installation:

1. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
2. Attach safety railing system to roof-hatch curb.

E. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.02 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780/A 780M.
- B. Clean exposed surfaces according to manufacturer's written instructions.
- C. Clean off excess sealants.
- D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION

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Protect Your Roof and Personnel With Non-Penetrating Guard Rail Systems & Solutions



LORGUARD™ GUARD RAIL

A versatile and affordable fall protection option



Lorguard™ is a utility safety product that complies with OSHA requirements 1910.29 and 1926.502 for guard rail systems. Lorguard™ is a free-standing, non-penetrating system that does not require attachment to any structure in approved applications.

Compatible with all commercial roofing materials, Lorguard™ is available in standard power-coated safety yellow and galvanized steel in 6', 8', and 10' sections. Custom lengths and colors are available upon request.

Lorguard™ Base Plate Features

- » Light weight, 58 lb. base plate reduces installation time and minimizes roof load
- » Hot dipped galvanized steel plate with non-skid pads
- » Carrying handle and radius corners
- » Set screw design secures railing and eliminates railing wobble
- » Engineered design prevents system overturn

Reasons to Choose Lorguard™ Railing Sections

- » No surface attachment or roof penetrations required
- » Fast installation—insert railing into receiver and tighten set screw
- » Minimal 1-3/16" gap between sections
- » Durable, UV resistant finish
- » Made in USA



Applications

- » Unprotected Roof Edges
- » Ramps, Runways, or Walkways
- » Roof Hatches
- » Construction Sites
- » Sky Lights
- » HVAC Systems
- » Floor Openings
- » Ladders
- » Wells, Pits, Shafts or Manholes

Compatible With All Roofing Materials

- » Membrane
- » Standing Seam
- » Gravel
- » Tar
- » EPDM

ASSOCIATIONS



International
Organization for
Standardization



The American Society of Safety Engineers

fallprotect.com

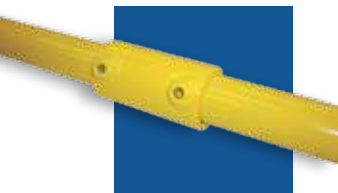


Lorguard™ Accessories and Kits



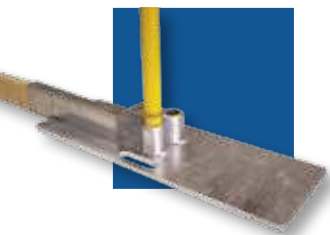
SAFETY SWING GATE

23" tall x 23"-38" wide adjustable, self-closing gate.



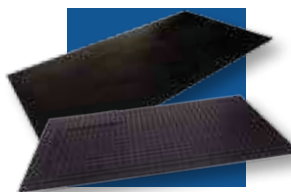
RAIL SPLICE KIT

For in the field custom length adjustability.



TOE BOARDS

Protect people and equipment below from falling tools.



RUBBER PADS

Optional rubber pads add an extra layer of protection between the baseplate and roof surface.



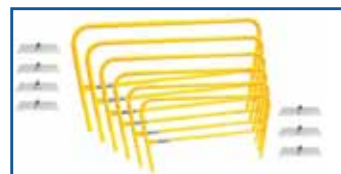
KITS

Roof hatch, HVAC, and contractor kits available.

Roof hatch kits



HVAC kits



Contractor kits

Part Number	Description	Part Number	Description
7900010-Y	6' Lorguard Safety Yellow Guard Rail Section	7900005	Rail Splice Kit
7900011-Y	8' Lorguard Safety Yellow Guard Rail Section	TB-6	6' Toe Board
7900012-Y	10' Lorguard Safety Yellow Guard Rail Section	TB-8	8' Toe Board
7900010-G	6' Lorguard Galvanized Guard Rail Section	TB-10	10' Toe Board
7900011-G	8' Lorguard Galvanized Guard Rail Section	7100001-SY	6' Lorgate Loading Dock Safety Gate
7900012-G	10' Lorguard Galvanized Guard Rail Section	7100002-SY	8' Lorgate Loading Dock Safety Gate
BRP1530	Rubber Studded Base Plate Pad	7100003-SY	10' Lorgate Loading Dock Safety Gate
7900004-G	Galvanized Base Plate	7100004-SY	12' Lorgate Loading Dock Safety Gate
SG233816Y	23" to 38" Adjustable Safety Swing Gate		



24400 Sperry Drive, Cleveland, OH 44145
(ph) 440-348-9460 (fx) 440-348-9455

fallprotect.com

Represented by:



LORGUARD INSTALLATION MANUAL

FAILURE TO FOLLOW THESE INSTRUCTIONS POSES A THREAT TO SAFETY OR HEALTH AND MAY RESULT IN DEATH OR SERIOUS INJURY TO USERS OF THE LORGUARD AND/OR TO THIRD PARTIES. MANUFACTURER EXPRESSLY DISCLAIMS ANY LIABILITY FROM INJURY, DAMAGE, OR OTHER LOSS RESULTING FROM THE IMPROPER OR UNAUTHORIZED INSTALLATION OR USE OF THE LORGUARD.

ASSEMBLE AND USE LORGUARD AS SPECIFIED IN THE INSTRUCTIONS MANUAL TO MEET OSHA COMPLIANCE REGULATIONS, AS STATED, UNDER STANDARDS -29 CFR, 1910.23 & STANDARDS - 29 CFR, 1926.502.11.

TOOLS NEEDED FOR INSTALLATION: ¼" HEX KEY

TOOLS RECOMMENDED: ¼" HEX SOCKET BIT, SOCKET ADAPTOR, CORDLESS IMPACT DRIVER

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PRE INSTALLATION MESSAGE

- ❖ Applications of the LORGUARD should be verified and approved by a competent safety personnel.
- ❖ Verify that the surface the LORGUARD will be installed onto is capable of supporting the product and personnel installing it. A complete assessment of the entire surrounding areas should be made to determine if the walking and working surfaces have the strength and structural integrity to support users safely.
- ❖ Only install LORGUARD on flat dry clean surfaces under conditions where adequate illumination is provided.
- ❖ If a short parapet wall exists, Baseplate can be against it and should be positioned at least 24 inches from the unprotected or leading edge.
- ❖ Always use Outriggers at both ends of a continuous rail section.
- ❖ Each rectangular Baseplate must be installed in the correct orientation. Install the Baseplate with the long side perpendicular or 90 degrees to the LORGUARD as shown in Manual examples.
- ❖ If it is necessary to remove LORGUARD during a portion of a particular job, make sure to re-secure the unit before resuming work.
- ❖ If LORGUARD is impacted, loosen all screws on the BASEPLATE receivers. Realign the LORGUARD and baseplates, and then secure all setscrews. If damaged parts are found, replace with new ones.
- ❖ LORGUARD bases have non-skid pads on the bottom. If a non-skid pad is missing, do not use until one is installed. Contact Diversified Fall Protection immediately.
- ❖ Never erect LORGUARD near electrical wires. Keep a minimum of ten (10) feet from power lines.
- ❖ Never install or use LORGUARD on top of gravel, metal or on slippery surfaces without speaking with a Diversified Fall Protection representative.
- ❖ Routine inspection of all parts is recommended. If damaged parts are found, replace with new parts. Contact Diversified Fall Protection immediately.
- ❖ **DEFINITIONS**

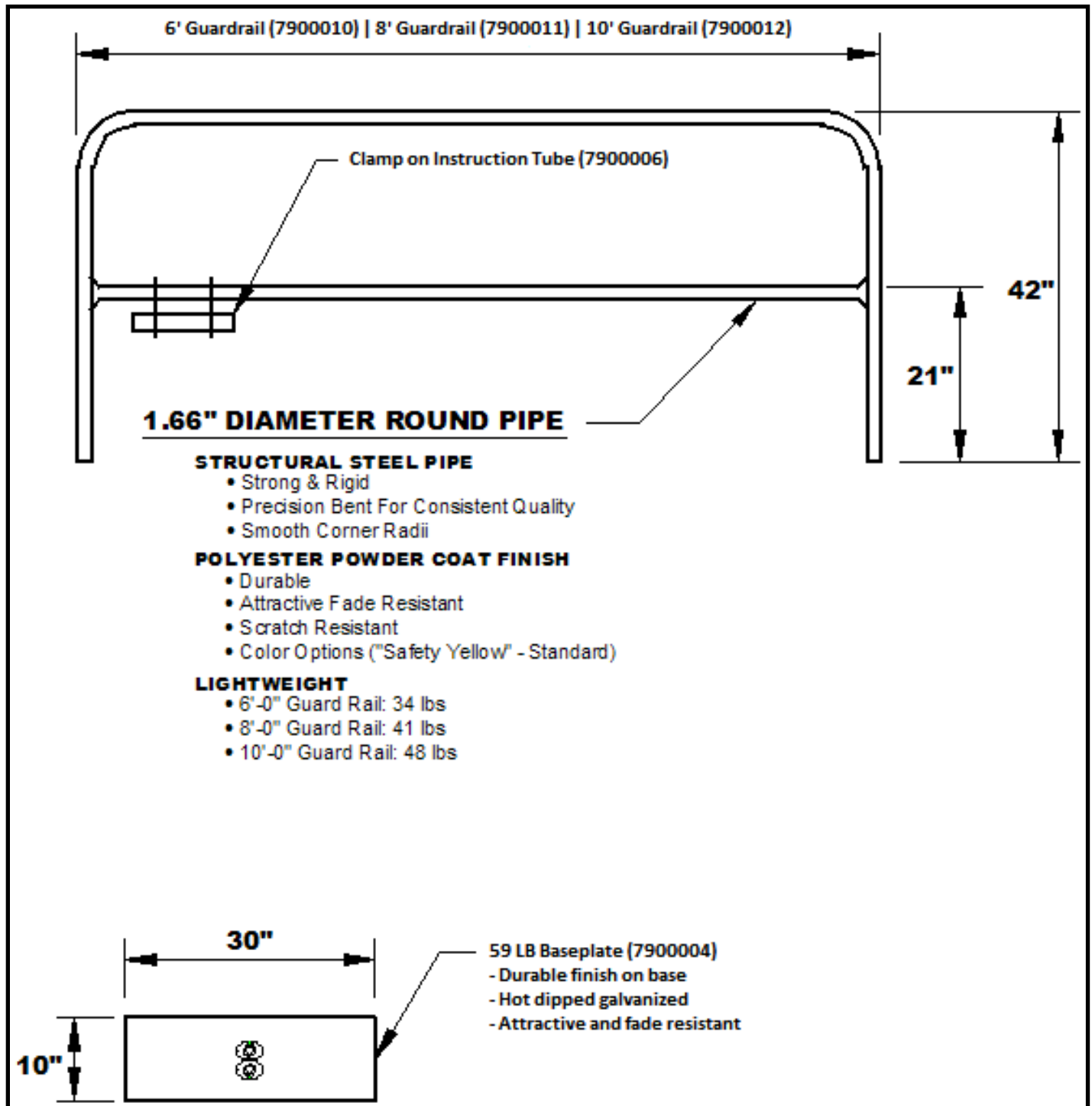
- ❖ **BASEPLATE:** Supporting base for LORGUARD.
- ❖ **COMPETENT PERSON:** Defined by 29 CFR 1926.32 (f) as someone *...who is capable of identifying existing and predicable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them...*
- ❖ **CONTINUOUS RUN:** A single or series of LORGUARD modular LORGUARD sections installed in a continuous, without interruption, straight line.
- ❖ **LEADING EDGE:** The edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof or deck, or formwork sections are placed or constructed. A leading edge is considered an unprotected side and edge.
- ❖ **LORGUARD:** A passive restraint fall protection system secured to uprights and erected along exposed edges and ends of platforms, catwalks, or rooftops to prevent falls of persons.
- ❖ **OUTRIGGER:** A 6 foot, 8 foot or 10 foot long LORGUARD installed at a 90 degree angle to a continuous run with a BASEPLATE connected to it.1
- ❖ **QUALIFIED PERSON:** Defined by 29 CFR 1926.32 (m) as someone...*who, by possession of a recognized degree, certificate, professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, work, or the project...*
- ❖ **TOEBOARD:** A low protective barrier that will prevent the fall of materials and equipment to lower levels.
- ❖ **UNPROTECTED SIDE AND EDGE:** Any side or edge (except at entrance points of access) of a walking/working surface, e.g. floor, roof, ramp, or runway where there is no wall or LORGUARD system.

LORGUARD PARTS LIST

- ❖ **7900010 (6 FOOT), 7900011 (8 FOOT), 7900012 (10 FOOT) MODULAR LORGUARD:** which are 6 feet, 8 feet and 10 feet long. Each LORGUARD section is 42 inches tall with a mid-rail 21 inches high. Standard color of the LORGUARD is safety yellow while other colors and finishes are available upon request.
- ❖ **7900004 BASEPLATE:** The Baseplate is a rectangular flat base, containing two receivers that the corresponding Modular LORGUARD is placed within. The receiver fittings are designed to accept LORGUARD sections, **7900010 (6 FOOT), 7900011 (8 FOOT), 7900012 (10 FOOT)**. Standard finish baseplate is hot dipped galvanized.
- ❖ **7900005 SPLICE KIT:** The Splice Kit is a fitting used to create custom length of the Modular LORGUARD.
- ❖ **OPTIONAL UNIVERSAL TOEBOARD BRACKET:** The Toeboard(s) is only required when it is possible objects could fall from the work area to a lower level.
- ❖ **OPTIONAL 7900006 INSTRUCTION TUBE:** The Instruction Tube attaches to the LORGUARD mid-rail. In the Instruction Tube are Installation Instructions, and one Allen Wrench tightening tool. Standard color of the tube is safety yellow while other colors and finishes available upon request.
- ❖ **OPTIONAL BRP1530 RUBBER ROOF PADS:** The Rubber Roof Pad(s) is a protective accessory that withstands environmental conditions while providing traction for personnel to conduct work upon the roof, or other outdoor surfaces.
- ❖ **SWING GATE:** The Swing Gate is a self-closing gate designed for use with Modular LORGUARD. Standard color of the Swing Gate is safety yellow while a hot-dipped galvanized finish is also available upon request.

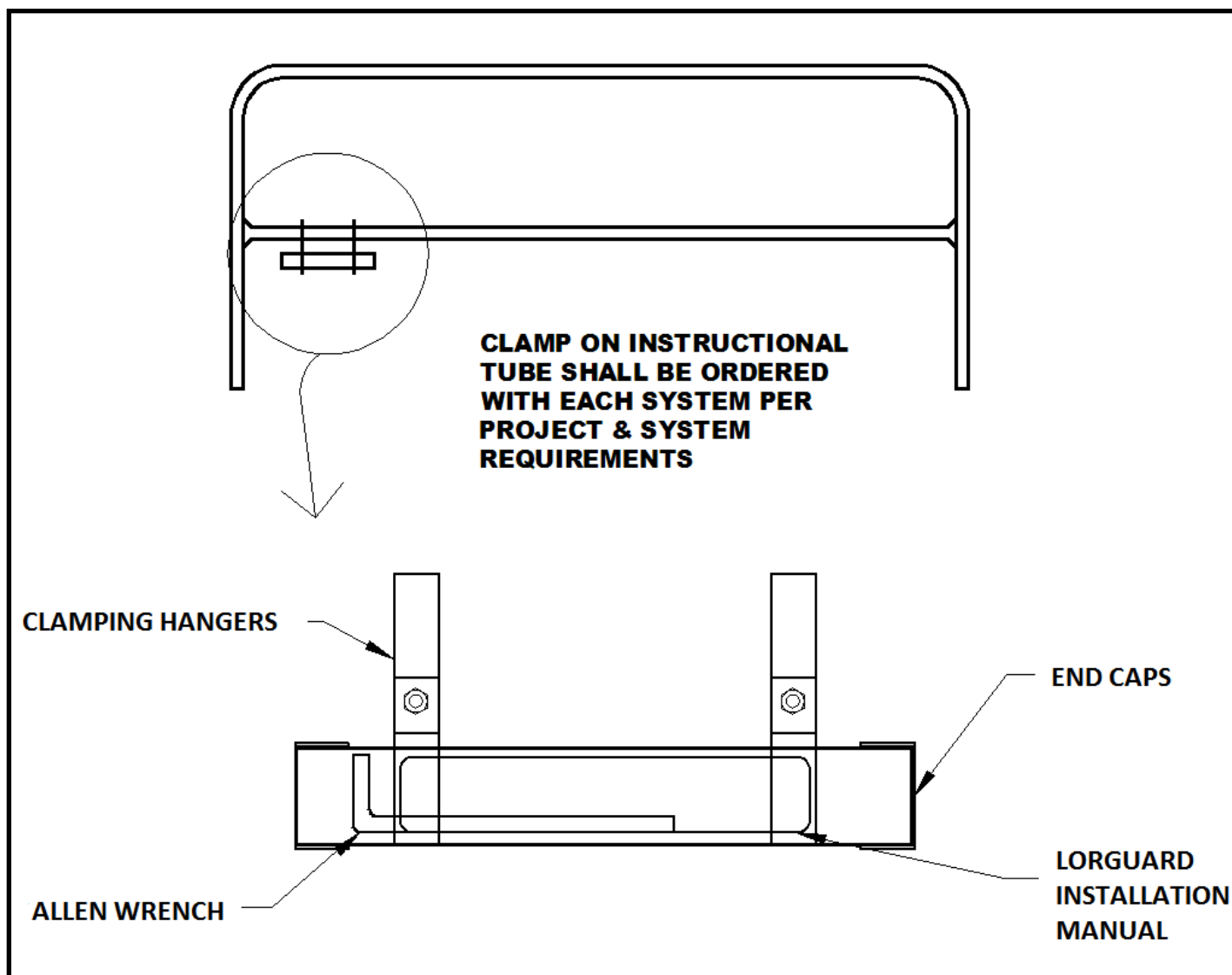
LORGUARD SPECIFICATION

LORGUARD



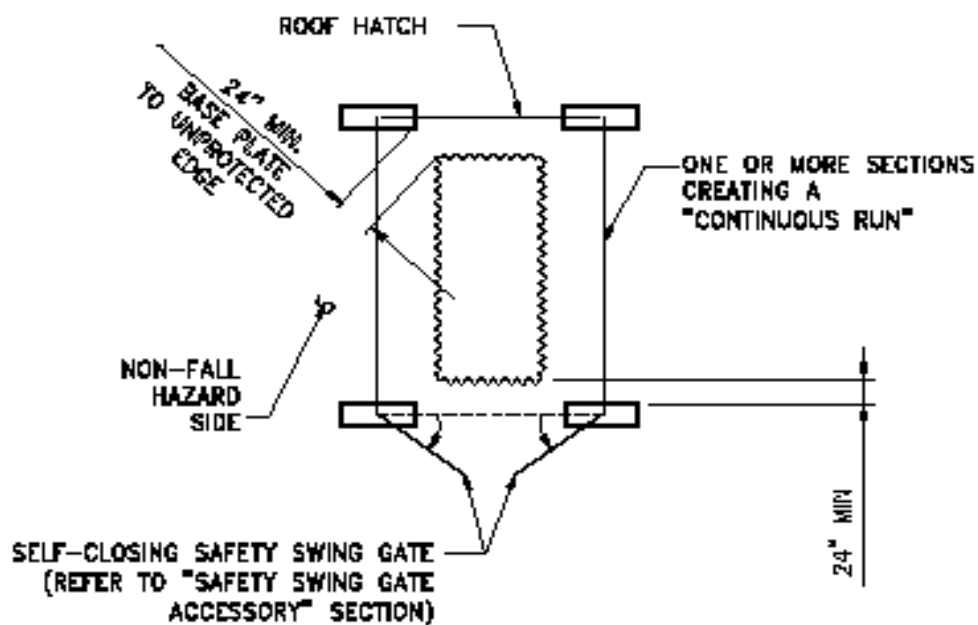
LORGUARD SPECIFICATION

Instruction Tube Accessory

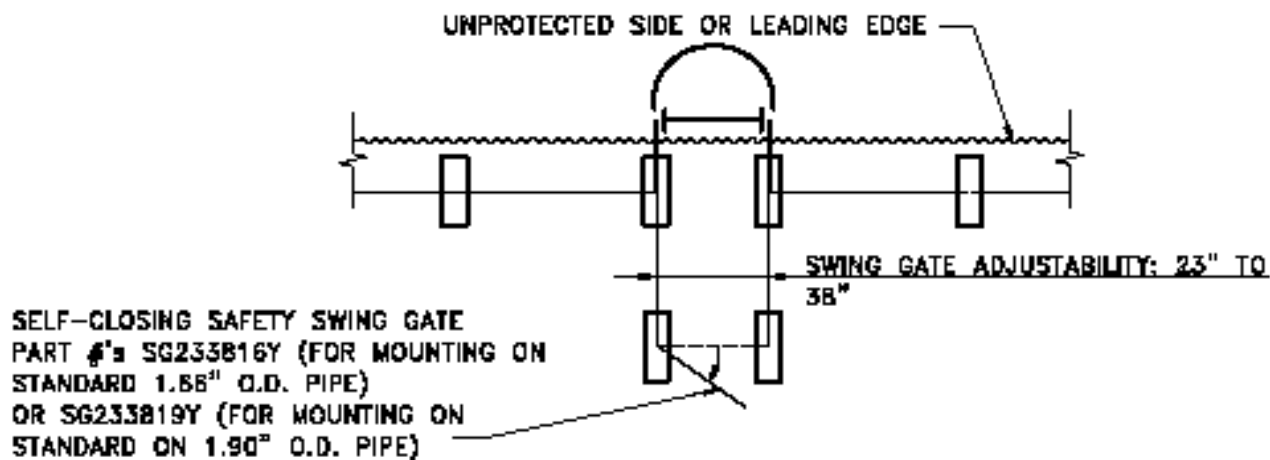


LORGUARD SPECIFICATION

Swing Gate Accessory

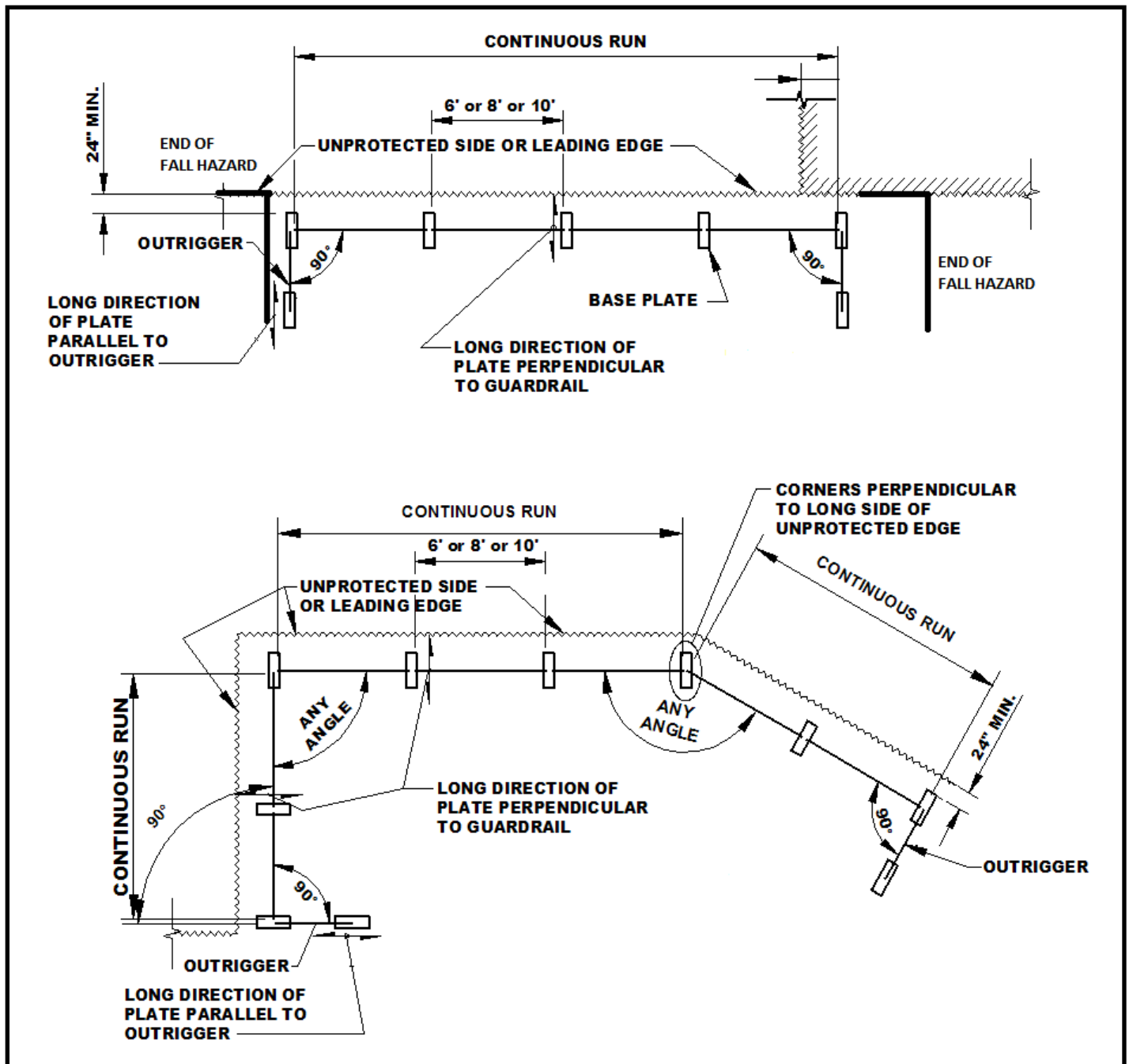


ROOF HATCH ACCESS



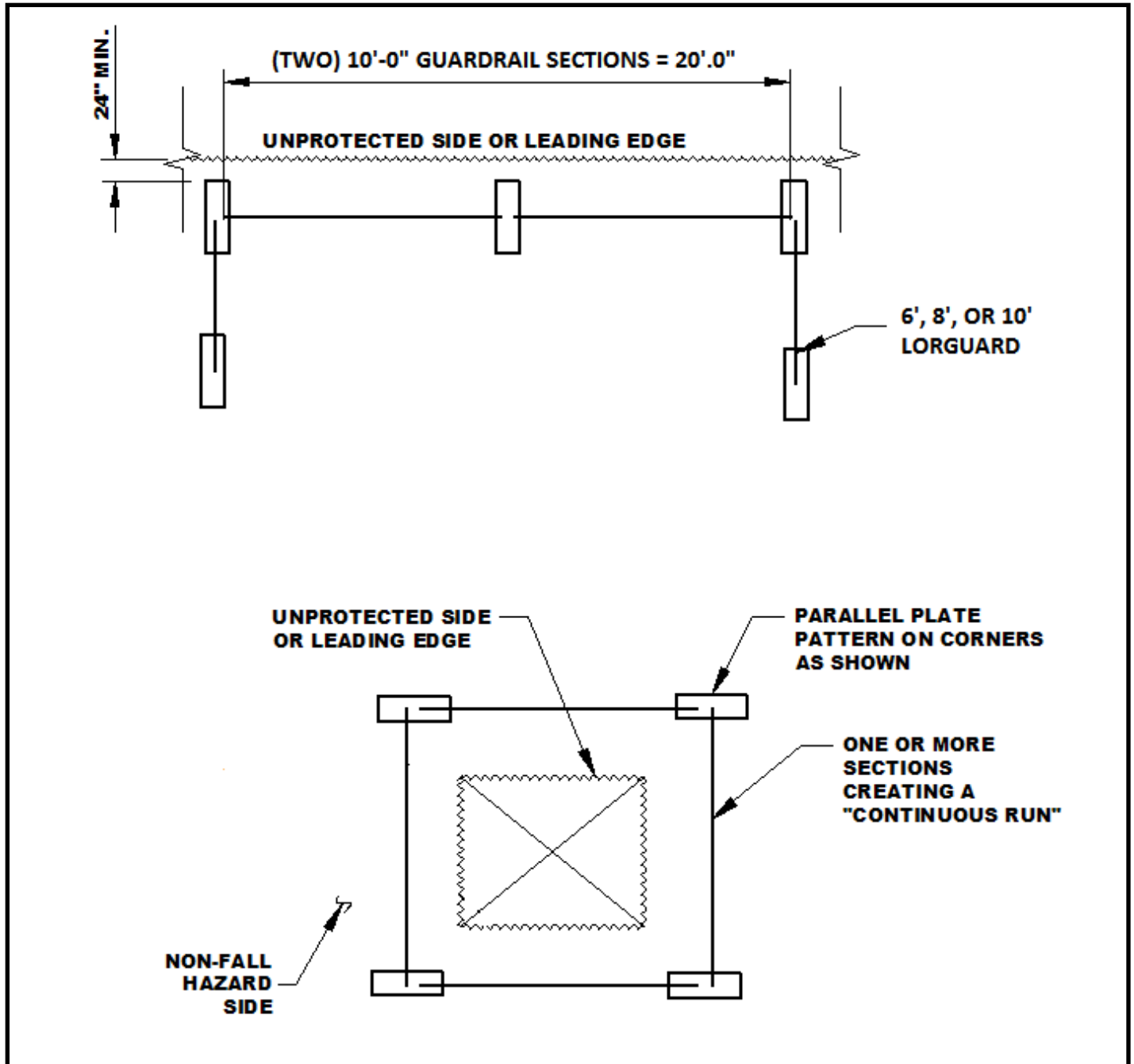
INSTALLATION CONFIGURATIONS

Continuous Run Configuration



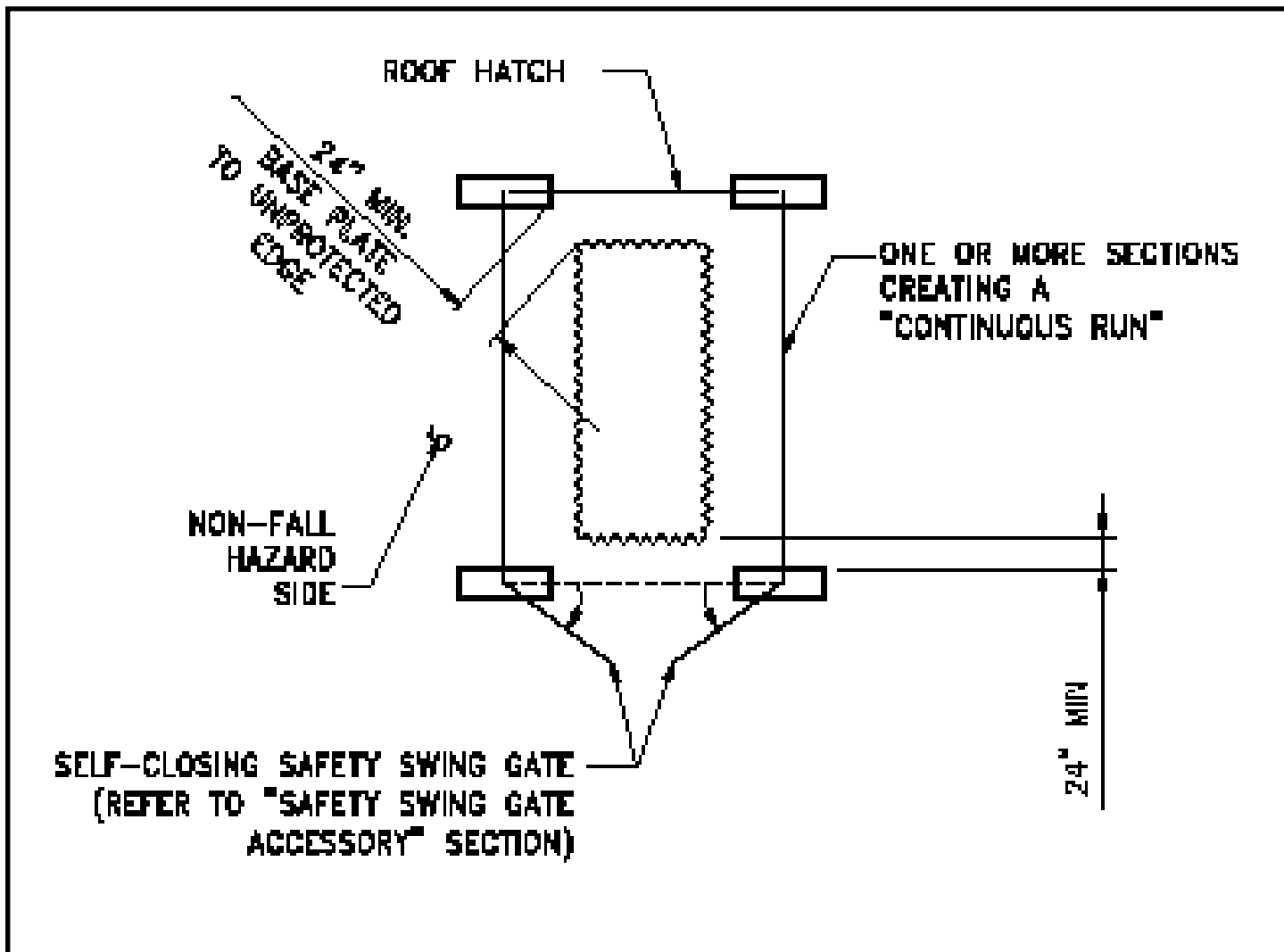
Open Configuration

Closed Configuration



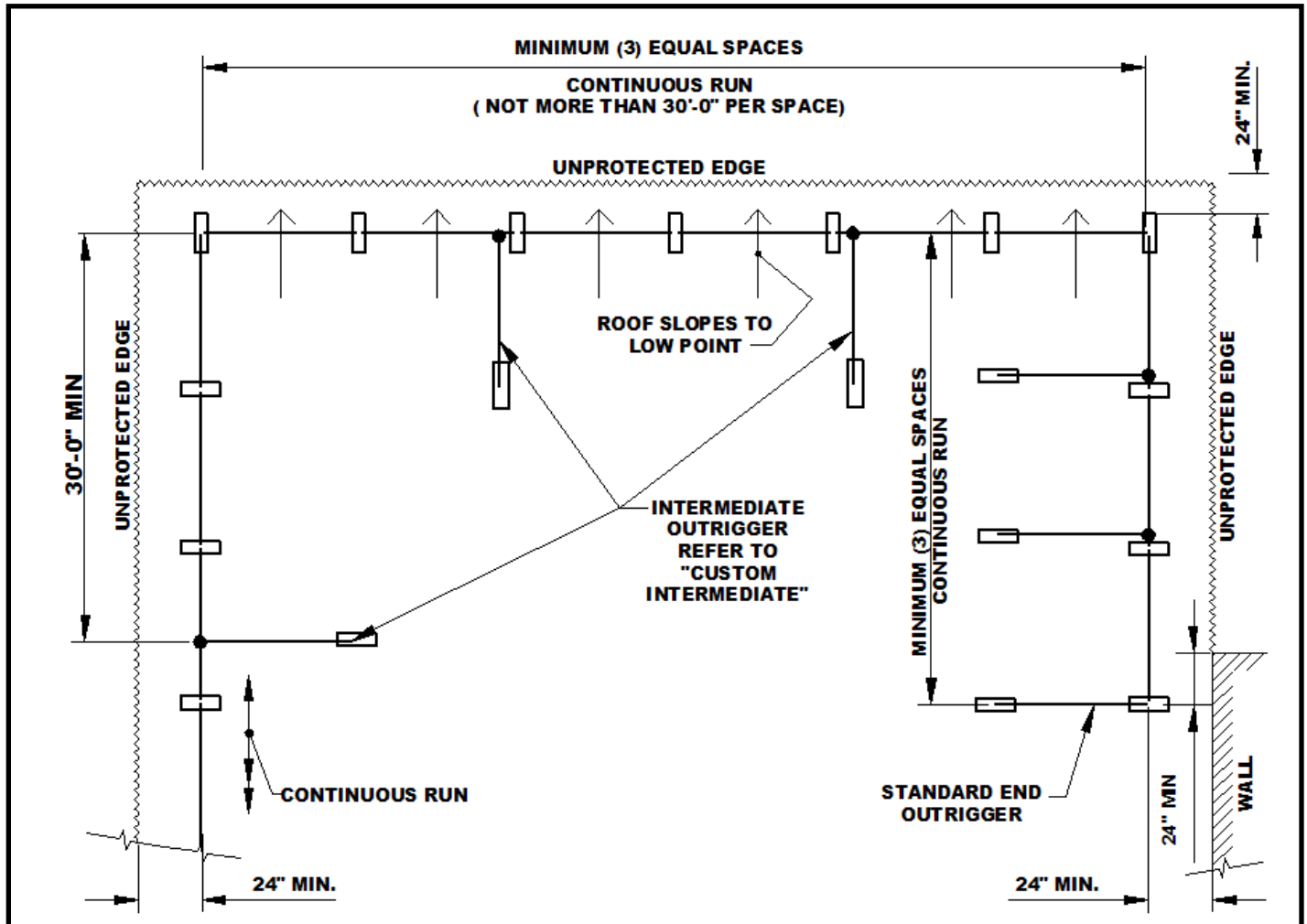
INSTALLATION CONFIGURATIONS

Roof Hatch Configuration



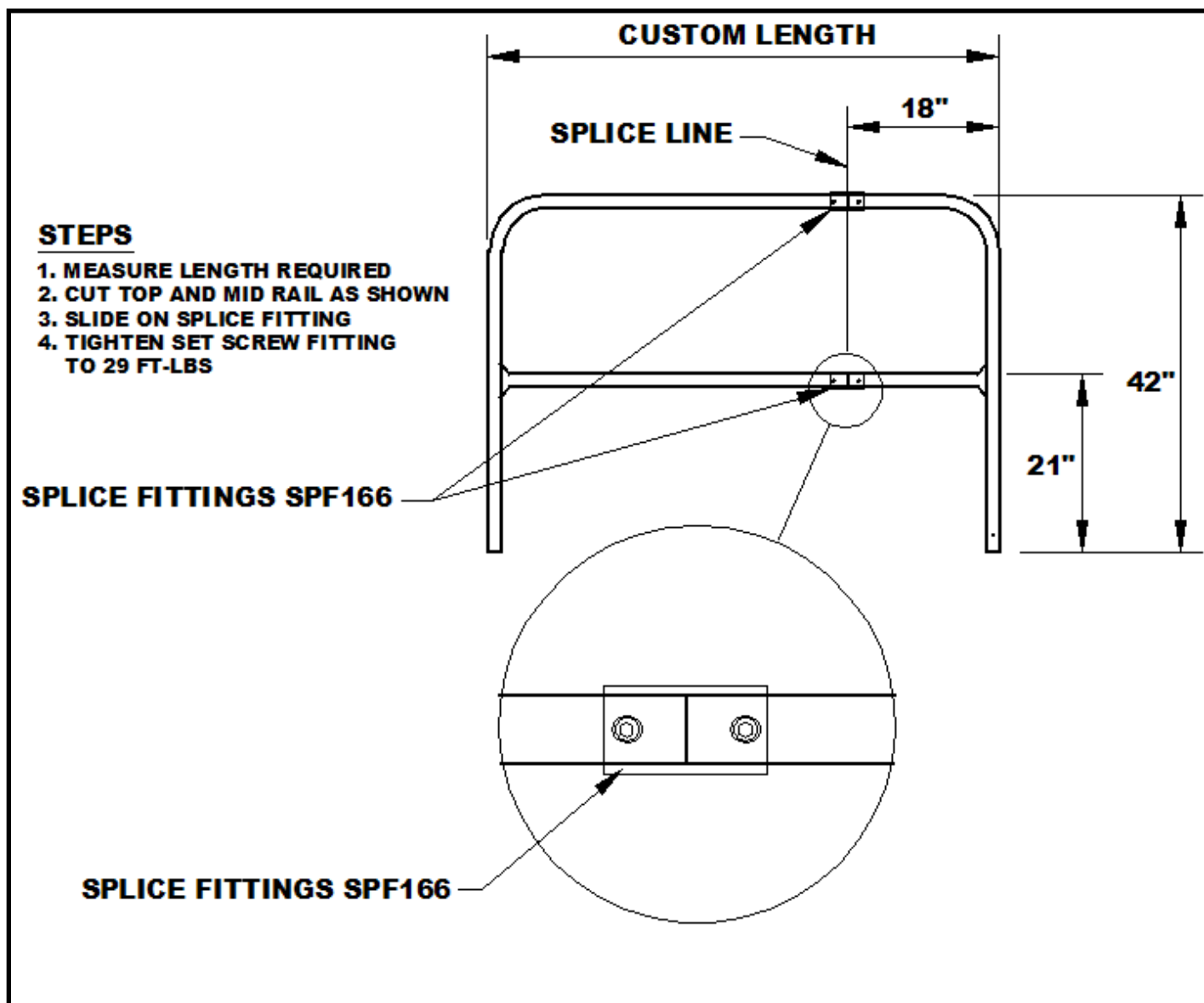
INSTALLATION CONFIGURATIONS

Tapered Roof Configuration (Common Plan for Rubber and/or Bituminous Roofs) (1 ½: 12 Slope or Less)

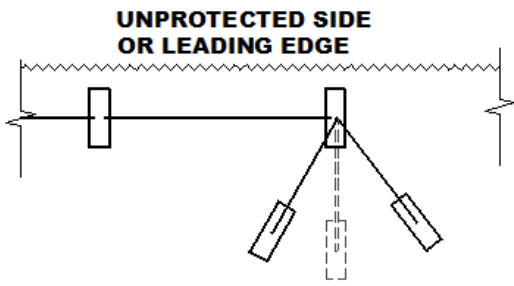


INSTALLATION CONFIGURATIONS

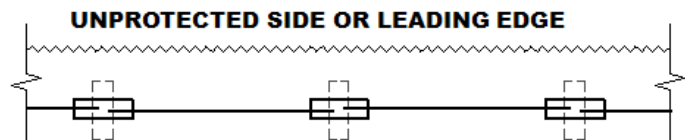
Custom Splice Fitting



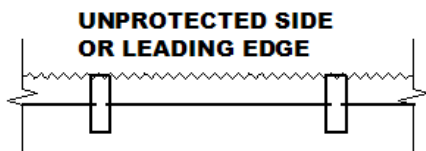
INCORRECT INSTALLATION CONFIGURATIONS



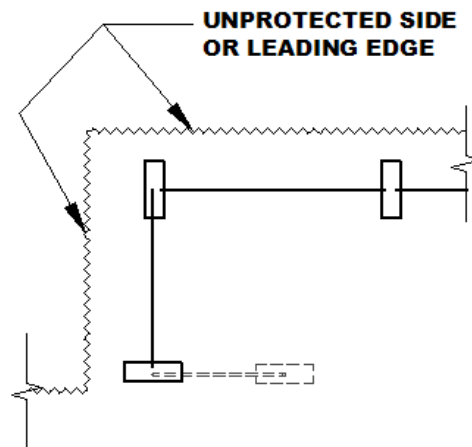
**OUTRIGGER NOT AT 90°
TO CONTINUOUS RUN**



**INCORRECT BASE PLATE
ORIENTATION**



**INSUFFICIENT DISTANCE
FROM BASE PLATE TO
UNPROTECTED EDGE**



NO OUTRIGGER

OSHA REGULATION COMPLIANCE

LORGUARD SYSTEM EXCEEDS OSHA 29 CFR-1910.23, OSHA 29 CFR-1926.502, AND IBC 2002 DESIGN REQUIREMENTS FOR GUARDRAIL WHEN ASSEMBLED AS DIRECTED IN INSTALLATION MANUAL.

- ❖ Exceeds top rail loading of 200 pounds in any downward or outward direction
- ❖ Exceeds mid rail loading of 150 pounds in any downward or outward direction
- ❖ 3 foot and 6 inches high and 1.66 inches outside diameter round pipe LORGUARD
- ❖ Mid-rail 1 foot and 9 inches between base and top rail

LORGUARD INSTALLATION PROCEDURES

- ❖ Lay out the job first by measuring and spacing the baseplates. Locate bases at least 24 inches from the edge of any surface. Failure to properly measure and plan ahead will result in difficulty in moving the assembled system to another location.
- ❖ Be sure the baseplates are in the correct orientation and the bottom of the baseplate is non-skid treated. Next, check that adequate room has been provided for the Outriggers.
- ❖ When satisfied with the layout, start inserting LORGUARD sections 6 foot, 8 foot, or 10 foot into the baseplate (7900004) receiver, which is mounted on the baseplate.
- ❖ Locate instruction tube accessory containing the Allen Wrench and Instructions to the mid-rail.
- ❖ Use the Allen Wrench to tighten the setscrews of the receivers mounted on the baseplate. Torque to 29 ft-lbs. Check tension twice on setscrews to make sure they all have been tightly secured. To disassemble, reverse the process. Once installation is completed, return Allen Wrench to the instruction tube for future use.
- ❖ Toeboards are an optional accessory provided only upon request. Refer to toeboard section for information regarding toeboards.

TOEBOARD BEST PRACTICES

WHEN TO USE TOEBOARDS

- ❖ When the unprotected edge does not have a substantial barrier, like a parapet wall on a roof.
- ❖ When it is possible that materials and equipment could possibly fall off the working area, like a crew working on a HVAC unit atop a roof and near the roofs edge.
- ❖ When any of the following may occur in or around the working area:
 - ❖ Persons can pass
 - ❖ Moving machinery
 - ❖ Falling materials could create a hazard

TOEBOARD COMPLIANCE

(OSHA 1926.501(c))

- ❖ **Ladder floor opening or platform:** shall be guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening (OSHA 1910.23(a)(2)).
- ❖ **On a Continuous Run:** The toeboard protection shall extend one LORGUARD unit on either side of a work area.
- ❖ **Protection from falling objects:** When an employee is exposed to falling objects, the employer shall have each employee wear a hard hat and shall implement one of the following measures:
 - ❖ Erect toeboards, screens, or LORGUARD systems to prevent objects from falling from higher levels.
 - ❖ Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced.
 - ❖ Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

TOEBOARD CONSTRUCTION

- ❖ Shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below. (OSHA 1926.502(j)(1))
- ❖ Where tools, equipment, or materials are piled higher than the top edge of a Toeboard, paneling or screening shall be erected from the walking/working surface or Toeboard to the top of a LOGGUARD system top rail or midrail, for a distance sufficient to protect employees below. (OSHA 1926.502(j)(4))
- ❖ Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds (222 N) applied in any downward or outward direction at any point along the Toeboard. (OSHA 1926.502(j)(2))
- ❖ Toeboards shall be a minimum of 3 1/2 inches (9 cm) in vertical height from their top edge to the level of the walking/working surface. They shall have not more than 1/4 inch (0.6 cm) clearance above the walking/working surface. They shall be solid or have openings not over 1 inch (2.5 cm) in greatest dimension. (OSHA 1926.502(j)(3))

TOEBOARD INSTALLATION PROCEDURES

- ❖ A footer laying out the job and placing baseplates per the LORGUARD Installation Procedures, slide the toeboard over the baseplate (7900004) receiver, which is then mounted on the baseplate.
- ❖ Be sure the proper toeboard model is used with the properly corresponding baseplate orientation (long or short direction).
- ❖ Insert the LORGUARD sections 6 foot, 8 foot, or 10 foot into a baseplate receiver, which is mounted on the baseplate.
- ❖ It is necessary to rise up the toeboard assembly at this point to tighten the setscrews for the receivers on the baseplate.

DISCLAIMER

Although every effort was made to ensure that all information in this Installation Manual is factual and that the numerical and non-numerical values expressed are accurate to a degree consistent with current practice(s), Diversified Fall Protection and its affiliates do not assume responsibility for errors or oversights that may result from the use of the information contained within this Installation Manual. Anyone making use of the contents in this Installation Manual assumes all liability arising for such use. By accepting and using this Installation Manual, you release Diversified Fall Protection and its affiliates of liability.

LORGUARD PRODUCT INFORMATION

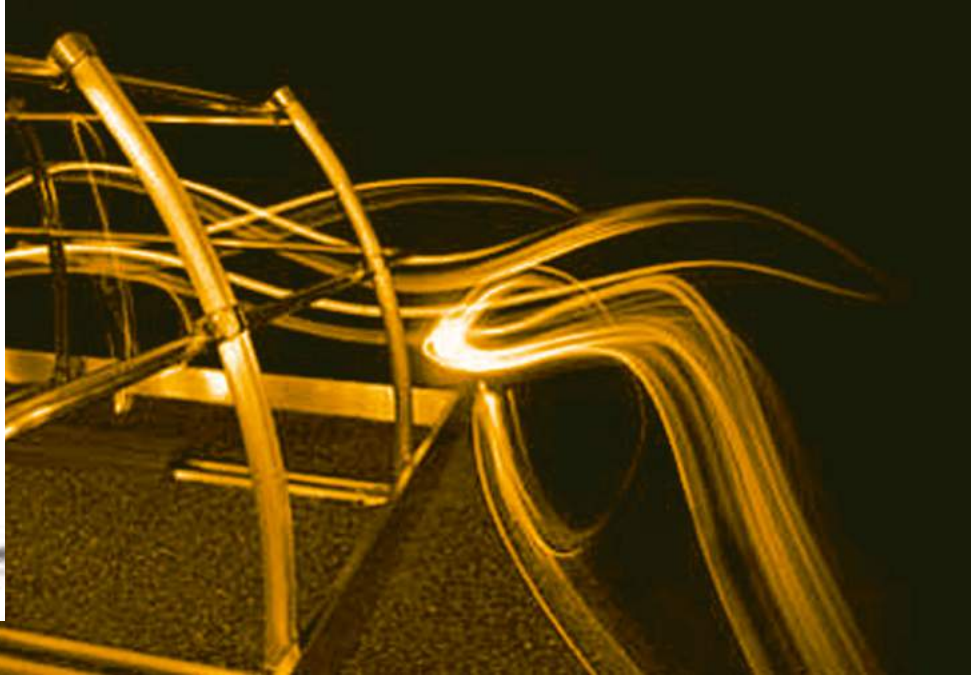
LORGUARD Product	SKU	Weight	Base Price
6 Foot GuardRail - Safety Yellow	7900010-Y	34 pounds	\$109.40
8 Foot GuardRail - Safety Yellow	7900011-Y	41.00 pounds	\$126.19
10 Foot GuardRail - Safety Yellow	7900012-Y	48.00 pounds	\$158.65
6 Foot GuardRail - Galvanized	7900010-G	34.00 pounds	\$130.56
8 Foot GuardRail - Galvanized	7900011-G	41.00 pounds	\$165.79
10 Foot GuardRail - Galvanized	7900012-G	48.00 pounds	\$195.87
6 Foot Toeboard - Safety Yellow	TB6	12 pounds	\$87.46
8 Foot Toeboard - Safety Yellow	TB8	16 pounds	\$95.40
10 Foot Toeboard - Safety Yellow	TB10	20 pounds	\$111.04
6 Foot Toeboard - Galvanized	TB6G	15 pounds	\$87.46 LOT CHARGE MAY APPLY
8 Foot Toeboard - Galvanized	TB8G	19 pounds	\$95.40 LOT CHARGE MAY APPLY
10 Foot Toeboard - Galvanized	TB10G	13 pounds	\$111.04 LOT CHARGE MAY APPLY
6 Foot Toeboard - Custom Color	TB6C	12 pounds	\$87.46 LOT CHARGE MAY APPLY
8 Foot Toeboard - Custom Color	TB8C	16 pounds	\$95.40 LOT CHARGE MAY APPLY
10 Foot Toeboard - Custom Color	TB10C	20 pounds	\$111.04 LOT CHARGE MAY APPLY
Accessory Base Plate - Galvanized	7900004-G	59.00 pounds	\$173.94
Accessory Splice Kit - Galvanized	7900005-G	0.50 pounds	\$36.50
Accessory Instruction Tube - Safety Yellow	7900006-SY	2.00 pounds	\$22.50
Swing Gate - Safety Yellow	GNE2SG-Y	21.00 pounds	\$225.00
Swing Gate - Galvanized	GEN2SG-G	21.0 pounds	CALL FOR PRING AND AVIALABILITY



Safeguard Industries

North American Turnkey Providers of Engineered Fall Protection & Custom Steel Fabrication

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VersiRail® for Roofing

Fall protection systems
for rooftop maintenance

VersiRail system

Where you need to restrict exposure to the hazard, the VersiRail® range offers an aesthetically-pleasing collective protection solution for flat surfaces up to a 10° slope. VersiRail comes as either a freestanding option where there is no need to drill or penetrate the roof, or as a fixed option which can be permanently attached to the roof.

Both freestanding and fixed solutions are available in three style choices; straight, curved or inclined and three finishes; natural, polished or powder coated to a RAL colour.

Freestanding VersiRail can also be supplied in a folding option to lie flat on the roof when the system is not in use.

A guardrail system should be designed to always provide a minimum edge protection height of 1100 mm. The fixed VersiRail system has upright supports that are available in various heights (from 300 – 1100 mm) to accommodate different parapet heights. For added safety VersiRail is supplied with kneerails as standard. Additional kneerails can be provided to meet individual requirement.

Key advantages

- Durable aluminium, corrosion-resistant construction
- Lightweight—quick and easy installation
- 30% lighter than steel alternative
- Fixed or freestanding (including folding) options
- Designer looks—three finishes available
- Adaptable, modular easy-fix system
- Fully weatherproof
- Tested and certified in accordance to EN 13374 and EN 14122-3
- No need for annual inspection
- Versatile—can be designed for any flat roof plan
- Available in three styles—straight, curved, inclined
- Freestanding option—no need to penetrate the roof
- Fixed option—a range of different heights to meet your needs (300, 500, 700, 900, 1000 and 1100 mm)



VersiRail: Freestanding upright



VersiRail: Fixed upright

ManSafe for Roofing

VersiRail: System options

Straight upright

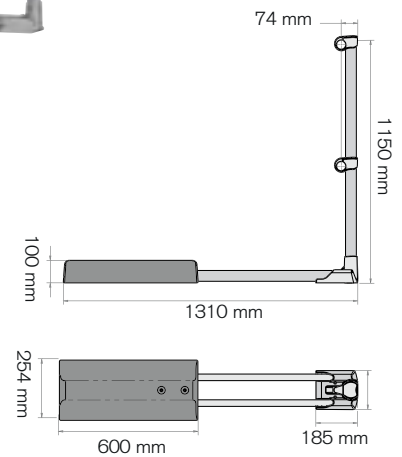
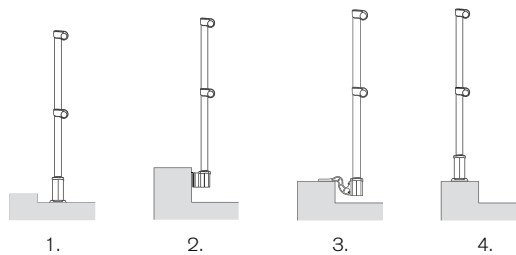
This simple design fits in perfectly with the clean lines and contours of a building.

The straight upright system is particularly suitable for protection at access points and demarking walkways.



Straight upright system with:

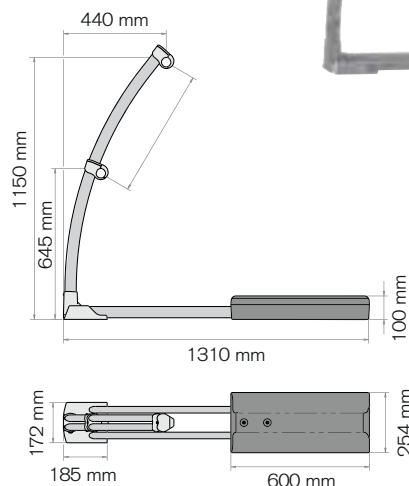
- 1) Slab mounting plate
- 2) Wall mounting plate
- 3) Z-type mounting plate
- 4) Parapet mounting plate



Curved upright

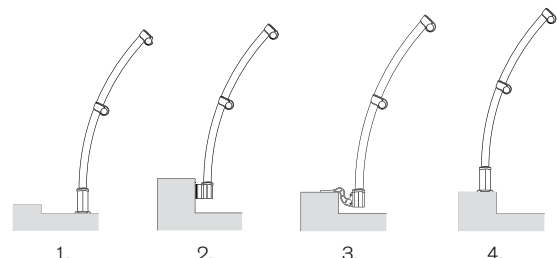
Whilst providing the primary function of collective protection, the curved upright system complements the design of a building.

This solution also keeps people further from the roof edge, providing a greater level of safety.



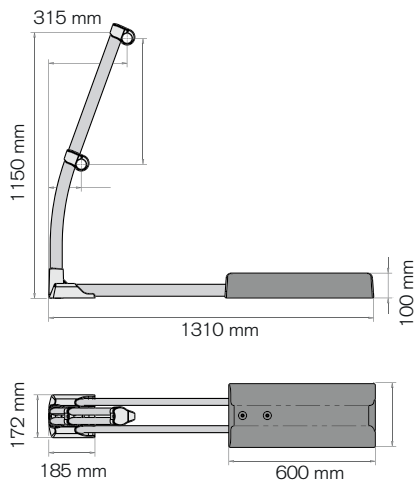
Curved upright system with:

- 1) Slab mounting plate
- 2) Wall mounting plate
- 3) Z-type mounting plate
- 4) Parapet mounting plate



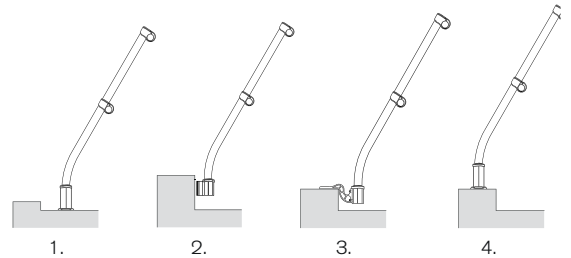
Inclined upright

This variation is inclined at 20°, which adds to the aesthetics of the system whilst making the system less visible from ground level. The result is better integration of VersiRail into the building design.



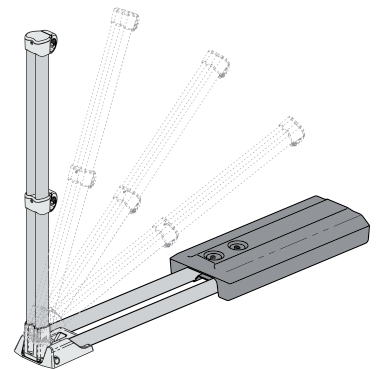
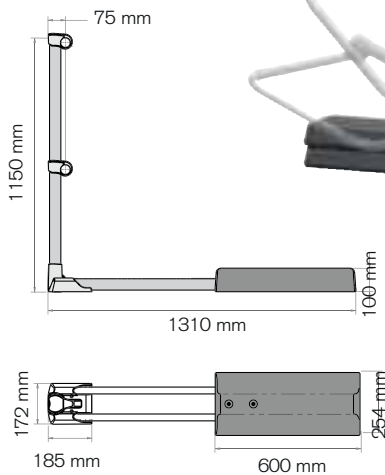
Inclined upright system with:

- 1) Slab mounting plate
- 2) Wall mounting plate
- 3) Z-type mounting plate
- 4) Parapet mounting plate



Freestanding folding

When collective protection is not being used, the folding uprights of this variation lie flat and are concealed when viewed from ground level, combining safe with architectural aesthetics. Available in straight, curved or inclined styles.

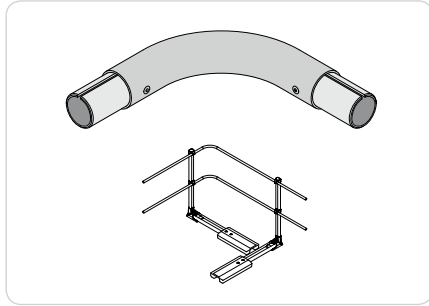


ManSafe for Roofing

VersiRail: System components

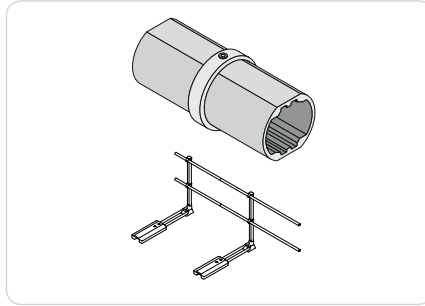
Ancillary items

VersiRail is exceptionally flexible in its application through modular easy-fix components allowing a wide range of configurations.



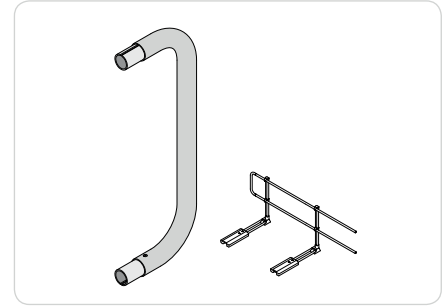
Corner sections

Where a change in system direction is required a standard 90° corner section can be supplied, or specific corner sections of between 45° to 175° can be made to order.



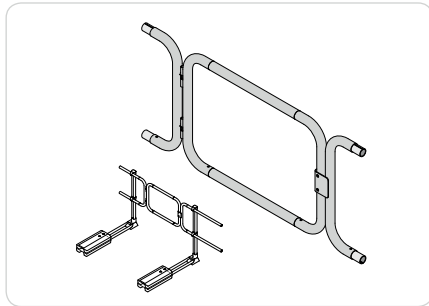
Connecting elements

T-Junctions, 45 – 45 corner sections and junction parts are all available to accommodate all system layouts.



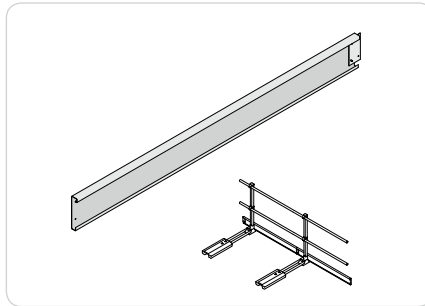
Closure bends

In situations where VersiRail needs to terminate and cannot be attached directly to a structural element, a closure bend can be specified. This same part can be incorporated into a length of system to designate a safe entry/exit point.



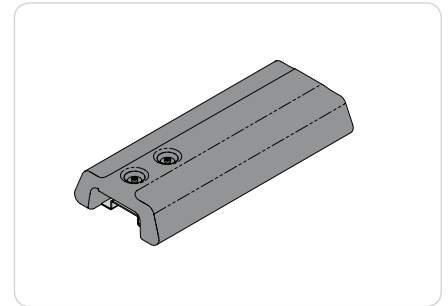
Access gate

Where VersiRail prevents access to a fall hazard such as a rooflight or trap door, but access may be needed for maintenance, the access gate can provide trained personnel controlled access to these areas.



Toeboard

On rooftops or surfaces where there is no parapet at the fall edge (or a parapet of less than 100 mm high) a toeboard can be affixed to the base of the VersiRail.

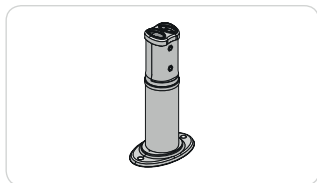


Additional counterweights

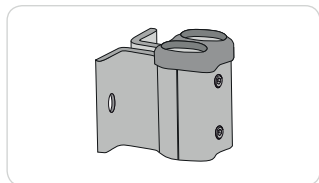
Where a closure bend, corner or specific access point occurs within a system, additional weights may be required to increase stability.

Fixing options

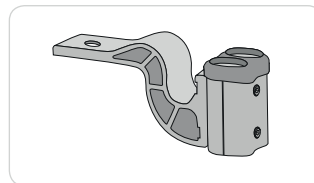
There are a number of brackets available for fixing on or to parapet walls using either M10 or M12 bolts. These fixings should also be chemically sealed where possible. It is essential to check the suitability of material that the fixed VersiRail is to be installed on.



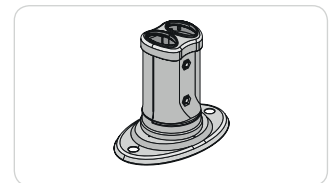
Slab mounting plate



Wall mounting plate

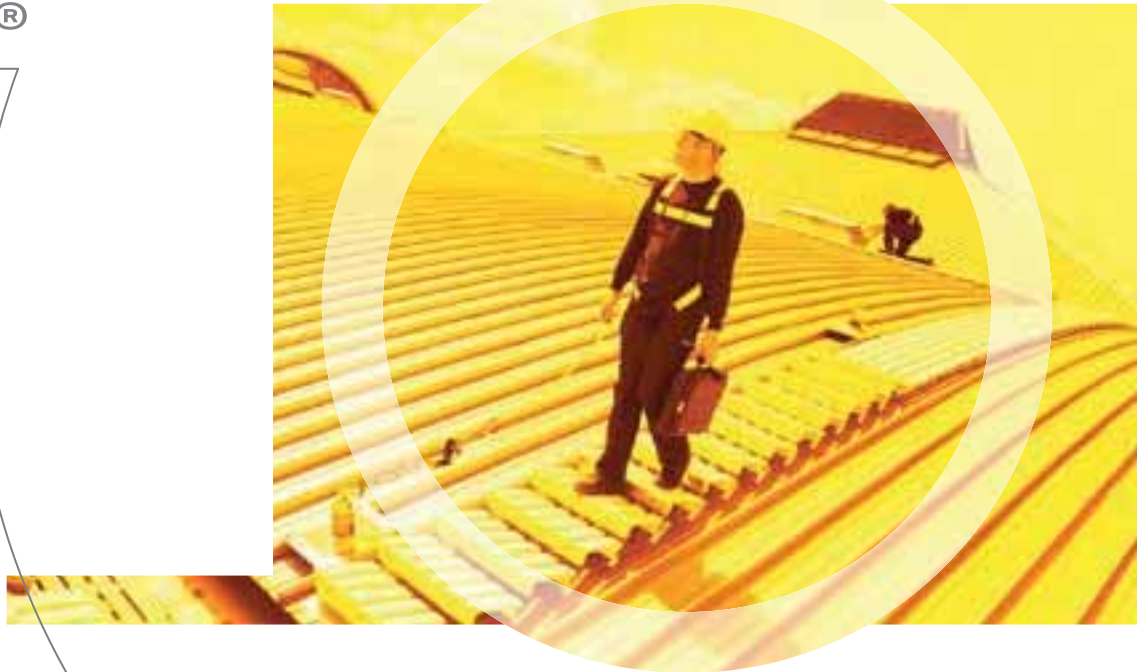


Z-type mounting plate



Parapet mounting plate

VersiRail®



World Corporate Headquarters

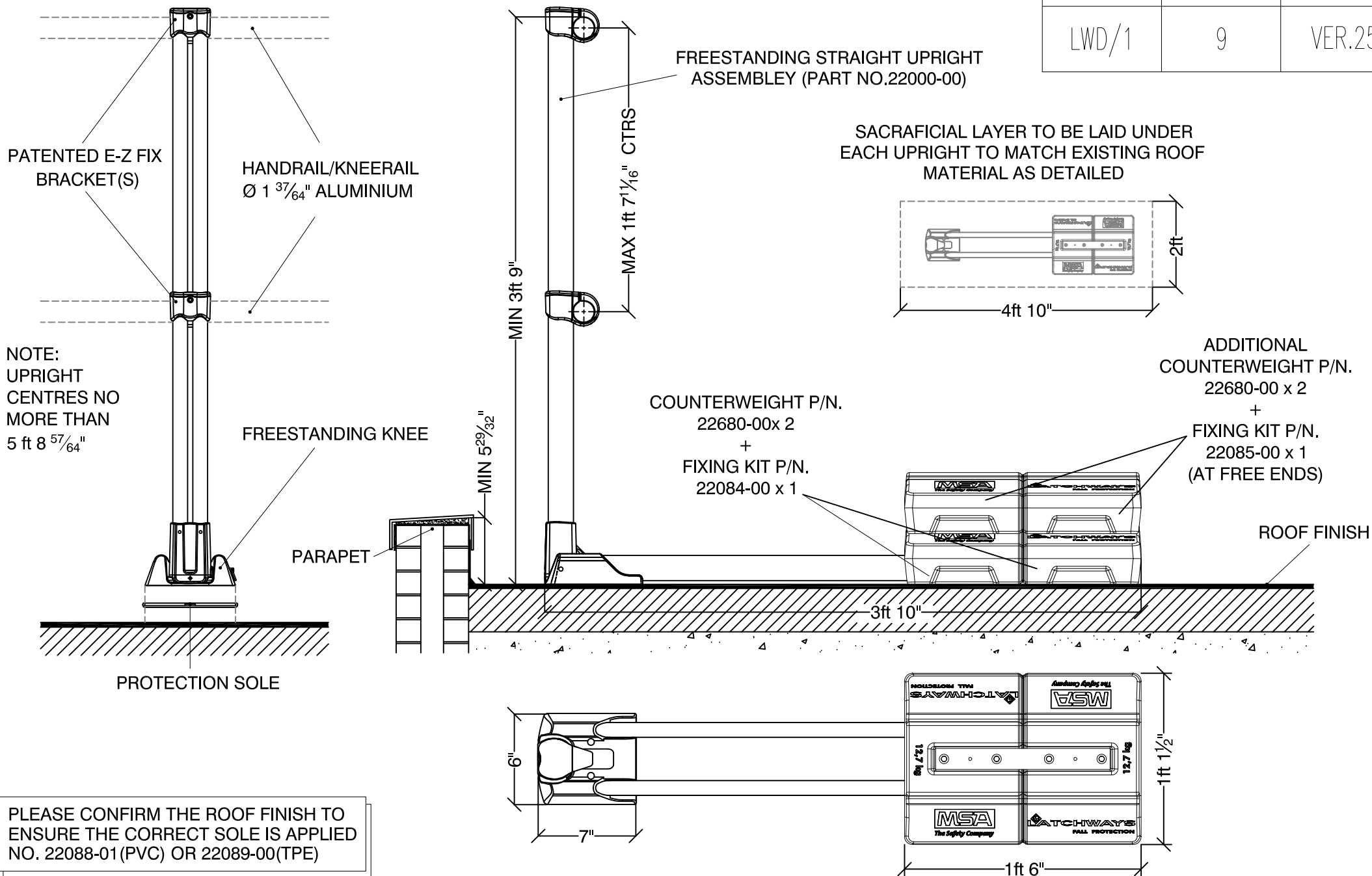
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VERSIRAIL FREESTANDING GUARDRAIL (STRAIGHT)

MANUAL	SECTION	DWG NO.
LWD/1	9	VER.25



KATTGUARD GR36 Surface Mount Guardrail

sales@fixfastusa.com fixfastusa.com 888 637 7872

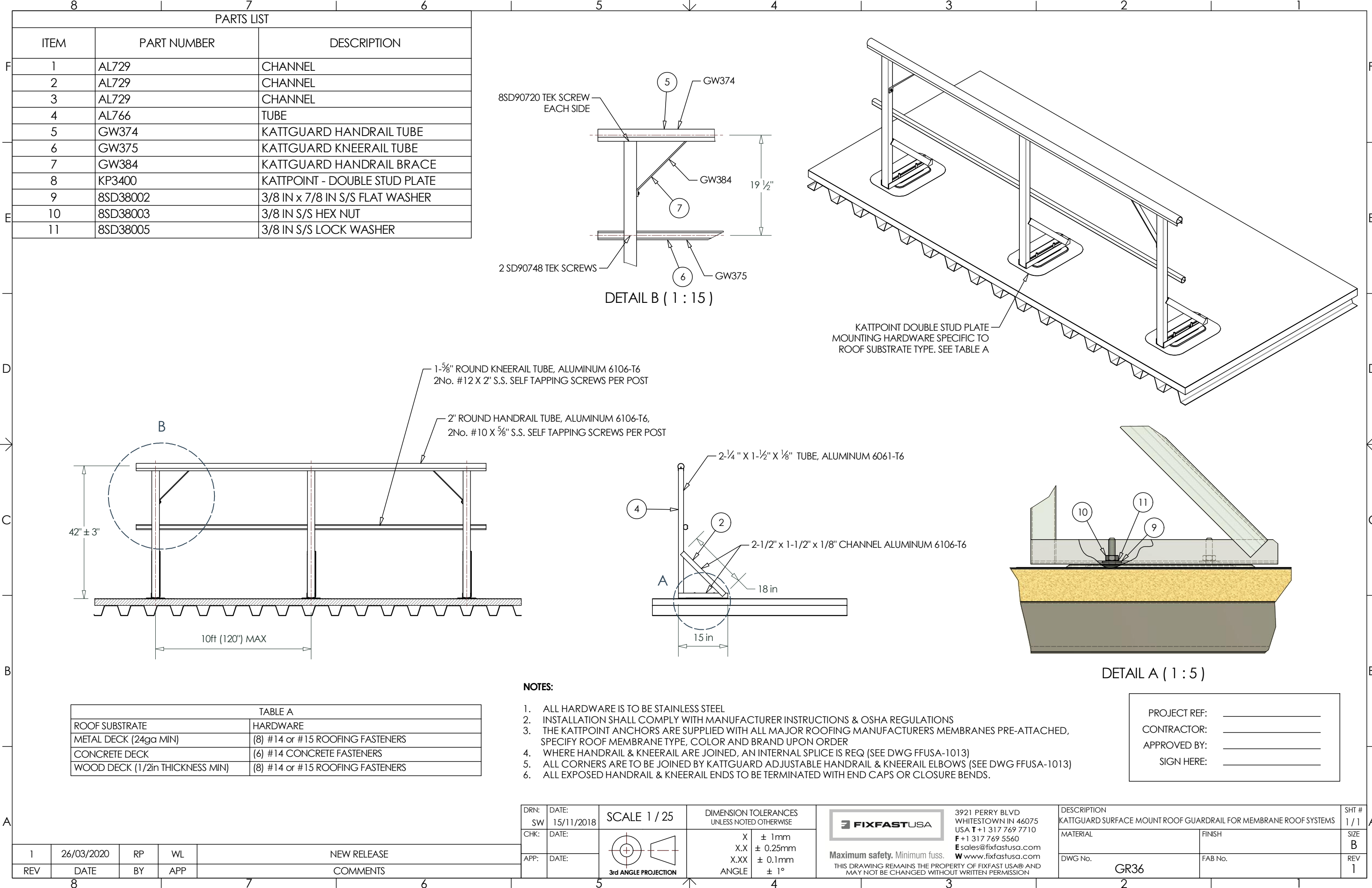


The **KATTGUARD GR36 Surface Mount Guardrail** is designed for sloped roof projects and applications where higher wind loads, ice build-up and snow loads are typical. The **KATTGUARD GR36** system can be fastened down with the **KATTPPOINT Anchor System**. The **KATTPPOINT Anchor** is supplied with project specific roof membrane pre-attached to ensure a waterproof connection and maintain the warranty. The **KATTPPOINT** is approved by all major manufacturers. This system can be easily customized on-site to suite specific site requirements.

Features

- Manufactured of high tensile aluminum
- Modular system facilitates infinite configurations
- Can be easily customized on site to suit application
- Lightweight easy for handling

Material & Performance Specifications	
Product Series	GR36
Stocked Colors	Mill Finish, Safety Yellow
Custom Colors	Inquire about custom colors
OSHA Compliance	OSHA 1926.501(b), 1910.28(b)
Max. Spacing Between Posts	10 feet



PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	AL729	CHANNEL
2	AL729	CHANNEL
3	AL729	CHANNEL
4	AL766	TUBE
5	GW374	KATTGUARD HANDRAIL TUBE
6	GW375	KATTGUARD KNEERAIL TUBE
7	GW384	KATTGUARD HANDRAIL BRACE
8	KP3400	KATTPPOINT - DOUBLE STUD PLATE
9	8SD38002	3/8 IN x 7/8 IN S/S FLAT WASHER
10	8SD38003	3/8 IN S/S HEX NUT
11	8SD38005	3/8 IN S/S LOCK WASHER

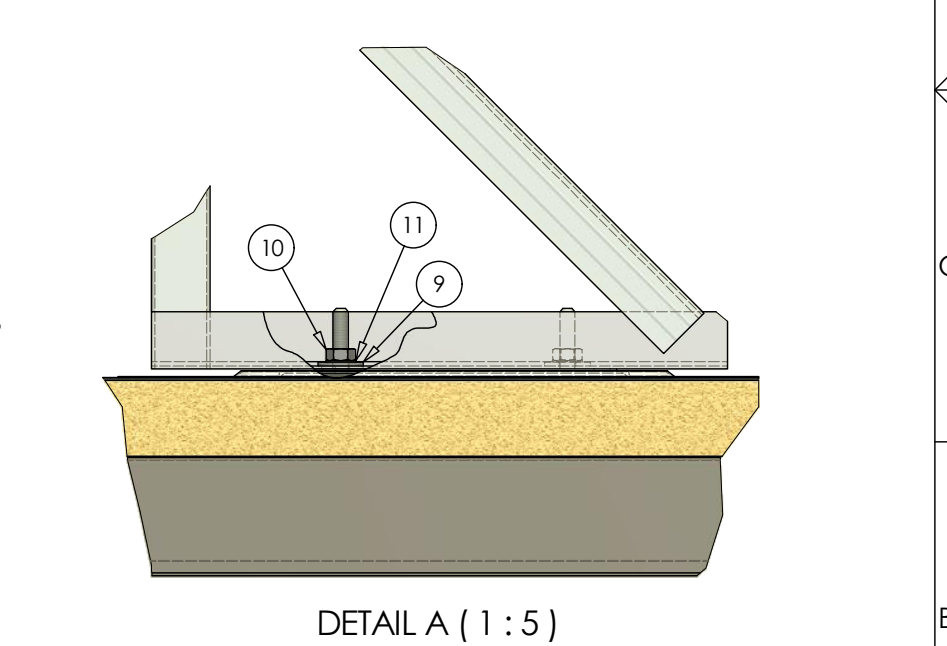
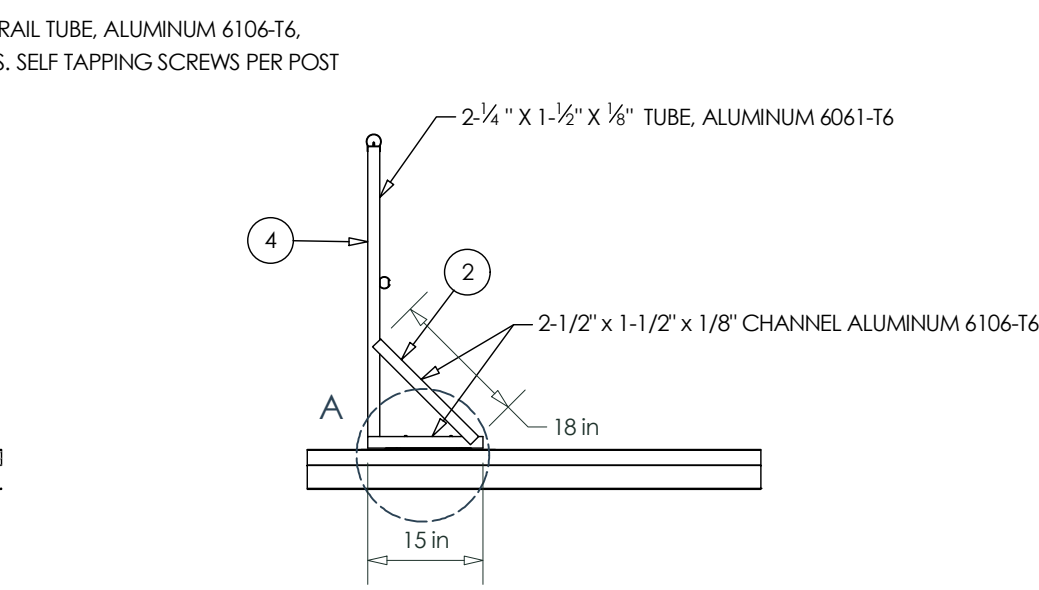
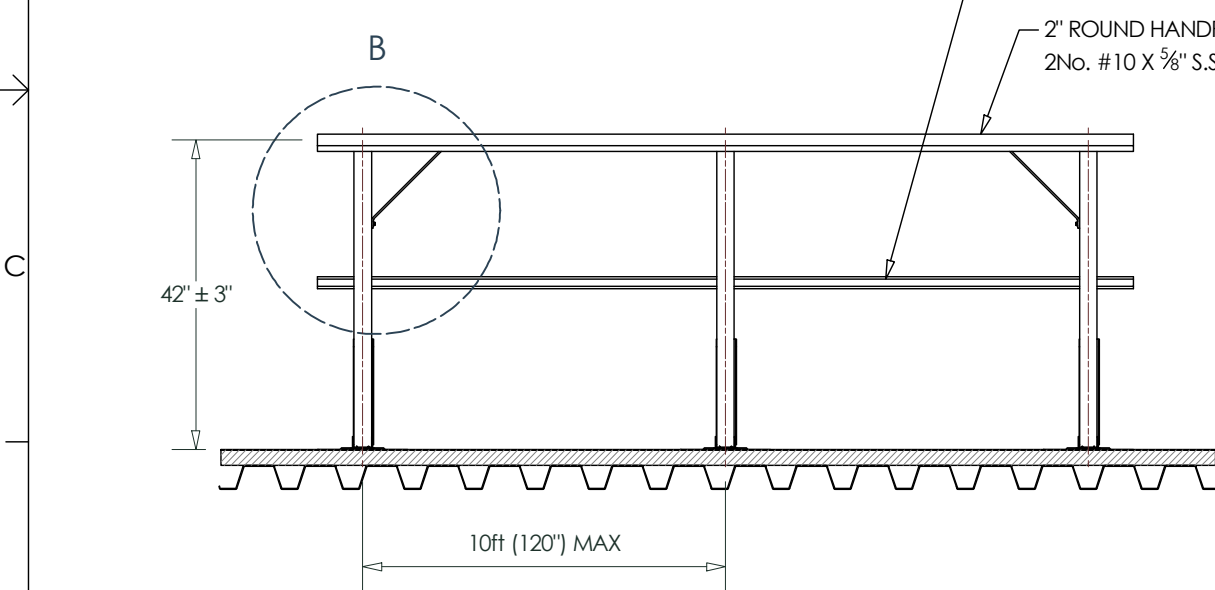
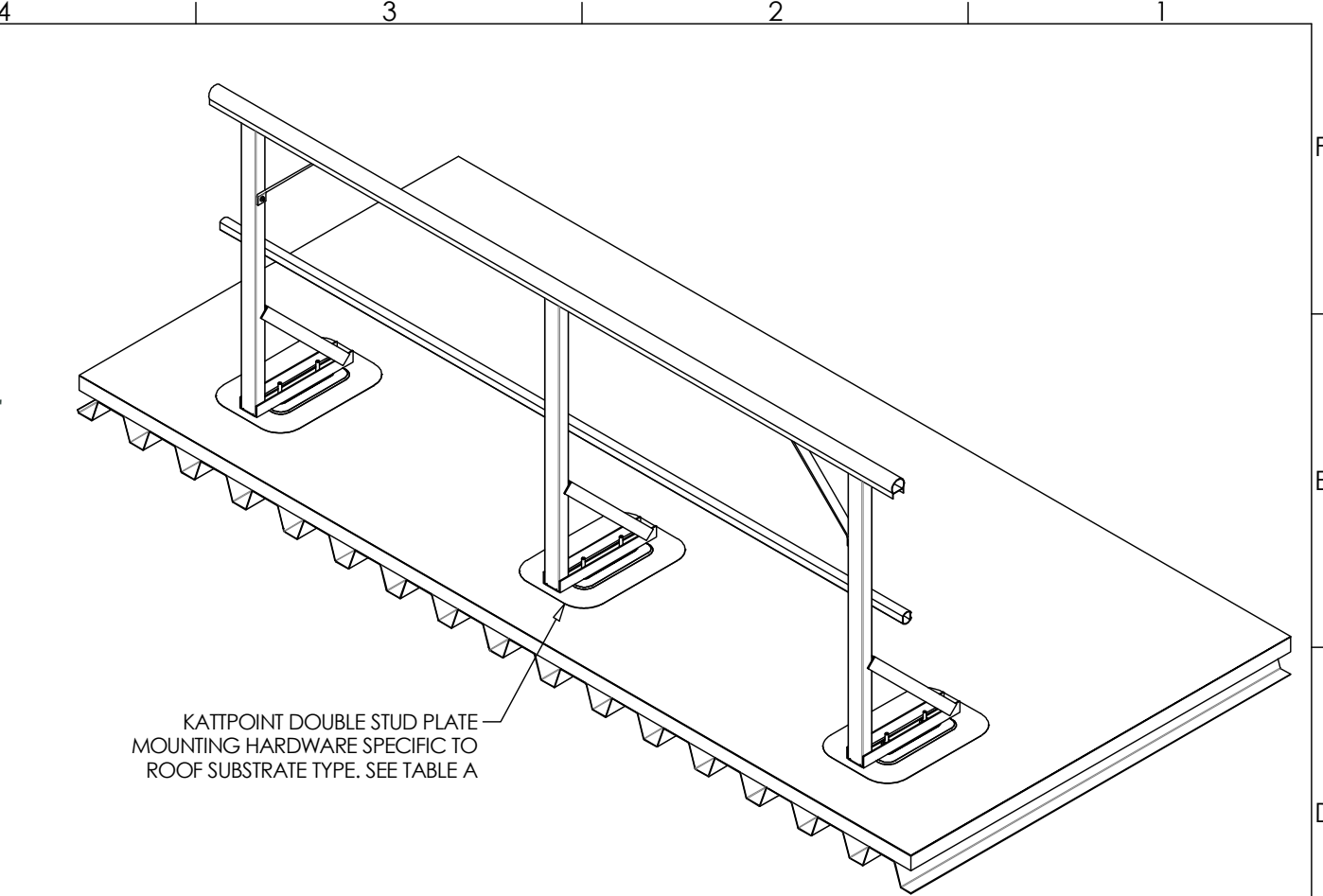
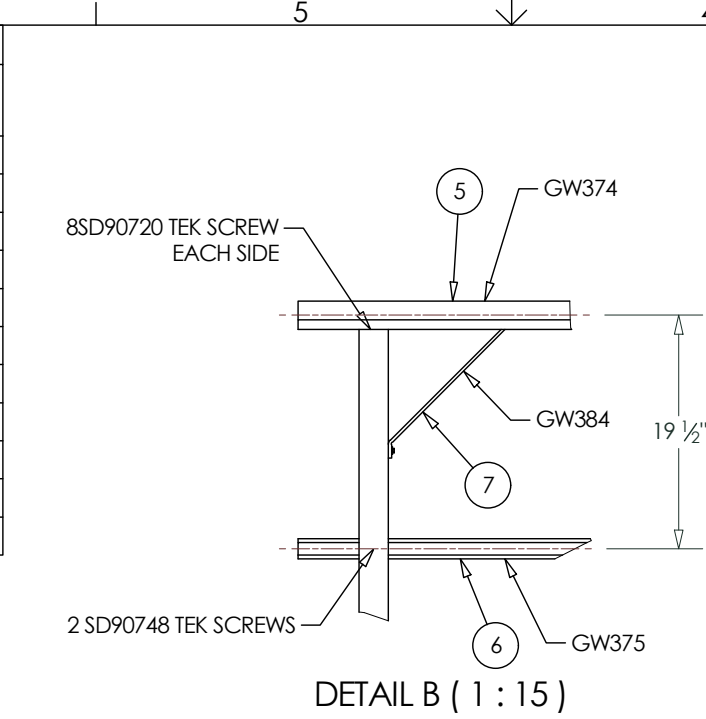


TABLE A	
ROOF SUBSTRATE	HARDWARE
METAL DECK (24ga MIN)	(8) #14 or #15 ROOFING FASTENERS
CONCRETE DECK	(6) #14 CONCRETE FASTENERS
WOOD DECK (1/2in THICKNESS MIN)	(8) #14 or #15 ROOFING FASTENERS

- NOTES:**
- ALL HARDWARE IS TO BE STAINLESS STEEL
 - INSTALLATION SHALL COMPLY WITH MANUFACTURER INSTRUCTIONS & OSHA REGULATIONS
 - THE KATTPPOINT ANCHORS ARE SUPPLIED WITH ALL MAJOR ROOFING MANUFACTURERS MEMBRANES PRE-ATTACHED, SPECIFY ROOF MEMBRANE TYPE, COLOR AND BRAND UPON ORDER
 - WHERE HANDRAIL & KNEERAIL ARE JOINED, AN INTERNAL SPLICE IS REQ (SEE DWG FFUSA-1013)
 - ALL CORNERS ARE TO BE JOINED BY KATTGUARD ADJUSTABLE HANDRAIL & KNEERAIL ELBOWS (SEE DWG FFUSA-1013)
 - ALL EXPOSED HANDRAIL & KNEERAIL ENDS TO BE TERMINATED WITH END CAPS OR CLOSURE BENDS.

PROJECT REF: _____

CONTRACTOR: _____

APPROVED BY: _____

SIGN HERE: _____

1	26/03/2020	RP	WL	NEW RELEASE	DRN: SW	DATE: 15/11/2018	SCALE 1 / 25	DIMENSION TOLERANCES UNLESS NOTED OTHERWISE	3921 PERRY BLVD WHITESTOWN IN 46075 USA T +1 317 769 7710 F +1 317 769 5560 E sales@fixfastusa.com W www.fixfastusa.com	DESCRIPTION KATTGUARD SURFACE MOUNT ROOF GUARDRAIL FOR MEMBRANE ROOF SYSTEMS	SHT # 1 / 1
REV	DATE	BY	APP	COMMENTS	CHK:	DATE:	3rd ANGLE PROJECTION	X ± 1mm X.X ± 0.25mm X.XX ± 0.1mm ANGLE ± 1°	THIS DRAWING REMAINS THE PROPERTY OF FIXFAST USA® AND MAY NOT BE CHANGED WITHOUT WRITTEN PERMISSION	MATERIAL	SIZE B
					APP:	DATE:				DWG No. GR36	REV 1

SECTION 07 72 36

AUTOMATIC SMOKE VENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included: Provide factory-fabricated double-leaf automatic smoke vents.

1.02 COORDINATION

- A. Coordinate layout and installation with existing roofing membrane, equipment curb, base flashing, interfacing, and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions by verifying existing conditions in the field.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, fusible links, adjacent construction interface, and dimensions.
- C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.04 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.
- B. Warranty: Manufacturer's standard warranty unless noted otherwise.

1.05 PRE-INSTALLATION MEETING

- A. Convene meeting at Project Site within one week of scheduled start of submittals with representatives of the following in attendance: Owner or Owner's designated representative, Inspector, Architect, Contractor, sub-contractor and manufacturer's representatives.
- B. Review existing conditions, requirements of related work, installation instruction, storage and handling procedures and protection measures.
- C. Contractor to provide meeting minutes.

1.06 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Installer: A minimum of 2 years experience installing similar products.

- C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of landing.

1.08 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Basis-of-Design Manufacturer: Type ACDSV Double-Leaf Automatic Roof Fire Vent by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.bilco.com.

2.02 AUTOMATIC ROOF FIRE VENT

- A. Furnish and install where indicated on plans: metal fire vent Type ACDSV, size to match existing, verify in field. Length denotes hinge side. The roof fire vent shall be double leaf. The roof fire vent shall be preassembled from the manufacturer.
- B. Performance characteristics:
 - 1. Vent(s) shall be UL listed.
 - 2. Covers shall be reinforced to support a minimum live load of 40 psf (195 kg/m²) with a maximum deflection of 1/150th of the span or 90 psf (439 kg/m²) wind uplift.
 - 3. Corrosion resistant gas springs shall open the vent covers simultaneously when latch is manually released or when heat breaks the UL listed fusible link. Opening shall be in a controlled manner to avoid damage to surrounding roof surfaces.
 - 4. Entire roof fire vent shall be weathertight with fully welded corner joints on cover and curb.
 - 5. Latch mechanisms shall hold the covers in the closed position without overstressing the fusible link and withstand 90 psf (439 kg/m²) wind uplift forces acting on the cover.
 - 6. Latch operation: When heat parts the UL listed fusible link, the latch shall release instantaneously, allowing vent covers to open. The latch shall be designed for easy resetting, after a fire or test, so that the covers cannot be latched closed unless the

mechanism has been reset properly. Manufacturer shall provide instructions for resetting the latch with each unit.

7. Sound Transmission Rating: Vent(s) shall carry STC-50 and OITC 46 sound ratings.
 8. ISO 140-18 Rainfall Sound Rating – 37.5 db.
 9. Vents shall replace existing vents and function with existing facility. Contractor shall visit the site, become familiar with the existing conditions, and include relationship to existing conditions in shop drawings.
- C. Covers: Shall be 14-gauge (1.9mm) paint bond G-90 galvanized steel with a 5-3/4" (146mm) beaded flange with formed reinforcing members.
 - D. Gasket: Dual EPDM gaskets shall be permanently adhered to the underside of the covers.
 - E. Cover insulation: Shall be mineral wool of 4" (102mm) in thickness, fully covered and protected by a 12-gauge (2.75mm) paint bond G-90 galvanized steel liner.
 - F. Curb: Existing to remain. Contractor to verify dimensions in field.
 - G. Curb insulation: Existing to remain.
 - H. Lifting mechanisms: Corrosion resistant gas springs open covers automatically against a 10 lb/ft² (49Kg/m²) snow/wind load. Gas springs shall have built in dampers to assure a controlled rate of opening and automatically lock the covers in the full open position. A release mechanism shall be provided to allow the covers to be closed.
 - I. Latch mechanism: Shall be the BILCO Thermolatch® II positive hold/release mechanism with a separate latching point for each cover controlled by a single UL listed 165°F (74°C) fusible link. Fusible link shall be curb mounted on a non-hinged end to allow the latching mechanism to be easily reset from the roof level.
 - J. Hardware: Corrosion resistant gas springs and hot dip galvanized steel stop cables. All other hardware is zinc plated/chromate sealed.
 - K. Finish: Factory finish shall be alkyd base red oxide primer.
 - L. Fall Protection: Provide security / burglar bars in compliance with California Code of Regulations Title 8, Section 3212, withstand an impact test of 400lbs. min. and have no opening larger than 12" horizontally.

PART 3- EXECUTION

3.01 EXAMINATION

- A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
 - 1. Test units for proper function and adjust until proper operation is achieved.
 - 2. Test fusible link and install replacement fusible link after testing.
 - 3. Repair finishes damaged during installation.
 - 4. Restore finishes so no evidence remains of corrective work.

3.03 ADJUSTING AND CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Sealants and backing, primers, and bond-breakers as indicated on the Drawings and specified herein. Work will include, but is not limited to the following locations:
 - 1. Joints between metal and cementitious building elements
 - 2. Joints between cementitious elements
 - 3. Expansion and control joints
 - 4. Cross joints in copings and projecting work
 - 5. Horizontal and vertical joints
 - 6. Hidden joints expected to undergo minimal movement.
 - 7. Sealing of penetrations thru fire rated assemblies.
- B. Related Work:
 - 1. Roof patching and sheet metal

1.02 REFERENCE STANDARDS

- A. Provide an installation in strict compliance with Title 24 requirements.

1.03 SUBMITTALS

- A. Submit manufacturer's printed literature and installation instructions on specified materials for review.
- B. Submit manufacturer's standard colors of materials for selection.

1.04 QUALITY ASSURANCE

- A. Proper caulking and proper installation of sealants requires that installers be thoroughly trained and experienced in the necessary skills and thoroughly familiar with the specified requirements.
- B. For caulking and installation of sealants throughout project, use only personnel who have been specifically trained in such procedures and who are completely familiar with the joint details shown or required, and the installation requirements called for in these specifications.
- C. Coordinate this work with work of other sections to ensure proper installations.
- D. Provide written certification that materials in contact with the sealants and appurtenant components, such as gaskets, spacers, setting blocks, concrete curing compounds, aluminum finishes, etc., are compatible with the sealants after 21-days exposure to ultra violet 2000 - 4000 (micro-watt radiation).
- E. Provide adhesion test data to production samples of metal and glass/spandrels, tested in accordance with ASTM C794.

1.05 GUARANTEES AND WARRANTIES

- A. Provide two year guarantee against defects in materials and workmanship of materials and installation. Include replacement or repairs as may be required by Owner.

PART 2 - PRODUCTS

2.01 SEALANTS

- A. Horizontal Non-Traffic-Bearing Surfaces: Provide acrylic or terpolymer acrylic base, chemical curing, self-leveling type sealants, non-sagging, uniform, homogeneous and free from lumps, capable of being continuously immersed in water, withstand movement up to 12.5 percent of joint width, and satisfactorily gunnable at 70 degrees F., non-staining and non-bleeding, in colors to be selected by Architect.
 - 1. Preferred product is Mono 555 manufactured by Tremco, and one part Acrylic Sealant manufactured by DAP.
- B. Horizontal Traffic-Bearing Joints: Provide multi-component, self-leveling polyurethane joint sealant meeting ASTM C920, capable of movement to plus or minus 25 percent.
 - 1. Preferred product is THC-900 as manufactured by Tremco, and Vulkem 245 as manufactured by Tremco.
- C. Non-moving Exterior Joints: Provide two-part noncorrosive epoxy metal seam cementing compound, recommended by metal manufacturer, at 2 feet each side of seam.
- D. Vertical Surfaces: Provide three-part epoxidized polyurethane terpolymer sealant, non-sagging, gun grade, meeting ASTM C920, Type M, Grade NS, Class 25, use NT, M, A and O.
 - 1. Preferred product is Dymeric as manufactured by Tremco, and Vulkem 227 as manufactured by Tremco.
- H. Acceptable Product Manufacturer's:
 - 1. TREMCO
 - 2. GE Silicones
 - 3. Dow Corning
 - 4. BASF

2.02 ACCESSORIES

- A. Primers: Where necessary, provide primers compatible with not only sealant, but substrate and finish on which to be applied. Primers are to be non-staining type and must have been specifically tested for durability on the surfaces to be sealed, and are specifically recommended for this installation by their manufacturer.
- B. Back-up Materials: Provide one of the following, as recommended for the particular joint construction and sealant type:
 - 1. Close-cell resilient urethane or polyvinyl-chloride foam
 - 2. Close-cell polyethylene foam
 - 3. Closed-cell sponge of vinyl or rubber
 - 4. Polychloroprene tubes or beads

5. Polyisobutylene extrusions
 6. Oil-less dry jute
 7. Preformed support strips for tile control joints and expansion joints, polyisobutylene or poly- chloroprene rubber.
- C. Bond Breaker: Use only one of the following as best suited for the specific application and as recommended by the manufacturer of the sealant to be used.
1. Polyethylene tape, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials shown.
 2. Aluminum foil conforming to Federal Specifications QQ-A-1876.
 3. Wax paper.
- D. Masking Tape: For masking around joints, provide masking tape conforming to ASTM D6123.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Joints and surfaces which are to be caulked or sealed shall be clean, dry and free of dust, loose mortar and other foreign materials.
- B. Clean ferrous metals of rust, mill scale and coatings by wire brush, grinding or sandblasting. Remove oil, grease and/or temporary protective coatings with high performance cleaners, as approved by sealant manufacturer.
- C. Joint dimensions for sealant should be reviewed and installed in accordance with sealant manufacturer's printed instructions. In no case should the sealant application be less than 1/4-inch wide, and 1/4-inch deep, except in specific metal-to metal curtain wall applications, and then as recommended by the sealant manufacturer.
- D. Concrete or masonry joint surfaces shall be wire brushed, then air-blown clean. The joint interface must be free of form release agents of chemical retarders which may interfere with sealant adhesion and performance.
- E. Sealants shall not be applied to masonry joints where a water repellent or masonry preservative has been applied prior to caulking. When called for, waterproofing treatments should be applied after caulking.
- F. Do not caulk joints until they are in compliance with requirements of the approved manufacturer of the materials, the details as shown on the Drawings, and the specific requirements of other sections of the specification.

3.02 INSTALLATION

- A. Apply and install sealant where shown on drawings, or if not shown on Drawings, apply and install sealant materials and products which could lead to infiltration of moisture, water, light, or air blown particles into building; and within building where changes of materials in same or different planes could allow moisture, water, air, or light to penetrate.
- B. Provide acoustical sealants on, around and between building construction members such as framing, panel boxes, cutouts for penetrations of other materials or equipment, etc., where walls and floors are designated to be sound attenuated or acoustically treated.

- C. Install joint backing with a blunt instrument so as not puncture the surface skin. Size of joint backing should be determined by taking the joint width and adding 25 percent to assure proper compression of backer rod.
- D. Apply sealant with a caulking gun, using proper nozzles. Use sufficient pressure to properly fill the joints with sealant to the back-up materials.
- E. After joints have been completely filled, they shall be neatly tooled to eliminate air pockets or voids, and to provide a smooth, neat appearing finish in intimate contact with interfaces. After tooling, surface of sealant shall be free of ridges, wrinkles, sags, air pockets and embedded impurities.
- F. It is recommended that a 40-degree F., minimum application temperature be maintained for joint sealant installations. When it is necessary, that applications be made at lower temperatures, take precautions to assure that joints have clean, dry, and frost-free surfaces. Submit a letter by sealant manufacturer's representative, verifying that surfaces are acceptable.

END OF SECTION

SECTION 08 45 23

FIBERGLASS-SANDWICH-PANEL ASSEMBLIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Supported aluminum framed sloped glazed system, sandwich panels of translucent skins, anchors, brackets, and attachments and aluminum flashings to adjoining work as indicated on the Drawings and specified herein.
- B. Related Sections:
 - 1. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.02 REFERENCE STANDARDS

- 1. Chapter 26, 2603.6 and 2603.7 California Building Code, 2019.

1.03 SYSTEM DESCRIPTION

- A. Type: Structurally reinforced translucent panel system, with support framing, battens, cap strips, related flashings, anchorage and attachment devices.

1.04 PERFORMANCE REQUIREMENTS

- A. System to provide for expansion and contraction within system components caused by a cycling temperature range of 170 degrees F. without causing detrimental effects to system or components.
- B. Design and size members to withstand dead loads plus 20 pound live load.
- C. System to accommodate, without damage to system or components, or deterioration of perimeter seal: Movement within system; movement between system and perimeter framing components; dynamic loading and release of loads; and deflection of structural support framing.
- D. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior.

1.05 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00 – Submittal Procedures.
- B. Product Data: Submit manufacturers' product specifications, installation instructions, and color charts.
- C. Submit shop drawings showing system and component dimensions, components within assembly; framed opening requirements and tolerances; anchorage and fasteners; affected related work; expansion and contraction joint locations and details; and drainage details.

- D. Submit certified test reports, made by an independent testing organization for translucent panel system. Reports shall verify that material will meet performance requirements of this specification. Previously completed test reports will be acceptable if current, and indicative of products used on this project. Test reports required are:
1. Flame Spread and Smoke Development (ASTM E84) with U.L. Card, No. 7415.
 2. Burn Extent (ASTM D635)
 3. Color Difference (ASTM D2244)
 4. Impact Strength (Free Falling Ball Method)
 5. Bond Strength (ASTM C-297 and ASTM D1002)
 6. Accelerated Aging (ASTM D1037)
 7. Beam Bending Strength (ASTM E72)
 8. Insulated 'U' Factor (by NFRC 100)
 9. Class 'A' Roof Covering Burning Brand (ASTM E108).
 10. ICC ES Research Report listing.
- E. Samples: Submit samples for each exposed finish, in same thickness and material indicated for the work in size indicated below. Samples shall illustrate pre-finished aluminum surface and specified panel with skins, including glazing edge and corner.
1. For each type of fiberglass-sandwich panel. Size: 14" x 28"
 2. For each type of exposed finish for framing members: Size: 5" long aluminum sections.
- F. Delegated-Design Submittal: For panel assemblies indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by a qualified professional engineer, licensed in California and responsible for their preparation.
- G. Evaluation Reports: For fiberglass-sandwich panel assemblies from ICC-ES (report #ESR-2464)
- H. Sample Warranties: For special warranties.

1.06 CLOSEOUT SUBMITTALS

- A. Warranty: Manufacturer and Installer warranty and extended panel warranty as specified.
- B. Maintenance Data: For panel assemblies to include in maintenance manuals.

1.07 QUALITY ASSURANCE

- A. Manufacturer's and Erector's Qualifications:
1. Skylight System Manufacturer must be listed by the International Code Council (ICC) which require quality control inspections by an approved agency for sandwich panel construction.
 2. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of similar materials, for a period of at least ten (10) consecutive years; and which can show evidence of these materials being satisfactorily used on at least six projects of similar size, scope and type within such a period. At least three of the projects shall have been in successful use for ten years or longer.

3. The manufacturer shall be responsible for the configuration and fabrication of the skylight system.
4. Erection shall be by an installer which has been in the business of erecting similar materials for at least five consecutive years; and can show evidence of satisfactory completion of projects of similar size and scope and is approved by the manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store translucent panels on the long edge, above the ground, blocked and under cover to prevent warping.
- B. Provide wrapping or strippable coating to protect pre-finished aluminum surfaces. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

1.09 WARRANTY

- A. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within one year of the date of delivery. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering and defects in accessories, insulated translucent sandwich panels, and other components of the work.
- B. Extended Panel Warranty: Five years from date of Substantial Completion.

1.10 PRE-INSTALLATION MEETING

- A. Convene meeting at Project Site within one week of scheduled start of submittals with representatives of the following in attendance: Owner or Owner's designated representative, Inspector, Architect, Contractor, sub-contractor and manufacturer's representatives.
- B. Review existing conditions, requirements of related work, installation instruction, storage and handling procedures and protection measures.
- C. Contractor to provide meeting minutes.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Kalwall Corporation, (800) 258-9777, email: info@kalwall.com
Local Representative: Architectural System, Inc., Fallbrook, CA (858) 679-9760

2.02 TRANSLUCENT FACING

- A. Translucent Faces: Manufactured from glass fiber reinforced thermoset resins, by an insulated panel system fabricator specifically for architectural use on sandwich panels. Standard commercial grade thermoplastic, fiberglass, acrylic, or polycarbonate resin based plastic sheets are unacceptable.

B. Flammability:

1. Interior face sheet shall be U.L. listed and have a flame spread rating no greater than 20 and smoke development no greater than 200 when tested in accordance with UL 723. CCI Plastic.
2. Exterior face sheet shall be U.L. listed and have a flame spread rating of no greater than 15 and smoke development no greater than 450 when tested in accordance with UL 723. CCI Plastic.
3. Burn extent no greater than 1-inch per ASTM D635.
4. Faces shall not deform, defect or drip when subjected to fire or flamed; or delamination when exposed to 300° F. for one (1) hour.

C. Weatherability:

1. Overall Degradation Factor: Ten or less per ASTM D3841, Method B.
2. The full thickness of the exterior face shall not change color more than 3.0 Hunter or CIE units (DELTA E by ASTM D2244) after three years outdoor weathering South Florida at 5 degrees facing south, determined by the average of at least three samples, without a protective film or coating to assure maximum, long term color stability. Color stability shall be unaffected by abrasion or scratching.
3. Face sheet shall not darken more than two (2) Adams units (DELTA L by ASTM D2244) when exposed to 150 degrees F., for two weeks.
4. The exterior face shall have a permanent glass erosion barrier to provide maximum long term resistance to reinforcing fiber exposure and shall be warranted against same for 26 years. (Note: For white, crystal and Kal-Tint) plastic film overlays are unacceptable.

D. Appearance:

1. The face sheets shall be uniform in color to prevent splotchy appearance.
2. Exterior Face sheets: .070" thick white color.
3. Interior Face Sheets: .045" thick white color.
4. Faces shall not vary more than \pm 10% in thickness.
5. Faces shall be completely free of ridges and wrinkles which prevent proper surface contact in bonding to aluminum grid core. Clusters of air bubbles and pinholes which collect moisture and dirt will not be acceptable.

E. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft./lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5lb. free-falling ball per UL 972. Panel shall meet ASTM E1996 and ASTM E1886 or TAS 201, 202, and 203.

2.03 NON-COMBUSTIBLE GRID CORE

- A. Extruded Aluminum: ASTM B221; 6063-T6 or 6005 alloy, T5 temper.
- B. Fabricate extruded aluminum I-Beams with provision for mechanical interlocking of muntin-mullion and perimeter to prevent high and low intersections which would interfere with full bonding surface to contact with face material. Width of I-Beam shall be no less than 7/16-inch. Machine aluminum I-Beam for the grid to tolerances of not greater than \pm .002-inch. Welded or web interlocked grid core not acceptable.
- C. I-Beam Thermal Break: Minimum 1", thermoset fiberglass composite. Poured and de-bridged thermal break is not acceptable.

2.04 ADHESIVE

- A. Use heat and pressure type laminate adhesive engineered for structural sandwich panel use, with minimum 25 years field use. Adhesive shall pass testing requirements specified by the International Conference of Building Officials "Acceptance Criteria for Sandwich Panel Adhesive". Minimum strengths as follows:
 - 1. Tensile Strength: 750 psi per ASTM C297 before and after two exposures to six cycles each of the aging conditions prescribed by ASTM D1037.
 - 2. Shear Strength: Minimum shear strength of the panels adhesive by ASTM D1002 after exposure to four separate conditions:
 - a. 50% relative humidity at 68 degrees F.: 540psi
 - b. Accelerated Aging by ASTM D1037 at room temperature: 800psi
 - c. 182 degrees F.: 100psi
 - d. Accelerated Aging by ASTM D1037 at 182 degrees F.: 250psi

2.05 ACCESSORIES

- A. Battens and Perimeter Closure Systems: Extruded 6063-T6 and 6063-T5 aluminum screw clamp-tight closure system. Skylight perimeter closures at curbs shall be factory sealed to panels.
 - 1. Provide battens and perimeter closures with 300 series, stainless steel screws (excluding final fasteners to the building, e.g., powder driven fasteners, lagbolts).
 - 2. Receiving channels for self-tapping stainless steel screws to be continuous the length of each member and extruded as part of the member. Threaded receiving channel not acceptable.
- B. Flexible Sealing Tape "Manufacturer's standard sealing tape pre-applied to closure system at the factory under controlled conditions.
- C. Perimeter Flashing: Sheet aluminum, ASTM B208; 3003 alloy, H14 temper.

2.06 ALUMINUM FINISH

- A. Finish: (Architect to specify)
 - 1. Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturer's full range of colors.

2. Architectural Class I - A44 - Anodized Integral Color
3. Architectural Class I - A41 - Clear Anodized

2.07 PANEL FABRICATION

- A. Fabricate translucent panels with a thickness of 2-3/4 inch; 'U' factor of 0.29 (by NFRC 100); light transmission of 20% (NFRC 202) and solar heat gain coefficient of 0.28 B (NFRC 201).
- B. Pre-assemble translucent panels and perimeter frame where practical and seal at factory. Ship panels to job site in rugged shipping units; ready for erection.
- C. Translucent panels shall be a true sandwich panel of flat fiberglass sheet bonded to a grid core of mechanically interlocking extruded aluminum I-Beams and laminated under controlled process of heat and pressure.
- D. Translucent panel system deflection shall not exceed 1.9 inches at 30psf in 10' span without supporting frame by ASTM E 72.
- E. Grid Pattern: Where possible, mimic existing condition. Otherwise, assume nominal 12" x 24" (Shoji); symmetrical about horizontal center line of each panel.
- F. Adhesive bonding line shall be straight, cover entire width of I-Beam and have a neat, sharp edge. In order to insure bonding strength, white spots at intersections of muntins and Mullins shall not exceed 4 for each 40 square feet of panel, nor shall they be more than 3/64-inch in width.
- G. Rigidly fit and secure joints and corners. Make joints and connections flush, hairline, and weatherproof.
- H. Develop drainage holes with moisture pattern to exterior.
- I. Prepare components to receive anchor devices. Fabricate anchorage items.
- J. Arrange fasteners, attachments, and jointing to ensure concealment from view.
- K. Standard panels shall withstand 1200 degrees F. fire for minimum one hour without collapse or exterior flaming.
- L. Thermally broken panels: Minimum condensation resistance factor of 80 by AAMA 1503 measured on the bond line.
- M. Roof/skylight system shall pass Class A roof burning brand test by ASTM E108.
- N. Roof/skylight system shall meet the fall through requirements of OSHA 1910.23 as demonstrated by testing in accordance with ASTM E661, thereby not required supplemental screens or railings.
- O. Expansion and Contraction Joints: Review existing conditions and provide movement joints to accommodate existing structure and as deemed necessary in delegated-design submittal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that openings and adjoining materials are ready to receive work of this section.
- B. Beginning of installation means acceptance of existing condition.

3.02 PREPARATION

- A. Coordinate dimensions, tolerances, and method of attachment with other work.
- B. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
- C. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.

3.03 INSTALLATION

- A. Install system and perimeter flashings in accordance with manufacturer's instructions and final shop drawings.
 - 1. Anchor component parts securely in place by permanent mechanical attachment system.
 - 2. Accommodate thermal and mechanical movements.
 - 3. Set perimeter framing in full bed of sealant compound, or with joint fillers or gaskets to provide weather-tight construction.
- B. Install joint sealants at perimeter joints and within the panel system in accordance with manufacturer's installation instructions.
- C. Provide alignment attachments and shims required to permanently fasten system to building structure.
- D. Align assembly free of warp or twist; maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Clean aluminum prior to application of sealant.
- F. After other trades have completed work on adjacent material, carefully inspect translucent panel installation and make adjustments necessary to insure proper installation and weather tight conditions.

3.04 FIELD QUALITY CONTROL

- A. Water Test: Test skylight system according to procedures in AAMA 501.2
- B. Repair or replace work that does not pass testing or that is damaged by testing and retest the work.

- C. Installer to have written approval from skylight unit manufacturer or representative as a qualified installer. Installer must prove five or more similar installations. Certified documentation will be provided at the request of the District representative or Architect.

3.05 CLEANING

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- C. Remove excess sealant by moderate use of mineral spirits or the solvent acceptable to sealant manufacturer. Use materials non-harmful to panels.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 - GENERAL

1.01 SUMMARY

- A. Scope of work shall include all materials, labor, equipment and supervision necessary to install warning safety striping, caution safety striping, and painted warning signage as outlined in this Specification. All work shall be performed by properly trained Contractor personnel in a safe, professional, timely and workmanlike manner and in accordance with all federal, state and local laws, rules and regulations, this Specification and good roofing practice.
- B. Any instructions on the Manufacturer's Product Data Sheets are to be considered part of these Specifications and should be followed in any performance of the work.
- C. Specific items NOT to be painted or finished: Factory finished items (as opposed to factory primed).

1.02 REFERENCE STANDARDS

- A. Conform to California Air Resources Board (CARB) Rules, especially 1113, Architectural Coatings.
- B. 2019, Title 19, California Code of Regulations (CCR), Public Safety, State Fire Marshal Regulations

1.03 SUBMITTALS

- A. Prepare eight, 8-1/2-inch by 11-inch samples of finishes, to be provided to District's Maintenance and Operations Department. When possible, apply finishes on identical type materials to which they will be applied on job.
- B. Identify each sample as to finish formula, color name, reflectance number and sheen name and gloss units.
- C. Colors will be selected by Owner and Architect prior to commencement of work, from manufacturer's full range of standard and custom colors.
- D. State Fire Marshal, Fire and Life Safety Approval: Flame retardant coatings shall be listed by the California State Fire Marshal's office. A copy of this listing and a material specification sheet shall accompany the submittal.
- E. Submittal to be reviewed and signed by District's Maintenance and Operations Department prior to Architects approval.
- F. Prior to bid, all project specifications, details, submittals, photographs, inspection reports and existing substrate conditions shall be provided to Manufacturer for review and pre-application warranty approval.
- G. Provide Manufacturer's standard warranty.

1.04 QUALITY ASSURANCE

- A. Mock-up: Before proceeding with paint application, finish one complete surface of each color scheme required, clearly indicating selected colors, finish texture, materials and workmanship. If approved, sample area will serve as a minimum standard for work throughout.
- B. Manufacturer Qualifications: Manufacturer shall have a minimum of 20 years' experience manufacturing roof coatings and be ISO 9001:2008 Certified.
- C. Products listed herein shall be provided by a single manufacturer or approved by the primary roofing manufacturer for compatibility.
- D. Contractor represents and warrants that it is experienced in and qualified to perform the work described herein and can provide the necessary equipment, supervision, and trained workforce capable of completing the work in a safe, prompt, diligent, professional and workmanlike manner and in accordance with all federal, state and local laws, rules and regulations, this Specification and good roofing practice.
- E. Contractor shall be thoroughly familiar with all codes, regulations and standards governing the work to be performed and shall provide written proof of all required licenses and permits prior to project commencement.
- F. Contractor shall inspect the project to examine the actual job and site conditions and must be familiar with local conditions and all things required to complete the work that will have a bearing on its costs and completion.
- G. All substrates must be peel tested for adhesion strength and those results provided to Manufacturer prior to application of the coating system.
- H. Contractor is responsible for ensuring a trained foreman is onsite during the application of the coating system and any related work.
- I. Contractor shall check wet film thickness during application of the coatings to ensure achievement of required coverage rates.
- J. In the event Contractor finds that performance or completion of the work will be delayed for any reason, Contractor shall notify the Owner, the Owner's Representative and Manufacturer in writing as soon as possible.
- K. There shall be no deviations made from the Specifications unless submitted in writing by the Contractor and approved in writing by the Specifier, Owner and Manufacturer.

1.05 MAINTENANCE MATERIALS

- A. Leave on premises where directed, not less than one full gallon of each color, of each type of paint, in new unopened containers. Label each container for identification.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver paint materials in sealed original labeled containers bearing manufacturer's name, type of paint, brand name, solids content, color designation and instructions for mixing and/or reducing.
- B. Provide adequate storage facilities. Store paint materials at a minimum ambient temperatures of 65 degrees F., in well ventilated area.

- C. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.07 PROJECT CONDITIONS

- A. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture contents of surfaces are below manufacturer require minimums.
- B. Contractor shall proceed with roofing work only when the existing and forecasted weather conditions and surface temperatures will permit work to be performed in accordance with Manufacturer's recommendations.
- C. During painting, provide minimum of 25 foot candles of lighting on surfaces to be painted.
- D. Condition of Existing Substrate:
 - 1. The Contractor shall inspect and determine the condition of the roof system and substrate to be coated, and the suitability of the roof system for the application and performance of the coating system.
 - 2. All surfaces and substrates which are to be coated must be properly prepared, clean, dry, structurally sound and free from any moisture, dirt, contaminants or any other conditions which may interfere with the application and performance of the coating system. Contractor shall approve the condition of the roof system and substrate prior to application of the roof coating system.
 - 3. If any unusual, unexpected or concealed conditions are discovered at any time prior to or during the work, the Contractor shall stop work immediately and notify the Owner, Owner's Representative and Manufacturer in writing as soon as possible.
- E. Protection and Coordination:
 - 1. Owner will occupy the premises during the work. Contractor will cooperate with the Owner to allow for the continued use of the facilities during the work.
 - 2. Contractor shall take all necessary precautions when using roof coatings or other materials around air intakes and air conditioning units to avoid any disturbance, including odors, for the Owner and building occupants. All air intakes and air conditioning shall be adequately protected or closed during the course of the work on the roofing system to prohibit odor intake into the building.
 - 3. If ventilators exist on the roof, the Contractor shall determine what material is being exhausted onto the roof surface. Contractor shall contact the Manufacturer to determine if the exhaust materials will interfere with surface preparation, application, adhesion or other performance of the coating system.
 - 4. Contractor shall take all necessary measures to protect unrelated work or adjacent areas from overspray and spillage.
 - 5. Contractor shall coordinate scheduling with the Owner to relocate or protect vehicles, building occupants, building contents and unrelated work from damage.

6. Site cleanup during and after completion of the work shall be completed to Owner's reasonable satisfaction.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design: Uniflex Fluid Applied Roofing Systems, manufactured by Sherwin-Williams. Contact: uniflex.technical@sherwin.com or John Dumesnil 619-665-9341 john.t.dumesnil@sherwin.com

2.02 PAINT MATERIALS

- A. Accessories: Provide linseed oil, turpentine and other materials not specifically specified but required to achieve finishes.
- B. Paints and Coatings: Provide ready-mixed type except field catalyzed coatings; pigments fully ground maintaining soft paste consistency, capable of being readily and uniformly dispersed to complete homogeneous mixtures.
- C. Provide paints and coatings with good flowing and brushing properties and capable of drying or curing free of streaks and sags.
- D. **Painting**
Provide equivalent paint types according to the following schedule.

Roof Safety Striping over TPO and PVC Roofs

1 st coat	S-W Uniflex 41-321 SPE Acrylic Basecoat Gray
2 nd coat	S-W 41-30 Premium Elastomeric Roof Coating
3 rd coat (to cover*)	S-W 41- 30 Premium Elastomeric Roof Coating
Total dry film thickness of 16-24 mils required.	

2.03 WARNING SAFETY STRIPE

- A. Width: As indicated on drawings.
- B. Color: As indicated on drawings.
- C. Text: As indicated on drawings.
- D. Location: As indicated on drawings. Apply warning text at every 25' on center maximum, but no less than once per segment of stripe, space permitting.

2.04 CAUTION SAFETY STRIPE

- A. Width: 8"
- B. Color: Yellow with 3" wide diagonal black stripes at 6" on center.
- C. Location: Install where there is a step or change in roof elevation within the defined work area, that someone would be expected to step or down 24" or less. Refer to drawings for anticipated locations.

2.05 WARNING SIGNAGE

- A. Size: As indicated on drawings.
- B. Color: As indicated on drawings.
- C. Text: As indicated on drawings.
- D. Location: At ladders, as indicated on drawings.

2.06 BALLASTED RAILING BASE PLATE

- A. Width: 2"
- B. Color: Black
- C. Location: Outline each ballasted railing base plate to identify the intended location.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Thoroughly examine surfaces scheduled to be painted prior to commencement of work. Report in writing of conditions potentially detrimental to proper application. Do not commence until satisfied that defects and deficiencies in surfaces have been rectified.

3.02 PROTECTION

- A. Adequately protect other surfaces from paint and damages. Repair damages as a result of inadequate or unsuitable protection.
- B. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted and in particular, surfaces within storage and preparation areas.
- C. Place cotton waste cloths and materials which may constitute a fire hazard in closed metal containers and remove daily from site.
- D. Remove or cause to have removed, electrical plates, fittings, fastenings, escutcheons, and hardware prior to painting operations. These items are to be carefully stored, cleaned and replaced on completion of work in each area. Do not use solvents or other harsh cleansers on surfaces which could be damaged by such use of materials.

3.03 PREPARATION OF SURFACES

- A. Preparation of the roof substrate is the responsibility of the Contractor.
- B. Surface Cleaning:
 - 1. Contractor shall first remove any dirt or debris from the roof by using a broom or air broomer.
 - 2. The roof shall be power washed using a power washer with greater than 2,000psi. The Contractor shall take caution not to inject water into the roofing substrate. Use of an all-purpose cleaner such as Great Lakes Laboratories No Rinse Cleaner is recommended.

3. Any areas of algae, mildew or fungus on the roof membrane or the existing coating shall be treated with a tri-sodium phosphate (TSP) or equivalent non-filming detergent and water solution.
4. Clear water rinse until all cleaning residue is removed.
5. After cleaning and rinsing the roof, Contractor should ensure that no dirt, debris or contaminants are present that may interfere with proper adhesion.
6. Contractor shall allow 24-48 hours for complete drying. All substrates must be dry.

3.04 APPLICATIONS

A. General:

1. Surface preparation is critical prior to application of the coating system. Contractor shall ensure that all surfaces and substrates which are to be coated have been properly prepared and are clean, dry, structurally sound and free from any moisture, dirt, contaminants or any other conditions which may interfere with the application and performance of the coating system.

B. Protection and Start-Up Procedures:

1. Contractor shall only apply coating when the existing or forecasted weather conditions and surface temperatures will permit work to be performed as described in Section 1.07.
2. Owner shall be notified of start times so that fresh air intakes may be closed, sealed off or adequately protected and HVAC units shut down.
3. If Contractor is spray applying the coating system, Contractor shall post notices a minimum of 48 hours around building and parking lots prior to any spraying.
4. Contractor shall protect unrelated work and adjacent surfaces from overspray or spillage by using masking tape, plastic/paper sheets, stretch wrap, tarps or plywood, or some other material.
5. Contractor shall follow all of Manufacturer's mixing instructions for the products prior to application.
6. Do not paint over labels.

C. Application Methods:

1. Roller: Minimum ¾" nap roller recommended.
2. Spray: Airless spray equipment with a recommended minimum air pressure of 2,800 psi at the tip and a tip size of .031 - .035 (e.g. .635 tip) is recommended for best results.
3. Contractor shall frequently verify correct mil thickness by the use of a standard wet mil gauge during application of the coating.

4. During application of the coating, Contractor will look for and correct any pinholes or blisters.
5. Refer to manufacturer data pages for application instructions.

3.05 FIELD QUALITY CONTROL

- A. Limit traffic on coated surfaces for a minimum of two (2) days.
- B. Final Observation and Verification:
 1. Prior to demobilization from the site, a final inspection of the roof coating system shall be carried out by the Owner's Representative and Contractor.
 2. Any defects and non-compliance with the Specifications, Product Data Sheets or recommendations of Uniflex shall be itemized in a punch list. These items must be corrected by the Contractor to the satisfaction of the Owner and Uniflex prior to demobilization.
 3. Any areas of insufficient coating thickness will require recoating by Contractor.
 4. The roof coating system must be fully adhered to the roof substrate. Any voids left under the system must be corrected.

3.06 CLEANING

- A. Remove masking and protection.
- B. As work progresses and upon completion, promptly remove paint where spilled, splashed, smeared and splattered.
- C. During progress of work, keep premises free from unnecessary accumulations of tools, equipment, surplus materials and debris.
- D. Upon completion of work, leave premises neat and clean, to satisfaction of Owner.

END OF SECTION

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SECTION 10 14 00

SIGNAGE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Interior warning signs at roof hatches.

1.02 SUBMITTALS

- A. Provide all submittals in accordance with the requirements of Section 01 33 00.
- B. Product Data: Submit manufacturer's technical data related to materials, component dimensions, profiles, finishes, and installation.
- C. Shop Drawings: Submit shop drawings for fabrication and erection of signs. Show anchors, layout, and installation details.
 - 1. Submit full-scale layout for each sign for review of wording, spacing, and letter design.
- D. Samples: Submit sample of each product and material indicating color, finish, pattern, and texture.
 - 1. Submit one full-size sample sign of type, style, and color specified, including method of attachment. If accepted, sample will become part of the job.
- E. Submit supplier's installation instructions.

1.03 QUALITY ASSURANCE

- A. In addition to complying with pertinent codes and regulations, comply with industry and trade standards normally associated with this product or material.
- B. Supplier: Obtain all products in this section from a single supplier.
- C. Installer: Installation shall be performed by installer specialized and experienced in work similar to that required for this project.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Protect signs components and surfaces against damage during transportation and unloading.
- B. Store products protected from weather, temperature, and other harmful conditions as recommended by the supplier.

1.05 WARRANTY

- A. Provide Installer's written warranty to maintain, repair and replace products and materials for one year following Notice of Completion date, without additional cost to Owner, as specified in Section 01 78 30 – Warranties, Guarantees, and Bonds.
- B. Provide Manufacturer's standard five year product warranty.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Provide products from ASI Signage Innovations, 8181 Jetstar Drive, Suite 100, Irving, Texas 75063; 800-247-7732, or equal.

2.02 NOT USED

2.03 SIGNAGE SYSTEMS

- A. Product: Equal to Series LTV, Digitally Cut Vinyl Letters. Color and size as indicated in the drawings. Matte finish. Class A fire rating.
 - 1. 3M Controltac Graphic Film IJ180-10; 2 mil, white, vinyl film with a luster finish; with 3M Scotchcal Overlaminate 8520 matte.
- B. Location: Provide one sign per roof hatch.
- C. Letterstyle: Helvetica, medium.
- D. Mounting Method: Pressure sensitive adhesive. Where existing conditions do not permit mounting sign directly to interior of roof hatch surface in a level, plumb, and distortion free manner, provide acrylic backer plate per 3.01.D.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install product in accordance with supplier's instructions. Clean surface
- B. Install product in locations indicated using mounting methods recommended by sign manufacturer and free from distortion, warp, or defect adversely affecting appearance. Do not install signs over existing fasteners, labels, or surface penetrations.
- C. Install signs level, plumb, and at required height.

- D. Irregular, Porous, or Vinyl-Covered Surfaces: Provide 1/8" acrylic backer mounted with one-way tamper proof screws, black, in pre-drilled holes, to permit installations of signs in a plumb, square, level plane.

3.02 CLEANING

- A. Clean sign and surrounding surfaces to remove all dirt and debris from work of this section.

END OF SECTION

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APRIL 9, 2021

**GROSSMONT UNION HIGH SCHOOL DISTRICT
ROOF SAFETY REMEDIATION**

APPENDIX A

ROOF AERIAL SURVEY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: District furnished roof aerial survey produced by SafeCon Consulting Group. This file is available as part of the Bid Documents. Contractor's shall be familiar with the existing conditions through this provided imagery and required site walk.

END OF SECTION

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