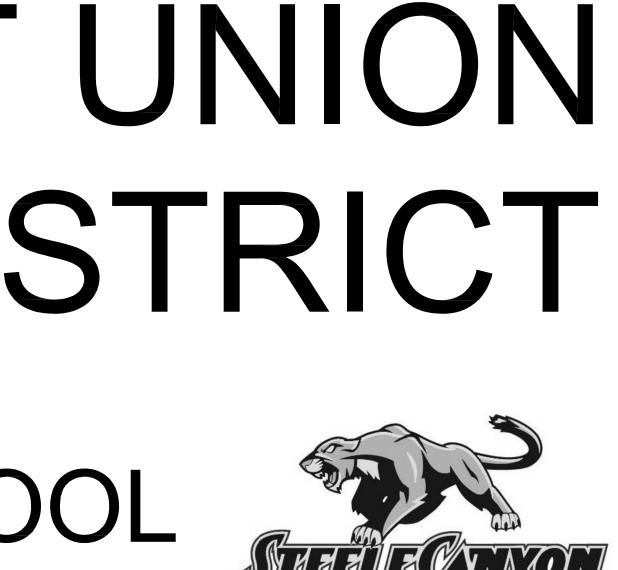
GROSSMONT UNION HIGH SCHOOL DISTRICT STEELE CANYON HIGH SCHOOL





DSA BACKCHECK 03/01/2022 PROJECT NO. 2020-06492-000

WWW.HED.DESIGN

Planning Architecture Engineering Interior Architecture Landscape Architecture **Construction Services** Copyright © 2021



IDENTIFICATION STAM DIV. OF THE STATE ARCHI

APP: 04-119322 INC REVIEWED FOR

S 🗹 🛛 FLS 🗹

ABBREVIATIONS

| A# xxx | DIVISION OF STATE ARCHITECT APPLICATION NUMBER | LAV. LB. | LAVATORY POUND | |
|------------------------|--|-------------------------|---|----|
| A.C. A/C | AIR CONDITIONING(ED) | L.F. LVR. | LOUVER | |
| A.D. | ACCESSIBLE AREA DRAIN | LT.WT. | LIGHTWEIGHT | 4 |
| A/E A.F.F. | ARCHITECT/ENGINEER ABOVE FINISH(ED) FLOOR ABOVE FINISH(ED) SURFACE | | | |
| ALUM. | ALUMINUM | MAS. MATL. | MATERIAL | |
| AMT. | | MAX. M.B. | MACHINE BOLT | |
| APPROX | ANODIZE(D) APPROXIMATE(LY) | MECH. MEMBR. | MEMBRANE | |
| ASPH. | ARCHITECT(S) ASPHALT AUDIO/VISUAL | MFR. MIN. | | 2 |
| BD. | | | .)MOUNT(ED)(ING) | |
| BIT. BLDG. | BITUMINOUS | | | |
| | BLOCK(ING) | (N) | NEW | |
| | | Ň/Á N.I.C. | | |
| C.B. C.F. | CATCH BASIN CUBIC FOOT (FEET) | NO. N.R.C. | NUMBER | |
| C.J. C.L. | CONTROL JOINT CENTERLINE | N.T.S. | COEFFICIENT NOT-TO-SCALE | |
| CLG. C.L.L. | | | | Ę |
| CLR. C.M.U. C.O. | CLEAR(ANCE) CONCRETE MASONRY UNIT(S) CLEAN OUT | 0.C. | | |
| COL. | COLUMN CONCRETE | O.D. O.H. OPNG | OUTSIDE DIAMETER OPPOSITE HAND OPENING | |
| | CONSTRUCTION | OPP. | | |
| CONTR. CORR. | CONTRACTOR | PAV.(MT.) |) PAVING, PAVEMENT | 6 |
| C.T. | | PC | POWDER COATED PANIC HARDWARE | |
| | | P.I.P. PL. | PROTECT IN PLACE PLATE | 7 |
| D. (D) | DRAIN DEMOLISH | P.LAM. PLAS. | PLASTIC LAMINATE PLASTER, PLASTIC | |
| DÉMO. D.F. | DEMOLISH (DEMOLITION) DRINKING FOUNTAIN | PLBG. PLYWD, | PLUMBING PLYWOOD | |
| DIA. | DIAMETER DIMENSION | PNT. PREFAB. | PAINT PREFABRICATE(D) | |
| DISP. DN. | DISPENSER, DISPOSAL DOWN | PREFIN. | PREFINISH(ED) POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH | 8 |
| DR. D.S. | DOWNSPOUT | PTD. | PAINTED | |
| D.T. | | | | |
| DTL. DRWG. | | QUAL. QUAN. | QUALITY QUANTITY | |
| | EXISTING | (R) | | ç |
| (E) EA. E.J. | EACH | R.B. R.C.P. R.D. | | Ξ |
| FI | ELEVATION (GRADE) | REF. | REFERENCE REFRIGERATOR | |
| ELEV. EMER. | ELEVATION, ELEVATOR | REG. | | |
| EQUIP. | EQUIPMENT ELECTRIC WATER COOLER | RET. | RETAINING | |
| EXH. | EXHAUST | RM. RT. | ROOF LEADER, RAIN LEADER ROOM RIGHT | |
| EXTG. | EXISTING EXTERIOR | | | |
| | EXPAND(SION), EXPOSED | S.C. | SOLID CORE | |
| F.A. F.D. | FIRE ALARM FIRE DAMPER, FLOOR DRAIN | SCHED. | SCHEDULE SOAP DISPENSER; | |
| F.E. | FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FINISHED FLOOR | S.D. | STORM DRAIN | |
| F.H. | FIRE HOSE | SHTG. | SHEATHING | |
| | | | SHEET METAL SCREW SPECIFICATION | |
| F.SP. | FIRE STANDPIPE | STD. | SOUND TRANSMISSION CLASS | 5 |
| FLASH. | | STRUCT. | STORAGE STRUCTURAL | |
| | FOUNDATION | SUSP. | SUSPENDED | |
| F.O.F. | FACE OF CONCRETE FACE OF FINISH FACE OF MASONRY | | TREAD, TILE, TOILET | |
| F.O.S. | FACE OF STUDS FACE OF SHEATHING | | TELEPHONE TEMPORARY | |
| F.S. | FINISH SURFACE FOOT, FEET | T.O.C. | TOP OF TOP-OF-CURB | |
| | FOOTING | T.O.M. | C.TOP-OF-CONCRETE TOP-OF-MASONRY TOP-OF-PARAPET | |
| GA. | GAUGE | T.O.R. | TOP-OF-PARAPET TOP-OF-ROOF TOP-OF-SLAB | |
| GALV. | GALVANIZED | T.O.ST. | TOP-OF-SLAB TOP OF STEEL TOP-OF-WALL | |
| GR. | GENERAL CONTRACTOR GLASS;GLAZING GRADE | | TRENCH TUBE STEEL | |
| GRD. G.W.B. | GUARD GYPSUM WALL BOARD | TYP. | | |
| | GYPSUM | | UNLESS NOTED OTHERWISE | |
| | | | UNLESS OTHERWISE NOTED | |
| H.C. | HOSE BIBB HOLLOW CORE | V.B. | VAPOR BARRIER, VINYL BASE | |
| HDWD | HARDWOOD | VERT. | VINYL COMPOSITION TILE VERTICAL | |
| H.M. | HOLLOW METAL | V.I.F. | VESTIBULE VERIFY IN FIELD VINYL TILE | |
| HT. | | | WITH (WITHOUT) | 1 |
| HVAC HYD | HYDRANT | W. (W/O) W.C. WD. | WATER CLOSET | |
| | | W.S. | WOOD SCREW WELDED WIRE FABRIC | |
| I.D. INSUL. | INSIDE DIAMETER INSULATION | | WELDED WIRE MESH | - |
| INT. INV. | INTERIOR INVERT | | | 20 |
| ISA | INTERNATIONAL SYMBOL OF ACCESSIBILITY | STEEL SH | HAPES | 21 |
| J.B. | JUNCTION BOX | C HP | CHANNEL HP SHAPES | |
| JT. | JOINT | L M | ANGLE M SHAPES | |
| K.D. | KNOCK DOWN | MC S | MISCELLANEOUS CHANNEL S SHAPES | 22 |
| KIT. K.O.(P.) | KITCHEN, KITCHENETTE KNOCK OUT (PANEL) | TS W | STRUCTURAL TUBE WIDE FLANGE | |
| | | | | |

GENERAL NOTES

- 1. ALL CONSTRUCTION SHALL COMPLY WITH CURRENT APPLICABLE CODES, ORDINANCES, REGULATIONS AND STATUTES.
- THE PROJECT SPECIFICATIONS, BOUND SEPARATELY, ARE A PART OF THE CONTRACT DOCUMENTS.
- 3. 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.
- 27. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO MODIFY THE FACILITY FOR ACCESSIBILITY IN 4. PLAN DIMENSIONS ARE TO THE FOLLOWING REFERENCES ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF UNLESS SPECIFICALLY NOTED OTHERWISE IN THE REGULATIONS. SHOULD ANY CONDITIONS THAT DEVELOP DRAWINGS: NOT COVERED BY THE CONTRACT DOCUMENTS SUCH **COLUMN LINE / STRUCTURAL GRID** THAT THE FINISHED WORK WILL NOT COMPLY WITH SAID EXTERIOR FACE OF STUDS (FOS) OF EXTERIOR STUD TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CHANGE ORDER DETAILING AND SPECIFYING THE WALLS, OR, REQUIRED WORK SHALL BE SUBMITTED TO AND (FOS) OF INTERIOR STUD WALLS APPROVED BY DSA BEFORE PROCEEDING WITH WORK. UNLESS NOTED OTHERWISE
 - FACE OF MASONRY (FOM) FACE OF CONCRETE (FOC) FACE OF FINISH (FOF) OF EXISTING FINISH
- MATERIALS 5. 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.
- 6. ALL MATTERS AND DECISIONS REGARDING COLOR, TEXTURE, DESIGN AND INTERPRETATION OF THE CONTRACT DOCUMENTS SHALL BE REFERRED TO HARLEY ELLIS DEVEREAUX ARCHITECTS & ENGINEERS.
- 7. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED EMPLOYED BY THE DISTRICT (OWNER) SHALL DIMENSIONS. LARGE SCALE DETAILS TAKE PRECEDENCE CONDUCT ALL THE REQUIRED TESTS AND OVER SMALLER SCALE DETAILS. ANY DISCREPANCIES OR INSPECTIONS FOR THE PROJECT. CONFLICTS WITHIN THE DRAWINGS OR BETWEEN MAINTAIN THE INTEGRITY OF ALL EXISTING RATED THE DRAWINGS OR SPECIFICATIONS SHALL BE BROUGHT ASSEMBLIES U.O.N. TO THE ATTENTION OF THE ARCHITECT.
- 8. 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.
- 10. 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 INSTALLA-TION OF BACKING, BLOCKING, FRAMING, HANGERS AND OTHER SUPPORT AMONG THE RESPECTIVE SUBCONTRACTORS AND TRADES.
- INSTALLED OR APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. IS PROHIBITED. MATERIALS SHALL NOT BE
- 11. ALL MATERIALS AND FINISHES SHALL BE 12. TRESPASSING ON ANY ADJOINING PROPERTIES STORED ON ANY ADJOINING PROPERTY.
- 13. 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).
- 14 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.
- **15. 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.
- 16. NO MOTOR VEHICLES ARE TO BE STORED IN THE BUILDING(S) DURING CONSTRUCTION.
- 19. 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.
- 20. ALL WORK SHALL CONFORM TO TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).
- 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. (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
- 21. CHANGES TO THE APPROVED DRAWINGS AND CHANNEL 22. A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT **INSPECTOR SHALL HAVE MIN. CLASS 3.**

- 23 SEE C.F.C. CHAPTER 33 FOR FIRE SAFETY DURING CONSTRUCTION
- 24. PROTECT IN PLACE ALL (E) LANDSCAPING THROUGHOUT THE DURATION OF CONSTRUCTION. U.O>N ANY LANDSCAPING, IRRIGATION OR HARDSCAPE DAMAGED BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED TO PRE-CONSTRUCTION CONDITION
- 25. ALL WORK SHOWN IS ASSUMED TO BE NEW WORK UNLESS NOTED AS EXISTING (E)
- 26. ALL SYSTEMS SHALL BE BID & INSTALLED COMPLETE AND FUNCTIONAL FOR THEIR PURPOSE
- 28. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION, OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS AND CFC CH 33- FIRE SAFETY DURING DEMOLITION AND CONSTRUCTION . SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS, A CONSTRUCTION CHANGE DOCUMENT, OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE APPROVED BEFORE PROCEEDING WITH THE REPAIR WORK.
- 29. A DSA ACCEPTED TESTING LABORATORY DIRECTLY

DEMOLITION AND REPAIR **GENERAL NOTES**

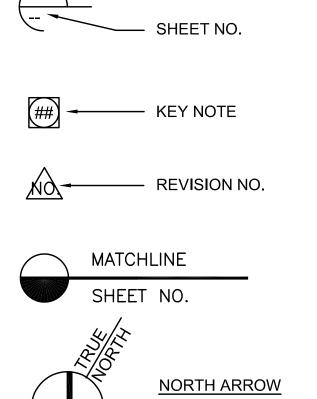
- CONTRACTOR SHALL PROVIDE ALL DEMOLITION NECESSARY TO ACCOMPLISH ALL NEW CONSTRUCTION
- REMOVAL OF ALL DEBRIS SHALL BE DONE CAREFULLY. CONDUCT DEBRIS REMOVAL TO INSURE MINIMUM INTERFERENCE WITH ROADS, WALKS AND OTHER OCCUPIED FACILITIES.
- EXECUTE WORK BY METHODS THAT AVOID DAMAGE TO EXISTING ADJACENT 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:
- REMOVAL OF ABANDONED ITEMS SUCH AS PIPING, Α. CONDUIT AND WIRING.
- 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:
- PROMPTLY NOTIFY CONSTRUCTION MANAGER.
- PROTECT DISCOVERY FROM DAMAGE FROM ELEMENTS OR WORK.
- 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.
- 10. 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.
 - 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.

- 11. PRESENCE OF AN EXISTING PRODUCT, FINISH, OR TYI CONSTRUCTION TO REMAIN, REQUIRES THAT PATCHI EXTENDING OR MATCHING SHALL BE PERFORMED AS NECESSARY TO MAKE WORK COMPLETE AND CONSIS TO THE STANDARD OF QUALITY OF THE EXISTING MATERIAL.
- 12. 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 THAT SPECIFIED FOR NEW WORK.
- 13. PATCH OR REPLACE ANY PORTION OF AN EXISTING FINISHED SURFACE WHICH IS FOUND TO BE DAMAGE LIFTED, DISCOLORED, OR SHOWS OTHER IMPERFECT 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 NEAR INTERSECTIONS.
- 14. WHEN NEW WORK ABUTS OR FINISHES FLUSH WITH EXISTING WORK. MAKE A SMOOTH TRANSITION. PATC WORK SHALL MATCH EXISTING ADJACENT WORK IN TEXTURE AND APPEARANCE SUCH THAT THE PATCH TRANSITION IS NOT NOTICEABLE AT A DISTANCE OF F FEET.
- A. WHEN FINISHED SURFACES ARE CUT IN SUCH A WAY THAT A SMOOTH TRANSITION WITH NEW W IS NOT POSSIBLE, TERMINATE EXISTING SURFA NEAT MANNER ALONG A STRAIGHT LINE AT A NATURAL LINE OF DIVISION AND PROVIDE TRIM APPROPRIATE TO FINISHED SURFACE.
- 15. ALL ADJACENT WORK DAMAGED DUE TO DEMOLITION NEW CONSTRUCTION SHALL BE PROMPTLY REPAIRED 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 COM WITH LOCAL BUILDING DEPARTMENT REQUIREMENTS
- 16 DO NOT CLOSE, BLOCK OR OTHERWISE OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED FACILITIES WITHOUT WRITTEN PERMISSION FROM AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PRO ALTERNATE ROUTES AROUND CLOSED OR OBSTRUC TRAFFIC WAYS IF REQUIRED BY GOVERNMENT REGULATIONS
- 17. DO NOT USE CUTTING TORCHES FOR REMOVAL UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. CONCEALED SPACES, SUCH AS INTERIOR OF DUCTS PIPE SPACES, VERIFY CONDITION OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN APPROPRIATE PORTABLE FIRE SUPPRESSI DEVICES DURING FLAME-CUTTING OPERATIONS.
- 18. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE PROTECT THEM AGAINST DAMAGE DURING DEMOLITI OPERATIONS.

DO NOT INTERRUPT UTILITIES SERVING OTHER FACIL EXCEPT WHEN AUTHORIZED IN WRITING BY AUTHORI HAVING JURISDICTION.

- 19. PROTECTION MEASURES SHALL BE IN EFFECT PRIOR COMMENCEMENT OF ANY DEMOLITION WORK. IT IS TH CONTRACTOR'S RESPONSIBILITY TO COMPLETELY ISOLATE CONSTRUCTION WORK FROM ADJACENT IN-SERVICE AREAS OF THE BUILDING.
- 20. UTILITY SHUT-DOWN MUST BE COORDINATED WITH OWNER A MINIMUM OF 48 HOURS IN ADVANCE.
- 21. THE LOCATION AND ACTIVE/INACTIVE STATUS OF ALL EXISTING UTILITIES IN THE IMMEDIATE AREA OF THE \ MUST BE VERIFIED PRIOR TO ANY CUTTING OPERATIO
- 22. DEBRIS FROM DEMOLITION SHALL BE COLLECTED AN REMOVED AT THE BEGINNING OF THE FOLLOWING WO DAY. ROUTING OF ANY DEBRIS THROUGH ANY PORTIC THE EXISTING BUILDING SHALL BE DONE UNDER STRI OBSERVATION OF THE PROJECT INSPECTOR. ONLY T ROUTES AND TIMES DESIGNATED SHALL BE ALLOWED
- 23. ALL FLOOR, WALL, OR ROOF OPENINGS ABANDONED NOT REUSED WILL BE CLOSED IN AND PATCHED TO PROVIDE THE SAME STRUCTURAL CAPACITY, SEPARA AND MATERIAL CONFIGURATION AND FINISH AS THE ADJACENT SURFACES.
- 24. CONSTRUCTION PROVISIONING MUST BE ACCOMPLIS ONLY VIA THE INGRESS/EGRESS ROUTES DESIGNED OWNER AND AT TIMES SPECIFICALLY ALLOWED.

SYMBOLS AND LEGENDS ----- DETAIL NO.



Ν

| PROJECT DESC | RIPTION | SHEET INDEX |
|--|--|---|
| ROOF SAFETY IMPROVEMENTS INCLUDING 1. BUILDING "A" WARNING LINES, LADDER TIE-OFF, BALLAS 2. BUILDING "B" WARNING LINES, LADDER TIE-OFF, BALLAS 3. BUILDING "C" WARNING LINES, ROOF HATCH RAILINGS & 4. BUILDING "D" WARNING LINES & ROOF HATCH RAILINGS & 5. BUILDING "F" WARNING LINES, ROOF HATCH RAILINGS & 6. BUILDING "F" WARNING LINES 7. BUILDING "K1" WARNING LINES, LADDER TIE-OFF, SKYLIG 8. BUILDING "K2" WARNING LINES, LADDER TIE-OFF, SKYLIG | STED RAILINGS & SKYLIGHTS STED RAILINGS & SKYLIGHTS BALLASTED RAILINGS. BALLASTED RAILINGS. | SeneralG.20.1TITLE SHEETG.20.2PROJECT INFORMATION & SHEET INDEXACHTECTURAL SITEA.20.1SITE PLANACHTECTURALM.20ENLARGED ROOF PLANSA.10.2ENLARGED ROOF PLANSA.10.3ENLARGED ROOF PLANSA.10.3ENLARGED ROOF PLANSA.10.4ENLARGED ROOF PLANSA.10.5ENLARGED |
| NOTE REGARDING DSA REVIEW: DSA APPROVAL OF BALLASTED GUARDRA RESTRAINT AND GRAVITY LOAD, AND DOE PROTECTION REQUIREMENTS. | | PROJECT DIRECTORY |
| | | Owner: Katy Wright GUHSD 1100 Murray Drive El Cajon, CA 92020 Tei: (619) 644 - 8151 Fax: (619) 465 -7478 Architect: Thomas Christian HED 11750 Sorrento Valley Road, Suite 100 San Diego, CA 92121 Tei: (619) 398-3800 Fax: (619) 398-3855 tchristian@hed.design Steven Rohy Wiseman + Rohy Struct. Engineers 9915 Mira Mesa Blvd, Suite 200 San Diego, CA 92131 Tei: (858) 536- 5166 Fax: (858) 536- 5166 Fax: (858) 536- 5163 srohy@wrengineers.com |
| SIGNATURE STA | FEMENT | DEFERRED APPROVAL |
| Statement of General Section No. 04-119322 (Application No. 04-119322 The drawings or sheets listed on the cover This drawing, page of specifications/calcul have been prepared by other design professis authorized to prepare such drawings in this s 1) Design intent and appears to meet the application with my plans and specifications (Coordination with my plans and specifications/calcul have been prepared by other design professis authorized to prepare such drawings in this s 1) Design intent and appears to meet the applicate on the construction of this project. The Statement of General Conformance "shall nd duties, and responsibilities under Sections 17303 Sections 4-336, 4-341 and 4-344" of Title 24, Pa I find that: All drawings or sheets listed on the Coerdination with my plans and specifications. Anarchitect or Engineer designated to be ingeneral responsible charge THOMAS ERIK CHRISTIAN Print Name C 18333 License Number EXPLOREDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDEDED | ERS WHO UTILIZE PLANS, AWINGS, PREPARED BY OTHER LICENSED AND/OR CONSULTANTS | FABRICATION & INSTALLATION OF THE FOLLOWING SHALL NOT BE STAUUNTIL DETAILED PLANS AND SPECIFICATIONS ARE APPROVED BY THE ACHITECT: 1. SKYLIGHTS & RELATED ANCHORAGE THE ABOVE PLANS AND SUPPORTING DOCUMENTS SHALL BE STAMPED SIGNED BY THE ARCHITECT AND/OR ENGINEER OF RECORD BEFORE S TO THE DIVISION OF THE STATE ARCHITECT |







KEYNOTES:

- 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 LORGUARD 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

---- BALLASTED RAILING SYSTEM PER SPECIFICATIONS

CAUTION SAFETY STRIPE 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

(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

ENLARGED PLAN

- 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
- <u>CAMPUS SPECIFIC NOTE:</u> THE BUILDINGS ON THIS CAMPUS ARE WITHIN A WILDLAND URBAN INTERFACE AREA (WUI) AND THEREFORE PATCHING OF THE ROOF, IF ANY, MUST BE WITH CLASS A ROOFING

COORDINATE WARNING LINE PLACEMENT WITH EXISTING WALK PADS PRIOR TO INSTALLATION

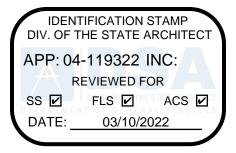
UNREASONABLE HARDSHIP KEY NOTES:

| NOTE: NOT ALL KEYNOTES ARE USED ON EACH PROJECT OR EACH SHEET. | |
|--|---|
| RAMP RUNNING SLOPE STEEPER THAN 1:12. DOES NOT COMPLY WITH 11B-405.2. WIL | L NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| B WALKWAY CROSS SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-403.3. V | /ILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| WALKWAY RUNNING SLOPE STEEPER THAN 1:20. DOES NOT COMPLY WITH 11B-403.3. | WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| HANDRAIL EXTENSIONS DO NOT COMPLY WITH 11B-505.10.1. WILL NOT BE CONSTRUC | TED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| E STUDENT DROP OFF/PICK UP DOES NOT COMPLY WITH 11B-209.2.1. WILL NOT BE CO | ISTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| F SIDEWALK WIDTH DOES NOT COMPLY WITH 11B-406.5.3. WILL NOT BE CONSTRUCTED | TO COMPLY. 11B-202.4 EXCEPTION 8. |
| G WALKWAY WIDTH DOES NOT COMPLY WITH 11B-404.2.4. WILL NOT BE CONSTRUCTED | TO COMPLY. 11B-202.4 EXCEPTION 8. |
| H SIDEWALK SLOPE AT CURB RAMP LANDING DOES NOT COMPLY WITH 11B-406.5.3 WIL | L NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| WALKWAY SURFACE UNEVEN. DOES NOT COMPLY WITH 11B-302.1 & 303.2. WILL NOT | BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| RAMP LANDING SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-405.7.1. WI | LL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| NO ACCESSIBLE ROUTE SIGN COMPLYING WITH 11B-216.6. WILL NOT BE CONSTRUCT | ED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| RAMP CROSS SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-4053. WILL | NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| GATE OR DOOR HARDWARE DOES NOT COMPLY WITH 11B-404.2.7. WILL NOT BE CONS | STRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| SIGNAGE DOES NOT COMPLY WITH 11B-703. WILL NOT BE CONSTRUCTED TO COMPLY | 7. 11B-202.4 EXCEPTION 8. |
| PARKING SPACE AND ACCESS AISLE DO NOT COMPLY WITH 11B-502.4. WILL NOT BE C | ONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| SIDEWALK CURB RAMP SLOPE IS TOO STEEP. DOES NOT COMPLY WITH 11B-406.2. W | LL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| Q DRINKING FOUNTAIN DOES NOT COMPLY WITH 11B-602. WILL NOT BE CONSTRUCTED | TO COMPLY. 11B-202.4 EXCEPTION 8. |
| NO TOW AWAY SIGN COMPLYING WITH 11B-502.8. WILL NOT BE CONSTRUCTED TO CO | MPLY. 11B-202.4 EXCEPTION 8. |
| RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 404.2.7, 603.2.1, 603.5, 604.2, 604.7, 604.7, 604.7, 604.2, 604.7, 604.2 | 4.8.1, 604.8.2, 605.3, 606.2, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO |
| RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 603.5, 604.3, 604.7, 604.8.1, 604.8.2, 604 11B-202.4 EXCEPTION 8. | 5.3, 606.2, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. |
| RESTROOMS DO NOT COMPLY WITH 11B-307.2, 404.2.7, 603.5, & 703. WILL NOT BE CON | STRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| RESTROOMS DO NOT COMPLY WITH 11B-307.2, 404.2.4, 603.5, 604.7, 605.2, & 606.5. WIL | L NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 404.2.10, 603.2.1, 603.5, 604.3, 604.7, 64 COMPLY. 11B-202.4 EXCEPTION 8. | 04.8.1, 605.2, 606.3, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO |
| RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 603.2.1, 603.4, 603.5, 604.4, 604.7, 604.4 EXCEPTION 8. | 8.2 & 606.5 WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 |
| RESTROOM DOES NOT COMPLY WITH 11B-404.2.7, 603.5, 604.3, 604.7, 606.5, & 703. WIL | NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| | |

UNREASONABLE HARDSHIP P.O.T. LEGEND:

COMPLIANT PATH OF TRAVEL

NON-COMPLIANT PATH OF TRAVEL

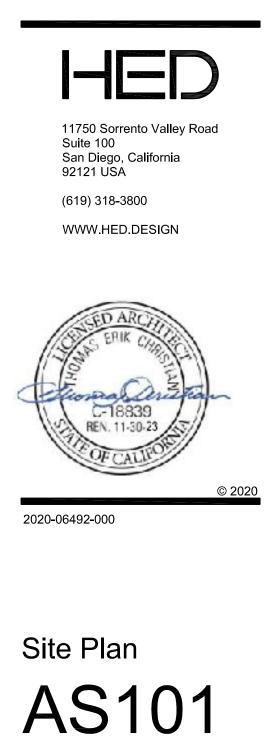


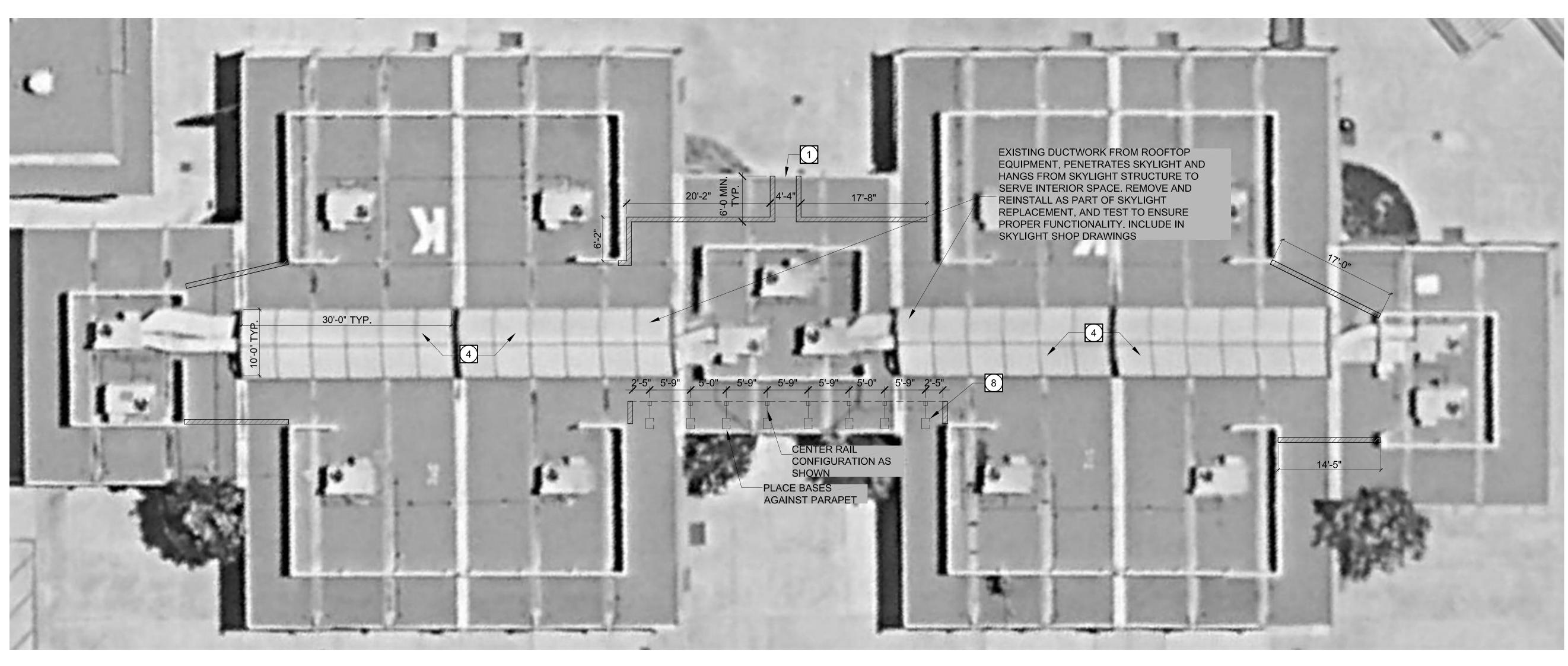


GROSSMONT UNION HIGH SCHOOL DISTRICT

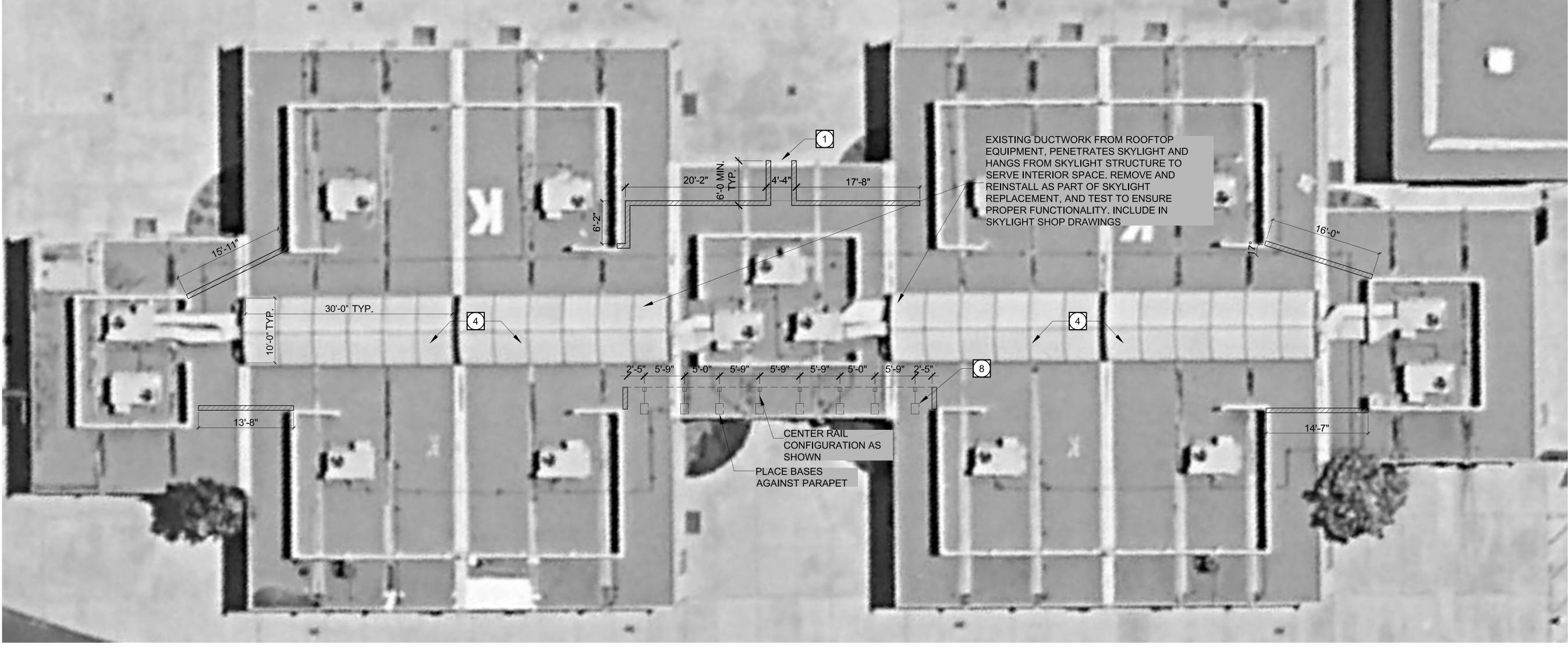


8585 Blossom Lane, Spring Valley, CA 91977 Date Issued For 08/04/2021 DSA SUBMITTAL 03/01/2022 DSA BACKCHECK





1 ENLARGED ROOF PLAN- BLDG K1 A-101 SCALE: 1/8"= 1'-0"

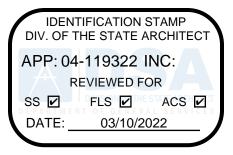


KEYNOTES:

| NOTE. NOT ALL | KEYNOTES ARE US | ED ON EACH PROJECT OR EACH SHEET. |
|---------------|--------------------|--|
| | E LADDER BRACKE | T & DANGER WARNING SIGN AT TOP OF LADDER OR ROOF TOP EQUIPMENT PER DETAIL 3/A-501 |
| 2 REMOVE | E (E) GUARDRAIL AT | ROOF HATCH |
| | SIDE ACCESS GAT | TE AT ROOF HATCH RAILING SYSTEM AS SHOWN |
| 4 REMOVI | E AND REPLACE EX | KISTING SKYLIGHT PER DETAIL 1/A-501 |
| 5 SELF CL | .OSING SAFETY GA | TE PER SPECS. |
| 6 LOCATE | CENTER OF RAILIN | IG OVER BEARING WALL BELOW. DIMENSION SHOWN IS APPROXIMATE. VERIFY LOCATION IN FIELD. |
| 7 divers | FIED FALL PROTEC | TION LORGUARD GUARDRAIL OR EQUAL |
| 8 SAFEGL | IARD INDUSTRIES V | /ERSIRAIL FREESTANDING GUARDRAIL OR EQUAL |
| | | |
| | | |
| IOTE: NOT ALL | TIEMS ARE USED C | |
| | | WARNING SAFETY STRIPE REFER DETAIL 4/A-501 |
| | | CAUTION SAFETY STRIPE PER SPECIFICATIONS |
| | ₁ ┼──── | BALLASTED RAILING SYSTEM PER SPECIFICATIONS |
| L | | 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) |
| | | (E) ROOF HATCH TO RECEIVE RAILING SYSTEM PER DETAIL 2/A-501. STANDARD FRONT ACCESS GATE U.O.N. |

- 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

STEELE CANYON HIGH SCHOOL ROOF SAFETY REMEDIATION

8585 Blossom Lane, Spring Valley, CA 919

DateIssued For08/04/2021DSA SUBMITTAL03/01/2022DSA BACKCHECK

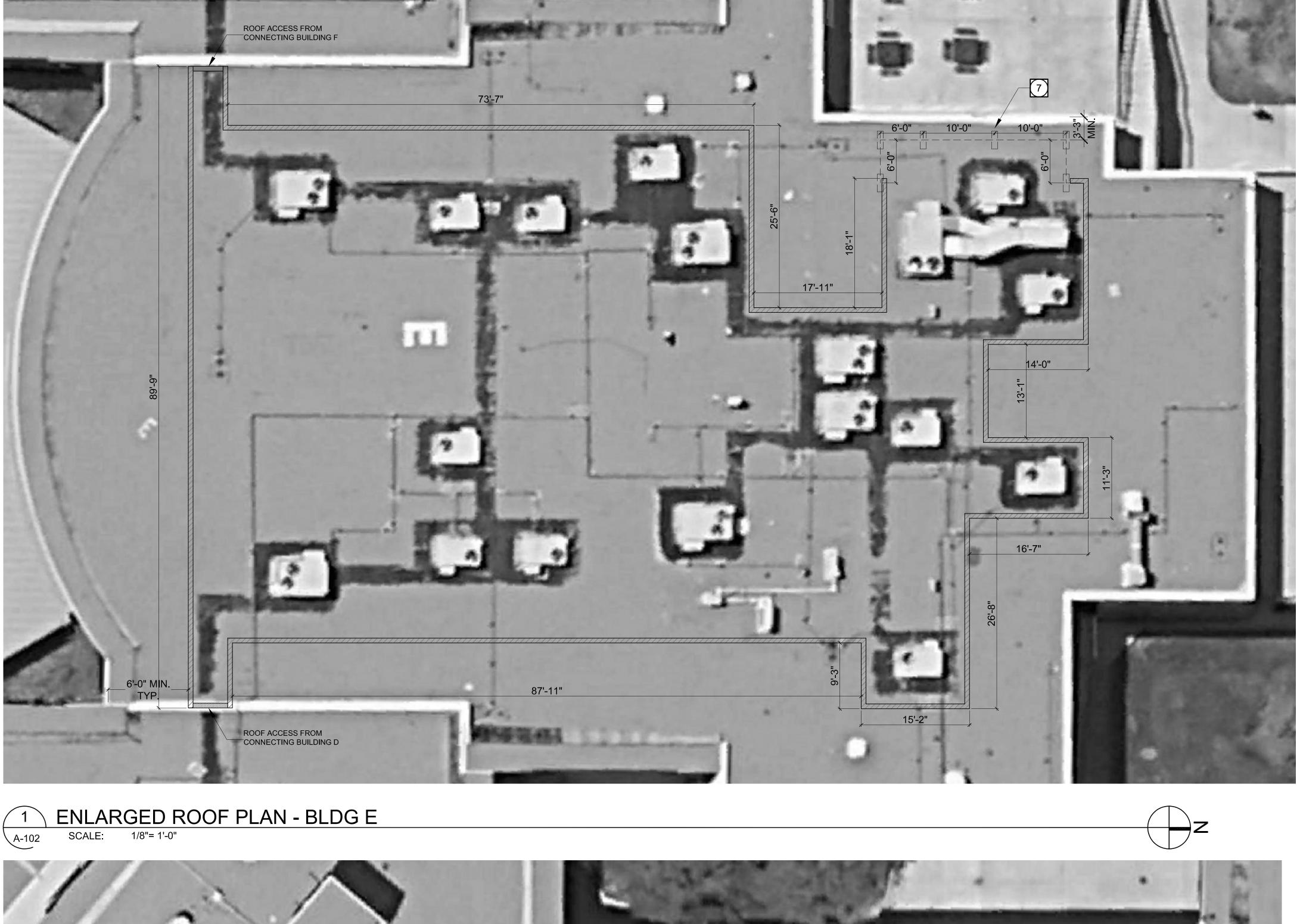


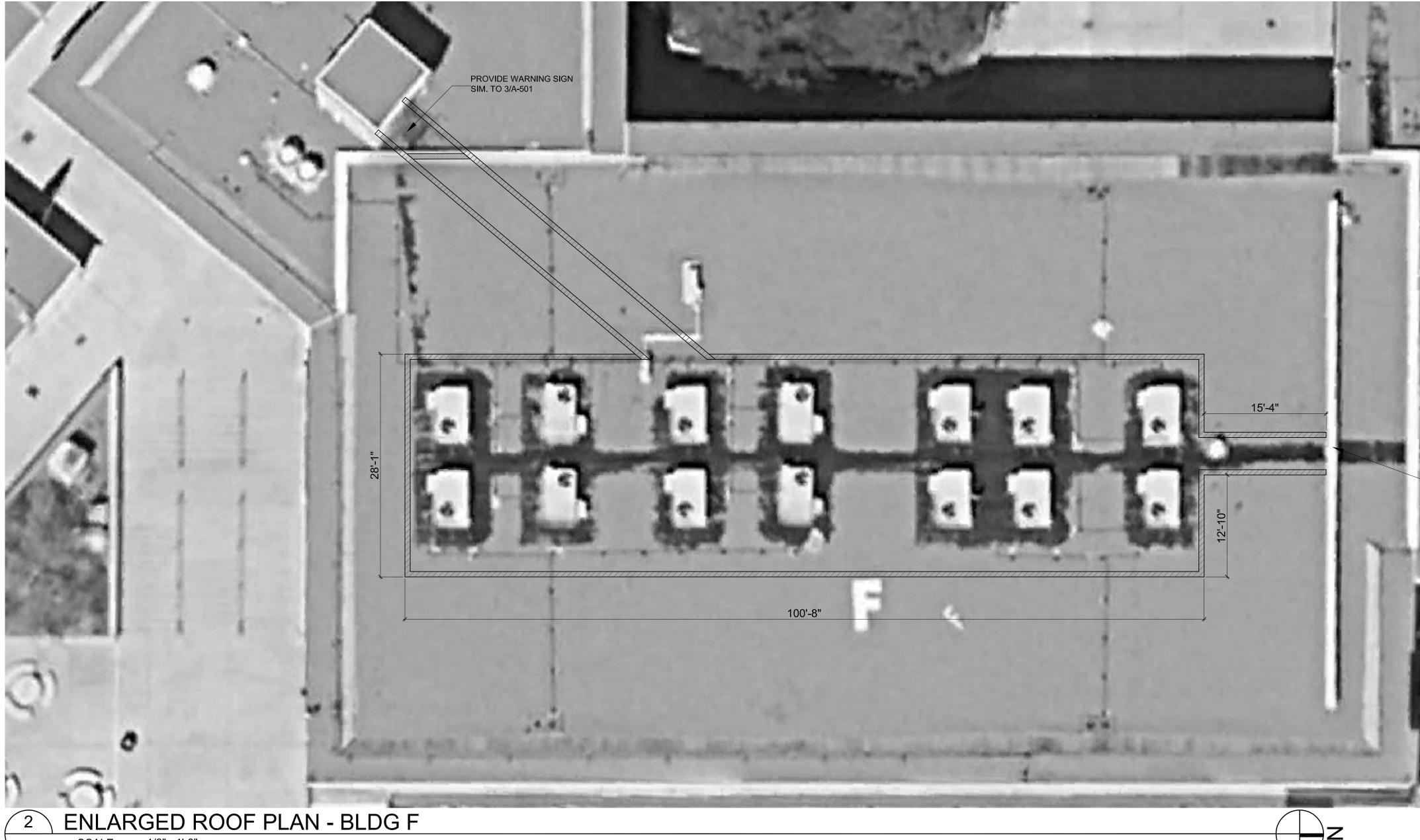
11750 Sorrento Valley Road Suite 100 San Diego, California 92121 USA (619) 318-3800 WWW.HED.DESIGN



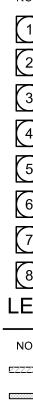
2020-06492-000

Enlarged Roof PLans A-101





2 SCALE: 1/8"= 1'-0" A-102



NOTES:

ROOF ACCESS FROM CONNECTING BUILDING E

KEYNOTES:

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

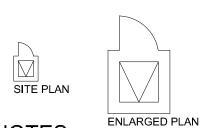
PROVIDE LADDER BRACKET & DANGER WARNING SIGN AT TOP OF LADDER OR ROOF TOP EQUIPMENT PER DETAIL 3/A-501

- 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.
- DIVERSIFIED FALL PROTECTION LORGUARD GUARDRAIL OR EQUAL
- 8 SAFEGUARD INDUSTRIES VERSIRAIL FREESTANDING GUARDRAIL OR EQUAL

LEGEND:

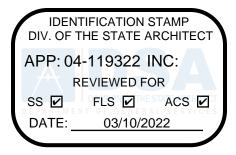
NOTE: NOT ALL ITEMS ARE USED ON EACH PROJECT OR EACH SHEET. WARNING SAFETY STRIPE REFER DETAIL 4/A-501 CAUTION SAFETY STRIPE PER SPECIFICATIONS --- -- -- |+-- -- BALLASTED RAILING SYSTEM PER SPECIFICATIONS

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)



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

- 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





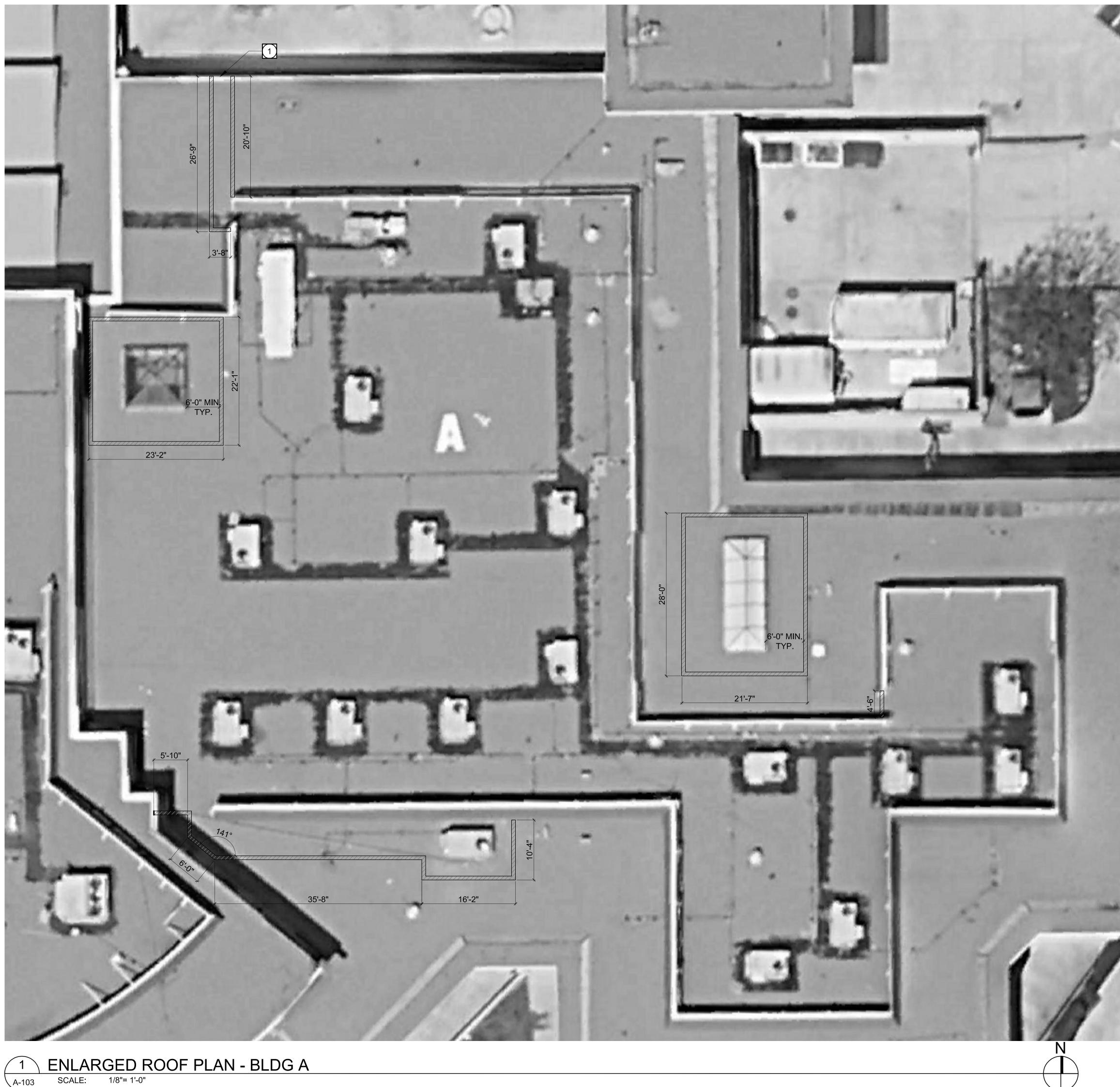
GROSSMONT **UNION HIGH** SCHOOL DISTRICT



8585 Blossom Lane, Spring Valley, CA 91977

| Date | Issued For |
|------------|---------------|
| 08/04/2021 | DSA SUBMITTAL |
| 03/01/2022 | DSA BACKCHECK |





A-103

KEYNOTES:

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

- 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 LORGUARD GUARDRAIL OR EQUAL
- 8 SAFEGUARD INDUSTRIES VERSIRAIL FREESTANDING GUARDRAIL OR EQUAL

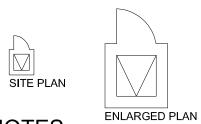
LEGEND:

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

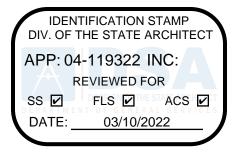
 BASE PLATE, LOCATE AS SHOWN
 PROVIDE SEISMIC RESTRAINT AT EACH BASE PLATE PER DETAIL 6/A-501
 (SEISMIC RESTRAINT NOT REQUIRED WHERE ROOF SLOPE IS LESS THAN 1:20 AND BASE PLATE IS GREATER THAN 4'-0" FROM THE ROOF EDGE)



(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



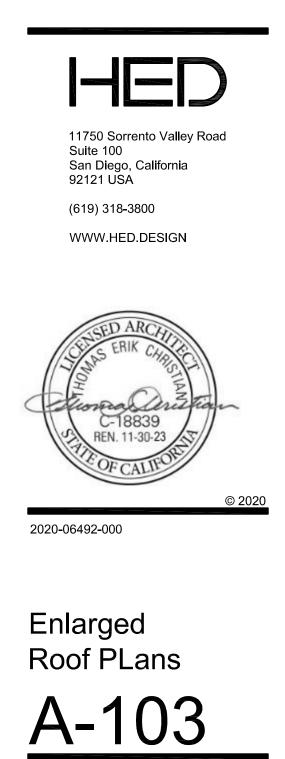


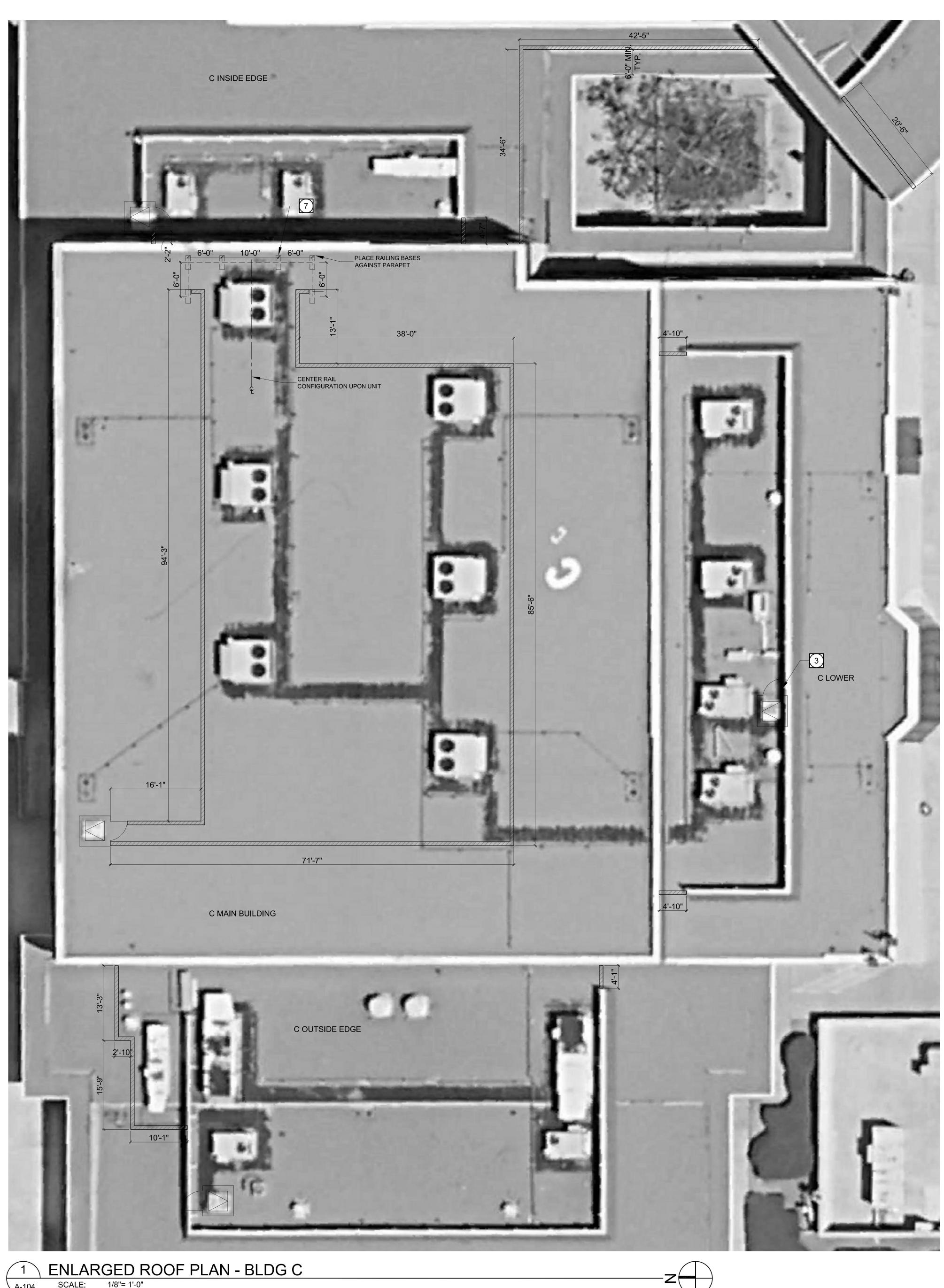
GROSSMONT UNION HIGH SCHOOL DISTRICT



8585 Blossom Lane, Spring Valley, CA 91977

| Date | Issued For |
|------------|---------------|
| 08/04/2021 | DSA SUBMITTAL |
| 03/01/2022 | DSA BACKCHECK |

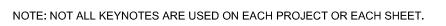




ENLARGED ROOF PLAN - BLDG C

1/8"= 1'-0" SCALE: A-104

KEYNOTES:



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 LORGUARD GUARDRAIL OR EQUAL

8 SAFEGUARD INDUSTRIES VERSIRAIL FREESTANDING GUARDRAIL OR EQUAL

LEGEND:

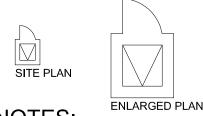
NOTE: NOT ALL ITEMS ARE USED ON EACH PROJECT OR EACH SHEET.

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)



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

NOTES:

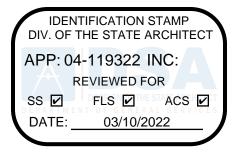
1. ALL DIMENSIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD.

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



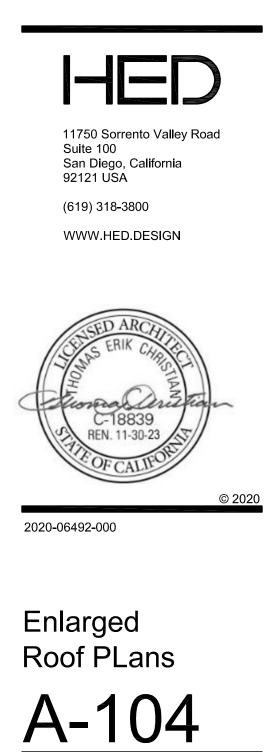


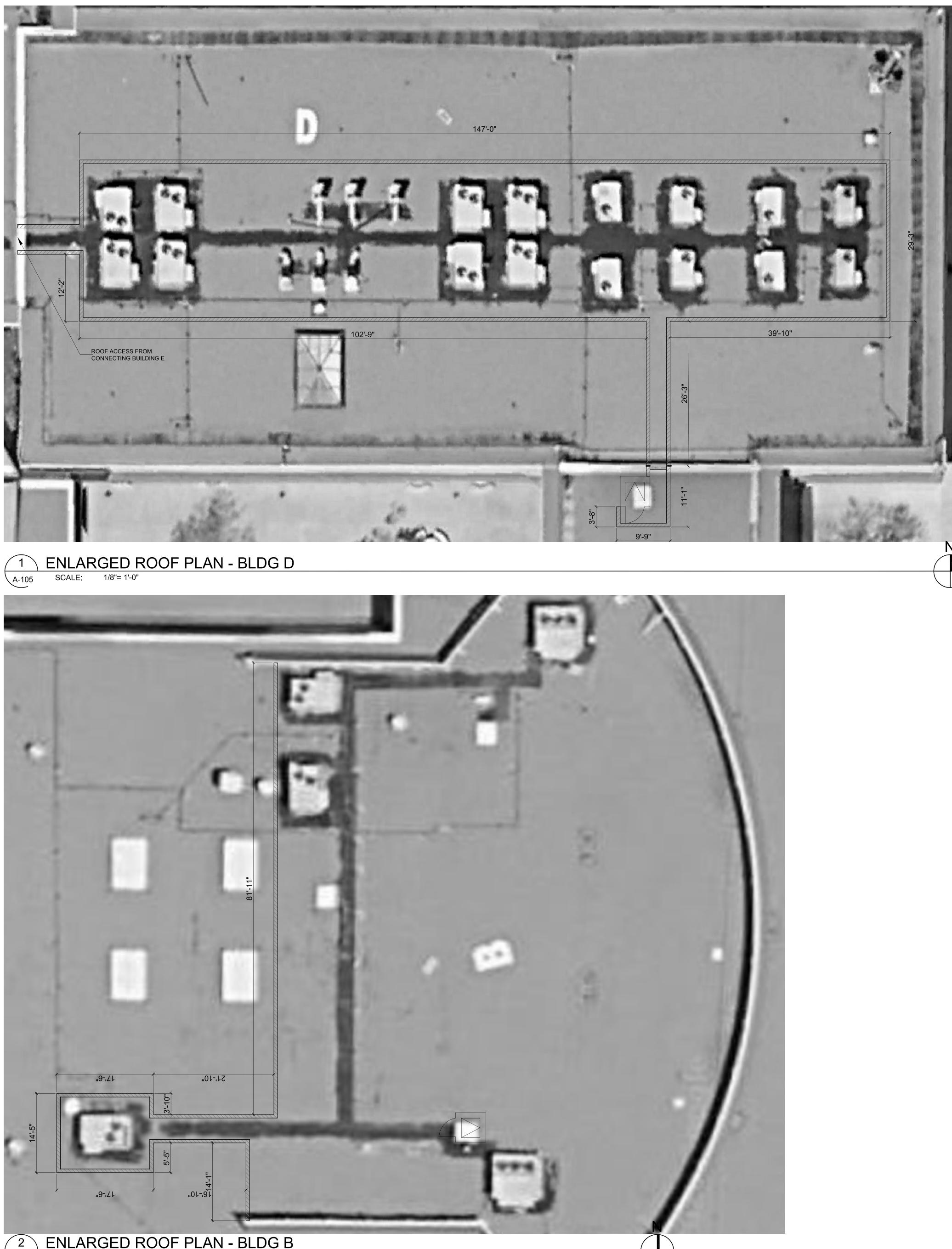
GROSSMONT **UNION HIGH** SCHOOL DISTRICT



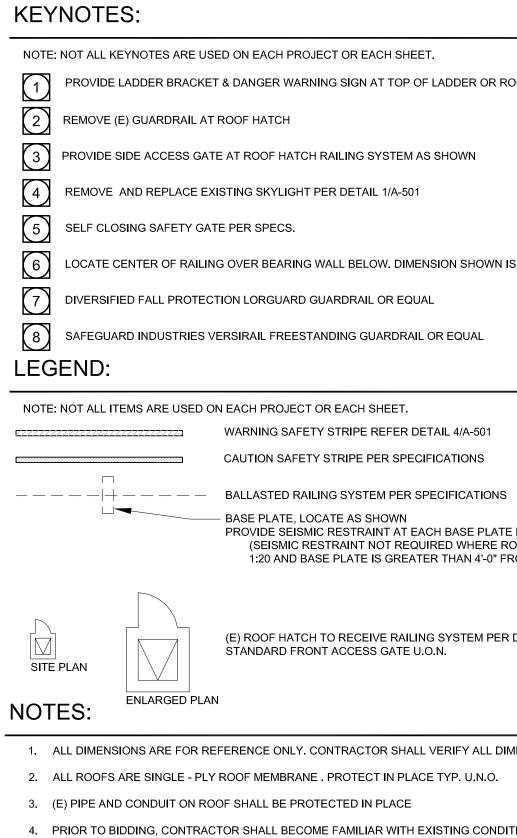
8585 Blossom Lane, Spring Valley, CA 91977

| Date | Issued For |
|------------|---------------|
| 08/04/2021 | DSA SUBMITTAL |
| 03/01/2022 | DSA BACKCHECK |





ENLARGED ROOF PLAN - BLDG B 1/8"= 1'-0" SCALE: A-105



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

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

3 PROVIDE SIDE ACCESS GATE AT ROOF HATCH RAILING SYSTEM AS SHOWN

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

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

7 DIVERSIFIED FALL PROTECTION LORGUARD GUARDRAIL OR EQUAL

8 SAFEGUARD INDUSTRIES VERSIRAIL FREESTANDING GUARDRAIL OR EQUAL

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

— 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)

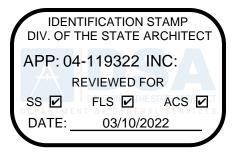
(E) ROOF HATCH TO RECEIVE RAILING SYSTEM PER DETAIL 2/A-501. STANDARD FRONT ACCESS GATE U.O.N.

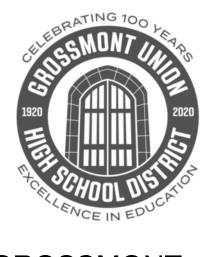
1. ALL DIMENSIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD.

2. ALL ROOFS ARE SINGLE - PLY ROOF MEMBRANE . PROTECT IN PLACE TYP. U.N.O.

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



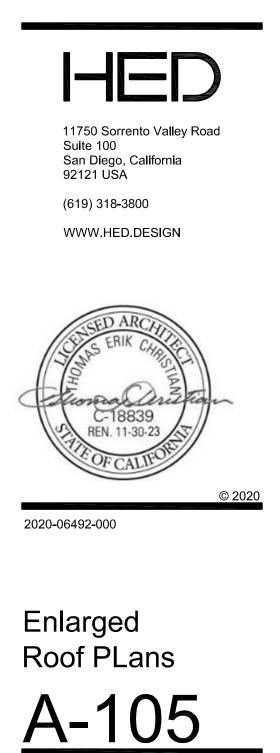


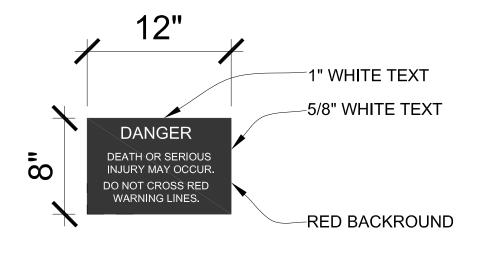
GROSSMONT **UNION HIGH** SCHOOL DISTRICT

STEELE CANYON HIGH SCHOOL ROOF SAFETY REMEDIATION

8585 Blossom Lane, Spring Valley, CA 91977

Date Issued For 08/04/2021 DSA SUBMITTAL 03/01/2022 DSA BACKCHECK





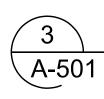
NOTES:

SIGN MATERIAL: VINYL LOCATION: INSIDE OF ROOF HATCH AT TOP OF LADDER, CLEARLY VISIBLE BEFORE OPENING HATCH

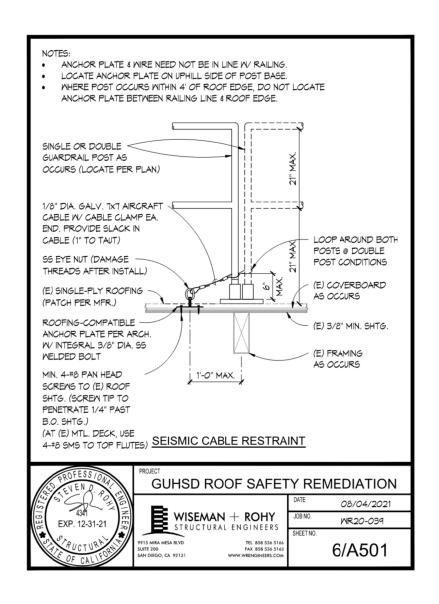


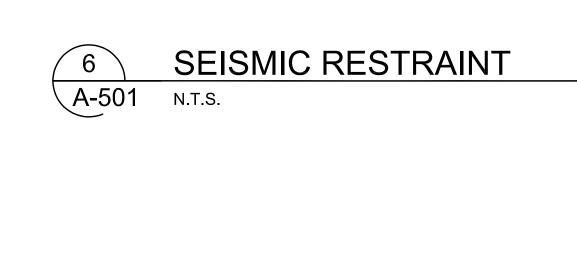
2" WHITE LETTERS 3" WHITE DANGER DEATH OR SERIOUS INJURY DANGER õ MAY OCCUR PAST THIS LINE 1'-0" 1'-0" NOTE: REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS WARNING LINE **A-**501 1" = 1'-0" 2'-6" —3" WHITE TEXT DANGER -2" WHITE TEXT DEATH OR **SERIOUS INJURY** MAY OCCUR. Ņ. DO NOT CROSS RED WARNING - RED BACKROUND LINES. NOTES: PROVIDE STENCILED WARNING SIGNAGE ON ROOF AT TOP OF LADDER ACCESS POINT. PER SIGN MATERIAL: PAINTED STENCIL DETAIL C LOCATION: CENTER SIGNAGE AT TOP OF LADDER ACCESS POINT AND WITHIN THE WARNING LINES C: WARNING SIGNAGE AT LADDERS - LADDER BRACKET FASTEN BRACKET TO (E) $\frac{3}{8}$ " MIN. ROOF SHEATHING WITH (6) # 14 X 3" TEK SCREWS WITH $\frac{5}{16}$ " BULB TITE RIVET AND RUBBER WASHERS (SCREW TIP TO PENETRATE $\frac{1}{4}$ " MIN. PAST B.O. SHEATHING) (1" MIN. CLEAR TO EDGE OF SHEATHING) EXISTING ROOF EXISTING GUTTER, WHERE OCCURS. POSITION BRACKET TO NOT REST ON THE GUTTER OR FASCIA.

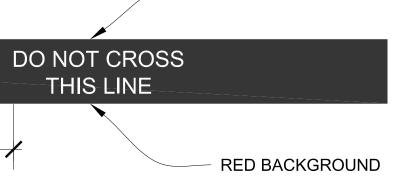
A: HORIZONTAL ATTACHMENT



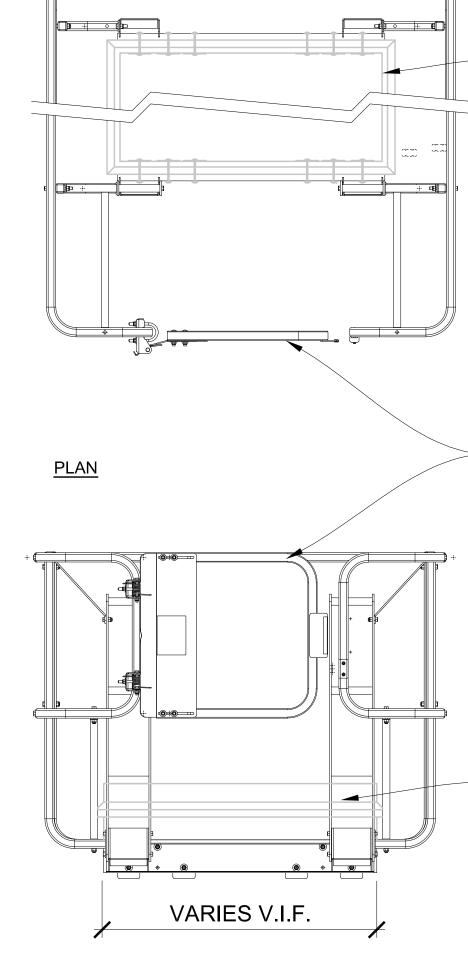
LADDER BRACKET 1" = 1'-0"





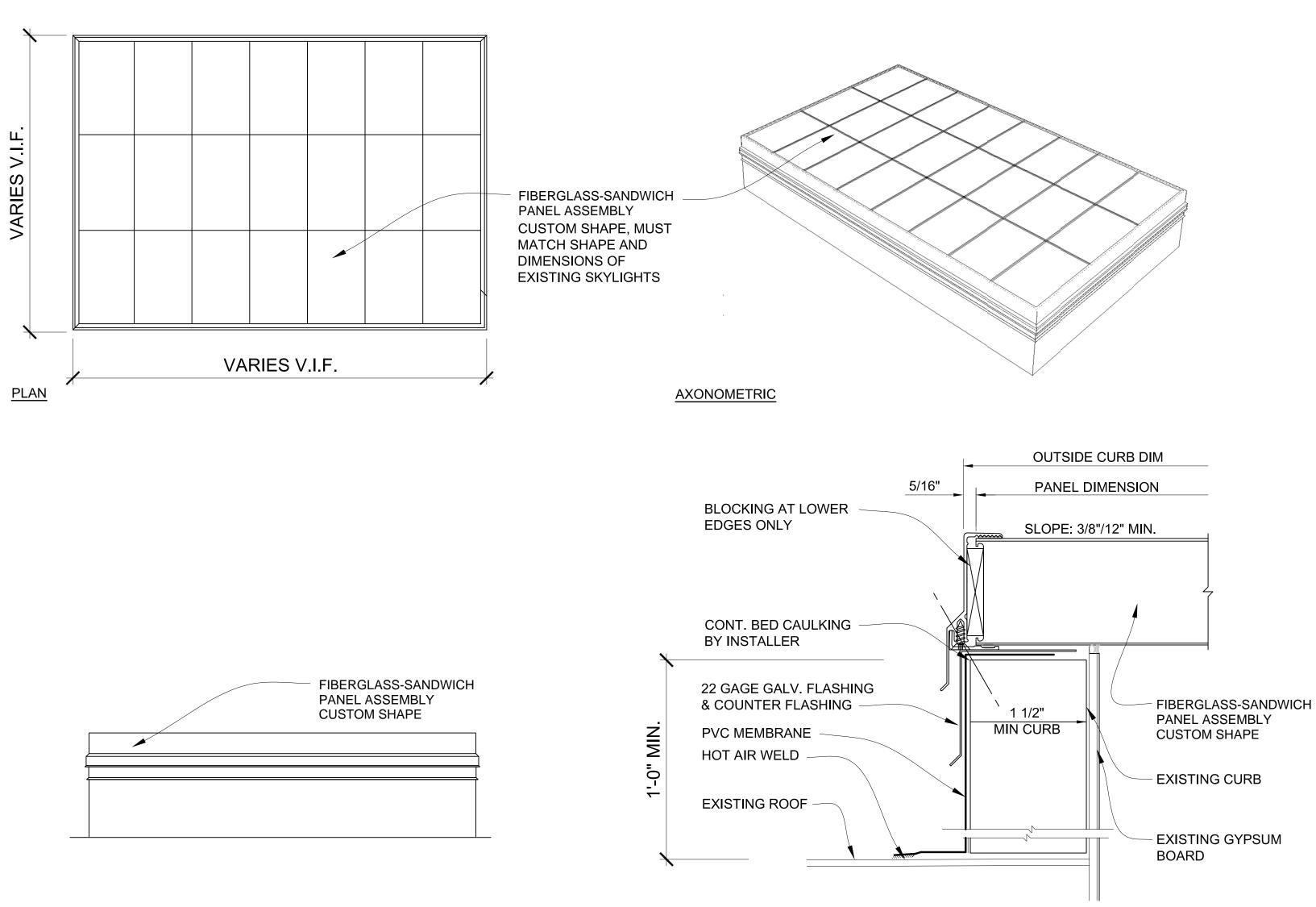


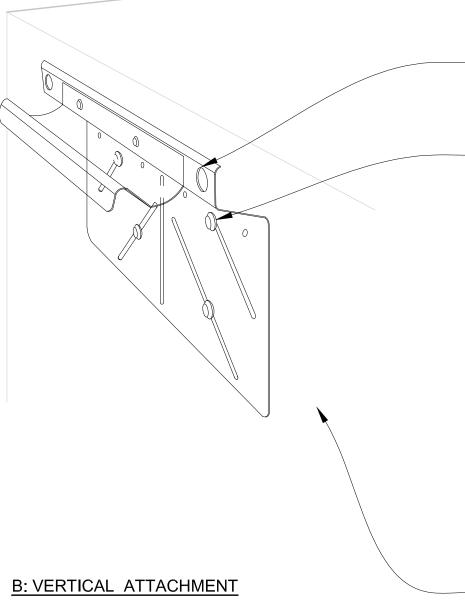
2" WHITE LETTERS



FRONT ELEVATION







– LADDER BRACKET

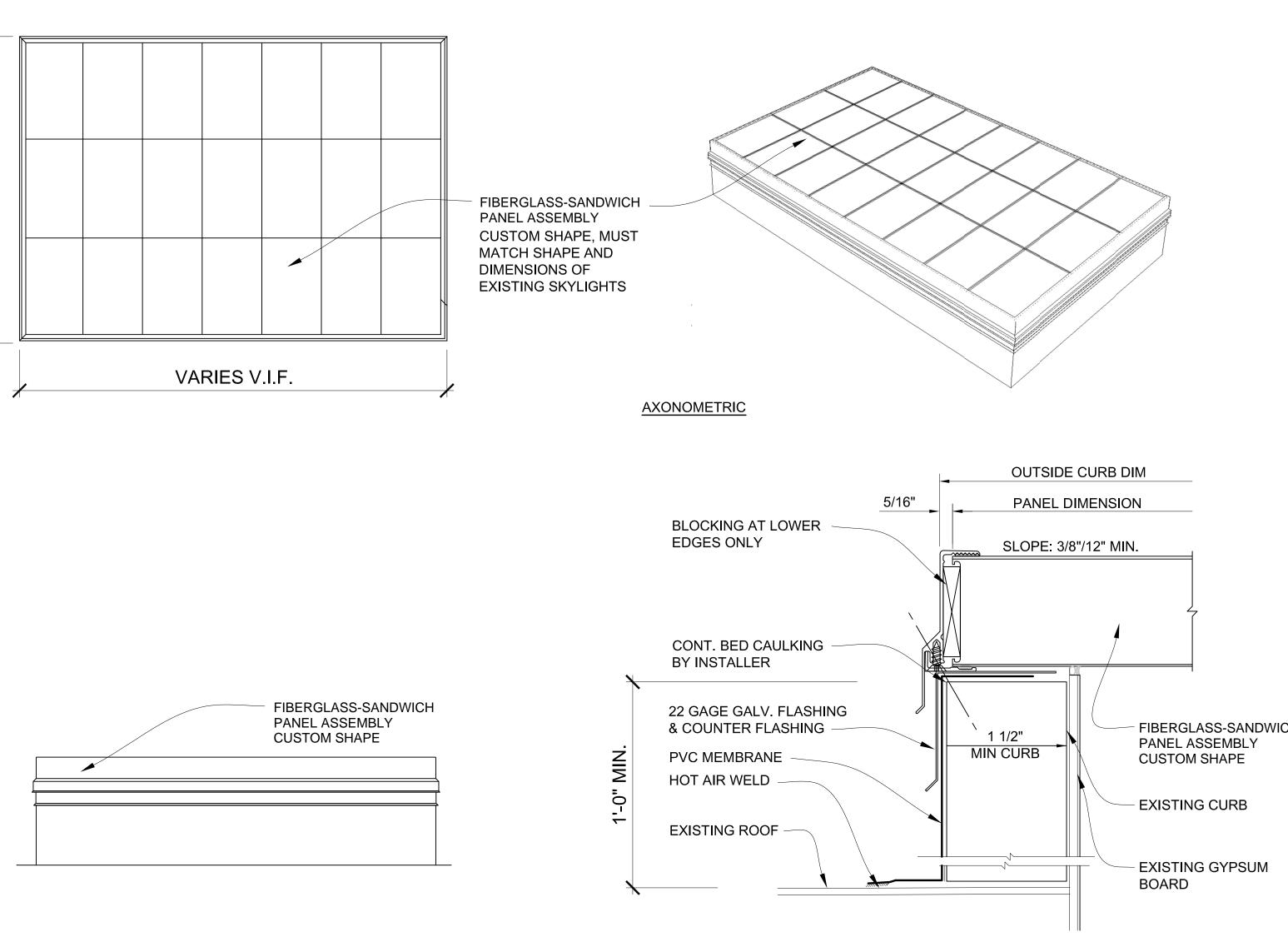
- FASTEN BRACKET TO WALL STRUCTURE PER MFR.

FASTEN: TO CONCRETE WALL (MIN. 6" THICK) WITH (3) 3/8" DIA. F1554 GR-55 THREADED ROD IN HILTI 'HIT-RE 500 V3' EPOXY, $2\frac{3}{8}$ " EFF. EMBED INTO CONCRETE (5" MIN. EDGE DISTANSE) (ICC ESR 3814) BRACKET SLOT/HOLE MAY BE ENLARGED TO ACCOMMODATE $\frac{3}{8}$ " ROD IF REQUIRED. PULL TEST TO 3650 LB.

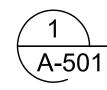
TO MASONRY WALL WITH (3) ¹/₄" DIA. HILT "KWIK HUS EZ SS316" WITH 1 8" EMBEDMENT (4" MIN EDGE DISTANCE) (INSTALLATION TORQUE = 21 FT-LB) (ICC ESR 3056)

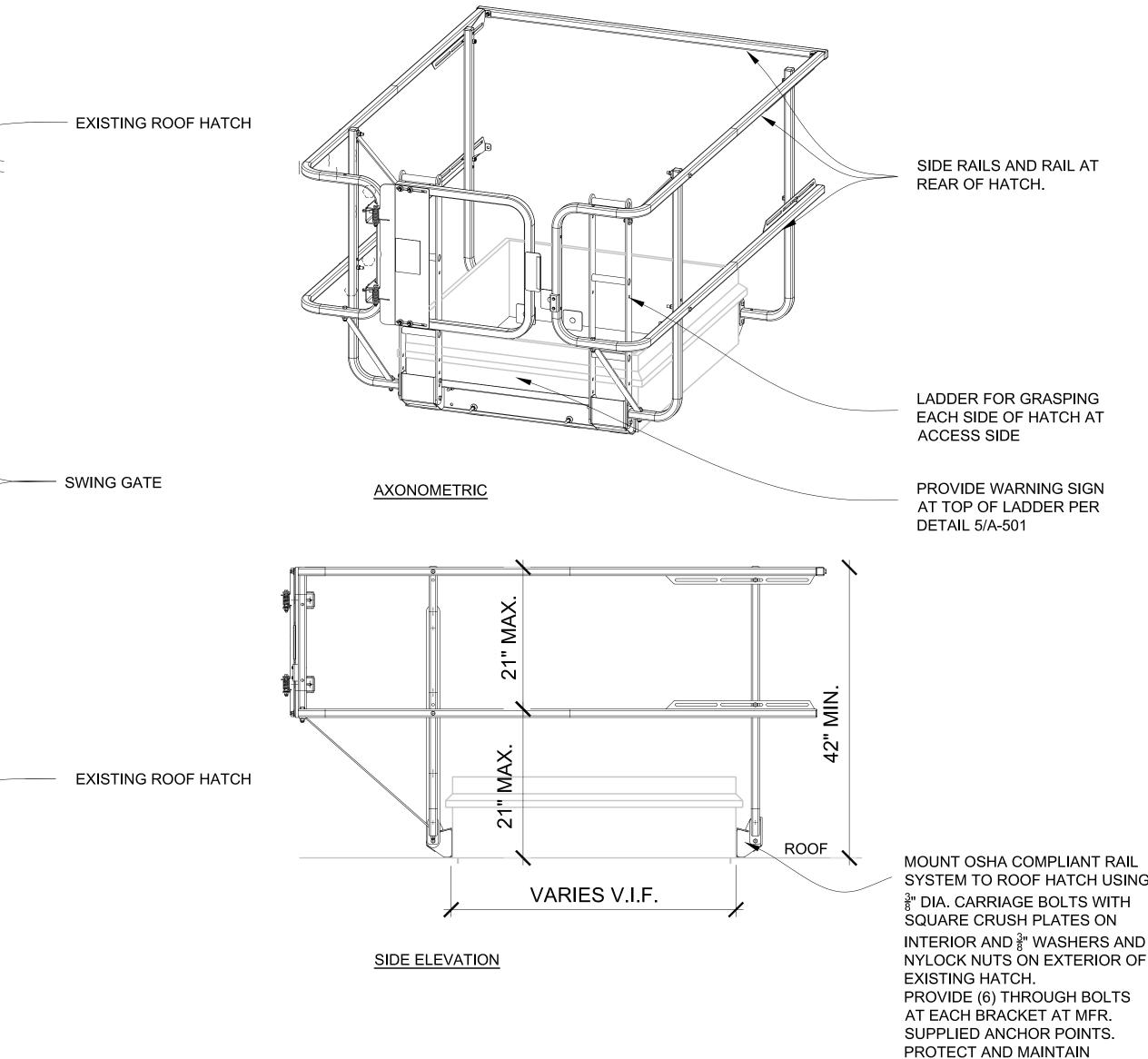
TO WOOD ROOF PERIMETER FRAMING WITH (6) # 14 X 3" TEK SCREWS

PROTECT EXISTING WALL FROM DAMAGE AND MAINTAIN WATERTIGHTNESS.

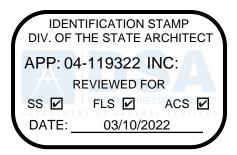


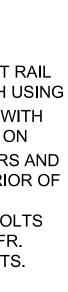
FRONT ELEVATION





<u>EAVE DETAIL</u>





EXISTING ROOF AND ROOF HATCH WATERTIGHTNESS.



GROSSMONT **UNION HIGH** SCHOOL DISTRICT



8585 Blossom Lane, Spring Valley, CA 91977

Date Issued For 08/04/2021 DSA SUBMITTAL 03/01/2022 DSA BACKCHECK







GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

PROJECT MANUAL

DSA Backcheck March 01, 2022

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:



11750 Sorrento Valley Road, Suite 100 SAN DIEGO, CA 92121

Project No. 2020-06429-000

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 00 01 07

CERTIFICATIONS AND SEALS

ARCHITECT

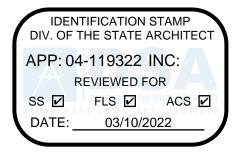
I hereby certify that the Project Drawings and the Project Manual were prepared by me or under my direct supervision and that I am a duly registered Architect under the laws of the State of California.



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.



C-18839 REN. 11-30-23



END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

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:
- DSA 103 List of Required Structural Tests and Special Inspections
- 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

DIVISION 6 WOOD, PLASTICS, AND COMPOSITES

06 10 00 Rough Carpentry

DIVISION 7 THERMAL AND MOISTURE PROTECTION

- 07 54 00 Thermoplastic Membrane Roofing
- 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
- 08 71 00 Door Hardware

DIVISION 9 FINISHES

09 90 00 Painting and Coating

DIVISION 10 SPECIALTIES

10 14 00 Signage

DIVISION 32 EXTERIOR IMPROVEMENTS

 32 12 16
 Asphalt Paving and Aggregate base
 NOT IN CONTRACT

 32 13 73
 Concrete Paving Joint Sealants
 NOT IN CONTRACT

 32 16 00
 Curbs Gutters Sidewalks and Driveways
 NOT IN CONTRACT

APPENDIX A ROOF AERIAL SURVEY

Roof Aerial Survey by SafeCon Consulting Group

END OF TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

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

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

THIS PAGE INTENTIONALLY LEFT BLANK

SUBSTITUTION REQUEST FORM

| Re: | | | |
|-------|---|-----------------------------------|---------------------------------|
| | Project Name | | |
| | Project Manual Section Number | | |
| | Item | | <u> </u> |
| To: | Architect | | |
| From: | | | |
| | Contractor | | |
| | Reviewed for timeliness and com | pleteness by General Contracto | r: |
| | We hereby submit for your consider and the proposed substitution: | deration the following product co | mparisons of the specified item |
| 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 | | |
| В. | Substantiating Data: | | |
| | | c | |

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 | | | _ |
| Main | tenance Service/Par | ts/Supplier: | | |
| Nam | e | | | |
| Addr | ess | | | |
| Addr | ess | | | |
| Telep | bhone | | | |
| F. W | /hat effect does this | substitution have on | applicable code r | equirements? |

Ε.

| G. Change I | | | | |
|--------------|--------------------------|------------------------|---|------------------|
| | | | | |
| | Attach comple Manual. | ete information for cl | nanges to be made to Dra | awings and Proj |
| | | * * * * * * * * | * * * * * * | |
| * | Certification o mance. | f equal performance | e and assumption of liabili | ty for equal per |
| * | | | for costs involved in cha fting and detail cost caus | |
| Submitted by | ': | | | |
| | | | | |
| Signature | | | Name | |
| | | | Title | |
| | | | | |
| | | | | |
| Name | | Date | | |
| | | Address | | |
| | | Address | | |
| SS | | | | |
| | State Zip | Telephone | | |
| | State Zip | Telephone | | |
| | State Zip | Telephone | | |
| | State Zip | Telephone | | |

Product substitution of ______

for _____

DSA SUBMITTAL

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

| Specifications Section | | | |
|------------------------|---------------|--------|---|
| | (number) | (name) | |
| For Use by Owner's Re | presentative: | | |
| Accepted | Not Accepted | | |
| Owner's Consultant: | | | |
| Ву: | | | _ |
| Date: | | | |
| □ Accepted | Not Accepted | | |
| School District: | | | |
| Ву: | | | - |
| 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 <u>submitted</u> to the Architect, <u>accepted</u> by the Architect and <u>approved</u> 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:

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 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

(Not Applicable)

END OF SECTION

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

THIS PAGE INTENTIONALLY LEFT BLANK

| APPLICATION AND CERTIFICATE FOR PAYMENT (G702) | | PAGE 1 OF 2 PAGES |
|--|---|--|
| TO: GROSSMONT UNION HIGH SCHOOL DISTRICT PROJECT: | APPLICATION NO: PERIOD TO: | DISTRIBUTION TO: |
| PHONE: FROM: VIA ARCHITECT: | PROJECT NO: CONTRACT DATE: CONTRACT FOR: | ARCHITECT CONTRATOR FIELD OTHER |
| PHONE: | | |
| CONTRACTOR'S APPLICATION FOR PAYMENT Application is made fro payment, as shown below, in connection with the Contract Continuation Sheet, AIA Document G703, is attached. | 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 | information and belief the Work e Contract Documents, that all Payment were issued and |
| 1. ORIGINAL CONTRACT SUM | payments received from the Owner, and that current payment shown herein is now due. CONTRACTOR: | aue. |
| | | |
| (Line 1 + Line 2) 4 TOTAL COMPLETED & STORED TO DATE 8 | By: Date: | |
| | INSPECTOR: | |
| 5. RETAINAGE: a% of Completed Work …\$ | By: Date: Date: | |
| tal Re | OWNER: | |
| Total in Column I of G703 | | |
| 6. TOTAL EARNED LESS RETAINAGE | By: Date: | |
| | | |
| 7. LESS PREVIOUS CERTIFICATES FOR PAYMENT\$ (1 ine 6 from prior Certificate | AMOLINT CEPTIFIED | ÷ |
| 8. CURRENT PAYMENT DUE | | |
| BALANCE TO FINISH, INCLUDI | | |
| (Line 3 less Line 6) | ARCHITECT'S CERTIFICATE FOR PAYMENT In accordance with the Contract Documents, based on on-site observations and the data comprising this application. | data comprising this application, |
| CHANGE ORDER SUMMARY | the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has procreased as indicated the runality of the Work is in accordance with the Contrast Documents and the Contrastor is | Imation and belief the Work has |
| Total changes approved in | progressed as increated, the yearing of the work is in accordance with the Contract D entitled to payment of the AMOUNT CERTIFIED. | |
| Previous months by Owner | ARCHITECT: | |
| Total approved this month\$ | | |
| NET CHANGES by Change Order | By: Date: | |
| State of: County of | This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. | Contractor named herein. |
| Subscribed and sworn to before me this day of, 20 | Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under | f the Owner or Contractor under |
| Notary Public: My Commission Expires: | this contract. | |
| | | |

| PROJECT: | CT: | | | APPLICATION NO: | | CONTRACT DATE: | | | |
|-----------------|---------------------|--------------------|-------------------------------------|-----------------|--|--|------------|----------------------------|-----------|
| | | | | PERIOD TO: | | CONTRACT FOR: | | | |
| ۷ | B | ပ | ٥ | ш | Ŀ | U | | т | _ |
| | | | WORK COMPLETED | MPLETED | MATERIALS | | | | |
| ITEM NO. | DESCRIPTION OF WORK | SCHEDULED VALUE | FROM PREVIOUS APPLICATIONS (D+E) | THIS PERIOD | PRESENTLY STORED (NOT IN D OR E) | IOLAL COMPLETED AND STORED TO DATE (D+E+F) | % (G+C) | BALANCE TO FINISH (C-G) | RETAINAGE |
| | | | | | | | | | |
| | | | | | | | | | |
| | TOTAL PAGE 1 | | | | | | | | |

PAGE 2 OF 2 PAGES

CONTINUATION SHEET (G703)

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

THIS PAGE INTENTIONALLY LEFT BLANK

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 <u>per</u> <u>Special Conditions Article A. TIME OF PERFORMANCE</u>. 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 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.
 - 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

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

THIS PAGE INTENTIONALLY LEFT BLANK

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. <u>All Requests for Substitutions</u>: After this date, no further requests for substitution will be considered, and Contractor shall be obligated to provide the specified products <u>NO EXCEPTIONS</u>.
 - 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 <u>only that color</u> for verification and approval.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

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 <u>not</u> 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.

THIS PAGE INTENTIONALLY LEFT BLANK

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:

THIS PAGE INTENTIONALLY LEFT BLANK

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

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

| 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

THIS PAGE INTENTIONALLY LEFT BLANK

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.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 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.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

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

Application Number: 04-119311 DSA File Number:

KEV TO COLLIMNIS

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

| 1. TYPE | 2. PERFORMED BY |
|--|--|
| Continuous – Indicates that a continuous special inspection is required | GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative. |
| Periodic – Indicates that a periodic special inspection is required | LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335. |
| | PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA. |
| Test – Indicates that a test is required | SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector. |

1705A.4; TMS 602-16, Tables 3 and 4.

| Application Number: |
|---------------------|
| 04-119311 |
| DSA File Number: |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

| | 13. STRUCTURAL MASONRY: | | | | | |
|--|---|------------|-----------------|---|--|--|
| | Test or Special Inspection | Туре | Performed By | Code References and Notes | | |
| Mater | ial Verification and Testing: (See Appendix for exemptions.) | | | | | |
| | a. Mill certificate indicatescompliance with requirements forreinforcement, anchors, ties, fasteners and metal accessories. See item 7b for identification, sampling and testing of reinforcing steel. | Periodic | SI* | 2103A.4 ; TMS 602-13 Article 1.5B.2 & 2.4. * To be performed by qualified LOR representative. Applicable testing by LOR. See IR 17-10.16 for unidentified reinforcing steel. | | |
| | b. Producer's certificate of compliance for masonry units, mortar and grout materials. | Test | LOR | 1705A.4, 2103A.2.1, 2103A.3, 2103A.5 ; TMS 602-16 Articles 2.1, 2.2,2.6A and 2.6B, and Table 6 footnote 3. | | |
| | c. Test masonry (f' _m). | Test | LOR | 1705A.4. For Unit Strength: 2105A.3 (2114.6.1+); TMS 602-16 Articles 1.4B.2 ,1.5B.1 & 1.5B.2. For Prism (required when f'm > 2000 psi):2105A.2 ; TMS 602-16 Articles 1.4B.3, 1.4B.4, 1.5B.1 & 1.5B.2. | | |
| | d . Verify proportions of siteprepared, premixed or preblended mortar and grout. | Periodic | SI | TMS 602-16 Table 3 Item 5, Table 4 Item 1a & 2d. | | |
| | e. Test core-drilled samples. | Test | LOR | 2105A.4. (See Appendix for exemptions.) | | |
| Inspection: (See Appendix for exemptions.) | | | | | | |
| | f. Inspect preparation of prisms. | Continuous | SI | TMS 602-16 Articles 1.4.B.3 & 1.4.B.4 & Table 4 Item 4. | | |
| | g. Verify size, location and condition of all dowels, construction supporting masonry, etc. | Periodic | SI | | | |

1705A.4; TMS 602-16, Tables 3 and 4.

| Application Number: | |
|---------------------|--|
| 04-119311 | |
| DSA File Number: | |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

| h. Verify size, grade and type of reinforcement and anchor bolts. | Periodic | SI | TMS 602-16 Table 4 Item 1c. |
|---|--|-----|--|
| i. Welding of reinforcing steel. | TMS 602-16 Table 4 Item 3e. Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below. | | |
| j. Inspect placement of reinforcement and connectors. | Continuous | SI | TMS 602-16 Table 4 Item 2c. |
| k. Inspect placement of masonry units and construction of mortar joints. | Periodic | SI | TMS 602-16 Table 4 Item 3b. |
| I. Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90° F). | Periodic | SI* | TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA. |
| m. Inspect type, size and location of anchors and all other items to embedded in masonry including other details of anchorage of masonry to structural members, frames and other construction. | Continuous | SI | TMS 602-16 Table 4 Item 3d. |
| n. Inspect grout space prior to placement of grout. | Continuous | SI | TMS 602-16 Table 4 Item 2a. |

| 14. VENEER OR GLASS BLOCK PARTITIONS: 1705A.4.1; TMS 602-16 Tables 3 and 4. | | | | |
|---|----------|-----------------|--|--|
| Test or Special Inspection | Туре | Performed By | Code References and Notes | |
| a. Verify proportions of siteprepared mortar and grout and/or verify certification of premixed mortar. | Periodic | SI | TMS 602-16 Table 3 Item 5 and Table 4 Items 1a & 2d. | |

1705A.4; TMS 602-16, Tables 3 and 4.

| Application Number: | School Name: | School District: |
|---------------------|------------------------|--------------------------------------|
| 04-119311 | El Capitan High School | Grossmont Union High School District |
| DSA File Number: | Increment Number: | Date Created: |
| | | 2021-09-22 14:22:14 |

| b. Inspect placement of units and construction of mortar joints. | Periodic | SI | TMS 602-16 Table 4 Item 3b. |
|--|----------|-----|---|
| c. Inspect placement of reinforcement, connectors and anchors. | Periodic | SI | TMS 602-16 Table 4 Item 2c. |
| d. Inspect type, size and location of anchors and all other items to be embedded in masonry including details of anchorage of masonry to structural members, frames and other construction. | Periodic | SI | TMS 602-16 Table 4 Item 3d. |
| e. Verify preparation, construction and protection of masonry during cold weather (temperature below 40° F) or hot weather (above 90° F). | Periodic | SI* | TMS 602-16 Table 4 Item 3f. * May be performed by the project inspector when specifically approved by DSA. |
| f. Test veneer bond strength | Test | LOR | 1410.2.1 ; TMS 402 Article 12.3.2.4. (Field constructed mock-up laboratory tested in accordance with ASTM C482). |

| | 15. POST-INSTALLED ANCHORS IN MASONRY: | | | |
|----------|--|-----------|-----------------|--|
| | Test or Special Inspection | Туре | Performed By | Code References and Notes |
| | a. Inspect installation of postinstalled anchors | See Notes | SI* | 1617A.1.19, 1705A.4, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic) ; ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. (See Appendix for exemptions.) |
| V | b. Test post-installed anchors. | Test | LOR | 1705A.4, 1910A.5. (See Appendix for exemptions.) |

1705A.4; TMS 602-16, Tables 3 and 4.

| Application Number: | School Name: | School District: |
|---------------------|------------------------|--------------------------------------|
| 04-119311 | El Capitan High School | Grossmont Union High School District |
| DSA File Number: | Increment Number: | Date Created: |
| | | 2021-09-22 14:22:14 |

| 16. OTHER MASONRY: | | | |
|----------------------------|------|-----------------|---------------------------|
| Test or Special Inspection | Туре | Performed By | Code References and Notes |
| a. | | | |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119311 |
| DSA File Number: |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

| SOILS: |
|--|
| 1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade. |
| 2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill. |

| CONCRETE/MASONRY: |
|--|
| 1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding." |
| 2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section. |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119311 |
| DSA File Number: |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

| | 3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition. |
|--|---|
| | 4. Epoxy shear dowels in site flatwork and/or other non-structural concrete. |
| | 5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section. |

| Welding: |
|---|
| 1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof. |
| 2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush. |
| 3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud. |
| 4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above). |
| 5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above). |
| |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119311 |
| DSA File Number: |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

| 6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category). |
|--|
| 7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems. |

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

| Application Number: |
|---------------------|
| 04-119311 |
| DSA File Number: |

School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

| Name of Architect or Engineer in general responsible charge: | | | |
|---|-----------|------|--|
| Thomas Christian | | | |
| Name of Structural Engineer (When structural design has been de | legated): | | |
| Steven Rohy | | | |
| Signature of Architect or Structural Engineer: | Date: | | |
| Stell | 9/26/2021 | | |

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

| DSA STAMP | | | | |
|-------------------------------------|---|--|--|--|
| IDENTIFICATION STAMP | | | | |
| DIV. OF THE STATE ARCHITECT |) | | | |
| APP: 04-119311 INC: REVIEWED FOR | | | | |
| SS 🗹 FLS 🗹 ACS 🗹 | | | | |
| DATE: <u>10/06/2021</u> | | | | |
| | | | | |

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 04-119311 DSA File Number: School Name: El Capitan High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-22 14:22:14

Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

Application Number: 04-119317 DSA File Number:

KEV TO COLLIMNIS

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

**NOTE: Undefined section and table references found in this document are from the CBC, or California Building Code.

| 1. TYPE | 2. PERFORMED BY |
|--|--|
| Continuous – Indicates that a continuous special inspection is required | GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative. |
| Periodic – Indicates that a periodic special inspection is required | LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335. |
| | PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA. |
| Test – Indicates that a test is required | SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector. |

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Concrete), 2019 CBC

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

| Application Number: |
|---------------------|
| 04-119317 |
| DSA File Number: |

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

| | 7. CAST-IN-PLACE CONCRETE | | | |
|-------|--|--------------|-----------------|--|
| | Test or Special Inspection | Туре | Performed By | Code References and Notes |
| Mate | rial Verification and Testing: | | | |
| | a. Verify use of required design mix. | Periodic | SI | Table 1705A.3 Item 5, 1910A.1. |
| | b. Identifiy, sample, and test reinforcing steel. | Test | LOR | 1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.) |
| | c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. | Test | LOR | Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12. |
| | d. Test concrete (f'c). | Test | LOR | 1905A.1.15 ; ACI 318-14 Section 26.12. |
| Inspe | ction: | | | |
| | e. Batch plant inspection: | See Notes | SI | Default of 'Continuous' per 1705A.3.3 . If approved by DSA, batch plant inspection may be reduced to ' Periodic' subject to requirements in Section 1705A.3.3.1 , or eliminated per 1705A.3.3.2 . (See Appendix for exemptions.) |
| | f. Welding of reinforcing steel. | Provide spec | ial inspection | per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below. |

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Concrete), 2019 CBC

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

| Application Number: | |
|---------------------|--|
| 04-119317 | |
| DSA File Number: | |

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

| Test or Special Inspection | Туре | Performed By | Code References and Notes |
|--|------------|-----------------|---|
| a. Sample and test prestressing tendons and anchorages. | Test | LOR | 1705A.3.4, 1910A.3 |
| b. Inspect placement of prestressing tendons. | Periodic | SI | 1705A.3.4, Table 1705A.3 Items 1 & 9. |
| c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons. | Periodic | SI | Table 1705A.3 Item 11. Special inspector to verify specified concrete strength test prior to stressing. |
| d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons. | Continuous | SI | 1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13 |

| 9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections): | | | | |
|--|------------|-----------------|--|--|
| Test or Special Inspection | Туре | Performed By | Code References and Notes | |
| a. Inspect fabrication of precast concrete members. | Continuous | SI | ACI 318-14 Section 26.13. | |
| b. Inspect erection of precast concrete members. | Periodic | | Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA. | |

| 10. SHOTCRETE (in addition to Cast-in-Place Concrete tests and inspections): | | | |
|--|------|-----------------|---------------------------|
| Test or Special Inspection | Туре | Performed By | Code References and Notes |

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS (Concrete), 2019 CBC

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

| Application Number: | School Name: | School District: |
|---------------------|-----------------------|--------------------------------------|
| 04-119317 | Grossmont High School | Grossmont Union High School District |
| DSA File Number: | Increment Number: | Date Created: |
| | | 2021-09-26 10:58:49 |

| [| a. Inspect shotcrete placement for proper application techniques. | Continuous | SI | 1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16. |
|---|--|------------|-----|--|
| [| b. Sample and test shotcrete (f'c). | Test | LOR | 1908A.5, 1908A.10. |

| | 11. POST-INSTALLED ANCHORS: | | | |
|--------------|---|-----------|-----------------|--|
| | Test or Special Inspection | Туре | Performed By | Code References and Notes |
| | a . Inspect installation of post-installed anchors | See Notes | SI* | 1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA. |
| \checkmark | b. Test post-installed anchors. | Test | LOR | 1910A.5. (See Appendix for exemptions.) |

| 12. OTHER CONCRETE: | | | |
|----------------------------|------|-----------------|---------------------------|
| Test or Special Inspection | Туре | Performed By | Code References and Notes |
| a. | | | |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119317 |
| DSA File Number: |

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

| SOILS: |
|--|
| 1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade. |
| 2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill. |

| CONCRETE/MASONRY: |
|--|
| 1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding." |
| 2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section. |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119317 |
| DSA File Number: |

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

| | 3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition. |
|--|---|
| | 4. Epoxy shear dowels in site flatwork and/or other non-structural concrete. |
| | 5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section. |

| Welding: |
|---|
| 1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof. |
| 2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush. |
| 3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud. |
| 4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above). |
| 5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above). |
| |

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

| Application Number: |
|---------------------|
| 04-119317 |
| DSA File Number: |

School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

| 6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category). |
|--|
| 7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems. |

DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

Application Number: 04-119317 DSA File Number: School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

Name of Architect or Engineer in general responsible charge:

Thomas Christian

Name of Structural Engineer (When structural design has been delegated):

Steven Rohy

Signature of Architect or Structural Engineer:

Date: 9/26/2021

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

| DSA STAMP |
|---|
| |
| IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT |
| APP: 04-119317 INC: |
| REVIEWED FOR |
| SS 🗹 FLS 🗹 ACS 🗹 |
| DATE: 01/26/2022 |
| |

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 04-119317 DSA File Number: School Name: Grossmont High School Increment Number: School District: Grossmont Union High School District Date Created: 2021-09-26 10:58:49

Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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, <u>Chapter 33 Fire Safety</u> <u>During Construction, And Demolition</u>:
 - 1. <u>Section 3301.1</u> <u>SCOPE</u>
 - 2. <u>Section 3302</u> <u>DEFINITIONS</u>
 - 3. <u>Section 3303</u> <u>TEMPORARY HEATING EQUIPMENT</u>
 - 4. <u>Section 3304</u> <u>PRECAUTIONS AGAINST FIRE</u>
 - 5. <u>Section 3305</u> FLAMMABLE AND COMBUSTIBLE LIQUIDS
 - 6. <u>Section 3306</u> FLAMMABLE GASES
 - 7. <u>Section 3307</u> <u>EXPLOSIVE MATERIALS</u>
 - 8. <u>Section 3308</u> <u>OWNER'S RESPONSIBILITY FOR FIRE PROTECTION</u>
 - 9. <u>Section 3309</u> FIRE REPORTING
 - 10. Section 3310 ACCESS FOR FIRE FIGHTING
 - 11. Section 3311 MEANS OF EGRESS
 - 12. Section 3312 WATER SUPPLY FOR FIRE PROTECTION
 - 13. <u>Section 3313</u> <u>STANDPIPES</u>
 - 14. <u>Section 3314</u> <u>AUTOMATIC SPRINKLER SYSTEM</u>
 - 15. <u>Section 3315</u> <u>PORTABLE FIRE EXTINGUISHERS</u>
 - 16. <u>Section 3316</u> <u>MOTORIZED CONSTRUCTION EQUIPMENT</u>
 - 17. <u>Section 3317</u> <u>SAFEGUARDING ROOFING OPERATIONS</u>

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

THIS PAGE INTENTIONALLY LEFT BLANK

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

THIS PAGE INTENTIONALLY LEFT BLANK

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:
 - 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

THIS PAGE INTENTIONALLY LEFT BLANK

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 <u>only</u> 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 <u>not</u> 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:
 - 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 an 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 <u>not</u> 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.lf 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 <u>conditionally</u> 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.

<u>Contractor shall remain responsible for these items prior to this date</u>. 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.

 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. 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

THIS PAGE INTENTIONALLY LEFT BLANK

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.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 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.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 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 agendizing 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

THIS PAGE INTENTIONALLY LEFT BLANK

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: | (Subsector Sub subsector Manufactures or Supplier) | | | | | |
|-------------------------|--|--|--|--|--|--|
| | (Subcontractor, Sub-subcontractor, Manufacturer or Supplier) | | | | | |
| | Ву: | | | | | |
| | Title: | | | | | |
| | State License No: | | | | | |
| Local Representative: F | or maintenance, repair, or replacement service, contact: | | | | | |
| Name: | | | | | | |
| Address: | | | | | | |
| Phone Num | ber | | | | | |
| | END OF SECTION | | | | | |

THIS PAGE LEFT BLANK FOR PRINTING PURPOSES

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:
 - 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

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY MEDIATION

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 indicted 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

THIS PAGE INTENTIONALLY LEFT BLANK

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 AWPA quality mark. Cuts and holes shall be treated per AWPA 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 AWPA 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 AWPA 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 54 00

THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

- 1.01 DESCRIPTION
 - A. Scope Install a complete adhered Sika Sarnafil, or equal roofing system including membrane, flashings and other components.
 - B. Related Work The work includes but is not limited to the installation of:
 - 1. Removal of Existing Roofing and Insulation
 - 2. Substrate Preparation
 - 3. Wood Blocking
 - 4. Insulation
 - 5. Separation Layers
 - 6. Roof Membrane
 - 7. Fasteners
 - 8. Adhesive for Flashings
 - 9. Roof Membrane Flashings
 - 10. Metal Flashings
 - 11. Sealants

1.02 QUALITY ASSURANCE

- A. This roofing system shall be applied only by a Roofing Applicator authorized by the manufacturer prior to bid.
- B. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner.
- C. All work pertaining to the installation of roofing membrane and flashings shall only be completed by Applicator personnel trained and authorized by the manufacturer in those procedures.

1.03 SUBMITTALS

- A. At the time of bidding, the Applicator shall submit to the Owner (or Representative) the following:
 - 1. Specific adherence to specification guideline.
 - 2. Samples of each primary component to be used in the roof system and the

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

manufacturer's current literature for each component.

- 3. Written approval by the insulation manufacturer for use and performance of the product in the proposed system.
- 4. Sample copy of manufacturer's warranty.
- 5. Sample copy of Applicator's warranty.
- 6. Dimensioned shop drawings which shall include: details of flashing methods for every condition.
- B. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.
- C. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.
- D. Material Safety Data Sheets (MSDS)

1.04 CODE REQUIREMENTS

- A. The Applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.
- B. System shall be designed to meet a minimum wind design requirements of the most recent version of ASCE 7.
- C. Factory Mutual Research Corporation (FM) Norwood, MA
 - 1. Class 1-90 (for high wind exposure)
- D. Underwriters Laboratories, Inc. Northbrook, IL
 - 1. Class A assembly

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- D. As a general rule all adhesives shall be stored at temperatures between 40 degree F (5 degree C) and 80 degree F (27 degree C). Read instructions contained on adhesive canister for specific storage instructions.

- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- F. All materials which are determined to be damaged by the Owner's Representative, manufacturer, or equal representative are to be removed from the job site and replaced at no cost to the Owner.

1.06 JOB CONDITIONS

- A. Materials may be installed under certain adverse weather conditions but only after consultation with manufacturer as installation time and system integrity may be affected.
- B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. The Applicator is cautioned that certain membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with membranes. The Applicator shall consult the manufacturer regarding compatibility, precautions and recommendations.
- H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over Sarnafelt, or equal, or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air or similar methods.
- J. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.
- K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials.

Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.

- L. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Applicator and properly transported to a legal dumping area authorized to receive such material.
- M. The Applicator shall take precautions that storage and application of materials and equipment does not overload the roof deck or building structure.
- N. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.
- O. The Applicator shall verify that all roof drain lines are functioning correctly (not clogged or blocked) before starting work. Applicator shall report any such blockages in writing to the Owner's Representative for corrective action prior to the installation of the roof system.
- P. Applicator shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner of such condition in writing for correction.
- Q. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.
- R. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.
- S. The Applicator shall conduct fastener pullout tests in accordance with the latest version of the SPRI/ANSI Fastener Pullout Standard to verify condition of the deck/substrate and to confirm expected pullout values.
- T. The membrane shall not be installed under the following conditions without consulting the manufacturer for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. Any exterior wall has 10 percent or more of the surface area comprised of opening doors or windows.
 - 3. The wall/deck intersection permits air entry into the wall flashing area.
- U. Precautions shall be taken when using any adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.
- V. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.
- W. Membranes are slippery when wet or covered with snow, frost, or ice. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.
- 1.07 BIDDING REQUIREMENTS
 - A. Pre-Bid Meeting:

A pre-bid meeting shall be held with the Owner's Representative and involved trades to discuss all aspects of the project. The Applicator's field representative or roofing foreman for the work shall be in attendance. Procedures to avoid rooftop damage by other trades shall be determined.

B. Site Visit:

Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Applicator. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

1.08 WARRANTIES

- A. All work shall maintain the existing manufacturer's warranty.
- C. Applicator/Roofing Contractor Warranty Applicator's/Contractor's warranty shall be 30 years. Applicator/Contractor shall supply Owner with a separate workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within Applicator warranty term, defective or otherwise not in accordance with Contract Documents, the Applicator shall repair that defect at no cost to the Owner. Applicator's warranty obligation shall run directly to the Owner, and a copy shall be sent manufacturer.
- D. Owner Responsibility Owner shall notify the contractor of any leaks, within one month, as they occur during the time period when both warranties are in effect.

PART 2 - PRODUCTS

- 2.01 GENERAL
 - A. Manufacturer: The components of the Sarnafil Adhered roof system, or equal, are to be products of Sika Sarnafil, or equal, as indicated on the Drawings and specified in the Contract Documents.
 - B. Other acceptable manufacturers: Johns Manville, Tremco or equal, upon submission of an acceptable pre-bid submittal.
 - C. Roof assembly shall be Class A.
 - D. Contractor shall verify existing roof manufacturer and use products and materials to match installed roof assembly.

2.02 MEMBRANE

- A. Sarnafil G410 fiberglass reinforced membrane with a lacquer coating.
- B. Membrane shall conform to ASTM D4434 (latest version), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II, Grade I.
 - 1. Sarnafil 6G410-20, 80 mil (2.0 mm), thermoplastic membrane with fiberglass reinforcement.
- C. Certified Polymer Thickness

- D. Color of Membrane EnergySmart White, initial solar reflectance of 0.83, emittance of 0.90, and solar reflective index (SRI) of 104 (ENERGY STAR listed).
- E. Typical Physical Properties (1)

| Parameters | ASTM <u>Test Method</u> | ASTM D-4434 <u>Spec.</u> <u>Requirement</u> | Typical Physical <u>Properties</u> |
|---|----------------------------|---|---------------------------------------|
| Reinforcing Material Overall Thickness(1), min., inches (mm) | - D638 | - 0.045 (1.14) | Fiberglass [0.0 inches)] |
| Thickness Above Scrim | - | - | 0.023 (avg.) |
| Tensile Strength, min., psi (MPa) | D638 | 1500 (10.4) | 1600 (11.1) |
| Elongation at Break, min. (machine / | D638 | 250% / 220% | 250% / 220% |
| transverse) | | | |
| Seam strength(2), min. (% of tensile strength) | D638 | 75 | 80 |
| Retention of Properties After Heat Aging | D3045 | - | - |
| Tensile Strength, min., (% of original) | D638 | 90 | 95 |
| Elongation, min., (% of original) | D638 | 90 | 90 |
| Tearing Resistance, min., lbf (N) | D1004 | 10 (45.0) | 14 (63.0) |
| Low Temperature Bend, -40° F (-40° C) | D2136 | Pass | Pass |
| Accelerated Weathering Test (florescent light, uv exposure) | G154 | 5,000 Hours | 10,000 Hours |
| Cracking (7x magnification) | - | None | None |
| Discoloration (by observation) | - | Negligible | Negligible |
| Crazing (7x magnification) | - | None | None |
| Linear Dimensional Change | D1204 | 0.10 % max. | 0.02% |
| Weight Change After Immersion in Water | D570 | ± 3.0% max. | 2.5% |
| Static Puncture Resistance, 33 lbf (15 kg) | D5602 | Pass | Pass |
| Dynamic Puncture Resistance, 7.3 ft-lbf (10 J) | D5635 | Pass | Pass |
| Initial Solar Reflectance | E903 | - | 0.83 |
| Emissivity | E408, C1371, Other | - | 0.90 |
| Solar Reflective Index (SRI) | E1980 | - | 104 |
| Recycled Content (5 & 10 ft. sheets only) | 8 to 12% Pre-Cor | sumer / Up to 1% F | ost Consumer. |

Notes

(1) Typical Physical Properties data is applicable for 0.048 in (1.2 mm) membrane thickness and greater.

(2) Failure occurs through membrane rupture not seam failure.

2.03 FLASHING MATERIALS

- A. Wall/Curb Flashing Sarnaclad, or equal A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Sarnaclad is a 24 gauge, G90 galvanized metal sheet with a 20 mil unsupported Sarnafil membrane laminated on one side. The dimensions of Sarnaclad are 4 ft x 8 ft (1.2 m x 2.4 m) or 4 ft x 10 ft (1.2 m x 3.0 m)
- B. Perimeter Edge Flashing Sarnaclad, or equal A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles for a high wind installation. Sarnaclad is a 24 gauge, G90 galvanized metal sheet with a 20 mil (0.5 mm) unsupported Sarnafil membrane laminated on one side. The dimensions of Sarnaclad are 4 ft x 8 ft (1.2 m x 2.4 m) or 4 ft x 10 ft (1.2 m x 3.0 m). Consult Product Data Sheet for additional information.
- C. Miscellaneous Flashing all miscellaneous flashing are referenced in terms of Sarnafil. Equal products shall be submitted for review and approval by Architect.

- 1. Sarnaflash Prefabricated expansion joint cover made from Sarnafil membrane. Sarnaflash is designed for securement to vertical or horizontal surfaces to span and accommodate the movement of new and existing expansion gaps from 1 inch to 4-1/2 inches (25 mm to 114 mm) across. Available in 40 foot (12 m) rolls.
- Sarnareglet Heavy-duty, extruded aluminum flashing termination reglet used at walls and large curbs. Sarnareglet is produced from 6063-T5, 0.10 inch to 0.12 inch (2.5 mm to 3.0 mm) thick extruded aluminum. Sarnareglet has a 2-1/4 inch (57 mm) deep profile, and is provided in 10 foot (3 m) lengths. Use prefabricated Sarnareglet mitered inside and outside corners where walls intersect.
- 3. Sarnastack Prefabricated vent pipe flashing made from 0.048 inch (48 mil/1.2 mm) thick Sarnafil G410 membrane.
- 4. Sarnadrain-RAC PVC-coated, heavy-duty aluminum roof drain insert that mechanically seals to the drainpipe interior. Sarnadrain-RAC is made of 0.080 inch (2 mm) thick 6063 aluminum with a urethane seal installed at the end of the drainpipe. The large 14 inch x 14 inch (0.36 m x 0.36 m) drain strainer is also made of 0.080 inch (2 mm) thick aluminum stock. The flange dimensions of Sarnadrain-RAC are 18 inches x 18 inches (0.46 m x 0.46 m).
- 5. Sarnacircle-"G" Circular 0.048 inch (48 mil/1.2 mm) thick G410 membrane patch welded over T-joints formed by overlapping thick membranes.
- 6. Sarnacorners Universal Prefabricated outside and inside flashing corners made of 0.060 inch (60 mil/1.5 mm) thick membrane that are heat-welded to membrane or Sarnaclad base flashings.
- 7. Open Post Flashing Prefabricated post flashing, 0.048 inch (48 mil/1.2 mm) thick, with an open seam used to flash obstructed rooftop conduits and pipes 1/2 to 1-1/4 inch (12.7-31.8 mm) in diameter. Available in 2 sizes; 1/2 to 3/4 inch (12.7-19 mm) and 3/4 to 1-1/4 inch (19-31.8 mm) diameter. Open Post Flashings are heat welded in place and terminated at the top of the penetration completing the pipe penetration detail.
- 8. Sikaflex-1a Sealant
- 9. Sarnafiller A two-component urethane adhesive used for pitch pocket filler. Cures with excellent elasticity and adhesion to various surfaces.
- 10. Sarnacol 2170 Adhesive Solvent-based reactivating adhesive used to attach membrane to flashing substrate.
- 11. Sarnacol 2170 VC Adhesive Solvent-based, low VOC, reactivating adhesive used to attach membrane to flashing substrate.
- 12. Sarnafelt A non-woven polyester or polypropylene mat cushion layer that is necessary behind G410 or G459 Flashing Membrane when the flashing substrates are rough or incompatible with the flashing membrane.

2.04 INSULATION/OVERLAYMENT/RECOVER BOARD

A. Sarnatherm, - Atlas AC Foam-IV, or equal, - 2 layers of rigid isocyanurate foam insulation composed of a losed cell polyisocyanurate foam core laminated to a high performance coated glass facer. DensDeck, or equal $-\frac{1}{2}$ " Siliconized gypsum, fire-tested

hardboard with glass-mat facers.

2.05 ATTACHMENT COMPONENTS

A solvent-based, low VOC, reactivating adhesive used to attach the membrane to the substrate, either horizontally or vertically. Consult Product Data Sheets for additional information. Application rates are as follows:

A. Membrane Adhesive - Sarnacol, or equal, 2170 VC Adhesive:

| SARNACOL 2170 VC APPLICATION RATES FOR BARE BACK MEMBRANE | | | | | | | |
|---|---|--|--|--|--|--|--|
| | Adhesive Rate | es – Gallons per 100 Square Feet Approximate | | | | | |
| | (Liters per Meter ²) Sq. Ft./Pail | | | | | | |
| | Substrate | Membrane Total (<i>meter</i> ²) | | | | | |
| Isocyanurate Paper Facer | 1.25 <i>(0.51)</i> | + 0.50 (0.20) = 1.75 (0.71) 285 (26.48) | | | | | |
| Smooth Plywood | 1.00 <i>(0.41)</i> | + 0.50 (0.20) = 1.50 (0.61) 333 (30.94) | | | | | |
| Metal | 0.75 <i>(0.31)</i> | + 0.50 (0.20) = 1.25 (0.51) 400 (37.16) | | | | | |
| Concrete Wall | 1.25 <i>(0.51)</i> | + 0.50 (0.20) = 1.75 (0.71) 285 (26.48) | | | | | |
| GP DensDeck | 1.25 <i>(0.51)</i> | + 0.50 (0.20) = 1.75 (0.71) 285 (26.48) | | | | | |
| GP DensDeck Prime GP DensDeck DuraGuard | 1.00 <i>(0.41)</i> | + 0.50 (0.20) = 1.50 (0.61) 333 (30.94) | | | | | |
| USG Securock Gypsum-Fiber | 0.75 (0.31) | + 0.50 (0.20) = 1.25 (0.51) 400 (37.16) | | | | | |

| SARNACOL 2170 VC APPLICATION RATES FOR MEMBRANE FLASHINGS USING SARNAFELT | | | | | | | |
|---|-------------------------------------|--|---|--------------------|---------------|---------------------------------|--|
| | Adhe | Adhesive Rates – Gallons per 100 Square Feet | | | | | |
| | | (Liters per Meter²) | | | | | |
| | Substrate (1 st coat) | Substrate (2 nd coat) | | Membrane | Total | <u>Sq. Ft./Pail</u> (meter²) | |
| Smooth Plywood | 1.00 (0.41) | + 1.00 (0.41) | + | 0.50 (0.20) | = 2.50 (1.02) | 200 (18.58) | |
| Concrete Wall | 1.00 (0.41) | + 1.00 (0.41) | + | 0.50 <i>(0.20)</i> | = 2.50 (1.02) | 200 (18.58) | |
| Masonry Wall | 1.00 (0.41) | + 1.00 (0.41) | + | 0.50 <i>(0.20)</i> | = 2.50 (1.02) | 200 (18.58) | |
| Granular Bitumen | 1.00 (0.41) | + 1.00 (0.41) | + | 0.50 <i>(0.20)</i> | = 2.50 (1.02) | 200 (18.58) | |
| Smooth Aged Bitumen | 1.00 <i>(0.41)</i> | + 1.00 (0.41) | + | 0.50 <i>(0.20)</i> | = 2.50 (1.02) | 200 (18.58) | |

Notes:

- a) Due to an increase in viscosity when outdoor temperatures during installation are below 40 degree F (5 degree C), add 1/2 gallon per 100 square feet (0.2 I per m²) to rate for estimating purposes. Do not install when air temperature is within 5 degree F of dew point. Solvent evaporation time increases significantly when temperatures drop. Ensure first layer of Sarnacol 2170 is fully dry before second layer is applied to the back of the membrane for proper reactivation.
- b) Use a water-filled, foam-covered lawn roller to consistently and evenly press the membrane into the adhesive layer.
- B. Insulation Board Placement
 - Sarnacol 2163 Adhesive A low odor, VOC compliant, one step, low-rise urethane foam used to attach insulation to approved compatible substrates. Adhesive is applied with a gravity fed applicator or by hand with a dual component caulk gun. Additional adhesive may be required for rougher surfaces. Consult Product Data Sheets for additional information.

Notes:

- a) Not recommended for use with insulation boards larger than 4x4 feet (1.2x1.2 m).
- Place insulation board into the adhesive shortly after it has reached its maximum rise [typically within 30 to 45 seconds at 60 to 80 degree F (16 to 27 degree C)] and walk into place.
- c) Minimum product temperature before entering the dispenser should be 70 degree F (21 degree C).
- d) Store between 60 degree F (16 degree C) and 80 degree F (27 degree C).
- e) Adhesive shall not be used during inclement weather.
- f) Adhesive shall not be applied to wet or damp surfaces.
- g) A minimum of 1 Sarnabar placed 4 feet (1.2 m) from the roof edge and fastened 12 inches (305 mm) on center to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnabar is to have a cover strip hot air welded over it.
- 2. Sarnacol 2164 Adhesive A low odor, VOC compliant, single component, lowrise urethane foam used to attach insulation to approved compatible substrates.

Notes:

- a) Not recommended for use with insulation boards larger than 4x4 feet (1.2x1.2 m).
- b) Place insulation board into wet adhesive immediately.
- c) Adhesive shall not be used during inclement weather.
- d) Adhesive shall not be applied to wet or damp surfaces.
- e) A minimum of 1 Sarnabar placed 4 feet (1.2 m) from the roof edge and fastened 12 inches (305 mm) on center to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnabar is to have a cover strip hot air welded over it.
- 3. Sarnaplate Used with various Sarnafasteners to attach insulation boards to roof deck. Sarnaplate is a 3 inch (75 mm) square or round, 26 gauge stamping of SAE 1010 steel with an AZ 55 Galvalume coating.
- Sarnaplate-HD/CD Used with Sarnafastener-HD or Sarnafastener-CD10 to attach insulation boards to wood or concrete roof decks. Sarnaplate-HD/CD is a 3 inch (75 mm) round stamping of SAE 1010 steel with an AZ 55 Galvalume coating. Consult Product Data Sheet for additional information.
- 5. Sarnaplate-Preassembled Combination of a 3 inch round plate and a #12 fastener used to attach insulation boards to steel or wood roof decks. Sarnaplate-Preassembled consists of a 3 inch (75 mm) round, 26 gauge stamping of SAE 1010 steel with an AZ 55 Galvalume coating and Sarnafastener #12 with modified buttress thread. The fastener shank diameter is approximately 0.168 inch (4 mm) and the thread diameter is approximately 0.214 inch (5 mm). Consult Product Data Sheet for additional information.

- 6. Sarnafastener #12A #12 corrosion-resistant fastener used with Sarnaplates to attach insulation boards to steel or wood roof decks. Sarnafastener #12 has a modified buttress thread, a shank diameter of approximately 0.168 inch (4 mm) and a thread diameter of approximately 0.214 inch (5 mm). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement. Consult Product Data Sheet for additional information.
- 7. Sarnafastener-HD A #14 corrosion-resistant fastener used with Sarnaplate-HD/CD to attach insulation boards or with Sarnastop and Sarnabar to attach membrane to structural concrete or wood roof decks. Sarnafastener-HD has a shank diameter of 0.190 inch (4.8 mm), a thread diameter of 0.245 inch (6.2 mm) and a #3 Phillips drive head with a diameter of 0.435 inch (11 mm). Consult Product Data Sheet for additional information.
- 8. Sarnafastener-XP –

A #15, heavy-duty, corrosion-resistant fastener used with Sarnaplate to attach insulation or with Sarnadisc, Sarnastop and Sarnabar to attach Sarnafil G410 roof membrane to steel or 1/2-3/4 inch wood roof decks. Sarnafastener-XP has a shank diameter of approximately 0.21 inch (5.3 mm) and the thread diameter is approximately 0.26 inch (6.6 mm). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement. Consult Product Data Sheet for additional information.

- 9. Sarnafastener-XPS A specially designed, heavy-duty, corrosion-resistant fastener used with Sarnastop or Sarnabar to attach Sarnafil G410 roof membrane to steel roof decks. Sarnafastener-XPS has a shank diameter of approximately 0.21 inch (5.3mm) and a thread diameter of approximately 0.26 inch (6.6). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement and simplicity of application. Consult Product Data Sheet for additional information.
- Sarnafastener-CD10 A nail-in, corrosion-resistant fastener used with Sarnaplate-HD/CD to attach insulation to normal weight concrete roof deck. Sarnafastener-CD10 has a shank diameter of 0.215 inch (5.5 mm), a split diameter of 0.265/0.275 inch (6.7/7.0 mm) and a flat head with a 0.435 inch (11 mm) diameter. Consult Product Data Sheet for additional information.
- 11. Sarnastop An extruded aluminum, low profile bar used with certain Sarnafasteners to attach to the roof deck or to walls/curbs at terminations, penetrations and at incline changes of the substrate. Sarnastop is a 1 inch (25 mm) wide, flat aluminum bar 1/8 inch (3 mm) thick that has predrilled holes every 6 inches (152 mm) on center. Consult Product Data Sheet for additional information.
- 12. Sarnabar An FM-approved, heavy-duty, 14 gauge, galvanized or stainless, rollformed steel bar used to attach membrane to roof decks. The formed steel is pre-punched with holes every 1 inch (25 mm) on center to allow various Sarnafastener spacing options. Consult Product Data Sheet for additional information.
- 13. Sarnacord A 5/32 inch (4 mm) diameter, red-colored, flexible thermoplastic extrusion that is welded to the top surface of the Sarnafil membrane and against the side of the Sarnabar, used to hold the membrane in position. Consult

Product Data Sheet for additional information.

2.06 DECK PRIMERS

- A. Sarnacol LR-2001 Deck Primer Designed for use with Sarnacol LR-2001 adhesive to condition surfaces and promote adhesion between certain vapor barriers, acceptable deck substrates such as perlite, vermiculite and Zonolite with insulation board products. Consult Product Data Sheet for additional information.
- B. Sarnavap Self-Adhered Primer A solvent-based primer designed for use with Sarnavap Self-Adhered vapor barrier to prime wood, concrete, lightweight concrete, gypsum boards and decks prior to application Sarnavap Self-Adhered vapor barrier. Consult Product Data Sheet for additional information.
- C. Sarnavap Self-Adhered Primer WB A water-based primer designed for use with Sarnavap Self-Adhered vapor barrier to promote adhesion to most substrates. Particularly recommended when use of solvent-based primer is not advised or permitted. Consult Product Data Sheet for additional information.

2.07 WALKWAY PROTECTION

A. Sarnatred - A polyester reinforced, 0.096 inch (96 mil/2.4 mm), weldable membrane with surface embossment. Used as a protection layer from rooftop traffic. Sarnatred is supplied in rolls of 39.3 inches (1.0 m) wide and 32.8 feet (10 m) long. Consult Product Data Sheet for additional information.

2.08 VAPOR BARRIER

A. Sarnavap-10 - A 10 mil (0.25 mm) thick polyethylene vapor barrier/air barrier. Sarnavap-10 is supplied in a folded panel that is rolled onto a core. The core width is 5 feet (1.5 m). When unrolled off the core and unfolded, the sheet dimensions are 20 feet (6.9 m) wide by 100 feet (33 m) long. Consult Product Data Sheet for additional information.

2.09 MISCELLANEOUS ACCESSORIES

- A. Aluminum Tape A 2 inch (50 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.
- B. Sealing Tape Strip Compressible foam with pressure-sensitive adhesive on one side. Used with metal flashings as a preventive measure against air and wind blown moisture entry.
- C. Multi-Purpose Tape A high performance sealant tape used with metal flashings as a preventive measure against air and wind blown moisture entry.
- D. Sarnamatic 641mc or 661 220 volt, self-propelled, hot-air welding machine used to seal Sarnafil membrane seams.
- E. Sarnasolv A high quality solvent cleaner used for the general cleaning of residual asphalt, scuff marks, etc., from the membrane surface. Sarnasolv is also used daily to clean seam areas prior to hot-air welding in tear off or dirty conditions or if the membrane is not welded the same day it is unrolled. Consult Product Data Sheet for additional information.
- F. Perimeter Warning Tape Designed for use on PVC membranes as a reflective, highly

visible pressure sensitive tape used to draw attention to roof perimeters and potential hazardous areas. Perimeter Warning Tape exceeds reflectivity 3 requirements and Federal spec. L-S-300, Class 1.

2.10 SEALANTS AND PITCH POCKET FILLERS

- A. Sarnafil Sikaflex-1a Sealant, or equal.
- B. Sarnafiller (two-component urethane adhesive for pitch pocket toppings).

Depending on substrates, the following sealants are options for temporary overnight tieins:

- 1. Type III hot asphalt conforming to ASTM D312 (latest version).
- 2. Sarnafiller.
- 3. Multiple layers of roofing cement and felt.
- 4. Spray-applied, water-resistant urethane foam.
- 5. Mechanical attachment with rigid bars and compressed sealant.

2.11 MISCELLANEOUS FASTENERS AND ANCHORS

A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1-1/4 inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

2.12 RELATED MATERIALS

- A. Wood Nailer Treated wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19 percent by weight on a dry-weight basis.
- B. Plywood When bonding directly to plywood, a minimum 1/2 inch (12 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used.
 Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19 percent by weight on a dry weight basis.

PART 3 - EXECUTION

- 3.01 PRE-CONSTRUCTION CONFERENCE
 - A. The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-

construction conference.

The meeting shall discuss all aspects of the project including but not limited to:

- 1. Safety
- 2. Set up
- 3. Construction schedule
- 4. Contract conditions
- 5. Coordination of the work

3.02 SUBSTRATE CONDITION

A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.

Applicator shall verify that the work done under related sections meets the following conditions:

- 1. Roof drains and scuppers have been reconditioned or replaced and installed properly.
- 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
- 3. All surfaces are smooth and free of dirt, debris and incompatible materials.
- 4. All roof surfaces shall be free of water, ice and snow.

3.03 SUBSTRATE PREPARATION

- A. The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Applicator shall load materials on the rooftop in such a manner as to eliminate risk of deck overload due to concentrated weight. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code and in such a manner as to resist all anticipated wind loads in that location.
- B. Existing Poured Structural Concrete Deck:

The contractor shall provide a smooth and level finish and shall be free of dust, excess moisture, oil-based curing agents and loose debris. Sharp ridges or other projections above the surface shall be removed before roofing.

3.04 SUBSTRATE INSPECTION

- A. A dry, clean and smooth substrate shall be prepared to receive the Sarnafil Adhered roof system.
- B. The Applicator shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.

- C. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.
- D. All roof surfaces shall be free of water, ice and snow.
- E. Sarnafil shall be applied over compatible and accepted substrates only.

3.05 VAPOR BARRIER/AIR BARRIER INSTALLATION

- A. Sarnavap Self-Adhered
 - 1. Primer Application The substrate must be clean, dry and free of dust, grease or other contaminants. Shake well before using. Apply to clean and dry surfaces with a paint brush, roller or sprayer. Application rates will vary depending on substrate. Sarnavap Self-Adhered vapor barrier must be installed on the same day as the primer application. Acceptable substrates for primer application include wood, concrete, lightweight concrete, gypsum boards and decks. Drying time is typically 30 minutes to 3 hours.

Spraying equipment recommendations - Spray tip size: between 20 and 25 mils at 1300 psi continuous.

To Install:

- a. Apply primer to prepared substrate.
- b. Allow primer to dry completely.
- c. Install Sarnavap Self-Adhered vapor barrier.

Notes:

- a) Do not install when it is raining, snowing, or on wet/humid surfaces.
- b) Install Sarnavap Self-Adhered Primer at temperatures 32 degree F (0 degree C) and above. Average coverage rate is 0.25 to 1.22 gallons per square (0.1 to 0.5 L per m²).
- c) Install Sarnavap Self-Adhered Primer WB at temperatures 41 degree F (5 degree C) and above. Average coverage rate is 0.25 to 0.75 gallon per square (0.1 to 0.3 L per m²). KEEP FROM FREEZING.
- d) Do not use Sarnavap Self-Adhered Primer WB to seal Sarnavap Self-Adhered vapor barrier membrane joints.
- e) Sarnavap Self-Adhered Primer WB is not suitable for plastic surfaces.
- f) Do not use Sarnavap Self-Adhered Primer WB on asphaltic boards.
- B. Membrane Application over Concrete Deck (Reroofing with Removal of Existing Roofing):

Install Sarnavap Self-Adhered over a clean and dry substrate. In concrete applications allow concrete to cure for at least 7 days. Do not install when it is raining, snowing, or on wet/humid surfaces. Install in temperatures 32 degree F (0 degree C) and above. The use of a primer is required on the following substrates: wood, concrete, lightweight concrete, gypsum boards and decks. On metal decks use a metal plate (6 x 42 inches - 15 x 106 cm) to support the membrane end lap between metal flutes ensuring a complete end lap seal.

a. Begin application at the bottom of the slope. Unroll Sarnavap Self-Adhered onto the substrate without adhering for alignment. Overlap each preceding sheet by 3

inches (75 mm) lengthwise following the reference line and by 6 inches (150 mm) at each end. Stagger end laps by at least 12 inches (300 mm). Do not immediately remove the silicone release sheet.

- b. Once aligned, peel back a portion of the silicone release sheet and press the membrane onto the substrate for initial adherence. Hold Sarnavap Self-Adhered tight and peel back the release sheet by pulling diagonally.
- c. Use a 75 lb. (34 kg) roller to press Sarnavap Self-Adhered down into the substrate including the laps. Finish by aligning the edge of the roller with the lower end of the side laps and rolling up the membrane. Do not cut the membrane to remove air bubbles trapped under the laps. Squeeze out air bubbles by pushing the roller to the edge of the laps.

3.06 WOOD NAILER INSTALLATION

A. Install continuous wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on the Detail Drawings.

Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons per lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center or 16 inches (0.4 m) on center if necessary to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. Nailer attachment shall also meet the requirements of the current Factory Mutual Loss Prevention Data Sheet 1-49.

- B. Thickness shall be as required to match substrate or insulation height to allow a smooth transition.
- C. Any existing nailer woodwork which is to remain shall be firmly anchored in place to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons per lineal meter) in any direction and shall be free of rot, excess moisture or deterioration. Only woodwork shown to be reused in Detail Drawings shall be left in place. All other nailer woodwork shall be removed.
- D. Stainless steel, corrosion resistant, fasteners are required when mechanically attaching any Sika Sarnafil product to wood nailers and wood products treated with ACQ (Alkaline copper Quaternary). When ACQ treated wood is used on steel roof decks or with metal edge detailing, a separation layer must be placed between the metal and ACQ treated wood.

3.07 INSULATION INSTALLATION

- A. General Criteria:
 - 1. Insulation shall be installed according to insulation manufacturer's instructions.
 - 2. Insulation shall be neatly cut to fit around penetrations and projections.
 - 3. Install tapered insulation in accordance with insulation manufacturer's shop drawings.
 - 4. Install tapered insulation around drains creating a drain sump.
 - 5. Do not install more insulation board than can be covered with Sarnafil membrane by the end of the day or the onset of inclement weather.

- 6. Use at least 2 layers of insulation when the total insulation thickness exceeds 2-1/2 inches (64 mm). Stagger joints at least 12 inches (0.3 m) between layers.
- B. Mechanical Attachment (if required Architect to specify)
 - 1. Insulation shall be mechanically fastened to the deck with approved fasteners and plates at a rate according to the insulation manufacturer's and Sika Sarnafil's recommendations for fastening rates and patterns. The quantity and locations of the fasteners and plates shall also cause the insulation boards to rest evenly on the roof deck/substrate so that there are no significant and avoidable air spaces between the boards and the substrate. Each insulation board shall be installed tightly against the adjacent boards on all sides.
 - 2. Fasteners are to be installed consistently in accordance with fastener manufacturer's recommendations. Fasteners are to have minimum penetration into structural deck recommended by the fastener manufacturer and Sika Sarnafil.
 - 3. Use fastener tools with a depth locator and torque-limiting attachment as recommended or supplied by fastener manufacturer to ensure proper installation.
- C. Sarnacol 2163 Adhesive (if required Architect to specify)
 - 1. With a utility knife, cut away the plastic plugs from the Sarnacol 2163 mixing head. Attach a mixing tip to the threaded mixing head. Place the cartridge into the applicator. At the beginning of the tube, some of the material should be pumped out initially to make sure of a proper mix. Apply using a gravity fed applicator or by hand with a dual component caulk gun over properly installed and prepared substrates in bands 12 inches (305 mm) on center. Bands are 1/4 to 1/2 inch (6 to 13 mm) wide before foaming. Adhesive will guickly, within 30 to 45 seconds at 60 to 80 degree F (15 to 27 degree C), transform from a liquid into a low rise foam. Immediately set insulation boards into wet adhesive. Do not allow the adhesive to skin over. Walk insulation boards into place to ensure full embedment. Within 5 to 15 minutes the boards are securely attached to the substrate. In warmer weather this process is a little quicker. In colder weather the process is a little slower. CAUTION: Walking insulation boards in immediately after placement into adhesive may cause slippage/movement until adhesive starts to set up. On roof slopes greater than 1/2 inch (13 mm) in 12 inches (305 mm), begin adhering insulation at low point and work upward to avoid slippage. One person should be designated to walk in, trim/slit and apply weight to all insulation boards to ensure adequate securement. Only areas that can be made completely watertight in the same day's operations shall be coated. Un-used adhesive can be applied at a later date by simply replacing the mixing tip.

For multiple layers of insulation spray adhesive over the base layer once fully secured and follow procedures above for attachment of each insulation layer.

- 2. Approved Insulation Boards:
 - a. Sarnatherm Polyisocyanurate, 1 inch (25 mm) minimum thickness (required for Systems Warranty).
 - b. Or equal DensDeck, or Securock Gypsum-Fiber
- 3. Approved Substrate/Deck:

- a. Structural Roof Decking: Concrete, Gypsum, Cemetitious Wood Fiber (Tectum), Wood or Steel.
- b. Base sheets: Standard or Granular surfaced.
- c. Smooth Built-Up Roof Surfaces: Re-Roof Applications.
- 4. Re-cover Applications A moisture survey must be performed. Any wet materials must be removed and replaced with compatible materials. For existing B.U.R., modified bitumen or mineral surface cap sheets inspections shall be performed for adhesion between the plies, insulation and deck. Deficiencies such as blisters, buckles, wrinkles and fishmouths shall be cut out or mechanically fastened. Apply Sarnacol 2163/2164 Universal Primer to all substrates prior to the application of Sarnacol 2163 adhesive.
- 5. Installation Guidelines:
 - a. Not recommended for use with insulation boards larger than 4x4 feet (1.2x1.2 m).
 - b. For ease of application, maintain a minimum material temperature of 70 degree F (21 degree C) prior to use.
 - c. Store between 60 degree F (16 degree C) and 80 degree F (27 degree C).
 - d. Adhesive shall not be used during inclement weather.
 - e. Adhesive shall not be applied to wet or damp surfaces.
 - f. Do not use warped or curled insulation boards.
 - g. For uneven surfaces, trimming or slitting of boards may be necessary.
 - h. Approximate Set-Time:
 - Air Temperature between 60 to 90 degree F (15 to 32 degree C) = 5 to 8 minutes.

Air Temperature between 32 to 60 degree F (0 to 15 degree C) = 8 to 15 minutes.

- i. Coverage:
 - Approximately 600 square feet per case. Rates are based on an application pattern of 4 ribbons, 1/4 to 1/2 inch (6 to 13 mm) beads, 12 inches (30 cm) on center per 4 x 4 feet (121.9 x 121.9 cm) insulation board. Coverage rates may vary over irregular surfaces.
- j. A minimum of 1 Sarnabar placed 4 feet (1.2 m) from the roof edge and fastened 12 inches (305 mm) on center to the structural deck with acceptable fasteners is required after installation of the Sarnafil roof membrane. The Sarnabar is to have a cover strip hot air welded over it.

3.08 INSTALLATION OF SARNAFIL MEMBRANE

The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.

- A. Sarnacol 2170 / 2170 VC Adhesive:
 - 1. Over the properly installed and prepared substrate surface, adhesive shall be applied using solvent-resistant 3/4 inch (19 mm) nap paint rollers. The adhesive shall be applied to the substrate at a rate according to Sika Sarnafil requirements. The adhesive shall be applied in smooth, even coating with no

gaps, globs, puddles or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The first layer of adhesive shall be allowed to dry completely prior to installing the membrane.

2. When the adhesive on the substrate is dry, the Sarnafil roof membrane is unrolled. Adjacent sheets shall be overlapped 3 inches (75 mm). Once in place, one-half of the sheet's length shall be turned back and the underside shall be coated with adhesive at a rate of 1/2 gallon per 100 square feet (0.2 liters per m²). When the membrane adhesive has dried slightly to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously-coated substrate being careful to avoid wrinkles. Do not allow adhesive on the underside of the Sarnafil membrane to dry completely. The amount of membrane that can be coated with adhesive before rolling into substrate will be determined by ambient temperature, humidity and crew. The bonded sheet shall be pressed firmly in place with a water-filled, foam-covered lawn roller by frequent rolling in two directions. The remaining un-bonded half of the sheet shall be folded back and the procedure repeated.

Notes: The Applicator shall count the amount of pails of adhesive used per area per day to verify conformance to the specified adhesive rate. No adhesive shall be applied in seam areas. All membrane shall be applied in the same manner.

3.09 HOT-AIR WELDING OF SEAM OVERLAPS

- A. General
 - 1. All seams shall be hot-air welded. Seam overlaps should be 3 inches (76 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.
 - 2. Welding equipment shall be provided by or approved by Sika Sarnafil. All mechanics intending to use the equipment shall have successfully completed a training course provided by a Sika Sarnafil Technical Service Representative prior to welding.
 - 3. All membrane to be welded shall be clean and dry.
- B. Hand-Welding

Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.

- 1. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
- 2. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow", the hand roller is positioned perpendicular to the nozzle and rolled lightly. For straight seams, the 1-1/2 inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the 3/4 inch (20 mm) wide nozzle shall be used.
- C. Machine Welding
 - 1. Machine welded seams are achieved by the use of Sika Sarnafil's automatic

welding equipment. When using this equipment, Sika Sarnafil's instructions shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated simultaneously off the generator.

- 2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.
- D. Quality Control of Welded Seams
 - 1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the underside of the top membrane. On-site evaluation of welded seams shall be made daily by the Applicator at locations as directed by the Owner's Representative or Sika Sarnafil's representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.

3.10 MEMBRANE FLASHINGS

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Sarnafil. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.

- A. Sarnacol Adhesive for Membrane Flashings
 - 1. Over the properly installed and prepared flashing substrate, Sarnacol adhesive shall be applied according to instructions found on the Product Data Sheet. The Sarnacol adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
 - 2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.
 - 3. Install Sarnastop/Sarnabar/Sarnacord according to the Detail Drawings with approved fasteners into the structural deck at the base of parapets, walls and curbs. Sarnastop is required by Sika Sarnafil at the base of all tapered edge strips and at transitions, peaks, and valleys according to Sika Sarnafil's details.
 - 4. Sika Sarnafil's requirements and recommendations and the specifications shall be followed. All material submittals shall have been accepted by Sika Sarnafil prior to installation.
 - 5. All flashings shall extend a minimum of 8 inches (0.2 m) above roofing level unless otherwise accepted in writing by the Owner's Representative and Sika

Sarnafil Technical Department.

- 6. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the flashing membrane.
- 7. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Sarnastop at 6 to 8 inches (0.15 to 0.20 m) on center.
- 8. Sarnafil flashings shall be terminated according to Sika Sarnafil recommended details.
- 9. All flashings that exceed 30 inches (0.75 m) in height shall receive additional securement. Consult Sika Sarnafil Technical Department for securement methods.

3.11 METAL FLASHINGS

- A. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:
 - 1. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).
 - 2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) latest issue.
 - 3. Metal, other than that provided by Sika Sarnafil, is not covered under the Sika Sarnafil warranty.
 - 4. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.
 - 5. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.
 - 6. Metal joints shall be watertight.
 - 7. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).
 - Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches (0.3 m) on center into the wood nailer or masonry wall.
 - 9. Counter flashings shall overlap base flashings at least 4 inches (100 mm).
 - 10. Hook strips shall extend past wood nailers over wall surfaces by 1-1/2 inch (38 mm) minimum and shall be securely sealed from air entry.

3.12 SARNACLAD METAL BASE FLASHINGS/EDGE METAL

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Sarnafil. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

- A. Sarnaclad metal flashings shall be formed and installed per the Detail Drawings.
 - 1. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 inches (100 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 inch (25 mm).
 - 2. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
 - 3. Adjacent sheets of Sarnaclad shall be spaced 1/4 inch (6 mm) apart. The joint shall be covered with 2 inch (50 mm) wide aluminum tape. A 4 inch minimum (100 mm) wide strip of Sarnafil flashing membrane shall be hot-air welded over the joint. Exercise caution at perimeter of roof.

3.13 EDGE METAL

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Sarnafil. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

- A. Edge Grip Extruded
 - 1. Position the roof membrane over edge of roof and down outside face of wall covering wood nailer(s) completely. Allow 1/2 inch (13 mm) of excess membrane to extend down past the wood nailer. Hot-air weld all seams making sure there are no voids in welds.
 - Apply a 3/8 inch (10 mm) continuous bead of Sikaflex 1a sealant to the clean bottom of heavy-duty extruded retainer. Install extruded retainer from right to left as seen from rooftop. Field cut sections as necessary.
 - 3. Install retainer splice under intersecting sections of extruded retainer.
 - 4. Fasten extruded retainer into side of nailer 12 inches (0.3 m) on center. Use fasteners provided with Edge Grip Extruded system; 1-1/2 inch (38 mm) hex head stainless steel fasteners with neoprene washers. Allow 1/8 inch (3 mm) gap between extruded retainer sections for thermal expansion [1/4 inch (6 mm) if temperature is below 40 degrees F (4 C)].
 - 5. Fasteners shall provide a minimum 240 lbs. (109 kg) pull-out resistance; suitable for the substrates to which being installed.
 - 6. Install concealed joint splice plates at intersecting sections of snap-on fascia cover joints.
 - 7. Position snap-on fascia cover so that it's top engages the extruded retainer top. Rotate downward engaging bottoms of snap-on fascia cover and extruded retainer base plate. Allow 1/4 inch (6 mm) gap between snap-on fascia sections for thermal expansion. Field cut where necessary.

3.14 WALKWAY INSTALLATION

A. Sarnatred Walkway - Roofing membrane to receive Sarnatred Walkway shall be clean

and dry. Place chalk lines on deck sheet to indicate location of Walkway. Apply a continuous coat of Sarnacol 2170 or 2170 VC adhesive to the deck sheet and the back of Walkway in accordance with Sika Sarnafil's technical requirements and press Walkway into place with a water-filled, foam-covered lawn roller. Clean the deck membrane in areas to be welded. Hot-air weld the entire perimeter of the Walkway to the Sarnafil deck sheet. Check all welds with a rounded screwdriver. Re-weld any inconsistencies. Important: Check all existing deck membrane seams that are to be covered by Walkway with rounded screwdriver and reweld any inconsistencies before Walkway installation. Do not run Walkway over Sarnabars.

3.15 PERIMETER WARNING TAPE

Areas of membrane where tape is to be applied must be cleaned to a "like new" condition. Failure to properly clean the membrane will result in less than satisfactory adhesion. The membrane should be cleaned as follows:

- A. New membrane: Remove loose dirt and dust by wiping clean with water. For areas where dirt is embedded, scrub the application area with a commercial cleaner such as Simple Green, 409 or other similar all purpose cleaner using a Scotch Brite scrubbing pad or similar product. Wash away residual cleaning material with clean water.
- B. Weathered membrane: For older membranes or areas where there is excessive dirt buildup, use the above cleaning procedure followed by cleaning with a natural fiber rag wet with MEK, and wipe away all residual cleaning solution and remaining dirt until membrane has a "like new" appearance.
- C. After surface is clean and dry, apply tape to surface taking care to avoid trapping air and creating blisters as tape is smoothed over with hand pressure. If a chalk line is used be sure to keep chalk dust clear of application area.
- D. Do not apply Perimeter Warning Tape to surfaces where the temperature is below 40 degrees Fahrenheit.
- E. Perimeter Warning Tape may be slippery when wet.

3.16 TEMPORARY CUT-OFF

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100 percent watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. Waterstop shall be sealed to the deck or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as described in Section 2.10. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off site. None of these materials shall be used in the new work.
- B. If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

3.17 COMPLETION

- A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of Sika Sarnafil shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and Sika Sarnafil prior to demobilization.
- B. All Warranties referenced in this Specification shall have been submitted and have been accepted at time of contract award.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

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/weatherresistant 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 inplace 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 as 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

THIS PAGE INTENTIONALLY LEFT BLANK

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: <u>sales@fixfastusa.com</u>

- 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
- 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:
 - 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
 - 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. <u>www,fallprotect.com</u>

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

- 1. Roof Slope: $1\frac{1}{2}$: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. 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: <u>mpittner@fallprotect.com</u>

- 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).

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 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: KATTPOINT 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:
 - 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 <u>www.jm.com</u>

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 <u>www.anchorp.com/u-anchors</u>

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

THIS PAGE INTENTIONALLY LEFT BLANK



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 » S
- » Standing Seam
- » Gravel
- » Tar
- » EPDM







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.





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

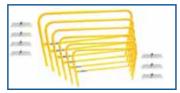


TOE BOARDS

Protect people and equipment below from falling tools.



HVAC kits



Contractor kits

| Part Number | Description | |
|-------------|---|--|
| 7900010-Y | 6' Lorguard Safety Yellow Guard Rail Section | |
| 7900011-Y | 8' Lorguard Safety Yellow Guard Rail Section | |
| 7900012-Y | 10' Lorguard Safety Yellow Guard Rail Section | |
| 7900010-G | 6' Lorguard Galvanized Guard Rail Section | |
| 7900011-G | 8' Lorguard Galvanized Guard Rail Section | |
| 7900012-G | 10' Lorguard Galvanized Guard Rail Section | |
| BRP1530 | Rubber Studded Base Plate Pad | |
| 7900004-G | Galvanized Base Plate | |
| SG233816Y | 23" to 38" Adjustable Safety Swing Gate | |

| Part Number | Description | |
|-------------|--------------------------------------|--|
| 7900005 | Rail Splice Kit | |
| TB-6 | 6′ Toe Board | |
| TB-8 | 8' Toe Board | |
| TB-10 | 10' Toe Board | |
| 7100001-SY | 6' Lorgate Loading Dock Safety Gate | |
| 7100002-SY | 8' Lorgate Loading Dock Safety Gate | |
| 7100003-SY | 10' Lorgate Loading Dock Safety Gate | |
| 7100004-SY | 12' Lorgate Loading Dock Safety Gate | |



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

fallprotect.com

Represented by:



24400 Sperry Drive Cleveland, OH 44145 Phone: (440) 348-9460 / Fax (440) 348-9455 www.FallProtect.com www.PortableGuard.com



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: 1/4" HEX KEY

TOOLS RECOMMENDED: 1/4" HEX SOCKET BIT, SOCKET ADAPTOR, CORDLESS IMPACT DRIVER



TABLE OF CONTENTS

| PRE INSTALLATION MESSAGE | 3 | |
|--|------|--|
| DEFINITIONS | 4 | |
| LORGUARD GUARDRAIL PARTS LIST | 5 | |
| LORGUARD GUARDRAIL SPECIFICATION | 6 | |
| LORGUARD GUARDRAIL SPECIFICATION - INSTRUCTION TUBE | 7 | |
| LORGUARD GUARDRAIL SPECIFICATION - SWING GATE | 8 | |
| LORGUARD GUARDRAIL INSTALLATION CONFIGURATIONS | 9-14 | |
| CONTINUOUS RUN CONFIGURATION | 9 | |
| OPEN CONFIGURATION | 10 | |
| CLOSED CONFIGURATION | 10 | |
| ROOF HATCH CONFIGURATION | 11 | |
| TAPERED ROOF CONFIGURATION | 12 | |
| CUSTOM SPLICE FITTING CONFIGURATION | 13 | |
| LORGUARD GUARDRAIL INCORRECT INSTALLATION CONFIGURATIONS | 14 | |
| OSHA REGULATION COMPLIANCE | 15 | |
| LORGUARD GUARDRAIL INSTALLATION PROCEDURES | 16 | |
| TOEBOARD BEST PRACTICES | 17 | |
| TOEBOARD COMPLIANCE | 18 | |
| TOEBOARD CONSTRUCTION | 19 | |
| TOEBOARD INSTALLATION PROCEDURES | 20 | |
| DISCLAIMER | 21 | |
| LORGUARD GUARDRAIL PRODUCT INFORMATION | | |



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 resecure 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.



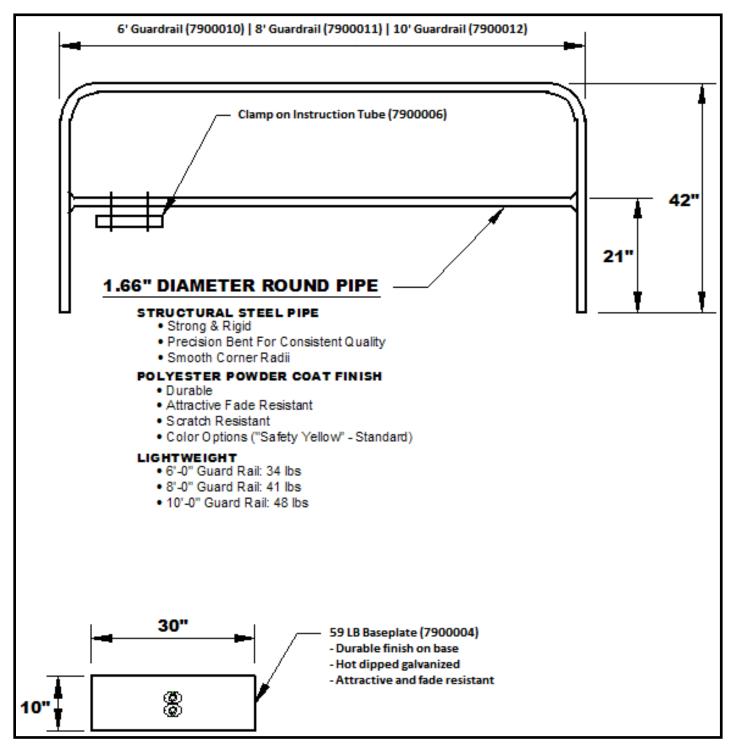
LORGUARD PARTS LIST

- 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

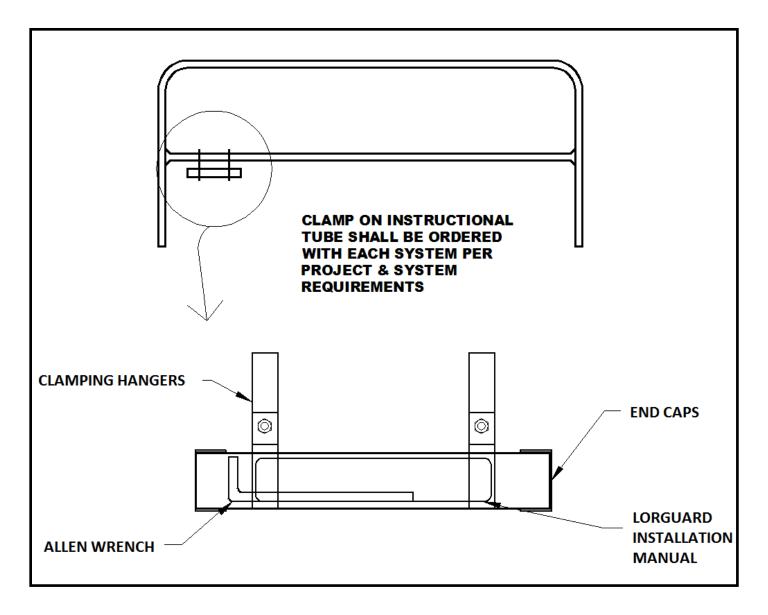
LORGUARD





LORGUARD SPECIFICATION

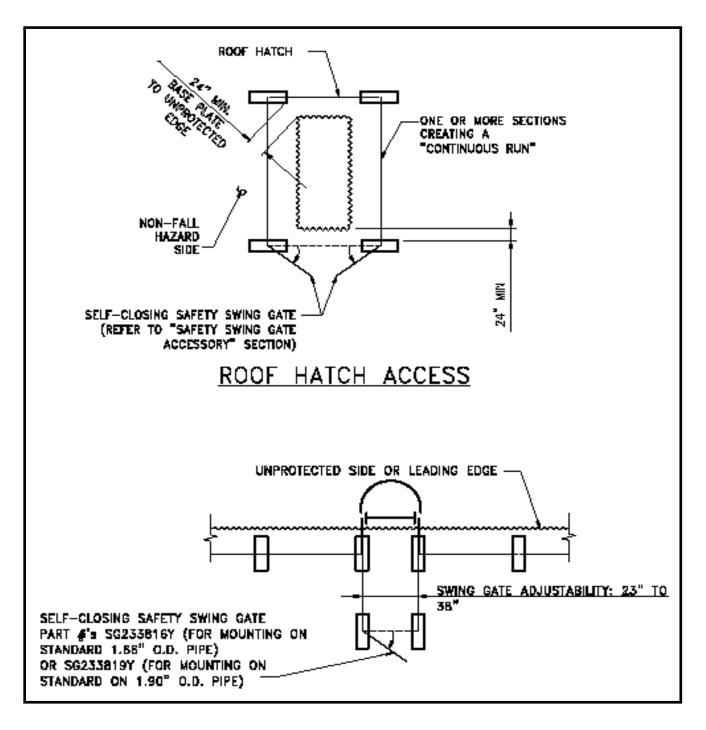
Instruction Tube Accessory





LORGUARD SPECIFICATION

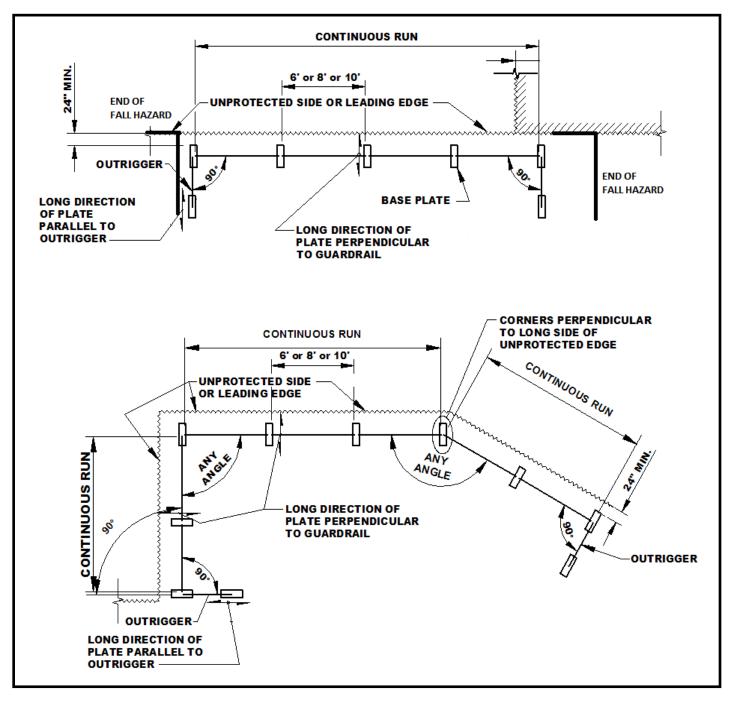
Swing Gate Accessory





INSTALLATION CONFIGURATIONS

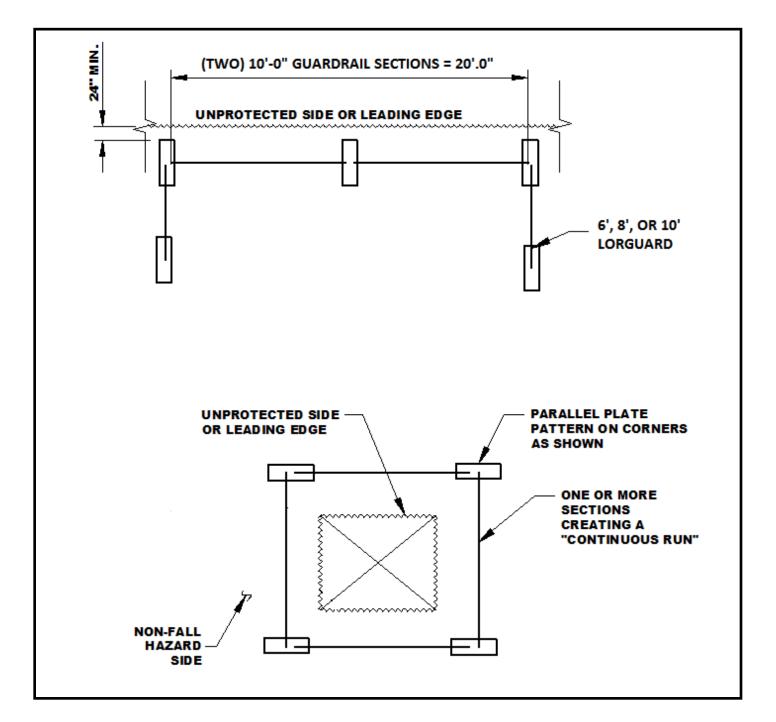
Continuous Run Configuration



Open Configuration



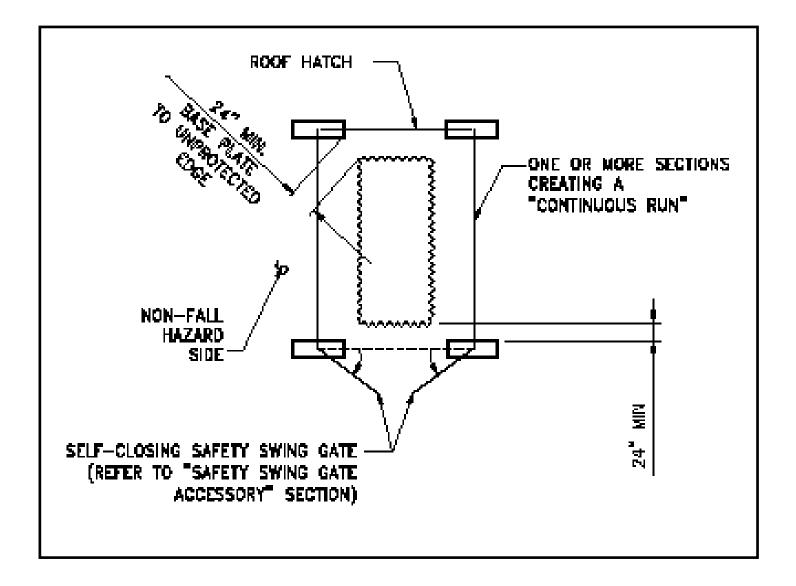
Closed Configuration





INSTALLATION CONFIGURATIONS

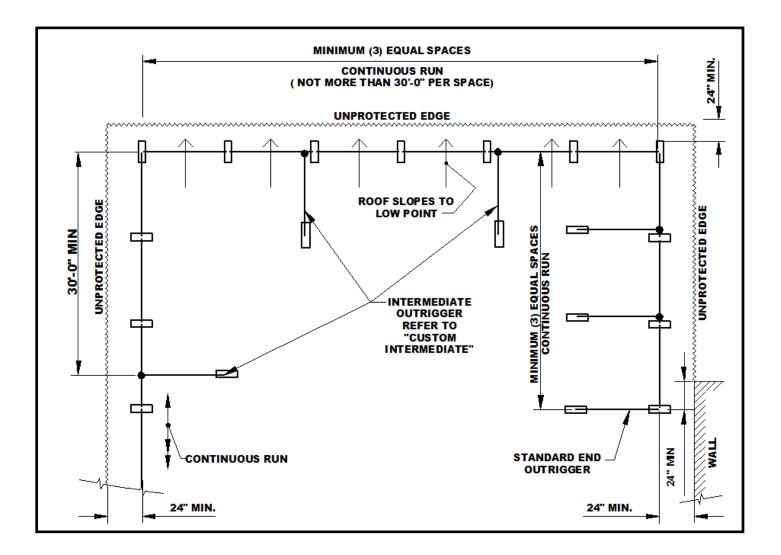
Roof Hatch Configuration





INSTALLATION CONFIGURATIONS

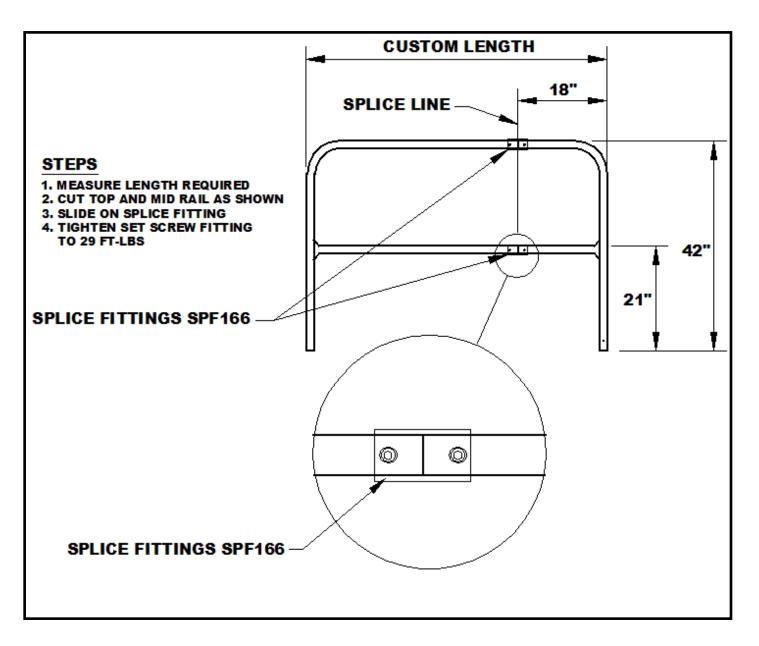
Tapered Roof Configuration (Common Plan for Rubber and/or Bituminous Roofs) (1 ½: 12 Slope or Less)





INSTALLATION CONFIGURATIONS

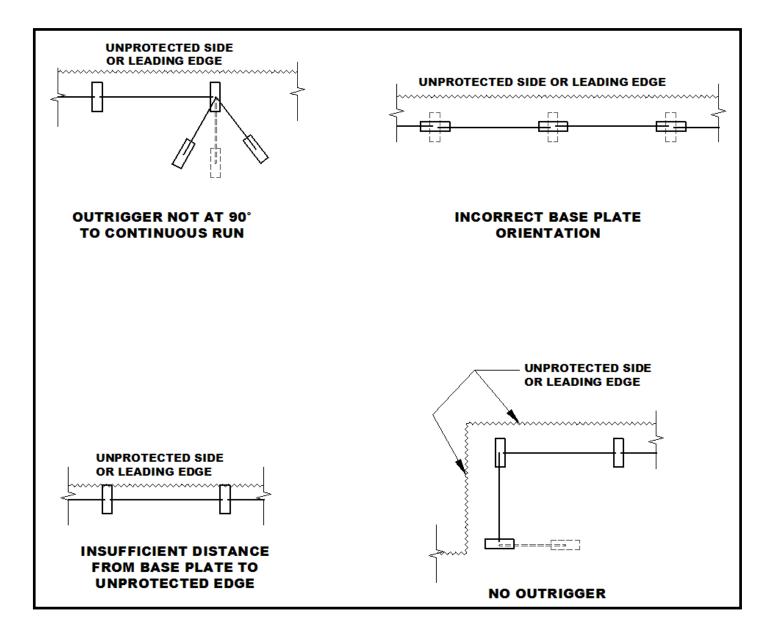
Custom Splice Fitting



Installation Manual



INCORRECT INSTALLATION CONFIGURATIONS





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 midrail.
- 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 LORGUARD 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.

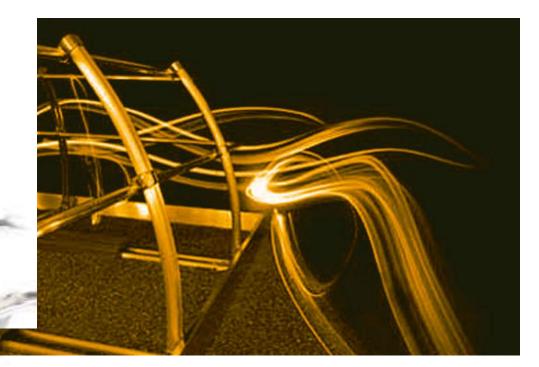


www.PortableGuard.com

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 | ТВб | 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 PRCING AND AVIALABILITY |





VersiRail® for Roofing

Fall protection systems for rooftop maintenance

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.

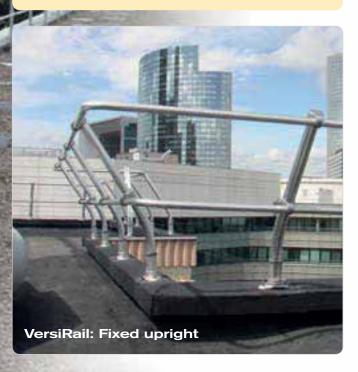
Both freestanding and fixed solutions are available in three style choices; straight, curved or inclined and three finishes; natural, polished or powder coated to a RAL colour.

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.

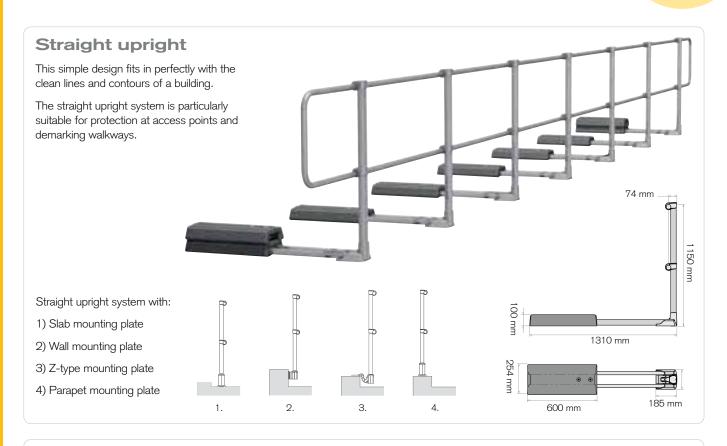
Key advantages

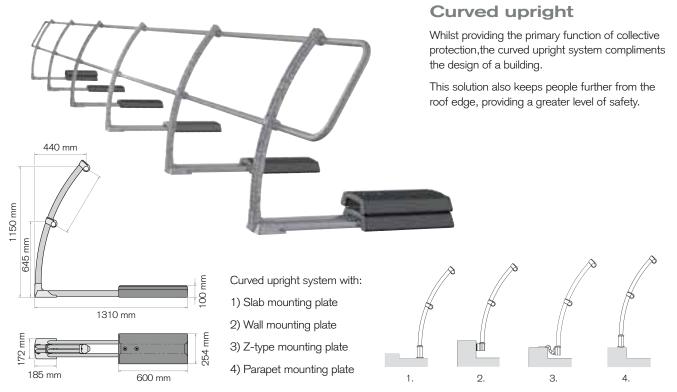
- Durable aluminium, corrosion-resistant construction
- Lightweight—quick and easy installation
- 30% lighter than steel alternative
- Fixed or freestanding (including folding) options
- Designer looks-three finishes available
- Adaptable, modular easy-fix system
- Fully weatherproof
- Tested and certified 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)

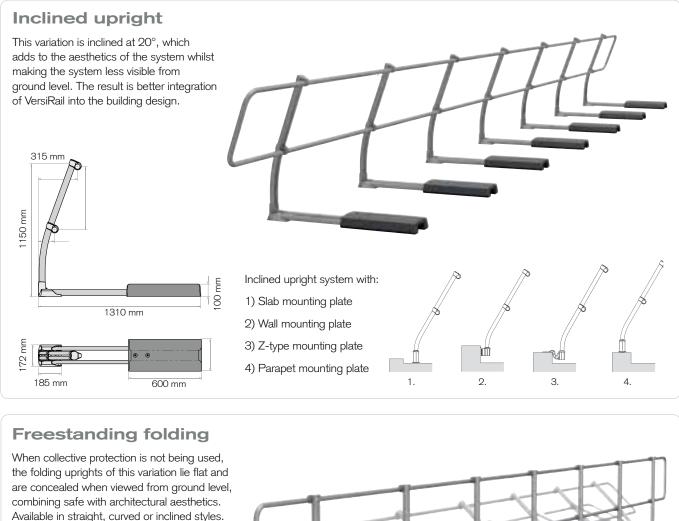


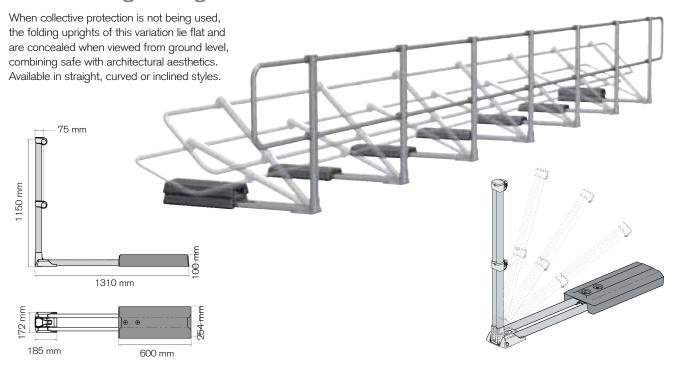


ManSafe for Roofing VersiRail: System options



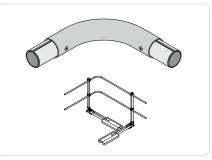






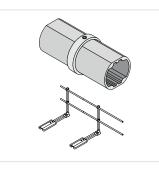
Ancillary items

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



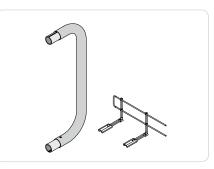
Corner sections

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.



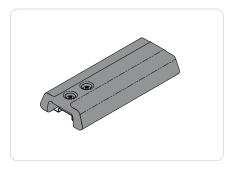
Access gate

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.









Z-type mounting plate

Parapet mounting plate

www.safeguard-industries.com Toll Free: 1-888-936-0752

Slab mounting plate

Wall mounting plate



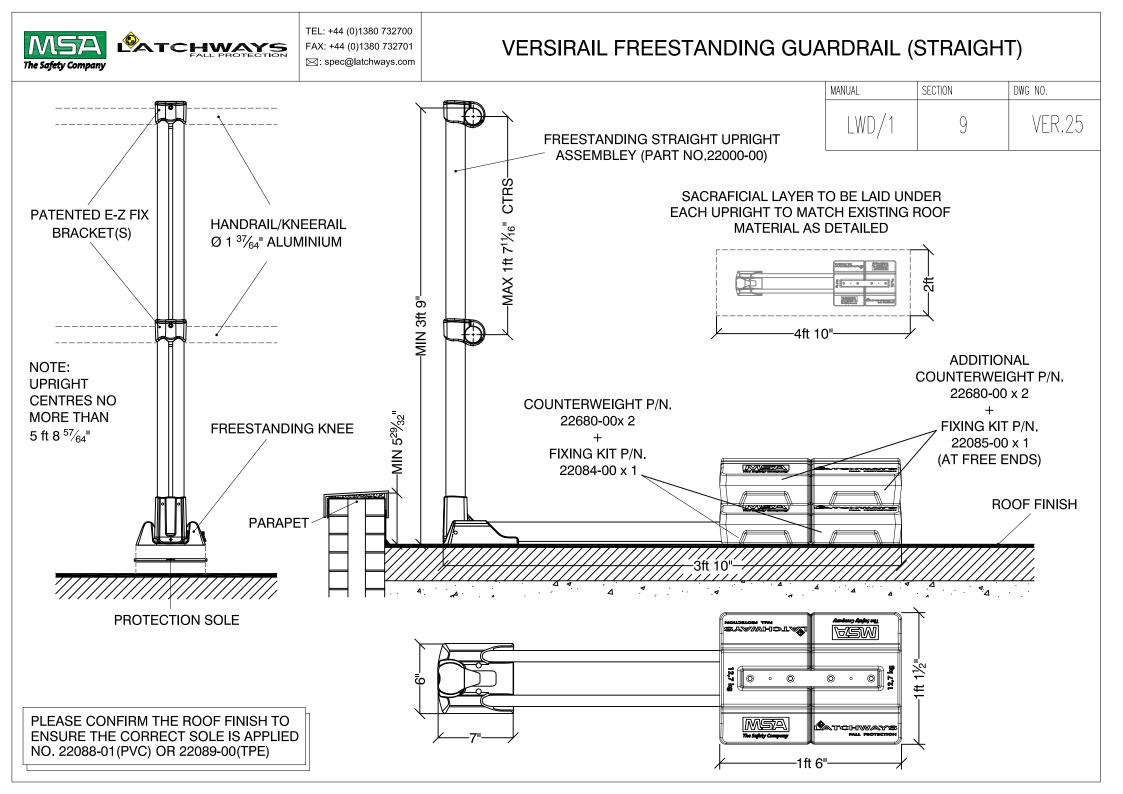
VersiRail®



World Corporate Headquarters 4515 - 112th Ave SE Calgary, AB T2C 5C5 eMail: info@safeguard-industries.com Toll Free: 1-888-936-0752 www.safeguard-industries.com

US Corporate Headquarters 6925 Speedway Blvd - Suite C101 Las Vegas, NV 89115 eMail: info@safeguard-industries.com Toll Free: 1-888-936-0752 www.safeguard-industries.com

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



FIXFASTUSA

KATTGUARD GR36 Surface Mount Guardrail

sales@fixfastusa.com fixfastusa.com 888 637 7872

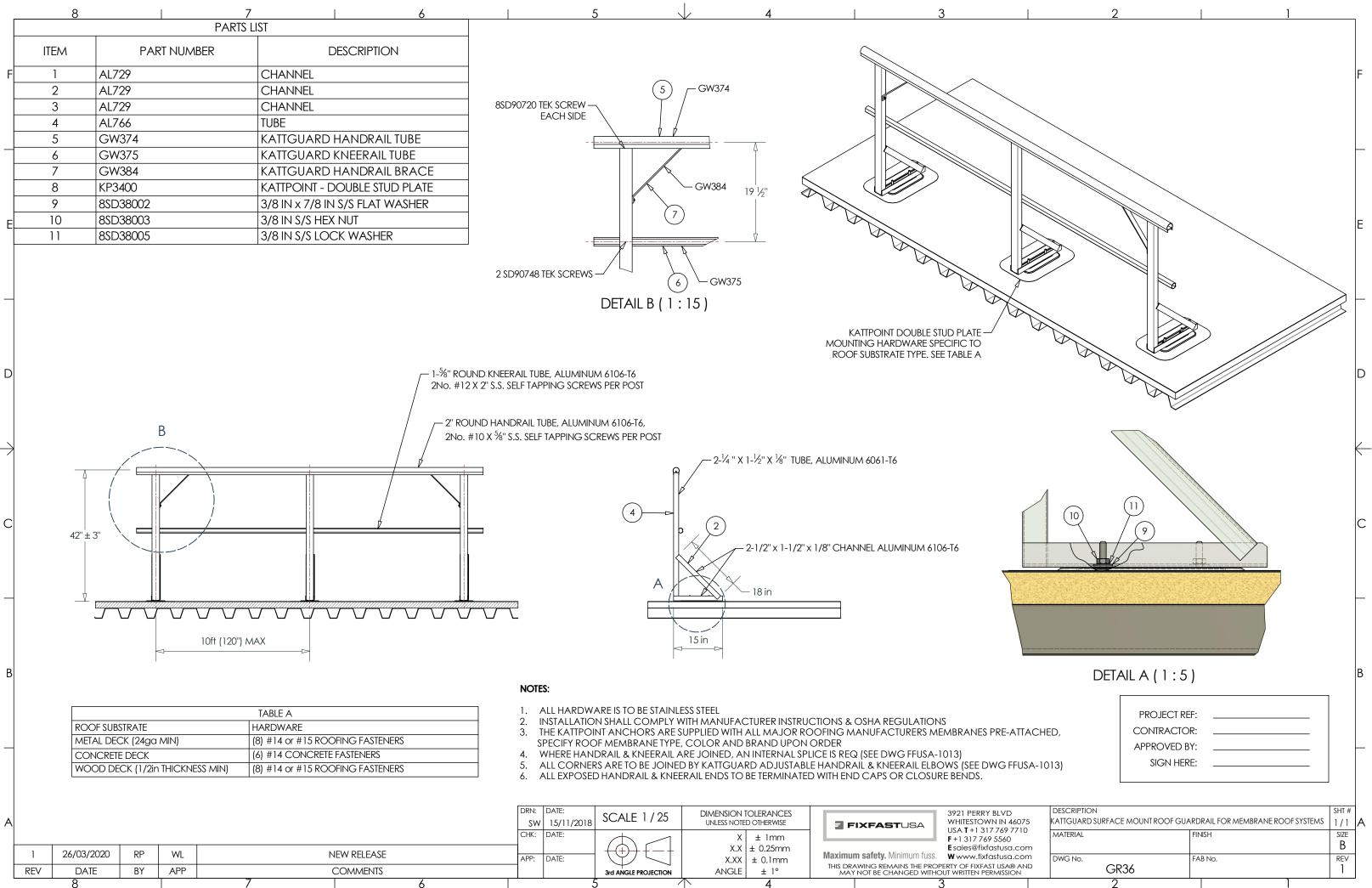


The **KATTGUARD GR36 Surface Mount Guardrail** is designed for sloped roof projects and applications where higher wind loads, ice build-up and snow loads are typical. The **KATTGUARD GR36** system can be fastened down with the **KATTPOINT Anchor System**. The **KATTPOINT Anchor** is supplied with project specific roof membrane pre-attached to ensure a waterproof connection and maintain the warranty. The **KATTPOINT** 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 | | | |



| A | | | | | | SW | DATE: 15/11/2018 | SCALE 1 / 25 | DIMENSION TOLERANCES UNLESS NOTED OTHERWISE | 3921 PERRY BLVD ■ FIXFAST USA WHITESTOWN IN 4. USA I +1 317 7697 |
|---|-----|--------------------|----|-----|----------|------|---------------------|----------------------|--|--|
| | 1 | 26/03/2020 | חח | WL | | СНК: | DATE: | | X ± 1mm X.X ± 0.25mm | F +1 317 769 5560 E sales@fixfastusa |
| | REV | 28/03/2020 DATE | BY | APP | COMMENTS | APP: | DATE: | 3rd ANGLE PROJECTION | X.XX ± 0.1mm ANGLE ± 1° | Maximum safety. Minimum fuss. Wwww.fixfastusa. This drawing remains the property of fixfast usa May not be changed without written permissio |
| | · | 8 | | | 7 6 | 5 | Ĩ | | 4 | 3 |

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 inhouse 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, UL File R6174 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.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

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, nonsagging, 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, polyisobutyleen 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. California Building Code, 2019, Section 2610 and 708A.

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, and 30 psf service-level wind 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.
- E. Delegated Design: Design fiberglass-sandwich-panel assemblies and their support, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated. Verify existing curb integrity.
- F. Curb design must allow for proper thrust loading of the skylight. Curb width must be within manufacturer's requirements.

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.
 - 11. ASTM E2707 test report.
- 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, comply with performance requirements and design criteria, including analysis data and structural calculations 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:
 - 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.
 - C. The corrosion resistant finish shall be factory applied under controlled conditions. Finish must be even over the entire exposed aluminum surface and have a minimum (average) dry thickness of two and one half mils (0.0025")
- 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
 - Kalwall Corporation, (800) 258-9777, email: info@kalwall.com
 Local Representative:Architectural System, Inc., Fallbrook, CA (858) 679-9760
 Kalwall Skywall, ICC ESR-2464, self-supporting custom Kalcurve panels to match existing skylight shapes: vaulted with shoji grid end panels or parabola, verify shape and configuration in the field.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

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 Plastc.
 - 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.
 - 5. Panel assembly must comply with CBC 708A.2.1. Demonstrate compliance in submittal.
- 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, <u>without</u> 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, Type A
 - 3. Interior Face Sheets: .045" thick white color.
 - 4. Faces shall not vary more than <u>+</u> 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 <u>+</u> .002-inch. Welded or web interlocked grid core not acceptable.
- C. I-Beam Thermal Break: Minimum 1", thermoset fiberglass composite. Poured and debridged 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 Annodized Integral Color
 - 3. Architectural Class I A41 Clear Annodized

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 16% (NFRC 202) and solar heat gain coefficient of 0.22 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 QUALLITY 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 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

- 1.1 SUMMARY
 - A. Section Includes:
 - 1. Door hardware.

1.2 REFERENCES:

- A. Use date of standard in effect as of Bid date.
 - 1. American National Standards Institute
 - a) ANSI 156.18 Materials and Finishes.
 - b) ICC/ANSI A117.1 1998 Specifications for making buildings and facilities usable by physically handicapped people. [omit for CA work not applicable]
 - 2. BHMA Builders Hardware Manufacturers Association
 - 3. 2019 California Building Code
 - a) Chapter 11B Accessibility To Public Buildings, Public Accommodations, Commercial Buildings and Public Housing
 - 4. DHI Door and Hardware Institute
 - 5. NFPA National Fire Protection Association
 - a) NFPA 80 2016 Edition Standard for Fire Doors and Other Opening Protectives.
 - b) NFPA 105 Smoke and Draft Control Door Assemblies
 - c) NFPA 252 Fire Tests of Door Assemblies
 - 6. UL Underwriters Laboratories
 - a) UL10C Positive Pressure Fire Tests of Door Assemblies.
 - b) UL 305 Panic Hardware
 - 7. WHI Warnock Hersey Incorporated State of California Building Code
 - 8. Local applicable codes
 - 9. SDI Steel Door Institute
 - 10. WI Woodwork Institute
 - 11. AWI Architectural Woodwork Institute
 - 12. NAAMM National Association of Architectural Metal Manufacturers

- B. Abbreviations
 - 1. Manufacturers: see table at 2.1.A of this section
 - 2. Finishes: see 2.7 of this section.

1.3 SUBMITTALS & SUBSTITUTIONS

- A. SUBMITTALS: Submit six copies of schedule per D. Only submittals printed one sided will be accepted and reviewed. Organize vertically formatted schedule into "Hardware Sets" with index of doors and headings, indicating complete designations of every item required for each door or opening. Minimum 10pt font size. Include following information:
 - 1. Type, style, function, size, quantity and finish of hardware items.
 - 2. Use BHMA Finish codes per ANSI A156.18.
 - 3. Name, part number and manufacturer of each item.
 - 4. Fastenings and other pertinent information.
 - 5. Location of hardware set coordinated with floor plans and door schedule.
 - 6. Explanation of abbreviations, symbols, and codes contained in schedule.
 - 7. Mounting locations for hardware.
 - 8. Door and frame sizes, materials and degrees of swing.
 - 9. List of manufacturers used and their nearest representative with address and phone number.
 - 10. Catalog cuts.
- B. Bid and submit manufacturer's updated/improved item if scheduled item is discontinued.
- C. Deviations: Highlight, encircle or otherwise identify deviations from "Schedule of Finish Hardware" on submittal with notations clearly designating those portions as deviating from this section.
- D. If discrepancy between drawings and scheduled material in this section, bid the more expensive of the two choices, note the discrepancy in the submittal and request direction from Architect for resolution.
- E. Substitutions per Division 1. Include product data and indicate benefit to the Project. Furnish operating samples on request.
- F. Items listed with no substitute manufacturers have been requested by Owner to meet existing standard.
- G. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, riser and point-to-point wiring diagrams, manufacturers' installation, adjustment and maintenance information, and supplier's final inspection report.

1.4 QUALITY ASSURANCE:

- A. Qualifications:
 - 1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course of work for project hardware consultation to Owner, Architect and Contractor.
 - a) Responsible for detailing, scheduling and ordering of finish hardware. Detailing implies that the submitted schedule of hardware is correct and complete for the intended function and performance of the openings.
- B. Hardware: Free of defects, blemishes and excessive play. Obtain each kind of hardware (latch and locksets, exit devices, hinges and closers) from one manufacturer.
- C. Exit Doors: Operable from inside with single motion without the use of a key or special knowledge or effort.
- D. Fire-Rated Openings: NFPA 80 compliant. Hardware UL10C (positive pressure) compliant for given type/size opening and degree of label. Provide proper latching hardware, non-flaming door closers, approved-bearing hinges, and resilient seals. Coordinate with wood door section for required intumescent seals. Furnish openings complete.
- E. Furnish hardware items required to complete the work in accordance with specified performance level and design intent, complying with manufacturers' instructions and code requirements.
- 1.5 DELIVERY, STORAGE AND HANDLING:
 - A. Delivery: coordinate delivery to appropriate locations (shop or field).
 - 1. Permanent keys and cores: secured delivery direct to Owner's representative.
 - B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.
 - C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

1.6 PROJECT CONDITIONS AND COORDINATION:

- A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical the same operation and quality as type specified, subject to Architect's approval.
- B. Coordination: Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents. Furnish related trades with the following information:
 - 1. Location of embedded and attached items to concrete.
 - 2. Location of wall-mounted hardware, including wall stops.

- Location of finish floor materials and floor-mounted hardware. 3.
- 4. At masonry construction, coordinate with the anchoring and hollow metal supplier prior to frame installation by placing a strip of insulation, wood, or foam, on the back of the hollow metal frame behind the rabbet section for continuous hinges. as well as at rim panic hardware strike locations, silencers, coordinators, and door closer arm locations. When the frame is grouted in place, the backing will allow drilling and tapping without dulling or breaking the installer's bits.
- 5. Coordinate: flush top rails of doors at outswinging exteriors, and throughout where adhesive-mounted seals occur.
- 6. Manufacturers' templates to door and frame fabricators.
- C. Check Shop Drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
- D. Environmental considerations: segregate unused recyclable paper and paper product packaging, uninstalled metals, and plastics, and have these sent to a recycling center.

WARRANTY: 1.7

- Α. Part of respective manufacturers' regular terms of sale. Provide manufacturers' written warranties.
- Β. Include factory order numbers with close-out documents to validate warranty information, required for Owner in making future warranty claims:
- C. Minimum warranties:

| 1. | Locksets: | Three years |
|----|------------------------------------|---|
| 2. | Extra Heavy Duty Cylindrical Lock: | Seven Years |
| 3. | Exit Devices: | Three years mechanical One year electrical |
| 4. | Closers: | Thirty years mechanical Two years electrical |
| 5. | Hinges: | One year |
| 6. | Other Hardware | Two years |

1.8 COMMISSIONING:

- Α. Conduct these tests prior to request for certificate of substantial completion:
 - 1. With installer present, test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.
 - 2. With installer, access control contractor and electrical contractor present, test electrical, electronic and electro-pneumatic hardware systems for satisfactory operation.
 - 3. With installer and electrical contractor present, test hardware interfaced with fire/life-safety system for proper operation and release.

1.9 REGULATORY REQUIREMENTS:

- A. Locate latching hardware between 34 inches to 44 inches above the finished floor, per 2019 California Building Code, Section 11B-404.2.7.
 - 1. Panic hardware: locate between 36 inches to 44 inches above the finished floor.
- B. Handles, pull, latches, locks, other operable parts:
 - 1. Readily openable from egress side with one hand and without tight grasping, tight pinching, or twisting of the wrist to operate. 2019 California Building Code Section 11B-309.4.
 - 2. Force required to activate the operable parts: 5.0 pounds maximum, per 2019 California Building Code Section 11B-309.4.
- C. Adjust doors to open with not more than 5.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors. As allowed per 2019 California Building Code Section 11B-404.2.9, local authority may increase the allowable pressure for fire doors to achieve positive latching, but not to exceed 15-pounds.
 - 1. Exception: exterior doors' pressure-to-open may be increased to 8.5-pounds if: at a single location, and one of a bank of eight leafs or fraction of eight, and one leaf of this bank is fitted with a low- or high-energy operator.
- D. Adjust door closer sweep periods so that from an open position of 90 degrees, the door will take at least 5 seconds to move to a point 12 degrees from the latch, measured to the landing side of the door, per 2019 California Building Code Section 11B-404.2.7.
 - 1. Spring hinges: adjust for 1.5 seconds minimum for 70 degrees to fully-closed.
- E. Smooth surfaces at bottom 10 inches of push sides of doors, facilitating push-open with wheelchair footrests, per 2019 California Building Code Section 11B-404.2.10.
 - 1. Applied kickplates and armor plates: bevel the left and right edges; free of sharp or abrasive edges.
 - 2. Tempered glass doors without stiles: bottom rail may be less than 10 inches if top leading edge is tapered 60 degrees minimum.
- F. Door opening clear width no less than 32 inches, measured from face of frame stop, or edge of inactive leaf of pair of doors, to door face with door opened to 90 degrees. Hardware projection not a factor in clear width if located above 30 inches and below 80 inches, and the hardware projects no more than 4 inches. 2019 California Building Code Section 11B-404.2.3.
 - 1. Exception: doors not requiring full passage through the opening, that is, to spaces less than 24 inches in depth, may have the clear opening width reduced to 20 inches. Example: shallow closets.
 - 2. Door closers and overhead stops: not less than 78 inches above the finished floor or ground, per 2019 California Building Code 11B-307.4.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- G. Thresholds: floor or landing no more than 0.50 inches below the top of the threshold of the doorway, per 2019 California Building Code Section 11B-404.2.5. Vertical rise no more than 0.25 inches, change in level between 0.25 inches and 0.50 inches: beveled to slope no greater than 1:2 (50 percent slope). 2019 California Building Code Section 11B-303.2 & ~.3.
- H. Floor stops: Do not locate in path of travel. Locate no more than 4 inches from walls, per DSA Policy #99-08 (Access).
- I. Pairs of doors with independently-activated hardware both leafs: limit swing of right-hand or right-hand-reverse leaf to 90 degrees to protect persons reading wall-mounted tactile signage, per 2019 California Building Code Section 11B-703.4.2.
- J. Door and door hardware encroachment: when door is swung fully-open into means-ofegress path, the doo may not encroach/project more than 7 inches into the required exit width, with the exception of door release hardware such as lockset levers or panic hardware. These hardware items must be located no less than 34-inches and no more than 48-inches above the floor/ground. 2019 California Building Code, Section 1005.7.1.
- K. Unlatching of any door shall not require more than one operation. See CBC 1010.1.9.5. for exceptions.
- L. In-door glazing and vision lights shall have bottom edge maximum 43" above the finish floor or ground surface per 11B-404.2.11.

PART 2PRODUCTS

- 2.1 MANUFACTURERS:
 - A. Listed acceptable alternate manufacturers: these will be considered; submit for review products with equivalent function and features of scheduled products.

| ITEM: | MANUFACTURER: | ACCEPTABLE ALTERNATE: |
|--------------------|---------------------------|--------------------------|
| Key System | (SCH) Schlage | Owner standard |
| Mechanical Locks | (SCH) Schlage | Owner standard |
| Electronic Locks | (SCE) Schlage Electronics | Owner standard |
| Exit Devices | (VON) Von Duprin | Owner standard |
| Auto Flush Bolts | (IVE) lves | DCI |
| Push & Pull Plates | (IVE) Ives | Rockwood, Trimco |

2.2 LOCKSETS, LATCHSETS, DEADBOLTS:

- A. Mortise Locksets and Latchsets: as scheduled.
 - 1. Chassis: cold-rolled steel, handing field-changeable without disassembly.
 - 2. Universal lock case 10 functions in one case.
 - 3. Floating mounting tabs automatically adjusts to fit a beveled door edge.

- 4. Latchbolts: 0.75 inch throw stainless steel anti-friction type.
- 5. Lever Trim: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.
 - a) Spindles: security design independent breakaway. Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
 - b) Inside lever applied by screwless shank mounting no exposed trim mount screws.
 - c) Levers rotate up or down for ease of use.
 - d) Vandalgard locks: locked lever freely rotates down while remaining securely locked. This feature prevents damage to internal lock components when subjected to excessive force.
- 6. Furnish solid cylinder collars with wave springs. Wall of collar to cover rim of mortise cylinder.
- 7. Turnpieces: accessible offset turn-lever design not requiring pinching or twisting motions to operate.
- 8. Deadbolts: stainless steel 1-inch throw.
- 9. Electric operation: Manufacturer-installed continuous duty solenoid.
- 10. Strikes: 16 gage curved steel, bronze or brass with 1 inch deep box construction, lips of sufficient length to clear trim and protect clothing.
- 11. Scheduled Lock Series and Design: Schlage L series, OME design.
- 12. Certifications:
 - a) ANSI A156.13, 1994, Grade 1 Operational, Grade 1 Security.
 - b) ANSI/ASTM F476-84 Grade 31 UL Listed.
- 13. Accessibility: Require not more than 5 lb to retract the latchbolt or deadbolt, or both, per CBC 2019 11B-404.2.7 and 11B-309.4.

2.3 EXIT DEVICES / PANIC HARDWARE

- A. General features:
 - 1. Independent lab-tested 1,000,000 cycles.
 - 2. Push-through push-pad design. No exposed push-pad fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.
 - 3. Deadlocking latchbolts, 0.75 inch projection.
 - 4. End caps: impact-resistant, flush-mounted. No raised edges or lips to catch carts or other equipment.
 - 5. No exposed screws to show through glass doors.
 - 6. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 7. The maximum unlatching force shall not exceed 15 pounds, per CBC 1010.1.10.1.
- 8. Exterior doors scheduled with XP-series devices: Static load force resistance of at least 2000 pounds.
- 9. Accessibility: Require not more than 5 lb to retract the latchbolt, per CBC 2019 11B-404.2.7 and 11B-309.4.
 - a) Mechanical method: Von Duprin "AX-" feature, where touchpad directly retracts the latchbolt with 5 lb or less of force. Provide testing lab certification confirming that the mechanical device is independent third-party tested to meet this 5 lb requirement.
- B. Specific features:
 - 1. Non-Fire Rated Devices: cylinder dogging.
 - 2. Lever Trim: breakaway type, forged brass or bronze escutcheon min. 0.130 inch thickness, compression spring drive, match lockset lever design.
 - 3. Rod and latch guards with sloped full-width kickplates for doors fitted with surface vertical rod devices with bottom latches.
 - 4. Fire-Labeled Devices: UL label indicating "Fire Exit Hardware". Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.
 - 5. Inpact recessed devices: 1.25 inch projection when push-pad is depressed. Sloped metal end caps to deflect carts, etc. No pinch points to catch skin between touchbar and door.
 - 6. Removable Mullions: Removable with single turn of building key. Securely reinstalled without need for key. Furnish storage brackets for securely stowing the mullion away from the door when removed.
 - 7. Releasing pressure. Exit panic hardware mechanisms shall be designed to release the door latch or latches when pressure not to exceed 15 pounds is applied at any point along the cross-bar perpendicular to the door in the direction of exit travel. The cross-bar shall extend across not less than one-half the width of the door SFM Standard 12-10-3, Section 12-10-300.
 - 8. Cross bar. The ends of the cross-bar shall be curved, guarded or otherwise designed to prevent catching on the clothing of persons during egress SFM Standard 12-10-3, Section 12-10-300.

2.4 FINISH:

A. Generally: BHMA 626 Satin Chromium.

| ANSI | US | Description | Base Metal |
|-------|-------|-----------------------------------|----------------------|
| 626 | US26D | Satin Chromium Plated Over Nickel | Brass, Bronze |
| 628 | US28 | Satin Aluminum, Clear Anodized | Aluminum |
| 630 | US32D | Satin Stainless Steel | Stain. Steel 300 Ser |
| 652 | US26D | Satin Chromium Plated Over Nickel | Steel |
| 689 | US28 | Aluminum Painted | Any |
| AA | | Anodized Aluminum | Aluminum |
| AL | US28 | Aluminum Mill Finish | Aluminum |
| GAL | | Galvanized | Any |
| GRY | | Grey | Any |
| US32D | US32D | Satin Stainless Steel, 300 Series | Stainless Steel |

Finishes

B. Finish designators used in appended hardware schedule:

2.5 KEYING REQUIREMENTS:

- A. Key System: Schlage Everest Primus high-security utility-patented keyway, interchangeable core throughout. Utility patent protection to extend at least until 2029. Key blanks available only from factory-direct sources, not available from after-market keyblank manufacturers. For estimate use factory GMK charge. Initiate and conduct meeting(s) with Owner and Allegion representatives to determine system keyway(s), keybow styles, structure, stamping, degree of physical security and degree of geographic exclusivity. Furnish Owner's written approval of the system; do not order keys or cylinders without written confirmation of actual requirements from the Owner. Owner will install permanent cylinders/cores.
 - 1. Existing factory-registered master key system.
 - 2. Primus Level 9
 - 3. Construction keying: furnish temporary keyed-alike cores. Remove at substantial completion and install permanent cylinders/cores in Owner's presence. Demonstrate that construction key no longer operates.
 - 4. Temporary cylinders/cores remain supplier's property.
 - 5. Furnish 10 construction keys.
 - 6. Furnish 2 construction control keys.
 - 7. Furnish 2 Emergency keys per each L9485 Faculty Restroom Lock
 - 8. Key Cylinders: furnish 6-pin solid brass construction.
- B. Cylinders/cores: keyed at factory of lock manufacturer where permanent records are maintained. Locksets and cylinders same manufacturer.
- C. Permanent keys: use secured shipment direct from point of origination to Owner.
 - 1. For estimate: 3 keys per change combination, 5 master keys per group, 5 grandmaster keys, 3 control keys.

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

- 2. For estimate: VKC stamping plus "DO NOT DUPLICATE".
- D. Bitting List: use secured shipment direct from point of origination to Owner at completion.
- E. Key Control software: Include one Sitemaster 200 key control system with new key system.

PART 3 - EXECUTION

- 3.1 ACCEPTABLE INSTALLERS:
 - A. Can read and understand manufacturers' templates, suppliers' hardware schedule and printed installation instructions. Can readily distinguish drywall screws from manufacturers' furnished fasteners. Available to meet with manufacturers' representatives and related trades to discuss installation of hardware.

3.2 PREPARATION:

- A. Remove existing panic exit devices, lever and pull hardware as required for installation of proposed work. Patch all openings left from demolition work in steel doors. Finish and paint repaired areas to match existing finish.
- B. Ensure that walls and frames are square and plumb before hardware installation. Make corrections before commencing hardware installation. Installation denotes acceptance of wall/frame condition.
- C. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
 - 1. Notify Architect of code conflicts before ordering material.
 - 1. Locate latching hardware between 34 inches to 44 inches above the finished floor, per California Building Code, Section 1010.1.9.2 and 11B-404.2.7.
 - 2. Locate panic hardware between 36 inches to 44 inches above the finished floor.
 - 3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

3.3 INSTALLATION

- A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.
 - 1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.
 - 2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
 - 3. Use manufacturers' fasteners furnished with hardware items, or submit Request for Substitution with Architect.
 - 4. Replace fasteners damaged by power-driven tools.

- A. Locate floor stops no more that 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.
- B. Core concrete for exterior door stop anchors. Set anchors in approved non-shrink grout.
- C. Locate overhead stops for minimum 90 degrees at rest and for maximum allowable degree of swing.
- D. Drill pilot holes for fasteners in wood doors and/or frames.
- E. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

3.4. ADJUSTING

- A. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.
 - 1. Hardware damaged by improper installation or adjustment methods: repair or replace to Owner's satisfaction.
 - 2. Adjust doors to fully latch with no more than 1 pound of pressure.
 - a) Door closer valves: turn valves clockwise until at bottom do not force. Turn valves back out one and one-half turns and begin adjustment process from that point. Do not force valves beyond three full turns counterclockwise.
 - 3. Adjust delayed-action closers on fire-rated doors to fully close from fully-opened position in no more than 10 seconds.
 - 4. Adjust door closers per 1.9 this section.
- B. Inspection of fire door assemblies and means-of-egress panic-hardware doors: Per 2019 NFPA-80 5.2.1: hire an independent third-party inspection service to prepare a report listing these doors, and include a statement that there are zero deficiencies with the fire-rated assemblies and the openings with panic hardware.
- C. Fire-rated doors:
 - 1. Wood doors: adjust to 0.125 inches clearance at heads, jambs, and meeting stiles.
 - 2. Steel doors: adjust to 0.063 inches minimum to 0.188 inches maximum clearance at heads, jambs, and meeting stiles.
 - 3. Adjust wood and steel doors to 0.75 inches maximum clearance (undercut) above threshold or finish floor material under door.
- D. Final inspection: Installer to provide letter to Owner that upon completion installer has visited the Project and has accomplished the following:
 - 1. Has re-adjusted hardware.
 - 2. Has evaluated maintenance procedures and recommend changes or additions, and instructed Owner's personnel.
 - 3. Has identified items that have deteriorated or failed.

4. Has submitted written report identifying problems.

3.5 DEMONSTRATION:

A. Demonstrate mechanical hardware and electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.6 PROTECTION/CLEANING:

- A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.
- B. Clean adjacent wall, frame and door surfaces soiled from installation / reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

A. Do not order material until submittal has been reviewed, stamped, and signed by Architect's door hardware consultant.

Hardware Group No. EXTERIOR

For use on all exterior doors. Qty. 26.

Provide each SGL door(s) with the following:

| QTY | DESCRIPTION | CATALOG NUMBER | FINISH | MFR |
|----------|-------------------|-------------------------------|--------|-----|
| 1 EA | PANIC HARDWARE | CD-PA-AX-XP99-NL-OP-110MD | 313_U | VON |
| | | | S10B | |
| 1 EA | RIM CYLINDER | 20-057 | 613 | SCH |
| 1 EA | PRIMUS MORT. CYL. | 20-763 X B502-191 XB11-475 EV | 613 | SCH |
| 1 EA | DOOR PULL | VR910 NL | 630 | IVE |
| Remarks: | | | | |

Field verify existing conditions.

Patch and paint any existing holes.

All other hardware existing to remain.

Match District standard D145 keyway.

Hardware Group No. INTERIOR

For use on all interior doors. Qty. 32.

Provide each SGL door(s) with the following:

| QTY | DESCRIPTION | CATALOG NUMBER | FINISH | MFR | |
|--|--------------------|----------------|--------|-----|--|
| 1 EA | CLASSROOM SECURITY | L9071R OMEA | 613 | SCH | |
| Remarks: | | | | | |
| Field verify existing conditions. | | | | | |
| Patch and paint any existing holes. | | | | | |
| All other hardware existing to remain. | | | | | |
| | | | | | |

Match District standard D145 keyway.

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 <u>primed</u>).

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: <u>uniflex.technical@sherwin.com</u> 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 om 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 ³/₄" nap roller recommended.
 - 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

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 10 14 00

SIGNAGE

PART 1 - GENERAL

- 1.01 SUMMARY
 - A. Section Includes
 - 1. Interior warning signs at roof hatches.
 - 2. Parking Signs

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 ROOF HATCH SIGNAGE SYSTEMS

A. Acceptable manufacturer or equal:

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

- B. 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.
- C. Location: Provide one sign per roof hatch.
- D. Letterstyle: Helvetica, medium.
- E. 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.

2.02 PARKING SIGNS

A. Acceptable manufacturer or equal:

Seton; <u>www.seton.com</u> Traffic and Parking Control Company; <u>www.tapco.net</u> Substitutions: Section 01 25 00 – Substitution Procedures."

- B. Sign Panels: Construct sign panels of 16-gage minimum hot-dip galvanized steel sheet or 0.080-inch thick engineer grade reflective aluminum sheet, with rounded corners. Clean and prepare surfaces to assure maximum paint adhesion and paint with reflectorized porcelain enamel. Apply legends, symbols and borders using the silkscreen process.
 - 1. Accessible Parking Sign with Minimum Fine \$250:
 - a. Dimensions: As shown on drawings.
 - b. Graphics: As shown on drawings.
 - 2. Van Accessible Parking Sign:
 - a. Dimensions: As shown on drawings.
 - b. Graphics: As shown on drawings.
 - 3. Passenger Loading Only Sign:
 - a. Dimensions: 18" W x 18" H.
 - b. Graphics: As shown on drawings.

- 4. Tow Away Sign:
 - a. Dimensions: 18" W x 24" H.
 - b. Graphics: As shown on drawings.
- C. Posts: 2-inch diameter galvanized steel, standard weight pipe posts.
- D. Comply with 2019 CBC Title 24 Part 2, Chapter 11 and 2010 ADA Standards for Accessible Design, for handicapped accessibility requirements.
- E. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. For exterior exposure, furnish stainless-steel devices unless otherwise indicated.

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

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 32 12 16

ASPHALT PAVING AND AGGREGATE BASE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Asphaltic concrete paving as indicated on the Drawings and specified herein.
- B. Principal items of Work:
 - 1. Preparation of subgrade
 - 2. Asphaltic surfacing materials
 - 3. Mixing asphaltic concrete material
 - 4. Placing asphaltic concrete pavement
 - 5. Flood test

1.02 PERFORMANCE REQUIREMENTS

- A. Establishment of Grades:
 - 1. The Contractor shall be responsible for finished elevation grade stakes and other surveying necessary for the layout of the Work.
 - 2. Conduct operations in such a manner that the survey stakes shall be protected as long as their need exists. Be responsible for replacement of stakes.
 - 3. Areas having drainage gradients of 2% or more shall have elevation stakes, set with instrument, at grid intervals of 25 feet. Intermediate stakes may be set by using a tightly-drawn string line over the tops of adjacent stakes. Grade stakes must be set at all grade breaks, grade changes, etc.
 - 4. Areas having drainage gradients of less than 2 percent shall have elevation stakes, set with instrument, at 10 foot intervals. Grade stakes must be set at all grade breaks, grade changes, etc.

1.03 SUBMITTALS:

- A. Provide the following:
 - 1. Material Compliance Data Specifications.
 - 2. Material Safety Data Specifications.
 - 3. Copy of Installer's license.
 - 4. Data Sheets for seal coat and paint.

1.04 QUALITY CONTROL SUBMITTALS

- A. Testing and Control of Materials:
 - Material shall meet the requirements specified herein. Laboratory tests of all of the materials will be required. If such tests meet the specified requirements, the laboratory test fees shall be paid by the Owner. If cost of subsequent tests fail to meet specified requirements, the costs of such tests shall be paid by the Contractor, and the Contractor shall immediately rectify the deficiency. Refer to Section 01 45 23 – Testing and Inspecting Services.
 - 2. The Owner's inspector shall test the temperature of each batch of asphaltic concrete prior to placement. If asphaltic concrete temperature is not within tolerances as set forth in this Section of the Specifications the affected batch shall be rejected. Any and all costs due to the rejected asphaltic concrete shall be the responsibility of the paving contractor.

1.05 PROJECT SITE CONDITIONS

A. Protect existing installations: Such installations, which are shown on the plan or whose location could be reasonably inferred and which become damaged or broken by the operations, shall be repaired or replaced at no cost to Owner.

PART 2 - MATERIALS

- 2.01 MATERIALS
 - A. Asphalt Concrete: Shall be produced by a commercial asphalt paving plant. Mineral aggregate and asphalt concrete production shall be in compliance with the State of California, Department of Transportation (CALTRANS) Standard Specifications, Current Edition.
 - 1. Paving asphalt shall be per CALTRANS Section 39 Hot Mix Asphalt.
 - 2. All on site paving shall be PG-64, ½" maximum Medium Grade asphalt per CALTRANS, Section 92, unless otherwise specified by the geotechnical engineer.
 - D. Asphalt Sealer: Sealer shall be LAS-320 by Enviroseal Corporation, 800-775-9474, or equal. Sealer cannot be installed for a minimum of 30 to 45 days after asphalt has been completed. Contractor shall account for this in his schedule. If asphalt must be striped prior to sealer, contractor shall account for sealer application and a subsequent restripe of any striping obscured by sealer.
 - E. All stripes and markings shall be painted with two (2) coats of pavement parking paint, v.o.c. compliant, lead free, base acrylic copolymer TSP, TT-P-115F, Type I and TT-P-85E for parking lots (yellow and white); and regular dry waterborne traffic paint (red, yellow and blue), TT-P-1952B for curbs, fire lanes, accessible striping, etc. Paint curb red at fire lanes refer to the Fire Access Site Plan. Asphaltic concrete seal coat shall be in place a minimum of 10 days before applying paint.
 - 1. Apply parking stall lines as indicated on the Drawings. Parking stall lines shall be 3 inches wide and white in color. Edges shall be clean and sharp.

- 2. Accessible Parking Stalls: Parking Spaces for persons with disabilities to be marked according to CBC 2019 Sections 11B-208, and 11B-502.
- 3. Loading and unloading access aisle shall be marked by a border painted blue. Within the blue border, hatched lines a maximum of 36" on center shall be painted white to contrast with the parking surface. CBC Figures 11B-502.2, 11B-502.3, 11B-502.3.3, and 11B-503.3, Blue color shall conform to Color No. 15092 per Federal Standard 595B. Paint to be slip resistant and provide a minimum 0.6 static coefficient of friction. Refer to drawings for width of painted lines and markings on pavement (3" minimum).
- F. Application of Tack Coat
 - 1. Apply tack coat at a rate of 0.05 to 0.15 gallon per square foot to cleaned contact surfaces of previously placed asphaltic concrete, abutting or projecting into asphaltic concrete paving and face of concrete curbs and walks. Protect exposed concrete.
- G. Detectable Warning Area Tile: Armor-Tile, Vitrified Polymer Composite (VPC) Cast-in-Place Detectable/Tactile Warning Surface Tile, 12 inch by 12 inch, CBC, 2019, Title 24, Part 2, Section 11B-705.1.2.5
 - 1. Detectable Warning Surfaces shall comply with CBC Section 11B-705.1:
 - a. Square grid, in-line pattern.
 - b. Diameter of nominal 0.9 inch (22.9mm) at base tapering to 0.45 inch (11.4) at top.
 - c. Nominal height of 0.2 inch (5.08 mm).
 - d. Nominal center to center spacing of 2.3 inch (58 mm) min. to 2.4 inch (61mm) max.
 - e. Detectable warning surfaces at transit boarding platform edges, bus stops, hazardous vehicular areas, reflecting pools, and track crossings shall be yellow and approximate FS 33538 of Federal Standard 595C. Detectable warning surfaces at other locations shall be either the aforementioned yellow or a color providing a 70 percent minimum visual contrast with that of adjacent walking surfaces. The material used to provide visual contrast shall be an integral part of the surface. CBC Section 11B-705.1.1.3.
 - f. Detectable warning surfaces shall differ from adjoining surfaces in resiliency or sound-on-cane contact. Such constrains shall not be required for detectable warning surfaces at curb ramps, islands, or cut-through medians. CBC Section 11B-705.1.1.4.
 - g. Detectable warnings at hazardous vehicular areas shall be 36 inches in width. CBC Section 11B-705.1.2.5.
 - h. Product shall be cast in concrete paving. Refer to section 32 16 00.
 - 2. Provide a written five (5) year product warranty provided by the manufacturer of detectable warnings and directional surface products as equivalent to the evaluation and product approval program. Such warranty shall indicate compliance with architectural standards as published in the current edition of the California Building Standards Code, and also include durability criteria which indicates that the shape, color fastness, confirmation, sound-on-cane acoustic quality, resilience, and attachment will not degrade significantly for at least five (5) years after initial installation. Warranty will certify that the produce will not degrade significantly, meaning that the product maintains at least 90 percent of its approved design characteristics, as determined by the enforcing agency.

- H. Concrete Wheel Stops
 - 1. Provide concrete wheel stops by San Diego Precast, or equal. Concrete shall be 4000 psi in 28 days. Provide two be galvanized dowels as anchorage, and glue wheel stop to asphalt surface. Dowels shall be hot dipped galvanized, 16-inch long, #4 reinforcing. Recess head of dowel beneath the top of the wheel stop. Wheel Stop shall be a minimum length of 6-feet.

PART 3 - EXECUTION

- 3.01 DEFINITIONS
 - A. For the purpose of compacting procedures the following definitions are used:
 - 1. Initial or Breakdown Rolling: The first coverage of a roller on asphalt concrete after the material has been placed to line and grade.
 - 2. Intermediate Rolling: The rolling performed immediately after the initial rolling. When completed, the pavement should meet job density requirements.
 - 3. Compaction Rolling: Including initial and intermediate rolling.
 - 4. Finish Rolling: The final rolling necessary to obtain the desired surface texture and eliminate roller marks. No further densification is anticipated in this operation.
 - 5. Coverage: The number of movements of a roller required to cover the entire width being paved at least once.
 - 6. Steel-Wheel Roller: A 2-wheel steel tandem roller weighing 8 to 10 tons.
 - 7. Pneumatic-tired Roller: A rubber-tired roller equipped with tires a minimum 7.50 x 15 in size, capable of being ballasted up to 12 tons.
 - 8. Vibratory Roller: A vibratory roller capable of imparting a dynamic force of at least 21,000 pounds.
 - 9. Maximum Laboratory Density: Density achieved on a sample of a material taken from a specific location at the job site under working conditions. This density can be obtained using the California Kneading Compactor per Test Method No. Cal. 304.
 - B. Prior to paving, furnish manufacturer's certificates or literature demonstrating that rollers meet requirements specified above. Prior to paving, state which procedure will be used and do not change that procedure without the Engineer's approval.

3.02 PRIMARY LIFT SPREADING AND COMPACTION

- A. Asphalt concrete in excess of 2 inches in thickness, shall be placed in two (2) lifts, a primary lift, and a surface course. Surface Course shall be a minimum of 1 inch thick.
- B. Asphalt concrete shall be delivered to the project site at a temperature of not less than 260 degrees F. nor more than 320 degrees F.

- C. The depositing, distributing, and spreading of asphalt concrete shall be accomplished in a single, continuous operation by means of a self-propelled paving machine, motor grader, spreader box, rock spreader, or similar equipment.
- D. Prior to spreading, a tack coat shall be applied to the vertical face of all curbs, gutters, and structures which will butt against the new pavement. A tack coat is required between courses if surface has been contaminated by dirt or oxidized by extended exposure. A diluted SS-type emulsion shall be used for tack coat and shall meet the requirements set forth in CALTRANS, Section 39 and Section 94.
- E. Certification: Provide certification that the asphalt aggregate mixture has at least 80 percent of compacted density values equal to or greater than 96 percent and 100 percent equal to or greater than 95 percent of a laboratory specimen prepared by the appropriate test method from a sample taken from a truck delivering mixture to the job site. Field density of compacted asphalt concrete shall be determined by:
 - 1. A properly calibrated nuclear asphalt testing device in the field, or
 - 2. ASTM D1188 when slabs or cores are taken for laboratory testing. Zinc stearate may be substituted for paraffin.
 - 3. In case of dispute, the procedure described under Sub-Item E (2.) above shall be used. Combination of rollers shall be allowed under this procedure.
- F. Steel-Wheel and Pneumatic: Apply a breakdown (initial) coverage with a steel-wheel roller loaded to 10 tons. Follow by intermediate rolling consisting of a minimum of 6 coverages of a pneumatic-tired roller, the tires being inflated a minimum of 60 psi cold and a maximum of 90 psi when hot. Finish rolling may consist of one coverage of an 8-ton tandem steel-wheel roller.
- G. Steel Wheel: Apply a minimum of eight coverages with a steel-wheel roller loaded to 10 tons.
- H. Vibratory: Compaction shall consist of at least six coverages with a vibratory roller. Rolling from the center to the edge shall be permitted, and all compaction rolling shall be accomplished before the mix temperature falls below 185 degrees F. Rolling shall commence at least one foot from edge of the mat after which the roller shall be gradually advanced to the edges. Within one foot of edge, the roller on its initial coverage shall advance to the edge in 4-inch increments. The roller shall be advanced to a supported edge first, if applicable. Rolling within one foot of an unsupported edge should be delayed to minimize possible distortion but completed at such time that proper densities are obtained after the completion of rolling. No roller shall be permitted to stand motionless on portion of the work before it has been properly compacted.

3.03 SURFACE COURSE SPREADING AND COMPACTION

- A. Surface course shall be 1-inch thick.
- B. At the time of delivery to the site of work, the temperature of mixture shall not be lower than 260 degrees F., or higher than 320 degrees F. Asphalt concrete shall not be placed when the atmospheric temperature is below 40 degrees F. or during unsuitable weather.
- C. The asphalt concrete shall be evenly spread upon the subgrade or base to such a depth that after rolling, it shall be of the specified cross section and grade of the course being

constructed.

- D. The depositing, distributing, and spreading of the asphalt concrete shall be accomplished in a single, continuous operation by means of a self-propelled mechanical spreading and finishing machine designed especially for that purpose and equipped with a screed or strike-off assembly capable of being accurately regulated and adjusted to distribute a layer of the material to a definite predetermined thickness.
- E. Spreading, once commenced, must be continued without interruption. No greater amount of the mixture shall be delivered in one day than can be properly distributed and rolled during that day.
- F. Compaction is the same as outlined in Paragraph 3.05, except as noted below:
 - 1. Steel-Wheel and Pneumatic: Apply a breakdown (initial) coverage with a steelwheel roller loaded to 10 tons. Follow by intermediate rolling consisting of a minimum of four coverages of a pneumatic-tired roller, the tires being inflated a minimum of 60 psi cold and maximum of 90 psi when hot. Finish rolling may consist of one coverage of an 8-ton tandem steel-wheel roller.
 - 2. Steel-Wheel: Apply a minimum of six coverages with a steel-wheel roller loaded to 10 tons.
 - 3. Vibratory: Compaction shall consist of at least four coverages with a vibratory roller.
- G. As soon as the layer of asphalt concrete has been placed, it shall be thoroughly compacted by rolling. Rolling shall be commenced along the lower edge of the area to be rolled and shall be continued until the edge is thoroughly compacted, after which the roller shall be gradually advanced to the crown point, both sides being rolled in a like manner. Rolling shall be continued until the layer has become thoroughly compacted throughout and is true to grade and cross-section.
- H. Maintain rollers in good mechanical condition, and those that cannot be operated without jerking, or driven along a straight path, shall not be used. No leakage of petroleum products from roller shall be allowed to come in contact with the pavements being constructed, nor shall roller be permitted to stand motionless on portion of the work before it has been properly compacted.

Rolling surfaces shall be treated with water to prevent the adherence of the asphalt concrete, but the quantity used must not be such as to be detrimental to the surface being rolled.

3.04 FLOOD TESTING

- A. Flood Test: Before seal coat is applied, a water flood test shall be done in the presence of the Inspector. The flooding shall be done by water tank truck. Depressions where the water ponds to a depth of more than 1/8-inch shall be filled, or the slope corrected to provide proper drainage. The edges of the fill shall be feathered and smoothed so that the joint between the fill and the original surface is invisible.
- B. Seal Coat: After completing the flood test and the pavement has cured for 30 days, all new A.C. pavement shall receive a slurry sealer applied in accordance with the manufacturer's specifications.

- 1. Areas to receive sealer shall be swept clean, and, before application, lightly sprayed with water, leaving it cool and damp but free of excess water.
- 2. Make two or more applications using a total of at least 80 square foot/gallon, min.
- 3. Each coat of sealer shall dry 24 hours before the succeeding coat is applied.
- 4. The finished surface seal, when dry and thoroughly set, shall be smooth, tough, waterproof, resilient, of uniform black color, and free from coarse textured areas, lap marks, ridges, and other surface irregularities. Should defect appear in the finished surface, apply as many additional coats of sealer as may be required to produce the specified finished surface at no additional cost. Protect from traffic during all operations and until the sealer is thoroughly set and cured and does not pick up under foot or wheeled traffic min. of 24 hours. When cured and set, thoroughly wash off with water to remove excess residue before applying painted markings.
- 5. Application shall be by spray method is possible. Brush method may be used when sealer is covering existing pavement and the pavement is in poor condition. Skid-slip resistance applications using sand are not acceptable.
- 6. Repair any damage caused by construction traffic.
- 3.05 STRIPING
 - A. Pavement Marking Paint: Vinyl acrylic type for use on asphaltic concrete and Portland cement concrete. Pavement Marking Paint: Vinyl acrylic type for use on asphaltic concrete and Portland cement concrete. Painted lines and markings on pavement shall be 3" minimum wide and blue in color equal to Color No 15092 per Federal Standard 595B. Refer to Paragraph 2.01 D., for additional paint striping information.
 - B. Provide International Symbol of Accessibility for each accessible parking stall at location indicated in the Drawings. Symbol shall be 36 inches square, white on standard blue background, and ADA Accessibility Guidelines for Buildings and Facilities.
 - 1. Parking spaces for the disabled shall be marked according to CBC Sections 11B-208, and 11B-502.
 - 2. Refer to paragraph 2.01 D., for additional paint striping information.
 - C. Preparation:
 - Immediately before applying the paint, thoroughly clean the pavement surface of dust, dirt, sand, scale, water, oil, grease or other objectionable matter. Do not use solvent materials that will damage pavements as cleaning agent. Immediately before paint, give pavement surface a final cleaning by means of a power broom. Following the power brooming, use power blower containing compressed air.
 - 2. Provide warning devices required to protect the painting operations and the finished work.
 - D. Application: Immediately following other preparation of the pavement surface, apply the striping at the rate of 100 to 110 square feet, per gallon of paint. Apply lines 4 inches wide unless otherwise indicated. Apply the stripe of the indicated or specified width with

clean true edges and without sharp breaks. Repaint to the applicable specification portions of the stripe damaged by any type of traffic within 24 hours after the stripe has been applied.

E. Provide temporary striping where parking must be occupied prior to installation of seal coat.

3.06 CLEANUP

- A. Clean up the paved areas prior to acceptance of the work. Dirt, spoil, and debris of nature shall be removed, and the entire site shall present a clean, workmanlike appearance.
- B. Damage to paint work from paving or seal-coating operations shall be corrected.

END OF SECTION

SECTION 32 13 73

CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Expansion and contraction joints within cement concrete pavement.
 - 2. Joints between cement concrete and asphalt pavement.
- B. Related Sections include the following:
 - 1. Section 32 16 00 "Curbs, Gutters, Sidewalks and Driveways".

1.03 SUBMITTALS

- A. Comply with Section 01 33 00 Submittal Procedures.
- B. Product Data: For each joint-sealant product indicated.
- C. Samples for Verification: For each type and color of joint sealant required. Install jointsealant samples in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- E. Qualification Data: For Installer.
- F. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for sealants.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than [eight] pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing of current sealant products within a 36-month period preceding the [commencement of] the Work.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 for testing indicated, as documented according to ASTM E 548.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.06 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 - 2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.4 deg C).
 - 3. When joint substrates are wet or covered with frost.
 - 4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

- 2.01 MANUFACTURERS
 - A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
 - B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.
- 2.02 MATERIALS, GENERAL
 - A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.
 - B. Colors of Exposed Joint Sealants: As selected by Landscape Architect from manufacturer's full range.

2.03 COLD-APPLIED JOINT SEALANTS

- A. Single-Component Urethane Sealant for Concrete: Single-component, pourable, coaltar-modified, urethane formulation complying with ASTM C 920 for Type S; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O.
- B. One part moisture curing polyurethane sealant designed for caulking applications of exterior horizontal joints. Self-leveling and compatible for uses with the expansion material.
 - 1. Products:
 - a. Sonneborn, Div. of ChemRex, Inc.; Sonomeric 1.
 - b. Polytite
 - c. Tremco

2.04 JOINT-SEALANT BACKER MATERIALS

- A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. Round Backer Rods for Cold- and Hot-Applied Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- C. Retain first paragraph below for use of cold- and hot-applied sealants in joints, such as expansion joints, where it is desirable for backing material to fill remainder of joint opening under sealant and minimize intrusion of water and incompressible foreign objects.

- D. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.
- E. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

2.05 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- 3.03 INSTALLATION OF JOINT SEALANTS
 - A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
 - B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
 - C. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of backer materials.
 - 2. Do not stretch, twist, puncture, or tear backer materials.
 - 3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.
 - D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

- 1. Place sealants so they directly contact and fully wet joint substrates.
- 2. Completely fill recesses provided for each joint configuration.
- 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealants from surfaces adjacent to joint.
 - 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.
- G. Provide recessed joint configuration for silicone sealants of recess depth and at locations indicated.
- 3.04 CLEANING
 - A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.
- 3.05 PROTECTION
 - A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 32 16 00

CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS

PART 1 - GENERAL

- 1.01 SUMMARY
 - A. Section includes: Concrete curbs, gutters, walks and pavements as indicated on the Drawings and specified herein.
- 1.02 QUALITY ASSURANCE
 - A. The curbs and gutters shall be staked by a Land Surveyor licensed to practice in the State of California. See Section 01 71 23 Field Engineering.

1.03 SUBMITTALS

A. Reinforcing bars certification and concrete mix design.

PART 2 - PRODUCTS

- 2.01 MATERIALS
 - A. Cement: ASTM C150, Type I; Type II, or Type V.
 - B. Aggregates: ASTM C33. 3/4-inch maximum for 4 inch thick slabs, conforming to CBC, 2019, Title 24, Part 2. Obtain from an approved source to insure uniform quality and grading; deliver so that moisture content variations will not decrease production of reasonably uniform concrete. Do not use aggregates that are reactive with alkalies.
 - 1. 3/4" for Curb and Gutter
 - 2. 3/4" for Broom Finish
 - C. Reinforcing Steel: Bars, ASTM A615-09b, grade 60. Reinforcing steel shall be minimum of #3's at 24" o.c. each way. WWM is not acceptable.
 - D. Dowels "Speed Dowel" by Greenstreak 1/2" x 12" unless otherwise required by Architect. Use smooth steel dowels.
 - E. Curb and Gutter Expansion Joint Filler: Celotex "Flexcell," ¹/₂-inch thick or Homex 300, 1/2-inch thick.
 - F. Walk and Slab Expansion Joint Filler: ASTM D1751. Equal must be certified by the Green Building Council.
 - 1. Walks and Back of Curb: 1/4" Polyethylene, closed cell expansion joint filler by Deck-O-Foam, or Equal.
 - G. Backer Rod Closed Cell Polyethylene.
 - H. Expansion Joint Sealer: Refer to Section 07 92 00, Joint Sealants. Match color of pavement equal to Pecora Dyna Tred.

- I. Water: Clean, fresh and potable.
- J. Truncated Domes refer to Section 32 12 16.

2.02 DESIGN REQUIREMENTS

- A. Concrete Design Strength: Concrete for curbs, gutters, walks and pavement shall develop a minimum ultimate compressive strength of 3000 psi and have a water to cement ratio of 0.5 minimum.
- B. Portland cement concrete paving shall be firm, stable, and slip resistant, per CBC 11B-302.1.
- 2.03 ACCEPTABLE MANUFACTURER
 - A. L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9051; Western Division – 323-720-3055; Central Division Office – 630-377-5959.
 - B. W.R. Meadows, Pomona, CA (800) 342-5976.
 - C. Sinak Corporation, San Diego, CA (800) 523-3147.
 - D. Greenstreak, St. Louis, Missouri (800) 325-9504.
 - E. Other equal manufacturer.

2.04 SEALING COMPOUNDS

- A. Sealing compound to be applied at all site concrete: Sinak HLQ-125. Repello penetrating sealer sealing compound shall comply with ASTM C309.
- 2.05 COLORS NOT ACCEPTABLE

PART 3 - EXECUTION

- 3.01 PREPARATION
 - A. Base Course: Subgrade shall be smooth, true to line and grade, and shall be tested for required compaction prior to start of placing concrete. Dampen subgrade 24 hours before placing. Reroll as required to smooth, hard, even surface of 90 percent compaction. Wet forms to tighten cracks.
- 3.02 INSTALLATION
 - A. Formwork:
 - 1. Stake rigidly at 4 feet on centers and secure against displacement. Formwork shall not deviate more than 1/2-inch from required vertical positions and 1 inch from required horizontal positions.
 - 2. Carefully set forms to alignment, grade, and required dimensions. Hold forms rigidly in place by stakes, clamps, spreaders, and braces where required to insure rigidity.

- 3. Apply form release to form lumber in accordance with manufacturer's recommendations.
- 4. Place joint filler on vertical surfaces in contact with concrete paving.
- B. Reinforcement: Upon completion of base course and formwork, install reinforcement where shown on the Contract Drawings.
 - 1. Clean reinforcement to remove loose rust and mill scale, earth, and other materials which reduce or destroy bond with concrete.
 - 2. Position, support, and secure reinforcement against displacement by concrete placement operations.
 - 3. Place reinforcement to obtain the required coverages for concrete protection.

3.03 APPLICATION

- A. Concrete:
 - 1. Mixing: Transit mix the concrete in accordance with provisions of ASTM C94.
 - 2. Conveying and Placing: Place concrete in accordance with pertinent recommendations contained in ACI 304 and with the following;
 - a. Deposit concrete continuously in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause formation of seams or places of weakness within the section.
 - b. Deposit and consolidate concrete in a continuous operation within the limits of construction joints until the placing of a panel or section is completed.
 - 1) Bring surfaces to the correct level with a straight-edge, and then strike off.
 - 2) Use bullfloats or darbies to smooth the surface, leaving it free from bumps and hollows.
 - c. Do not sprinkle water on the plastic surface. Do not disturb the surfaces prior to start of finishing operations.
 - d. Do not use concrete which has become non-plastic and unworkable, which does not meet required quality control limits, or which has been contaminated by foreign materials.

3.04 CONTROL JOINTS

- A. Tops of joint shall be installed flush with the concrete surface. Depth of joint shall be a minimum of 1/4 the thickness of slab. Use control joints on curbs, curbs and gutters, and cross gutters at maximum intervals of 20 feet on center. Sawed joints may be used in lieu of the above upon Architect's written approval providing they are at least 1-inch deep.
- 3.05 FINISHES
 - A. Paved areas between buildings will consist of various different finishes such as medium and heavy broom, steel trowel exposed aggregate and rock salt. See architectural drawings for specific type of finish for these areas.
 - B. Walks, Pavements, Stairs and Ramps: Portland cement concrete paving and concrete finishes shall have the following broom finishes:

- 1. Walks (Portland Cement Concrete paving and concrete finishes):
 - a. Slopes Less than 6%: Surfaces with a slope of less than 6 percent gradient shall be at least as slip-resistant as that described as medium broom finish, perpendicular to the direction of travel. (CBC Sections 11B-403.1, 11B-403.2, 11B-403.5.1 Exception 3, 11B-403.5.3, 11B-302.1.)
 - b. Slopes 6% or Greater: Surfaces with a slope of 6 percent gradient shall be slip-resistant as that described as <u>heavy</u> broom finish, perpendicular to the direction of travel. (CBC Sections 11B-403.1, 11B-403.2, 11B-403.5.1 Exception 3, 11B-403.5.3, 11B-302.1.)
 - c. Surface slopes of accessible parking spaces and access aisles shall be the minimum possible and shall not exceed 2% slope in any direction. CBC 2019 11B-502.4
- 2. Pavement Markings per plans and as specified below:
 - a. Accessible parking spaces shall be located as near as practical to a primary entrance and shall be marked according to CBC 2019 Sections 11B-502.3.3 and 11B-502.6.
 - b. Loading and unloading access aisle shall be marked by a border painted blue. Within the blue border, hatched lines a maximum of 36" on center shall be painted a color contrasting with the parking surface, preferably blue or white. CBC Figures 11B-502.2, 11B-502.3, 11B-502.3, and 11B-503.3.
 - c. When blue color is used, it shall conform to Color No. 15092 per Federal Standard 595C.
 - d. Painted lines and markings on pavement are recommended to be 3" wide minimum.
- C. Gutters: Light broom finish with 3 inch wide steel trowel finish at flowlines.
- D. Curbs: Steel trowel finish.

3.06 CURING

- A. Comply with 2019, California Building Code, Title 24, Part 2, Section 1905A.9.
 - 1. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least seven (7) days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- B. Curing Methods: Perform curing of concrete by curing as herein specified.
 - 1. Provide moisture-curing by the following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Continuous water-fog spray.
 - c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4 inch lap over adjacent absorptive covers.
 - 2. Provide curing and sealing compound to exposed exterior slabs, walks, and curbs, as follows:
 - a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply

uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Re-coat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

- b. Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid, floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile, glue-down carpet), painting, and other coatings and finish materials, unless otherwise acceptable to Architect.
- C. Concrete slabs and paving shall be properly cured and protected against damage and defacement of nature during construction operations. If weather is hot or surface has dried out, spray surface with fine mist of water starting not later than two hours after final troweling. Surface of finish shall be kept continuously wet for at least ten days. Wetting is considered emergency work and shall be performed on weekends and holidays if necessary.
- D. In lieu of water curing, within 24 hours after finishing, the concrete may be cured with a clear liquid curing compound such as "Sealtight 1100-Clear" by W.R. Meadows or equal applied in accordance with manufacturer's recommendations.

3.07 OFF-SITE CONCRETE WORK

A. Concrete driveway aprons, street sidewalks, curbs and gutters, etc., indicated to be constructed outside of property lines shall conform to the standards and specifications of the public agency having jurisdiction and shall be subject to inspection by its representative. Obtain and pay for necessary permits. The Owner will pay for inspection fees.

3.08 FIELD QUALITY CONTROL

F. Flood Tests: Concrete gutters and concrete pavement shall be given a flood test in the presence of the Inspector. Concrete work where water ponds and does not run off in a reasonable amount of time, shall be removed to the nearest score or joint line and replaced to provide proper drainage.

END OF SECTION

GROSSMONT UNION HIGH SCHOOL DISTRICT ROOF SAFETY REMEDIATION

THIS PAGE INTENTIONALLY LEFT BLANK

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

THIS PAGE INTENTIONALLY LEFT BLANK

ADSA

1-RUH

REQUEST FOR FINDING OF UNREASONABLE HARDSHIP

Use this form to request a finding of unreasonable hardship for a project with an Adjusted Construction Cost exceeding the Valuation Threshold. A hardship finding will provide relief from full compliance with the path of travel requirements of CBC section 11B-202.4. Compliance shall be provided by equivalent facilitation or to the greatest extent possible without creating an unreasonable hardship; in no case shall the cost of compliance be less than 20 percent of the adjusted construction cost of alterations, additions or structural repairs. DSA shall approve proposed alternate compliance, to be included as part of this request.

| PROJECT INFORMATION | | | | |
|--|----------------|----|---|--------|
| School District/Owner/Agency: Grossmont Union High School District | DSA File #: | 37 | - | H4 |
| Project Name/School: Steele Canyon High School Roof Safety Remediation | DSA App. #: 04 | | - | 119322 |

| APPLICANT | | | |
|---|-----------------------------------|-------------------|--|
| Firm Name: _{HED} | Contact Name: Evan Henderson | | |
| Work Phone: (619) 398-3836 | Work Email: ehenderson@hed.design | | |
| Work Address: 11750 Sorrento Valley Rd, Suite 100 | | | |
| City: San Diego | Zip: 92121 | County: San Diego | |

| DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE | | | | | |
|---|--|--|--|--|--|
| Name of Design Professional in General Responsible Charge: Thomas Christian | | | | | |
| Professional License #:C-18839 Discipline: Architect | | | | | |
| Facilities Director (or appropriate contact):Katy Wright | | | | | |
| Work Phone: (619) 644-8000 | Work Phone: (619) 644-8000 Work Email: kwright@guhsd.net | | | | |
| Project Location: Steele Canyon High School | | | | | |
| Project Address: 8585 Blossom Lane | | | | | |
| City: Spring Valley Zip: 91977 County: San Diego | | | | | |

APPLICANT'S STATEMENT OF RESPONSIBILITY

I certify, under penalty of perjury, that I am acting for the School District/Owner/Agency in the legal capacity of agent making application for Finding of Unreasonable Hardship.

Signature:

Digitally signed by Thomas Erik Christian DN: C=US, E=tchristian@hed.design, O=HED, CN=Thomas Erik Christian Date: 2022.02.17 09:20:17-08'00'

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE

Auma Dristian

Thomas Christian Printed Name:

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE

CBC, CHAPTER 11B

11B-202.4 Path of travel requirements in alterations, additions and structural repairs.

Exception 8: When the adjusted construction cost **exceeds** the current valuation threshold, as defined in Chapter 2, Section 202, and the enforcing agency determines the cost of compliance with Section 11B-202.4 is an unreasonable hardship, as defined in Chapter 2, Section 202, full compliance with Section 11B-202.4 shall not be required. Compliance shall be provided by equivalent facilitation or to the greatest extent possible without creating an unreasonable hardship; but in no case shall the cost of compliance be less than 20 percent of the adjusted construction cost of alterations, structural repairs or additions.

DESCRIBE THE NATURE OF THE USE OF THE FACILITY UNDER CONSTRUCTION AND ITS AVAILABILITY TO PERSONS WITH DISABILITIES: Attach additional pages if necessary.

This project consists of roof safety improvements throughout the campus. As part of this project, the District has opted to replace existing skylights at buildings K1 & K2. The replacements are in-kind and considered maintenance. These buildings were permitted in 1996 and at the time had accommodations for persons with disabilities. Additionally, site improvements have been made over the years enhancing access to these buildings. However, as codes have evolved and the work has aged, several areas are no longer compliant with current accessibility codes. Please see attached noted drawing describing the non-conforming conditions.

DESCRIBE THE NATURE OF ACCESSIBILITY THAT WOULD BE GAINED (BY FULL COMPLIANCE) AND LOST (BY PROPOSED ALTERNATE COMPLIANCE): Attach additional pages if necessary.

This project proposes to remove accessible barriers directly at these classroom buildings by improving door hardware and signage throughout Buildings K1 & K2. We are proposing that the balance of site accommodations, including path of travel, restrooms, and parking, are not performed as part of this project as their costs to make accessible are above the 20% cost threshold. Please see attached notated drawing describing the non-conforming conditions, as well as the attached cost estimate outlining the cost of access compliance.

IS THE PROJECT A QUALIFIED HISTORICAL BUILDING OR FACILITY, AS DEFINED IN THE CALIFORNIA HISTORICAL BUILDING CODE WHERE PROVIDING COMPLIANCE WILL THREATEN THE HISTORIC NATURE OF THE BUILDING?: If yes please describe. *Attach additional pages if necessary.*

No

| CONSTRUCTION COSTS: | | |
|---|-----------------|-----|
| Construction cost for proposed project (not including costs of improvements to the <i>path of travel</i> to the area of alteration): | \$ \$559,065 | (A) |
| Cost of alterations to areas on this <i>path of travel</i> undertaken during the preceding three-year period which did not provide an accessible <i>path of travel</i> to the area of alteration (as applicable): | \$ 0 | (B) |
| Adjusted construction cost (C) = (A) + (B) | \$ \$559,065 | (C) |

| PATH OF TRAVEL CONSTRUCTION COSTS: | | | | | |
|--|--|---|--|---|--|
| Elements serving the area of alteration based on priority | Is element in compliance with Chapter 11B? (Y/N) | If no, will element be upgraded to Chapter 11B? (Y/N) | Estimated cost of full compliance with Chapter 11B | Proposed cost of partial compliance with Chapter 11B | |
| 1. An accessible entrance | Ν | Y | \$\$213,608 | \$\$168,620 | |
| 2. An accessible route to the altered area | N | N | \$ \$237,665 | \$ | |
| 3. At least one accessible restroom for each gender or a single accessible unisex restroom | N | N | \$28,624 \$ | \$ | |
| 4. Accessible public telephones | N/A | N/A | \$ \$0 | \$ | |
| 5. Accessible drinking fountains | Y | N/A | \$ \$0 | \$ | |
| 6. When possible, additional accessible elements such as: | | | | | |
| a. Parking | N | N | \$\$139,077 | \$ | |
| b. Signs | N | N | \$ \$5,640 | \$ | |
| c. Storage | N/A | N/A | \$ | \$ | |
| d. Alarms | N/A | N/A | \$ | \$ | |
| e. Other | N | N | \$ \$51,136 | \$ | |
| Total cost of providing full compliance of <i>path of travel</i> elements: | | | \$\$675,750 (D) | | |
| Total cost of providing partial compliance of <i>path of travel</i> elements: | | | | \$\$168,620 (E) | |

| COST OF PATH OF TRAVEL UPGRADES AS A PERCENTAGE OF ADJUSTED CONSTRUCTION COST: | | | | |
|--|---|------|-----|--|
| Full compliance of path of travel as % of adjusted construction cost: $(F)\% = (D) / (C)$ | % | 121% | (F) | |
| Partial compliance of path of travel as % of adjusted construction cost: $(G)\% = (E) / (C)$ | % | 30% | (G) | |

DESCRIBE THE IMPACT ON THE FINANCIAL FEASIBILITY OF THE PROJECT WHEN THE COST OF PROVIDING FULL COMPLIANCE WITH CHAPTER 11B STANDARDS EXCEEDS 20%: Attach additional pages if necessary.

Additional funds to bring the full campus into compliance are unavailable at this time.

DESCRIBE THE EQUIVALENT FACILITATION PROVIDED (IF APPLICABLE): Attach additional pages if necessary.

None provided.

DSA USE ONLY

The details of any finding of unreasonable hardship will be recorded in the DSA project file.

FINDING OF UNREASONABLE HARDSHIP REQUEST GRANTED

X

Elements listed in this form for modifications to meet compliance shall be included as part of this project and indicated on contract documents.

| FINDI | NG OF UNREASONABLE HARDSHIP REQUEST DENIED |
|-------|---|
| | Equivalent facilitation is not provided |
| | □ Compliance to the greatest extent possible is not provided. |
| | □ Proposed cost for minimum compliance is less than 20% of the adjusted construction cost. |
| | □ Other |
| | If you disagree with this determination, the DSA code appeal process is available for further review. |

| REVIEWED BY | | | | |
|-------------|--------------|--------|-----------------------|--|
| Name: | Don Fenlason | Title: | Supervising Architect | |
| Signature: | Don Fenlason | Date: | 02-22-2022 | |

| SUPERVISOR'S APPROVAL | | | |
|-----------------------|--------------|--------|-----------------------|
| Name: | Don Fenlason | Title: | Supervising Architect |
| Signature: | Don Fenlason | Date: | 02-22-2022 |

| REFE | RRED TO STATEWIDE TEAM | | Yes | X | No |
|------|--|-------|---------|---|----|
| | Finding of Unreasonable Hardship Request Denied. | | | | |
| X | Finding of Unreasonable Hardship Request Approved. | | | | |
| REAS | ON FOR APPROVAL OR DENIAL | | | | |
| 209 | % of the estimated cost of construction has beer | n exc | ceeded. | | |



Grossmont Union High School District Steele Canyon HS Access Compliance

Spring Valley, CA

HED ROUGH ORDER OF MAGNITUDE COST ESTIMATE OCMI JOB #: 211329.000 23 December 2021





Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

COST ESTIMATE

INTRODUCTORY NOTES

This estimate is based on verbal direction from the client and the following items, received 20 December 2021:

General

Steele Canyon_Site_EH.pdf, Steele Canyon RRs_EH.pdf, Steele Canyon DSA-RUH Calculator.xlsx

The following items are excluded from this estimate:

- Professional fees.
- Building permits and fees.
- Inspections and tests.
- Furniture, fixtures & equipment, except as noted.
- Installation of owner furnished equipment.
- Construction change order contingency.
- Overtime.
- Hazardous material abatement/removal.
- Items referenced as NOT INCLUDED or NIC in estimate.

The midpoint of construction of April 2022 is based on:

- Construction start date of March 2022
- Estimated construction duration of 03 months
- This estimate is based on a Design-Bid-Build delivery method.
- This estimate is based on prevailing wage labor rates.
- This estimate is based on a detailed measurement of quantities. We have made allowances for items that were not clearly defined in the drawings. The client should verify these allowances.
- This estimate is based on a minimum of four competitive bids and a stable bidding market.
- This estimate should be updated if more definitive information becomes available, or if there is any change in scope.
- We strongly advise the client to review this estimate in detail. If any interpretations in this estimate appear to differ from those intended by the design documents, they should be addressed immediately.

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| ELEMENT | TOTAL COST |
|--|------------|
| 01. BUILDING K | \$219,248 |
| 02. BUILDING K SITE | \$17,747 |
| 03. BOY'S RESTROOM | \$6,381 |
| 04. GIRL'S RESTROOM | \$9,037 |
| 05. MEN'S RESTROOM | \$6,805 |
| 06. WOMEN'S RESTROOM | \$6,401 |
| 07. PARKING LOT #1 | \$56,169 |
| 08. PARKING LOT #2 | \$82,908 |
| * 09. SOFTBALL PARKING | \$55,544 |
| 10. RESTROOM SITE | \$24,371 |
| 11. POT TO ROW | \$73,240 |
| 12. DROP-OFF | \$51,136 |
| 13. POT TO BUILDING K | \$54,941 |
| 14. POT BETWEEN PARKING LOT #2 AND LOT#1 | \$67,366 |
| | |

| TOTAL CONSTRUCTION COST | \$675,750 |
|-------------------------|-----------|
| | |

*NOT AN EXISTING ACCESSIBILITY ISSUE - OMITTED FROM ESTIMATE

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

DETAILED PROJECT SUMMARY

| ELEMENT | TOTAL COST |
|--|------------|
| 01. BUILDING K | \$125,334 |
| 02. BUILDING K SITE | \$10,145 |
| 03. BOY'S RESTROOM | \$3,648 |
| 04. GIRL'S RESTROOM | \$5,166 |
| 05. MEN'S RESTROOM | \$3,890 |
| 06. WOMEN'S RESTROOM | \$3,659 |
| 07. PARKING LOT #1 | \$32,109 |
| 08. PARKING LOT #2 | \$47,395 |
| * 09. SOFTBALL PARKING | \$31,752 |
| 10. RESTROOM SITE | \$13,932 |
| 11. POT TO ROW | \$41,868 |
| 12. DROP-OFF | \$29,232 |
| 13. POT TO BUILDING K | \$31,407 |
| 14. POT BETWEEN PARKING LOT #2 AND LOT#1 | \$38,510 |
| | |

*NOT AN EXISTING ACCESSIBILITY ISSUE - OMITTED FROM ESTIMATE

| TOTAL NET DIRECT COST | | \$386,295 |
|---------------------------------|--------|-----------|
| GENERAL MARKUPS | | |
| DESIGN CONTINGENCY | 15.00% | \$57,944 |
| ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$8,885 |
| GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$77,031 |
| CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$66,269 |
| INSURANCE AND BONDS | 3.00% | \$17,893 |
| RESTRICTIVE MARKET AND BIDDING | 10.00% | \$61,432 |
| | | |
| TOTAL CONSTRUCTION COST | | \$675,750 |
| | | |

BUILDING K

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

BUILDING SUMMARY

| ELEMENT | | SIGNAGE SCOPE | PROPOSED WORK | TOTAL COST |
|---|--------|------------------|---------------------|---------------------------------|
| 02 EXISTING CONDITIONS 08 OPENINGS 10 SPECIALTIES | | \$3,224 | \$6,880 \$89,512 | \$6,880 \$115,230 \$3,224 |
| NET DIRECT BUILDING COST | 15.00% | \$3,224 | \$96,392 | \$125,334 |
| DESIGN CONTINGENCY | | \$484 | \$14,459 | \$18,800 |
| SUBTOTAL | 2.00% | \$3,708 | \$110,851 | \$144,134 |
| ESCALATION TO MIDPOINT 04/2022 | | \$74 | \$2,217 | \$2,883 |
| SUBTOTAL | 17.00% | \$3,782 | \$113,068 | \$147,017 |
| GENERAL CONDITIONS/REQUIREMENTS | | \$643 | \$19,222 | \$24,993 |
| SUBTOTAL | 12.50% | \$4,425 | \$132,290 | \$172,010 |
| CONTRACTOR OVERHEAD AND PROFIT | | \$553 | \$16,536 | \$21,501 |
| SUBTOTAL | 3.00% | \$4,978 | \$148,826 | \$193,511 |
| INSURANCE AND BONDS | | \$149 | \$4,465 | \$5,805 |
| SUBTOTAL | 10.00% | \$5,127 | \$153,291 | \$199,316 |
| RESTRICTIVE MARKET AND BIDDING | | \$513 | \$15,329 | \$19,932 |
| TOTAL BUILDING COST | | \$5,640 | \$168,620 | \$219,248 |

BUILDING K

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Door hardware | | | | |
| Exterior single door, inclu. closer and panic device | 26 | EA | 140.00 | \$3,640 |
| * Interior single door | 32 | EA | 101.25 | \$3,240 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$6,880 |
| 08 OPENINGS | | | | |
| Door hardware | | | | |
| Exterior single door | | | | |
| Lockset, including panic hardware | 26 | EA | 2,066.84 | \$53,738 |
| Automatic door opener, handicap | 3 | PR | 3,813.22 | \$11,440 |
| Interior single door | | | | |
| * ANSI F84, classroom lock | 32 | EA | 1,117.94 | \$35,774 |
| Access control, card type | 4 | EA | 3,569.41 | \$14,278 |
| TOTAL - 08 OPENINGS | | | | \$115,230 |
| 10 SPECIALTIES | | | | |
| Signage | | | | |
| Interior room tactile | 66 | EA | 48.85 | \$3,224 |
| TOTAL - 10 SPECIALTIES | | | | \$3,224 |
| | | | | |

* PROPOSED WORK

BUILDING K SITE

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| SITE SUMMARY | | | |
|--|--------|---------------------|--|
| ELEMENT | | TOTAL COST | |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$2,337 \$7,808 | |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$10,145 \$1,522 | |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$11,667 \$233 | |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$11,900 \$2,023 | |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$13,923 \$1,740 | |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$15,663 \$470 | |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$16,133 \$1,613 | |
| TOTAL SITE COST | | \$17,747 | |

BUILDING K SITE

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|----------------------------------|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Chain link fence | 100 | LF | 14.51 | \$1,451 |
| Footing | 21 | EA | 25.00 | \$525 |
| Chain-link gate | | | | |
| Pull hardware | 1 | EA | 56.25 | \$56 |
| Haul and dispose, Allowance | 15% | LS | 2,032.00 | \$305 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$2,337 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Chain link, 9 gauge, 6' | 100 | LF | 61.36 | \$6,136 |
| Footing | 21 | EA | 62.96 | \$1,322 |
| Replace gate hardware | 1 | EA | 350.00 | \$350 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$7,808 |

BOY'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

BUILDING SUMMARY

| ELEMENT | | TOTAL COST |
|---|--------|-----------------------------|
| 02 EXISTING CONDITIONS 08 OPENINGS 10 SPECIALTIES | | \$529 \$1,387 \$1,732 |
| NET DIRECT BUILDING COST DESIGN CONTINGENCY | 15.00% | \$3,648 \$547 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$4,195 \$84 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$4,279 \$727 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$5,007 \$626 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$5,632 \$169 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$5,801 \$580 |
| TOTAL BUILDING COST | | \$6,381 |

BOY'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|-----------------------------------|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 101.25 | \$101 |
| Specialties, remove for reinstall | | | | |
| Paper towel dispenser | 2 | EA | 25.00 | \$50 |
| Soap dispenser, liquid | 2 | EA | 25.00 | \$50 |
| Toilet partition | 1 | EA | 135.32 | \$135 |
| Toilet partition, ADA | 1 | EA | 193.31 | \$193 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$529 |
| 08 OPENINGS | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 897.72 | \$898 |
| Door closer | 1 | EA | 488.68 | \$489 |
| TOTAL - 08 OPENINGS | | | | \$1,387 |
| 10 SPECIALTIES | | | | |
| Toilet specialties | | | | |
| Lavatory guards | 3 | EA | 99.26 | \$298 |
| Toilet partition, reinstall | 1 | EA | 483.28 | \$483 |
| Toilet partition, ADA, reinstall | 1 | EA | 579.93 | \$580 |
| Paper towel dispenser, reinstall | 2 | EA | 89.50 | \$179 |
| Soap dispenser, liquid, reinstall | 2 | EA | 71.60 | \$143 |
| Signage | | | | |
| Interior room tactile | 1 | EA | 48.85 | \$49 |
| TOTAL - 10 SPECIALTIES | | | | \$1,732 |

GIRL'S RESTROOM

Spring Valley, CA

\$239

\$8,215

\$9,037

\$822

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| BUILDING SUMMARY | | | |
|--|--------|--|--|
| ELEMENT | | TOTAL COST | |
| 02 EXISTING CONDITIONS 08 OPENINGS 10 SPECIALTIES 22 PLUMBING | | \$1,199 \$1,387 \$1,767 \$813 | |
| NET DIRECT BUILDING COST DESIGN CONTINGENCY | 15.00% | \$5,166 \$775 | |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$5,941 \$119 | |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$6,060 \$1,030 | |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$7,090 \$886 | |
| SUBTOTAL | | \$7,976 | |

3.00%

10.00%

SUBTOTAL RESTRICTIVE MARKET AND BIDDING TOTAL BUILDING COST

INSURANCE AND BONDS

GIRL'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 101.25 | \$101 |
| Specialties, remove for reinstall | | | | |
| Paper towel dispenser | 2 | EA | 25.00 | \$50 |
| Soap dispenser, liquid | 2 | EA | 25.00 | \$50 |
| Toilet paper dispenser | 1 | EA | 25.00 | \$25 |
| Toilet partition | 1 | EA | 135.32 | \$135 |
| Toilet partition, ADA | 1 | EA | 193.31 | \$193 |
| Door latch on toilet partition | 2 | EA | 37.50 | \$75 |
| Specialties, remove and disposal | | | | |
| Toilet paper dispenser | 1 | EA | 20.00 | \$20 |
| Plumbing | | | | |
| Water closet, protect piping and rough-ins | 1 | EA | 400.00 | \$400 |
| Haul and dispose, Allowance | 1 | LS | 150.00 | \$150 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$1,199 |
| 08 OPENINGS | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 897.72 | \$898 |
| Door closer | 1 | EA | 488.68 | \$489 |
| TOTAL - 08 OPENINGS | | | | \$1,387 |
| | | | | ¢ 1,007 |
| 10 SPECIALTIES | | | | |
| Toilet specialties, reinstall | | | | |
| Toilet partition | 1 | EA | 483.28 | \$483 |
| Toilet partition, ADA | 1 | EA | 579.93 | \$580 |
| Paper towel dispenser | 2 | EA | 89.50 | \$179 |
| Soap dispenser, liquid | 2 | EA | 71.60 | \$143 |
| Toilet tissue dispenser | 1 | EA | 59.60 | \$60 |
| Toilet latch | 2 | EA | 71.25 | \$143 |
| Toilet specialties, new | | | | . |
| Toilet tissue dispenser, double | 1 | EA | 130.23 | \$130 |
| Signage | | _ | | |
| Interior room tactile | 1 | EA | 48.85 | \$49 |

GIRL'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | (| QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|---|----------|------|-----------|----------------|
| TOTAL - 10 SPECIALTIES | | | | | \$1,767 |
| 22 PLUMBING Water closet, excluding rough-ins | | 1 | EA | 812.50 | \$813 |
| TOTAL - 22 PLUMBING | | | | | \$813 |

MEN'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

BUILDING SUMMARY

| ELEMENT | | TOTAL COST |
|---|--------|-----------------------------|
| 02 EXISTING CONDITIONS 08 OPENINGS 10 SPECIALTIES | | \$606 \$1,387 \$1,897 |
| NET DIRECT BUILDING COST DESIGN CONTINGENCY | 15.00% | \$3,890 \$584 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$4,474 \$89 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$4,563 \$776_ |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$5,339 \$667 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$6,006 \$180 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$6,186 \$619 |
| TOTAL BUILDING COST | | \$6,805 |

MEN'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|-----------------------------------|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 101.25 | \$101 |
| Specialties, remove for reinstall | | | | |
| Paper towel dispenser | 1 | EA | 25.00 | \$25 |
| Seat cover dispenser | 1 | EA | 25.00 | \$25 |
| Toilet partition, ADA | 1 | EA | 193.31 | \$193 |
| Specialties, remove and disposal | | | | |
| Toilet tissue dispenser | 1 | EA | 25.00 | \$25 |
| Grab bar set | 1 | EA | 71.50 | \$72 |
| Urinal screen | 1 | EA | 65.00 | \$65 |
| Haul and dispose, Allowance | 1 | LS | 100.00 | \$100 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$606 |
| 08 OPENINGS | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 897.72 | \$898 |
| Door closer | 1 | EA | 488.68 | \$489 |
| TOTAL - 08 OPENINGS | | | | \$1,387 |
| 10 SPECIALTIES | | | | |
| Toilet specialties, reinstall | | | | |
| Urinal screen | 1 | EA | 669.70 | \$670 |
| Toilet partition, ADA | 1 | EA | 579.93 | \$580 |
| Paper towel dispenser | 1 | EA | 89.50 | \$89 |
| Toilet seat cover dispenser | 1 | EA | 95.40 | \$95 |
| Toilet specialties, new | | | | |
| Grab bar set | 1 | EA | 300.67 | \$301 |
| Toilet tissue dispenser, double | 1 | EA | 130.23 | \$130 |
| Signage | | | | |
| Interior room tactile, relocate | 1 | EA | 32.25 | \$32 |
| TOTAL - 10 SPECIALTIES | | | | \$1,897 |

WOMEN'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

BUILDING SUMMARY

| ELEMENT | | TOTAL COST |
|--|--------|------------------------------------|
| 02 EXISTING CONDITIONS 08 OPENINGS 10 SPECIALTIES 22 PLUMBING | | \$798 \$1,387 \$661 \$813 |
| NET DIRECT BUILDING COST DESIGN CONTINGENCY | 15.00% | \$3,659 \$549 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$4,208 \$84 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$4,292 \$730_ |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$5,022 \$628 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$5,649 \$169 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$5,819 \$582 |
| TOTAL BUILDING COST | | \$6,401 |

WOMEN'S RESTROOM

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 101.25 | \$101 |
| Specialties, remove for reinstall | | | | |
| Grab bar set | 1 | EA | 71.50 | \$72 |
| Paper towel dispenser | 1 | EA | 25.00 | \$25 |
| Soap dispenser, liquid | 1 | EA | 25.00 | \$25 |
| Specialties, remove and disposal | | | | |
| Toilet tissue dispenser | 1 | EA | 25.00 | \$25 |
| Plumbing | | | | |
| Water closet, protect piping and rough-ins | 1 | EA | 400.00 | \$400 |
| Haul and dispose, Allowance | 1 | LS | 150.00 | \$150 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$798 |
| 08 OPENINGS | | | | |
| Door hardware | | | | |
| Interior single door | 1 | EA | 897.72 | \$898 |
| Door closer | 1 | EA | 488.68 | \$489 |
| TOTAL - 08 OPENINGS | | | | \$1,387 |
| 10 SPECIALTIES | | | | |
| Toilet specialties, reinstall | | | | |
| Lavatory guards | 1 | EA | 99.26 | \$99 |
| Grab bar set | 1 | EA | 178.76 | \$179 |
| Paper towel dispenser | 1 | EA | 89.50 | \$89 |
| Soap dispenser, liquid | 1 | EA | 71.60 | \$72 |
| Toilet tissue dispenser | 1 | EA | 59.60 | \$60 |
| Toilet specialties, new | | | | |
| Toilet tissue dispenser, double | 1 | EA | 130.23 | \$130 |
| Signage | | | | |
| Interior room tactile, relocate | 1 | EA | 32.25 | \$32 |
| TOTAL - 10 SPECIALTIES | | | | \$661 |
| 22 PLUMBING | | | | |
| Water closet, excluding rough-ins | 1 | EA | 812.50 | \$813 |
| Prepared by: OCMI | | | | Sheet 15 of 40 |

WOMEN'S RESTROOM

Spring Valley, CA

\$813

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|-------------|----------|------|-----------|----------------|
| | | | | |

TOTAL - 22 PLUMBING

PARKING LOT #1

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| SITE SUMMARY | | | |
|--|--------|----------------------|--|
| ELEMENT | | TOTAL COST | |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$14,256 \$17,853 | |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$32,109 \$4,816 | |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$36,925 \$739 | |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$37,664 \$6,403 | |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$44,067 \$5,508 | |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$49,575 \$1,487 | |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$51,062 \$5,106 | |
| TOTAL SITE COST | | \$56,169 | |

PARKING LOT #1

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|------------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Grind asphaltic concrete surface | 2,000 | SF | 6.25 | \$12,499 |
| Concrete pavement | 180 | SF | 4.75 | \$855 |
| Sawcut pavement, concrete | 30 | LF | 10.15 | \$305 |
| Haul and dispose | 3 | CY | 35.00 | \$97 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 500.00 | \$500 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$14,256 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Asphaltic concrete paving, 2" overlay | 2,000 | SF | 4.70 | \$9 <i>,</i> 396 |
| Asphaltic concrete paving, sealer | 2,000 | SF | 0.30 | \$607 |
| Concrete paving, over existing base | 180 | SF | 20.83 | \$3,750 |
| Paving specialties | | | | |
| Restripe | 2,000 | SF | 0.30 | \$600 |
| Patch and repair affected hardscape | 1 | LS | 2,000.00 | \$2,000 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 1,500.00 | \$1,500 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$17,853 |

PARKING LOT #2

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| SITE SUMMARY | | |
|--|--------|----------------------|
| ELEMENT | | TOTAL COST |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$14,015 \$33,380 |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$47,395 \$7,109 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$54,504 \$1,090 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$55,594 \$9,451 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$65,045 \$8,131 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$73,176 \$2,195 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$75,371 \$7,537 |
| TOTAL SITE COST | | \$82,908 |

PARKING LOT #2

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Grind asphaltic concrete surface | 1,000 | SF | 6.25 | \$6,249 |
| Concrete pavement | 1,080 | SF | 4.75 | \$5,128 |
| Sawcut pavement, concrete | 30 | LF | 10.15 | \$305 |
| Demo curb ramps | 5 | EA | 150.00 | \$750 |
| Haul and dispose | 17 | CY | 35.00 | \$583 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 1,000.00 | \$1,000 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$14,015 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Asphaltic concrete paving, 2" overlay | 1,000 | SF | 4.70 | \$4,698 |
| Asphaltic concrete paving, sealer | 1,000 | SF | 0.30 | \$304 |
| Concrete paving, over existing base | 1,230 | SF | 18.03 | \$22,174 |
| Ramp, premium | 150 | SF | 18.38 | \$2,757 |
| Paving specialties | | | | |
| Restripe | 1,000 | SF | 0.30 | \$300 |
| Truncated dome, plastic | 40 | SF | 41.18 | \$1,647 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 1,500.00 | \$1,500 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$33,380 |

RESTROOM SITE

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| SITE SUMMARY | | |
|--|--------|---------------------|
| ELEMENT | | TOTAL COST |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$2,026 \$11,906 |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$13,932 \$2,090 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$16,022 \$320 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$16,342 \$2,778 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$19,120 \$2,390 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$21,510 \$645 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$22,156 \$2,216 |
| TOTAL SITE COST | | \$24,371 |

RESTROOM SITE

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Concrete pavement | 240 | SF | 4.75 | \$1,140 |
| Sawcut pavement, concrete | 40 | LF | 10.15 | \$406 |
| Haul and dispose | 4 | CY | 35.00 | \$130 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 350.00 | \$350 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$2,026 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Concrete paving, over existing base | 240 | SF | 18.03 | \$4,327 |
| Chainlink gate | | | | |
| Latch | 2 | EA | 412.50 | \$825 |
| Panic hardware | 4 | EA | 1,096.71 | \$4,387 |
| Door closer | 4 | EA | 341.83 | \$1,367 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 1,000.00 | \$1,000 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$11,906 |

POT TO ROW

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| SITE SUMMARY |
|--------------|
|--------------|

| ELEMENT | TOTAL COST | \$/SF AREA |
|---------------------------------|-----------------------|-------------|
| 02 EXISTING CONDITIONS | \$5,745 | \$5,745.00 |
| 31 EARTHWORK | \$287 | \$287.00 |
| 32 EXTERIOR IMPROVEMENTS | \$35,836 | \$35,836.00 |
| NET DIRECT SITE COST | \$41,868 | \$41,868.00 |
| DESIGN CONTINGENCY | 15.00%\$6,280 | \$6,280.20 |
| SUBTOTAL | \$48,148 | \$48,148.20 |
| ESCALATION TO MIDPOINT 04/2022 | 2.00% \$963_ | \$962.96 |
| SUBTOTAL | \$49,111 | \$49,111.16 |
| GENERAL CONDITIONS/REQUIREMENTS | 17.00% <u>\$8,349</u> | \$8,348.90 |
| SUBTOTAL | \$57,460 | \$57,460.06 |
| CONTRACTOR OVERHEAD AND PROFIT | 12.50%\$7,183_ | \$7,182.51 |
| SUBTOTAL | \$64,643 | \$64,642.57 |
| INSURANCE AND BONDS | 3.00%\$1,939 | \$1,939.28 |
| SUBTOTAL | \$66,582 | \$66,581.85 |
| RESTRICTIVE MARKET AND BIDDING | 10.00%\$6,658_ | \$6,658.18 |
| TOTAL SITE COST | \$73,240 | \$73,240.03 |

POT TO ROW

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 2 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Concrete pavement | 800 | SF | 4.75 | \$3,79 |
| Sawcut pavement, concrete | 100 | LF | 10.15 | \$1,01 |
| Haul and dispose | 12 | CY | 35.00 | \$43 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 500.00 | \$50 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$5,74 |
| 31 EARTHWORK | | | | |
| Rough grade | 100 | SF | 1.02 | \$10 |
| Fine grade | 100 | SF | 1.85 | \$18 |
| | | | | |
| TOTAL - 31 EARTHWORK | | | | \$287 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Concrete paving, over existing base | 600 | SF | 18.03 | \$10,81 |
| Concrete paving, 6", at new ramp | 100 | SF | 18.03 | \$1,80 |
| Aggregate base | 100 | SF | 1.80 | \$18 |
| Ramp, premium | 100 | SF | 18.38 | \$1,83 |
| Paving specialties | | | | |
| Truncated dome, plastic | 16 | SF | 41.18 | \$65 |
| Restripe cross walk | 30 | LF | 18.00 | \$54 |
| Switch back ramp | 1 | EA | 18,000.00 | \$18,00 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 2,000.00 | \$2,00 |
| OTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$35,836 |

DROP-OFF

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| SITE SUMMARY | | |
|--|--------|---------------------|
| ELEMENT | | TOTAL COST |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$6,282 \$22,950 |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$29,232 \$4,385 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$33,617 \$672 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$34,289 \$5,829 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$40,118 \$5,015 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$45,133 \$1,354 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$46,487 \$4,649 |
| TOTAL SITE COST | | \$51,136 |

DROP-OFF

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Concrete pavement | 900 | SF | 4.75 | \$4,273 |
| Sawcut pavement, concrete | 40 | LF | 10.15 | \$406 |
| Curb ramp | 100 | SF | 6.17 | \$617 |
| Haul and dispose | 14 | CY | 35.00 | \$486 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 500.00 | \$500 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$6,282 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Concrete paving, over existing base | 900 | SF | 18.03 | \$16,225 |
| Concrete paving, 6" | 100 | SF | 18.03 | \$1,803 |
| Ramp, premium | 100 | SF | 18.38 | \$1,838 |
| Paving specialties | | | | |
| Truncated dome, plastic | 16 | SF | 41.18 | \$659 |
| Restripe ADA drop-off | 1 | LS | 125.00 | \$125 |
| Paint curb | 100 | LF | 3.00 | \$300 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 2,000.00 | \$2,000 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$22,950 |

POT TO BUILDING K

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

OCMI JOB #: 211329.000 | 23 December 2021

| SITE SUMMARY | | |
|--|--------|---------------------|
| ELEMENT | | TOTAL COST |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$8,188 \$23,219 |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$31,407 \$4,711 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$36,118 \$722 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$36,840 \$6,263 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$43,103 \$5,388 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$48,491 \$1,455 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$49,946 \$4,995 |
| TOTAL SITE COST | | \$54,941 |

POT TO BUILDING K

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Concrete pavement | 1,080 | SF | 4.75 | \$5,128 |
| Sawcut pavement, concrete | 180 | LF | 10.15 | \$1,827 |
| Haul and dispose | 17 | CY | 35.00 | \$583 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 650.00 | \$650 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$8,188 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Concrete paving, over existing base | 1,080 | SF | 18.03 | \$19,469 |
| Railing | | | | |
| Extend handrail | 10 | EA | 175.00 | \$1,750 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 2,000.00 | \$2,000 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$23,219 |

POT BETWEEN PARKING LOT #2 AND LOT#1

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| | SITE SUMMARY | |
|--|--------------|----------------------|
| ELEMENT | | TOTAL COST |
| 02 EXISTING CONDITIONS 32 EXTERIOR IMPROVEMENTS | | \$10,551 \$27,959 |
| NET DIRECT SITE COST DESIGN CONTINGENCY | 15.00% | \$38,510 \$5,777 |
| SUBTOTAL ESCALATION TO MIDPOINT 04/2022 | 2.00% | \$44,287 \$886 |
| SUBTOTAL GENERAL CONDITIONS/REQUIREMENTS | 17.00% | \$45,172 \$7,679 |
| SUBTOTAL CONTRACTOR OVERHEAD AND PROFIT | 12.50% | \$52,852 \$6,606 |
| SUBTOTAL INSURANCE AND BONDS | 3.00% | \$59,458 \$1,784 |
| SUBTOTAL RESTRICTIVE MARKET AND BIDDING | 10.00% | \$61,242 \$6,124 |
| TOTAL SITE COST | | \$67,366 |

POT BETWEEN PARKING LOT #2 AND LOT#1

Spring Valley, CA

ROUGH ORDER OF MAGNITUDE COST ESTIMATE

| DESCRIPTION | QUANTITY | UNIT | UNIT RATE | ESTIMATED COST |
|--|----------|------|-----------|----------------|
| 02 EXISTING CONDITIONS | | | | |
| Demolition | | | | |
| Concrete pavement | 1,440 | SF | 4.75 | \$6,837 |
| Sawcut pavement, concrete | 240 | LF | 10.15 | \$2,436 |
| Haul and dispose | 22 | CY | 35.00 | \$778 |
| Miscellaneous incidental demolition, Allowance | 1 | LS | 500.00 | \$500 |
| TOTAL - 02 EXISTING CONDITIONS | | | | \$10,551 |
| 32 EXTERIOR IMPROVEMENTS | | | | |
| Hardscape | | | | |
| Concrete paving, over existing base | 1,440 | SF | 18.03 | \$25,959 |
| Patch and repair affected hardscape, Allowance | 1 | LS | 2,000.00 | \$2,000 |
| TOTAL - 32 EXTERIOR IMPROVEMENTS | | | | \$27,959 |







KEYNOTES:

| NOTE: NOT ALL KEYNOTES ARE USED ON EACH PR | OJECT OR EACH SHEET. |
|--|----------------------|

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

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

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

WARNING SAFETY STRIPE REFER DETAIL 4/A-501

---- |+--- 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)

CAUTION SAFETY STRIPE PER SPECIFICATIONS

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

NOTE:

COORDINATE WARNING LINE PLACEMENT WITH NEW WALK PADS PRIOR TO INSTALLATION

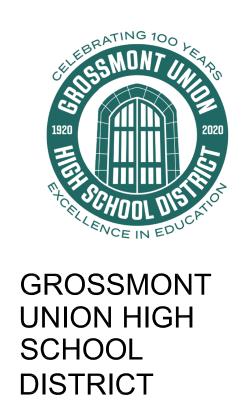
UNREASONABLE HARDSHIP KEY NOTES:

| •••• | |
|------------|---|
| NOTE: | NOT ALL KEYNOTES ARE USED ON EACH PROJECT OR EACH SHEET. |
| A | RAMP RUNNING SLOPE STEEPER THAN 1:12. DOES NOT COMPLY WITH 11B-405.2. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| B | WALKWAY CROSS SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-403.3. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| C | WALKWAY RUNNING SLOPE STEEPER THAN 1:20. DOES NOT COMPLY WITH 11B-403.3. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| D | HANDRAIL EXTENSIONS DO NOT COMPLY WITH 11B-505.10.1. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| E | STUDENT DROP OFF/PICK UP DOES NOT COMPLY WITH 11B-209.2.1. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| F | SIDEWALK WIDTH DOES NOT COMPLY WITH 11B-406.5.3. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| G | WALKWAY WIDTH DOES NOT COMPLY WITH 11B-404.2.4. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| H | SIDEWALK SLOPE AT CURB RAMP LANDING DOES NOT COMPLY WITH 11B-406.5.3 WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| | WALKWAY SURFACE UNEVEN. DOES NOT COMPLY WITH 11B-302.1 & 303.2. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| J | RAMP LANDING SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-405.7.1. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| K | NO ACCESSIBLE ROUTE SIGN COMPLYING WITH 11B-216.6. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| | RAMP CROSS SLOPE STEEPER THAN 1:48. DOES NOT COMPLY WITH 11B-4053. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| M | GATE OR DOOR HARDWARE DOES NOT COMPLY WITH 11B-404.2.7. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| | SIGNAGE DOES NOT COMPLY WITH 11B-703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| \bigcirc | PARKING SPACE AND ACCESS AISLE DO NOT COMPLY WITH 11B-502.4. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| P | SIDEWALK CURB RAMP SLOPE IS TOO STEEP. DOES NOT COMPLY WITH 11B-406.2. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| Q | DRINKING FOUNTAIN DOES NOT COMPLY WITH 11B-602. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| R | NO TOW AWAY SIGN COMPLYING WITH 11B-502.8. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| S | RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 404.2.7, 603.2.1, 603.5, 604.2, 604.7, 604.8.1, 604.8.2, 605.3, 606.2, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| T | RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 603.5, 604.3, 604.7, 604.8.1, 604.8.2, 605.3, 606.2, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| U | RESTROOMS DO NOT COMPLY WITH 11B-307.2, 404.2.7, 603.5, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| \lor | RESTROOMS DO NOT COMPLY WITH 11B-307.2, 404.2.4, 603.5, 604.7, 605.2, & 606.5. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| (vv) | RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 404.2.10, 603.2.1, 603.5, 604.3, 604.7, 604.8.1, 605.2, 606.3, 606.5, 609, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| \times | RESTROOMS DO NOT COMPLY WITH 11B-404.2.4, 603.2.1, 603.4, 603.5, 604.4, 604.7, 604.8.2 & 606.5 WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |
| \bigcirc | RESTROOM DOES NOT COMPLY WITH 11B-404.2.7, 603.5, 604.3, 604.7, 606.5, & 703. WILL NOT BE CONSTRUCTED TO COMPLY. 11B-202.4 EXCEPTION 8. |

UNREASONABLE HARDSHIP P.O.T. LEGEND:

COMPLIANT PATH OF TRAVEL ____

NON-COMPLIANT PATH OF TRAVEL





8585 Blossom Lane, Spring Valley, CA 91977

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



