

PROJECT SITES

CITY OF MANHATTAN BEACH (PUBLIC WORKS DEPARTMENT).....STEPHANIE KATSOULEAS.....	(310) 802-5303
CITY OF MANHATTAN BEACH (POLICE DEPARTMENT).....DERRICK ABELL.....	(310) 802-5103
CITY OF MANHATTAN BEACH (FIRE DEPARTMENT).....	(310) 802-5203
COUNTY SANITATION DISTRICT (COMPTON).....ENGINEERING COUNTER.....	(562) 908-4288 (Ext. 1204 or 1205)
AT&T DISTRIBUTION...SUBSTRUCTURE RECORDS REQUEST CONSTRUCTION & ENGINEERING.....	(510) 645-2929
CALIFORNIA WATER SERVICE...FRANK SCOTTY.....	(310) 257-1400
LA COUNTY PUBLIC WORKS - FLOOD MAINTENANCE...EDUARDO IVASAN or AHMET TATILIOLOV.....	(562) 861-0316
NEXTGLAVEN NETWORK...BRYANT LOWE.....	(724) 416-2193
SHELL OIL...CLARINDA MALDONADO.....	(310) 816-2063
SOUTHERN CALIFORNIA GAS COMPANY...GUILLERMO TEJEDA.....	(310) 687-2014
SOUTHERN CALIFORNIA EDISON...KRIS WALSH.....	(949) 533-6137
SPECTRUM (TIME WARNER CABLE)...ANTHONY XANPHIS.....	(310) 750-9185
T-MOBILE...SHAWN HENDERSON.....	(805) 279-3513
FRONTIER COMMUNICATION (PREVIOUSLY VERIZON)...DAN HAYES.....	(310) 793-4159
XO COMMUNICATIONS.....	(949) 417-7841


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TOTAL SHEETS = 15	



LOCATION MAP
NOT TO SCALE

THOMAS GUIDE:
PAGE 732, GRID 6F

WORK SITE LOCATIONS



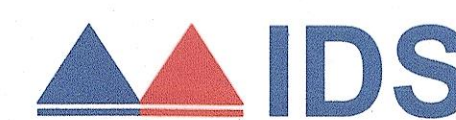
Know what's below.
Call before you dig.

NO WORK SHALL BE DONE ON THIS SITE
UNTIL USA AGENCY IS NOTIFIED
OF INTENTION TO GRADE OR EXCAVATE,
TWO WORKING DAYS BEFORE YOU DIG.

SUPPLEMENTAL NOTES:

1. THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
2. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING.
3. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS.

ENGINEER/ARCHITECT
OF RECORD STAMP

DESIGN FIRM NAME,
ADDRESS, PHONE NUMBER

IDS GROUP
1 PETERS CANYON ROAD,
SUITE 130 IRVINE, CA. 92606
949-387-8500. FAX: 949-387-0800

[illegible]

CITY OF MANHATTAN BEACH

PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION

REFERENCES


REFERENCES			
NO.		BY	DATE

REVISIONS

REVISIONS	

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK


RECOMMENDED BY



CITY ENGINEER
PREM KUMAR

REVIEWED BY
Name: A. S. G. Jr.
PROJECT MANAGER

APPROVED BY



DIRECTOR OF PUBLIC WORKS
STEPHANIE KATSOULEAS

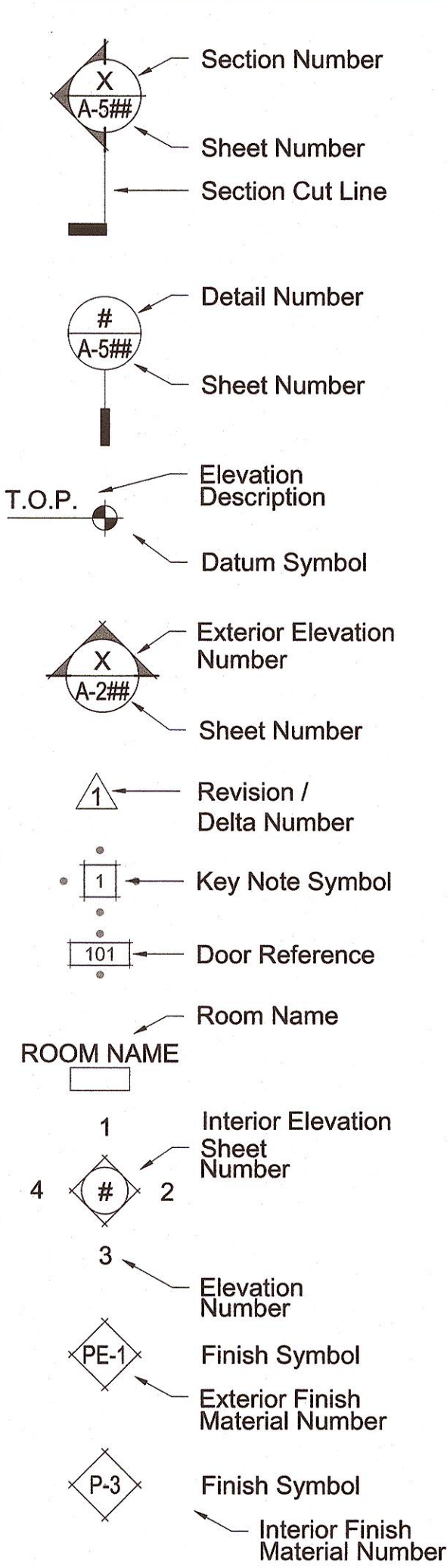
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N/A	11/27/2019

DRAWING NO.
CS
7-934

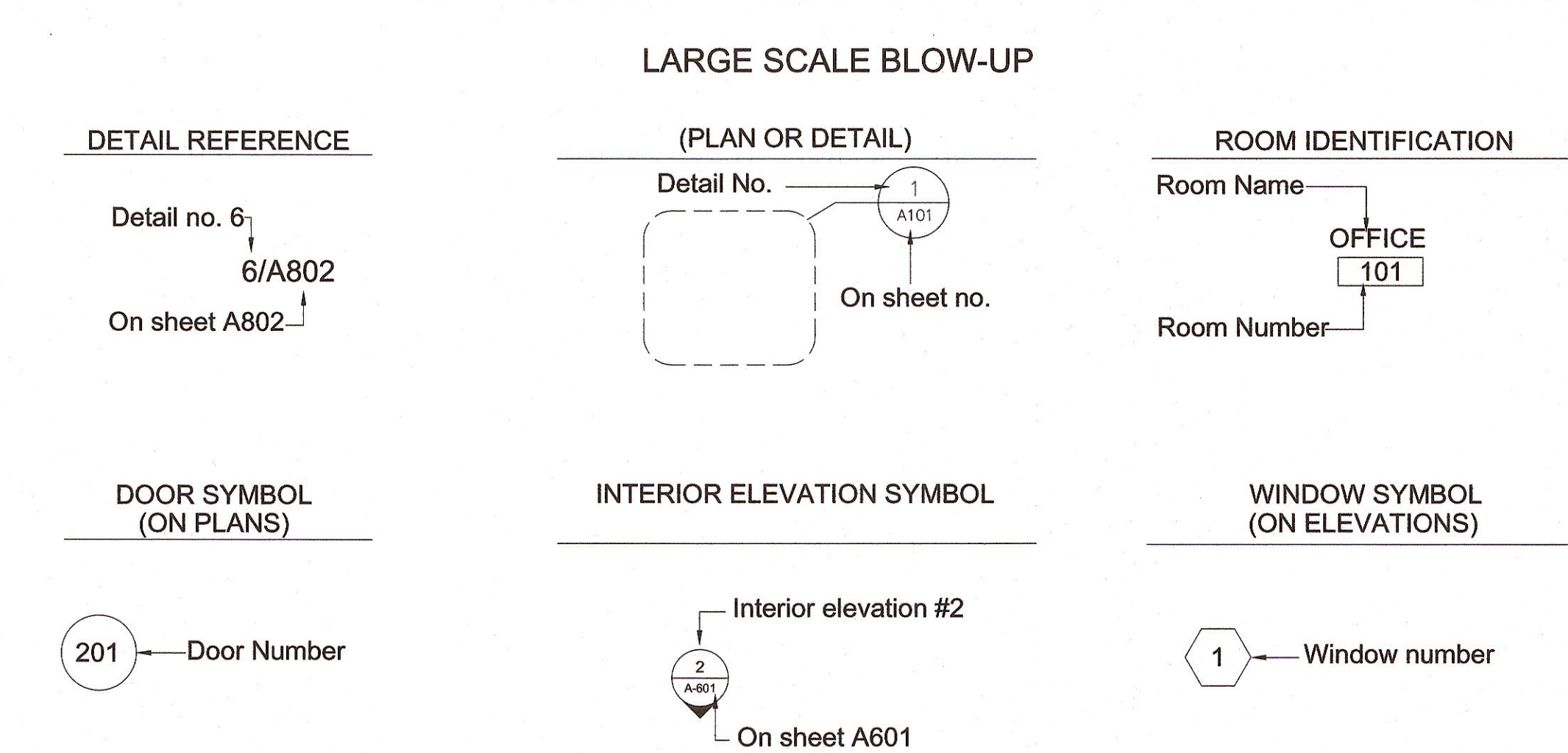
ABBREVIATIONS

&	And	FIN.	Finish (Ed)	P.L.	Property Line
l	Angle	FIXT.	Fixture	PL.	Plate
@	At	FL.	Flow Line	P.LAM.	Plastic Laminate
d	Penny			PLAS.	Plaster
• •	Round	FL. / FLR.	Floor	PLUMB.	Plumbing
w/	With	FLEX.	Flexible	PLYWD.	Plywood
A.	Area	FLSHG.	Flashing	P.N.	Plywood Nails
A.B.	Anchor Bolt	FLUOR.	Fluorescent	PNL.	Panel
ABV.	Above	F.O.C.	Face Of Concrete	PR.	Pair
A.C.	Asphaltic Conc.	F.O.F.	Face Of Finish	PRCST.	Precast
A / C	Air Condition /			PREFAB.	Prefabricate (D)
	Conditioning	F.O.M.	Face Of Masonry		
ACC.	Access			PRESS.	Pressure
ACOUST.	Acoustic (Al)			PRF.	Preformed
A.D.	Area Drain	F.O.S.	Face Of Stud	P.S.F.	Lbs. / Sq. Foot
ADD.	Addendum	F.O.W.	Face Of Wall	P.S.I.	Lbs. / Sq. Inch
ADDL.	Additional	F.P.	Fireproof (Ed)	P.T.	Pressure Treated
ADJ.	Adjust	FR	Frame (D)	PT.	Point (Ed)
ADJT.	Adjustable	FRMG.	Framing	PTD.	Painted
A.F.F.	Abv. Fin. Fir.	F.S.	Finished Surface	P.T.D.	Paper Towel
AGG.	Aggregate	FT.	Foot, Feet		Dispenser
ALT.	Alternate	FTG.	Footing	PVMT.	Pavement
ALUM.	Aluminum	FURR.	Furred, Furring		
ANOD.	Anodized	FUT.	Future	Q.T.	Quarry Tile
A.P.	Access Panel				
APPR.	Approved	GA.	Gauge	R.	Riser
APPROX.	Approximate	GALV.	Galvanized	R.A.	Return Air
ARCH.	Architect (Ural)	G.B.	Grab Bar	RAD.	Radius
ASPH.	Asphalt	G.C.	General Contractor	R.D.	Roof Drain
AUTO.	Automatic	GEN.	General	REF.	Reference
AVG.	Average	G.I.	Galvanized Iron	REFER.	Refrigerator
		GL.	Glazing, Glass	REG.	Register
B.D.	Building Dept.	GLB.	Glue - Laminated	REINF.	Reinforced (Ing)
BD.	Board			REM.	Remove
BEL.	Below	GND.	Ground	REQ.	Required
BIT.	Bituminous	GR.	Grade, Grading	RESIL.	Resilient
BLDG.	Building	GRT.	GROUT	RET.	Return
BLK.	Block	GYP.	Gypsum	REV.	Revised (ed)
BL'KG.	Blocking	GYP. BD.	Gypsum Board		Revision
BLT-UP	Built-up	H	High	RFG.	Roofing
B.M.	Bench Mark	H.B.	Hose Bibb	RFTR.	Rafter
BM.	Beam	H.C.	Hollow Core	R.H.	Redhead Bolt
B.N.	Boundary Nailing	H.D.	Heavy Duty	R.H.B.	Recessed
BOT.	Bottom	HD.	Head		Hose Bibb
B.P.	Bearing Plate	HDCCP.	Handicap	R.I.	Rough - In
BRCCG.	Bracing	HDR.	Header	RM.	Room
BRG.	Bearing	HDWD.	Hardwood	RO.	Rough
BTWN.	Between	HDWE.	Hardware	R.O.	Rough Opening
B.U.R.	Built-up Roofing	HGR.	Hanger	R.O.W.	Right Of Way
BVL.	Bevel (Ed)	H.M.	Hollow Metal	R.S.	Resawn
		HORIZ.	Horizontal	RWD.	Redwood
C	Camber	H.P.	High Point	S.	South
CAB.	Cabinet	HR.	Hour	S.A.	Supply Air
C.B.	Catch Basin	HT.	Height	S.C.	Solid Core
C.C.	Center To Center	HTG.	Heating	SCHED.	Schedule
CEM.	Cement	HTR.	Heater	SCR.	Screw
CER.	Ceramic	HVAC	Heating, Ventilation,	S.D.	Storm Drain
C.F.	Cubic Feet		Air Conditioning	SDG.	Siding
C.F.M.	Cubic Feet / Min.	H.W.	Hot Water	SEAL.	Sealant
C.H.B.	Concealed H.b.	I.D.	Inside Diameter /	SECT.	Section
CHAM.	Chamber		Dimension	SEIS.	Seismic
C.I.	Cast Iron	IN.	INCH (ES)	SEL.	Select
C.I.P.	Cast - In - Place	INCL.	Included / Including	S.F.	Sq. Foot / Feet
CIR.	Circle	INFO.	Information	SHT.	Sheet
C.J.	Control Joint	INSUL.	Insulation	SHTG.	Sheathing
C.L.	Center Line	INT.	Interior	SIM.	Similar
CLG.	Ceiling	INV.	Invert	SL.	Sleeve
CL'KG.	Caulking	JAN.	Janitor	SM.	Smooth
CLR.	Clear	JST.	Joist	SPCG.	Spacing
CLS.	Closure	JT.	Joint	SPECS	Specifications
C.M.U.	Concrete			SPL.	Splash
	Masonry Unit			SQ.	Square
C / O	Clean Out	K.B.	Hilti Kwik - Bolt	S.S.	Select Str.
C.O.	Clear Opening	KIT.	Kitchen	S / S	Service Sink
COL.	Column	K.P.L.	Kick Plate	S.ST.	Stainless Steel
COMB.	Combination			STAG.	Stagger (ed)
COMP.	Compact(ed)	LAG.	Lag Bolt	STD.	Standard
COMPO.	Composition	LAM.	Laminated	STG.	Seating
CONC.	Concrete	LAT.	Lateral	STIFF.	Stiffener
CONN.	Connection	LAV.	Lavatory	STL.	Steel
CONST.	Construction	LDGR.	Ledger	STOR.	Storage
CONT.	Continuous	LG.	Long	STR.	Structural
CONTR.	Contractor	LGTH.	Length	SUB.	Sub - Contractor
CORR.	Corrugated	L.H.E.	Low Hydrogen	SUSD.	Suspended
CPT.	Carpet	LLH.	Long Leg Horizontal	SW.BD.	Switch Board
CSK.	Countersunk	LLV.	Long Leg Vertical	SYM.	Symbol
CTR.	Center	L.P.	Low Point	SYS.	System
C.T.	Ceramic Tile	LT.	Light		
CU.	Cubic	LTWT.	Lightweight	TR.	Tread
C. YD.	Cubic Yard			T&B	Top & Bottom
D	Drain			T&G	Tongue & Groove
DBL.	Double	MACH.	Machine	TEL.	Telephone
DCK'G.	Decking	MAS.	Masonry	TEMP.	Temper (Ed)
DEMO.	Demolition /	MAT'L.	Material	THK	Thick (Ness)
	Demolish	MAX.	Maximum	THRESH.	Threshold
DEPR.	Depress (ion)	M.B.	Machine Bolt	THRU	Through
DET.	Detail	MECH.	Mechanical	T.	Top
D.F.	Douglas Fir	MED.	Medium	T.O.B.	Top Of Beam
D.H.	Double Hung	MEM.	Member	T.O.C.	Top Of Curb
DIA.	Diameter	MEMB.	Membrane	T.O.F.	Top Of Framing
DIAG.	Diagonal	M.	Men	T.O.L.	Top Of Ledger
DIM.	Dimension	MET.	Metal	T.O.P.	Top Of Parapet
DISC.	Discontinuous	MFR.	Manufacture (R)	T.O.PVG.	Top Of Paving
D.L.	Dead Load	M.H.	Manhole	T.O.S.	Top Of Sheathing
DISP.	Dispenser	M.I.	Malleable Iron	T.O.S.B.	Top Of Sub
DN.	Down	MIN.	Minimum	T.O.STL.	Top Of Steel
DIV.	Division	MIR.	Mirror	T.O.W.	Top Of Wall
DR.	Door	MISC.	Miscellaneous	T.S.G.	Tapered Steel
D.P.	Dampproofing	MLDG.	Moulding		Girder
D.S.	Down Spout	M.O.	Masonry Opening	TYP.	Typical
DWG.	Drawing	MT.	Mount	U.B.C.	Uniform
DWR.	Drawer	MTD.	Mounted		Building Code
E	East	MULTI.	Multiple	UNF.	Unfinished
EA.	Each			U.N.O.	Unless Noted
E.B.	Expansion Bolt	N.	North		Otherwise
E.F.	Each Face	NAT.	Natural	UNREINF.	Unreinforced
E.J.	Expansion Joint	N.G.	Natural Grade	URL.	Urinal
EL.	Elevation	N.I.C.	Not In Contract	UTIL.	Utility
ELECT.	Electric (Al)	NO.	Number		
ELEV.	Elevator	NOM.	Nominal	VAR.	Varies
E.N.	Edge Nailing	N.S.	Near Side	V.B.	Vapor Barrier
ENCL.	Enclosure	N.T.S.	Not To Scale	V.C.P.	Vitreous Clay Pipe
ENG.	Engineer			VERT.	Vertical
EQ.	Equal			V.G.	Vertical Grain
EQUIP.	Equipment	O /	Over	VNR.	Veneer
E.S.	Each Side	O.A.	Overall	VOL.	Volume
EST.	Estimate	OBS.	Obscure	V.T.	Vinyl Tile
E.W.	Each Way	O.C.	On Center	V.T.R.	Vent Thru Roof
EXH.	Exhaust	O.D.	Outside Dia. / Dim.	W	West
EXIST.	Existing	OPD.	Overflow Drain	W /	With
EXP.	Expand	OPF.	Overflow Scupper	W / C	Water Closet
EXPO.	Expose(d)	O.H.	Overhead	WD.	Wood
EXT.	Exterior	O.H.D.	Overhead Door	WOW.	Window
		OPG.	Opening	W.H.	Water Heater
FAB.	Fabricate	OPP.	Opposite	WH.	Wall Hung
FAST.	Fasten (Er)			W.I.	Wrought Iron
F.D.	Floor Drain	PAR.	Parallel	W / O	Without
FDN.	Foundation	PART.	Partition	W.	Women
F.E.	Fire Extinguisher	P.C.	Pipe Column	WP.	Waterproof (ed)
F.E.C.	Fire Extinguisher	P.C.F.	Pounds Per		Waterproofing
	Cabinet		Cubic Feet	W.R.	Water Resistant
F.F.	Finished Floor	PEN.	Penetration	WSCOT.	Weight
F.G.	Finished Grade	PERF.	Perforate (D)	WT.	Width
F.H.	Fire Hydrant	PERI.	Perimeter	WTH.	Width
FILL.	Fill	PG.	Page	YD.	Yard

SYMBOLS



REFERENCE SYSTEM



DEMOLITION NOTES

- PRIOR TO ANY REMOVAL OF EXISTING FACILITIES, VISUALLY INSPECT THE WORK AREA IN THE FIELD TO VERIFY ALL EXISTING CONDITIONS AND IDENTIFY THE EXACT SCOPE OF WORK. CONTACT ARCHITECT AND CLIENT IF THERE ARE ANY DISCREPANCIES.
- THE GENERAL CONTRACTOR SHALL COORDINATE ANY DEMOLITION OF PLUMBING AND ELECTRICAL SCOPE OF WORK WITH ENGINEERS DRAWINGS.
 - THE GENERAL CONTRACTOR MUST ALLOW FOR ADDITIONAL DEMOLITION THAT MAY NOT BE SHOWN, BUT MAY BE REQUIRED TO ACHIEVE THE FINISHED RESULT, AS SHOWN ON THE DRAWINGS.
 - PRIOR TO START OF DEMOLITION WORK, GENERAL CONTRACTOR SHALL PROVIDE A PROTECTIVE BARRIER PER CLIENT, AND LOCAL JURISDICTION REQUIREMENTS.
 - ALL EXISTING WORK TO REMAIN, UNLESS OTHERWISE NOTED.
 - PROTECT IN PLACE ALL EXISTING FLOOR STRUCTURAL SYSTEMS, INCLUDING ANY FIRE-PROOFING. DO NOT DISTURB OR DAMAGE ANY EXISTING STRUCTURAL ELEMENTS.
 - ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE, 2016 EDITION, CHAPTER 33.
 - THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION ANY EXISTING WORK DAMAGED DURING DEMOLITION BUT INDICATED TO REMAIN.
 - REMOVE EXISTING PARTITIONS / PORTIONS OF PARTITIONS THROUGHOUT DESIGNATED SCOPE OF WORK AS NOTED. PROTECT ADJACENT CONSTRUCTION.
 - EXISTING EXTERIOR SHELL, WALLS, AND COLUMNS TO REMAIN AS SHOWN; PROTECT IN PLACE DURING DEMOLITION.
 - REMOVE ALL DEBRIS. NO DEBRIS SHALL BE LEFT OR REMAIN IN THE PASSAGEWAY DURING CONSTRUCTION. TRASH REMOVAL IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

RCP. PLAN SYMBOLS

SYMBOL	CEILING TYPE	SYMBOL	CEILING TYPE
A101	ROOM NUMBER		LINEAR DIFFUSER OR GRILL
8'-0"	CEILING HEIGHT		
	MECHANICAL EXHAUST FAN		CEILING TYPE A: 2' x 4' LAY-IN SUSPENDED GRID
	MECHANICAL SUPPLY AIR DEVICE		CEILING TYPE GB: GYPSUM BOARD, PAINT
	RETURN AIR GRILLE		CEILING TYPE EC: EXPOSED OR EXISTING FINISH AS SCHEDULED
			CEILING TYPE MD: EXPOSED METAL DECK FINISH AS SCHEDULED

PROJECT DATA

PROJECTS ADDRESS:	RECREATION HALL AT LIVE OAK PARK 1901 VALLEY DRIVE , MANHATTAN BEACH, CA 90266
	RECREATION CENTER AT LIVE OAK PARK 1901 VALLEY DRIVE , MANHATTAN BEACH, CA 90266
	COMMUNITY BUILDING AT MARINE AVENUE PARK 1625 MARINE AVE, MANHATTAN BEACH, CA 90266
OWNER:	CITY OF MANHATTAN BEACH
ARCHITECT/ELECTRICAL ENGINEER:	IDS GROUP, INC. 1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA 92606 TEL.: (949) 387-8500 MARSHALL SMITH, PROJECT MANAGER

APPLICABLE CODES

- 2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 1, TITLE 24 C.C.R.
- 2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.
- 2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NEC)
- 2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.
- 2016 CALIFORNIA EXISTING BUILDING CODE, PART 10, TITLE 24 C.C.R.
- 2016 TITLE 19 C.C.R. PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- AMERICANS WITH DISABILITIES ACT.
- 2016 CALIFORNIA GREEN STANDARD CODE.

SCOPE OF WORK

- ROOFING REPLACEMENT AT RECREATION HALL AT LIVE OAK PARK
 - REMOVE EXISTING ROOFING AND ROOF PAPER TO EXPOSE ROOF PLYWOOD SHEATHING, EVALUATE PLYWOOD AND ROOF RAFTERS VIA VISUAL
 - INSPECTION IN ATTIC AND REPLACE IF REQUIRED BY ARCHITECT. INSTALL NEW ROOFING SYSTEM AND FASCIA AND PROTECT AND RESEAL ALL ROOF PENETRATIONS.AREA OF WORK = 3514 SF.
- ROOFING REPLACEMENT FOR COMMUNITY BUILDING AT MARINE AVENUE PARK
 - REMOVE AND REPLACE EXISTING FINISH. (2640 SF.)
 - EVALUATE PLYWOOD AND FASCIA AND ROOF RAFTERS VIA VISUAL INSPECTION IN ATTIC AND REPLACE IF REQUIRED BY ARCHITECT. INSTALL NEW ROOFING SYSTEM AND PROTECT AND RESEAL ALL ROOF PENETRATIONS.
 - EXISTING ROOF TILE (SPANISH TILE) TO BE CLEANED (426 SF.)AREA OF WORK = 3066 SF.
- ROOFING REPLACEMENT FOR COMMUNITY BUILDING AT MARINE AVENUE PARK
 - REMOVE EXISTING ROOF TILES, ROOF PAPER AND FASCIA TO EXPOSE ROOF PLYWOOD SHEATHING, EVALUATE PLYWOOD AND ROOF RAFTERS VIA VISUAL INSPECTION IN ATTIC AND REPLACE IF REQUIRED BY ARCHITECT. INSTALL NEW ROOFING SYSTEM AND FASCIA, PROTECT AND RESEAL ALL ROOF PENETRATIONS.AREA OF WORK = 3292 SF.

811 Know what's below. Call before you dig.		SUPPLEMENTAL NOTES: 1. THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE. 2. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING. 3. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SGE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS.		ENGINEER/ARCHITECT OF RECORD STAMP 		DESIGN FIRM NAME, ADDRESS, PHONE NUMBER IDS IDS GROUP 1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA. 92606 TEL: 949-387-8500, FAX: 949-387-0800		REVIEWED BY BY DATE 		REFERENCES <table><tr><th>NO.</th><th>BY</th><th>DATE</th></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>		NO.	BY	DATE													REVISIONS <table><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>		NO.	DATE	DESCRIPTION													CITY OF MANHATTAN BEACH PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION ROOFING REPLACEMENT RECREATION HALL LIVE OAK PARK TITLE SHEET <table><tr><td>RECOMMENDED BY CITY ENGINEER PREM KUMAR DESIGNED BY MS DATE 11/21/2018</td><td>APPROVED BY DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS DATE 12/9/12</td><td>SCALE N/A DATE 11/22/2019</td><td>DRAWING NO. G001 D-934</td></tr></table>		RECOMMENDED BY CITY ENGINEER PREM KUMAR DESIGNED BY MS DATE 11/21/2018	APPROVED BY DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS DATE 12/9/12	SCALE N/A DATE 11/22/2019	DRAWING NO. G001 D-934
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- A. All work shall conform to contract documents. No changes therefrom shall be made without written approval of the city. Where more information or when an interpretation of the contract documents is needed, the contractor before proceeding with work, shall refer the matter to the city who will furnish information or interpretation in the form of supplemental information or other written form or drawing.
- B. Where only part of the work is indicated, similar parts shall be considered repetitions. Where any detail is shown and the components are described elsewhere, similar details shall be constructed as described in the original details.
- C. Drawings are general in nature. Contractor shall fully coordinate all aspects of the work to be performed. Details are not intended to show method and manner of accomplishing the work.
- D. All dimensions originating at, connected to, or continuing through existing conditions, including previous phases, must be coordinated and field verified by the contractor prior to fabrication installation, and construction of building elements or systems.
- E. Verify all dimensions, elevations, and all existing conditions at the site before commencing work and report any discrepancies to the architect and owner.
- F. Should a conflict be discovered within the contract documents, the contractor shall be deemed to have included in his work the highest quality way of doing the work unless he shall have asked for and obtained a decision in writing from the architect and owner.

A. All construction is to comply with the applicable codes as adapted by the regional, state, and national authorities having jurisdiction.

B. For list of codes applicable to this project, see 'applicable codes' on cover sheet.

A. The contractor shall procure all permits, and licenses required for the completion of the work. The cost of these notices, permits, and licenses is incidental to other items of work and no additional payment will be made for costs incurred in obtaining notices, permits, and licenses or in conforming to the requirements thereof.

- A. The drawings are divided into separate sheets and the project manual into separate sections for general convenience only. Sheet designation or numbers shall not be considered to limit areas of the work or responsibility of trades. Coordinate the work shown on the drawings and in the project manual in order to complete the project as designed.
- B. Verify all sizes of and prepare work for equipment of others and coordinate work on this contract with items of work not in contract (N.I.C.) or work furnished by others.
- C. Locations and sizes of equipment are based on available information. Provide and coordinate the exact dimensions, sizes, and positions.
- D. Provide and coordinate the exact dimensions necessary for the installation of the work.
- E. Quantities indicated on the drawings are approximate. Contractor shall verify quantities and include accurate quantities as part of the work.
- F. Notes and details: specific notes or keynotes on details apply to similar conditions on other details on all drawings unless specifically noted otherwise.

- A. The drawings show diagrammatically the approximate location of underground utilities where information is available, but the drawings are not exact as to the quantity, extent or location.
- B. Prepare surfaces of floor areas which have finishes demolished to receive new finish material as specified.
- C. For additional demolition requirements, see specifications.

- A. Overall dimensions are to face of finish, and/or nominal face of masonry or stud unless noted otherwise.
- B. Elevations and vertical dimensions are to top of finish floor material. Thickness of all floor finish material must be fully coordinated.
- C. Grid line to center of column.
- D. Dimension to center of column & grid line.
- E. Exterior dimensions are from face to face of concrete stem walls.
- F. Interior dimensions are from finish to finish.
- G. Do not scale drawings.

- A. Fire protection of structural members shall be in compliance with state regulations.
- B. Steel fireproofing thickness shall be in compliance with the current edition of the CBC .
- C. Periodic inspections shall be provided for all required sprayed-on fireproofing to the requirements of CBC Chapter 17a Special Inspections and Tests. The inspector shall submit a signed affidavit that all sprayed-on fireproofing, where required, is applied according to code and manufacturer's specifications.

- A. Mechanical ducts, etc. Penetrating fire-rated ceilings and fire walls shall be correspondingly rated or damped. Cabinets, electrical panels, lights, etc. Recessed into fire rated walls or ceilings shall be backed with corresponding fire-resistive construction as required to maintain the integrity of the fire protection.
- B. Fire resistive assemblies for protection of openings shall comply with CBC. Penetration of fire rated assemblies which require opening protection shall be fire stopped. Fire stopping shall be identical to an approved underwriters laboratories (UL) listed assembly with an "F" of "T" rating. Penetrations must also consist of approved materials for through wall penetrations fire stop systems as prescribed in CBC standard 7-5 fire rating for fire stop systems shall be equal to the assembly penetrated.
- C. Shaft enclosures: openings extending vertically through floors shall be enclosed in a shaft of 1-hour fire-resistive construction. Shafts shall include a gypsum board horizontal termination at bottom, engineered by general contractor. Protection for stairways shall be as specified in code of jurisdiction.

A. All dissimilar metals shall be effectively isolated.

A. Contractor for the project shall be responsible for obtaining all required building permits prior to commencing work.

B. The contractor shall insure that all work is done in a professional work-man-like manner by skilled mechanics and shall replace any new and/or existing materials or items indicated to remain damaged by any cause during construction.

C. The contractor and/or subcontractor shall, prior to the submission of their bid or performance of work, notify the owner of any work called out on the drawings or in the specifications in their trade that cannot be fully guaranteed or warranted from defective workmanship or material defects.

D. The contractor shall notify the architect if details are considered unsound, unsafe, not waterproof, or not within customary trade practice. If work is performed, it will be assumed that there is no objections to the detail. Details are intended to show end result of design, minor modifications may be required to suit job conditions and current trade practice and shall be included as part of this project.

E. Contractor shall be responsible for all finishes at point of connections for all work (architectural, structural, mechanical and electrical) finishes will match those specified or existing in line, texture and finish. Spot painting is not acceptable. New finishes shall be from corner to corner, floor to ceiling, etc.

F. Unless otherwise noted, all materials shall be new and of good quality. Where existing materials are indicated to be salvaged, contractor shall inventory, clean, box protect, and store items for reuse on the project. Items not reused shall be returned to owner.

G. Coordination: the general and each sub-contractor shall be responsible for verification and coordination with other sub-contractors to assure compliance with drawings and specifications, and the accurate location of architectural, structural, mechanical and electrical building elements. Their required openings clearances support systems are all interconnected and coordinated.

H. Contractor shall be responsible for coordinating the work of all trades and for being aware of all conditions that affect their work. Notify owner, in writing, within 3 working days of award of contract, of the proposed delivery schedule, of any equipment, finishes or material, for which that schedule will prevent the installation from being completed at the time of the scheduled project completion.

I. Coordination of work:

- “ the contractor shall provide and coordinate the exact dimensions sizes and positions of all systems, equipment, mounting, and attachments relating to the work.
- “ the contractor shall provide and coordinate all dimensions sizes and positions of openings in slabs and walls necessary to the installation of the work.
- “ all equipment, controls and terminations shall be positioned for safe, direct and easy access.

J. The contractor shall verify all dimensions and conditions of existing site. The contractor shall report to the architect all conditions which prevent the proper execution of its work. The drawings shall not be scaled.

K. Construction shall comply with applicable edition of California Building Code, all applicable local, state and federal codes, ordinances, laws, regulations and protective covenants governing the work. In case of conflicts, the more stringent requirement shall govern.

L. General contractor to arrange inspections as necessary or required.

M. All contractor's work shall be of the quality to pass inspections by local and state authorities, lending institutions, the architect and his engineers, inspector of record, and owner. Any one or all of the above mentioned inspectors may inspect trade(s) at any time, and any corrections needed to meet the required quality of construction shall be done immediately after notifying the architect and the owner for approval.

N. The contractor/sub contractors shall inspect the site prior to start of construction and notify owner and the architect of any existing conditions that may affect the work including elements that may be subject to damage during demolition and renovation. The contractor shall field verify existing dimensions, prior to start of construction and notify owner and architect of any discrepancies between the existing dimensions and the drawing dimensions that may affect the work. The contractor shall obtain direction from owner on resolution of the discrepancies between the existing conditions and dimensions and drawings prior to starting any work that may be affected by such discrepancies.

O. Cleanup: typically each subcontractor is held responsible for cleanup of the work of their trade by the general contractor. However, the general contractor shall be held solely responsible for continuous cleanup as the job progresses, and final cleanup upon substantial completion. The contractor shall be responsible for cleaning up and removing from the job site all trash and debris, immediately upon completion of his daily work. Continuous cleanup shall keep the job free at all times from unreasonable buildup of debris, wrappers, containers, waste materials, etc., which may cause accidents, undue hardship on the tradesman, and work progress. Final cleanup includes cleaning of all surfaces to a "like new" condition and preparing the building for its intended use.

- P. The contractor shall at all times maintain the site and adjacent areas in a clean, neat, and orderly manner. The contractor shall be responsible only for debris that is a result of the work, including any that may result from the workers. The contractor shall be responsible for providing his own refuse containers and shall at no time use the building refuse containers.
- Q. The contractor shall be responsible for the complete security of the site while the job is in progress and until the job is completed.
- R. Contractor shall provide a portable fire extinguisher with a rating of not less than 2-a or 2-10bc within 75 feet of travel distance to all portions of the build out area during construction.
- S. Obtain all cal / OSHA construction activity permits, prior to obtaining the building permit, as required by and in accordance with applicable codes.
- T. Demarcate and notify the regional notification center (Dig Alert, 811) at least two working days prior to making any excavations.

A. The Instruments of Services are any expression, whether tangible or intangible, of creative work performed by a design professional for a project, such as:

- models
- sketches and drawings
- specifications

The instruments of service are also known as design documents and construction documents.

The scope of this project is as generally depicted in these instruments of service as part of the contract documents. Work including: points of connection, not specifically depicted, that need to be made are the responsibility of the general contractor. All work performed even in remote areas of the building or site, pertaining to this project shall comply with the intent of contract documents.

C. These contract documents cover the furnishing and installation of materials and work as called for on the drawings or in the specifications (or in both) which are bound separately and are a part of the contract. It shall be the responsibility of each contractor to check with the architectural drawings before finalizing their bid and before the installation of their work. Any discrepancy between the architectural and the consulting engineer(s) drawings shall be brought to the architects attention by written request for clarification. Any work installed in conflict with the architectural drawings shall be corrected by the contractor at his own expense and at no expense to the owner or architect.

D. General requirements, describing the project's administrative requirements and the physical aspects of construction, are provided within each professional discipline's project specification and general notation. General requirements are not limited to the instrument of services and may extend to the contract documents and owner requirements.

E. The project specifications consisting of the written requirements for material, equipment, systems, standards and workmanship for the work, and performance of related services are contained within each of the architect and the architect's instrument of services. Refer to general notes for additional project standards information. Documents indicated as "reference document" are not considered instruments of services and are being issued to provide assistance during the regulatory agency contract document review.

F. Refer to life safety and accessibility diagrams that indicate provisions within existing conditions.

G. These drawings are based on field observation and/or documents furnished by the owner. The architect shall be notified immediately by the contractor of any discrepancies or other questions pertaining to the contract documents. If obvious omissions or contradictory situations in the contract documents are discovered to exist, they should be immediately called to the attention of architect for clarification.

H. All dimensions take precedence over scale unless otherwise noted by a plus/minus dimension. Contractor shall check accuracy of dimensions on plans with actual field dimensions. The contractor shall report to the architect all conditions which prevent the proper execution of its work. Contractor shall not start any construction or any off-site fabrication of materials until the drawings dimensions are verified with actual field conditions. Do not scale drawings.

I. The contractor shall be held responsible for the results of any errors, discrepancies or omissions that the contractor failed to notify the architect of before construction and/or fabrication of the work.

J. Work includes demolition, removal and reinstallation where required. Remove, revise, relocate and reinstall as required.

K. It is not the responsibility of the architect or general contractor to insure that areas of the building, not described within the scope of this project, comply with current building codes. It is the responsibility of the owner to maintain the building, so as to provide for the safety and comfort of the occupants. This includes all life safety features such as fire alarm, fire-sprinklers, nurse call, exit enclosure, accessibility, etc. This also includes maintaining the building free of hazardous materials i.e., chemicals as described by state or federal agencies as "hazardous" including asbestos.

A. The removal of hazardous materials is not intended to be included as part of this project unless specifically noted otherwise.

B. If hazardous materials are discovered during the course of construction, the contractor shall stop all affected work and notify the owner and architect immediately

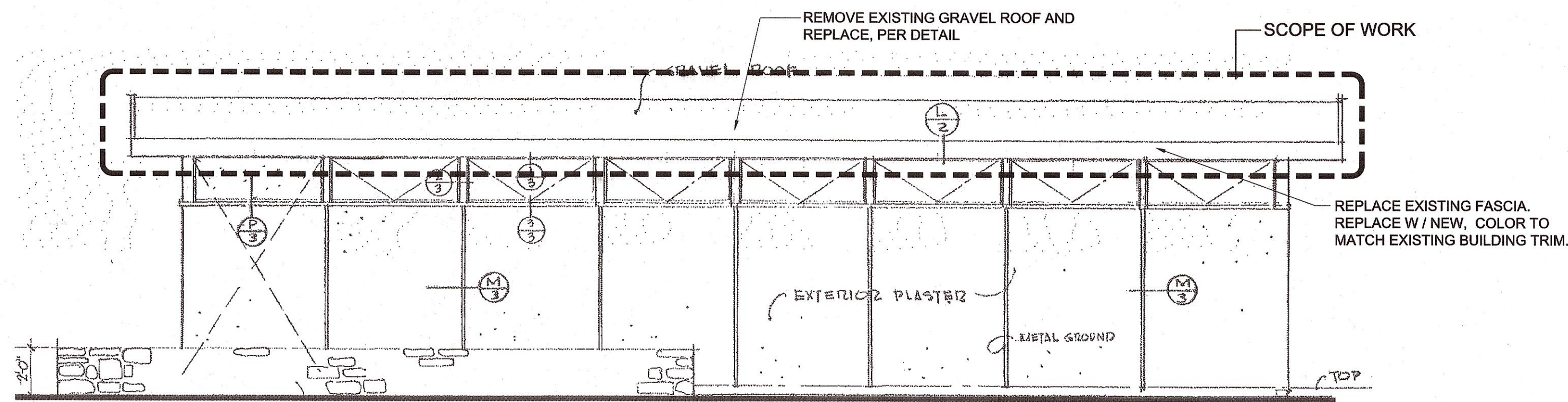
Construction activities including additions, alterations, and demolitions shall provide pedestrian protection pursuant to section 3306 of the California building code. To determine the type of protection required for pedestrians, measure the ultimate height of construction with consideration for building setbacks and projections from the building. For sloping sites, measure the height of the building from construction edge of the walkway and the setback distance between the walkway and the building line.

Below are requirements to be addressed in the design of pedestrian protections:

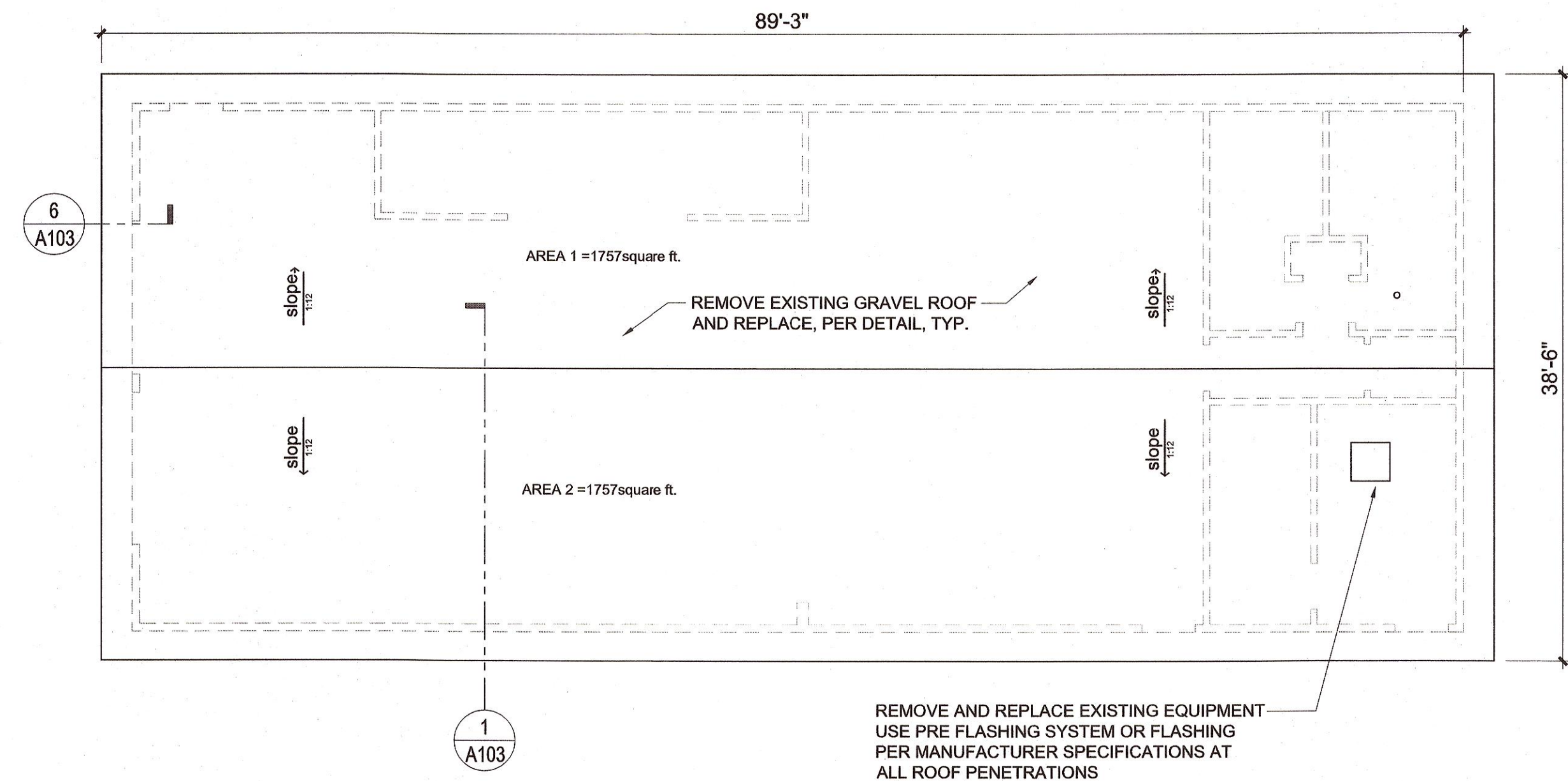
- A. Walkways shall provide sufficient width with the minimum of 4 ft. Clear.
- B. Directional barricades shall be provided as needed where the walkway extends into the street.
- C. Construction railings shall be at least 42 inches in height.
- D. Barriers shall be a minimum of 8 ft. In height and be designed to resist loads required.
- E. Such protection shall be maintained in place and kept in good order. Until work is completed.
- F. Whenever a walkway must extend into the roadway, a railing is required on the street side.

Contractor shall perform a water test of the entire roof of each building to confirm that all penetrations have been adequately sealed.

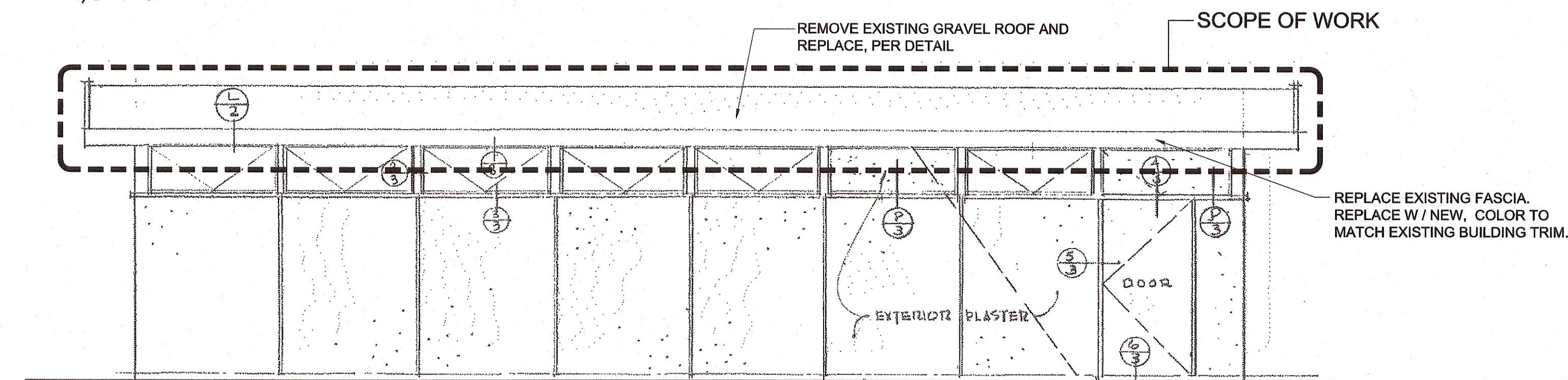
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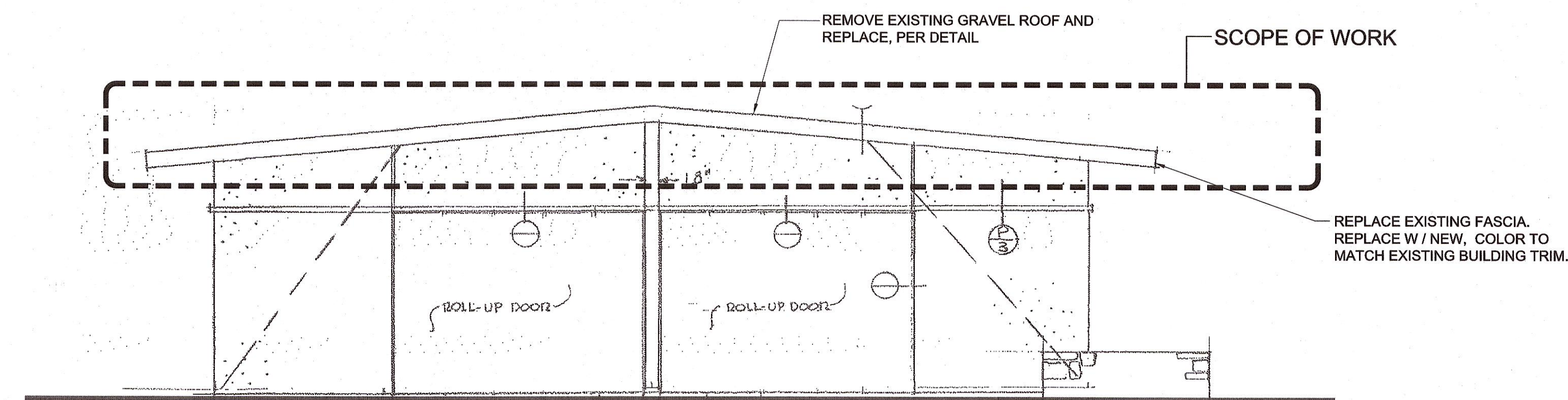
EXISTING ELEVATION - FOR REFERENCE ONLY 6
1/8"=1'-0"



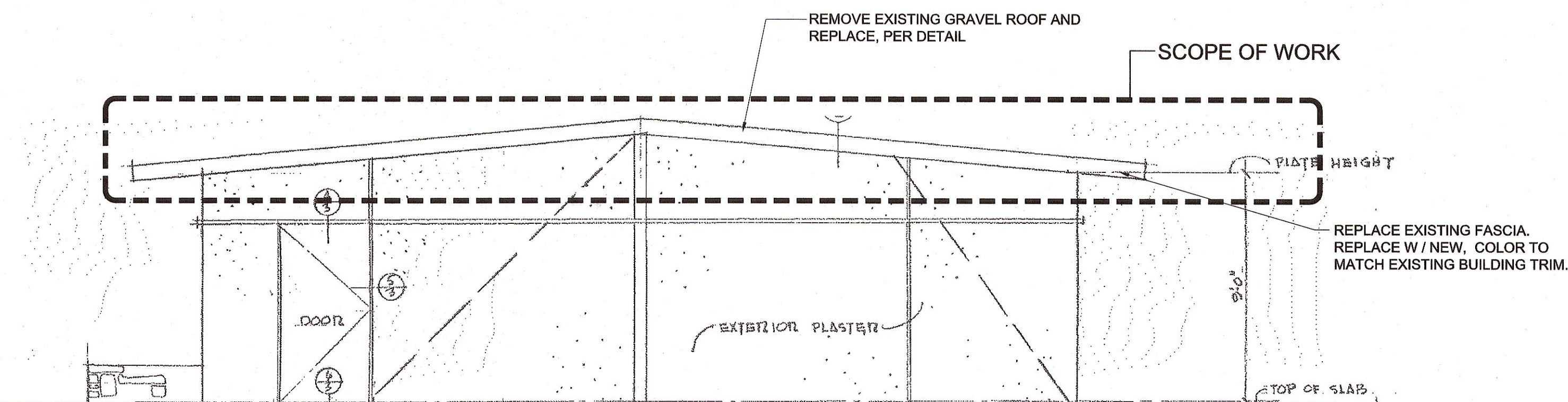
EXISTING ROOF PLAN 2
1/8"=1'-0"



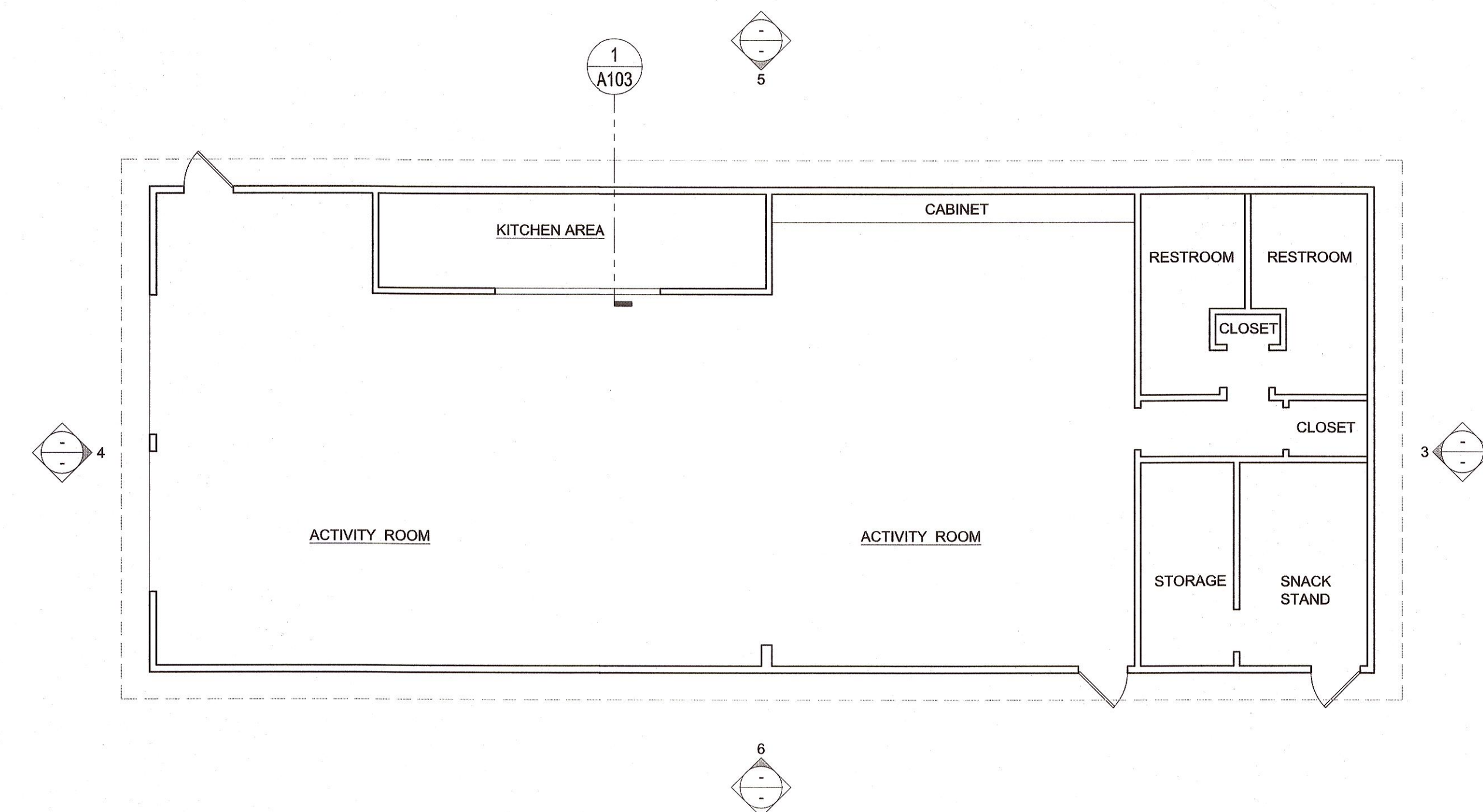
EXISTING ELEVATION - FOR REFERENCE ONLY 5
1/8"=1'-0"



EXISTING ELEVATION - FOR REFERENCE ONLY 4
1/8"=1'-0"

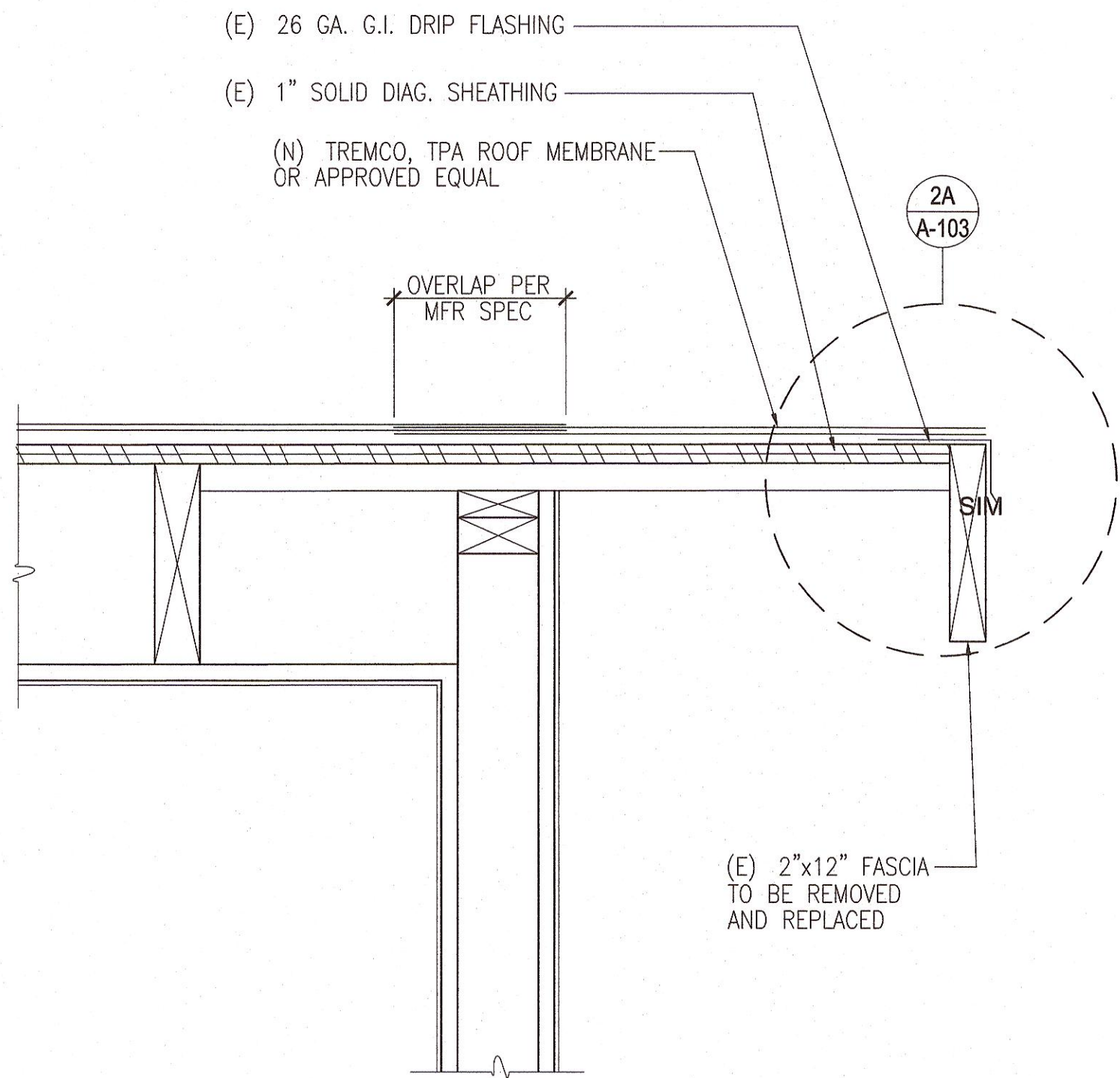


EXISTING ELEVATION - FOR REFERENCE ONLY 3
NOT TO SCALE

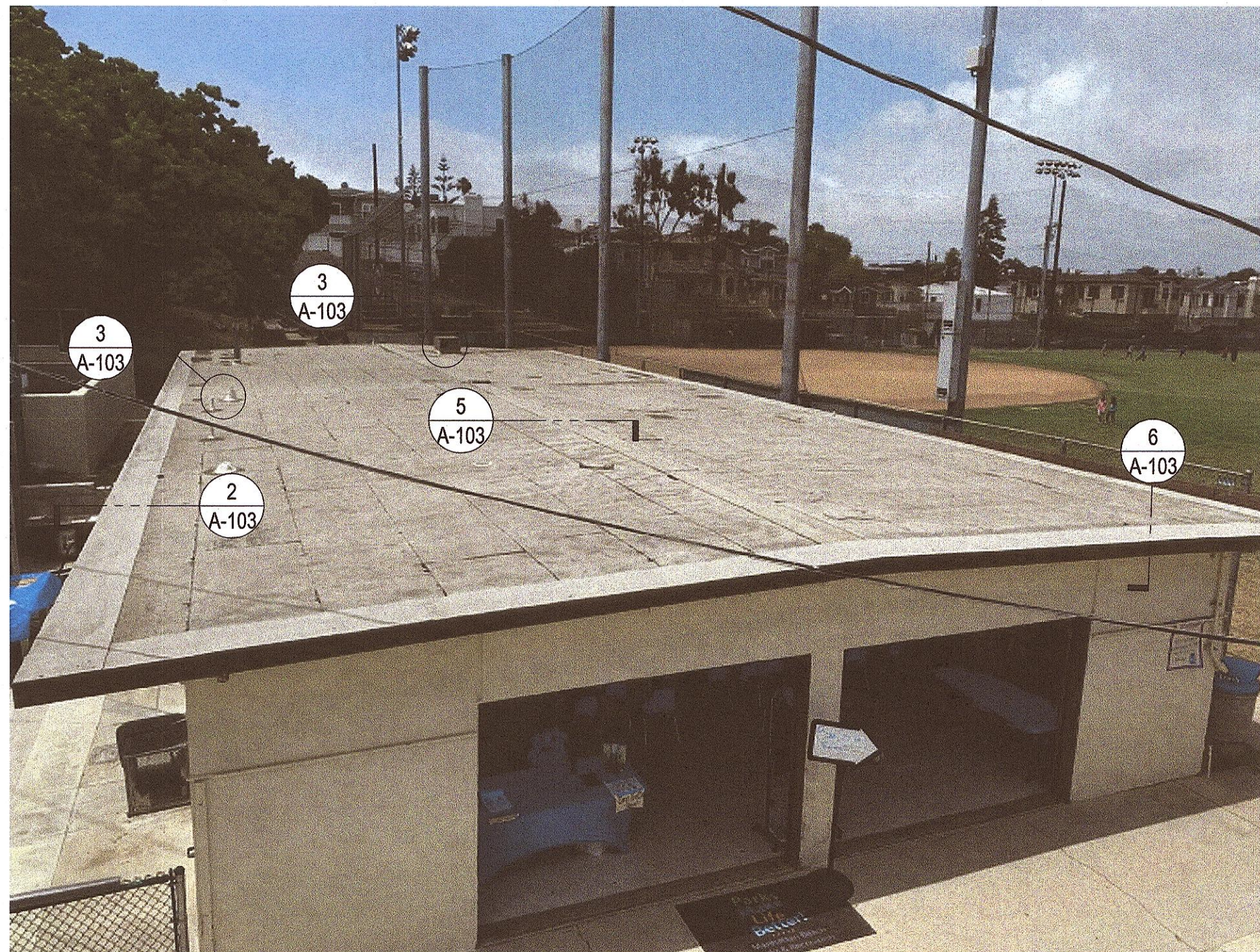


EXISTING FLOOR PLAN FOR REFERENCE ONLY 3
NOT TO SCALE

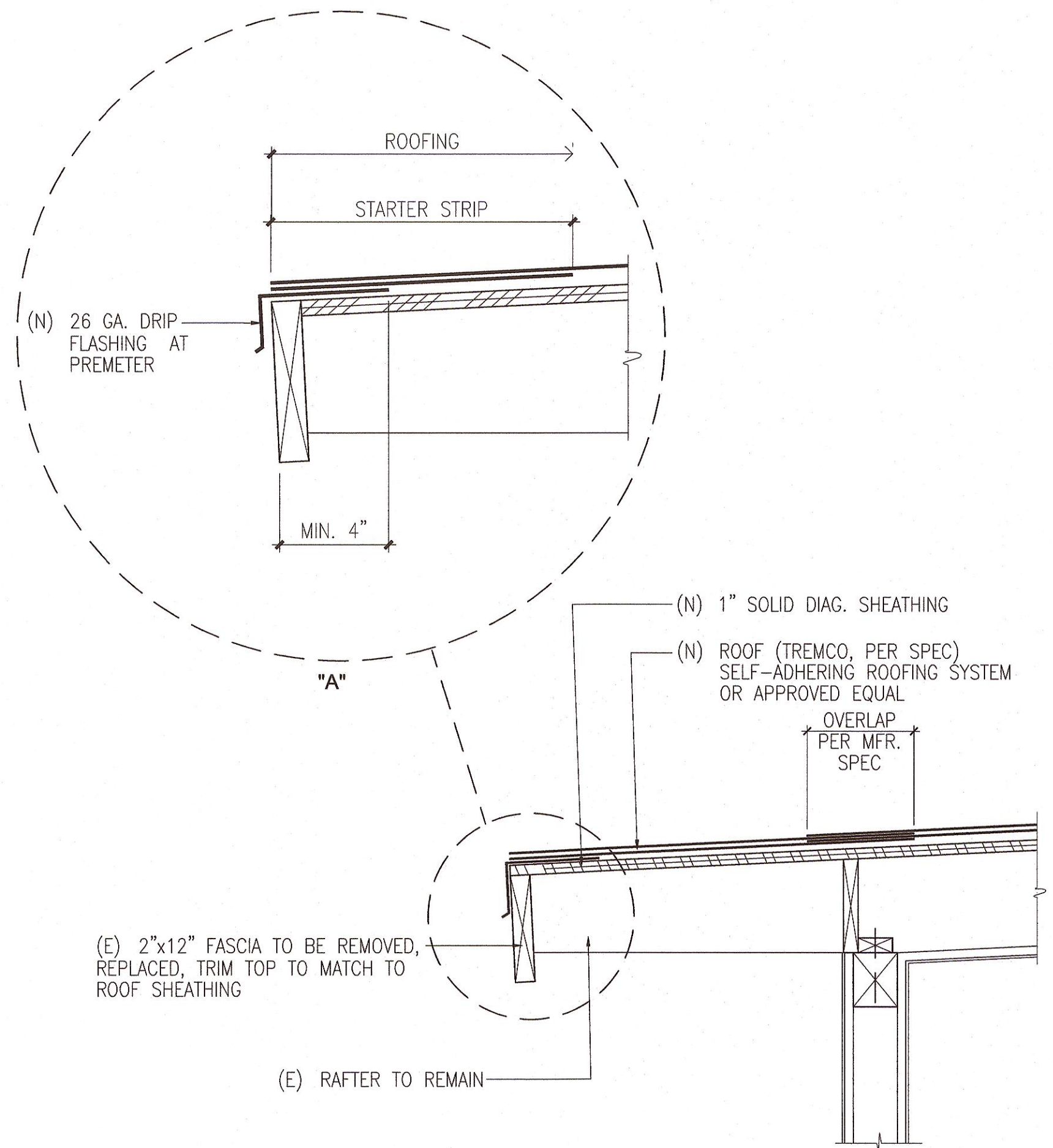
<p>NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.</p>		<p>SUPPLEMENTAL NOTES:</p> <p>1. THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.</p> <p>2. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING.</p> <p>3. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS.</p>		<p>ENGINEER/ARCHITECT OF RECORD STAMP</p> <p>DATE SIGNED: 11/21/2019</p>		<p>DESIGN FIRM NAME, ADDRESS, PHONE NUMBER</p> <p>IDS IDS GROUP 1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA 92606 TEL: 949-387-8500, FAX: 949-387-0800</p>		<p>REVIEWED BY: _____ DATE: _____</p>		<p>CITY OF MANHATTAN BEACH PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION</p> <p>ROOFING REPLACEMENT RECREATION HALL LIVE OAK PARK PLAN AND ELEVATIONS</p>		<p>REFERENCES</p> <table border="1"> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	BY	DATE										<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		NO.	DATE	DESCRIPTION										<p>RECOMMENDED BY: 12/9/19 CITY ENGINEER PREM KUMAR</p> <p>APPROVED BY: 12/9/19 DIRECTOR OF PUBLIC WORKS STEPHANIE KATSIOLEAS</p>		<p>SCALE: AS SHOWN DATE: 12/04/2019</p>		<p>DESIGNED BY: MS DATE: 11/03/2019</p>		<p>DRAWING NO. A102 D-934</p>	
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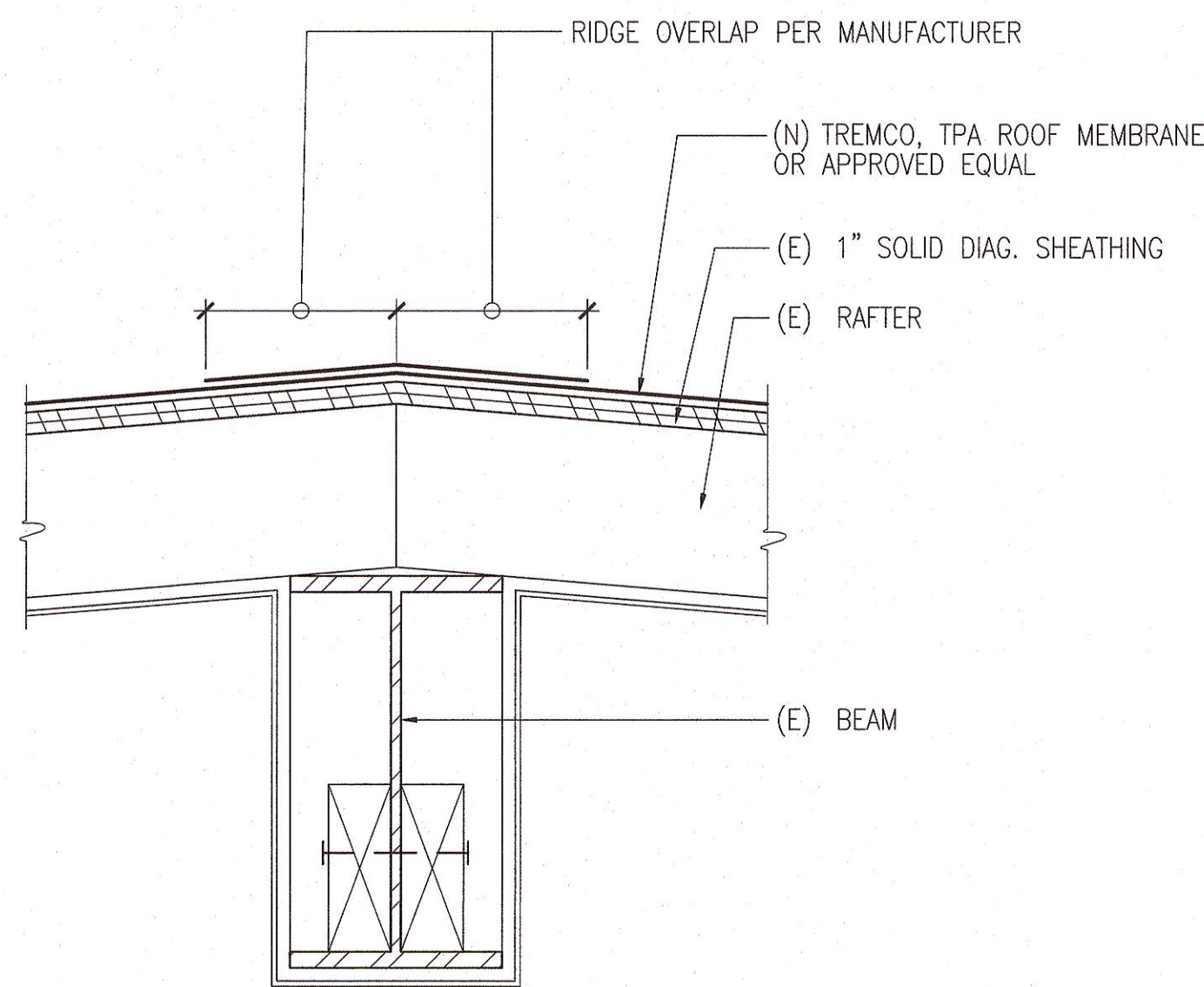
RAKE DETAIL 6
NOT TO SCALE



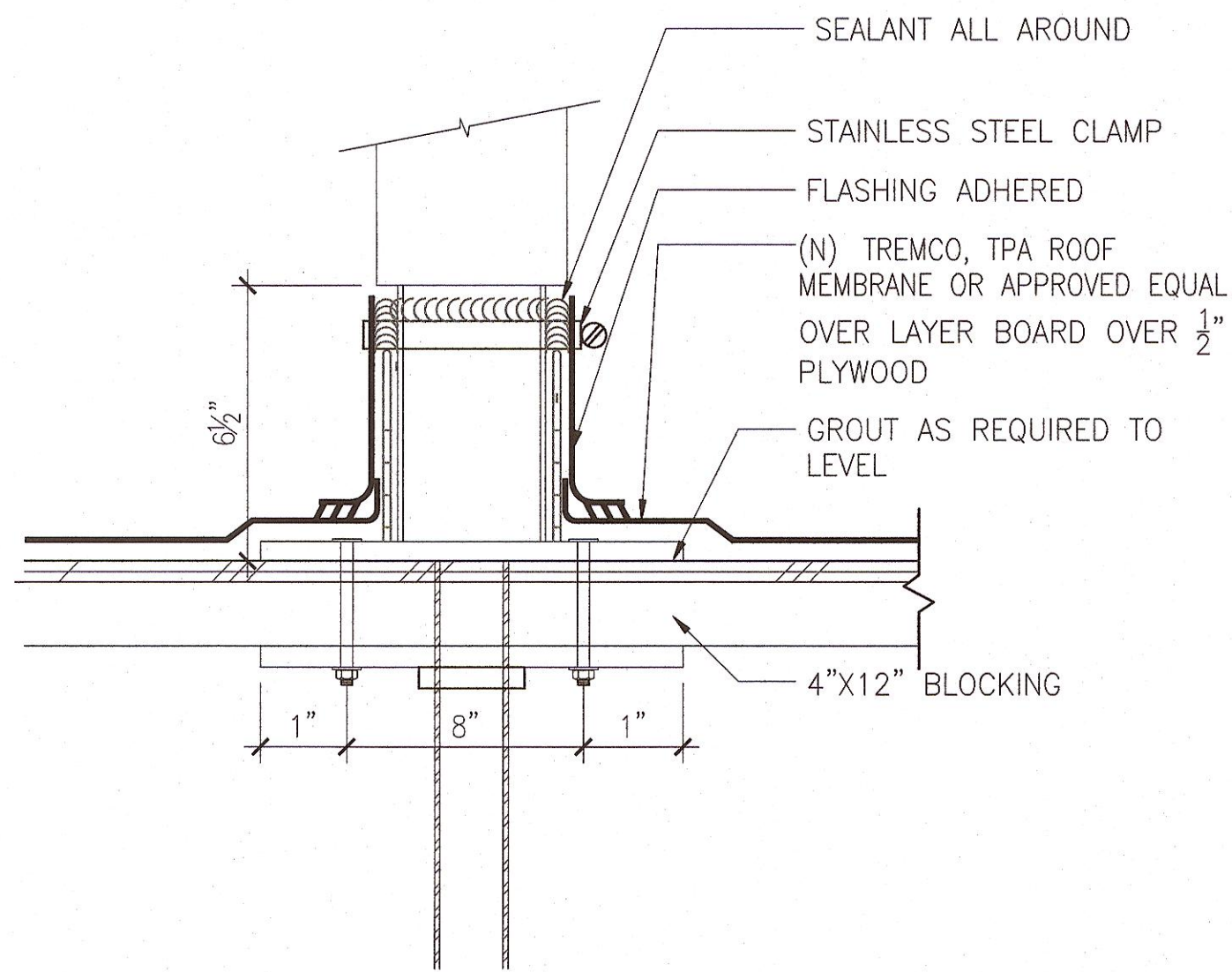
ROOF 4
1 1/2"=1'-0"



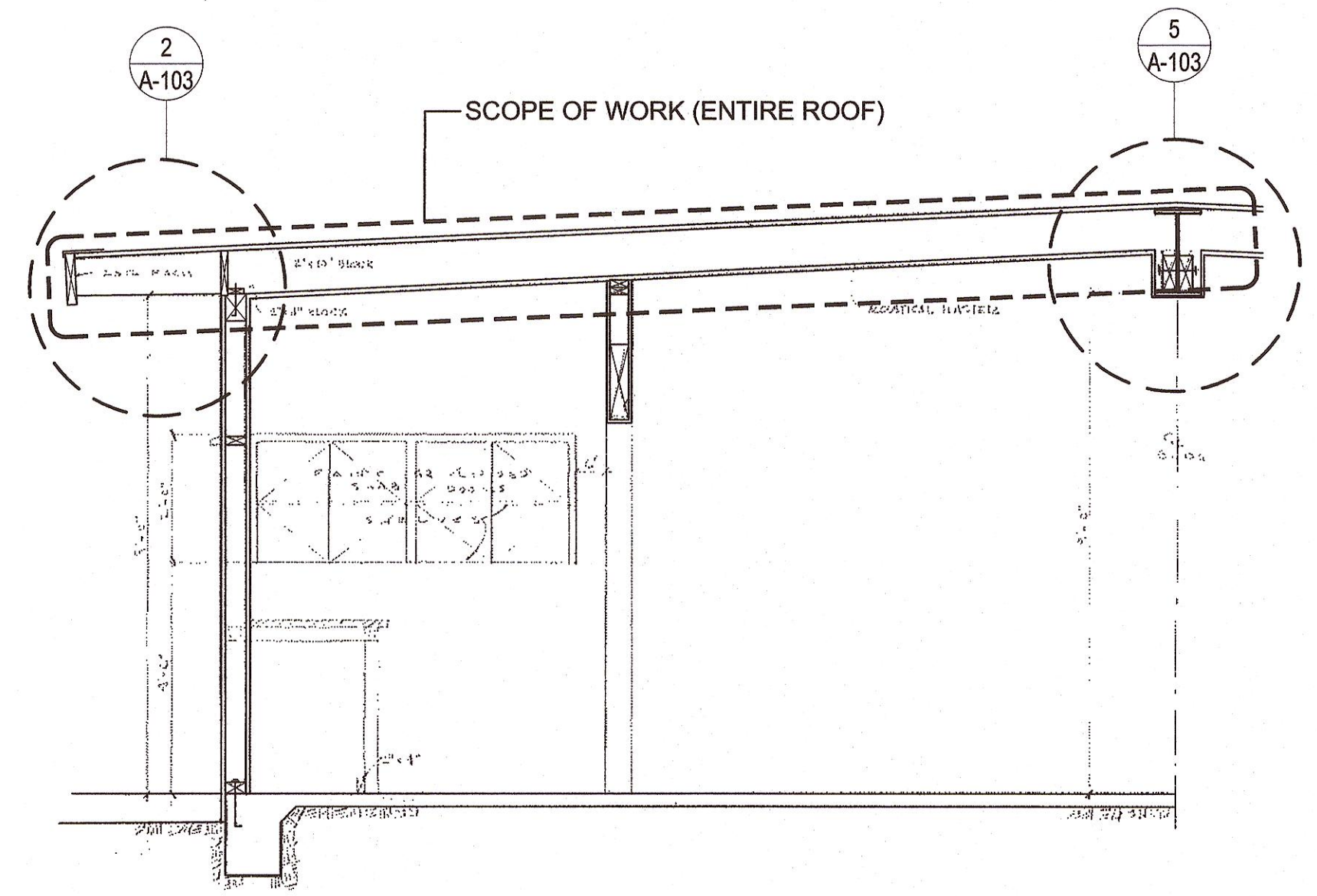
ROOF DETAIL 2
1 1/2"=1'-0"



RIDGE DETAIL 5
NOT TO SCALE



ROOF PENETRATION - FLASHING 3
NOT TO SCALE



EXISTING SECTION-REFERENCE ONLY 1
NOT TO SCALE

<p>NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.</p>		<p>SUPPLEMENTAL NOTES:</p> <ol style="list-style-type: none"> THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS. 		<p>ENGINEER/ARCHITECT OF RECORD STAMP</p> <p>DATE SIGNED: 11/21/2019</p>		<p>DESIGN FIRM NAME, ADDRESS, PHONE NUMBER</p> <p>IDS IDS GROUP 1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA. 92606 TEL: 949-387-8500, FAX: 949-387-0800</p>		<table border="1"> <tr> <th colspan="3">REFERENCES</th> </tr> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>		REFERENCES			NO.	BY	DATE				REVISIONS																		<p>CITY OF MANHATTAN BEACH PUBLIC WORKS DEPARTMENT — ENGINEERING DIVISION</p> <p>ROOFING REPLACEMENT RECREATION HALL LIVE OAK PARK DETAILS</p> <table border="1"> <tr> <td> <p>RECOMMENDED BY: </p> <p>CITY ENGINEER PREM KUMAR</p> <p>REVIEWED BY: </p> <p>PROJECT MANAGER</p> <p>DESIGNED BY: MS</p> </td> <td> <p>DATE: 12/9/19</p> <p>DATE: 12/6/19</p> <p>DATE: 11/23/2019</p> </td> <td> <p>APPROVED BY: </p> <p>DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS</p> <p>DATE: 12/9/19</p> </td> <td> <p>SCALE: AS NOTED</p> <p>DATE: 11/27/2019</p> <p>DRAWING NO.: A103 D-934</p> </td> </tr> </table>		<p>RECOMMENDED BY: </p> <p>CITY ENGINEER PREM KUMAR</p> <p>REVIEWED BY: </p> <p>PROJECT MANAGER</p> <p>DESIGNED BY: MS</p>	<p>DATE: 12/9/19</p> <p>DATE: 12/6/19</p> <p>DATE: 11/23/2019</p>	<p>APPROVED BY: </p> <p>DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS</p> <p>DATE: 12/9/19</p>	<p>SCALE: AS NOTED</p> <p>DATE: 11/27/2019</p> <p>DRAWING NO.: A103 D-934</p>
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KEYNOTES

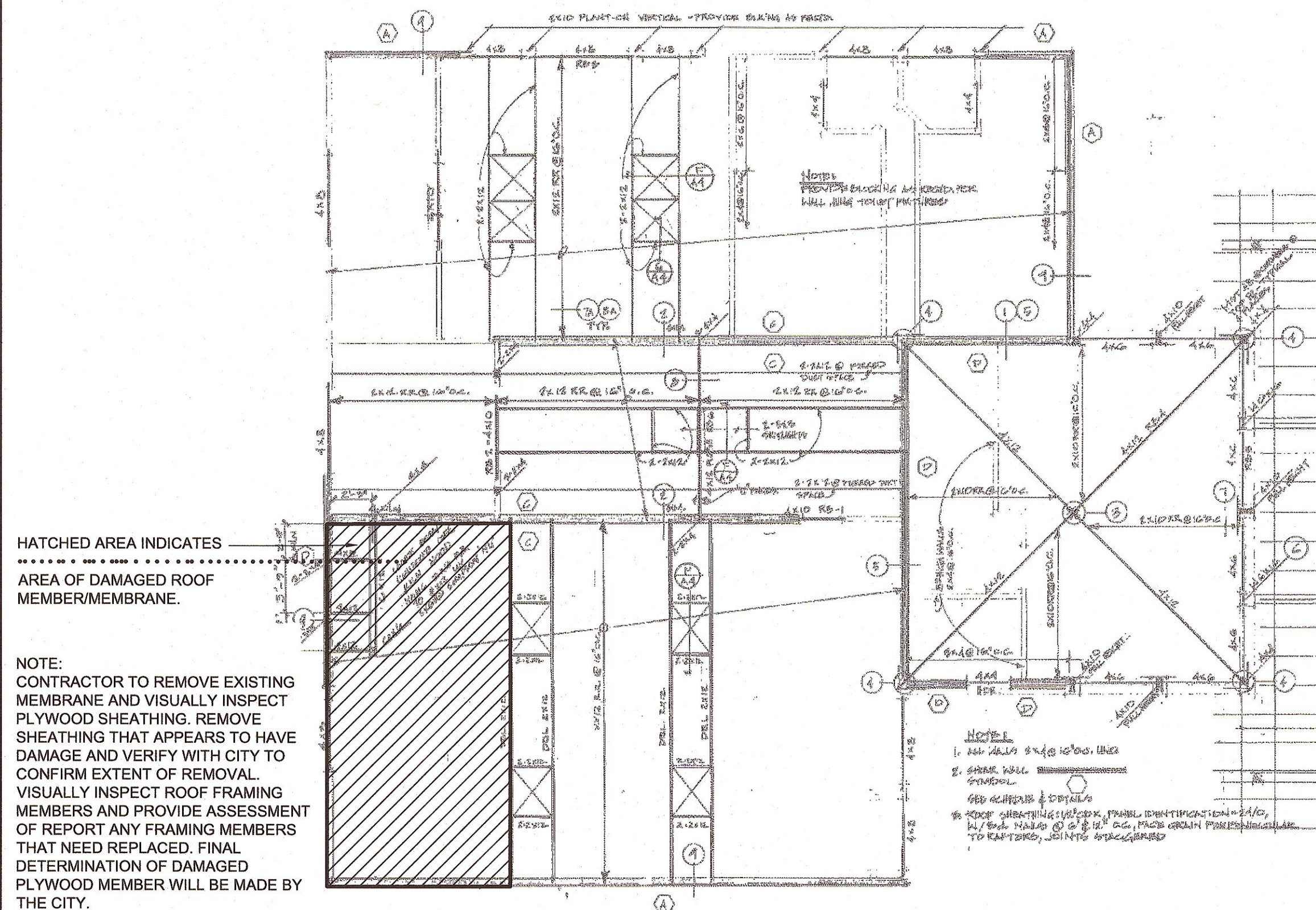
- 1 THE ENTIRE EXISTING PVC ROOF TO BE REMOVED AND REPLACED WITH TREMCO, TPA ROOF MEMBRANE OR APPROVED EQUAL, PLYWOOD, FASCIA AND ROOF RAFTERS TO BE REPLACED AS NEEDED
- 2 REMOVE AND REINSTALL EXISTING EQUIPMENT
- 3 CLEAN AND WASH EXISTING ROOF TILE, AND REPLACE ANY DAMAGED TILE AS-NEEDED
- 4 REMOVE AND REPLACE FLASHING PER DETAIL 5/A204
- 5 REMOVE AND REPLACE FLASHING AND GUTTER PER DETAIL 5/A203

GENERAL NOTES

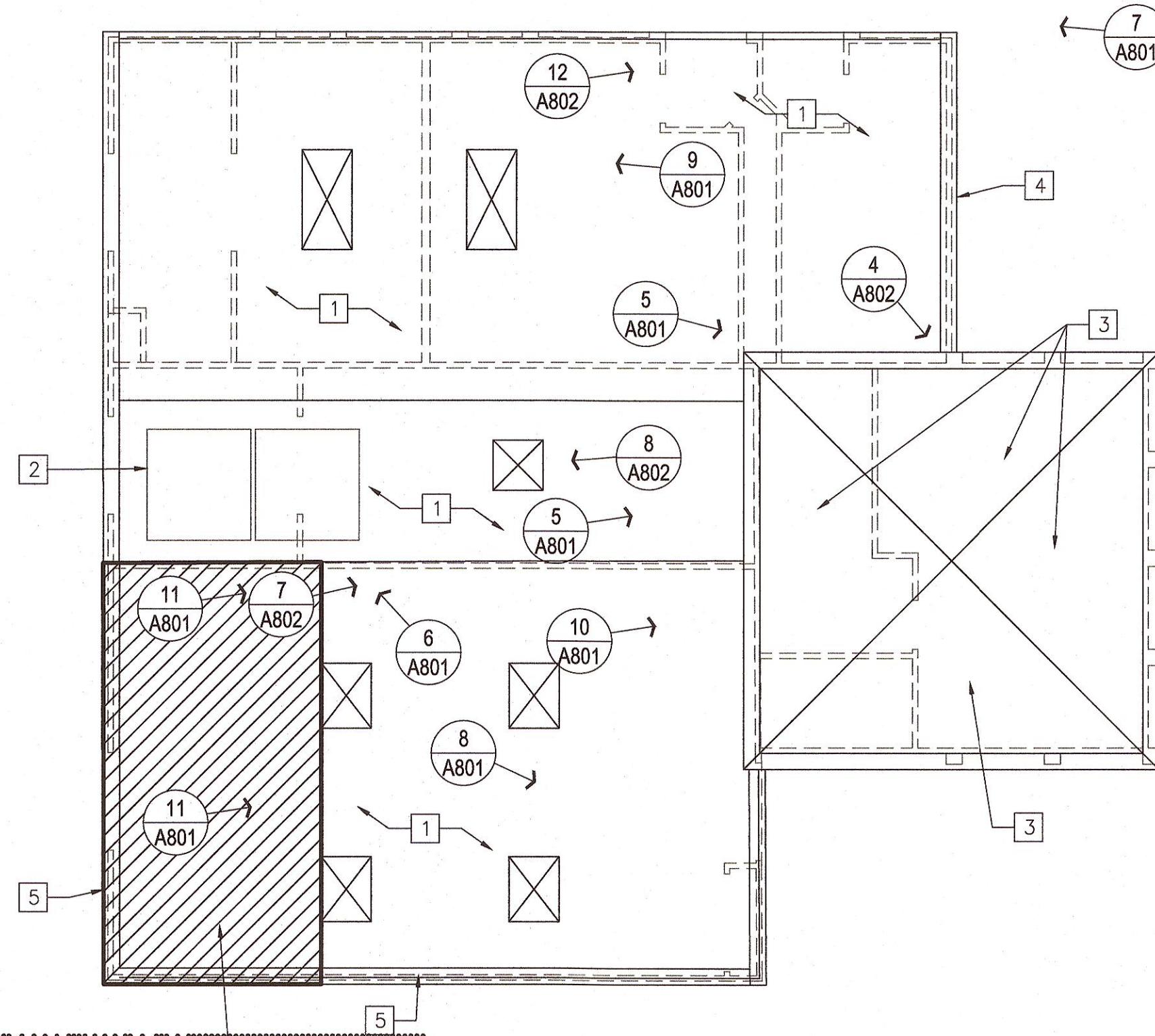
1. ALL WORK PERFORMED AND MATERIAL PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST BUILDING CODES AND CONSTRUCTION STANDARDS, WHETHER OR NOT SPECIFIED ON THE DOCUMENTS BEING PROVIDED.
2. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" STANDARD FORM OF THE AMERICAN INSTITUTES OF ARCHITECTS, LATEST EDITION ARE MADE A PART OF THE CONSTRUCTION DOCUMENTS AND SHALL APPLY TO THE GENERAL CONTRACTOR AND TO SUB-CONTRACTORS.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITION AT THE JOB SITE PRIOR TO COMMENCEMENT OF ANY WORK AND SHALL REQUEST CLARIFICATION FROM THE ARCHITECT IMMEDIATELY FOR ANY DISCREPANCIES OR OMISSIONS BETWEEN THE DOCUMENTS AND FIELD CONDITIONS.
4. THE CONTRACTOR AND SUB-CONTRACTORS SHALL REVIEW THE CONSTRUCTION DOCUMENTS FOR ISSUES RELATED TO EACH TRADE PRIOR TO COMMENCEMENT OF THE CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE WORK OF EVERY SUB-CONTRACTORS, AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT FOR CLARIFICATION.
5. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL RUBBISH OR WASTE MATERIALS FROM THE JOB SITE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT TO PREVENT DIRT, DUST OR DEBRIS FROM LEAVING THE JOB SITE.
6. CONTRACTOR TO PROTECT-IN-PLACE ALL EXISTING ROOF ELEMENTS BEING NOTED AS TO REMAIN. PATCH, REPAIR AND REPLACE ALL EXISTING ROOF ELEMENTS ONCE DAMAGED DURING CONSTRUCTION TO MATCH AND ALIGN WITH EXISTING, TYP. THROUGHOUT THE ENTIRE ROOF AREA. CONTRACTOR TO NOTIFY ARCHITECT OR ENGINEER FOR APPROVAL PRIOR TO COMMENCE.
7. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ARCHITECT OR ENGINEER FOR APPROVAL PRIOR TO INSTALL OR REPLACE ANY STRUCTURAL ELEMENTS.
8. THE CONTRACTOR SHALL PROVIDE PUBLIC PROTECTION AS REQUIRED BY THE CITY AGENCIES, AND SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTIONS, INCLUDING THE SAFETY OF PERSON OR PROPERTY. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT TO BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING SURFACES TO REMAIN, AND SHALL PATCH, REPAIR AND REPLACE ANY EXISTING SURFACES DAMAGED DURING DEMOLITION OR CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

LEGEND

 REPAIR DAMAGED ROOF MEMBRANE AND ROOF MEMBER

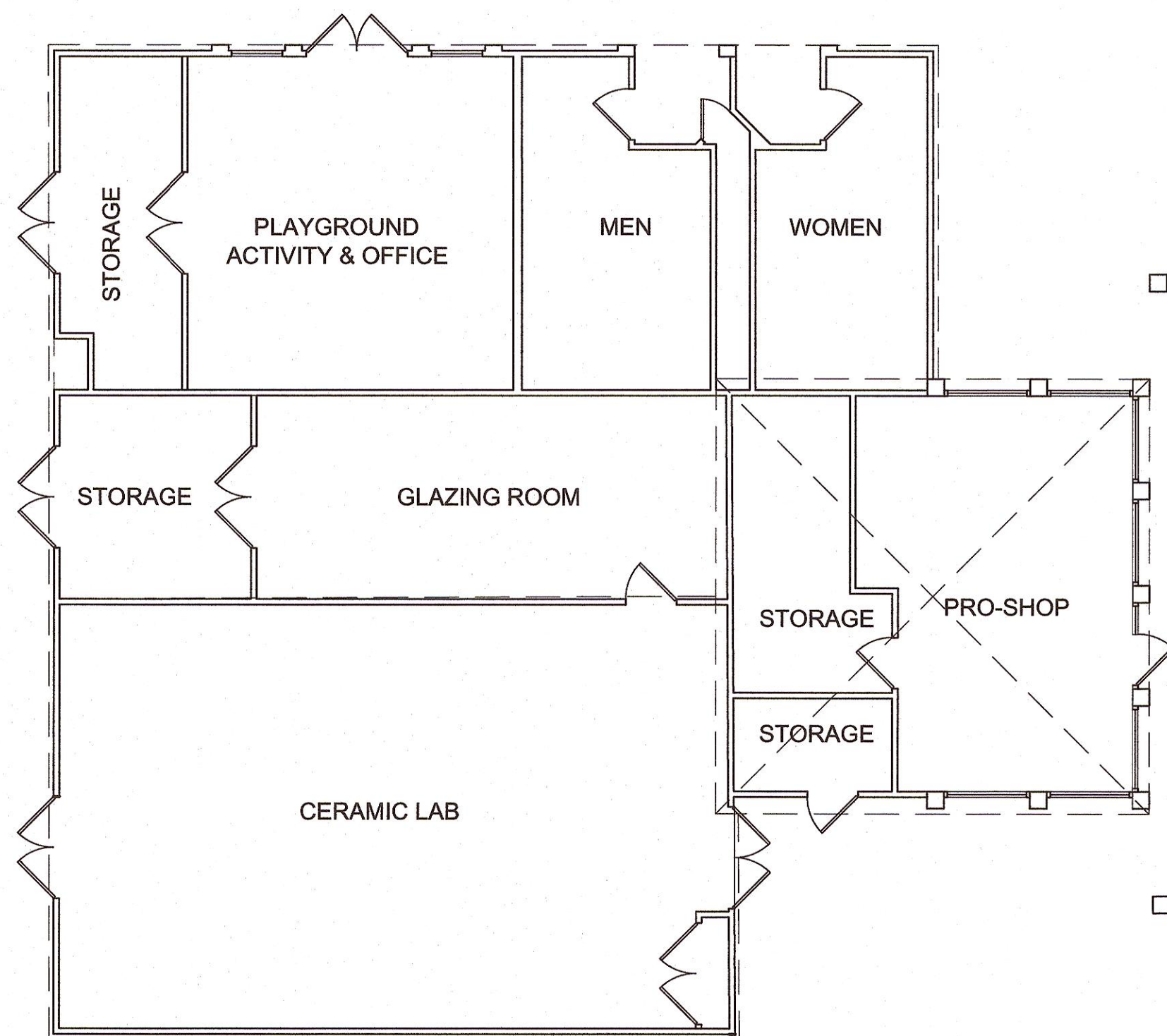


EXISTING ROOF RAFTER PLAN (FOR REFERENCE ONLY) 3
1/8"=1'-0"



EXISTING ROOF MEMBRANE AND ROOF MEMBER TO BE REMOVE AND REPLACE AS NECESSARY DUE TO WATER INTRUSION.

EXISTING ROOF PLAN FOR REFERENCE ONLY 2
1/8"=1'-0"



EXISTING FLOOR PLAN FOR REFERENCE ONLY 1
1/8"=1'-0"

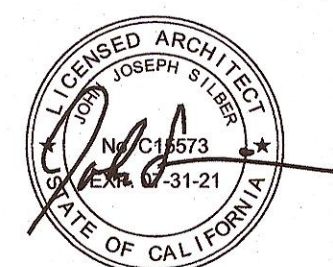


NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.

SUPPLEMENTAL NOTES:

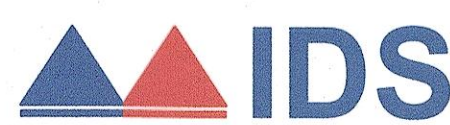
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ENGINEER/ARCHITECT OF RECORD STAMP



DATE SIGNED 11/21/2019

DESIGN FIRM NAME, ADDRESS, PHONE NUMBER



IDS GROUP
1 PETERS CANYON ROAD,
SUITE 130 IRVINE, CA. 92606
TEL: 949-387-8500, FAX: 949-387-0800

REVIEWED BY DATE

REVISIONS

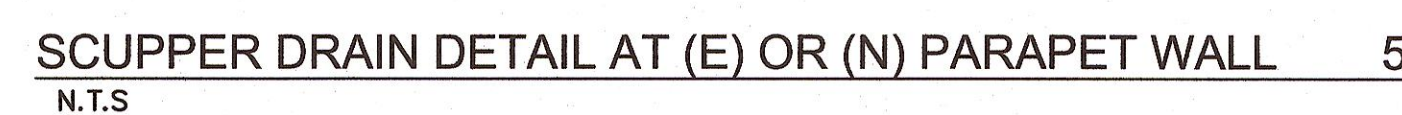
CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISIONROOFING REPLACEMENT RECREATION CENTER LIVE OAK PARK
FLOOR PLAN & ROOF PLAN

RECOMMENDED BY
CITY ENGINEER
PREM KUMAR
12/9/19
DATE

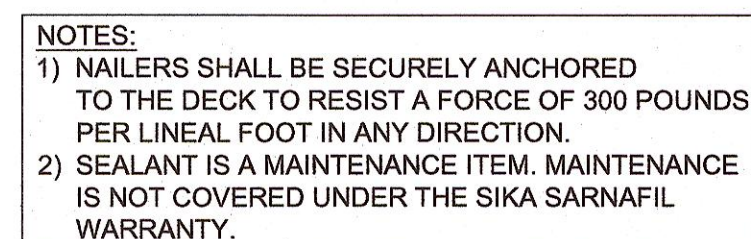
DESIGNED BY
MS
11/21/2019
DATE

APPROVED BY
DIRECTOR OF PUBLIC WORKS
STEPHANIE KATSOULEAS
12/9/19
DATE

SCALE
1/8"=1'-0"
11/21/2019
DATE
SHEET 8 OF 15
DRAWING NO.
A202
D-934



- 1 THE ENTIRE EXISTING PVC ROOF TO BE REMOVED AND REPLACE TREMCO, TPA ROOF MEMBRANE OR APPROVED EQUAL, PLYWOOD, FASCIA AND ROOF RAFTERS TO BE REPLACED AS NEEDED
- 2 REMOVE AND REINSTALL EXISTING EQUIPMENT, REFER TO SHEET A102 FOR ADDITIONAL INFO.
- 3 CLEAN AND WASH EXISTING ROOF TILE, AND REPLACE ANY DAMAGED TILE AS-NEEDED
- 4 REMOVE AND REPLACE (E) FLASHING PER DETAIL 8B/A102.
- 5 REMOVE AND REPLACE (E) FLASHING AND GUTTER, TYP.
- 6 (E) PARAPET WALL TO REMAIN, REPLACE AS REQUIRED TO MATCH AND ALIGN WITH (E), TYP.
- 7 (E) STRUCTURAL ROOF MEMBER TO REMAIN, PROTECT-IN-PLACE, TYP.
- 8 (E) INSULATION TO REMAIN, PROTECT -IN-PLACE REPLACE AS REQUIRED, TYP.
- 9 REMOVE AND REPLACE (E) PLYWOOD SHEATHING AS REQUIRED, TO MATCH AND ALIGN WITH (E) TYP.
- 10 REMOVE (E) ROOF MEMBRANE AS REQUIRED AT DAMAGED ROOF AREA DUE TO WATER INTRUSION AND REPLACE WITH PVC ROOF MEMBRANE OR APPROVED EQUAL
- 11 (E) ROOF MEMBER TO REMAIN, REMOVE AND REPLACE (E) ROOF MEMBER AS REQUIRED AT DAMAGED ROOF AREA UPON VISUAL INSPECTION DUE TO WATER INTRUSION.
- 12 REMOVE (E) SCUPPER DRAIN ASSEMBLY COMPLETE AND REPLACE WITH (N) SCUPPER DRAIN SYSTEM BY TREMCO ROOFING SYSTEM OR APPROVED EQUAL, TYP.
- 13 (E) STUD WALL AND FINISHES TO REMAIN, PROTECT-IN-PLACE, PATCH AND REPAIR ONCE DAMAGED DURING CONSTRUCTION TO MATCH AND ALIGN WITH (E), TYP.
- 14 (N) CONT. 22 GA METAL FLASHING, TO MATCH AND ALIGN WITH (E), PAINT FINISH, TYP.
- 15 15 SEALANT OR APPROVED EQUAL, TYP.
- 16 TREMCO FLASHING STRIP, HOT-AIR WELDED OR APPROVED EQUAL
- 17 TREMCO MEMBRANE OR APPROVED EQUAL OVER VAPOR BARRIER
- 18 (N) FASTENER BY TREMCO OF APPROVED EQUAL, TYP.
- 19 (N) 4X TREATED WOOD NAILER ANCHORED SECURELY TO (E) ROOF STRUCTURE
- 20 TREMCO METAL SCUPPER FASTENED 4 INCHES O.C, STAGGERED, USING GALVANIZED ANNULAR RING NAILS OR APPROVED EQUAL
- 21 (E) EXTERIOR FINISH OVER STUD WALL TO REMAIN, PROTECT-IN-PLACE, PATCH AND REPAIR AND REPAINT EXTERIOR WALL AS NEEDED TYP.
- 22 REMOVE AND REINSTALL (E) SKYLIGHT AND ITS COMPONENTS.
- 23 REMOVE (E) CANT AS REQUIRED PER DIRECTION OF ARCHITECT / ENGINEER UPON VISUAL INSPECTION CANT HAS BEEN DAMAGED DUE TO WATER INTRUSION, PROVIDE (N) CANT TO MATCH AND ALIGN WITH EXISTING, TYP.

SEE GENERAL NOTES ON
SHEET A102 FOR ADDITIONAL INFORMATION

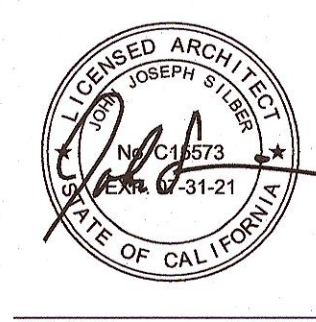
SUPPLEMENTAL NOTES:

1. THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
2. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING.
3. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS.



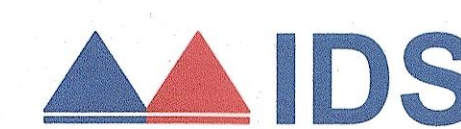
NO WORK SHALL BE DONE ON THIS SITE
UNTIL USA AGENCY IS NOTIFIED
OF INTENTION TO GRADE OR EXCAVATE,
TWO WORKING DAYS BEFORE YOU DIG.

ENGINEER/ARCHITECT
OF RECORD STAMP



DATE SIGNED 11/21/2014

DESIGN FIRM NAME, ADDRESS, PHONE NUMBER
--



IDS GROUP
1 PETERS CANYON ROAD,
SUITE 130 IRVINE, CA. 92606
TEL: 949-387-8500, FAX: 949-387-0800

[illegible]

REFERENCES

[illegible]

REVISIONS

CITY OF MANHATTAN BEACH

PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION

ROOFING REPLACEMENT RECREATION CENTER LIVE OAK PARK
ELEVATIONS & SECTIONS & DETAILS

RECOMMENDED BY



CITY ENGINEER

PREM KUMAR

REVIEWED BY
Nancy F.

PROJECT MAN
DESIGNED BY

APPROVED BY _____

APPROVED BY



[Signature]
DIRECTOR OF PUBLIC WORKS

STEPHANIE KATSOULEAS

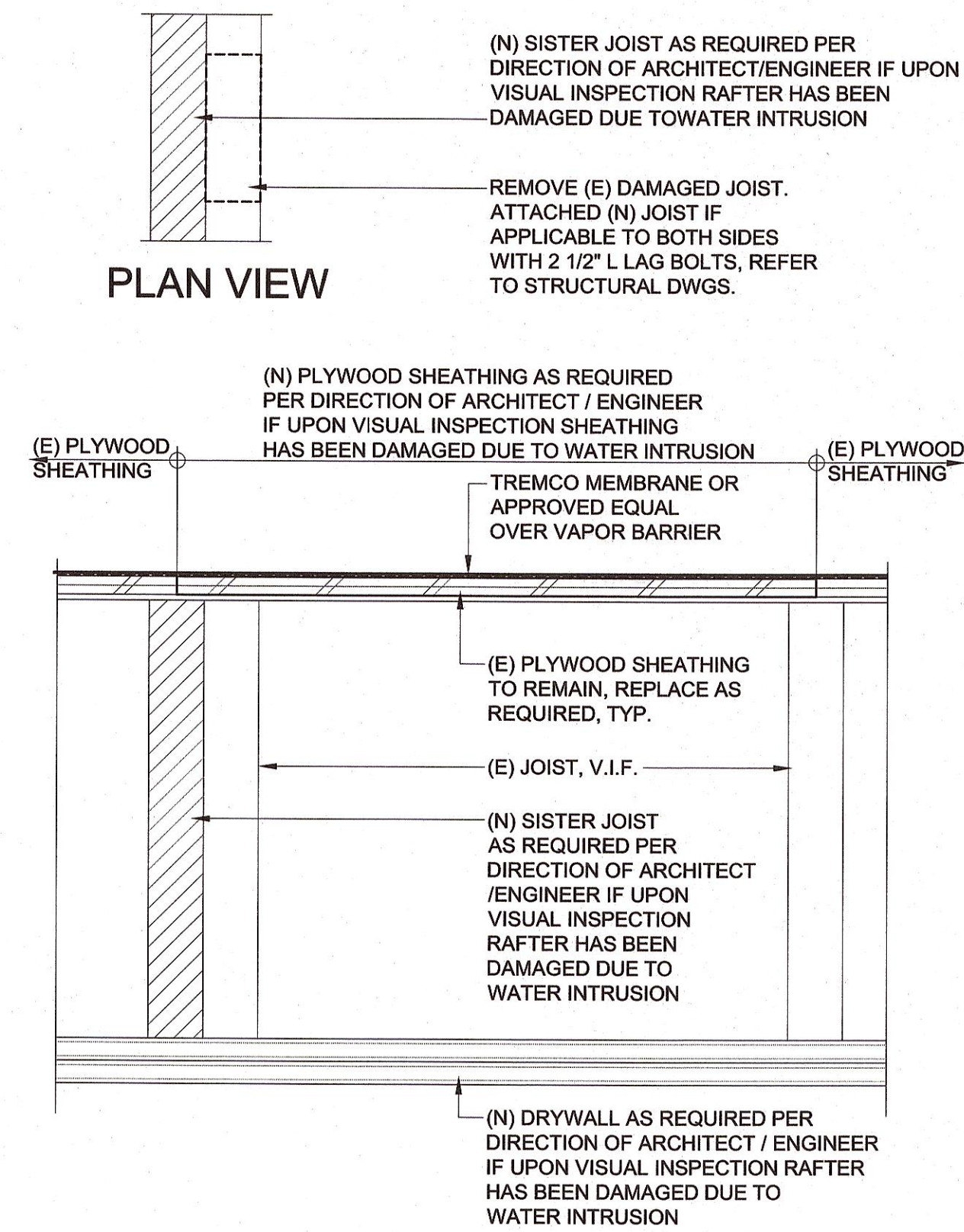
SCALE	DATE
AS NOTED	11/27/2019

AS NOTED	11/11/2010
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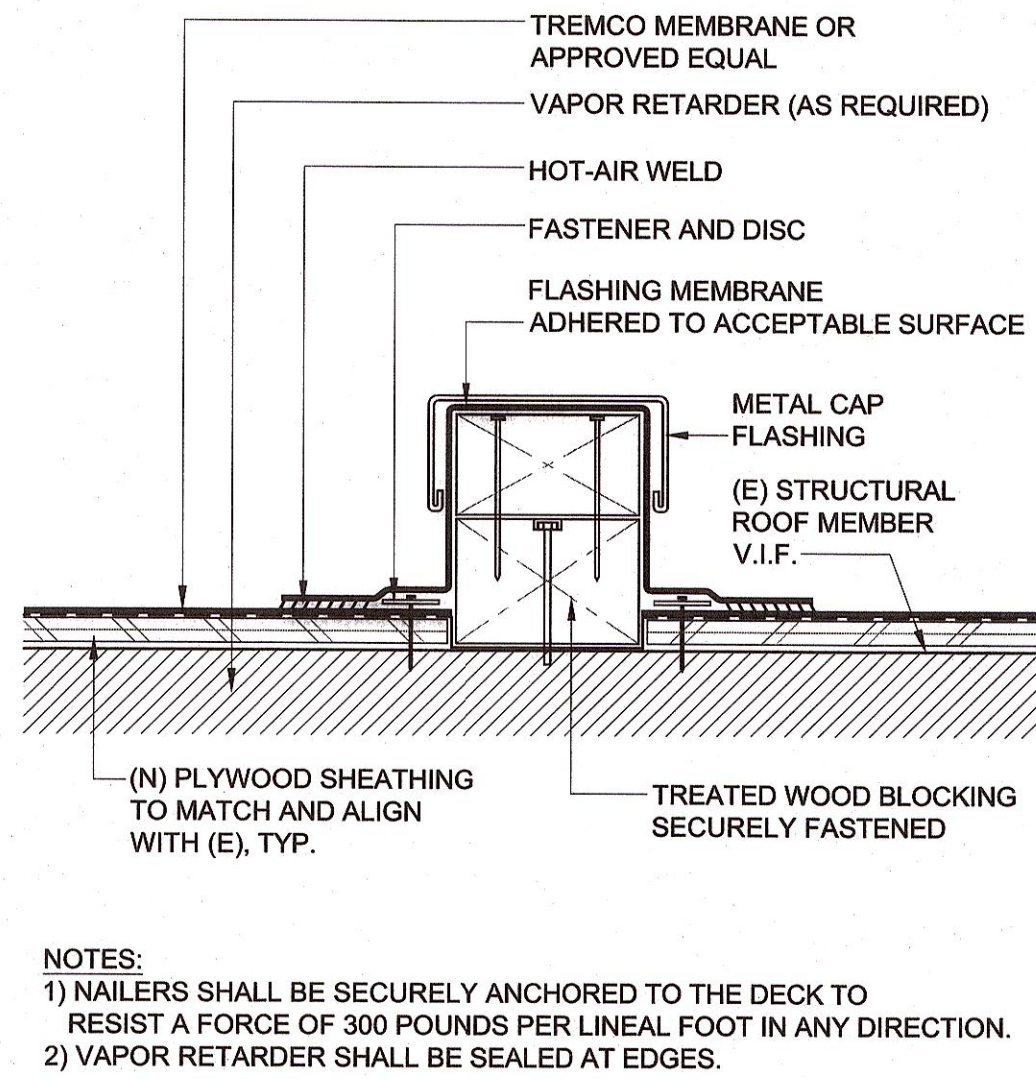
12/9/19
DATE

DRAWING NO.

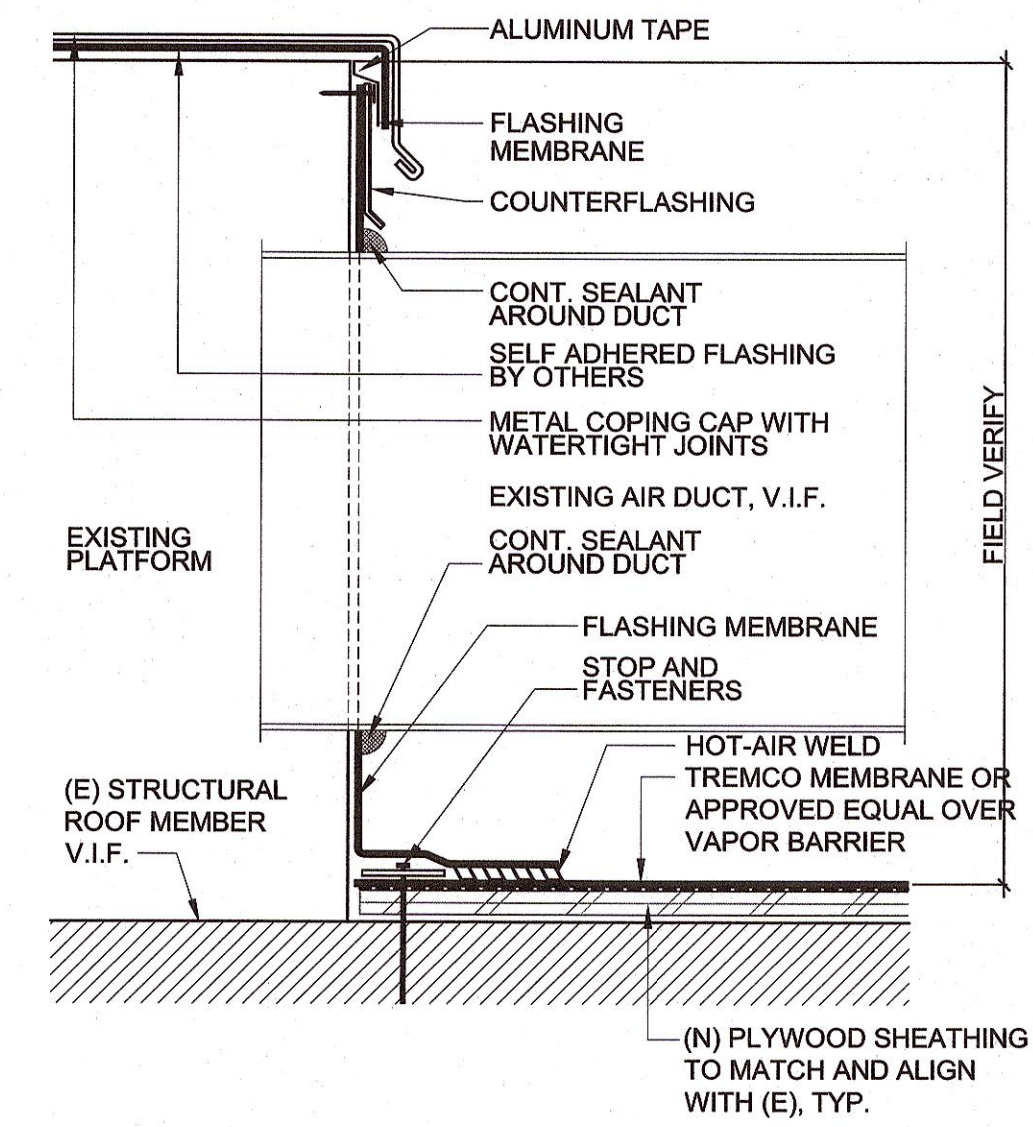
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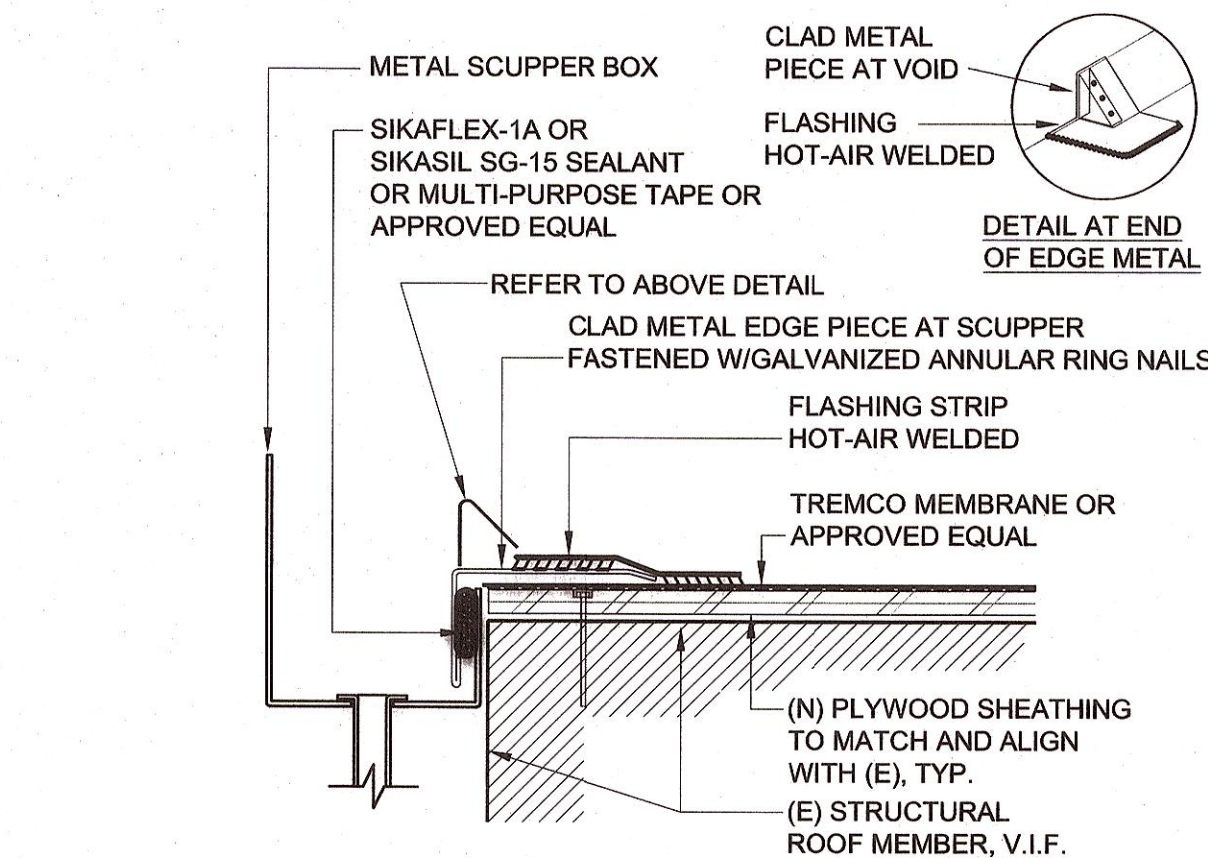
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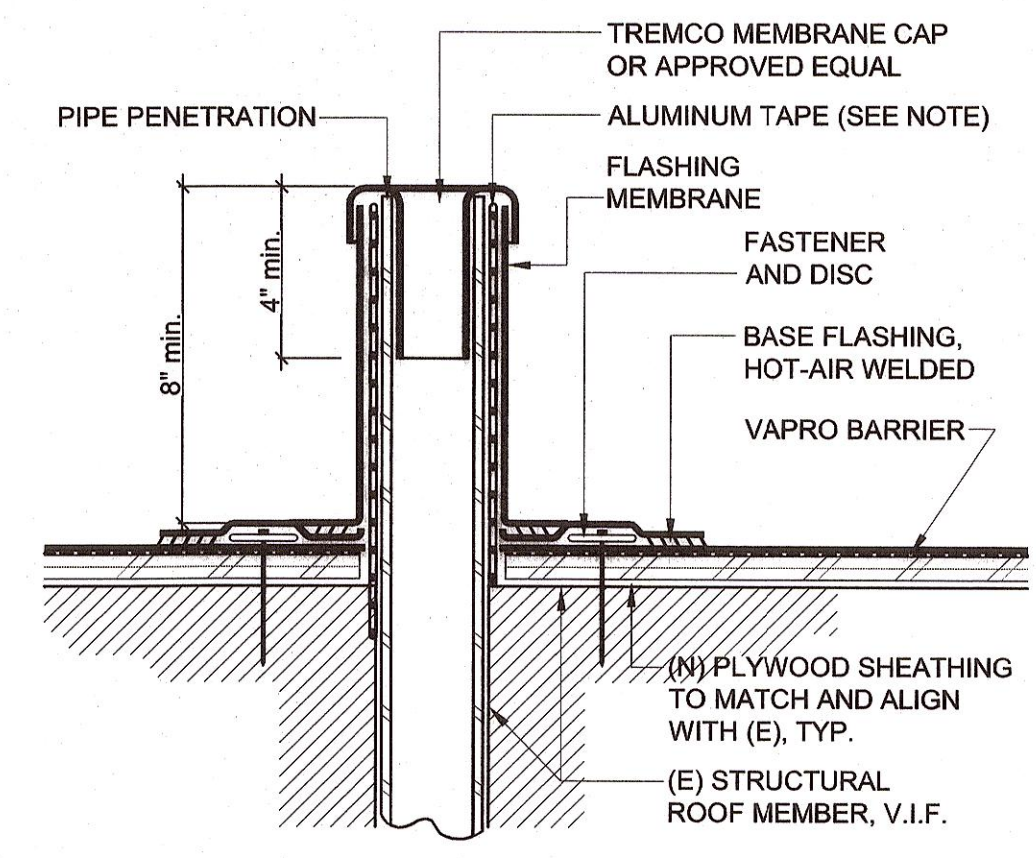
DETAIL AT EQUIPMENT SUPPORT
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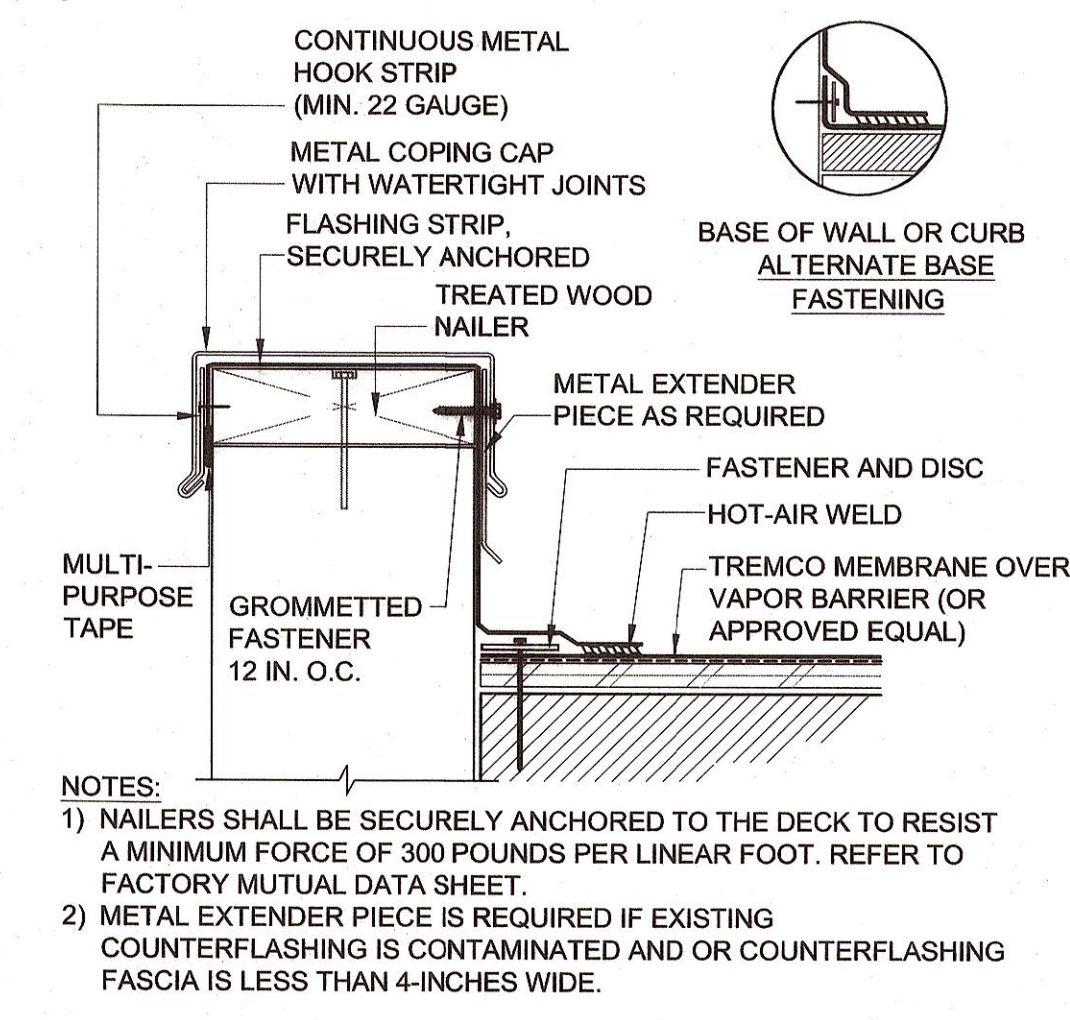
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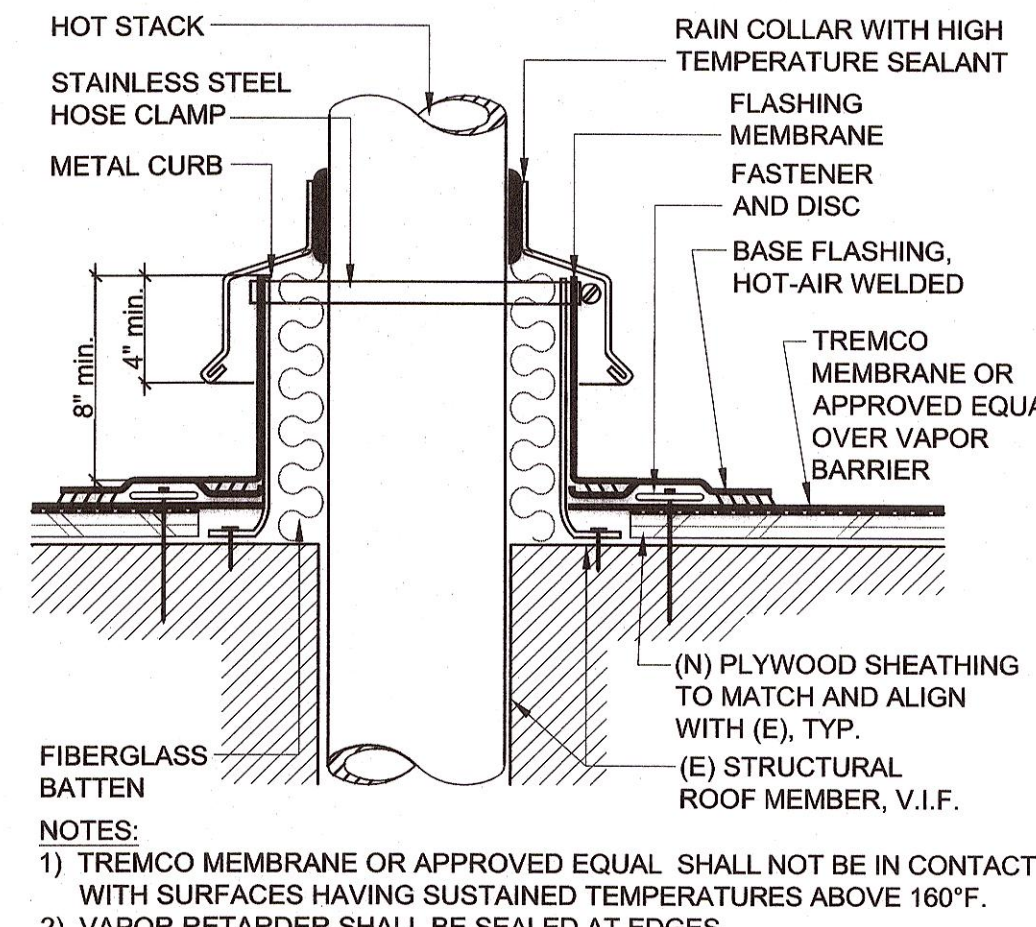
DETAIL AT SCUPPER BOX
SC: 3"=1'-0"



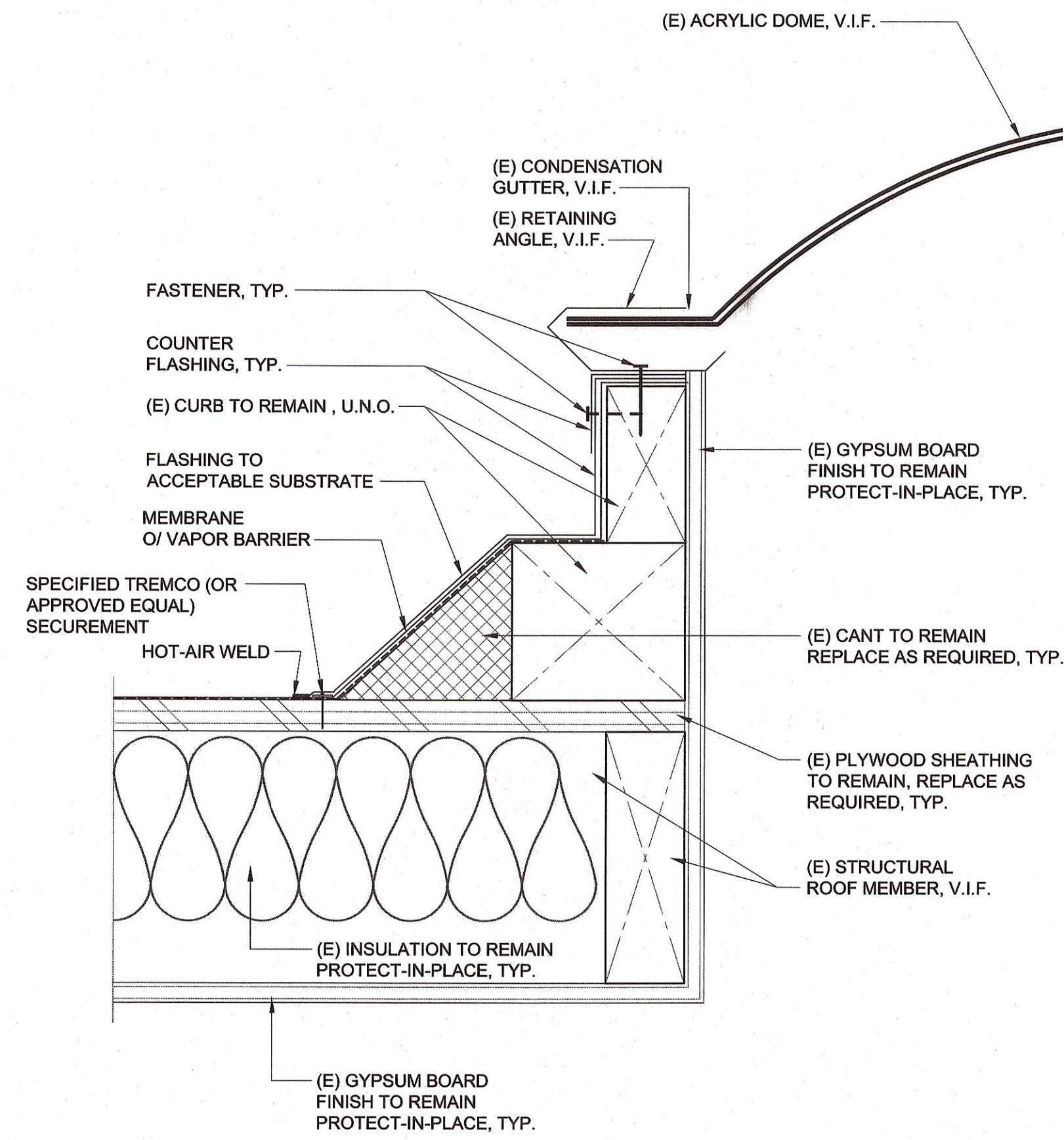
VENT STACK FLASHING DETAIL
3



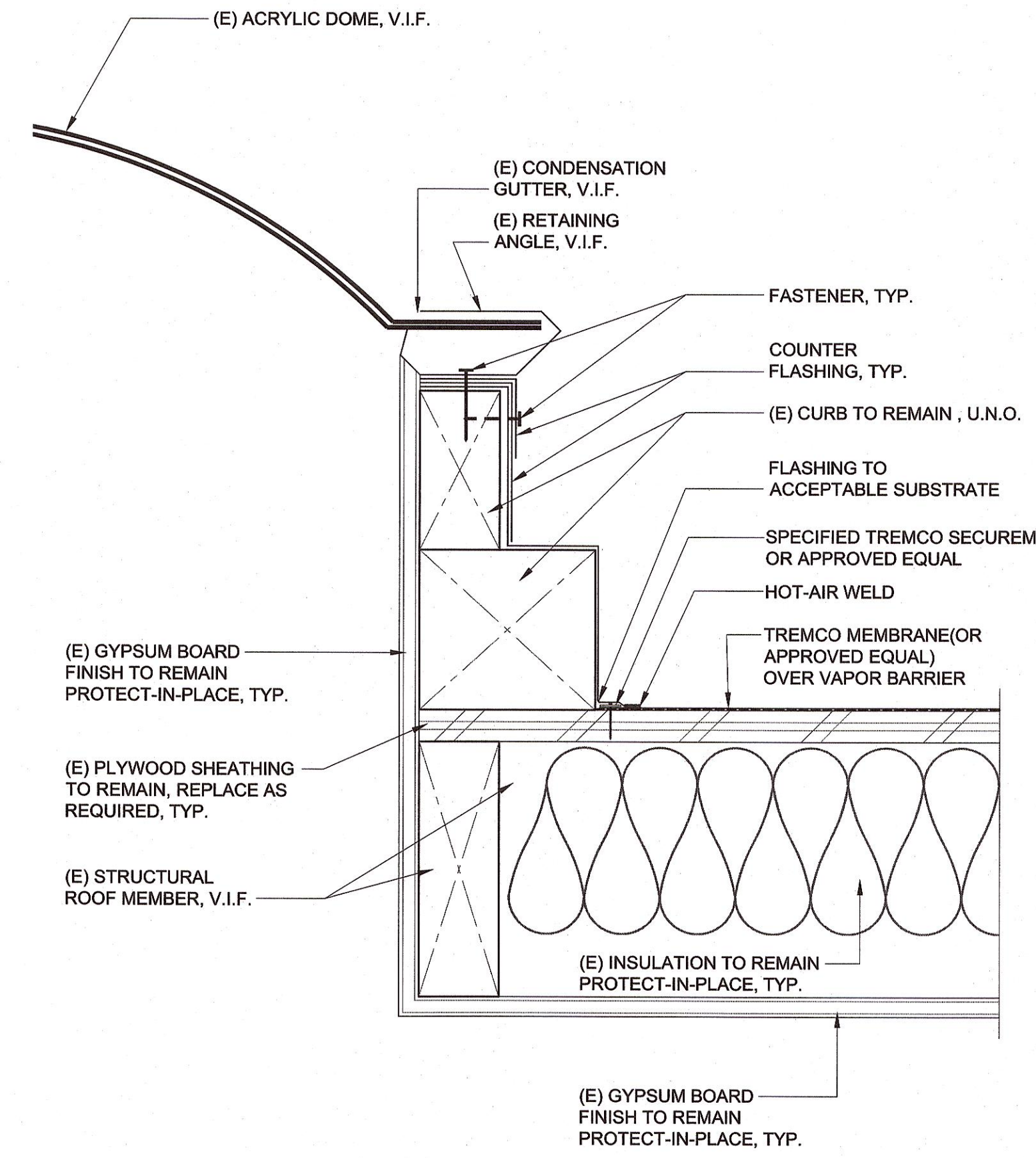
PARAPET WALL W/ METAL COPING CAP
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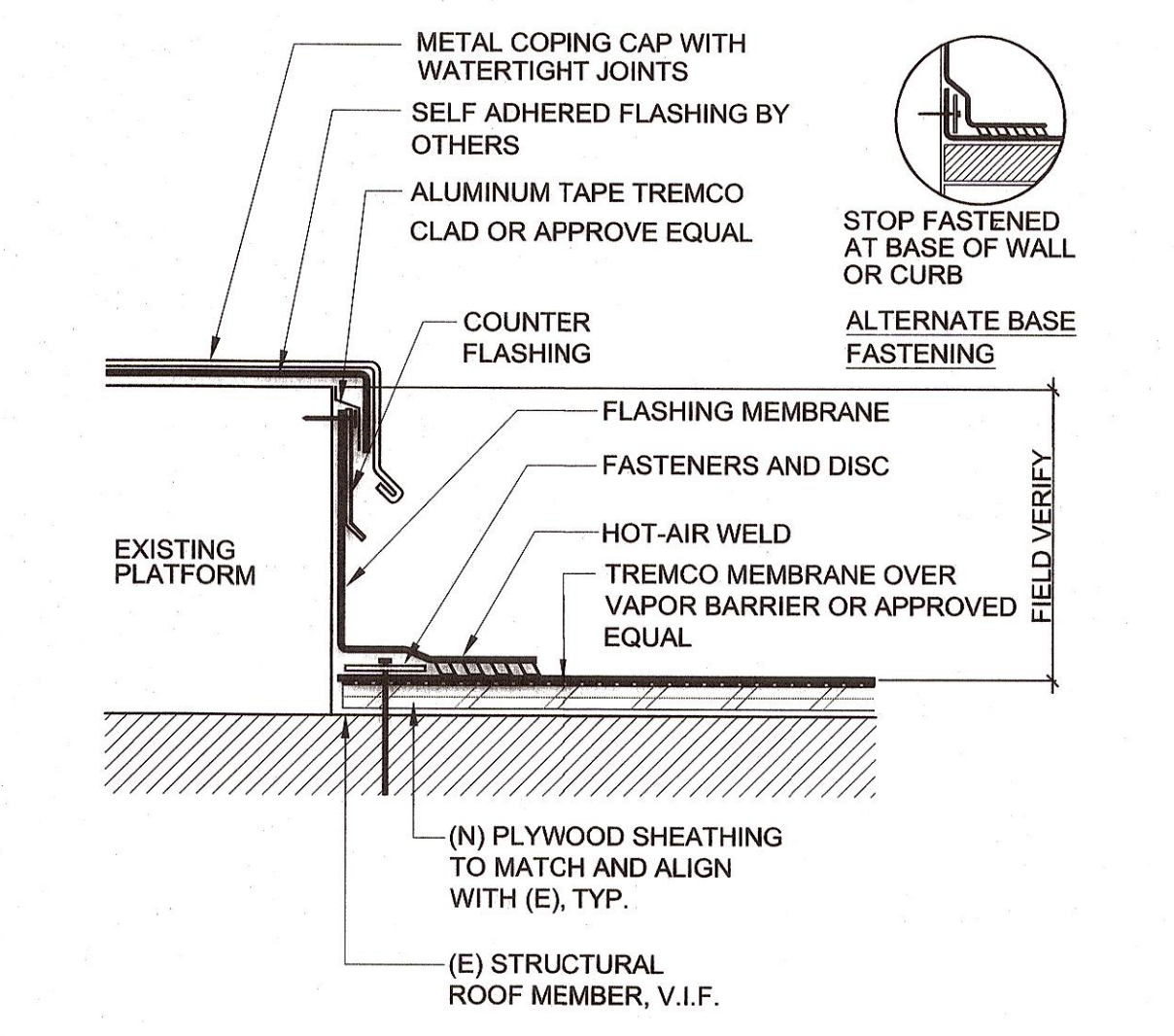
HEATED STACK FLASHING DETAIL
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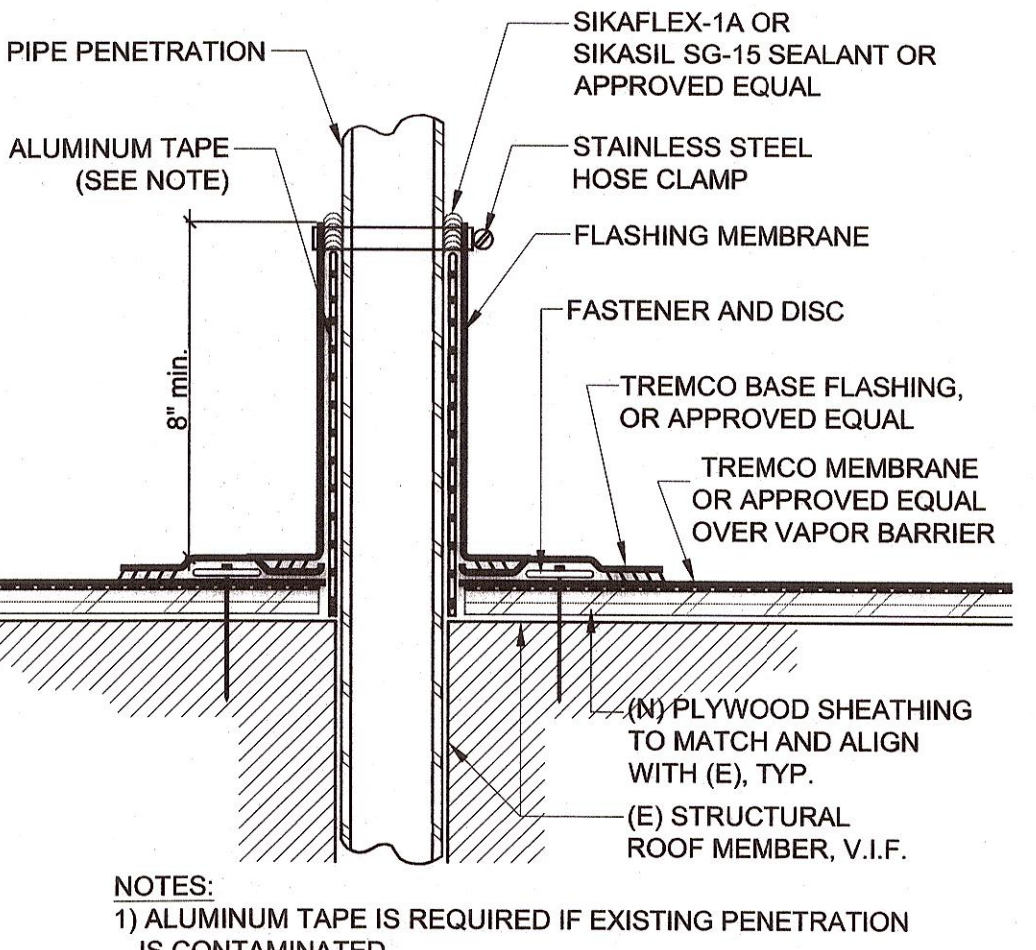
(E) SKYLIGHT FLASHING DETAIL
SC: 3"=1'-0"



(E) SKYLIGHT FLASHING DETAIL
SC: 3"=1'-0"



PLATFORM/PAD FLASHING DETAIL
SC: 3"=1'-0"



PIPE PENETRATION FLASHING DETAIL
SC: 3"=1'-0"

CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT - ENGINEERING DIVISION

ROOFING REPLACEMENT RECREATION CENTER LIVE OAK PARK
DETAILS

RECOMMENDED BY <i>[Signature]</i> CITY ENGINEER PREM KUMAR	DATE 12/9/19	APPROVED BY <i>[Signature]</i> DIRECTOR OF PUBLIC WORKS STEPHANIE KATSIOULEAS	DATE 12/9/19
DESIGNED BY <i>[Signature]</i> PROJECT MANAGER	DATE 12/9/19	SCALE 3"=1'-0"	DRAWING NO. A204 D-934
REVIEWED BY MS	DATE 11/13/2019	SHEET 10 OF 15	

811
Know what's below.
Call before you dig.

NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.

SUPPLEMENTAL NOTES:

- THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING.
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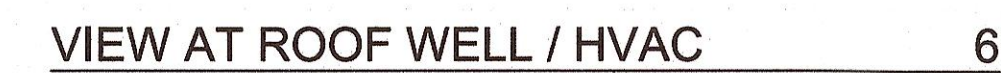
ENGINEER/ARCHITECT OF RECORD STAMP

[Signature]
JOSEPH STERN
11/27/2019

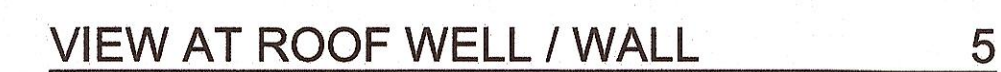
DESIGN FIRM NAME, ADDRESS, PHONE NUMBER

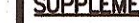





IDS
IDS GROUP
1 PETERS CANYON ROAD,
SUITE 130 IRVINE, CA. 92606
TEL: 949-387-8500, FAX: 949-387-0800

NO.	BY	DATE



- 1 REMOVE EXISTING HVAC EQUIPMENT AS REQUIRED AND REINSTALL AND TEST.
- 2 REMOVE AND REINSTALL EXISTING SKYLIGHT, SEE 7 & 11/A-204
- 3 PROTECT-IN-PLACE CONDUITS, ELECTRICAL FIXTURES AND ROOF PADS.
- 4 PROVIDE FLASHING AT ALL ROOF PENETRATIONS, SEE DETAIL 1, 2 & 3/A-204
- 5 PROVIDE FLASHING AT ALL CURBS, SEE DETAIL 4/A-204
- 6 REPLACE (E) METAL COPING WITH (N) GALVANIZED FLASHING, PAINT TO MATCH (E) COLOR
SEE DETAIL 5/A-204
- 7 ROOF TO WALL FLASHING, SEE SIMILAR DETAIL 4/A-204
- 8 ROOF TO WALL COPING AT HVAC ROOF WELL, SEE DETAIL 4/A-204
- 9 PROVIDE (N) VERTICAL APPLICATION OF TPA OR EQUAL TO COPING AT TOP OF WALL
SEE DETAIL 5/A-204
- 10 PROVIDE FLASHING AT (E) MECHANICAL DUCTS, SEE DETAIL 8/A-204
- 11 PROVIDE FLASHING AT (E) EQUIPMENT SUPPORT, SEE DETAIL 9/A-204



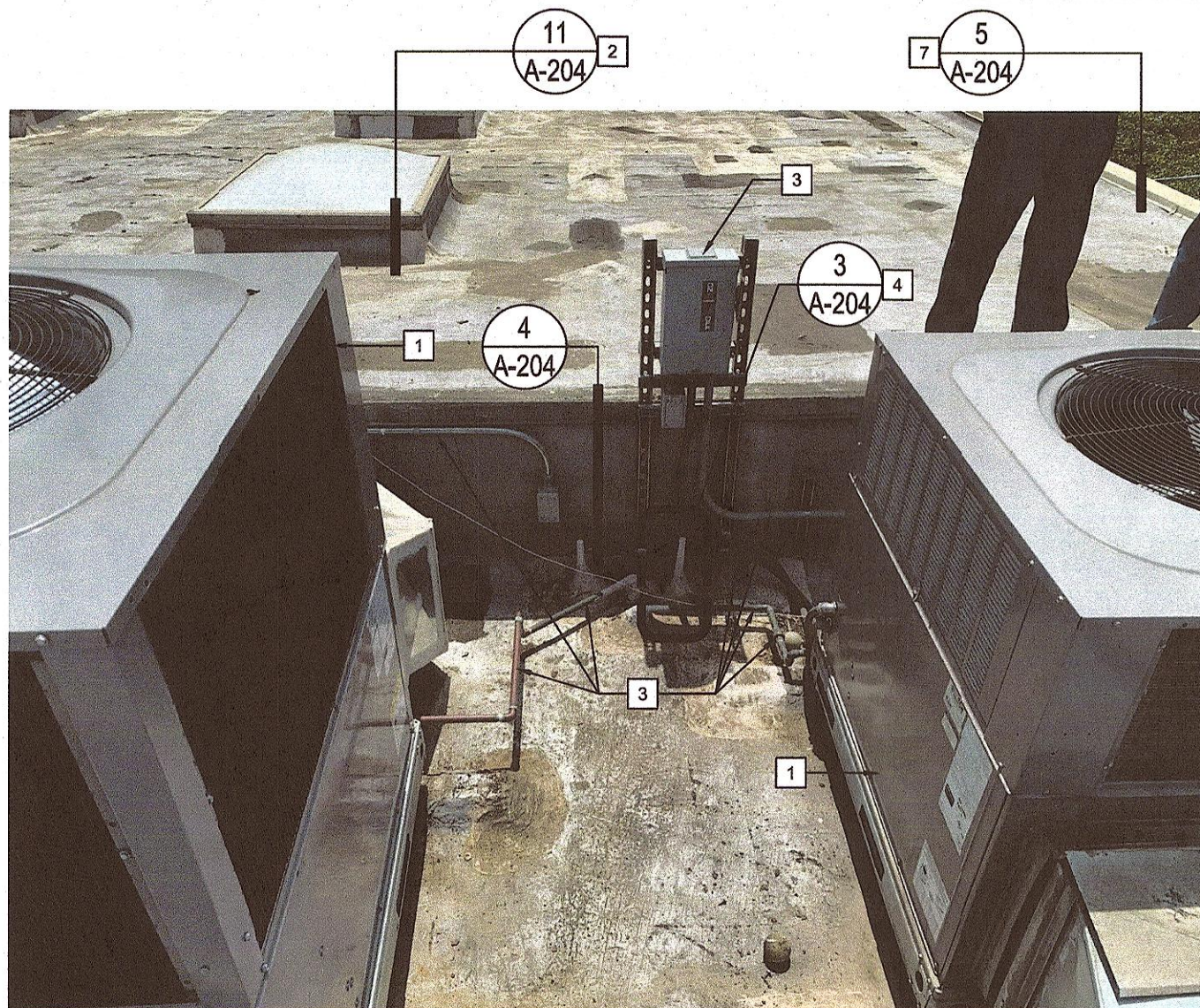
 Know what's below. Call before you dig.	SUPPLEMENTAL NOTES:		<p>ENGINEER/ARCHITECT OF RECORD STAMP</p>  <p>LICENSED ARCHITECT JOSEPH ELBERT No. C-15573 State of California Exp. 12-31-21</p> <p>DATE SIGNED _____ 11/21/2019</p>		<p>DESIGN FIRM NAME, ADDRESS, PHONE NUMBER</p> <p style="text-align: center;"> IDS GROUP</p> <p>1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA. 92606 TEL: 949-387-8500, FAX: 949-387-0800</p>		<h2 style="margin: 0;">FLOOR PLAN & ROOF PLAN</h2>	
	<ol style="list-style-type: none"> THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS. 							
<p>NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.</p>				REVIEWED BY _____ DATE _____		BY _____ DATE _____		
				REVISIONS		DATE _____		
		RECOMMENDED BY  DATE 12/9/19		APPROVED BY  DATE 12/19/19		<p>CITY ENGINEER PREM KUMAR</p> <hr/> <p>DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS</p>		
		CITY ENGINEER PREM KUMAR		DIRECTOR OF PUBLIC WORKS STEPHANIE KATSOULEAS				
		REVIEWED BY  PE DATE 12/9/19		SCALE N.T.S. DATE 12/04/2019		<p>DRAWING NO. A205</p> <p>D-934</p>		
		PROJECT MANAGER		DATE 12/04/2019				
		DESIGNED BY MS DATE 11/23/2019		<p>SHEET 11 OF 15</p>				
		DATE 11/23/2019						



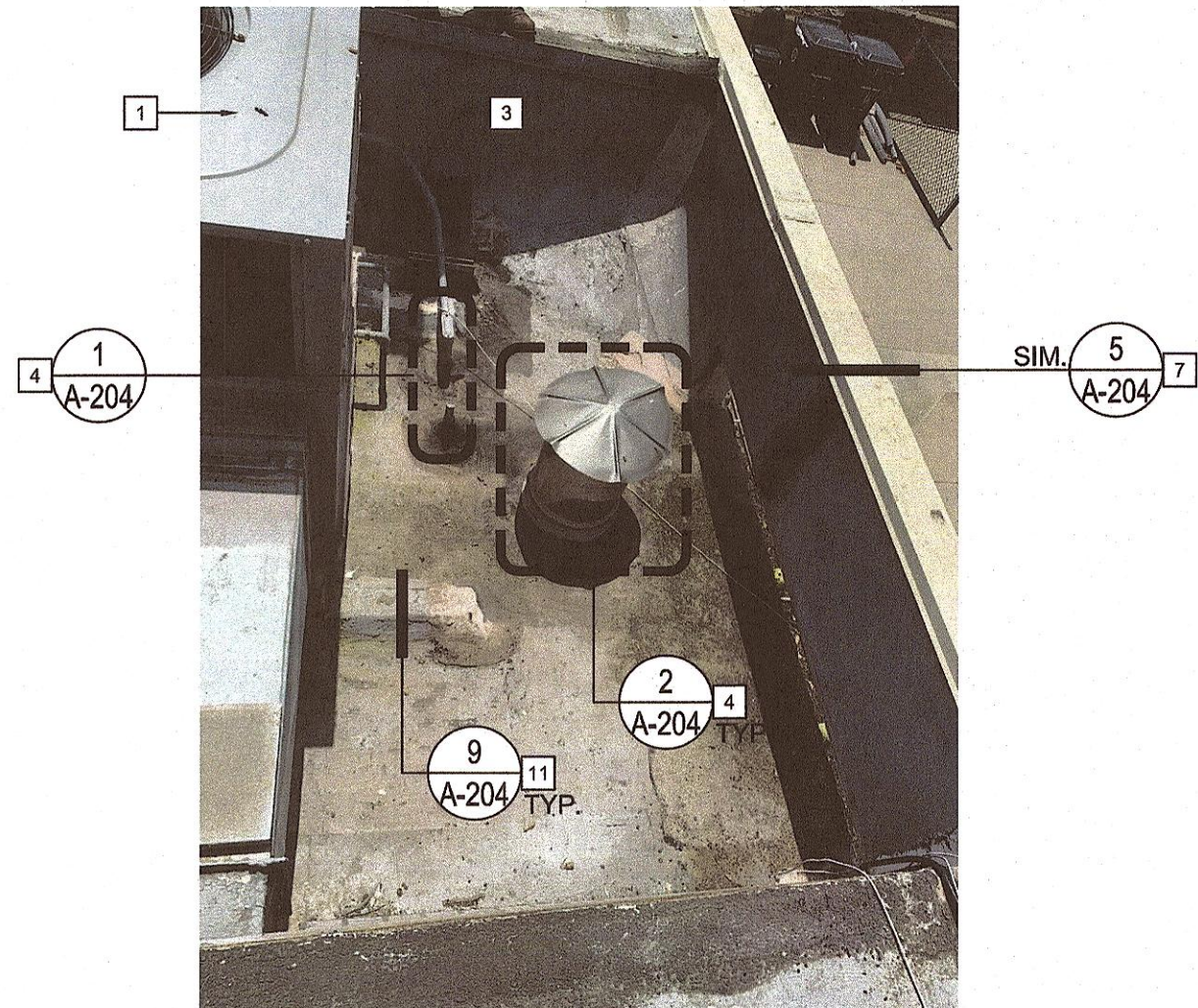
VIEW AT ROOF DECK / PARAPET 12



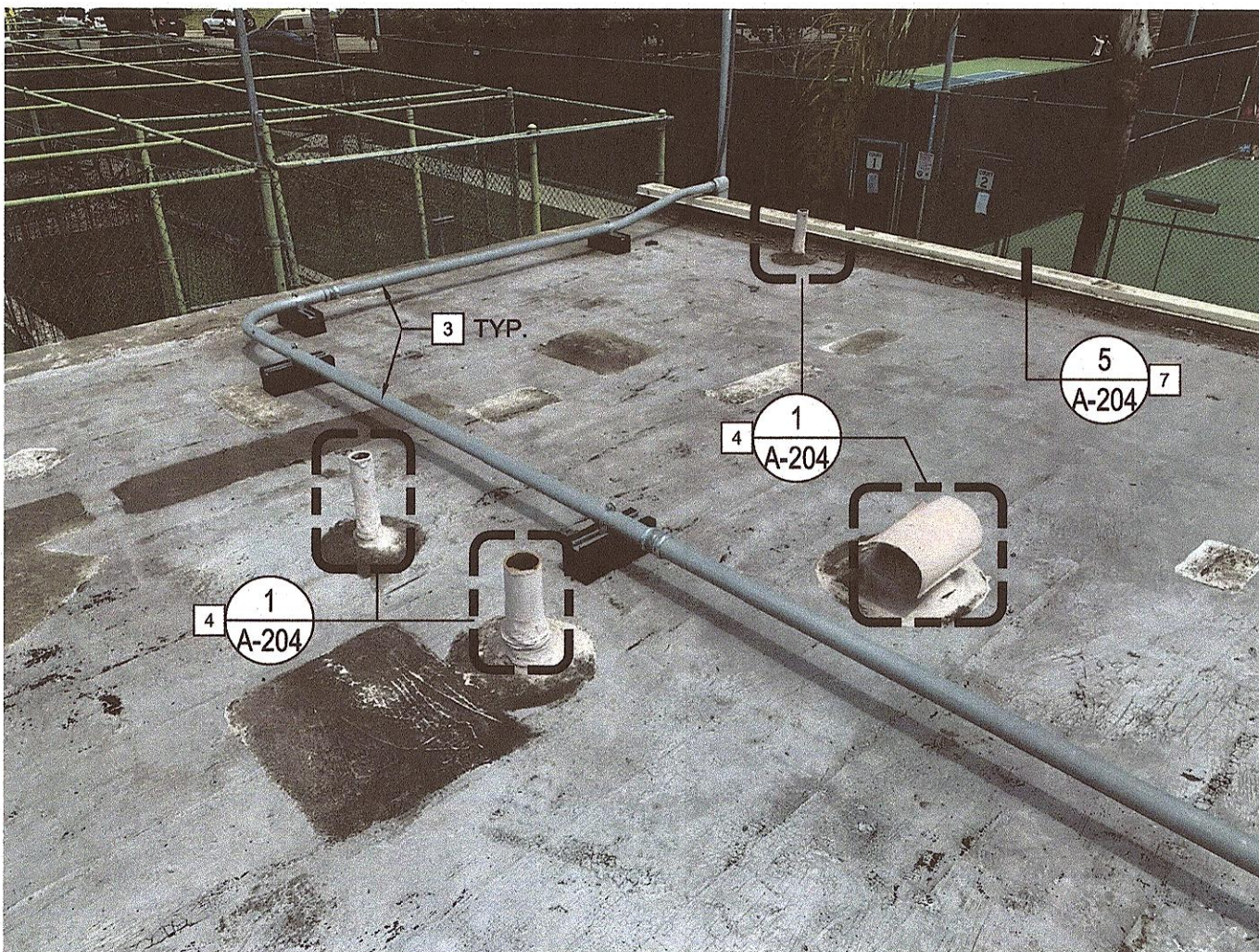
VIEW AT ROOF DECK / SKYLIGHT 9



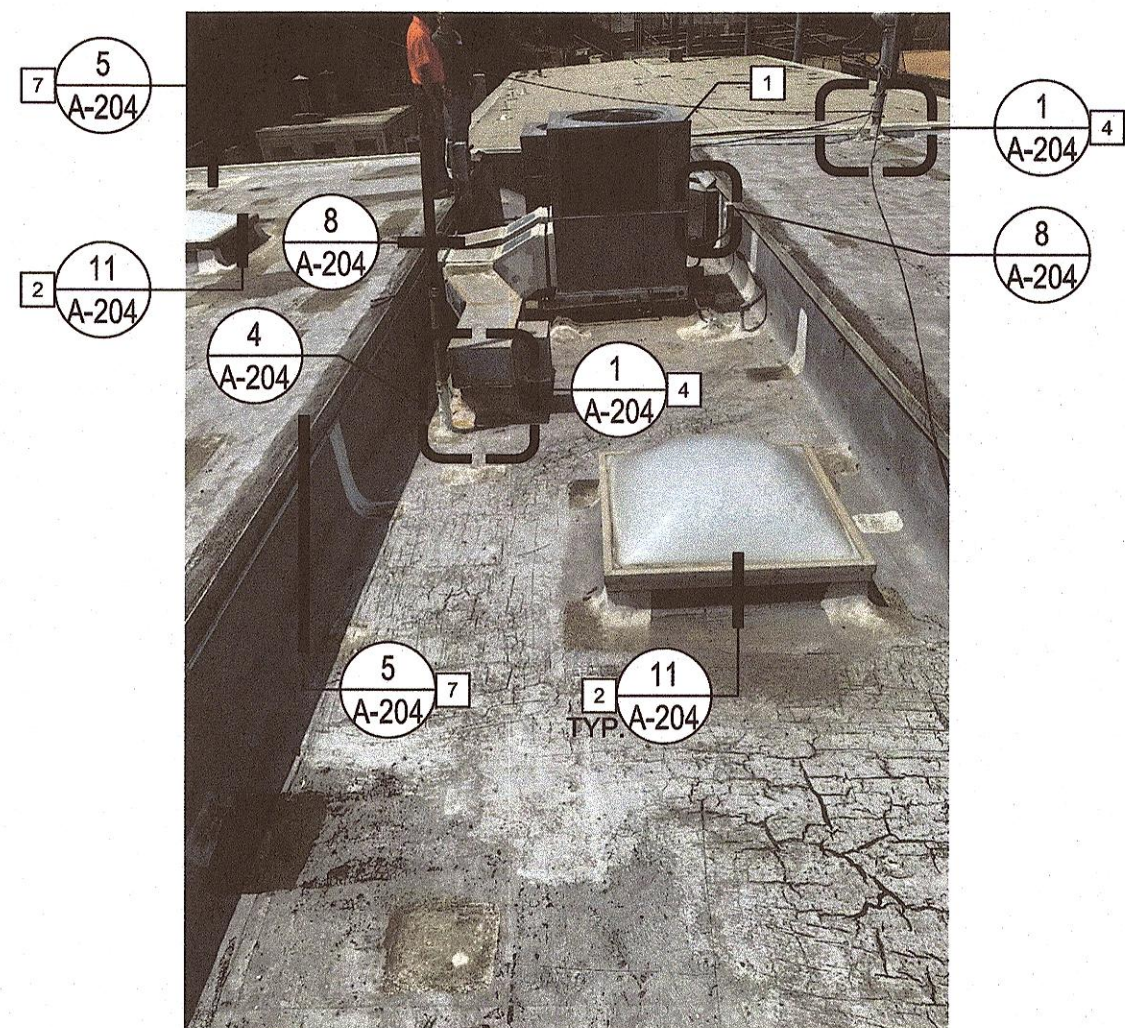
VIEW AT ROOF WELL / HVAC 9



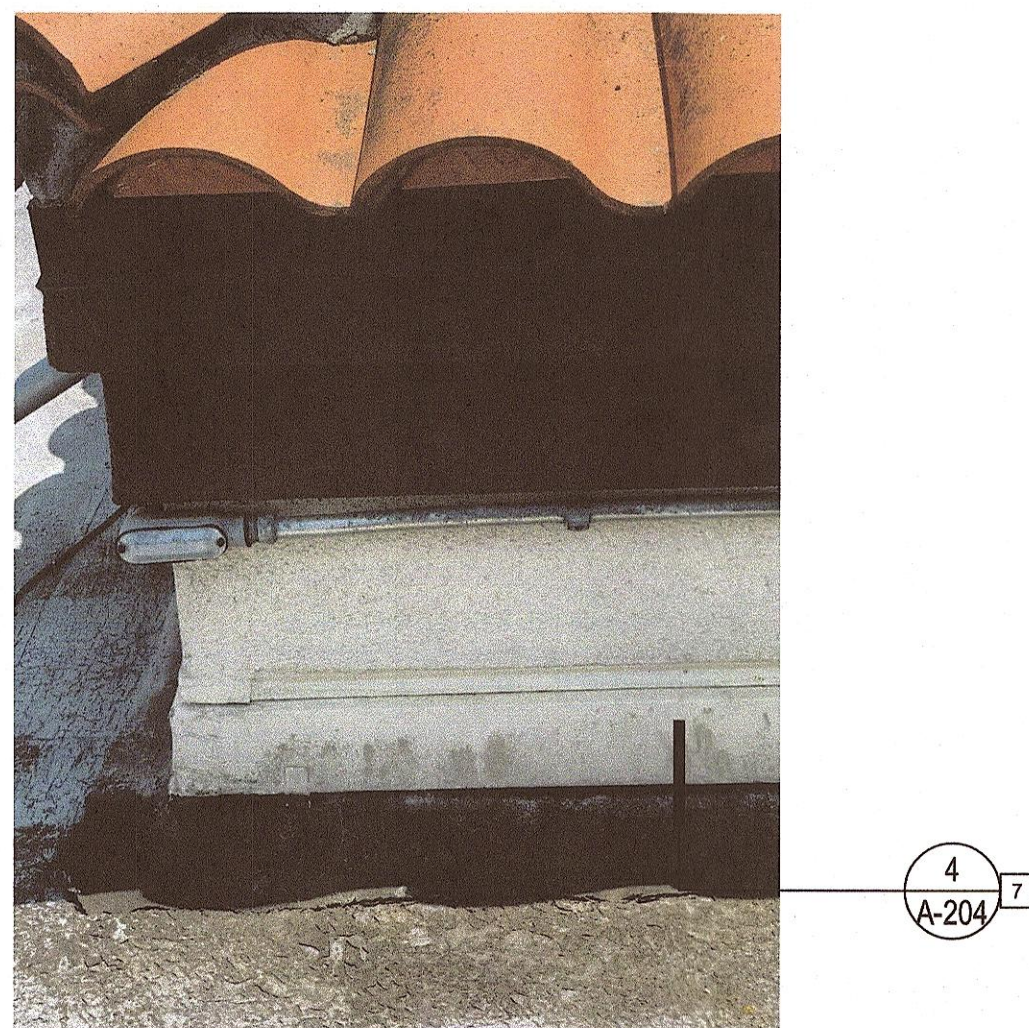
VIEW AT ROOF / PENETRATION 7



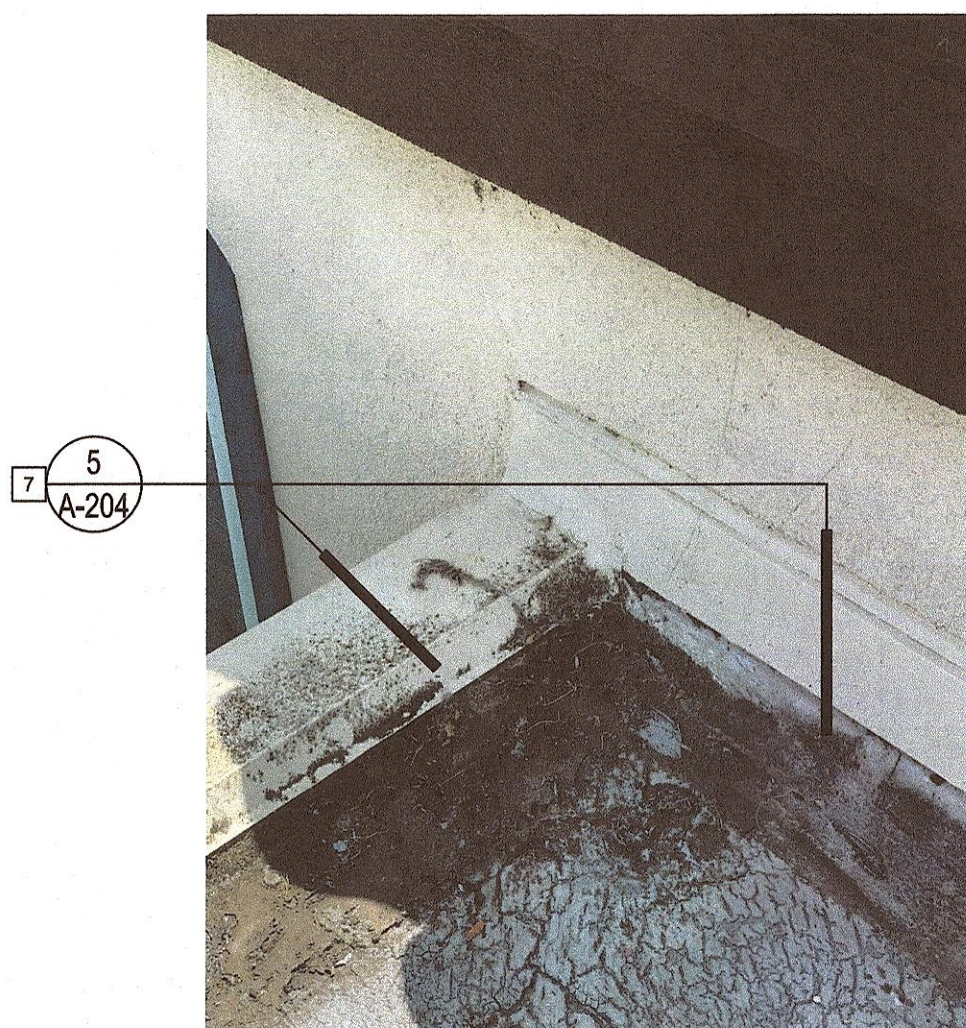
VIEW AT ROOF/ PENETRATIONS 11



VIEW AT ROOF/ EQUIPMENTS 8



VIEW AT ROOF/ FLASHING 5



VIEW AT ROOF/ FLASHING 4

KEYNOTES

- 1 REMOVE EXISTING HVAC EQUIPMENT AS REQUIRED AND REINSTALL.
- 2 REMOVE AND REINSTALL EXISTING SKYLIGHT, SEE 7 & 11/A-104.
- 3 PROTECT-IN-PLACE CONDUITS, ELECTRICAL FIXTURES AND ROOF PADS.
- 4 PROVIDE FLASHING AT ALL ROOF PENETRATIONS, SEE DETAIL 1, 2 & 3/A-104.
- 5 PROVIDE FLASHING AT ALL CURBS, SEE DETAIL 4/A-104
- 6 REPLACE (E) METAL COPING WITH (N) GALVANIZED FLASHING, PAINT TO MATCH (E) COLOR SEE DETAIL 5/A-104.
- 7 ROOF TO WALL FLASHING, SEE SIMILAR DETAIL 4/A-104.
- 8 ROOF TO WALL COPING AT HVAC ROOF WELL, SEE DETAIL 4/A-104.
- 9 PROVIDE (N) VERTICAL APPLICATION OF SARNAFIL TO COPING AT TOP OF WALL SEE DETAIL 5/A-104.
- 10 PROVIDE FLASHING AT (E) MECHANICAL DUCTS, SEE DETAIL 8/A-104
- 11 PROVIDE FLASHING AT (E) EQUIPMENT SUPPORT, SEE DETAIL 9/A-104



VIEW AT ROOF/ PENETRATIONS 10

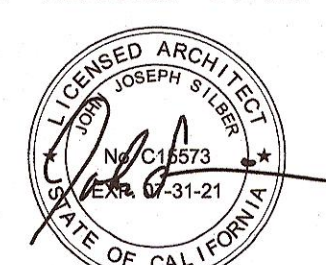


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ENGINEER/ARCHITECT OF RECORD STAMP



DATE SIGNED 11/21/2019

DESIGN FIRM NAME, ADDRESS, PHONE NUMBER



1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA. 92606 TEL: 949-387-8500, FAX: 949-387-0800

REVIEWED	BY	DATE

REFERENCES

NO.	BY	DATE

REVISIONS

NO.	BY	DATE

CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION

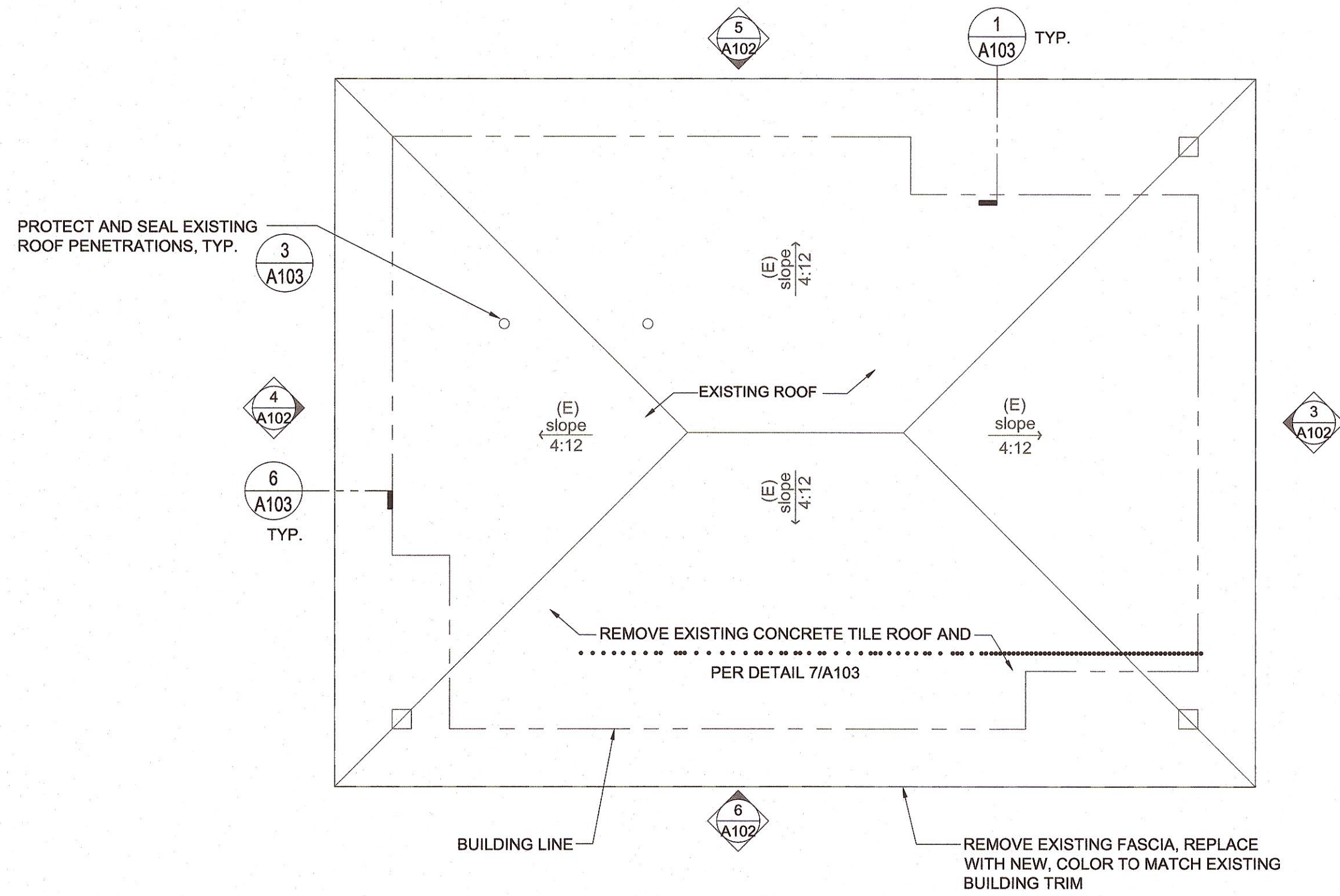
ROOFING REPLACEMENT RECREATION CENTER LIVE OAK PARK
PHOTOS

RECOMMENDED BY
[Signature]
CITY ENGINEER
PREM KUMAR
DATE 12/9/19

APPROVED BY
[Signature]
DIRECTOR OF PUBLIC WORKS
STEPHANIE KATSIOULEAS
DATE 12/9/19

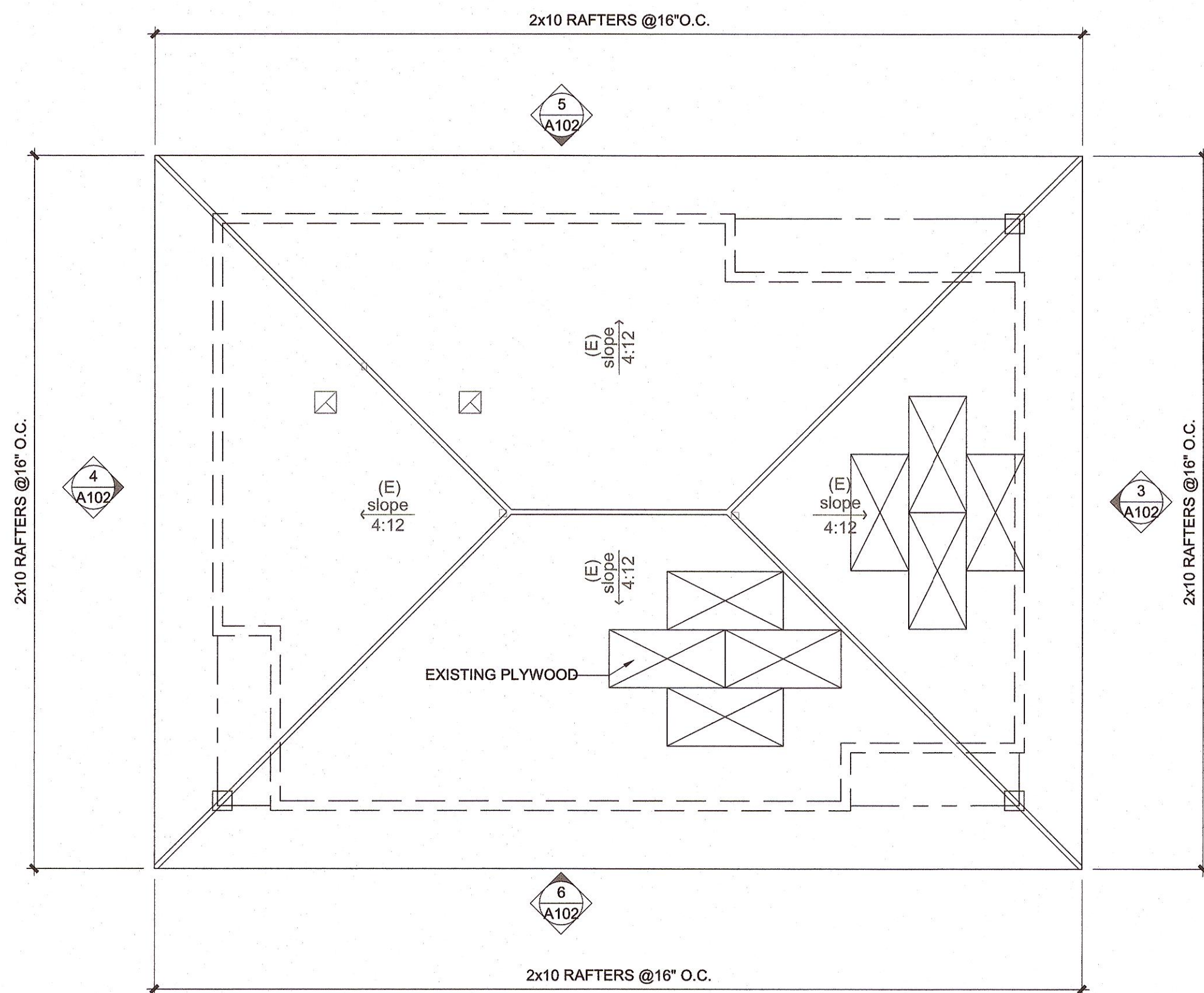
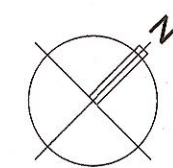
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SCALE
N.T.S.
DATE 12/04/2019
DRAWING NO.
A206
D-934
SHEET 12 OF 15



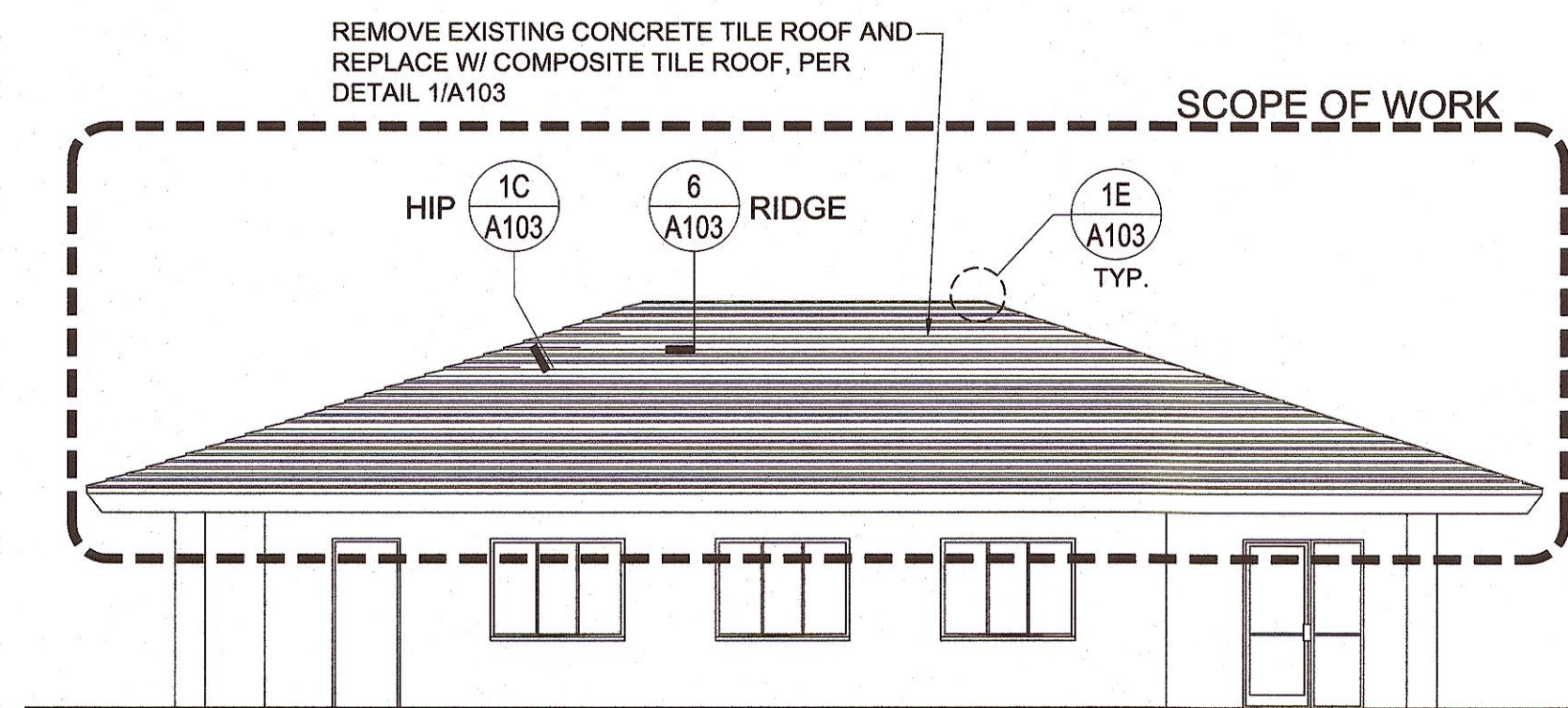
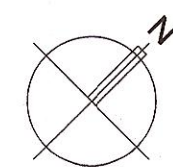
EXISTING ROOF PLAN
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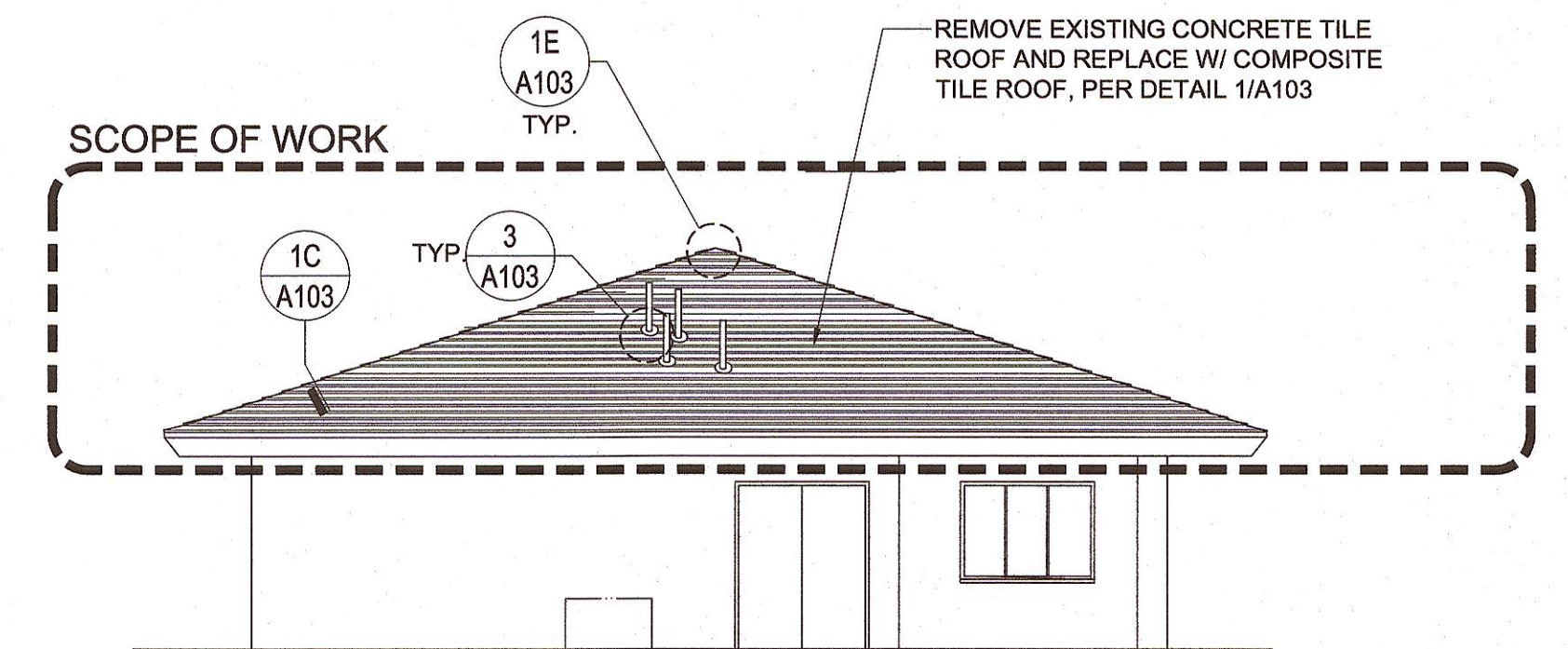
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NOT TO SCALE

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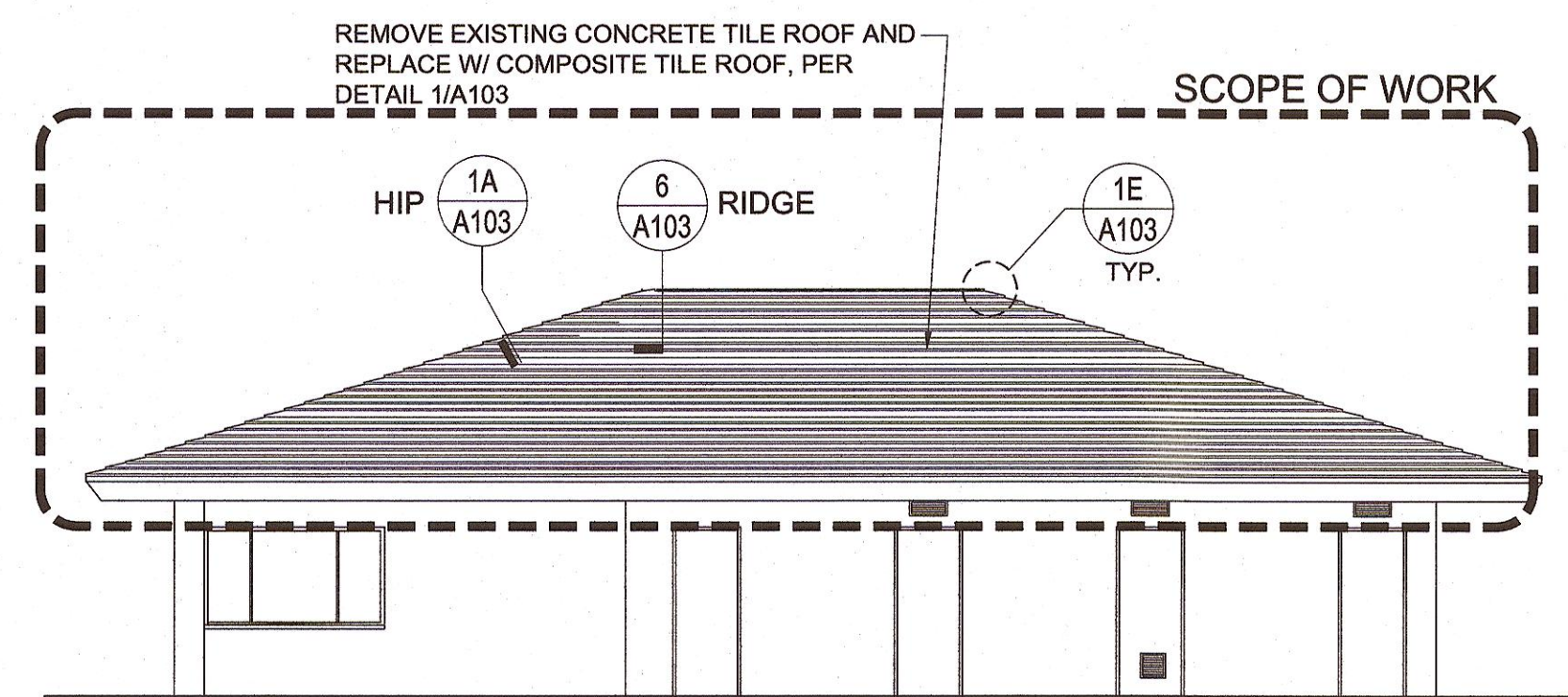
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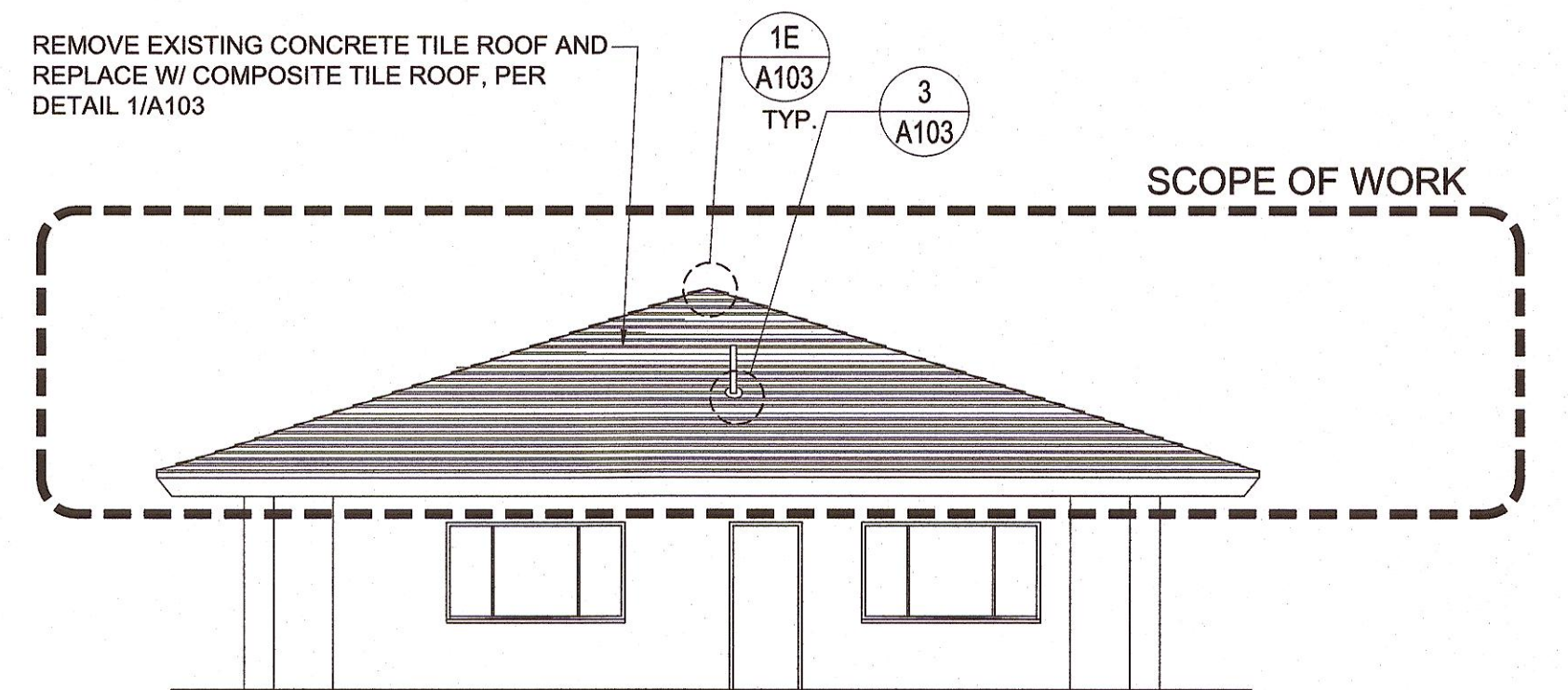
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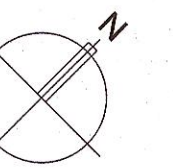
EXISTING ELEVATION - FOR REFERENCE ONLY
SC: 1/8"=1'-0"

5



EXISTING ELEVATION - FOR REFERENCE ONLY
SC: 1/8"=1'-0"

3



<p align="center">811 Know what's below. Call before you dig.</p> <p>NO WORK SHALL BE DONE ON THIS SITE UNTIL USA AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE, TWO WORKING DAYS BEFORE YOU DIG.</p>										<p>SUPPLEMENTAL NOTES:</p> <ol style="list-style-type: none"> THE CONTRACTOR SHALL LOCATE, VERIFY AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. DAMAGED UTILITIES SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE. DUE TO INDIVIDUAL LOT IMPROVEMENTS, THE EXISTING WATER, SEWER AND/OR GAS LATERALS MAY NOT BE AT THE LOCATIONS SHOWN OR SHOWN IN THEIR ENTIRETY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN EXCAVATING. THE CONTRACTOR SHALL DETERMINE THE DEPTH OF THE GAS SCE, CABLE, SEWER, STORM DRAIN AND WATER AT ALL INTERSECTIONS AND INTERFERENCES PRIOR TO CONSTRUCTION AND AS NOTED ON PLANS. 										<p>ENGINEER/ARCHITECT OF RECORD STAMP</p> <p align="center"> JOSEPH PREM KUMAR NO. 5173 STATE OF CALIFORNIA DATE SIGNED 11/21/2019 </p>										<p>DESIGN FIRM NAME, ADDRESS, PHONE NUMBER</p> <p align="center"> IDS GROUP 1 PETERS CANYON ROAD, SUITE 130 IRVINE, CA. 92606 TEL: 949-387-8500, FAX: 949-387-0800 </p>										<table border="1"> <tr> <th>REVIEWED</th> <th>BY</th> <th>DATE</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>										REVIEWED	BY	DATE																												<table border="1"> <tr> <th colspan="3">REFERENCES</th> </tr> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>										REFERENCES			NO.	BY	DATE																												<table border="1"> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>NO.</th> <th>BY</th> <th>DATE</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>										REVISIONS			NO.	BY	DATE																												<p align="center">CITY OF MANHATTAN BEACH PUBLIC WORKS DEPARTMENT – ENGINEERING DIVISION</p> <p align="center">ROOFING REPLACEMENT COMMUNITY BUILDING PLANS & ELEVATIONS</p> <table border="1"> <tr> <td> <p>RECOMMENDED BY</p> <p align="center"></p> <p>CITY ENGINEER PREM KUMAR</p> </td> <td> <p>APPROVED BY</p> <p align="center"></p> <p>DIRECTOR OF PUBLIC WORKS STEPHANIE KATSIOULEAS</p> </td> </tr> <tr> <td> <p>REVIEWED BY</p> <p align="center"></p> <p>PROJECT MANAGER</p> </td> <td> <p>SCALE</p> <p>1/8"=1'-0"</p> </td> </tr> <tr> <td> <p>DESIGNED BY</p> <p>MS</p> </td> <td> <p>DATE</p> <p>11/21/2019</p> </td> </tr> </table> <p align="right">DRAWING NO. A302 D-934</p>										<p>RECOMMENDED BY</p> <p align="center"></p> <p>CITY ENGINEER PREM KUMAR</p>	<p>APPROVED BY</p> <p align="center"></p> <p>DIRECTOR OF PUBLIC WORKS STEPHANIE KATSIOULEAS</p>	<p>REVIEWED BY</p> <p align="center"></p> <p>PROJECT MANAGER</p>	<p>SCALE</p> <p>1/8"=1'-0"</p>	<p>DESIGNED BY</p> <p>MS</p>	<p>DATE</p> <p>11/21/2019</p>
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CITY OF MANHATTAN BEACH

BID DOCUMENTS

PROJECT NO. D-934

**Roofing Replacement at Live Oak Park and Marine
Avenue Park**

November 2019



**CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT
PROJECT MANAGER: MAMERTO ESTEPA JR. , PE
1400 HIGHLAND AVENUE
MANHATTAN BEACH, CA 90266**

Prem Kumar, City Engineer C52463

John Silber, AIA C15573

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**NOTICE INVITING BIDS
FOR
ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK**

Project number: D-934 Bid Number: 1226-20

NOTICE IS HEREBY GIVEN that the City of Manhattan Beach, California ("City") invites sealed Bids for the Project. The City will receive such Bids at the City Clerk's office, City Hall, 1400 Highland Avenue, Manhattan Beach, California 90266 up to 11:00 a.m. on Tuesday, December 17, 2019, at which time they will be publicly opened and read aloud.

All Bids must be made on the form furnished by the City. Each Bid must be submitted in a sealed envelope addressed to the City Clerk with the Project name and identification number typed or clearly printed on the lower left corner of the envelope. Bids must remain valid and shall not be subject to withdrawal for 90 calendar Days after the Bid opening date.

SCOPE OF WORK. The Project includes, without limitation, furnishing all necessary labor, materials, equipment and other incidental and appurtenant Work necessary to satisfactorily complete the Project, as more specifically described in the Contract Documents. This Work will be performed in strict conformance with the Contract Documents, permits from regulatory agencies with jurisdiction, and applicable regulations. The quantity of Work to be performed and materials to be furnished are approximations only, being given as a basis for the comparison of Bids. Actual quantities of Work to be performed may vary at the discretion of the City Engineer. Time for completion of the Work is 30 total Working Days from the date specified in the Notice to Proceed.

OBTAINING BID DOCUMENTS. Bidders may obtain free copies of the Plans, Specifications and other Contract Documents online by visiting <https://www.bidsync.com>.

REGISTRATION WITH THE DEPARTMENT OF INDUSTRIAL RELATIONS. In accordance with Labor Code Sections 1725.5 and 1771.1, no contractor or subcontractor shall be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Section 1725.5 [with limited exceptions for bid purposes only under Labor Code Section 1771.1(a)].

PREVAILING WAGES. In accordance with Labor Code Section 1770 *et seq.*, the Project is a "public work." The selected Bidder (Contractor) and any Subcontractors shall pay wages in accordance with the determination of the Director of the Department of Industrial Relations ("DIR") regarding the prevailing rate of per diem wages. Copies of those rates are on file with the Director of Public Works and are available to any interested party upon request. The Contractor shall post a copy of the DIR's determination of the prevailing rate of per diem wages at each job site. This Project is subject to compliance monitoring and enforcement by the DIR.

BONDS. Each Bid must be accompanied by a cash deposit, cashier's check, certified check or Bidder's Bond issued by a Surety insurer, made payable to the City and in an amount not less than ten percent of the total Bid submitted. Personal or company checks are not acceptable. Upon Contract award, the Contractor shall provide faithful performance and payment Bonds, each in a sum equal to the Contract Price, as well as a warranty or maintenance Bond that is valid for

one year from Project acceptance in the amount of ten percent of the Contract Price. All Bonds must be issued by a California admitted Surety insurer using the forms set forth in the Contract Documents, or in any other form approved by the City Attorney. Failure to enter into the Contract with the City, including the submission of all required Bonds and insurance coverages, within ten calendar days after the date of the mailing of written notice of contract award to the Bidder, shall subject the Bid security to forfeiture to the extent provided by law.

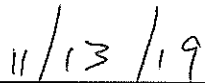
LICENSES. Each Bidder shall possess a valid Class B or C39 Contractor's license issued by the California State Contractors License Board at the time of the Bid submission, unless this Project has any federal funding, in which case the successful Bidder must possess such a license at the time of Contract award. The successful Contractor must also possess a current City business license.

RETENTION SUBSTITUTION. Five percent of any progress payment will be withheld as retention. In accordance with Public Contract Code Section 22300 and at the request and expense of the Contractor, securities equivalent to the amount withheld may be deposited with the City or with a State or federally chartered bank as escrow agent, which shall then pay such moneys to the Contractor. Upon satisfactory completion of the Project, the securities shall be returned to the Contractor. Alternatively, the Contractor may request that the City make payments of earned retentions directly to an escrow agent at the Contractor's expense. No such substitutions shall be accepted until all related documents are approved by the City Attorney.

BIDDING PROCESS. The City reserves the right to reject any Bid or all Bids, and to waive any irregularities or informalities in any Bid or in the bidding, as deemed to be in its best interest.

By:


Prem Kumar, City Engineer


Date

INSTRUCTIONS TO BIDDERS

FORM OF BID. Bids shall be made on the Bid forms found herein. Bidders shall include all forms and fill in all blank spaces, including inserting "N/A" (for not applicable) where necessary. The Bid shall be enclosed in a sealed envelope bearing the Bidder's name and the Project name and identification number as described in the Notice Inviting Bids.

Any Bid not accompanied by a Contractor's Statement completed with all information required and bearing the signature of the Bidder's duly authorized representative under penalty of perjury may be deemed non-responsive and rejected. If the City determines that any information provided by a Bidder in the Contractor's Statement is false or misleading, or is so incomplete as to be false or misleading, the City may reject the Bid submitted by such Bidder as being non-responsive.

DELIVERY OF BIDS. The Bid shall be delivered by the time and date and to the place specified in the Notice Inviting Bids. No oral, faxed, emailed, or telephonic Bids or alternatives will be considered. Bidders are solely responsible for ensuring that their Bids are received in proper time, and Bidders assume all risks arising out of their chosen means of delivery. Any Bid received after the Bid submission deadline shall be returned unopened. Bidders are invited to be present for Bid opening. Accepted Bids shall become the property of the City.

AMENDED BIDS. Unauthorized conditions, limitations or provisos attached to a Bid may cause the Bid to be deemed incomplete and non-responsive.

WITHDRAWAL OF BID. A Bid may be withdrawn without prejudice upon written request by the Bidder filed with the City Clerk before the Bid submission deadline. Bids must remain valid and shall not be subject to withdrawal for 90 Days after the Bid opening date.

BIDDER'S SECURITY. Each Bid shall be accompanied by cash, a certified or cashier's check payable to the City, or a satisfactory Bid Bond in favor of the City executed by the Bidder as principal and an admitted surety insurer as Surety, in an amount not less than ten percent of the amount set forth in the Bid. The cash, check or Bid Bond shall be given as a guarantee that, if selected, the Bidder will execute the Contract in conformity with the Contract Documents, and will provide the evidence of insurance and furnish the specified Bonds, within ten calendar days after the date of delivery of the Contract Documents to the Bidder. In case of the Bidder's refusal or failure to do so, the City may award the Contract to the next lowest responsible bidder, and the cash, check, or Bond (as applicable) of the lowest Bidder shall be forfeited to the City to the extent permitted by law. No Bid Bond will be accepted unless it conforms substantially to the form provided in these Contract Documents.

QUANTITIES APPROXIMATE. Any quantities shown in the Bid form or elsewhere herein shall be considered as approximations listed to serve as a general indication of the amount of Work or materials to be performed or furnished, and as basis for the Bid comparison. The City does not guarantee that the actual amounts required will correspond with those shown. As deemed necessary or convenient, the City may increase or decrease the amount of any item or portion of Work or material to be performed or furnished or omit any such item or portion, in accordance with the Contract Documents.

ADDENDA. The City Engineer may, from time to time, issue Addenda to the Contract Documents. The City shall post all documents to the City's website at <http://www.ci.manhattan-beach.ca.us> or <https://www.citymb.info>. The Addenda may also be posted to BidSync at

<https://www.bidsync.com>. Bidders are responsible for ensuring that they have received any and all Addenda. It is the Bidder's responsibility to actively check BidSync and/or the City's website for Addenda or bulletin updates. Each Bidder is responsible for verifying that it has received all Addenda issued. Bidders must acknowledge receipt of all Addenda, if any, using the Addenda Acknowledgement Form included in these Bid Documents. Failure to acknowledge receipt of all Addenda may cause a Bid to be deemed incomplete and non-responsive.

DISCREPANCIES IN BIDS. Each Bidder shall set forth as to each item of Work, in clearly legible words and figures, a unit or line item Bid amount for the item in the respective spaces provided for this purpose.

In case of discrepancy between the unit price and the extended amount set forth for the item, the unit price shall prevail. However, if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or if the unit price is the same amount as the entry in the "extended amount" column, then the amount set forth in the "extended amount" column for the item shall prevail in accordance with the following:

- (1) As to lump sum items, the amount set forth in the "extended amount" column shall be the unit price.
- (2) As to unit price items, the amount set forth in the "extended amount" column shall be divided by the estimated quantity for the item set forth in the Bid documents, and the price thus obtained shall be the unit price.

In case of discrepancy between words and figures, the words shall prevail.

COMPETENCY OF BIDDERS. In evaluating Bidder responsibility, consideration will be given not only to the financial standing, but also to the general competency of the Bidder for the performance of the Project. Each Bidder shall set forth in the designated area of the Bid form a statement of its experience. No Contract will be executed with a Bidder that is not licensed and registered with the DIR in accordance with State law, and with any applicable specific licensing requirements specified in these Contract Documents. These licensing and registration requirements for Contractors shall also apply to all Subcontractors.

BIDDER'S EXAMINATION OF SITE AND CONTRACT DOCUMENTS. The Bidder, at its sole cost and expense, is required to carefully examine the Contract Documents and the Project site to become fully acquainted with the conditions affecting the Work. The failure of a Bidder to receive or examine any of the Contract Documents or to inspect the site shall not relieve such Bidder from any obligation relating to the Bid, the Contract, or the Work required under the Contract Documents. The City assumes no responsibility or liability to any Bidder for, nor shall the City be bound by, any understandings, oral representations or oral agreements of the City's agents, employees or officers concerning the Contract Documents or the Work made prior to execution of the Contract. By submitting a Bid, Bidder represents: (1) that Bidder has read and understands the Contract Documents; (2) the Bid is made in compliance with the Contract Documents and is based upon the labor, materials, equipment, and systems required by the Contract Documents; (3) that Bidder understands that all labor, materials, equipment, and systems to be furnished for the Work shall be furnished for the prices bid; (4) that it has visited the Project site, familiarized itself with the local conditions under which the Work is to be performed; (5) that it is fully experienced, qualified and competent to perform the Work set forth in the Contract Documents; (6) that it shall not damage or endanger and shall preserve and protect adjacent properties; (7) that it is properly equipped, organized, and financed to perform the Work;

(8) that it is properly permitted and licensed by the California Contractors State Licensing Board to perform the Work; (9) that it has familiarized itself with all conditions bearing upon transportation, disposal, handling, and storage of materials; (10) that it has familiarized itself with the availability of labor, water, electric power, and roads; (11) that it has familiarized itself with uncertainties of weather, or similar physical conditions at the Project site; (12) that it has familiarized itself with the character of equipment and facilities needed preliminary to and during performance of the Work; (13) that it has familiarized itself with the staging and material storage constraints of the Project site and surrounding buildings and will confine its staging and storage operations to approved areas; and (14) that it will coordinate its construction activities with the other contractors performing work on the Project site, if any, including, but not limited to, any separate contractor retained by the City.

No information derived from an inspection of records or investigation will in any way relieve the Contractor from its obligations under the Contract Documents nor entitle the Contractor to any additional compensation. The Contractor shall not make any claim against the City based upon ignorance or misunderstanding of any condition of the Project site or of the requirements set forth in the Contract Documents. No claim for additional compensation will be allowed which is based on a lack of knowledge of the above items. Bidders assume all risks in connection with performance of the Work in accordance with the Contract Documents, regardless of actual conditions encountered, and waive and release the City with respect to any and all claims and liabilities in connection therewith, to the extent permitted by law.

The omission of any portion or item of Work from the Bid that is reasonably inferable from the Contract Documents is not a basis for adjustment of the Contract Price or the Contract Time.

DISQUALIFICATION OF BIDDERS. No Person shall be allowed to make, file or be interested in more than one Bid for the Project. A Person that has submitted a sub-bid to a Bidder, or that has quoted prices of materials to a Bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from making a prime Bid. If there is a reason to believe that collusion exists among the Bidders, all affected Bids will be rejected.

RETURN OF BID SECURITY. The successful Bidder's Bid security shall be held until the Contract is executed. Bid security shall be returned to the unsuccessful Bidders within a reasonable time, which in any case shall not exceed 90 Days after the successful Bidder has signed the Contract.

AWARD OF CONTRACT. The City reserves the right to reject any or all Bids or any parts thereof or to waive any irregularities or informalities in any Bid or in the bidding. The Contract award, if made, will be to the lowest responsible, responsive Bidder and is anticipated to occur within 90 calendar Days after the Bid opening. The Contract award may be made after that period if the selected Bidder has not given the City written notice of the withdrawal of its Bid.

DETERMINATION OF LOWEST BIDDER IF ADDITIVE OR DEDUCTIVE ITEMS. In accordance with Public Contract Code Section 20103.8, the lowest Bid shall be determined by comparing the total Bid price of all Base Bid Items and Additive Alternate Bid Items, using the Engineer's estimate of quantities for the Work as set forth in the Bidder's Proposal. The amount of the contract award will be based on the available budget for the project. It may be only for the Base Bid or if the budget allows, include Additive Bid Items. In the event that any or all of the Alternate Bid Items are not awarded as part of the Contract, the City reserves the right to add any or all of the Alternate Bid Items by Change Order or Construction Change Directive at the prices set forth in the Bid.

TRENCHING. If the Project involves the construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, which are five feet deep or more, then each Bidder must submit, as a Bid item, adequate sheeting, shoring, and bracing, or an equivalent method, for the protection of life or limb, which shall conform to applicable safety orders. This final submission must be accepted by the City in advance of excavation and must include a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from caving ground during the excavation Work. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

LISTING SUBCONTRACTORS. Each Bidder shall submit a list of the proposed Subcontractors on the Project, as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100, *et seq.*).

WORK OF SUBCONTRACTORS. All Bidders are encouraged to disseminate all of the Specifications, Drawings, and other Contract Documents to all persons or entities submitting sub-bids to the Bidder.

INELIGIBLE SUBCONTRACTORS. The successful Bidder is prohibited from performing Work on the Project with any Subcontractor who is ineligible to perform work on a public works project pursuant to Sections 1777.1 or 1777.7 of the California Labor Code. By submitting a Bid, each Bidder certifies that it has investigated the eligibility of each and every listed Subcontractor and has determined that none is ineligible to perform Work pursuant to the Labor Code.

EXECUTION OF CONTRACT. The selected Bidder shall execute the Contract in the form included in these Contract Documents within ten calendar days from the date of delivery of the Contract Documents to the Bidder. Additionally, the selected Bidder shall also secure all insurance and Bonds as herein specified, and provide copies to the City, within ten calendar days from the date of delivery of the Contract Documents to the Bidder. Failure or refusal to execute the Contract or to conform to any of the stipulated requirements shall be just cause for the annulment of the award and forfeiture of the Bidder's security. In such event, the City may declare the Bidder's security forfeited to the extent permitted by law, and the City may award the Contract to the next lowest responsible Bidder or may reject all bids.

SIGNATURES. The Bidder shall execute all documents requiring signatures, and shall cause to be notarized all documents that indicate such a requirement. The Bidder shall provide evidence satisfactory to the City, such as an authenticated resolution of its board of directors or a power of attorney, indicating the capacity of the person(s) signing the Bid to bind the Bidder to the Bid and any Contract arising therefrom.

INSURANCE AND BONDS. The Contractor shall not begin Work until it has given the City evidence of all required insurance coverage (including all additional insured endorsements), a Bond guaranteeing the Contractor's faithful performance of the Contract, and a Bond securing the payment of claims for labor and materials. Where a Contractor has entered into an agreement with a Professional Employment Organization (PEO) to provide human resources, workers' compensation insurance, or other benefits to the Contractor's employees, the Contractor must also submit the agreement with the PEO for review by the City.

TELEPHONES. Bidders are hereby notified that the City will not provide telephones for their use at the time of Bid submission.

INTERPRETATION OF CONTRACT DOCUMENTS. Any Bidder that is in doubt as to the intended meaning of any part of the Contract Documents, or that finds discrepancies in or omissions from the Contract Documents, may submit to the City Engineer a written request for an interpretation or correction not later than five Working Days before the Bid submission deadline. Requests for clarification received after this date will be disregarded. Please indicate the Project and identification number in the request for clarification. Telephonic requests will not be taken. Any interpretation or correction of the Contract Documents will be made only by a written Addendum. No oral interpretation of any provision in the Contract Documents shall be binding.

TRADE NAMES OR EQUALS. Requests to substitute an equivalent item for a brand or trade name item must be made by written request submitted no later than 14 calendar days before the Bid submission deadline. Requests received after this time shall not be considered. Requests shall clearly describe the product for which approval is requested, including all data necessary to demonstrate acceptability.

TAXES. Except as may be otherwise specifically provided herein, all sales and/or use taxes assessed by federal, State or local authorities on materials used or furnished by the Contractor in performing the Work shall be paid by the Contractor. The Bidder shall calculate payment for all sales, unemployment, pension and other taxes imposed by federal, State, and local law and shall include these payments in computing the Bid.

CHECKLIST FOR BIDDERS

The following information is required of all Bidders at the time of Bid submission:

- _____ Completed and Signed Bid Schedule, including cover sheet (page B-1)
- _____ Completed and Signed Contractor's Statement
- _____ Completed References Form
- _____ Completed Subcontractor Designation Form
- _____ Completed, Signed and Notarized Bid Bond or Other Security Form
- _____ Signed and Notarized Noncollusion Declaration Form
- _____ Completed and Signed Addenda Acknowledgement Form
- _____ Evidence satisfactory to the City indicating the capacity of the person(s) signing the Bid to bind the Bidder

Failure of the Bidder to provide all required information in a complete and accurate manner may cause the Bid to be considered non-responsive.

BID

CITY OF MANHATTAN BEACH

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

TO THE HONORABLE MAYOR AND CITY COUNCIL OF THE CITY OF MANHATTAN BEACH:

The undersigned, as Bidder, declares that: (1) this Bid is made without collusion with any other person and that the only persons or parties interested as principals are those named herein; (2) the undersigned has carefully examined the Contract Documents (including all Addenda) and the Project site; and (3) the undersigned has investigated and is satisfied as to the conditions to be encountered, the character, quality and quantities of Work to be performed, and the materials to be furnished. Furthermore, the undersigned agrees that submission of this Bid shall be conclusive evidence that such examination and investigation have been made and agrees, in the event the Contract be awarded to it, to execute the Contract with the City of Manhattan Beach to perform the Project in accordance with the Contract Documents in the time and manner therein prescribed, and to furnish or provide all materials, labor, tools, equipment, apparatus and other means necessary so to do, except as may otherwise be furnished or provided under the terms of the Contract Documents, for the following stated unit prices or lump-sum price as submitted on the Bid herein.

This Bid is made with the full knowledge of the kind, quantity, and quality of the materials and Work required and, if it is accepted by the City, the Bidder shall enter into a Contract and furnish the bonds, insurance, and other documents as required by the Contract Documents within ten calendar days after award of the Contract. The Bidder agrees that failure to execute and return the Contract or the required faithful performance bond, labor and materials payment bond, warranty bond, and insurance certificates to the City within the ten calendar day period shall be sufficient cause for the rescission of the award and forfeiture of the Bid Security to the City to the extent permitted by law.

Accompanying this Bid is cash, a cashier's check, a certified check or a Bid Bond in an amount equal to at least ten percent of the total aggregate Bid price based on the quantities shown and the unit prices quoted. The undersigned further agrees that, should it be awarded the Contract and thereafter fail or refuse to execute the Contract and provide the required evidence of insurance and Bonds within ten calendar days after delivery of the Contract to the undersigned, then the cash, check or Bid Bond shall be forfeited to the City to the extent permitted by law.

CITY OF MANHATTAN BEACH

BID SCHEDULE FOR

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

Bidder's Name: _____

Bidder's Address: _____

To the Honorable Mayor and Members of the City Council:

In compliance with the Notice Inviting Bids, the undersigned hereby agrees to execute the Contract to furnish all labor, materials, equipment and supplies for the Project in accordance with the Contract Documents to the satisfaction and under the direction of the City Engineer, at the following prices:

Base Bid Items as Follows: **BASE BID SCHEDULE**

ITEM NO.	CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
COMMUNITY BUILDING - MARINE AVE PARK						
1		Demolition	LS	%	\$	\$
2		Roof Repair	SF	400	\$	\$
3		Finish Carpentry	LF	235	\$	\$
4		Waterproofing/ Flashing	EA	10	\$	\$
5		TPA Roof Install	LS	%	\$	\$
6		Safety Protection and Staging	LS	%	\$	\$
7		Paint	LS	%	\$	\$
8		Clean	LS	%	\$	\$
9		Water Leak Testing	LS	%	\$	\$
10		QA roofing Mfr. Inspection	LS	%	\$	\$

ITEM NO.	CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
RECREATION HALL LIVE OAK PARK						
11		Demolition	LS	%	\$	\$
12		Finish Carpentry	LF	275	\$	\$
13		Waterproofing/ Flashing	EA	8	\$	\$
14		TPA Roof Install	LS	%	\$	\$
15		Safety Protection and Staging	LS	%	\$	\$
16		Paint	LS	%	\$	\$
17		Clean	LS	%	\$	\$
18		Water Leak Testing	LS	%	\$	\$
19		QA Mfr. Inspection	LS	%	\$	\$

ITEM NO.	CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
RECREATION CENTER LIVE OAK PARK						
20		Demolition	LS	%	\$	\$
21		Roof Repair	LS	%	\$	\$
22		Rough Carpentry	LF	50	\$	\$
23		Waterproofing/ Flashing	LS	%	\$	\$
24		TPA Roof Install	LS	%	\$	\$
25		Safety Protection and Staging	LS	%	\$	\$
26		Paint	LS	%	\$	\$
27		Clean	LS	%	\$	\$
28		Reinstall Rooftop Equip.	LS	%	\$	\$
29		Water Leak Testing	LS	%	\$	\$
30		QA Mfr. Inspection	LS	%	\$	\$
	TOTAL BASE BID SCHEDULE:					\$ _____

NOTE: Estimated quantities are for the purpose of Bid comparison only; payments will be made on the basis of actual measurement of Work completed, except for lump sum (LS) and final pay (F) quantities. (S) denotes a specialty item. (F) and (S) will be specified in the "Code" Column. The Bid Price shall include, but not limited to, sales tax and all other applicable taxes and fees. See also Section 9-2 of the General Provisions.

ITEM NO.	CODE	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICES	EXTENDED AMOUNT
ADDITIVE BID SCHEDULE						
31		Abatement/Disposal Marine Ave Park – Community Bldg	LS	%	\$	\$
32		Abatement/Disposal Live Oak Park – Rec Hall	LS	%	\$	\$
33		Abatement/Disposal Live Oak Park – Rec Center	LS	%	\$	\$
TOTAL ADDITIVE BID ITEMS:						\$ _____

NOTE: Items may be adjusted or deleted. Therefore, regardless of total actual volume (percentage) compared to estimated quantities, the unit prices provided above by the Bidder shall be applied to the final quantity when payment is calculated for these items. No adjustment in the unit prices will be allowed. The City reserves the right to not use any of the estimated quantities; and if this right is exercised, the Contractor will not be entitled to any additional compensation. Cost of all export of material shall be included in the above unit costs; no additional compensation will be granted for such expenses.

Total Bid Price = Total Bid Schedule Amount Plus (+) Additive Bid Schedule

TOTAL BID PRICE IN DIGITS: \$ _____

TOTAL BID PRICE IN WORDS: _____

The undersigned certifies to have a minimum of three consecutive years of current experience in the type of Work related to the Project and that this experience is in actual operation of the firm with permanent employees performing a part of the Work as distinct from a firm operating entirely by subcontracting all phases of the Work. The undersigned also certifies to be properly licensed by the State as a contractor to perform this type of Work. The undersigned possesses California Contractor's License

Number _____, Class _____, which expires on _____.

Signature: _____ Title: _____ Date: _____

Signature: _____ Title: _____ Date: _____

BIDDER'S PROPOSAL – CONTRACTOR'S STATEMENT

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

Fill out all of the following information. Attach additional sheets if necessary.

- (1) Bidder's Name: _____
- (2) If the Bidder's name is a fictitious name, who or what is the full name of the registered owner? If the Bidder's name is not a fictitious name, write "N/A" in the response to this question. If you are doing business under a fictitious name, provide a copy of the filed valid Fictitious Business Name Statement.

- (3) Business Address: _____
- (4) Telephone: _____ Email: _____
- (5) Type of Firm – Individual, Partnership, LLC or Corporation: _____
- (6) Corporation organized under the laws of the State of: _____
- (7) California State Contractor's License Number and Class: _____
Original Date Issued: _____ Expiration Date: _____
- (8) DIR Contractor Registration Number: _____
- (9) List the name and title of the person(s) who inspected the Project site for your firm:

- (10) Number of years experience the company has as a contractor in construction work: _____
- (11) List the names, titles, addresses and telephone numbers of all individuals, firm members, partners, joint venturers, and company or corporate officers having a principal interest in this Bid:

- (12) List all current and prior D.B.A.'s, aliases, and fictitious business names for any principal having interest in this Bid:

- (13) List the dates of any voluntary or involuntary bankruptcy judgments against any principal having an interest in this Bid:

- (14) For all arbitrations, lawsuits, settlements and the like (in or out of court) that the company or any principal having an interest in this Bid has been involved with in the past five years:

- a. List the names, addresses and telephone numbers of contact persons for the parties:

- b. Briefly summarize the parties' claims and defenses:

- c. State the tribunal (e.g., Superior Court, American Arbitration Association, etc.), the matter number, and the outcome:

- (15) Has the company or any principal having an interest in this Bid ever had a contract terminated by the owner or agency? If yes, explain.

- (16) Has the company or any principal having an interest in this Bid ever failed to complete a project? If yes, explain.

- (17) Has the company or any principal having an interest in this Bid ever been terminated for cause, even if it was converted to a "termination of convenience"? If yes, explain.

- (18) For projects that the company or any principal having an interest in this Bid has been involved with in the last five years, did you have any claims or actions:

- a. By you against the owner? Circle one: Yes No
- b. By the owner against you? Circle one: Yes No
- c. By any outside agency or individual for labor compliance?
Circle one: Yes No
- d. By Subcontractors? Circle one: Yes No
- e. Are any of these claims or actions unresolved or outstanding?
Circle one: Yes No

If your answer is "yes" to any part or parts of this question, explain.

- (19) Has the company or any of its principals ever been debarred by any agencies? Is yes, please explain.

(21) For all public agency projects in excess of \$15,000.00 that you are currently working on or have worked on in the past two years, provide the following information:

Project 1 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: \$_____ Final Contract Amount: \$_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

Project 2 Name/Number _____

Project Description _____

Approximate Construction Date From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: \$_____ Final Contract Amount: \$_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

Project 3 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: \$_____ Final Contract Amount: \$_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

Project 4 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: \$_____ Final Contract Amount: \$_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

Project 5 Name/Number _____

Project Description _____

Approximate Construction Dates From: _____ To: _____

Agency Name: _____

Contact Person: _____ Telephone: _____

Address: _____

Original Contract Amount: \$_____ Final Contract Amount: \$_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

Project 6 Name/Number _____

Project Description _____

Approximate Construction Dates **From:** _____ **To:** _____

Agency Name: _____

Contact Person: _____ **Telephone:** _____

Address: _____

Original Contract Amount: \$_____ **Final Contract Amount: \$**_____

If final amount is different from original amount, please explain (change orders, extra work, etc.).

Did you or any Subcontractor, file any claims against the Agency?

Circle one: Yes No

Did the Agency file any claims against you? Circle one: Yes No

If you answered yes to either of the above two questions, please explain and indicate outcome of claims.

[Continue to Next Page]

Upon request of the City, the Bidder shall furnish evidence showing a notarized financial statement, financial data, construction experience, or other additional information.

Failure to provide truthful answers to the questions above or in the following References Form may result in the Bid being deemed non-responsive.

Urban Runoff Certification. The Bidder certifies to the City that he/she has trained his/her employees and Subcontractors, if any, for Urban Runoff management and has included sufficient sums in the Bid Price to cover such costs of training as stipulated in the most current Regional Water Quality Control Board requirements, including the Municipal Separate Storm Sewer System NPDES Permit. The Contractor is responsible for all clean up and payment of all fines levied as a result of any illegal discharge (as defined in NPDES permit) occurring as a result of the Contractor's Work and/or operations.

I, the undersigned, certify and declare that I have read all the foregoing answers to the Bidder's Proposal – Contractor's Statement and know their contents. The matters stated in the Bidder's Proposal – Contractor's Statement answers are true of my own knowledge and belief, except as to those matters stated on information and belief, and as to those matters I believe them to be true. I declare under penalty of perjury under the laws of the State of California that the foregoing is correct.

Company

Signature: _____

Name: _____

Title: _____

Date: _____

Signature: _____

Name: _____

Title: _____

Date: _____

DESIGNATION OF SUBCONTRACTORS
[Public Contract Code Section 4104]

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

List all Subcontractors who will perform Work or labor or render service to the Contractor in or about the construction of the Work or improvement, or a Subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the Work or improvement according to detailed drawings contained in the Plans and Specifications, in an amount in excess of one-half percent of the Contractor's total Bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half percent of the Contractor's total Bid or \$10,000.00, whichever is greater. If all Subcontractors do not fit on this page, attach another page listing all information for all other Subcontractors.

Name under which Subcontractor is Licensed and Registered	CSLB License Number(s) and Class(es)	DIR Contractor Registration Number	Address and Phone Number	Type of Work (e.g., Electrical)	Percentage of Total Bid (e.g., 10%)*

*The percentage of the total Bid shall represent the "portion of the work" for the purposes of Public Contract Code Section 4104(b).

Bond No. _____

BID BOND

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Manhattan Beach ("City"), has issued an invitation for Bids for the Work described as follows: _____

WHEREAS _____
(Name and address of Bidder)

("Principal"), desires to submit a Bid to City for the Work.

WHEREAS, Bidders are required to furnish a form of Bidder's security with their Bids.

NOW, THEREFORE, we, the undersigned Principal, and _____

(Name and address of Surety)

("Surety"), a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City in the penal sum of _____ Dollars (\$_____), being not less than ten percent of the total Bid price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal is awarded the Contract for the Work by the City and, within the time and in the manner required by the bidding specifications, enters into the written form of Contract included with the bidding specifications, furnishes the required Bonds (one to guarantee faithful performance and the other to guarantee payment for labor and materials), and furnishes the required insurance coverage, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

In case suit is brought upon this instrument, Surety further agrees to pay all court costs incurred by the City in the suit and reasonable attorneys' fees in an amount fixed by the court. Surety hereby waives the provisions of Civil Code Section 2845.

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

“Principal”

Name: _____

Address: _____

Telephone No.: _____

Signature:

Print Name: _____

Title: _____

Date: _____

Signature:

Print Name: _____

Title: _____

Date: _____

“Surety”

Company Name: _____

Address: _____

Telephone No.: _____

Signature:

Print Name: _____

Title: _____

Date: _____

NOTE: *This Bond must be dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.*

**NONCOLLUSION DECLARATION FORM
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
[Public Contract Code Section 7106]**

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

The undersigned declares:

I am the _____ of _____, the party making the foregoing Bid.

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham Bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder. All statements contained in the Bid are true. The Bidder has not, directly or indirectly, submitted his or her Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, Bid depository, or to any member or agent thereof, to effectuate a collusive or sham Bid, and has not paid, and will not pay, any Person or entity for such purpose.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

Signature: _____

Signature: _____

Printed Name: _____

Printed Name: _____

Date: _____

Date: _____

This form must be notarized.

ADDENDA ACKNOWLEDGMENT FORM

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

Bidder's Name: _____

The Bidder shall signify receipt of all Addenda here, if any:

Addendum Number	Date Received	Signature

If there are more Addenda than there is room in the chart above, attach another page acknowledging receipt of the Addenda.

CONTRACT

CITY OF MANHATTAN BEACH CONTRACT FOR ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

THIS CONTRACT ("Contract") is made and entered this _____ day of _____, 20____ ("Effective Date"), by and between the CITY OF MANHATTAN BEACH, a California municipal corporation ("City") and _____, a _____ [Legal Form of Entity and state of formation, e.g., California corporation, limited partnership, limited liability company] ("Contractor"). The Contractor's California State Contractor's license number is _____.

In consideration of the mutual covenants hereinafter set forth, the parties hereto agree as follows:

1. Contract Documents. The Contract Documents consist of this Contract, the Notice Inviting Bids, Instructions to Bidders, Bid (including documentation accompanying the Bid and any post-Bid documentation submitted before the Notice of Award), the Bonds, permits from regulatory agencies with jurisdiction, General Provisions, Special Provisions, Plans, Standard Plans, Standard Specifications, Reference Specifications, Addenda, Change Orders, and Supplemental Agreements. The Contract Documents are attached hereto and incorporated herein by reference.

2. Scope of Services. The Contractor shall perform and provide all materials, tools, equipment, labor, and services necessary to complete the Work in a good and workmanlike manner for the project identified as ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK ("Project"), as described in the Contract Documents.

3. Compensation.

3.1 Contract Price and Basis for Payment. In consideration for the Contractor's full, complete, and timely performance of the Work required by the Contract Documents, the City shall pay the Contractor for the actual quantity of Work required under the Bid Items awarded by the City performed in accordance with the lump sum prices and unit prices for Bid Items, set forth in the Bidder's Proposal submitted with the Bid. The sum of the unit prices and lump sum prices for the Bid Items, awarded by the City is \$_____ ("Contract Price"). It is understood and agreed that the quantities set forth in the Bidder's Proposal for which unit prices are fixed are estimates only and that the City will pay and the Contractor will accept, as full payment for these items of work, the unit prices set forth in the Bidder's Proposal multiplied by the actual number of units performed, constructed, or completed as directed by the Engineer.

3.2 Payment Procedures. Based upon applications for payment submitted by the Contractor to the City, the City shall make payments to the Contractor in accordance with Section 9 of the Standard Specifications, as modified by Section 9 of the General Provisions.

4. Contract Time.

4.1 Initial Notice to Proceed. The City shall issue the "Notice to Proceed to Fulfill Preconstruction Requirements and Order Materials." The date specified in the Notice to Proceed to Fulfill Preconstruction Requirements and Order Materials constitutes the date of commencement of the Contract Time of Working Days. The Contract Time includes the time necessary to fulfill preconstruction requirements, place the order for materials, and to complete construction of the Project (except as adjusted by subsequent Change Orders).

The Notice to Proceed to Fulfill Preconstruction Requirements and Order Materials shall further specify that the Contractor must complete the preconstruction requirements and order materials within **15 Working Days** after the date of commencement of the Contract Time; this duration is part of the Contract Time.

Preconstruction requirements include, but are not limited to, the following:

- Submitting and obtaining approval of Traffic Control Plans
- Submitting and obtaining approval of the Stormwater Pollution Prevention Plan (SWPPP)/Water Pollution Control Plan (WPCP)
- Submitting and obtaining approval of critical required submittals
- Installation of the approved Project Identification Signs
- Obtaining an approved no fee Encroachment Permit
- Obtaining a Temporary Use Permit for a construction yard
- Notifying all agencies, utilities, residents, etc., as outlined in the Contract Documents

4.2 Notice to Proceed with Construction. After all preconstruction requirements are met and materials have been ordered in accordance with the Notice to Proceed to Fulfill Preconstruction Requirements and Order Materials, the City shall issue the "Notice to Proceed with Construction," at which time the Contractor shall diligently prosecute the Work, including corrective items of Work, day to day thereafter, within the remaining Contract Time.

5. Liquidated Damages for Delay and Control of Work.

5.1 Liquidated Damages. The Contractor and the City have agreed to liquidate damages pursuant to Section 6-9 of the General Provisions.

6. Not Used.

7. Work after Stop Work Notice. Any work completed by the Contractor after the issuance of a Stop Work Notice by the City shall be rejected and/or removed and replaced as specified in the applicable Section of the Special Provisions.

8. Antitrust Claims. In entering into this Contract, the Contractor offers and agrees to assign to the City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. § 15) or under the Cartwright Act (Business and Professions Code Section 16700 *et seq.*) arising from purchases of goods, services, or materials pursuant to the Contract. This assignment shall be made and become effective at the time the City tenders final payment to the Contractor without further acknowledgment by the parties.

9. Prevailing Wages. The City and the Contractor acknowledge that the Project is a public work to which prevailing wages apply.

10. Workers' Compensation. Labor Code Sections 1860 and 3700 provide that every contractor will be required to secure the payment of compensation to its employees. In

accordance with the provisions of Labor Code Section 1861, by signing this Contract, the Contractor certifies as follows:

“I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers’ compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the Work of this Contract.”

11. Titles. The titles used in this Contract are for convenience only and shall in no way define, limit or describe the scope or intent of this Contract or any part of it.

12. Authority. Any person executing this Contract on behalf of the Contractor warrants and represents that he or she has the authority to execute this Contract on behalf of the Contractor and has the authority to bind the Contractor to the performance of its obligations hereunder.

13. Entire Agreement. This Contract, including the Contract Documents and any other documents incorporated herein by specific reference, represents the entire and integrated Contract between the City and the Contractor. This Contract supersedes all prior oral or written negotiations, representations or agreements. This Contract may not be modified or amended, nor any provision or breach waived, except in a writing signed by both parties that expressly refers to this Contract.

14. Counterparts. This Contract may be executed in counterpart originals, duplicate originals, or both, each of which is deemed to be an original for all purposes.

IN WITNESS WHEREOF, the parties hereto have executed this Contract the day and year first above written.

CITY OF MANHATTAN BEACH

By: _____
City Manager

ATTEST:

APPROVED AS TO FORM:

By: _____
City Clerk

By: _____
City Attorney

Dated: _____

("CONTRACTOR")

By: _____
NAME TITLE

By: _____
NAME TITLE

PROOF OF AUTHORITY TO BIND
CONTRACTING PARTY REQUIRED

Bond No. _____

**PAYMENT BOND
(LABOR AND MATERIALS)**

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Manhattan Beach ("City"), State of California, has awarded to _____

(“Principal”)

(Name and address of Contractor)

a contract (the "Contract") for the Work described as follows:

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

WHEREAS, under the terms of the Contract, the Principal is required before entering upon the performance of the Work, to file a good and sufficient payment Bond with the City to secure the claims to which reference is made in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code.

NOW, THEREFORE, we, the undersigned Principal, and _____

(Name and address of Surety)

(“Surety”) a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City and all contractors, subcontractors, laborers, material suppliers, and other persons employed in the performance of the Contract and referred to in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code in the penal sum of _____ Dollars

(§ _____), for materials furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to this Work or labor, that the Surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this Bond, will pay, in addition to the face amount thereof, costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by City in successfully enforcing this obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this Bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this Bond.

Upon expiration of the time within which the California Labor Commissioner may serve a civil wage and penalty assessment against the principal, any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1741, and upon expiration of the time within which a joint labor management committee may commence an action against the principal, any of its subcontractors, or both the principal and its subcontractors pursuant to Labor Code Section 1771.2, if the condition of this Bond be fully performed, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

The Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or the Specifications accompanying the same shall in any manner affect its obligations on this Bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

“Principal”

“Surety”

Signature:

Signature:

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Signature:

Print Name: _____

(Seal)

Title: _____

Date: _____

(Seal)

NOTE: *This Bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached. DATE OF BOND MUST NOT BE BEFORE DATE OF CONTRACT.* Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Manhattan Beach ("City"), has awarded to _____

____ (“Principal”)

(Name and address of Contractor)

a contract (the "Contract") for the Work described as follows:

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

WHEREAS, Principal is required under the terms of the Contract to furnish a Bond for the faithful performance of the Contract.

NOW, THEREFORE, we, the undersigned Principal, and _____

(Name and address of Surety)

(“Surety”) a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City in the penal sum of _____ Dollars (\$ _____), this amount being not less than the total Contract Price, in lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors executors and administrators, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal, his, her or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the Contract and any alteration thereof made as therein provided, on the Principal's part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefor, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered. Surety hereby waives any statute of limitations as it applies to an action on this Bond.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or of the Work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations under this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the specifications. Surety hereby waives the provisions of California Civil Code Sections 2845 and 2849. The City is the principal beneficiary of this Bond and has all rights of a party hereto.

IN WITNESS WHEREOF, two identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

“Principal”

“Surety”

Signature:

Signature:

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Signature:

Print Name: _____

Title: _____

Date: _____

(Seal)

(Seal)

NOTE: *This Bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached. DATE OF BOND MUST NOT BE BEFORE DATE OF CONTRACT.* Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

Bond No. _____

WARRANTY BOND

KNOW ALL PERSONS BY THESE PRESENTS that:

WHEREAS the City of Manhattan Beach ("City"), State of California, has awarded to_____

(“Principal”)

(Name and address of Contractor)

a contract (the "Contract") for the Work described as follows:

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

WHEREAS, under the terms of the Contract, the Principal is required before entering upon the performance of the Work to file a good and sufficient warranty Bond with the City.

NOW, THEREFORE, we, the undersigned Principal, and _____

(Name and address of Surety)

(“Surety”) a duly admitted surety insurer under the laws of the State of California, as Surety, are held and firmly bound unto the City in the penal sum of _____ Dollars (\$ _____)

this amount being not less than 10% of the total Contract Price, lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bounded Principal, his, her or its heirs, executors, administrators, successors or assigns, shall remedy, without cost to the City, any defects which may develop during a period of one year from the date of completion and acceptance of the work performed under the Contract, caused by defective or inferior materials or workmanship, and shall indemnify, defend and hold harmless the City, its officers, agents, and employees for any and all claims, demands, causes of action, damages, injuries, liabilities, losses, costs or expenses, including attorneys' fees and costs of defense, which arise out of, pertain to, or relate to such defects or to the Principal's actions or inactions in remedying such defects, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

In case suit is brought upon this bond, Surety further agrees to pay, in addition to the Penal Sum, all costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

FURTHER, Surety hereby waives the provisions of California Civil Code sections 2845 and 2849. The City is the principal beneficiary of this bond and has all rights of a party hereto.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby

waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two identical counterparts of this instrument, each of which shall for all purposes be deemed an original hereof, have been duly executed by Principal and Surety, on the date set forth below, the name of each corporate party being hereto affixed and these presents duly signed by its undersigned representative(s) pursuant to authority of its governing body.

Dated: _____

“Principal”

“Surety”

Signature:

Signature:

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Signature:

Print Name: _____

(Seal)

Title: _____

Date: _____

(Seal)

NOTE: *This Bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached. DATE OF BOND MUST NOT BE BEFORE DATE OF CONTRACT.* Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

CHECKLIST FOR EXECUTION OF CONTRACT

TO BE SUBMITTED BY SUCCESSFUL BIDDER:

- _____ Two executed copies of the Contract
- _____ Completed, signed and notarized Payment Bond (original) in amount of the Contract
- _____ Completed, signed and notarized Performance Bond (original) in amount of the Contract
- _____ Completed, signed and notarized Warranty Bond (original) in the amount of 10% of the Contract
- _____ Workers' Compensation Certificate with attached Certificate of Insurance
- _____ General Liability insurance certificate naming the City as a co-insured
- _____ Automobile insurance naming the City as a co-insured
- _____ Umbrella/Excess Liability (General aggregate) insurance certificate naming the City as a co-insured, if applicable
- _____ Copy of City business license, if applicable
- _____ Additional insured endorsement – comprehensive general liability
- _____ Additional insured endorsement – automobile liability
- _____ Additional insured endorsement – excess liability
- _____ Primary and Non-Contributory Endorsement- General Liability Policy
- _____ Waiver of Subrogation - general liability
- _____ Waiver of Subrogation - Worker's Compensation

ALL SUBMITTALS WILL BE RETAINED BY CITY, EXCEPT FOR ONE COPY OF THE FULLY EXECUTED CONTRACT

GENERAL PROVISIONS

SECTION 0. GENERAL PROVISIONS DEFINED

0-1 STANDARD SPECIFICATIONS

The 2015 edition of "Standard Specifications for Public Works Construction", including the 2016 Supplement ("Standard Specifications"), as amended by the Contract Documents, is incorporated into the Contract Documents by this reference. The Work described herein shall be done in accordance with the provisions of the Standard Specifications, as amended by the Contract Documents.

0-2 NUMBERING OF SECTIONS

The number of sections and subsections in these General Provisions are compatible with the numbering in the Standard Specifications. Subsections of architectural and/or other work may be numbered according to the Construction Specifications Institute (CSI) format.

0-3 SUPPLEMENTATION OF STANDARD SPECIFICATIONS

The Sections that follow supplement, but do not replace, the Standard Specifications, except as otherwise indicated herein. In the event of any conflict between the Standard Specifications and these General Provisions, these General Provisions shall control.

SECTION 1. TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

The provisions below shall supplement, but not replace, those provisions in Section 1 of the Standard Specifications.

1-2 TERMS AND DEFINITIONS

Whenever in the Standard Specifications or in the Contract Documents the following terms are used, they shall be understood to mean the following:

Agency – The City of Manhattan Beach.

Applicable Law – All State, federal, and local laws, statutes, ordinances, codes, rules, and regulations governing the Work.

Bid Item – An item of Work listed on the Bid Schedule.

Board – The City Council of the City of Manhattan Beach.

City – The City of Manhattan Beach

City Council – The City Council of the City of Manhattan Beach

Contract Documents – As defined in Section 1 of the Contract.

Contract Time – The number of Working Days stated in the Contract for the completion of the Work.

County – County of Los Angeles, California

Detour – A temporary route for traffic (vehicular or pedestrian) around a closed portion of a road or travelway.

Engineer – The City Engineer, acting either directly or through properly authorized agents. Such agents shall act within the scope of the particular duties entrusted to them.

Estimated Quantities – The quantities of Work anticipated to be performed, as set forth in the Bid Schedule, designated as units or a lump sum.

Excavation – Any operation in which earth, rock, or other material in the ground is moved, removed, or otherwise displaced by means of tools, equipment, or explosives in any of the following ways: grading, trenching, digging, ditching, drilling, augering, tunneling, scraping, cable or pipe plowing and driving, or any other way (Cal. Gov. Code § 4216).

Final Acceptance- acceptance of the Work by the City Council and direction to staff to cause recordation of the Notice of Completion, pursuant to Section 6-8.2 of these General Provisions.

Inspector – An authorized representative of the City, assigned by the City to make inspections of Work performed by or materials supplied by the Contractor.

Major Item of Work – A bid item amount that is at least 10% of the total contract award amount.

Minor Item of Work - A bid item amount that is less than 10% of the total contract award amount.

Notice of Completion – The notice authorized by Civil Code Section 9204.

Notice to Proceed or Notice to Proceed with Construction – A written notice issued by the City to the Contractor that authorizes the Contractor to perform the Work.

Notice to Proceed to Fulfill Preconstruction Requirements and Order Materials – A written notice issued by the City to the Contractor that authorizes the Contractor to proceed with preconstruction requirements and the acquisition or purchase of materials that are to be incorporated into the Work and establishes the date of commencement of the Contract Time.

Project – See Work.

Punch List – A list of items of Work to be completed or corrected by the Contractor in order to complete the Work as specified in the Contract Documents.

Shop Drawings – All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

State – The State of California.

Submittal – Any drawing, calculation, specification, product data, samples, manuals, requests for substitutes, spare parts, photographs, survey data, traffic control plans, record drawings, Bonds or similar items required to be submitted to the City under the terms of the Contract.

Traffic Engineer – The representative of the Engineer who is assigned traffic-related matters.

Work – The construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, services provided or to be provided by the Contractor to fulfill the Contractor's obligations.

Working Day – See Subsection 6-7.2 of the General Provisions.

Work Directive – A unilateral written order issued by the City directing the Contractor to continue performance of the Work or a disputed item of Work pending resolution of a claim or dispute concerning the scope of Work.

1-3.3 Institutions

The institutions listed in Section 1-3.3 of the Standard Specifications shall be supplemented by the list below:

<u>Abbreviation</u>	<u>Word or Words</u>
AAN	American Association of Nurserymen
ACI	American Concrete Institute
AGCA	Associated General Contractors of America
APWA	American Public Works Association
ASME	American Society of Mechanical Engineers
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
IEEE	Institute of Electric and Electronic Engineers
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
SSS	State of California Standard Specifications, Latest edition, Department of Transportation
SSP	State of California Standard Plans, Latest edition, Department of Transportation

SECTION 2. SCOPE AND CONTROL OF THE WORK

The provisions below shall supplement but not replace those provisions in Section 2 of the Standard Specifications, unless specifically noted below.

2-2 *ASSIGNMENT*

Any purported assignment without written consent of the City shall be null, void, and of no effect, and the Contractor shall hold harmless, defend and indemnify the City and its officers, officials, employees, agents and representatives with respect to any claim, demand or action arising from or relating to any unauthorized assignment.

If the City opts to consent to assignment, the City's consent shall be contingent upon: (1) a letter from the Surety agreeing to the assignment and assigning all of the Bonds to the assignee without any reduction, or the assignee supplying all new Bonds in the amounts originally required under the Contract Documents; and (2) the assignee supplying all of the required insurance in the amounts required in the Contract Documents. Until the Surety assigns all of the Bonds or the assignee supplies all of the new Bonds, and until the assignee supplies all of the required insurance, an assignment otherwise consented to in writing by the City shall not be effective. Even if the City consents to assignment, no assignment shall relieve the Contractor of liability under the Contract.

2-3.1.1 Subcontractors. Add the following sections:

Subcontractors shall be listed by the Bidder in accordance with these specifications and must be properly licensed under the laws of the State of California for the type of work which they are to perform. Copies of all Subcontracts shall be made available to the Engineer, upon request.

2-3.1.2A Subcontractor whose prosecution of the work is not satisfactory shall be terminated immediately by the Contractor upon the receipt of a written notice by the Engineer. Subcontractors whose work was determined to be unsatisfactory shall not be allowed to perform any work on the job site.

2-4 *CONTRACT BONDS*

The Faithful Performance Bond shall remain in force until the date of recordation of the Notice of Completion. The Labor and Materails Bond shall remain in force until expiration of the time within which the California Labor Commissioner may serve a civil wage and penalty assessment against the principal, any of its Subcontractors, or both the principal and its Subcontractors pursuant to Labor Code Section 1741, and until the expiration of the time within which a joint labor management committee may commence an action against the principal, any of its Subcontractors, or both the principal and its Subcontractors pursuant to Labor Code Section 1771.2.

The warranty or maintenance Bond shall be valid for one year from the date of recordation of Notice of Completion by the County Recorder, in the amount of ten percent of the Contract Price. Other than the details listed herein, the warranty or maintenance Bond shall adhere to the requirements for Bonds in Section 2-4 of the Standard Specifications. Nothing herein shall abridge or amend Section 6-8.3 of the Standard Specifications or the related provisions in these Contract Documents.

All Bonds must be submitted using the required forms, which are in the Contract Documents, or on any other form approved by the City Attorney.

2-5 PLANS AND SPECIFICATIONS

2-5.1 General

In addition to the requirements under Section 2-5.1 in the Standard Specifications, the Contractor shall maintain a control set of Plans and Specifications on the Project site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on the control set to show the as-built conditions. This control set of Plans shall also be edited for all Addenda, Requests for Information, Change Orders, field changes not involving cost, and any other variation that occurred during construction. Upon completion of all Work, the Contractor shall return the control set to the Engineer. Final payment will not be made until this requirement is met.

Where a work feature is shown on the drawings or identified in the Specifications but is not specifically indicated as an item in the Bid Schedule, and there is no ambiguity regarding the requirement to construct, install, or construct and install that work feature, the Contractor is required to complete the work feature. All costs to the Contractor for constructing, installing, or both constructing and installing such a work feature shall be included in the Bid.

2-5.2 Precedence of the Contract Documents

The following shall replace Section 2-5.2:

With regard to Section 2-5.2 in the Standard Specifications, the General Provisions shall control over the Special Provisions, and the Notice Inviting Bids and Instructions to Bidders (in that order) shall control over the Bid, such that the order of precedence shall be as follows:

1. Requirements of law.
2. Permits issued by regulatory agencies with jurisdiction.
3. Change Orders and Supplemental Agreements, whichever occurs last.
4. Contract.
5. Addenda.
6. Notice Inviting Bids.
7. Instructions to Bidders.
8. Bid/Proposal.
9. General Provisions.
10. Special Provisions.
11. Plans.
12. Standard Plans.
13. Standard Specifications.
14. Reference Specifications.

2-5.2.1 Traffic Signal Work

Except as otherwise specified in the General Provisions or on the Plans, all Work relating to traffic signals and incidental illuminated street name signs and safety lighting, including all equipment, materials, components, and the installation thereof, shall be in accordance with the City's Technical Provisions for traffic signals, latest edition of the State Standard Plans (SSP) in effect and published at the Bid Deadline and Section 86 "Signals, Lighting and Electrical Systems" of the latest edition of the State Standard Specifications (SSS) in effect and published at the Bid Deadline, unless otherwise indicated in the Technical Provisions. With respect to traffic signal

Work, the order of precedence, from highest to lowest, shall be: City Technical Provisions, Plans, Section 86 of the State Standard Specifications, State Standard Plans, Standard Plans, and Standard Specifications.

2-5.3 Submittals

2-5.3.1 General

The following paragraphs shall be added following the third paragraph:

The Contractor shall, at its own expense, transmit to the Engineer for review and acceptance, working drawings, shop drawings, supporting information, and/or other available instructive and descriptive information from the manufacturer, when and as required by the Plans or General Provisions or requested by the Engineer. Shop drawings will not be required for standard items in common use for which adequate manufacturers' literature is available unless otherwise required by the Engineer.

The Contractor shall consecutively number, thoroughly check, approve and sign each submittal and transmit the submittals to the Engineer for review. In the event that certain submittals are submitted without the Contractor's approval signature or are unacceptable to the City, they shall be rejected by the Engineer. The Contractor shall thereafter correct the submittals and resubmit.

In the event that in the process of development of the submittals it is discovered that there are defects and/or errors on the Plans that result in conflict between the Plans and the submittals, or if the submittals show variation from the Plans or other Contract Documents, the Contractor shall thoroughly describe and explain any defects and/or conflicts in its transmittal letter to the Engineer.

The Engineer's review of the submittals will be for general design and arrangement only, and shall not relieve the Contractor from responsibility for errors of any sort in the submittals or of the responsibility for executing the work in accordance with the Contract Documents. The Contractor shall allow a minimum of 20 Working Days for review of submittals. The Contractor shall be solely responsible for the correctness of the submittals, for shop fits and field connections, and for the results obtained by use of such submittals. The Contractor shall verify and be fully responsible for all dimensions and job-site conditions affecting the Work and shall be responsible for furnishing and installing the proper materials required by the Contract Documents.

The Contract Time will not be extended due to the failure of the Contractor to provide submittals as required by the Contract Documents in a timely manner.

2-6 *WORK TO BE DONE*

The following paragraphs shall be added following paragraph one:

All work which is defective in its construction or deficient in any of the requirements of the Plans and Specifications shall be remedied or removed and replaced by the Contractor in an acceptable manner at his own expense. No compensation will be allowed for any work done beyond the lines and grades shown on the Plans or established by the Engineer. Upon failure on the part of the Contractor to comply with any order of the Engineer made under the provisions of this article, the Engineer and the City may cause the defective work to be remedied or removed and replaced at the expense of the Contractor.

Any unauthorized or defective work, defective material or workmanship or any unfaithful or imperfect work that may be discovered before Final Acceptance of work by the Board shall be corrected immediately with no extra charge even though it may have been overlooked in previous inspections and estimates or may have been caused due to failure to inspect the work.

2-7 *SUBSURFACE DATA*

If the City or its consultants have made investigations of subsurface conditions in areas where the Work is to be performed, such investigations shall be deemed made only for the purpose of study and design. If a geotechnical or other report has been prepared for the Project, the Contractor may inspect the records pertaining to such investigations subject to and upon the conditions hereinafter set forth. The inspection of the records shall be made in the office of the Engineer. It is the Contractor's sole responsibility to determine whether such investigations exist, and the City makes no affirmative or negative representation concerning the existence of such investigations.

The records of any such investigations are made available solely for the convenience of the Contractor. It is expressly understood and agreed that the City, the Engineer, their agents, consultants or employees assume no responsibility whatsoever with respect to the sufficiency or accuracy of any investigations, the records thereof, and the interpretations set forth therein. No warranty or guarantee is expressed or implied that the conditions indicated by any such investigations or records are representative of those existing in the Project area. The Contractor agrees to make such independent investigations and examination as necessary to be satisfied of the conditions to be encountered in the performance of the Work.

The Contractor represents that it has studied the Plans, Specifications and other Contract Documents, and all surveys and investigation reports of subsurface and latent physical conditions, has made such additional surveys and investigations as necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents, and that it has correlated the results of all such data with the requirements of the Contract Documents. No claim of any kind shall be made or allowed for any error, omission or claimed error or omission, in whole or in part, of any geotechnical exploration or any other report or data furnished or not furnished by the City.

2-9 *SURVEYING*

The Contractor shall verify all dimensions on the drawings and shall report to the City any discrepancies before proceeding with related Work. The Contractor shall perform all survey and layout Work per the benchmark information on the Project Plans. All surveying Work must conform to the Professional Land Surveyors' Act (Business and Professions Code Section 8700 *et seq.*). All Project surveying notes and "cut-sheets" are to be provided to the City after the completion of each surveying activity and all final surveying notes shall be provided before final payment to the Contractor.

The Contractor is responsible for hiring a Surveyor to set survey points to be used for re-establishments of disturbed monuments and submit Corner Records to the County Surveyor. Copy of the submitted Corner Records must be provided to the City prior to actual disturbance of the monuments. The Contractor shall also cause all disturbed survey monuments within the project work area to be re-established at the end of the project. This also includes filing Corner Records and Record of Survey with the County Surveyor within 7 days of substantial completion of the construction work and submitting a copy to the City of the filed paperwork receipt within 2

days of submission. The Contractor is required to provide a copy of the County Surveyor's acceptance within 2 days of receipt from the County Surveyor.

Construction stakes shall be set and stationed by the Contractor at its expense. Unless otherwise indicated in the Special Provisions, surveying costs shall be included in the price of items bid. No separate payment will be made. Re-staking and replacement of construction survey markers damaged as a result of the Work, vandalism, or accident shall be at the Contractor's expense.

2-11 INSPECTION

The Contractor shall arrange and pay for all off-site inspection of the Work required by any ordinance or governing authorities. The Contractor shall also arrange and pay for other inspections, including tests in connection therewith, as may be assigned or required.

Add the following paragraphs:

2-11.1 Inspection

An inspector shall in no case act as foreman or perform other duties for the Contractor, nor interfere with the Contractor's management of the Work. Any advice which an inspector may give the Contractor shall not be binding to the Engineer or to the City, or release the Contractor from fulfilling all the terms of the Contract.

No partial payment, inspection, taking possession of, or other act made or done by the Engineer or the City with respect to the work prior to final completion and acceptance thereof shall affect or prejudice the right of the Engineer or the City to reject any defective work or material or to require the complete fulfillment of all the provisions of the Contract.

If the Engineer deems it expedient and not in the best interest of the City to correct work injured or done not in accordance with the Contract, the defective work may be accepted subject to an equitable deduction from the Contract Price which may be made therefor by the City upon certification from the Engineer.

Reexamination of any work may be ordered by the Engineer at any time prior to Final Acceptance and, if so ordered, the work must be uncovered by the Contractor. If such work be found in accordance with the Contract, the City will pay the cost of reexamination and replacement. If such work be found defective or not in accordance with the Contract, the Contractor shall pay such costs.

SECTION 3. CHANGES IN WORK

3-1 CHANGES REQUESTED BY THE CONTRACTOR

3-1.1 General

Add the following paragraph to the end of Subsection 3-1.1:

If the Contractor alleges that instructions issued after the date of the Contract will result in increases to the Contract Price or Contract Time, if latent or unforeseen conditions require modification of the Contract Documents, or the Contractor otherwise becomes aware of the need for or desirability of a change in the Work, a Change Order Proposal ("COP") may be submitted

to the City in writing, using the forms provided herein in Subsection 3-6.2 of the General Provisions, and must specify the reasons for such change, including relevant circumstances and impacts on the construction schedule. The Contractor may request additional compensation and/or time through a COP but not for instances that occurred more than ten calendar days prior to the COP. The Contractor's failure to initiate a COP within such period shall be deemed a waiver of the right to adjustment of the Contract Price or the Contract Time for the alleged change, unless such waiver is prohibited under state law. Any COP that is approved by the City will be incorporated in a Change Order or Construction Change Directive. If the City determines that the Work in question is not a change, the City shall issue a Work Directive, ordering the Contractor to proceed with the Work without delay. If the COP is denied but the Contractor believes that it does have merit, the Contractor may submit a claim to the City.

3-2 CHANGES INITIATED BY THE AGENCY

The City reserves the right, without notice to the Surety, to increase or decrease the quantity of any item or portion of the Work described in the Contract Documents or to alter or omit portions of the Work so described, as may be deemed necessary or expedient by the Engineer, without in any way making the Contract void. Such increases, alterations or decreases of Work shall be considered and treated as though originally contracted for, and shall be subject to all the terms, conditions and provisions of the original Contract. The Contractor shall not claim or bring suit for damages, whether for loss of profits or otherwise, on account of any decrease, alteration or omission of any kind of Work to be done.

3-2.1 General

Add the following paragraphs at the end of Subsection 3-2.1:

The City reserves the right to make changes in the Work, including the elimination of any Bid Item, after execution of the Contract and without invalidating the Contract by:

A. Change Order approved by the City Council, City Manager, Public Works Director, or City Engineer (dollar value of approval authority for each as per City policy); or

B. Construction Change Directive approved by the City Council, City Manager, Public Works Director, or City Engineer (dollar value of approval authority for each as per City policy);

A change that causes the total value of all changes to exceed the Contract contingency amount established at the time of award of the Contract must be approved by the City Council. No payments in excess of the original Contract Price will be made until a Change Order is approved in the normal course of business. The City may, at any time, without notice to the Contractor's surety(ies), order changes in the Work within the general scope of the Contract. Such changes in the Work shall not relieve or release the surety(ies) of its(their) obligations under the Performance and Payment Bonds issued for the Project. Changes in the Work made pursuant to this Article 3 shall in no way release any guarantee or warranty provided by the Contractor.

The City may issue a Change Order Proposal Request ("COPR"), in writing, to the Contractor, describing a proposed change to the Work and requesting that the Contractor submit an itemized Change Order Proposal ("COP") to the City, using the forms provided herein in Subsection 3-6.2 of the General Provisions, within ten calendar days after the City's issuance of the COPR. If the Contractor fails to submit a COP within such period of time, it shall be presumed that the change described in the City's COPR will not result in an increase to the Contract Price

or Contract Time and the change shall be performed by the Contractor without such increases. A COPR does not authorize the Contractor to commence performance of the changed work. The Contractor shall not perform any change until receipt of the City's written approval. If the City approves the Contractor's COP, City shall issue a Change Order.

Whenever a change is pending, the Contractor shall notify the City if it is necessary to halt other Work in the area of the change that would be affected thereby, until such time as the change is authorized.

Any change to the Contract Price shall be in a sum mutually agreed to by the Contractor and the City. When the cost for Extra Work cannot be agreed upon, the City will pay for Extra Work based on the accumulation of costs as provided for in Subsection 3-3, "Extra Work," of the Standard Specifications and the General Provisions.

3-2.1.1 Change Order

A Change Order is a written instrument prepared by the City and signed by the City and the Contractor, stating their agreement upon all of the following:

- A. The scope of the change in the Work;
- B. The amount of the adjustment, if any, in the Contract Price; and
- C. The extent of the adjustment, if any, in the Contract Time.

3-2.1.1.1 Accord and Satisfaction

The Contractor's agreement on any Change Order shall be a full compromise and settlement of all adjustments to the Contract Time and Contract Price, and compensation for any and all delay, extended or additional field and home office overhead, disruption, acceleration, inefficiencies, lost labor or equipment productivity, differing site conditions, construction interferences, and other extraordinary or consequential damages (hereinafter called "Impacts"), including any ripple or cumulative effect of the Impacts on the overall Work under the Contract arising directly or indirectly from the performance of Work described in the Change Order. By execution of any Change Order, the Contractor agrees that the Change Order constitutes a complete accord and satisfaction with respect to all claims for schedule extension, Impacts, or any costs of whatsoever nature, character or kind arising out of or incidental to the Change Order. No action, conduct, omission, product failure, or course of dealing by the City shall act to waive, modify, change, or alter the requirement that Change Orders must be in writing, signed by the City and the Contractor, and that such written Change Orders are the exclusive method for effectuating any change to the Contract Sum and/or Contract Time.

3-2.1.2 Construction Change Directive

A Construction Change Directive is a written order prepared and signed by the City, directing a change in the Work prior to the Contractor's agreement on adjustment, if any, in the Contract Price or Contract Time, or both. The City may, by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Price and Contract Time being adjusted accordingly. Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved. A Construction Change Directive shall

be used in the absence of total agreement on the terms of a Change Order. The City's form of Construction Change directive is provided in Subsection 3-6.2 of the General Provisions.

3-2.2.2 Increases of More than 25 Percent

Delete Subsection 3-2.2.2 in its entirety and substitute the following:

Should the actual quantity of a Major Item of Work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications exceed the Bid quantity by more than 25%, a Change Order will be issued and payment for the quantity in excess of 25% of the Bid quantity will be made on the basis of an adjustment to the Contract Unit price mutually agreed to by the City and the Contractor or pursuant to Subsection 3-2.4 "Agreed Prices."

For Minor Items of Work, the Contractor will be paid using the Contract Unit Price, regardless of whether the actual quantity of the Minor Item of Work covered by a Contract Unit Price exceeds the bid quantity by more than 25%.

3-2.2.3 Decreases of More than 25 Percent

Delete Subsection 3-2.2.3 in its entirety and substitute the following:

Should the actual quantity of a Major Item of Work covered by a Contract Unit Price and constructed in conformance with the Plans and Specifications be less than 75% of the Bid quantity, an adjustment in payment will not be made unless so requested in writing by the Contractor. If the Contractor so requests, a Change Order shall be issued and payment shall be made on the basis of an adjustment to the Contract Unit Price mutually agreed to by the City and the Contractor, or pursuant to Subsection 3-2.4 "Agreed Prices"; however, in no case will payment be less than would be made for the actual quantity at the Contract Unit Price.

For Minor Items of Work, the Contractor will be paid using the Contract Unit Price, regardless of whether the actual quantity of the Minor Item of Work covered by a Contract Unit Price is less than 75% of the Bid quantity.

3-2.2.4 Changes for Items Not Covered by Unit Prices

Payment for any change for an Item of Work not covered by a Contract Unit Price shall be made pursuant to Subsection 3-3 "Extra Work."

3-3 *EXTRA WORK*

New and unforeseen work will be classified as Extra Work only when the Work is not covered and cannot be paid for under any of the various items or combination of items for which a Bid price appears on the Bid. The Contractor shall not do any Extra Work except upon written order from the Engineer.

3-3.1 General

Add the following at the end of Subsection 3-3.1:

All Extra Work shall conform to the Plans and Specifications.

The Contractor shall furnish to the Engineer each Subcontractor's signed and detailed estimate of the cost for labor, materials, and equipment, including the markup by such Subcontractor for overhead and profit for Work added or deducted to a Subcontractor's scope of Work. The Contractor shall furnish to the Engineer the sub-Subcontractor's signed detailed estimate of the cost for labor, materials, and equipment, including the markup by such sub-Subcontractor for overhead and profit for Work added or deducted to a sub-Subcontractor's scope of Work. The Contractor shall furnish to the Engineer the vendor or supplier's signed detailed estimate or quotation of the cost to the Contractor for Work added or deducted from a vendor or suppliers scope of Work.

3-3.2.1 General

Add the following at the end of Subsection 3-3.2.1

Any change in the Work for an Item of Work not covered by a Contract Unit Price that involves both added and deleted Work shall be paid on the basis of the net total cost. The cost of deleted Work not covered by a Contract Unit Price shall be determined by the Engineer based on the schedule of lump sum prices submitted by the Contractor in accordance with Subsection 9-2, "Lump Sum Work," of the Standard Specifications and the General Provisions.

3-3.2.2.1 Labor

Delete Subsection 3-3.2.2.1 in its entirety and substitute the following:

The cost of labor will be the actual cost for wages prevailing locally for each craft or type of worker (including foreman when authorized by the Engineer) performing the Extra Work at the time the Extra Work is done, plus liability insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs, as well as assessments or benefits required by lawful collective bargaining agreements.

To the actual wages, as defined above, will be added a labor surcharge set forth in the California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates" that is in effect on the date upon which the Extra Work is performed. The labor surcharge shall constitute full compensation for all payments imposed by State and federal laws and for all other payments made to, or on behalf of, the workers, other than actual wages, subsistence and travel paid to the workers. The labor surcharge includes Workers' Compensation, Social Security, Medicare, Federal Unemployment, State Unemployment, and State Training taxes.

Except when direct supervision is provided by working foremen whose time is included in accordance with Subsection 3-2.2.2, the cost of direct supervision of Extra Work, when such direct supervision is provided exclusively for the Extra Work and not in conjunction with or at the same time as supervision for other Work, and when approved in advance in writing by the Engineer, may be charged to the Extra Work. Such cost includes only the actual cost of supervision labor, plus payroll taxes, insurance, and pension costs. The cost of transportation, use of vehicle, and other costs incurred by supervision will not be allowed.

3-3.2.2.2 Materials

Add the following to Subsection 3-3.2.2.2:

If the Contractor does not furnish satisfactory evidence of the cost of the materials from the actual supplier thereof within **3 working days** following delivery of materials to the Work site, the Engineer reserves the right to establish the cost of the materials at the lowest current wholesale prices at which the materials were available, in the quantities concerned, delivered to the location of the Work site, less any discounts.

3-3.2.2.3 Tool and Equipment Rental

Delete Subsection 3-3.2.2.3 in its entirety and substitute the following:

No payment will be made for individual pieces of equipment or tools not listed in the California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates" that is in effect on the date upon which the Extra Work is performed and that have a replacement value of \$200.00 or less, whether or not consumed by use. Such equipment or tools shall be considered to be small tools.

The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the Labor Surcharge and Equipment Rental Rates publication that is in effect on the date upon which the Extra Work is performed.

Move in and out, or minimum charges other than the hourly rate, shall not apply to equipment available from the force already on the Project site.

For equipment that is rented from a local equipment agency, the Contractor will be paid at the hourly rate shown on the rental agency invoice or agreement for the time the equipment is used on Extra Work. If a minimum equipment rental amount is required by the local equipment rental agency, the actual amount charged will be paid to the Contractor.

If it is deemed necessary by the Engineer to use equipment not listed in the Labor Surcharge and Equipment Rental Rates publication, a suitable rental rate for that equipment will be established by the Engineer. The Contractor may furnish any cost data that might assist the Engineer in the establishment of the rental rate. If the rental rate established by the Engineer is \$10.00 per hour or less, the provisions above concerning rental of equipment from a local equipment agency shall apply.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

When owner operated equipment is used to perform Extra Work to be paid on a force account basis, the Contractor will be paid for the equipment and operator as follows:

1. Payment for the equipment will be made at the rental rates listed for such equipment in the Labor Surcharge and Equipment Rental Rates publication that is in effect on the date upon which the Extra Work is performed.

2. Payment for the cost of labor will be made in conformance with the provisions in Subsection 3-3.2.2.1 "Labor" of the General Provisions.

3-3.2.3 Markup

Delete Subsection 3-3.2.3 in its entirety and substitute the following:

The markup for overhead and profit on Extra Work shall be in accordance with the following schedule.

3-3.2.3.1 Work by Contractor.

The following percentages shall be added to the Contractor's costs and shall constitute the markup for all overhead and profit:

1)	Labor	20
2)	Materials	15
3)	Equipment Rental	15
4)	Other Items and Expenditures.....	15

To the sum of the costs and markups provided for in this subsection, one percent shall be added as compensation for bonding.

3-3.2.3.2 Work by Subcontractor.

For Extra Work performed by a Subcontractor, the markup established in Subsection 3-3.2.3.1 of the General Provisions shall be applied to the Subcontractor's costs. An additional five percent shall be added to the Subcontractor's final cost, which shall reimburse the Contractor for administrative costs, including overhead and profit.

3-3.2.3.3 Work by Sub-Subcontractor.

For Extra Work performed by a sub-Subcontractor, the markup established in Subsection 3-3.2.3.1 of the General Provisions shall be applied to the sub-Subcontractor's costs. An additional ten percent shall be added to the sub-Subcontractor's final cost, five percent of which shall reimburse the Contractor for administrative costs, including overhead and profit, and five percent of which shall reimburse the Subcontractor for administrative costs, including overhead and profit.

3-3.2.3.4 Work by Specialist.

If the Engineer and the Contractor agree that a service or an item of Extra Work cannot be performed by the forces of the Contractor or those of any of its Subcontractors or sub-Subcontractors, such service or Extra Work item may be performed by a specialist. Invoices for such services or items of Extra Work calculated on the basis of current market prices may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization.

If the Contractor is required to perform Extra Work that requires a fabrication or matching process in a fabrication or machine shop facilities away from the Project site, the charges for that portion of the Extra Work performed in such facility may, by agreement between the Contractor and Engineer, be accepted as a specialist billing.

For Extra Work performed by a specialist, 15% shall be added to the specialist's invoice price less a credit to the City for any cash or trade discount offered or available, whether or not such discount may have been taken; such percentage shall reimburse the Contractor for administrative costs, including overhead and profit.

3-3.2.3.5 Work not Covered by Unit Prices.

Markup for overhead and profit on any change in the Work for an Item of Work not covered by a Contract Unit Price that involves both added and deleted Work shall be paid, in accordance with this Subsection 3-3.2.3 of the General Provisions, only if the net cost increases the Contract Price (i.e., if the cost for added Work exceeds the cost for deleted Work).

3-3.3 Daily Reports by Contractor

Delete the first sentence of Subsection 3-3.3 and substitute the following:

The Contractor shall submit daily reports for Extra Work showing all labor, material, and equipment costs incurred.

Add the following at the end of Subsection 3-3.3:

The daily reports shall describe in detail the Extra Work that was performed and the location (station, etc.). Separate daily reports shall be submitted for Extra Work that is performed for more than one location and for different tasks that are performed on the same day. Material charges shall be substantiated by valid copies of vendor's invoices. Such invoices shall be submitted with the daily reports, or if not available, they shall be submitted with subsequent daily reports. The Contractor shall maintain the Contractor's records in such a manner as to provide a clear accounting of the costs.

Upon completion of the Extra Work, the Contractor shall submit a summary of costs, including markup for overhead and profit. All costs shall be in accordance with Subsection 3-3.2, "Payment," of the Standard Specifications and the General Provisions. The signature of the City's Inspector on a daily report shall indicate agreement with the information reflected therein, not that the Contractor is entitled to payment of the costs in the report. The Engineer shall review the daily reports. The Engineer shall compare the Inspector's records with the completed daily reports furnished by the Contractor and make any necessary adjustments. When the daily reports are agreed upon and signed by both parties, these reports shall become the basis of payment for the Extra Work performed.

3-3.4 Extension of Time

Add the following as Subsection 3-3.4:

If the Contractor is delayed in completing the Extra Work due to a change ordered by the City, the time for completion of Work will be extended in accordance with Subsection 6-6.1 of these General Provisions.

3-5 *DISPUTED WORK*

Delete Subsection 3-5 in its entirety and substitute the following:

In the event of disputed Work, the City shall have the right to unilaterally issue a written Work Directive; and the Contractor shall continue performance pending resolution of the dispute and shall maintain cost data described in Subsection 3-3 of the Standard Specifications and the General Provisions. The City's form of Work Directive is provided in Subsection 3-6 of the General Provisions. Payment shall be made for such disputed Work as is later determined by negotiation between the parties or as is fixed by a court of law.

3-6 *FORMS*

Add Section 3-6 to incorporate the following forms, which appear in the succeeding pages.

3-6.1 Change Order Form

3-6.2 Change Order Proposal Forms

- (a) Change Order Proposal Summary Report
- (b) Labor Cost Report
- (c) Labor Rates Report
- (d) Material Cost Report
- (e) Equipment Cost Report
- (f) Special Forces/Services Cost Report

3-6.3 Construction Change Directive Form

3-6.4 Work Directive Form



**CITY OF MANHATTAN BEACH
PUBLIC WORKS DEPARTMENT
Engineering Division**

CONTRACT CHANGE ORDER NO. 1 (Final)

PROJECT NO.:

DESCRIPTION:

TO: Construction Company, Inc.

You are hereby instructed to comply with the following changes from the Contract Plans and Specifications:

SUMMARY OF CHANGES			
Description (Detailed Explanation Attached)	Change in Contract Price ¹	Change in Work Days	
1.	\$0.00		
2. Adjustment in Final Bid Quantities	\$0.00		
Net Change in Contract Price and Work Days	\$0.00		

¹Deduction or decrease in Contract Price is denoted in parentheses.

The following change is hereby made a part of the Contract Documents and shall be performed under the same terms and conditions as required by the original Contract Documents. Except as modified herein, the original Contract Documents and all prior amendments shall remain in full force and effect and all of the terms of the Contract Documents are hereby incorporated in this Change Order.

SUMMARY OF ALL CHANGE ORDERS

ORIGINAL CONTRACT AMOUNT\$000,000.00
CCO1 (FINAL)\$0.00
TOTAL\$000,000.00

SUMMARY OF WORKING DAYS

FIRST DAY OF WORK: Date
CONTRACT WORKING DAYS: X
TIME EXTENSION: CCO 1 (Final) Y
NEW TOTAL WORKING DAYS: X+Y
LAST DAY OF WORK: New Date



CHANGE ORDER DETAIL

Change Order No.: 1 (Final)

Project No.: Description:

The changes or interpretations described and noted herein are hereby authorized. The signed original of this order is on file in the Department of Public Works. Shown as separate paragraphs: (A) Reason for Change; (B) Description of Change; (C) Change in Contract Costs; and (D) Change in Completion Date.

Item No. 1:

A. Reason for Change:

B. Description of Change:

ITEM	DESCRIPTION	UNIT	UNIT PRICE	BID OR CURRENT APPROVED QTY	FINAL QTY	CHANGE	CHANGE IN COST ¹
New Item				0	0	0	0.00

¹Deduction or decrease in Contract Price is denoted in parentheses.

C. Change in Contract Cost:
Add \$0.00

D. Change in Completion Date:
Add Y Working Days

Item No. 2: Adjustment in Final Bid Quantities:

A. Reason for Change:
Due to conditions encountered during construction, modifications to the amount of Work were determined to be appropriate, and the changes were addressed by means of adjusting applicable contract quantities, as outlined below.



B. Description of Change:

ITEM	DESCRIPTION	UNIT	UNIT PRICE	BID OR CURRENT APPROVED QTY	FINAL QTY	CHANGE	CHANGE IN COST ¹
New Item				0	0	0	0.00

¹Deduction or decrease in Contract Price is denoted in parentheses.

C. Change in Contract Cost:
Add \$0.00

D. Change in Completion Date:
No Change.

SIGNATURE PAGE TO FOLLOW:



The original Contract Price was (\$0.00). Contract Change Order No. 1 (Final) increased the Contract Price by (\$0.00). The new Contract Price will be \$00/100, resulting in an increase of approximately 0.00% to the original Contract.

The original Contract Time of X Working Days was extended by Y Working Days per Change Order No. 1 (Final). The last contract Working Day is new Date.

Ordered: _____ Date: _____
Public Works Director

Concurred by: _____ Date: _____
City Engineer

Concurred by: _____
Project Manager

Acceptance by the Contractor:

This Change Order is in full compromise and settlement of all adjustments to Contract Time and Contract Price, and compensation for any and all delay, extended or additional field and home office overhead, disruption, acceleration, inefficiencies, lost labor or equipment productivity, differing site conditions, construction interferences and other extraordinary or consequential damages (hereinafter called "Impacts"), including any ripple or cumulative effect of these Impacts on the overall Work under the Contract arising directly or indirectly from the performance of Work described in this Change Order. By execution of this Change Order, the Contractor agrees that this Change Order constitutes a complete accord and satisfaction with respect to all claims for schedule extension, Impacts, or any costs of any nature, character or kind arising out of or incidental to this Change Order.

Name: _____ Date: _____

Title: _____



CHANGE ORDER PROPOSAL FORM

3-6.2(a) CONTRACT CHANGE ORDER PROPOSAL SUMMARY REPORT

Date _____
CCO Proposal No. _____ Contractor _____
Item No. _____ Location _____

AMOUNT

General Contractor

1. Labor Cost:.....\$ _____
2. Material Cost:\$ _____
3. Equipment Cost:.....\$ _____
4. Special Forces/Services:\$ _____
Subtotal Contractor Cost•.....\$ _____

5. Subcontractor/Sub-Subcontractor Name _____
Labor Cost.....\$ _____
Material Cost\$ _____
Equipment Cost.....\$ _____
Subtotal Subcontractor/Sub-Subcontractor Cost

6. Subcontractor/Sub-Subcontractor Name _____
Labor Cost.....\$ _____
Material Cost\$ _____
Equipment Cost.....\$ _____
Subtotal Subcontractor/Sub-Subcontractor Cost.....\$ _____

TOTAL CONTRACT CHANGE ORDER COSTS.....\$ _____



CHANGE ORDER PROPOSAL FORM

3-6.2(b) LABOR COST REPORT Date _____

Date _____

CCO Proposal No. _____ Contractor or Subcontractor _____

Item No. _____ Location _____

CLASSIFICATION AND NAME	HOURS	HOURLY RATE	EXTENDED AMOUNTS
Classification:	OT	\$	\$
Name:	REG	\$	\$
Classification:	OT	\$	\$
Name:	REG	\$	\$
Classification:	OT	\$	\$
Name:	REG	\$	\$
Classification:	OT	\$	\$
Name:	REG	\$	\$
Classification:	OT	\$	\$
Name:	REG	\$	\$
TOTAL LABOR			\$

Overhead/profit 20% \$ _____

Total labor/overhead/profit \$ _____

Subcontractor's mark-up of total Sub-Subcontractor
labor/overhead/profit (if applicable) 5% \$ _____

General contractor's mark-up of total Subcontractor
or Sub-Subcontractor labor/overhead/profit (if applicable) 5%..... \$ _____

Total..... \$ _____



CHANGE ORDER PROPOSAL FORM

3-6.2(c) LABOR RATES REPORT Date

Date _____

CCO Proposal No. _____ Contractor or Subcontractor _____

Item No. _____ Location _____

CLASSIFICATION:		
TAXABLE BASE:		AMOUNT
Base Hourly Pay		\$
Vacation		\$
TOTAL TAXABLE BASE		\$
TAXES & INSURANCE	PERCENT	AMOUNT
Social Security Tax		\$
State Unemployment Tax		\$
Federal Unemployment Tax		\$
Workmen's Compensation		\$
Liability & Umbrella Insurance		\$
TOTAL TAXES & INSURANCE		\$
FRINGE BENEFITS	AMOUNT	
Pension	\$	
Health & Welfare	\$	
Training	\$	
Other Fringe Benefits	\$	
TOTAL FRINGE BENEFITS	\$	
AMOUNT	\$	



CHANGE ORDER PROPOSAL FORM

3-6.2(d) MATERIAL COST REPORT

Date _____

CCO Proposal No. _____ Contractor or Subcontractor _____

Item No. _____ Location _____

INVOICE NO.	DESCRIPTION	AMOUNT
1.	Material	\$
	Sales Tax (Prevailing Tax Rate) 7.75%	\$
	Subtotal	\$
2.	Material	\$
	Sales Tax (Prevailing Tax Rate) 7.75%	\$
	Subtotal	\$
3.	Material	\$
	Sales Tax (Prevailing Tax Rate) 7.75%	\$
	Subtotal	\$
SUBTOTAL MATERIAL COST		\$

NOTE: An itemized list of materials, manufacturers, serial numbers, invoices, and other pertinent data shall be submitted along with the material cost report.

Overhead/profit 15% \$ _____

Total material/overhead/profit..... \$ _____

Subcontractor's mark-up of total Sub-Subcontractor
material/overhead/profit (if applicable) 5% \$ _____

General contractor's mark-up of total Subcontractor
or Sub-Subcontractor labor/overhead/profit (if applicable) 5%..... \$ _____

Total..... \$ _____



CHANGE ORDER PROPOSAL FORM

3-6.2(e) EQUIPMENT COST REPORT

Date _____

CCO Proposal No. _____ Contractor or Subcontractor _____

Item No. _____ Location _____

EQUIPMENT NO. (Description, Type, Size)	HOURS	HOURLY RATE	EXTENDED AMOUNTS
SUBTOTAL EQUIPMENT COST			\$

Overhead/profit 15% \$ _____

Total equipment/overhead/profit..... \$ _____

Subcontractor's mark-up of total Sub-Subcontractor
equipment/overhead/profit (if applicable) 5% \$ _____

General contractor's mark-up of total Subcontractor
or Sub-Subcontractor equipment/overhead/profit (if applicable) 5% \$ _____

Total..... \$ _____



CHANGE ORDER PROPOSAL FORM

3-6.2 (f) SPECIAL FORCES/SERVICES COST REPORT

Date _____

CCO Proposal No. _____ Contractor or Subcontractor _____

Item No. _____ Location _____

INVOICE NO.	DESCRIPTION	AMOUNT
1.		\$
		\$
	Subtotal	\$
2.		\$
		\$
	Subtotal	\$
3.		\$
		\$
	Subtotal	\$
SUBTOTAL MATERIAL COST		\$

NOTE: An itemized list of materials, manufacturers, serial numbers, invoices, and other pertinent data shall be submitted along with the special forces/services cost report.

Overhead/profit 15%\$ _____

Total Special Forces/Services/Overhead/Profit\$ _____



3-6.3 CONSTRUCTION CHANGE DIRECTIVE

Distribution to: CITY ☐ CONTRACTOR ☐ OTHER ☐ PROJECT MANAGER ☐

PROJECT:	DIRECTIVE NO.:
	DATE:
	CONTRACT DATE:
TO CONTRACTOR:	CONTRACT FOR:

You are hereby directed to make the following change(s) to this Contract:

PROPOSED ADJUSTMENTS

1. The proposed basis of adjustment to the Contract Price is:
[] Lump Sum (increase) (decrease) of \$ _____
[] Unit Price of \$ _____ per _____
[] Daily time and materials records of actual costs plus a overhead and profit, as provided in Subsection 3-3, "Extra Work," the Standard Specifications and the General Provisions, [subject to a Not-To-Exceed Amount of \$ _____].\n[] as follows:
2. The Contract Time is proposed to (be adjusted) (remain unchanged). The proposed adjustment, if any, is (an increase of ____ days) (a decrease of ____ days).

If the Contractor disagrees with the proposed adjustments, it must submit its own proposal within ten days of the date of this Construction Change Directive pursuant to Contract Documents or the proposed adjustment will become final and binding on the Contractor.

When signed by the City and received by the Contractor, this document becomes effective IMMEDIATELY as a Construction Change Directive (CCD), and the Contractor shall proceed with the change(s) described above.

Ordered: _____ Date: _____
Public Works Director

Concurred by: _____ Date: _____
City Engineer

Concurred by: _____ Date: _____
Project Manager



3-6.4 WORK DIRECTIVE

Distribution to: CITY ☐ CONTRACTOR ☐ FIELD ☐ OTHER ☐ PROJECT MANAGER ☐

PROJECT:

WORK DIRECTIVE NO.:

DATE:

CONTRACT DATE:

TO CONTRACTOR:

CONTRACT FOR:

You are hereby directed to continue performance of the following Work, without delay, pending resolution of the dispute concerning such Work and maintain the cost data described in Subsection 3-3, "Extra Work," of the Standard Specifications and the **General Provisions** to the Contract for the performance of such Work:

Neither the issuance of this Work Directive nor the requirement for the Contractor to maintain cost data constitutes approval by the City of a change in the Work or modification of the Contract Documents.

Ordered: _____
Public Works Director

Date: _____

Concurred by: _____
City Engineer

Date: _____

Concurred by: _____
Project Manager

Date: _____

SECTION 4. CONTROL OF MATERIALS

4-1 MATERIALS AND WORKMANSHIP

The provisions below shall supplement but not replace those provisions in Section 4-1 of the Standard Specifications, except that Subsection 4-1.4 shall be replaced in its entirety.

The first paragraph of Section 4-1 is replaced with the following:

Wherever applicable, materials shall conform to the latest Standards of the American Society for Testing Materials. All workmanship in the fabrication, assembly and construction of materials and equipment shall be neat and workmanlike in every respect. All equipment offered shall be of the manufacturer's latest design.

The Contractor and all Subcontractors, suppliers, and vendors shall guarantee that the Work will meet all requirements of this Contract as to the quality of materials, equipment, and workmanship.

4.1.1.1 Property Rights in Materials

Nothing in the Contract shall be construed as vesting in the Contractor any right, title, or interest in material used in the Work after it has been attached or affixed to the Work or the soil. All such material shall become the property of the City upon being so attached or affixed.

4-1.2 Protection of Work and Materials

Add the following at the end of Subsection 4-1.2:

Materials shall not be stored in the right-of-way unless written permission is given by the Engineer.

4-1.4 Test of Materials

Delete Subsection 4-1.4 in its entirety and substitute the following:

Unless otherwise called for in these General Provisions, all testing of materials will be performed by the City in such number and at such locations as deemed necessary by the Engineer to ensure compliance with the Contract Documents. The cost of all testing that can be performed within 50 miles of the Project will be borne by the City; the cost of all testing that must be performed 50 miles or more from the Project will be borne by the Contractor; the cost of all re-testing will be borne by the Contractor, and the amount due the City for the re-testing will be deducted from the Contract Price via Change Order.

The cost of rework material testing, overtime, travel and other related costs incurred by the City will be deducted from the Contract Price via Change Order.

4-1.6 Trade Names or Equals

If the Contractor requests to substitute an equivalent item for a brand or trade name item, the burden of proof as to the comparative quality and suitability of alternative equipment or articles or materials shall be upon the Contractor, and the Contractor shall furnish, at its own expense, all information necessary or related thereto as required by the Engineer. All requests for substitution shall be submitted, together with all documentation necessary for the Engineer to determine

equivalence, no later than ten calendar days after the award of the Contract, unless a different deadline is listed in the Special Provisions.

SECTION 5 UTILITIES

The provisions below shall supplement but not replace those provisions in Section 5 of the Standard Specifications.

5-1 LOCATION

The location and existence of any underground Utility or substructure has not been obtained. The methods used and costs involved to locate existing elements, points of connection and all construction methods are the Contractor's sole responsibility. Accuracy of information furnished, as to existing conditions, is not guaranteed by the City. The Contractor, at its sole expense, must make all investigations necessary to determine locations of existing elements, which may include contacting Underground Service Alert and other private underground locating firm(s), utilizing specialized locating equipment, hand trenching, or both. For every Dig Alert Identification Number issued by Underground Service Alert during the course of the Project, the Contractor must submit to the City the following form. The Contractor shall be responsible for preserving the integrity of the existing underground utilities at the site.

UNDERGROUND SERVICE ALERT IDENTIFICATION NUMBER FORM

ROOFING REPLACEMENT AT LIVE OAK PARK AND MARINE AVENUE PARK

No excavation will be permitted until this form is completed and returned to the City.

Government Code Section 4216 *et seq.* requires a Dig Alert Identification Number to be issued before a permit to excavate will be valid.

To obtain a Dig Alert Identification Number, call Underground Service Alert at **811** a minimum of three Working Days before scheduled excavation. For best response, provide as much notice as possible up to ten Working Days.

Dig Alert Identification Number: _____

Dated: _____

("CONTRACTOR")

By: _____

Printed Name: _____

Title: _____

By: _____

Printed Name: _____

Title: _____

NOTE: This form is required for every Dig Alert Identification Number issued by Underground Service during the course of the Work. Additional forms may be obtained from the City upon request.

5-1.3 Entry by Utility Owners

The right is reserved to the owners of public Utilities or franchises to enter the Project site for the purpose of making repairs or changes in their property that may be necessary as a result of the Work as well as any other reason authorized by the City. When the Contract Documents provide for the Utility owners to alter, relocate or reconstruct a Utility, or when the Contract Documents are silent in this regard and it is determined by the Engineer that the Utility owners must alter, relocate or reconstruct a Utility, the Contractor shall schedule and allow adequate time for those alterations, relocations or reconstructions by the respective Utility owners. City employees and agents shall likewise have the right to enter upon the Project site at any time and for any reason or no reason at all.

5-2 PROTECTION

If Contractor damages or breaks the Utilities, it will be the Contractor's responsibility to repair the Utility at no cost to the utility company or the City. If not fixed in a timely manner as deemed by the City Engineer, the utility company has the right to complete the repairs and assess the Contractor for all applicable costs.

Add the following paragraphs at the end of Subsection 5-2:

At least two Working Days prior to commencing work within the area, the Contractor shall request the utility owners to identify or otherwise indicate the location of their subsurface facilities. It shall be the Contractor's responsibility to determine the location and depth of all utilities including service connections which have been marked by the representative owners and which he believes may affect or be affected by the work. Full compensation for the ascertainment of utility locations and depths shall be considered included in the prices bid for the other items of work.

All utilities shall be notified by the Contractor in advance, according to their respective advance notice requirements, prior to excavating adjacent to, altering, or in any way modifying their facilities. The Contractor, at his expense, shall maintain in service all existing utilities. Should interruption of such utilities become necessary, the property owners and residents affected shall be notified 48 hours before the interruption.

The Contractor shall protect, support, or perform any other work necessary in order to maintain the operation of utilities in the proximity of the work area. The Contractor shall inform the Engineer in writing of all utilities omitted from or shown incorrectly on the contract plans. The Contractor shall not be entitled to damages or additional payment for delays attributable to utility relocations or alterations not shown or incorrectly delineated on the contract plans. The Contractor shall conduct his operations so as to permit access to the work site by any affected utility necessary for the relocation or modification to the utility system at no cost to the City.

Any interference by the Contractor with City-owned facilities such as, but not limited to, sewer, water, or storm drain that, in the opinion of the Engineer, creates a safety or health hazard and is not quickly repaired, the damaged facilities may be repaired by City forces and all costs of repairs will be deducted from contract payments.

5-3 REMOVAL

Facilities encountered during the prosecution of the Work that are determined to be abandoned shall be removed by the Contractor as required for the Work, unless directed otherwise by the

Engineer. The remaining portion of the existing Utility which is left in place shall be accurately recorded, in elevation and plan, on the control set of Contract drawings.

5-4 RELOCATION

The Contractor shall cooperate fully with all Utility forces of the City or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities that interfere with the progress of the Work. The Contractor shall schedule the Work so as to minimize interference with the relocation, altering, or other rearranging of facilities.

5-6 COOPERATION

The Contractor's attention is directed to the fact that Work may be conducted at or adjacent to the site by other contractors during the performance of the Work under the Contract. The Contractor shall conduct its operations so as to cause a minimum of interference with the work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts. Compensation for compliance shall be included in the various items of the Work, and no additional compensation shall be allowed therefor.

5-7 NOTIFICATION

The Contractor shall notify the Engineer and the owners of all Utilities and substructures not less than 48 hours before starting construction. The following list of names and telephone numbers is intended for the convenience of the Contractor and is not guaranteed to be complete or accurate:

Agency: _____
Phone Number: _____
Contact Person: _____

Agency: _____
Phone Number: _____
Contact Person: _____

Agency: _____
Phone Number: _____
Contact Person: _____

SECTION 6. PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK

The provisions below shall supplement but not replace those provisions in Section 6 of the Standard Specifications.

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK

6-1.1 Construction Schedule

In addition to the construction schedule required pursuant to Section 6-1.1 of the Standard Specifications after notification of the Contract award and before any start of the Project, as well as the revised construction schedule in advance of beginning revised operations, the Contractor

shall submit an updated construction schedule with its monthly invoice every month. Progress payments shall be contingent upon the receipt of monthly updated construction schedules.

One week before the scheduled pre-construction meeting, the Contractor must submit a construction schedule to the Engineer for review and approval. The Contractor shall make revisions as required by the Engineer. The schedule must account for all subcontract work, as well as the work of the Contractor, submittals, coordination with the other contractors performing concurrent work and the Traffic Control Plan. The Contractor shall update this Construction Schedule when directed by the Engineer, or when:

a. A Change Order significantly affects the Contract completion date or the sequence of construction approach or activities; or

b. The actual sequence of the Work, or the planned sequence of the Work, is changed and does not conform to the Contractor's current accepted Project construction schedule.

6-1.1.1 Pre-Construction Conference

Approximately five Days before the commencement of Work at the site, a pre-construction conference will be held at the City and shall be attended by the Contractor's Project manager, its on-site field superintendent, and any Subcontractors that the Contractor deems appropriate. Attendance by the Contractor and any Subcontractors designated is mandatory.

Contractor shall submit its 24-hour emergency telephone numbers to the Engineer for approval a minimum of two Working Days before the pre-construction conference. Unless previously submitted to the Engineer, the Contractor shall bring to the pre-construction conference copies of each of the following:

- 1) Construction Schedule.
- 2) Procurement schedule of major equipment and materials and items requiring long lead time.
- 3) Shop drawing/sample submittal schedule.
- 4) Preliminary schedule of values (lump sum price breakdown) for progress payment purposes.
- 5) Written designation of the on-site field superintendent and the Project manager. Both daytime and emergency telephone numbers shall be included in the written designation.

The purpose of the conference is to designate responsible personnel and establish a working relationship. The parties will discuss matters requiring coordination and establish procedures for handling such matters. The complete agenda will be furnished to the Contractor before the meeting date. The Contractor shall be prepared to discuss all of the items listed below.

- 1) The Contractor's construction schedule.
- 2) Notification of local residents before starting any Work and keeping them informed throughout the Project.
- 3) Procedures for transmittal, review, and distribution of the Contractor's submittals.
- 4) Processing applications for payment.
- 5) Maintaining record documents.
- 6) Critical Work sequencing.

- 7) Maintaining sewage service during construction, including proposed by-passes.
- 8) NPDES requirements, if any.
- 9) Field decisions and Change Orders.
- 10) Use of Project site, office and storage areas, security, housekeeping, and the City's needs.
- 11) Major equipment deliveries and priorities.
- 12) Traffic control.
- 13) Any other item that the City representative states is relevant to the meeting.

6-1.1.2 Weekly Progress Meetings

Progress meetings will be held each week during the course of the Project. The meeting location, day of the week and time of day will be mutually agreed to by the City and the Contractor. The Contractor shall provide a two-week "look ahead" schedule for each meeting. The construction manager will preside at these meetings and will prepare the meeting agenda, meeting minutes and will distribute minutes to all persons in attendance. As the Work progresses, if it is determined by agreement of the attendees, that weekly meetings are not necessary, the weekly progress meetings may be changed to bi-weekly progress meetings.

Add the following to section 6-2:

6-2.1 Excess Cost of City Personnel and Inspection Personnel

For any overtime or emergency work beyond a regular eight-hour day and for any work performed on Saturday, Sunday, or holidays, the charges for City personnel, including inspection, required on the job site shall be the responsibility of the Contractor and all costs therefor shall be deducted from the payments due the Contractor. The cost of City personnel shall be computed pursuant to adopted City salary schedules, overtime policies, fringe benefits, and overhead costs.

6-3.1 General

Add the following paragraph following paragraph one:

In the event a suspension of work is ordered because of failure on the part of the Contractor to carry out orders given or to perform any provisions of the Work, such suspension of work shall not relieve the Contractor of its responsibility to complete the work within the time limit set forth herein and shall not be considered cause for extension of the time for completion, and further, such suspension of work shall not entitle the Contractor to any additional compensation.

6-5 *TERMINATION OF THE CONTRACT FOR CONVENIENCE*

In addition to the reasons for termination listed in Section 6-5 of the Standard Specifications, which allow termination upon any written notice, the City may cancel the Contract for any other reason or for no reason upon 30 Days' written notice. The rest of the procedure outlined in Section 6-5 shall apply to such situation, including the Contractor's required immediate notification of Subcontractors and suppliers and the payment. In no event (including termination for impossibility or impracticability, due to conditions or events beyond the control of the City, for any other reason

or for no reason) shall the total amount of money to Contractor exceed the amount which would have been paid to the Contractor for the full performance of the services described in the Contract.

Furthermore, some of the City's projects are funded in whole or in part by funds other than the City's General Fund. If this Project is funded by such external funds in whole or in part, or if those external funds are terminated or reduced at any time and for any reason or for no reason at all, and the City determines at its discretion that no other funding is available for continuation of this Project, the City will not be obligated to continue funding for the services contained in these Contract Documents and may terminate the Project immediately. The City shall reimburse the Contractor for its work satisfactorily completed until the termination date. In no event shall the total amount of money to the Contractor exceed the amount which the City has received in funding from its external source. The Special Provisions may include further details in this regard.

6-6 DELAYS AND EXTENSIONS OF TIME

Unless otherwise agreed in writing, an adjustment to the Contract time by reason of a Change Order shall be agreed to at the time the Change Order is issued and accepted by the Contractor. If the Change Order does not reserve the right of the parties, or either of them, to seek an adjustment to the Contract time, then the parties forever relinquish and waive such right and there shall be no further adjustments to the Contract time.

6-6.1 Extensions of Time

In the event it is deemed appropriate by the City to extend the time for completion of the Work, any such extension shall not release any guarantee for the Work required by the Contract Documents, nor shall any such extension of time relieve or release the Sureties on the Bonds executed. In executing such Bonds, the Sureties shall be deemed to have expressly agreed to any such extensions of time. The amount of time allowed by an extension of time shall be limited to the period of the delay giving rise to the same as determined by the City. Notwithstanding any dispute which may arise in connection with a claim for adjustment of the Contract time, the Contractor shall promptly proceed with the Work.

6-6.2 Payment for Delays

Notwithstanding any other terms and conditions of the Contract Documents, the City shall have no obligation whatsoever to increase the Contract Price or extend the time for delays.

Unless compensation and/or mark up is agreed upon by the City, the Contractor agrees that no payment of compensation of any kind shall be made to the Contractor for damages or increased overhead costs caused by any delays in the progress of the Contract, whether such delays are avoidable or unavoidable or caused by any act or omission of the City or its agents. Any accepted delay claim shall be fully compensated for by an extension of time to complete the performance of the Work.

This Section shall not apply to compensable delays caused solely by the City. If a compensable delay is caused solely by the City, the Contractor shall be entitled to a Change Order that: (1) extends the time for completion of the Contract by the amount of delay caused by the City; and (2) provides equitable adjustment, as determined by the City, to the Contractor.

Add the following as section 6-7.2:

6-7.2 Working Day

The term "Working Day" shall mean any calendar day except Saturdays, Sundays, and the following holidays:

New Year's Day.....	January 1
Martin Luther King, Jr. Day	3rd Monday in January
Presidents' Day	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	1st Monday in September
Columbus Day	2nd Monday in October
Veterans' Day	November 11
Thanksgiving	4th Thursday in November
Friday after Thanksgiving	4th Friday in November
Christmas Day	December 25

If a holiday falls upon a Sunday, the following Monday shall be the day the holiday is observed, and if a holiday falls upon a Saturday, the preceding Friday shall be the day the holiday is observed.

6-7.3 Contract Time Accounting

Add the following at the end of Subsection 6-7.3:

The Contract Time for completion of the Work, including corrective items of Work, shall be in accordance with Section 4 of the Contract. Contract Time extensions, when granted by the Engineer, will be in Working Days and in accordance with the Contract Documents, and will be set forth in writing via Change Order.

Add the following as section 6-7.3.1:

6-7.3.1 Hours of Work

The Contractor shall not conduct any operations or perform any Work pertaining to the Project as defined herein, between the hours of 4:30 p.m. and 7:30 a.m. on any day nor on Saturday, Sunday, or holidays at any time except as approved by the Engineer. In the event that the Contractor abuses the hours of work requirement, a written warning will follow. After each additional warning, a \$200.00 penalty will be deducted from the Contract amount. All operations or Work pertaining to the Project, shall be in conformance with Manhattan Beach Municipal Code

Section 9.44.030 - "Construction Hours and Prohibited Days."

6-8 COMPLETION, ACCEPTANCE AND WARRANTY

The Contractor shall complete all Work under the Contract within the stipulated Working Days from the Notice to Proceed, as stated in the Contract. The Contractor shall not be allowed to begin any construction activity at the site before the issuance of the Notice to Proceed. Between the period of the Notice of Award and Notice to Proceed, the Contractor shall process Shop Drawings and begin procuring equipment and materials.

6-8.2 Acceptance

The Project will not be considered complete and ready for City Council direction to staff regarding recordation of the Notice of Completion until all Work required by the Contract Documents has been fully completed in compliance with the Contract Documents and all Applicable Laws including, but not limited to, correction or completion of all punch list items, the Work site is cleaned up in accordance with Section 7-8 of the Standard Specifications, the General Provisions, and the Special Provisions, and all of the following items have been received by the Engineer:

1. A form of Notice of Completion, with all information required by the California Civil Code;
2. All written guarantees, warranties, and special warranties if applicable;
3. All "as-builts" and record drawings;
4. Duly completed and executed forms of Conditional Waiver and Release On Final Payment from the Contractor, Subcontractors of any tier, suppliers, and other person eligible to file stop notices in connection with the Work; and
5. Duplicate copies of all operating instructions and manufacturer's operating catalogs and data, together with such field instructions as necessary to fully instruct City personnel in correct operation and maintenance procedures for all equipment installed listed under the electrical, air conditioning, heating, ventilating and other trades. This data and instructions shall be furnished for all equipment requiring periodic adjustments, maintenance or other operation procedures.

The Contractor shall allow at least seven Working Days notice for final inspection. Such notice shall be submitted to the Engineer in writing.

6-8.3 Warranty

For the purposes of the calculation of the start of the warranty period, the Work shall be deemed to be completed upon the date of recordation of the Notice of Completion. If that direction is contingent on the completion of any items remaining on a punchlist, the Work shall be deemed to be completed upon the date of the Engineer's acceptance of the final item(s) on that punchlist.

The Contractor shall repair or replace defective materials and workmanship as required in Section 6-8.3 of the Standard Specification at its own expense. Additionally, the Contractor agrees to defend, indemnify and hold the City harmless from claims of any kind arising from damage, injury or death due to such defects.

The parties agree that no certificate given shall be conclusive evidence of the faithful performance of the Contract, either in whole or in part, and that no payment shall be construed to be in acceptance of any defective Work or improper materials. Further, the certificate or final payment shall not terminate the Contractor's obligations under the warranty herein. The Contractor agrees that payment of the amount due under the Contract and the adjustments and payments due for any Work done in accordance with any alterations of the same, shall release the City, the City Council and its officers and employees from any and all claims or liability on account of Work performed under the Contract or any alteration thereof.

6-9 LIQUIDATED DAMAGES

For the purposes of the calculation of the start of the liquidated damages, the Work shall be deemed to be completed when the same has been completed in accordance with the Plans and Specifications therefor and to the satisfaction of the Engineer, and the Engineer has certified such completion in accordance with Section 6-8.1 of the Standard Specifications. The liquidated damages value is hereby amended to be \$1,000 per day.

SECTION 7. RESPONSIBILITIES OF THE CONTRACTOR

The first paragraph of Section 7-3.1 of the Standard Specifications shall not be incorporated and shall instead be replaced with the following:

The Contractor shall provide and maintain insurance naming the City, its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials as insureds or additional insureds regardless of any inconsistent statement in the policy or any subsequent endorsement whether liability is attributable to the Contractor or the City. The insurance provisions shall not be construed to limit the Contractor's indemnity obligations contained in the Contract. The City will not be liable for any accident, loss, or damage to the Work before completion, except as otherwise specified in Section 6-10.

The first sentence of Section 7-8.4.2 shall not be incorporated, and shall instead be replaced with the following:

Construction materials and equipment shall not be stored in Streets, roads, or highways unless otherwise specified in the Special Provisions or approved by the Engineer.

The first sentence of the second paragraph of Section 7-9 of the Standard Specifications shall not be incorporated, and shall instead be replaced with the following:

The Contractor shall relocate, repair, replace, or reestablish all existing improvements within the Project limits which are not designated for removal (e.g., curbs, sidewalks, driveways, signal loops, fences, walls, sprinkler systems, signs, Utility installations, pavements, structures, etc.) which are damaged or removed as a result of the Contractor's or the Subcontractors' operations or as required by the Plans and Specifications.

The last paragraph of Subsection 7-9 of the Standard Specifications shall not be incorporated, and shall instead be replaced with the following:

All costs to the Contractor for protecting, removing, restoring, relocating, repairing, replacing, or reestablishing existing improvements shall be included in the Bid.

Section 7-12 of the Standard Specifications shall not be incorporated, and shall instead be replaced with the following:

The names, addresses and specialties of the Contractor, Subcontractors, architects or engineers may not be displayed on any signage within the public right-of-way. This signage prohibition includes advertising banners hung from truck beds or other equipment.

Otherwise, the provisions below shall supplement but not replace those provisions in Section 7 of the Standard Specifications.

7-1 THE CONTRACTOR'S EQUIPMENT AND FACILITIES

The use of excessively loud equipment and warning signals shall be avoided, except in those cases required for the protection of personnel.

7-2 LABOR

7-2.2.1 Public Work

The Contractor acknowledges that the Project is a "public work" as defined in Labor Code Section 1720 *et seq.* ("Chapter 1"), and that this Project is subject to (a) Chapter 1, including without limitation Labor Code Section 1771 and (b) the rules and regulations established by the Director of Industrial Relations ("DIR") implementing such statutes. The Contractor shall perform all Work on the Project as a public work. The Contractor shall comply with and be bound by all the terms, rules and regulations described in (a) and (b) as though set forth in full herein.

7-2.2.2 Copies of Wage Rates

Pursuant to Labor Code Section 1773.2, copies of the prevailing rate of per diem wages for each craft, classification, or type of worker needed to perform the Project are on file at City Hall and will be made available to any interested party on request. By initiating any Work on this Project, the Contractor acknowledges receipt of a copy of the DIR determination of such prevailing rate of per diem wages, and the Contractor shall post such rates at each job site covered by these Contract Documents.

7-2.2.3 Failure to Pay Prevailing Rates

The Contractor shall comply with and be bound by the provisions of Labor Code Sections 1774 and 1775 concerning the payment of prevailing rates of wages to workers and the penalties for failure to pay prevailing wages. The Contractor shall, as a penalty paid to the City, forfeit \$200.00 for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the DIR for the work or craft in which the worker is employed for any public work done pursuant to these Contract Documents by the Contractor or by any Subcontractor.

7-2.2.4 Apprentices

The Contractor shall comply with and be bound by the provisions of Labor Code Sections 1777.5, 1777.6 and 1777.7 and California Code of Regulations Title 8, Section 200 *et seq.* concerning the employment of apprentices on public works projects. The Contractor shall be responsible for compliance with these Sections for all apprenticeable occupations. Before commencing Work on this Project, the Contractor shall provide the City with a copy of the information submitted to any applicable apprenticeship program. Within 60 Days after concluding Work, Contractor and each of its Subcontractors shall submit to the City a verified statement of the journeyman and apprentice hours performed under this Contract.

7-2.2.5 Debarment or Suspension

The Contractor shall not perform Work with any Subcontractor that has been debarred or suspended pursuant to California Labor Code Section 1777.1 or any other federal or State law providing for the debarment of contractors from public works. The Contractor and Subcontractors shall not be debarred or suspended throughout the duration of the Contract pursuant to Labor Code Section 1777.1 or any other federal or State law providing for the debarment of contractors from public works. If the Contractor or any Subcontractor becomes debarred or suspended during the duration of the Project, the Contractor shall immediately notify the City.

7-2.3 Payroll Records

The Contractor shall comply with and be bound by the provisions of Labor Code Section 1776, which requires the Contractor and each Subcontractor to (1) keep accurate payroll records and verify such records in writing under penalty of perjury, as specified in Section 1776, (2) certify and make such payroll records available for inspection as provided by Section 1776, and (3) inform the City of the location of the records. The Contractor has ten days in which to comply subsequent to receipt of a written notice requesting these records, or as a penalty to the City, the Contractor shall forfeit \$100.00 for each Day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

7-2.4 Hours of Labor

The Contractor acknowledges that eight hours labor constitutes a legal day's work. The Contractor shall comply with and be bound by Labor Code Section 1810. The Contractor shall comply with and be bound by the provisions of Labor Code Section 1813 concerning penalties for workers who work excess hours. The Contractor shall, as a penalty paid to the City, forfeit \$25.00 for each worker employed in the performance of this Project by the Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code. Pursuant to Labor Code Section 1815, work performed by employees of the Contractor in excess of eight hours per day, and 40 hours during any one week shall be permitted upon public work upon compensation for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay.

7-2.5 Registration with the DIR

In accordance with Labor Code Sections 1725.5 and 1771.1, no contractor or Subcontractor shall be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Section 1725.5.

7-2.6 Compliance Monitoring and Posting Job Sites

This Project is subject to compliance monitoring and enforcement by the DIR. The Contractor shall post job site notices, as prescribed by regulation.

7-2.7 Subcontractors

For every Subcontractor who will perform Work on the Project, the Contractor shall be responsible for such Subcontractor's compliance with Chapter 1 and Labor Code Sections 1860 and 3700, and the Contractor shall include in the written Contract between it and each Subcontractor a copy of the provisions in this Section 7-2 of the General Provisions and a requirement that each Subcontractor shall comply with those provisions. The Contractor shall be required to take all actions necessary to enforce such contractual provisions and ensure Subcontractor's compliance, including without limitation, conducting a periodic review of the certified payroll records of the Subcontractor and upon becoming aware of the failure of the Subcontractor to pay its workers the specified prevailing rate of wages. The Contractor shall diligently take corrective action to halt or rectify any failure.

7-2.9 Prevailing Wage Indemnity

To the maximum extent permitted by law, the Contractor shall indemnify, hold harmless and defend (at the Contractor's expense with counsel reasonably acceptable to the City) the City, its officials, officers, employees, agents and independent contractors serving in the role of City officials, and volunteers from and against any demand or claim for damages, compensation, fines, penalties or other amounts arising out of or incidental to any acts or omissions listed in Section 7-2 of the General Provisions by any Person (including the Contractor, its Subcontractors, and each of their officials, officers, employees and agents) in connection with any Work undertaken or in connection with the Contract Documents, including without limitation the payment of all consequential damages, attorneys' fees, and other related costs and expenses. All duties of the Contractor under this Section 7-2.9 shall survive expiration or termination of the Contract.

7-3 *INSURANCE*

The Contractor shall at all times during the term of the Contract carry, maintain, and keep in full force and effect the insurance referenced in Section 7-3 of the Standard Specifications, as modified below.

7-3.1.1 Acceptability of Insurers.

The insurance policies required under this Section 7-3 shall be issued by an insurer admitted to write insurance in the State of California with a rating of A:VII or better in the latest edition of the A.M. Best Insurance Rating Guide. Self insurance shall not be considered to comply with the insurance requirements under this Section 7-3.

7-3.1.2 Additional Insured.

The City, its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials, shall be the insured or named as additional insureds covering the Work, regardless of any inconsistent statement in the policy or any subsequent endorsement, whether liability is attributable to the Contractor or the City. The commercial general and automobile liability policies shall contain an endorsement naming City, its officers, employees, agents and volunteers as additional insureds. This provision shall also apply to any excess/umbrella liability policies.

7-3.1.3 Primary and Non-Contributing.

The insurance policies required under this Section 7-3 shall apply on a primary non-contributing basis in relation to any other insurance or self-insurance available to the City. Any insurance or self-insurance maintained by the City, its officers, employees, agents or volunteers, shall be in excess of the Contractor's insurance and shall not contribute with it. This provision shall also apply to any excess/umbrella liability policies.

7-3.1.4 Contractor's Waiver of Subrogation.

The insurance policies required under this Section 7-3 shall not prohibit the Contractor and the Contractor's employees, agents or Subcontractors from waiving the right of subrogation prior to a loss. The Contractor hereby waives all rights of subrogation against the City.

7-3.1.5 Deductibles and Self-Insured Retentions.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the City's option, the Contractor shall either reduce or eliminate the deductibles or self-insured retentions with respect to the City, or the Contractor shall procure a bond guaranteeing payment of losses and expenses.

7-3.1.6 Cancellations or Modifications to Coverage.

The Contractor shall not cancel, reduce or otherwise modify the insurance policies required by this Section 7-3 during the term of the Contract. The commercial general and automobile liability policies required under the Contract shall be endorsed to state that should the issuing insurer cancel the policy before the expiration date, the issuing insurer will endeavor to mail 30 days' prior written notice to the City. If any insurance policy required under this Section 7-3 is canceled or reduced in coverage or limits, the Contractor shall, within two business days of notice from the insurer, phone, fax or notify the City via certified mail, return receipt requested, of the cancellation or changes to the policy.

7-3.1.7 City Remedy for Noncompliance.

If the Contractor does not maintain the policies of insurance required under this Section 7-3 in full force and effect during the term of the Contract, or in the event any of the Contractor's policies do not comply with the requirements under this Section 7-3, the City may either immediately terminate the Contract or, if insurance is available at a reasonable cost, the City may, but has no duty to, take out the necessary insurance and pay, at the Contractor's expense, the premium thereon. The Contractor shall promptly reimburse the City for any premium paid by the City or

the City may withhold amounts sufficient to pay the premiums from payments due to the Contractor.

7-3.1.8 Evidence of Insurance.

At least two Working Days prior to the performance of Services under the Contract, the Contractor shall furnish the City's Risk Manager with a certificate or certificates of insurance and all original endorsements (both of which must reference the same Policy number), evidencing and effecting the coverages required under Section 7-3 of the Standard Specifications, as modified by this Section 7-3. The endorsements are subject to approval by the City's Risk Manager. The Contractor may provide complete, certified copies of all required insurance policies to the City. The Contractor shall provide proof to the City's Risk Manager that insurance policies expiring during the term of the Contract have been renewed or replaced with other policies providing at least the same coverage. The Contractor shall furnish such proof at least two weeks prior to the expiration of the coverages.

The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements must specifically name the City of Manhattan Beach and its elected and appointed officials, officers, employees, attorneys, agents, designated volunteers, and independent contractors in the role of City officials as insureds or additional insureds. The Contractor shall maintain current insurance certificates and endorsements on file with the City's Risk Manager at all times during the term of this Contract. The City reserves the right to require complete, certified copies of all required insurance policies at any time.

Where the Contractor has entered into an agreement with a Professional Employment Organization (PEO) to provide human resources, workers' compensation insurance, or other benefits to the Contractor's employees, the Contractor must also submit the agreement with the PEO. If the evidence of insurance submitted by the Contractor pursuant to this Section 7-3 evidences that the insurance is provided by the PEO, all such PEO-provided insurance coverages and indemnities must comply with the requirements of these Contract Documents.

7-3.1.9 Indemnity Requirements not Limiting.

Procurement of insurance by the Contractor shall not be construed as a limitation of Contractor's liability or as full performance of the Contractor's duty to indemnify the City under Section 7-4 of the Contract.

7-3.1.10 Subcontractor Insurance Requirements.

The Contractor shall require each of its Subcontractors that perform Services under the Contract to maintain insurance coverage that meets all of the requirements of this Section 7-3.

7-3.1.11 Replacement Insurance

The Contractor agrees that it will not cancel, reduce or otherwise modify the insurance coverage. The Contractor agrees that if it does not keep the required insurance in full force and effect, and such insurance is available at a reasonable cost, the City may take out the necessary insurance and pay the premium thereon, and the repayment thereof shall be deemed an obligation of the Contractor and the cost of such insurance may be deducted, at the option of the City, from payments due the Contractor. This shall be in addition to all other legal options available to the City to enforce the insurance requirements.

7-3.1.12 Subcontractors

The Contractor shall ensure all Subcontractors and their employees are listed as additional insureds on all of the Contractor's insurance.

7-3.2 General Liability Insurance

Instead of the minimum limits listed in Section 7-3.2 of the Standard Specifications, the Contractor shall procure and at all times during the term of the Contract carry, maintain, and keep in full force and effect Commercial General Liability Insurance with a minimum limit of \$2,000,000.00 per occurrence for bodily injury, personal injury and property damage and a general aggregate limit of \$2,000,000.00 per project or location. If the Contractor is a limited liability company, the commercial general liability coverage shall be amended so that the Contractor and its managers, affiliates, employees, agents and other persons necessary or incidental to its operation are insureds.

7-3.3 Workers' Compensation Insurance

Workers' Compensation Insurance as required by the State of California and Employer's Liability Insurance with a minimum limit of \$1,000,000.00 per accident for bodily injury or disease. If the Contractor has no employees while performing the Work under the Contract, a Workers' Compensation policy is not required, but the Contractor shall execute a declaration that it has no employees.

7-3.4 Automobile Insurance

Instead of the minimum limits listed in Section 7-3.4 of the Standard Specifications, the Contractor shall procure and at all times during the term of the Contract carry, maintain, and keep in full force and effect Automobile Liability Insurance for any owned, non-owned or hired vehicle used in connection with the performance of the Contract with a combined single limit of \$2,000,000.00 per accident for bodily injury and property damage. If the Contractor does not use any owned, non-owned or hired vehicles in the performance of the Work under this Contract, the Contractor shall obtain a non-owned auto endorsement to the Commercial General Liability policy required by Subsection 7-3.2.

7-3.5 Insurance Requirements not Limiting

If the Contractor maintains broader coverage and/or higher limits than the minimums required above, the City requires and shall be entitled to the broader coverage and/or the higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

7-3.6 If required by the City, the Contractor shall also provide the following policy(ies) of insurance:

7-4 INDEMNIFICATION

The following indemnity provisions shall supersede the indemnity in Section 7-3.1 of the Standard Specifications.

7-4.1 Indemnities for Third Party Claims.

To the fullest extent permitted by law, the Contractor shall, at its sole cost and expense, defend, hold harmless and indemnify the City and its elected officials, officers, attorneys, agents, employees, designated volunteers, successors, assigns and those City agents serving as independent contractors in the role of City officials (collectively "Indemnitees"), from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith and the payment of all consequential damages (collectively "Liabilities"), in law or equity, whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to the acts or omissions of the Contractor, its officers, agents, servants, employees, Subcontractors, materialmen, contractors or their officers, agents, servants or employees (or any entity or individual that the Contractor shall bear the legal liability thereof) in the performance of the Contract, including the Indemnitees' active or passive negligence, except for Liabilities arising from the sole negligence or willful misconduct of the Indemnitees, as determined by final arbitration or court decision or by the agreement of the Parties. The Contractor shall defend the Indemnitees in any action or actions filed in connection with any Liabilities with counsel of the Indemnitees' choice, and shall pay all costs and expenses, including all attorneys' fees and experts' costs actually incurred in connection with such defense. The Contractor shall reimburse the Indemnitees for any and all legal expenses and costs incurred by Indemnitees in connection therewith.

7-4.1.1 Taxes and Workers' Compensation

The Contractor shall pay all required taxes on amounts paid to the Contractor under the Contract, and indemnify and hold the City harmless from any and all taxes, assessments, penalties, and interest asserted against the City by reason of the independent contractor relationship created by the Contract. The Contractor shall fully comply with the Workers' Compensation law regarding the Contractor and the Contractor's employees. The Contractor shall indemnify and hold the City harmless from any failure of the Contractor to comply with applicable Workers' Compensation laws. The City may offset against the amount of any fees due to the Contractor under the Contract any amount due to the City from the Contractor as a result of the Contractor's failure to promptly pay to the City any reimbursement or indemnification arising under this Subsection 7-4.1.1.

7-4.1.2 Subcontractor Indemnity Agreements

The Contractor shall obtain executed indemnity agreements with provisions identical to those in this Section 7-4 from each and every Subcontractor or any other person or entity involved by, for, with or on behalf of the Contractor in the performance of the Contract. If the Contractor fails to obtain such indemnity obligations, the Contractor shall be fully responsible and indemnify, hold harmless and defend the Indemnitees from and against any and all Liabilities at law or in equity, whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to the acts or omissions of the Contractor's Subcontractor, its officers, agents, servants, employees, Subcontractors, materialmen, contractors or their officers, agents, servants or employees (or any entity or individual that the Contractor's Subcontractor shall bear the legal liability thereof) in the performance of the Contract, including the Indemnitees' active or passive negligence, except for Liabilities arising from the sole negligence or willful misconduct of the Indemnitees, as determined by final arbitration or court decision or by the agreement of the Parties.

7-4.2 Workers' Compensation Acts not Limiting.

The Contractor's indemnifications and obligations under this Section 7-4, or any other provision of the Contract, shall not be limited by the provisions of any Workers' Compensation act or similar act. The Contractor expressly waives its statutory immunity under such statutes or laws as to the City, its officers, agents, employees and volunteers.

7-4.3 Insurance Requirements not Limiting.

The City does not, and shall not, waive any rights that it may possess against the Contractor because of the acceptance by the City, or the deposit with the City, of any insurance policy or certificate required pursuant to the Contract. The indemnities in this Section 7-4 shall apply regardless of whether or not any insurance policies are determined to be applicable to the Liabilities, tax, assessment, penalty or interest asserted against the City.

7-4.4 Survival of Terms.

The Contractor's indemnifications and obligations under this Section 7-4 shall survive the expiration or termination of the Contract.

7-4.5 Civil Code Exception.

Nothing in this Section 7-4 shall be construed to encompass Indemnitees' sole negligence or willful misconduct to the limited extent that the underlying Contract is subject to Civil Code Section 2782(a) or the City's active negligence to the limited extent that the underlying Contract Documents are subject to Civil Code Section 2782(b), provided such sole negligence, willful misconduct or active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction.

7-4.6 Nonwaiver of Rights.

Indemnitees do not and shall not waive any rights that they may possess against the Contractor because the acceptance by the City, or the deposit with the City, of any insurance policy or certificate required pursuant to these Contract Documents. This indemnity provision is effective regardless of any prior, concurrent, or subsequent active or passive negligence by Indemnitees and shall operate to fully indemnify Indemnitees against any such negligence.

7-4.7 Waiver of Right of Subrogation.

The Contractor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all Claims arising out of or incident to the activities or operations performed by or on behalf of the Contractor regardless of any prior, concurrent or subsequent active or passive negligence by Indemnitees.

7-5 PERMITS

Before starting any construction work, the Contractor will be required to obtain all necessary permits from the City, which may include obtaining a no fee encroachment permit for Work within the public right-of-way, as well as all other permits required from all other agencies. Should this Project require construction of trenches or excavations which are five feet or deeper and into

which a person is required to descend, the Contractor shall obtain a Cal/OSHA permit and furnish the City with a copy before Work can commence on this Project. The Contractor shall bear all cost for fees for all agencies except for the City's permit fees.

The Contractor shall procure all permits and licenses (including a City of Manhattan Beach business license), pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. All City of Manhattan Beach permits required for the performance of the Contract shall be issued on a "no fee" basis. Permits required by other agencies shall be obtained by the City for all work within the City of Manhattan Beach.

7-7 COOPERATION AND COLLATERAL WORK

The Contractor shall be responsible for coordinating all Work with the City's street sweeping, trash pick-up, and street maintenance contractors, emergency services departments, utility companies' crews, and others when necessary. Payment for conforming to these requirements shall be included in other items of Work, and no additional payment shall be made thereof.

7-8 WORKSITE MAINTENANCE

Clean-up shall be done as Work progresses at the end of each day and thoroughly before weekends. The Contractor shall not allow the Work site to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction operation. Materials which need to be disposed shall not be stored at the Project site, but shall be removed by the end of each Working Day. If the job site is not cleaned to the satisfaction of the Engineer, the cleaning will be done or contracted by the City and shall be back-charged to the Contractor and deducted from the Contract Price.

The Contractor shall make arrangements for storing its equipment and materials. The Contractor shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work. Approved areas within Work site may be used for temporary storage; however, the Contractor shall be responsible for obtaining any necessary permits from the City. In any case, the Contractor's equipment and personal vehicles of the Contractor's employees shall not be parked on the traveled way or on any section where traffic is restricted at any time.

The Contractor shall deliver, handle, and store products in accordance with the manufacturer's written recommendations and by methods and means that will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at the Project site and overcrowding of construction spaces. In particular, the Contractor shall provide delivery and installation coordination to ensure minimum holding or storage times for products recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

Storage shall be arranged to provide access for inspection. The Contractor shall periodically inspect to ensure products are undamaged and are maintained under required conditions.

The Contractor shall promptly remove from the vicinity of the completed Work, all rubbish, debris, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final Acceptance of the Work by the City will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final clean-up of the Project site.

All costs associated with the clean-up and storage required to complete the Project shall be the sole responsibility of the Contractor.

Pursuant to the provisions of Section 7-8 and Section 7-10 of the Standard Specifications and these General Provisions, the Contractor is responsible for Project site maintenance and for public convenience and safety. Payment for compliance with these provisions is considered as included in the prices bid for other contract items.

The City, however, to maintain good public relations, may deem it necessary to require special Project site maintenance and public convenience and safety actions and work to be performed by the Contractor that are over and above those required by the provisions of Section 7-8 and Section 7-10 of the Standard Specifications and these General Provisions.

These actions and work shall be as directed by the Engineer in writing and payment for compliance therewith shall be on a cost plus basis for extra work per Section 3-3 of the Standard Specifications and applied against the not-to-exceed bid item for "Special Project Site Maintenance and Public Convenience and Safety."

7-10 SAFETY

The provisions below shall supplement but not replace those provisions in Subsection 7-10 of the Standard Specifications.

7-10.2 Haul Routes

Subsection 7-10.3 of the Standard Specifications shall be deleted and replaced as follows:

The Contractor must obtain the Engineer's approval before using any haul routes. Further detail requirements for haul traffic are delineated in the Special Provisions.

7-10.5.3 Steel Plate Covers

The Contractor shall cover all openings, trenches and excavations at the end of each Work Day with steel plate covers.

7-15 RECYCLING OF MATERIALS

Subsection 7-15 is hereby added to the Standard Specifications as follows:

7-15.1 Recycling of Asphalt Concrete, Portland Cement Concrete, Aggregate Base, and Green Waste are Required

The records of disposal, including scale tonnages, shall be furnished to the City on a monthly basis. Failure to comply with the requirements of this Section will result in delay of progress payment.

7-15.2 Contractor's Obligation

The City is committed to a recycling program. If available, it is the obligation of the Contractor, under the Contract, to recycle the waste material through an approved recycling plant. Records and reports of waste recycle will be submitted to the City on a regular monthly basis.

SECTION 8. FACILITIES FOR AGENCY PERSONNEL

The provisions of Section 8 of the Standard Specifications shall apply except as modified herein. No field offices for City personnel shall be required; however, City personnel shall have the right to enter upon the Project at all times and shall be admitted to the offices of the Contractor to use the telephone, desk and sanitary facilities provided by the Contractor for its own personnel.

SECTION 9. MEASUREMENT AND PAYMENT

The provisions below shall supplement but not replace those provisions in Section 9 of the Standard Specifications.

9-1.1 General

Add the following at the end of Subsection 9-1.1:

All items of Work which are not designated on the Bid Schedule by the letters "F" or "LS" or words "Final" or "Lump Sum" shall have final pay quantities measured and paid for in accordance with the Standard Specifications and these General Provisions.

9-1.2 Methods of Measurement

The Contract Price shall constitute full compensation for all labor, equipment, materials, tools and incidentals required to complete the Project as outlined in these Contract Documents and as directed by the Engineer.

9-2 LUMP SUM WORK

Delete the first sentence of Subsection 9-2 and substitute the following:

Items of Work which are designated by the letters "LS" or the words "Lump Sum" in the Estimated Quantities column of the Bid Schedule shall be paid for at the price indicated in the Bid, unless the dimensions of the Work, as shown on the Plans, are revised by the Engineer. If such dimensions are revised and such revisions result in an increase or decrease in the quantity of such Work, the final payment for the lump sum item will be revised in proportion to the change in dimensions authorized by Change Order.

Add the following at the end of Subsection 9-2:

The Contractor shall submit a Work item breakdown of the Bid, described in the second paragraph of Subsection 9-2, "Lump Sum Work," of the Standard Specifications, within ten Working Days after award of the Contract and/or at any other time as required by the Engineer.

No guarantee is made regarding the amount of Work required to complete a lump sum item of Work.

9-2.1 Progress Payments for Lump Sum Items of Work

The word "Complete" in the Estimated Quantities column of the Bid Schedule for a lump sum item of Work shall mean that payment for that item will only be made after all Work for that item has been completed. The "%" symbol in the Estimated Quantities column of the Bid Schedule for a lump sum item of Work shall mean that progress payments for that item will be

allowed based on the percentage of completion as determined by the Engineer in each pay period, typically every 30 days. (See Subsection 9-3.2 of the Standard Specifications and these General Provisions.)

9-3 PAYMENT

9-3.1 General

In accordance with Public Contract Code Section 7107, if no claims have been filed and are still pending, the amount deducted from the final estimate and retained by the City will be paid to the Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be withheld for any other lawful purposes.

Whenever the Contractor is required to perform work or furnish equipment, labor, tools, and materials of any class for which no price is fixed in the proposal, it shall be understood that such work, equipment, labor, tools, and materials shall be provided without extra charge, allowance, or direct payment of any kind. The cost of performing such work or furnishing such equipment, labor, tools, and materials shall be included in the unit bid prices in the proposal most closely related to the work and no additional compensation will be made thereof.

If any portion of the work done or materials furnished under the Contract shall prove defective or not in accordance with the Specifications and Contract drawings, and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or undesirable, the Engineer shall have the right and authority to retain the work instead of requiring it to be removed and reconstructed, but he shall make such deductions therefor in the payment due the Contractor as may be just and reasonable.

Delete the tenth paragraph of Subsection 9-3.1 and substitute the following:

Not later than 60 days from the date of Final Acceptance, the five percent deducted and retained from each progress estimate (see Subsection 9-3.2 of the Standard Specifications and these General Provisions) by the City will be paid to the Contractor except such amounts as are required by law to be withheld by properly executed and filed notices to stop payment, or as may be authorized by the Contract to be further retained.

9-3.2 Partial and Final Payment

9-3.2.1 Monthly Closure Date and Invoice Date

The Contractor shall prepare and submit the form attached herewith (see Appendix I), or its own form in an identical format, to the Engineer for all requests for progress payments for the work performed in accordance with the provisions of the Contract during the preceding month. The progress payment request shall be submitted monthly, and a maximum of one progress payment request may be submitted each month. The Contractor shall submit a Conditional Waiver and Release form (Civil Code Section 8132) with the applicable monthly progress payment request. Progress payment requests associated with work completed prior to June 30th (the end of the City's fiscal year), must be submitted no later than July 30th.

9-3.2.2 Payments

The City shall make payments within 30 Days after receipt of the Contractor's undisputed and properly submitted payment request, including an updated construction schedule pursuant to Section 6-1.1 of the General Provisions. The City shall return to the Contractor any payment request determined not to be a proper payment request as soon as practicable, but not later than seven Days after receipt, and shall explain in writing the reasons why the payment request is not proper. Acceptance by the Contractor of the payment made in accordance with the final estimate shall be a release to the City, its officers, agents, and employees excepting only claims against the City for any amount withheld by it at the time of such payment.

9-3.2.3 Retention

The City shall withhold not less than five percent from each progress payment. The City shall withhold not less than five percent of the Contract Price from the Final Payment Amount (defined in Section 9-3.2.4) until at least 35 days after recordation of the Notice of Completion, or recordation of a notice of cessation, but not longer than the period permitted by Public Contract Code Section 7107.

In addition to retained percentage and liquidated damages, the City may withhold payments to the Contractor including for defective work not remedied and other valid claims against the Contractor.

9-3.2.4 Final Invoice and Payment

Whenever the Contractor shall have completely performed the Contract in the opinion of the Engineer, the Contractor shall submit to the Engineer a written statement of the final quantities of Contract items in the form of the final invoice, which must have an identical format to the progress payment request form attached herewith (see Appendix I). Upon receipt of the final payment request, the Engineer shall check the quantities included therein and shall authorize a payment amount, which in the Engineer's opinion shall be just and fair, covering the value of the total amount of Work done by the Contractor, less all previous payments and all amounts to be retained under the provisions of the Contract Documents ("Final Payment Amount"). The Contractor shall submit a Conditional Waiver and Release form (Civil Code Section 8136) with the Final Payment request. The Engineer shall then request that the City accept the Work and that the City Clerk be authorized to file, on behalf of the City in the office of the County Recorder, a Notice of Completion of the Work herein agreed to be done by the Contractor. In addition, the final payment will not be released until the Contractor returns the control set of Plans and Specifications showing the redlined as-built conditions.

Final payment requests associated with work completed prior to June 30th (the end of the City's fiscal year), must be submitted no later than July 30th.

9-3.2.5 Substitute Security

In accordance with Public Contract Code Section 22300, the Contractor may request that it be permitted to substitute securities in lieu of having retention withheld by the City from progress payments when such payments become due or, in the alternative, the Contractor may request that the City make payments of earned retentions directly to an agreed upon designated escrow agent at the Contractor's expense. If the Contractor selects either one of these alternatives, the following shall control.

9-3.2.5.1 Substitution of Securities for Performance Retention

At some reasonable time before any progress payment would otherwise be due and payable to the Contractor in the performance of Work under these Contract Documents, the Contractor may submit a request to the City in writing to permit the substitution of retentions with securities equivalent to the amount estimated by the City ("estimated amount of retention") to be withheld. The Contractor shall deposit such securities with the City or may, in the alternative, deposit such securities in escrow with a State or federally chartered bank in California, as the escrow agent, at the Contractor's expense. Such securities will be the equivalent or greater in value of the estimated amount of retention. If the Contract is modified by written Modifications or Change Orders or the Contractor otherwise becomes entitled to receive an amount more than the Contract Price at the time the securities are deposited, the Contractor shall, at the request of the City, deposit with the City or escrow agent, whichever is applicable, additional securities within a reasonable time so that the amount of securities on deposit with the City or escrow agent is equivalent or greater in value than the amount of retention the City would otherwise be entitled to withhold from progress payments due or to become due to the Contractor as the Work progresses. The City shall withhold any retention amount that exceeds the security amount until the additional securities are deposited and, if the deposit is with an escrow agent, the City has confirmation from that escrow agent of the new total value of securities. Upon satisfactory completion of the Contract, which shall mean, among other things, that the City is not otherwise entitled to retain proceeds from progress payments as elsewhere provided in the Contract or under applicable law, the securities shall be returned to the Contractor. The City shall, within its sole discretion, determine whether the amount of the securities on deposit with the City or escrow agent is equal to or greater than the amount of estimated retention of progress payments that could otherwise be held by the City if the Contractor had not elected to substitute same with securities.

9-3.2.5.2 Deposit of Retention Proceeds with an Escrow Agent

As an alternative to the substitution of securities, as provided above, or the City otherwise retaining and holding retention proceeds from progress payments, the Contractor may request the City to make payments of retentions earned directly to an escrow agent with the same qualifications as required in Section 9-3.2.5.1 above and at the expense of the Contractor. At its sole expense, the Contractor may direct the investment of such retention payments into only such securities as mentioned in Section 9-3.2.5.3 below and shall be entitled to interest earned on such investments on the same terms provided for securities deposited by the Contractor. Upon satisfactory completion of the Contract, which shall mean when the City would not otherwise be entitled to withhold retention proceeds from progress payments had the Contractor not elected to have such proceeds deposited into escrow, the Contractor shall be allowed to receive from the escrow agent all securities, interest and payments deposited into escrow pursuant to the terms of this Section. The Contractor shall pay to each Subcontractor, not later than ten Days of receipt of payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount withheld to ensure performance of the Contractor.

9-3.2.5.3 Subcontractor Entitlement to Interest

If the Contractor elects to receive interest on any moneys withheld in retention by the City, then the Subcontractor shall receive the identical rate of interest received by the Contractor on any retention moneys withheld from the Subcontractor by the Contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the Subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the Subcontractor. If the

Contractor elects to substitute securities in lieu of retention, then, by mutual consent of the Contractor and the Subcontractor, the Subcontractor may substitute securities in exchange for the release of moneys held in retention by the Contractor. The Contractor shall pay each Subcontractor, not later than ten Days after receipt of escrow moneys, the amount owed to each Subcontractor from the moneys plus the respective amount of interest earned, net of costs attributed to the retention held from each Subcontractor, on the amount of retention withheld to ensure performance of the Subcontractor.

9-3.2.5.4 Securities Eligible for Investment

Securities eligible for investment shall include those listed in Government Code Section 16430, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed upon between the Contractor and the City. The Contractor shall be the beneficial owner of any securities substituted for any monies withheld and shall receive any interest thereon.

9-3.2.5.5 Escrow Agreement for Security Deposits in Lieu of Retention

The escrow agreement that shall be used for the deposit of securities in lieu of retention shall substantially conform to the form prescribed in Public Contract Code Section 22300(f).

9-3.2.5.6 Inconsistencies with Prevailing Statutory Requirements

If there is any inconsistency between or differences in Public Contract Code Section 22300 and the terms of this provision, or any future amendments thereto, Section 22300 shall control.

9-4 AUDIT

The City or its representative shall have the option of inspecting and/or auditing all records and other written materials used by the Contractor in preparing its billings to the City as a condition precedent to any payment to the Contractor or in response to a construction claim or a Public Records Act (Government Code Section 6250 *et seq.*) request. The Contractor will promptly furnish documents requested by the City at no cost. Additionally, the Contractor shall be subject to State Auditor examination and audit at the request of the City or as part of any audit of the City, for a period of three and one-half years after Final Acceptance under the Contract. The Contractor shall include a copy of this Section 9-4 in all contracts with its Subcontractors, and the Contractor shall be responsible for immediately obtaining those records or other written material from its Subcontractors upon a request by the State Auditor or the City. If the Project includes other auditing requirements, those additional requirements will be listed in the Special Provisions.

SECTION 10. CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

10.1 GENERAL

To ensure that solid waste generated in the City is reduced, reused or recycled, the Contractor shall submit a "Waste Management Plan" (WMP) to the Engineer for review and approval, using the form found at the end of this Section 10. After the WMP has been reviewed by the Engineer, it will be returned to the Contractor in one of the following four status conditions:

- "Approved"

- “Further Explanation Required”: The Engineer will return the WMP to the Contractor with questions about the WMP. The Contractor shall resubmit plan with each of the City’s questions answered thoroughly.
- “Denied”: The Engineer will indicate the reasons for denial. The Contractor shall then re-submit a new WMP that complies with the requirements of this Section or request an Infeasibility Exemption.
- “Infeasibility Exemption Approved”

The Contractor shall follow the WMP and document results during demolition and construction. Final documentation shall be submitted at the end of the project to the Engineer for review of compliance with the original WMP. The amount deducted from the final estimate and retained by the City in accordance with Section 9.3.1 and 9.3.2 shall be withheld until final WMP is submitted to the City and approved by the City.

10-2 DEFINITIONS

- a) “Construction” means the building of any facility or structure or any portion thereof including any tenant improvements to an existing facility or structure.
- b) “Construction and Demolition Debris” means used or discarded materials removed from premises during construction of the Project.
- c) “Conversion Rate” means the rate set forth in the standardized Conversion Rate Table approved by the City Council pursuant to this Section for use in estimating the volume or weight of materials identified in a Construction and Demolition Waste Reduction and Recycling Plan.
- d) “Divert” means to use material for any purpose other than disposal in a landfill. Diversion credit is given for source reduction (waste reduction), recycling, and composting.
- e) “Diversion Requirement” means the diversion of at least 65% of the total Construction and Demolition Debris generated by a Project via reduction (source reduction), reuse or recycling, unless the Contractor has been granted an Infeasibility Exemption, in which case the Diversion Requirement shall be the maximum feasible diversion rate established by the Engineer.
- f) “Recycling” means the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.
- g) “Renovation” means any change, addition, or modification in an existing structure.
- h) “Reuse” means further or repeated use of Construction or Demolition Debris. An example is the reuse of crushed concrete as road base or as aggregate on the construction site.
- i) “Salvage” means the controlled removal of Construction or Demolition Debris from project for the purpose of recycling, reuse, or storage for later recycling or reuse.
- j) “Construction and Demolition Waste Management Plan” means a completed form, approved by the Engineer for the purpose of compliance with this Section, submitted by the

Contractor/Contractor for any Covered or Noncovered Project that indicates the estimated diversion that the Contractor/Contractor anticipates in diverting from disposal.

k) “Construction and Demolition Waste Management Report” means a completed form, approved by the Engineer for the purpose of compliance with this Section, submitted by the Contractor for any Project that documents the disposal and diversion tonnages and destinations.

10-3 INFEASIBILITY EXEMPTION

a) Application. If the Contractor experiences unique circumstances that the Contractor believes make it infeasible to comply with the Diversion Requirement, the Contractor shall apply for an exemption at the time that it submits the WMP. The Contractor shall indicate on the WMP the maximum rate of diversion the Contractor believes is feasible for each material and the specific circumstances that the Contractor believes make it infeasible to comply with the Diversion Requirement.

b) The Engineer shall review the information supplied by the Contractor and may meet with the Contractor to discuss possible ways of meeting the Diversion Requirement. Based on the information supplied by the Contractor, the Engineer shall determine whether it is possible for the Contractor to meet the Diversion Requirement.

c) If the Engineer determines that it is infeasible for the Contractor to meet the Diversion Requirement due to unique circumstances, the Engineer shall determine the maximum feasible diversion rate for each material and shall indicate this rate on the WMP submitted by the Contractor. The Engineer shall return a copy of the WMP to the Contractor marked “Infeasibility Exemption Approved.”

d) Denial of Exemption. If the Engineer determines that it is possible for the Contractor to meet the Diversion Requirement, the Engineer shall so inform the Contractor in writing. The Contractor will have 15 days to resubmit a new WMP. If the Contractor fails to resubmit a new WMP, or if the resubmitted WMP does not comply with the requirements of the plan, the Engineer shall deny the WMP.

10-4 DIVERSION PROGRAM

The methodology used to calculate diversion is based on the Title 14, California Code of Regulations, Article 6.1 Solid Waste Generation Study, Section 18722 et seq, and is consistent with California Integrated Waste Management Board measurement protocols. The following equation defines the “Generation-Based Diversion Quantification Methodology”:

$$\begin{aligned}\text{Generation} &= \text{Disposal} + \text{Diversion} \\ \text{Diversion Rate (\%)} &= \frac{\text{Diversion Tons}}{\text{Generation Tons}}\end{aligned}$$

10-5 ADDITIONAL INFORMATION

Other materials to assist the Contractor in completing the WMP can be found on the City’s website at www.citymb.info.

- Construction and Demolition Debris Recycling Guide
- Construction and Demolition Recycling Brochure

The California Integrated Waste Management Board has also developed Technical Assistance Literature regarding construction and demolition waste reduction and recycling, which is available on-line at <http://www.ciwmb.ca.gov/ConDemo/>.

CITY OF MANHATTAN BEACH
Construction & Demolition Waste Management Plan

Manhattan Beach Municipal Code 5.26 requires construction projects to reuse or recycle 65% of all construction site waste (All Demo & Roof tear-off projects, and All construction with a total value of \$100,000+). All haulers and contractors MUST have a business license in the City of Manhattan Beach.

REQUIRED GOAL: REUSE OR RECYCLE A MINIMUM OF 65% OF ALL PROJECT WASTE

Instructions:

1. Complete entire WMP & submit to the Project Manager as a project submittal.
2. Reuse and/or recycle at least 65% of all construction site waste and keep good records of all facility waste tickets.
3. Submit a copy of this WMP and ALL recycling and landfill facility weight tickets before Final Inspection to the Project Manager as a new project submittal. **A COPY OF THIS WMP AND RECEIPTS OF ALL RECYCLING AND DISPOSAL SHALL BE SUBMITTED BEFORE FINAL PAYMENT WILL BE MADE BY THE CITY.**

Fines for Non-Compliance (MBMC 5.26.020): Demo projects up to \$5,000 and Construction projects up to \$10,000

Project Name: _____

Project Address: _____

Type of Project: ☐ Street Improvement ☐ Water Main ☐ Sewer Main
 ☐ Storm Drain ☐ Other

Total Bid Price: \$ _____

Requesting Infeasibility Exemption: ☐ Yes ☐ No

Contractor Name: _____ **Contact Name:** _____

Address: _____ **Contact Phone:** _____

Recycler: _____ **Recycler Contact:** _____

Recycler Address: _____ **Recycler Contact Phone:** _____

	CITY USE ONLY	
	Application (Date)	Final (Date)
Approved	_____	_____
Further explanation needed (see attached)	_____	_____
Denied	_____	_____
Infeasibility Exemption Approved	_____	_____
Reviewed By	_____	_____

Submit this form and the attached Waste Management Plan Table to:

**Engineering Division
City of Manhattan Beach
3621 Bell Avenue
Manhattan Beach, CA 90266**

CITY OF MANHATTAN BEACH
Construction & Demolition Waste Management Plan Table

Project Name: _____

Total Estimated Waste Generated by Project: _____ (**IN TONS**).
(Ask your hauler, recycler or site cleanup vendor to assist you. Use receipts from your previous jobs for estimates.)

Complete and return with Building Permit Application				Complete and return with receipts prior to final building approval		
Material Type	Estimated Reused/ Recycled	Estimated Disposed/ Landfilled	Vendor or Facility to be Used (Destination)	Actual Reused/ Recycled	Actual Disposed/ Landfilled	Vendor or Facility Used (Destination)
Asphalt & Concrete						
Bricks/Masonry/Tiles						
Building Materials (doors, windows, fixtures, etc.)						
Cardboard						
Concrete Pavement and Grindings						
Drywall (new, unpainted)						
Asphalt Pavement Grindings						
Landscape Debris (Plant & Tree Trimmings)						
Scrap Metal						
Unpainted Wood & Pallets						
Other (painted wood & drywall, roofing, etc.)						
Mixed C&D*						
Trash/Garbage						
TOTAL						

*Mixed C&D is defined as a mixture of three or more materials (e.g., wood, drywall, roofing, etc.) from construction or demolition sites that will be taken to a "qualified" facility for recycling. (See C&D Debris Recycling Guide.)

If you are requesting an infeasibility exemption and the estimated amount reused/recycled is less than 65%, please explain why (attach additional sheets if necessary):

If the actual amount reused/recycled is less than 65%, please explain why:

Prepared by (please print): _____

Date: _____

Contractor Signature: _____

Phone Number: _____

Conversion Rates

The following conversion rates are estimates. The ranges vary widely, depending on how the materials are handled (compacted, loose, chipped, etc.). Use the conversion factors and receipts from any previous projects to help you estimate the potential amount of materials and diversion. Take into consideration the type and load of vehicles that will be used to haul the materials. Ask your hauler or recycler to assist you in estimating these numbers.

Material	Lbs/cy	Tons/cy
Asphalt	1,400 lbs/cy	0.7 tons/cy
Brick	2,430 lbs/cy	1.21 tons/cy
Cardboard	100 lbs/cy	0.05 tons/cy
Concrete	2,600 lbs/cy (Sources range from 1,000 to 4,000)	1.3 tons/cy
Dirt/Soils	2,660 lbs/cy	1.33 tons/cy
Drywall	700 lbs/cy	0.35 tons/cy
Wood (chipped)	300 – 650 lbs/cy	0.15 – 0.3 tons/cy
Mixed C&D Debris	900 lbs/cy	0.45 tons/cy
Mixed Waste/Trash	100 – 350 lbs/cy	0.5 – 0.175 tons/cy

SECTION 11. ADDITIONAL TERMS

11-1 NONDISCRIMINATORY EMPLOYMENT

The Contractor shall not unlawfully discriminate against any individual based on race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation or military and veteran status. The Contractor understands and agrees that it is bound by and will comply with the nondiscrimination mandates of all statutes and local ordinances and regulations.

11-2 NOTICE TO PROCEED

Upon award of the Contract and signing the Contract Documents, the City shall issue the Contractor a Notice to Proceed. The City will not authorize any Work to be done under these Contract Documents before the Contract has been fully executed. Any Work that is done by the Contractor in advance of such time shall be considered as being done at the Contractor's own risk and responsibility, and as a consequence will be subject to rejection.

11-3 CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the final acceptance of the Work by the City as defined in Section 6-8.2 of the General Provisions, by written action of the Engineer, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part of the Work by the action of the elements, criminal acts, or any other cause. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the Work occasioned by any cause before its completion and acceptance and shall bear the expense thereof, except for such injuries or damages arising from the sole negligence or willful misconduct of the City, its officers, agents or employees. In the case of suspension of Work from any cause whatever, the Contractor shall be responsible for all materials and the protection of Work already completed, shall properly store and protect them if necessary, and shall provide suitable drainage and erect temporary structures where necessary.

11-4 PROCEDURE IN CASE OF DAMAGE TO PUBLIC PROPERTY

Any portions of curb, gutter, sidewalk or any other City improvement damaged by the Contractor during the course of construction shall be replaced by the Contractor at its own cost. The cost of additional replacement of curb, gutter or sidewalk in excess of the estimated quantities shown in the Bid form and Specifications, and found necessary during the process of construction (but not due to damage resulting from carelessness on the part of the Contractor during its operation), shall be paid to the Contractor at the unit prices submitted in its Bid.

11-5 REMOVAL OF INTERFERING OBSTRUCTIONS

The Contractor shall remove and dispose of all debris, abandoned structures, tree roots and obstructions of any character encountered during the process of excavation. It is understood that the cost of any such removals are made a part of the unit price bid by the Contractor under the item for excavation or removal of existing Work.

11-6 SOILS ENGINEERING AND TESTING

An independent certified materials testing firm must be retained by the Contractor to perform materials tests and applicable special inspections during the Contractor's entire operation to ascertain compliance with the Contract requirements. . If the initial tests do not meet the Contract requirements, the Contractor shall bear the cost of all subsequent tests.

The Contractor shall provide a copy of the testing and inspection reports to the Engineer within 24 hours upon receipt.

If the City requires other tests or more specific requirements for testing regarding this Project, those details will be included in the Special Provisions.

11-7 ACCESS TO PRIVATE PROPERTY

Unless otherwise stated in the Special Provisions, the Contractor shall be responsible for all fees and costs associated with securing permission to access private property for any portion of the Project.

11-8 WORKING DAYS AND HOURS

The Contractor shall do all Work between the hours of 7:30 a.m. to 4:30 p.m., Monday through Friday. No Work will be allowed on Saturday, Sunday or City holidays listed on the City's website unless specifically mentioned in the Contract Documents or authorized by the City Engineer.

In addition, no Work will be allowed on any special election Day that may be declared. Should a special election Day be declared, a time extension of one Working Day will be granted for each such Day.

A permit may have other hours or Days for the Contractor to do the Work, and those hours and Days shall supersede any hours and Days written in this Section.

Whenever the Contractor is permitted or directed to perform night Work or to vary the period during which Work is performed during the Working Day, the Contractor shall give 24 hours' notice to the Engineer so that inspection may be provided. Also, a charge may be made to the Contractor for approved overtime or weekend inspections requested by the Contractor.

11-9 CLAIM DISPUTE RESOLUTION

In the event of any dispute or controversy with the City over any matter whatsoever, the Contractor shall not cause any delay or cessation in or of Work, but shall proceed with the performance of the Work in dispute. The Contractor shall retain any and all rights provided that pertain to the resolution of disputes and protests between the parties. The Disputed Work will be categorized as an "unresolved dispute" and payment, if any, shall be as later determined by mutual agreement or a court of law. The Contractor shall keep accurate, detailed records of all Disputed Work, claims and other disputed matters.

All claims arising out of or related to the Contract Documents or the Project, and the consideration and payment of such claims, are subject to the Government Claims Act (Government Code Section 810 *et seq.*) with regard to filing claims. All such claims are also subject to Public Contract Code Section 9204 and Public Contract Code Section 20104 *et seq.* (Article 1.5), where

applicable. The Contract hereby incorporates those provisions as though fully set forth herein. Thus, the Contractor or any Subcontractor must file a claim in accordance with the Government Claims Act as a prerequisite to filing a construction claim in compliance with Section 9204 and Article 1.5 (if applicable), and must then adhere to Article 1.5 and Section 9204, as applicable, pursuant to the definition of "claim" as individually defined therein.

11-10 THIRD PARTY CLAIMS

The City shall have full authority to compromise or otherwise settle any claim relating to the Project at any time. The City shall timely notify the Contractor of the receipt of any third-party claim relating to the Project. The City shall be entitled to recover its reasonable costs incurred in providing this notice.

11-11 COMPLIANCE WITH LAWS

The Contractor shall comply with all applicable federal, State and local laws, ordinances, codes and regulations in force at the time the Contractor performs pursuant to the Contract Documents.

11-12 CONTRACTOR'S REPRESENTATIONS

By signing the Contract, the Contractor represents, covenants, agrees, and declares under penalty of perjury under the laws of the State of California that: (a) the Contractor is licensed, qualified, and capable of furnishing the labor, materials, and expertise necessary to perform the services in accordance with the terms and conditions set forth in the Contract Documents; (b) there are no obligations, commitments, or impediments of any kind that will limit or prevent its full performance under the Contract Documents; (c) there is no litigation pending against the Contractor that could adversely affect its performance of the Contract, and the Contractor is not the subject of any criminal investigation or proceeding; and (d) to the Contractor's actual knowledge, neither the Contractor nor its personnel have been convicted of a felony.

11-13 CONFLICTS OF INTEREST

The Contractor agrees not to accept any employment or representation during the term of the Contract or within 12 months after acceptance as defined in Section 6-8.2 of the General Provisions that is or may likely make the Contractor "financially interested," as provided in Government Code Sections 1090 and 87100, in any decisions made by the City on any matter in connection with which the Contractor has been retained pursuant to the Contract Documents.

11-14 APPLICABLE LAW

The validity, interpretation, and performance of these Contract Documents shall be controlled by and construed under the laws of the State of California, excluding California's choice of law rules. Venue for any such action relating to the Contract shall be in the Los Angeles County Superior Court.

11-15 TIME

Time is of the essence in these Contract Documents.

11-16 INDEPENDENT CONTRACTOR

The Contractor and Subcontractors shall at all times remain, as to the City, wholly independent contractors. Neither the City nor any of its officials, officers, employees or agents shall have control over the conduct of the Contractor, Subcontractors, or any of their officers, employees, or agents, except as herein set forth, and the Contractor and Subcontractors are free to dispose of all portions of their time and activities that they are not obligated to devote to the City in such a manner and to such Persons that the Contractor or Subcontractors wish except as expressly provided in these Contract Documents. The Contractor and Subcontractors shall have no power to incur any debt, obligation, or liability on behalf of the City, bind the City in any manner, or otherwise act on behalf of the City as agents. The Contractor and Subcontractors shall not, at any time or in any manner, represent that they or any of their agents, servants or employees, are in any manner agents, servants or employees of the City. The Contractor and Subcontractors agree to pay all required taxes on amounts paid to them under the Contract, and to indemnify and hold the City harmless from any and all taxes, assessments, penalties, and interest asserted against the City by reason of the independent contractor relationship created by the Contract Documents. The Contractor shall include this provision in all contracts with all Subcontractors.

11-17 CONSTRUCTION

In the event of any asserted ambiguity in, or dispute regarding the interpretation of any matter herein, the interpretation of these Contract Documents shall not be resolved by any rules of interpretation providing for interpretation against the party who causes the uncertainty to exist or against the party who drafted the Contract Documents or who drafted that portion of the Contract Documents.

11-18 NON-WAIVER OF TERMS, RIGHTS AND REMEDIES

Waiver by either party of any one or more of the conditions of performance under these Contract Documents shall not be a waiver of any other condition of performance under these Contract Documents. In no event shall the making by the City of any payment to the Contractor constitute or be construed as a waiver by the City of any breach of covenant, or any default that may then exist on the part of the Contractor, and the making of any such payment by the City shall in no way impair or prejudice any right or remedy available to the City with regard to such breach or default.

11-19 TERM

The Contract is effective as of the Effective Date listed, and shall remain in full force and effect until the Contractor has fully rendered the services required by the Contract Documents or the Contract has been otherwise terminated by the City. However, some provisions may survive the term listed within this Section, as stated in those provisions.

11-20 NOTICE

Except as otherwise required by law, any notice or other communication authorized or required by these Contract Documents shall be in writing and shall be deemed received on (a) the day of delivery if delivered by hand or overnight courier service during the City's regular business hours or (b) on the third business day following deposit in the United States mail, postage prepaid, to the addresses listed on the Contractor's Bid and City Hall, or at such other address as one party may notify the other.

11-21 SEVERABILITY

If any term or portion of these Contract Documents is held to be invalid, illegal, or otherwise unenforceable by a court of competent jurisdiction, the remaining provisions of these Contract Documents shall continue in full force and effect.

SPECIAL PROVISIONS

PART I: SPECIAL INSTRUCTIONS

- I. Prosecution of Work. It is the intent of the City to complete the project expediently. The City plans to issue the Initial Notice to Proceed within two (2) weeks of full execution of the Contract. This commences the Contract Time specified in the Notice Inviting Bids. It is expected that work will occur at all three (3) locations simultaneously. The contractor is advised to begin work at the Recreation Center at Live Oak Park, as this location is anticipated to require the most work. Per the Contract Documents, all contract work including punch list items are to be completed within the Contract Time.
- II. Permits. Prior to commencing work, the Contractor shall obtain a Reroof Permit for each building in the project (3 total). Permits shall be obtained from the City of Manhattan Beach Community Development Department Permitting Center located in City Hall, 1400 Highland Avenue, Manhattan Beach, CA 90266. Contractor shall coordinate with the City's Project Manager for the date and time to obtain the permit. The permits shall be "No Fee". All cost associated with obtaining the necessary permits shall be included in the cost of the other bid items and no additional payment shall be provided. The Reroof Permit Worksheet can be downloaded from <https://www.citymb.info/departments/community-development/building-and-safety/permits-handouts-and-forms>
- III. Possible Framing Work & Appropriate Contractor's License. The Contractor is notified that the scope of work on the project may involve framing work to repair rafters. Determination of any framing work will be made after removal of the existing roofing material and evaluation of the underlying plywood and/or rafters. Any framing work shall be performed by a contractor with the appropriate license.

Evaluation of the plywood will be made by the City after the Contractor has removed the existing roofing and exposed the underlying plywood. City will then direct the Contractor to remove specific areas of plywood in order to evaluate the rafters. Contractor shall schedule the evaluation at least 48 hours in advance of the date and time of the proposed evaluation.
- IV. Staging Area. Contractor will be provided with an area (approximately 280 SF) for staging at Marine Avenue Park and at Live Oak Park. The staging area shall be secured with a chain-link fence with screening and any stormwater BMPs shall be installed as needed. The fenced-off area shall be locked during periods when construction activities are not occurring. Any damage to the existing area at the time of demobilization shall be repaired to the satisfaction of the Engineer. All cost for setting up, maintaining, and breaking down of the staging area shall be included in the cost of the other bid items and no additional payment shall be provided.
- V. Quality Assurance/Quality Control. All quality control/quality assurance that is specified in the Contract Documents, to be performed by an agent of the roofing material manufacturer, shall be coordinated and provided by the Contractor. Reports shall be provided to the City by the agent representing the roofing material manufacturer. The cost for coordinating and providing the quality control/quality assurance shall be included in the price of the various bid items and no additional payment shall be provided.

- VI. Protection of Sheathing & Roof Framing. Contractor is responsible for protecting the exposed sheathing and rafters from rain and moisture after the roofing material is removed. Protection may include, but is not limited to, tarping the exposed areas in advance of a precipitation event. The cost of this protection shall be included in the cost of the other bid items and no additional payment shall be provided.

PART II: STANDARD AND SPECIAL TECHNICAL PROVISIONS

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TECHNICAL SPECIFICATIONS

DIVISION 00 GENERAL

000101	PROJECT TITLE PAGE
000107	SEALS PAGE
000115	LIST OF DRAWING SHEETS

DIVISION 01 GENERAL CONDITIONS

010000	GENERAL REQUIREMENTS
014000	QUALITY REQUIREMENTS
016000	PRODUCT REQUIREMENTS

DIVISION 02 CONCRETE

024119	SELECTIVE DEMOLITION
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DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

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062013	EXTERIOR FINISH CARPENTRY

DIVISION 07 THERMAL AND MOISTURE PROTECTION

072100	THERMAL INSULATION
072220	DECK BOARD
073200	ROOF TILES
075419	POLYVINYL-CHLORIDE (PVC) ROOFING
076200	SHEET METAL FLASHING AND TRIM

DIVISION 09 FINISHES

092400	CEMENT PLASTERING
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099113	EXTERIOR PAINTING
099123	INTERIOR PAINTING

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101423	SIGNAGE
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104413	FIRE PROTECTION CABINETS
105500	POSTAL SPECIALTIES
107113	EXTERIOR SUN SHADES

END OF TABLE OF CONTENTS

DOCUMENT 000101 - PROJECT TITLE PAGE

1.1 PROJECT MANUAL OUTLINE

Roofing Replacement at Live Oak Park and Marine Avenue Park

Manhattan Beach Department of Public Works

City of Manhattan Beach Project No. D-934

Manhattan Beach, CA.

Architect Project No. **19X034.00**

Marshall Smith

1 Peters Canyon Road, Suite 130

Irvine, CA., 92606.

Phone: **949-387-8500.**

Fax: **949-387-0800.**

Website: **www.idsgi.com.**

Issued: **November 18, 2019.**

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END OF DOCUMENT 000101

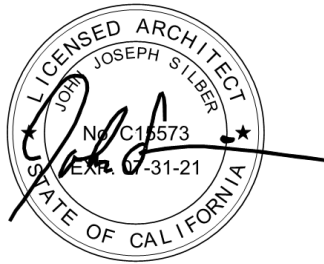
DOCUMENT 000107 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

A. Architect: John Silber

1. License Number: #C-15573

*ENGINEER/ARCHITECT
OF RECORD STAMP*



END OF DOCUMENT 000107

DOCUMENT 000115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

- A. Drawings: Listed on the Table of Contents page of the drawing set.
- B. List of Drawings:

INDEX OF PLANS	
DWG. NO. D-934	DESCRIPTION
CS	COVER SHEET
G02	TITLE SHEET
G03	GENERAL NOTES
	ROOFING REPLACEMENT RECREATION HALL LIVE OAK PARK
A101	SITE PLAN – RECREATION HALL LIVE OAK PARK
A102	FLOOR PLAN – ELEVATIONS
A103	DETAIL
	ROOFING REPLACEMENT RECREATION CENTER LIVE OAK PARK
A201	SITE PLAN – RECREATION CENTER LIVE OAK PARK
A202	FLOOR PLAN
A203	ELEVATIONS – DETAIL
A204	DETAIL
A205	PHOTOS
A206	PHOTOS
	ROOFING REPLACEMENT FOR COMMUNITY BUILDING AT MARINE AVENUE PARK
A301	SITE PLAN – COMMUNITY BUILDING AT MARINE AVENUE PARK
A302	FLOOR PLAN – ELEVATIONS
A303	DETAIL
	TOTAL SHEETS = 15

END OF DOCUMENT 000115

SECTION 010000

GENERAL REQUIREMENTS

PART 1 - CONTRACTOR CONSTRUCTION REQUIREMENTS

- A. CONTRACTOR TO PROVIDE MOCKUPS AND SUBMITTAL SAMPLES AS PART OF THE SUBMITTAL PROCESS TO BE APPROVED BY ARCHITECT AND CITY.
 - a. SEE RELATED SECTION 14000 FOR INFORMATION ON QUALITY CONTROL REQUIREMENTS FOR SUBMITTALS AND MOCKUPS.
- B. CONTRACTOR TO PROVIDE DAILY REPORT AND UPDATED PROJECT SCHEDULE, FIELD CONDITIONS, AND PROGRESS FOR EACH BUILDING
- C. CONTRACTOR TO PROVIDE IN WRITING ANY REQUESTS FOR INFORMATION TO OWNER/ARCHITECT. INCOMPLETE RFI OR INSUFFICIENT PROPOSAL FOR SOLUTION WILL BE REASON TO REJECT AND REQUIRE RESUBMITTAL.
- D. CONTRACTOR TO PROVIDE COMPLETE SUBMITTALS TO OWNER/ARCHITECT. INCOMPLETE SUBMITTAL OR INSUFFICIENT PROPOSAL FOR SOLUTION WILL BE REASON TO REJECT AND REQUIRE RESUBMITTAL.
- E. CONTRACTOR TO PROVIDE PROVISIONS FOR 3RD PARTY WATER INFILTRATION TEST FOR EACH COMPLETED ROOF AT ALL PENETRATIONS TO VERIFY ROOF HAS BEEN PROPERLY INSTALLED AND SEALED FROM WATER INTRUSION BY ONE OF THE FOLLOWING TESTING METHODS AS RECOMMENDED BY 3RD PARTY INSPECTION COMPANY:
 - 1. **ASTM C1153** STANDARD PRACTICE FOR LOCATION OF WET INSULATION IN ROOFING SYSTEMS USING INFRARED IMAGING
 - 2. **ASTM D7877** STANDARD GUIDE FOR ELECTRONIC METHODS FOR DETECTING AND LOCATING LEAKS IN WATERPROOF MEMBRANES
 - 3. **ASTM E1105** STANDARD TEST METHOD FOR FIELD DETERMINATION OF WATER PENETRATION OF INSTALLED EXTERIOR WINDOWS, SKYLIGHTS, DOORS, AND CURTAIN WALLS, BY UNIFORM OR CYCLIC STATIC AIR PRESSURE DIFFERENCE

PART 2 - CONTRACTOR POST CONSTRUCTION REQUIREMENTS

- A. CONTRACTOR TO TEST ALL MECHANICAL AND ELECTRICAL EQUIPMENT FOLLOWING REINSTALLATION WITH CITY PROJECT MANAGER PRESENT.
- B. CONTRACTOR TO COORDINATE AND PROVIDE FINAL INSPECTION SERVICES AS REQUIRED HEREIN THE PROJECT SPECIFICATIONS.

END OF SECTION 010000

SECTION 014000

QUALITY REQUIREMENTS

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not

Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
- D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- F. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
1. Indicate manufacturer and model number of individual components.
 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data : For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of technical representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.

3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. **Factory-Authorized Service Representative's Reports:** Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. **Permits, Licenses, and Certificates:** For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

- A. **General:** Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- G. Integrated Exterior Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - a. TPA Membrane Roofing: Provide 2'x 2' board with roofing system mounted on plywood with all substrate included showing each layer peeled back to show materials at each layer
 - b. Composite Tile : Provide 2'x2' board with sample of tile and all accessories
 - c. Fascia : 1'-0 long painted fascia showing matching type and style with half primer and half primer + paint
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 - 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 7. Demolish and remove mockups when directed unless otherwise indicated.

1.10 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
 - 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.

- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Architect testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

2. Protect construction exposed by or for quality-control service activities.

3. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within **15** days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 - 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
 - 1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 - 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies

with requirements. Comparable products or substitutions for Contractor's convenience will be considered.

- b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
- 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 024119 - SELECTIVE DEMOLITION

1.1 FIELD CONDITIONS

- A. Owner will occupy portions of building where the selective demolition area will occur.
- B. Hazardous Materials: Hazardous Materials: Limited Asbestos and Lead-Based Paint Assessments were performed at Live Oak Park Rec Hall and Marine Avenue Park. The respective reports have been included as Appendix II of the Contract Documents.

1.2 EXAMINATION

- A. Perform an engineering survey of condition of building.

1.3 PREPARATION

- A. Refrigerant: Remove according to 40 CFR 82.

1.4 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Utility Shut Off: City will perform utility shut off. Contractor will submit its request for shut off no later than 48 hours in advance of the shut off.

1.5 ABATEMENT AND DISPOSAL OF DEMOLISHED MATERIALS

- A. Abate and dispose of any hazardous material in accordance with the aforementioned reports.

1.6 SELECTIVE DEMOLITION SCHEDULE

- A. All Rooftop equipment to be removed as required, stored and protected and reinstalled.

END OF SECTION 024119

SECTION 061000

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Framing with dimension lumber.
 - 2. Framing with timber.
 - 3. Framing with engineered wood products.
 - 4. Shear wall panels.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- B. Timber: Lumber of 5 inches nominal size or greater in least dimension.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Power-driven fasteners.
 - 2. Post-installed anchors.
 - 3. Metal framing anchors.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent.

2.2 DIMENSION LUMBER FRAMING

- A. Ceiling Joists: Construction or No. 2 grade.
- B. Joists, Rafters, and Other Framing Not Listed Above: No. 1 grade.
- C. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
 - 6. Grounds.
 - 7. Utility shelving.
- D. Dimension Lumber Items: Construction or No. 2.
- E. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- F. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- G. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.3 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C. in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

2.4 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction if not indicated.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction if not indicated.

2.5 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- D. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.
- E. Install shear wall panels to comply with manufacturer's written instructions.

- F. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- G. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.
- H. Do not splice structural members between supports unless otherwise indicated.
- I. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- J. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 - 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
 - 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
 - 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.
 - 4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.
- K. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- L. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- M. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- N. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. ICC-ES evaluation report for fastener.
- O. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish

materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 WALL AND PARTITION FRAMING INSTALLATION

- A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction unless otherwise indicated. Provide wood studs at exterior walls and interior partitions and walls of sizes shown on the drawings.
- B. Construct corners and intersections with three or more studs, except that two studs may be used for interior non-load-bearing partitions.
- C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.
 - 1. For load-bearing walls, provide double-jamb studs for openings 60 inches and less in width, and triple-jamb studs for wider openings. Provide headers of depth indicated.

3.4 CEILING JOIST AND RAFTER FRAMING INSTALLATION

- A. Ceiling Joists: Install with crown edge up and complying with requirements specified above for floor joists. Face nail to ends of parallel rafters.
 - 1. Where ceiling joists are at right angles to rafters, provide additional short joists parallel to rafters from wall plate to first joist; nail to ends of rafters and to top plate, and nail to first joist or anchor with framing anchors or metal straps. Provide 1-by-8-inch nominal- size or 2-by-4-inch nominal- size stringers spaced 48 inches o.c. crosswise over main ceiling joists.
- B. Rafters: Notch to fit exterior wall plates and use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal

hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.

1. At valleys, provide double-valley rafters of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper. Bevel ends of jack rafters for full bearing against valley rafters.
 2. At hips, provide hip rafter of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper. Bevel ends of jack rafters for full bearing against hip rafter.
- C. Provide collar beams (ties) as indicated or, if not indicated, provide 1-by-6-inch nominal-size boards between every third pair of rafters, but not more than 48 inches o.c. Locate below ridge member, at third point of rafter span. Cut ends to fit roof slope and nail to rafters.
- D. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions if any.

3.5 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 062013 - EXTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Exterior wood trim.
- B. Related Requirements:
 - 1. Section 061063 "Exterior Rough Carpentry"

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
- B. Samples: For each type of product involving selection of colors, profiles, or textures.

1.3 INFORMATIONAL SUBMITTALS

- A. Compliance Certificates:
 - 1. For lumber that is not marked with grade stamp.
 - 2. For preservative-treated wood that is not marked with treatment-quality mark.
- B. Evaluation Reports: For the following, from ICC-ES:
 - 1. Wood-preservative-treated wood.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Regional Materials: The following wood products shall be manufactured within 500 miles (800 km) of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.
 - 1. Exterior trim.
- B. Certified Wood: The following wood products shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship":
 - 1. Exterior trim.

C. Lumber: DOC PS 20.

1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

a. For exposed lumber, mark grade stamp on end or back of each piece

D. Softwood Plywood: DOC PS 1.

E. Hardboard: ANSI A135.4.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC3b.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent respectively.

2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

3. Application: Where indicated and all exterior lumber and plywood

2.3 EXTERIOR TRIM

A. Lumber Trim:

1. Species and Grade: Southern pine, pressure-preservative treated

2. Maximum Moisture Content: 19 percent.

3. Face Surface: Match existing

2.4 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches (38 mm) into wood substrate.

1. For prefabricated items, provide matching prefabricated aluminum fasteners where face fastening is required.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

3.2 INSTALLATION, GENERAL

- A. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
 - 1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 - 2. Install stairs with no more than 3/16-inch (4.7-mm) variation between adjacent treads and risers and with no more than 3/8-inch (9.5-mm) variation between largest and smallest treads and risers within each flight.

3.3 STANDING AND RUNNING TRIM INSTALLATION

- A. Install flat-grain lumber with bark side exposed to weather.
- B. Install cellular PVC trim to comply with manufacturer's written instructions.
- C. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches (610 mm) long except where necessary.
 - 1. Use scarf joints for end-to-end joints.
 - 2. Stagger end joints in adjacent and related members.
- D. Fit exterior joints to exclude water. Cope at returns and miter at corners.

END OF SECTION 062013

SECTION 072100

THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Glass-fiber blanket.
- B. Related Requirements:
 - 1. Section 075419 "Polyvinyl-Chloride (PVC) Roofing
 - 2. Section 092900 "Gypsum Board" For Sound Attenuation Blanket Used As Acoustic Insulation.
 - 3. Section 095123 "Acoustical Tile Ceilings"

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each product, for tests performed by a qualified testing agency.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic board materials

- to Project site until just before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 GENERAL; MATERIAL

- A. Fiberglass-based insulation shall meet the Greenguard Gold Certification as established by the UL Environment's GREENGUARD Certification program.

2.2 GLASS-FIBER BLANKET

- A. Insulation Type INSUL-2: Glass-Fiber Blanket, Unfaced: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
 1. Acceptable Manufacturer: Subject to compliance with requirements, provide one of the following:
 - a. Owens Corning;
 - b. Johns Manville;
 - c. Knauf
- B. Insulation Type INSUL-3: Glass-Fiber Blanket, Kraft Faced: ASTM C 665, Type II (nonreflective faced), Class C (faced surface not rated for flame propagation); Category 1 (membrane is a vapor barrier).
 1. Acceptable Manufacturer: Subject to compliance with requirements, provide one of the following:
 - a. Owens Corning;
 - b. Johns Manville;
 - c. Knauf

2.3 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
 1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
 2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- B. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to

hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.

1. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in the following locations:
 - a. Crawl spaces.
 - b. Ceiling plenums.
 - c. Attic spaces.
- C. Insulation Standoff: Spacer fabricated from galvanized mild-steel sheet for fitting over spindle of insulation anchor to maintain air space of 1 inch between face of insulation and substrate to which anchor is attached.
- D. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

2.4 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
 1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
- B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.
- C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left

exposed to ice, rain, or snow at any time.

- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 - 4. Attics: Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
 - 5. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:
 - a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.
 - 6. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.
 - a. Exterior Walls: Set units with facing placed toward exterior of construction.
 - b. Interior Walls: Set units with facing placed toward areas of high humidity.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
 - 1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft.
 - 2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

3.4 INSTALLATION OF REFLECTIVE INSULATION

- A. Install sheet reflective insulation according to ASTM C 727.

- B. Install sheet radiant barriers according to ASTM C 1744.
- C. Install interior radiation control coating system according to ASTM C 1321.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION
072100

SECTION 07 22 20

ROOF BOARDS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Fiberglass-mat faced gypsum roof boards for application directly under roof membrane systems.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM C209 Standard Test Method for Cell. Fiber Insulating Board
 - 2. ASTM C472 Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete.
 - 3. ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products.
 - 4. ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
 - 5. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 - 6. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
 - 7. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
 - 8. ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings
 - 9. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 C.
 - 10. ASTM E661 Standard Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads.
- B. Underwriters Laboratories (UL): UL 790 Standard Test Methods for Fire Tests of Roof Coverings.
- C. [Florida Approvals: Roof boards shall have Florida Product Approval and Miami-Dade County Product Control Approval.]

1.03 SUBMITTALS

- A. Product Data and Installation Instructions: Submit manufacturer's product data including installation instructions and substrate preparation recommendations
- B. Sample warranty: Submit a sample warranty identifying the terms and conditions of the warranty as herein specified.

1.04 QUALITY ASSURANCE

- A. Inspection: Where applicable, allow for Owner's inspection and moisture testing and reporting prior to installation of roof boards.
- B. Install roof board in mock-up

1.05 DELIVERY, STORAGE, AND HANDLING

- A. All components used in roofing systems, including DensDeck® Prime Roof Boards, shall be protected from exposure to moisture before, during and after installation.
- B. Remove any plastic packaging from roof boards immediately upon receipt of delivery. Failure to remove plastic packaging may result in entrapment of condensation or moisture, which may cause application problems that are not the responsibility of manufacturer
- C. Any protective, plastic factory packaging that is used to wrap roof boards for shipment is intended to provide temporary protection from moisture exposure during transit only and is not intended to provide protection during storage after delivery.
- D. Roof boards stored outside shall be stored level and off the ground and protected by a waterproof covering. Provide means for air circulation around and under stored bundles of DensDeck® Prime Roof Boards. Use adequate supports to keep the bundles flat, level and dry.
- E. Care should also be taken during installation to avoid the accumulation of moisture in the system. Roof boards shall be covered the same day as installed. Avoid application of roof boards during rain, heavy fog and any other conditions that may deposit moisture on the surface, and avoid the overuse of non-vented, direct-fired heaters during winter months.

1.06 FIELD CONDITIONS

- A. Application standards where applicable are in accordance with design assembly specifics, system manufacturer requirements and the DensDeck® Technical Guide.
- B. Do not install DensDeck® Prime Roof Board that is moisture damaged. Indications that panels are moisture damaged include, but not limited to, discoloration, sagging, or irregular shape.
- C. Installed DensDeck® Prime Roof Boards shall be dry, with free moisture content of less than 1% using a moisture meter that has been set to the gypsum scale, before applying adhesive, asphalt or membrane.

- D. All components used in roofing systems, including DensDeck® Roof Boards, shall be protected from exposure to moisture before, during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS:

- A. Georgia-Pacific Gypsum, LLC, products as specified herein.

2.02 COATED PRIME FIBERGLASS-MAT FACED GYPSUM ROOF BOARDS:

- A. Fiberglass Mat Faced Gypsum Roof Board:
 - 1. Acceptable Product: GP Gypsum, DensDeck® Prime Roof Boards.
 - 2. Thickness: 1/4 inch.
 - 3. Width: 4 feet.
 - 4. Length: [4 feet] [8 feet].
 - 5. Weight: 1.2 lb/sq. ft.
 - 6. Surfacing: Primed Fiberglass Mat.
 - 7. Flexural Strength, Parallel (ASTM C473): 40 lbf, minimum.
 - 8. Flute Span (ASTM E661): 2-5/8 inches.
 - 9. Permeance (ASTM E96): Greater than 30 perms.
 - 10. R-Value (ASTM C518): 0.28.
 - 11. Water Absorption (ASTM C473): Less than 5 percent of weight.
 - 12. Surface Water Absorption (ASTM C473): Nominal 1.0 grams.
 - 13. Compressive Strength (Applicable Sections of ASTM C472): Nominal 900 pounds per square inch.
 - 14. Flame Spread/ Smoke Development (ASTM E84): Not more than 0 Flame Spread, 0 Smoke Development
 - 15. Combustibility (ASTM E136): Noncombustible
 - 16. Fire resistance rating (UL 790 and ASTM E108): Class A
 - 17. Mold Resistance (ASTM D3273): Scored a 10

PART 3 EXECUTION

3.01 INSTALLATION

- A. Apply only as many roof boards as can be covered by a roof membrane system in the same day.
- B. Board edges and ends shall be butted tightly together; do not gap edges or ends.
- C. Adhesive Installation under Single-Ply Roofing Systems:
 - 1. Stagger roof board end and edge joints minimum 12" over installed insulation layers.
 - 2. Stagger roof board end and edge joints minimum 6".
 - 3. Adhere roof boards over installed insulation using adhesive as recommended by roofing system manufacturer's product data.
 - 4. Apply overall pressure to ensure full adhesion. Do not slide into place.

- D. Following roofing system installation, avoid leaks and properly manage water accumulation.
1. Eliminate moisture vapor movement by convection and control the flow of water by gravity through imperfections in the roof system.
 2. After a leak has occurred, do not allow condensation on the upper surface of the roof membrane, and all moisture accumulations as a result of the leak shall be removed, leaving dry substrates and materials.

3.02 PROTECTION

- A. Protect roof board installations from damage and deterioration until the date of Substantial Completion.

END OF SECTION 07 22 20

SECTION 07 32 00
COMPOSITE ROOF TILE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Composite Roof Tile.
- B. Composite Tile Roof Accessories.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry
- B. Section 06 20 00 - Finish Carpentry.
- C. Section 07 53 13 - Chlorinated-Polyethylene Roofing.
- D. Section 07 60 00 - Flashing and Sheet Metal.

1.3 REFERENCES

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- C. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- D. ASTM B 370 - Standard Specification for Copper Sheet and Strip for Building Construction.
- E. ASTM C 290 - Method of Test for Resistance of Concrete Specimens to Rapid Freezing and Thawing in Water.
- F. ASTM C 387 - Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
- G. ASTM C 887 - Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar.
- H. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- I. ASTM D 2822 - Standard Specification for Asphalt Roof Cement.
- J. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
- K. FS SS-S-153C - Sealants used with EPDM.
- L. ICBO-ES AC48 - Acceptance Criteria for Roof Underlayment for Use in Severe Climate Areas.
- M. ICC-ES -AC07 - Acceptance Criteria for Special Roofing Systems.

- N. FM 4473 - Specification Test Standard for Impact Resistance Testing of Rigid Roofing Materials by Impacting with Freezer Ice Balls.
- O. TAS 100 - Test Procedure For Wind And Wind Driven Rain Resistance.
- P. Canadian Standard 19-HP-5M - Sealing Compound, One Component, Acrylic Base, Solvent Curing.
- Q. NRCA - Steep Roofing Manual; National Roofing Contractors of America.
- R. SMACNA - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors National Association.
- S. WSRCA/TRI Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions.
- T. WSRCA/TRI Standard Installation Guide for Concrete and Clay Roof Tile in Cold Weather Applications.
- U. FRSA/TRI Concrete and Clay Roof Tile Installation Manual for Florida High Wind Applications.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Roofing tile materials and installation shall conform to ICC-ES -AC07 Acceptance Criteria for Specialty Roofing Systems including:
 - 1. ASTM G 155 - 2000 Hours - Xenon Weathering
 - 2. ASTM D 638 - Tensile & Tensile Weathering
 - 3. Wind resistance
 - 4. Uplift bend
 - 5. Penetration
 - 6. ASTM E 108 - Class C Fire
 - 7. ASTM D 1929 - Ignition Temps & Ignition Temps - Weathered
 - 8. ASTM D 635 - Rate of Burn & Rate of Burn - Weathered
 - 9. ASTM D 2843 - Smoke Density
 - 10. Temperature Cycling
 - 11. FM 4473 - Ice Hail Impact - Hail impact test for Class 4 Hail

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Indicate metal flashing profiles, joint locations, fastening locations, and installation details. Indicate tile layout with location of cut and special shaped tiles identified.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two full size samples, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Warranty documents, issued and executed by manufacturer of roof tile, countersigned by

roof tile installer.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum three years documented experience producing composite roof tile.
- B. Installer Qualifications: Minimum five years documented experience installing products specified in this section and/or supervision by a manufacturers authorized installation representative.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.
- D. Pre-Installation Meeting:
 - 1. Convene at job site seven calendar days prior to scheduled beginning of construction activities of this section to review requirements of this section.
 - 2. Require attendance by representatives of the following:
 - 3. Installer of this section.
 - 4. Other entities directly affecting, or affected by, construction activities of this section.
 - 5. Notify Architect four calendar days in advance of scheduled meeting date.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to project site in manufacturer's unopened pallets, labeled with data indicating compliance with specified requirements.
- B. Storage and Protection:
 - 1. Store products in manufacturer's unopened packaging until ready for installation.
 - 2. Maintain dry storage area for products of this section until installation of products

1.8 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

- A. Manufacturer's Warranty: Furnish roof tile manufacturer's 50 year limited warranty against defects in product workmanship and materials.
- B. Tile will be free from manufacturing defects not to rot, split, splinter or suffer structural damage from normal weather conditions and termite or fungal decay when subject to normal use for a period of fifty (50) years from date of original purchase or will not blow off or otherwise become damaged by winds less than eighty (80) miles per hour for a period of ten

(10) years from the date of original purchase.

- C. Warranty does not provide protection against any failure, defect or damage caused by situations and events beyond roof manufacturer's control, including but not limited to: (i) natural disasters, hail over 1.0" in diameter, fire, smoke, chemicals, earthquakes, lightning or static electricity, (ii) falling, thrown or blown objects, (iii) the neglect, abuse, misuse (including faulty installation, repair or maintenance), improper transportation, handling or storage of the roof manufacturer's products or other failure to comply with the instructions set forth in the documentation and/or manual accompanying the Roof Products, (iv) a modification of the roof manufacturer's products not provided by roof manufacturer, (v) a malfunction of any product not provided by the roof manufacturer with which the roof manufacturer's products are used or combined, (vi) use, modification or other treatment of the roof manufacturer's products in a manner for which it was not designed or intended, (vii) defects or damage due to inferior building practices, ventilation, drainage issues or roof slopes inconsistent with snow and ice control, (viii) replacement under or subsection to abnormal use conditions, (ix) normal wear and tear including the natural effects of progressive aging on the color and surface of the tile, (x) discoloration and variations in color or uniformity caused by weathering and/or UV exposure, staining due to shade or sap, ash or proximity to metals that might cause discoloration; (xi) foot traffic, (xii) vandalism or other malicious actions, or (xiii) roof manufacturer's products blown off by winds in excess of 80 mph.
- D. Refer to the roof manufacturer's Limited Warranty & Certificate of Warranty for complete details.

1.11 EXTRA MATERIALS

- A. See Section 01 60 00 - Product Requirements.
- B. Provide an additional one percent of installed roof tiles, but not less than one full square, for Owner's use in roof maintenance.
- C. Furnish extra materials packaged with protective covering for storage and identified with labels clearly describing contents

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Quarrix Building Products or equal, A Division of Verscene an LDI Company, which is located at: 705 Pennsylvania Ave. S.; Minneapolis, MN 55426; Toll Free Tel: 800-438-2920; Tel: 763-540-9700; Fax: 763-540-9709
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 COMPOSITE ROOF TILE

- A. Roof Tiles: Quarrix Composite Tile, Double Roman Lightweight Tile or approved equal; Similar to a high barrel Spanish tile with two factory fastening locations in each tile.
 - 1. Material: High Density Polyethylene Polymer.
 - 2. Size: 16-1/2 inches (419 mm) long by 13 inches (330 mm) wide.
 - 3. Exposure per Tile: 13-1/2 inches (343 mm) long by 11-19/32 inches (394 mm) wide with an overall height of 2-1/4 inches (57 mm).
 - 4. Weight/Tile 3.38 lb. (1.53 kg).
 - 5. Weight/Square 304 lbs. (137.9 kg).
 - 6. Fire Rating: Class C
 - 7. Certifications:

- a. Impact: Class 4 (FM 4473)
 - b. Wind Driven Rain: Passed (TAS 100)
- 8. Color:
 - a. Selected from manufacturer's available colors.
 - b. Black.
 - c. Canyon Earth.
 - d. Desert Red.
 - e. Goldenrod.
 - f. Sage.
 - g. Saddle Brown.
- 9. Multi-Color Custom Blend:
 - a. Color:____; ____percent.
 - b. Color____; ____percent.
- B. Trim: Supply manufactured shapes of same material, style, color, and texture as roof tile for indicated hips, ridges, and rakes.

2.3 TILE ROOF ACCESSORIES

- A. Underlayment:
 - 1. Synthetic Self Sealing Roof Underlayment: For roof slopes 4:12 and above underlayment shall meet or exceed ICC-ES AC 48 and AC 207 criteria to meet UBC, IBC and IRC requirements for Roofing Underlayments.
 - 2. Asphalt Saturated Organic Felt: No. 30 Asphalt Saturated Organic Felt, to meet requirements of ASTM D 226, Type 2 or equal.
 - 3. Rubberized Self Sealing Underlayment: ASTM D 1970 sheet barrier of self-adhering rubberized asphalt membrane underlayment having internal reinforcement, and "split" back plastic release film.
- B. Quarrix Tile Battens or approved equal: Quarrix Tile Battens or approved equal, manufactured of corrosion-free, laminated high-density polyethylene corrugated plastic. Layers of corrugated plastic must be glued.
 - 1. Tile Battens: Roof Tile Battens.
 - a. Color: Black.
 - b. Dimensions: 1-1/2 inches (38.1 mm) wide by 8 feet (2.4 m) long by 3/4 inch (19 mm) high.
- C. Quarrix Upper and Lower Metal/Eave Closures or approved equal: Coated steel Eave Closure (birdstop) friction fits between the weather checks on the lower edge of the tile. Closure is formed to match the contour of the tile and fits on top of the drip edge under the first course of tile to raise the lower edge to the correct height as well as keep out birds and insects.
 - 1. Color:
 - a. Black
 - b. Canyon Earth
 - c. Desert Red
 - d. Golden Rod
 - e. Saddle Brown
- D. Quarrix Universal Tile Ridge Vent or approved equal : Combines tile ventilation and expandable weather blocking with an aluminum closure system to attach to tile with a peel-off butyl adhesive.
 - 1. Color / Width:
 - a. Black / 15 inches by 25 feet (381 mm by 7/72 m)
 - b. Terra Cotta / 15-3/4 inch by 16 feet (400 mm by 4.87 m)
 - c. Venetian Red / 15-3/4 inches by 16 feet (400 mm by 4.87 m)
 - d. Brown / 15-3/4 inches by 16 feet (400 mm by 4.87 m)

- E. Universal Tile Flashing: Fully adhered, expandable aluminum flashing with a width of 11-3/4 inches, can be used as a primary flashing and counter flashing, in combination with bent metal flashings, or as a weather block wherever mortar would be required.
1. Color:
 - a. Black
 - b. Terra Cotta
 - c. Venetian Red
 - d. Brown
- F. Fasteners:
1. Tile Fasteners:
 - a. Roof Tile Fasteners: Corrosion resistant exterior grade screws specially engineered for special roof applications and recommended with Roof composite tile. Tested to SAE J78 standard with 2-3/4 inch (6.98 cm) overall length, 1-1/2 inch (38 mm) thread length, #10 pan-head (.40 inch) screws, 2 per tile.
 - b. Screw Fasteners: Two 2-3/4 inch (6.98 cm), non-corrosive No. 10 coarse thread, .344 inch diameter (8.74 mm) pan-head screws. Allow for 1/4 inch (6.35 mm) penetration through sheathing, 2 per tile.
 - c. Nails: Non-corrosive, 2-3/4 inch (6.98 cm), 10/11-gauge, ring-shank (18 rings/inch), 3/8 inch-diameter (9.53 mm) head nails, 2 per tile. Allow for 1/4 inch (6.35 mm) penetration through sheathing, when using Roof tile battens.
 2. Batten Fasteners: Fasten battens every 10 inches (254 mm) with non-corrosive nails or screws of sufficient length to fully penetrate the roof sheathing.
 3. Underlayment Fasteners: Fasten underlayment using 11-gauge roofing nails with 3/8 inch (9.53 mm) heads. Fasteners shall be of sufficient length to penetrate the sheathing 3/8 inch (9.53 mm) or through the sheathing 3/4 inch (19.05 mm), whichever is less.
 4. Flashing Fasteners: Fasten flashing with 11-gauge, ring-shank, corrosion-resistant nails compatible with the flashing material. Fasteners shall be of sufficient length to penetrate the sheathing 3/4 inch (19.05 mm) or thorough the sheathing, whichever is less.
 5. Fasteners for Hip/Ridge/Rake trim and Hip/Ridge Starter: Roof Tile Fasteners No.10, coarse-thread, 0.344 inch-diameter (8.74 mm), corrosion-resistant pan-head screws. Use 2-3/4 inches (6.98 cm) long for ridges and hips. Also 3 inch (7.62 cm) non-corrosive, ring-shank nails together with an approved adhesive under the nose of each trim piece may also be used.
- G. Snow Guard: Roof tile manufacturer's fabricated unit for protection over entrances, lower roof areas, or other areas where falling snow is not desired. Fabricated from metals and profiles from Alpine Snow Guards (Alpinesnowguards.com).
- H. Mortar/grout for hips, open valleys and saddles shall be a combination of 50 lb. mix of Quickwall Surface Bonding Cement and 120 lb. Mason Mix to meet or exceed strength requirements of ASTM C 387 for Type "N" mortar and Concrete Acrylic Fortifier to meet or exceed ASTM C 887 standard specifications as manufactured by Quikrete, Atlanta, GA or approved equal. Grout and colored mortar to match field tile as manufactured by Flexim is recommended by the Tile Manufacturer.
- I. Adhesives to secure cut pieces of field tile along hips, valleys, flying gables, and protrusions and to install hip/ridge/rake trim shall be Titebond as manufactured by Franklin International, Columbus, OH; RT-600 as manufactured by Ohio Sealant Inc., Mentor, OH, or 3500 Roof Tile Adhesive/Sealant by Geocel, Elkhart, IN, or approved equal.
- J. Metal Flashings:
1. General Requirements: Form flashings to profiles indicated on Drawings, in accordance with manufacturer's printed instructions, and as recommended by

SMACNA Architectural Sheet Metal Manual to protect materials from physical damage and to shed water.

- a. Form flashing lengths square, accurate to profile, in maximum possible lengths; form flashing lengths free from distortion or defects detrimental to appearance or performance.
 - b. Hem edges of flashings exposed to view a minimum 1/4 inch (6 mm) on underside.
2. Eave Flashings and Other Metal Flashings: Copper sheet, ASTM B 370, cold rolled, natural finish; 16 ounces per square foot minimum thickness.
 3. Eave Flashings and Other Metal Flashings: Copper sheet, ASTM B 370, cold rolled, natural finish; 20 ounces per square foot minimum thickness.
 4. Eave Flashings and Other Metal Flashings: Stainless Steel Sheet for Flashings: ASTM A 666, Type 304 alloy, soft tempered; 24 gauge minimum thickness.
 5. Eave Flashings and Other Metal Flashings: 24 gauge galvanized steel sheet, ASTM A 653/A 653M, minimum G90/Z275 hot-dip zinc coating.
 6. Eave Flashings: Aluminum sheet, ASTM B 209; 0.019 inch minimum thickness.
 7. Concealed sealants along gable rakes, ridge/hip trim and flashings with asphalt saturated felt underlayment shall be non-running, heavy body Plastic Roof Cement that meets or exceeds the requirements of ASTM D 2822 and Federal Specifications SS-S-153C (Type 1) or equal. Sealants used with EPDM or Synthetic Underlayment shall be per manufacturer's recommendation.
 8. Exposed sealants, such as those used on counter flashings or non-soldered joints, should be high quality sealants to meet or exceed requirements of U.S. TT-S-00230C, U.S. Fed Cat. No 8030-965-2397, Canadian 19-HP-5M, ASTM C 290 or equal.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification roof deck structure to meet roof tile manufacturer's installation requirements.
 1. Verify roof penetrations are in place and flashed to deck surface.
 2. Verify roof openings are correctly framed prior to installing Work of this section.
 3. Verify deck is of sufficient thickness to accept fasteners.
 4. Verify deck surfaces are dry, unfrozen, and free of ridges, warps, and voids
- B. Notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation. Broom clean deck surfaces prior to installation of underlayment.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Coordinate with installation of gutters, vents, skylights and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and securely fastened.

3.3 INSTALLATION

- A. General: Install in accordance with manufacturer's instructions.
 1. Arrange three or more stacks of roof tile at installation area; mix tile from stacks as installation progresses for consistent color blend.
 2. Do not overload roof surface with staged materials.

- B. Install roof tile in accordance with shop drawings, manufacturer's printed installation instructions for specified project conditions and the following:
1. ICC-ES -AC07.
 2. WSRCA/TRI Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions.
 3. WSRCA/TRI Standard Installation Guide for Concrete and Clay Roof Tile in Cold Weather Applications.
 4. FRSA/TRI Concrete and Clay Roof Tile Installation Manual for Florida High Wind Applications.
 5. NRCA Steep Slope Roofing Manual.
 6. SMACNA Architectural Sheet Metal Manual.
- C. Eave Flashings: Install metal eave flashing 1/8 inch (3 mm) beyond the fascia; lap end joints minimum 3 inches (76 mm), with plastic cement seal between overlapping metal surfaces.
1. Apply self-seal membrane over eave flashing parallel to eave edge in accordance with manufacturer's printed instructions.
 2. Extend self-seal membrane up roof slope minimum 2 feet (610 mm) beyond interior face of exterior wall or as required by code, whichever is greater.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
- D. Valley Flashings: Install 24 inch (610 mm) to 28 inch (711 mm) standing seam, double rib (for closed valleys) or 24 inch (610 mm) double rib valley flashing (for open grouted valleys).
1. Form flashings in accordance with manufacturer's instructions for valley type indicated.
 2. Apply flashing over 36 inch (914 mm) full width vertical underlayment centered in all valley areas.
 3. Install flashings centered on valley; nail in place at 12 inches (305 mm) on center, 1 inch (25 mm) from metal edges.
 4. Roof Pitch 4 in 12 or Greater: Lap flashing end joints minimum 4 inches (102 mm).
 5. Roof Pitch Less Than 4 in 12: Lap flashing end joints minimum 6 inches (152 mm).
 6. For slopes below 3:12 or 4:12 in severe weather areas, install flashings and EPDM underlayment per details provided by the Manufacturer.
- E. Sidewall Flashings: Coordinate with the installation of sidewall flashings specified in Section 07 60 00 - Flashing and Sheet Metal Flashing and Sheet Metal.
- F. Synthetic underlayment
1. Use self-sealing membrane that meets or exceeds requirements of ICC-ES 48 along roof perimeters and protrusions. Underlayment should be installed parallel to the roof eave with a 6 inch (15.24 cm) lap on the ends, a 3 inch (7.62 cm) side lap and a minimum 1/4 inch (6.35 mm) lap over eaves.
 2. Class C: ICC-ES, self-sealing membrane is required up the roof deck at least 2 feet (60.96 cm) inside the exterior wall, 6 feet (1.83 m) in the valleys and 3 feet (91.44 cm) around protrusions, gables, walls and under valley flashings. For better protection, smaller roofs, and lower slopes, self-sealing membrane may be used on the entire roof deck. High temperature underlayments are not required, but may enhance performance. Heavy granulated underlayments are not recommended.
- G. Asphalt Saturated Organic Felt No.30 Underlayment or approved synthetic underlayment: Install 2 plies underlayment over entire roof area, parallel to eaves.
1. Place first ply 18 inches (457 mm) wide at eave edge, with bottom edge extending 1/4 inch (6 mm) over lower edge of eave flashing; seal to eave flashing.
 2. Place second ply 36 inches (914 mm) wide over first ply flush at bottom and sealed to first ply.
 3. Place third ply 36 inches (914 mm) wide 15 inches (381 mm) up from bottom edge of first ply.
 4. Place each successive ply 18 inches (457 mm) up from bottom of each previous ply.

5. Nail horizontal seams 1 inch (25 mm) from exposed edge of felt; space nails in accordance with manufacturer's printed instructions for roof slope.
 6. Overlap vertical seams minimum 6 inches (457 mm), seal lap with plastic cement, then nail at 3 inches (76 mm) on center; stagger vertical laps of each successive layer so that vertical joints do not align in any two adjacent plies.
 7. Ridges, Except at Ridge Vents: Extend underlayment over ridges 6 inches (152 mm) on each side making a double layer.
 8. Hips: Extend underlayment over hips 6 inches (152 mm) on each side making a double layer.
 9. Valleys: Overlap metal valley flashing 3 inches (76 mm) and seal to metal.
- H. Rubberized Underlayment: Install underlayment over entire roof area, parallel to eaves.
1. Install in accordance with manufacturer's printed instructions.
 2. Place first ply at eave edge, with bottom edge extending 1/4 inch (6 mm) over lower edge of eave flashing; seal to eave flashing.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
 4. Ridges, Except at Ridge Vents: Extend underlayment over ridges 6 inches (457 mm) on each side making a double layer.
 5. Hips: Extend underlayment over hips 6 inches (152 mm) on each side making a double layer.
 6. Valleys: Overlap metal valley flashing 3 inches (76 mm) and seal to metal.
- I. Single Ply Roof Membrane: Install EPDM membrane over entire roof area, parallel to eaves.
1. Install in accordance with manufacturer's printed instructions.
 2. Place first ply at eave edge, with bottom edge extending 1/4 inch (78 mm) over lower edge of eave flashing; seal to eave flashing.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
 4. Bond lapped joints in accordance with EPDM manufacturer's printed instructions.
 5. Ridges, Except at Ridge Vents: Extend membrane over ridges 6 inches (152 mm) on each side making a double layer.
 6. Hips: Extend membrane over hips 6 inches (152 mm) on each side making a double layer.
 7. Valleys: Overlap metal valley flashing 3 inches (75 mm) and seal to metal.
- J. Intersections of Roof Surfaces and Abutting Vertical Surfaces:
1. Install continuous 36 inch (914 mm) wide strips of self-seal membrane to extend 30 inches (762 mm) across roof deck and 6 inches (152 mm) up vertical surface.
 2. Install continuous metal flashing to extend 3 inches (76 mm) up vertical surface.
 3. At locations where vertical surface will abut top edge of tile, install metal flashing to extend 3 inches (76 mm) up vertical surface, form metal flashing to extend minimum 3 inches (76 mm) over tile, and form 1/2 inch (12.5 mm) return hem at edge of metal.
 4. Form saddle flashings for protrusions through roof in accordance with manufacturer's printed instructions.
- K. Ridge Vent:
1. Apply Roof Universal Tile Ridge Vent (or Roof Universal Flashing) to the ridge.
 2. Center vent on the ridge and loosely form the material to the tile roof surface.
 3. Determine how much vent you want exposed or concealed and snap horizontal lines accordingly.
 4. Overlap any rolls by 3 inch (7.52 cm).
 5. Remove the protective strip and firmly press into the tiles.
- L. Tile Battens:
1. Align the batten along the pre-chalked line.
 2. Never space battens more than 13-1/2 inches apart.
 3. Nail or screw the batten 2 inches (51 mm) from each end.
 4. Nail or screw the battens every 10 inches.

5. Do not use Roof Tile Battens as structural support for the tile.
 6. Tile fasteners shall to penetrate the roof deck through the battens by a minimum of 3/4 inch.
 7. Use a utility knife for cutting the battens.
 8. Install one roof plane at a time and not leave battens exposed an extended time to heat and sun as movement may occur prior to being covered by the tile.
- M. Eave Flashings: Install metal eave flashing 1/8 inch (3 mm) beyond the fascia; lap end joints minimum 3 inches (76 mm), with plastic cement seal between overlapping metal surfaces.
1. Apply self-seal membrane over eave flashing parallel to eave edge in accordance with manufacturer's printed instructions.
 2. Extend self-seal membrane up roof slope minimum 2 feet (610 mm) beyond interior face of exterior wall or as required by code, whichever is greater.
 3. Place each successive ply overlapping top edge of previous ply 3 inches (76 mm).
- N. Ridge Vent: Install in accordance with manufacturer's printed instructions.
- O. Tile Fasteners: Install in accordance with manufacturer's printed instructions.
- P. Roof Tile:
1. Install tile right to left, as viewed facing ridge.
 2. Install closure strips in accordance with manufacturer's printed instructions for project conditions.
 3. Fasten tile each tile to battens with two Roof High-Low Roofing Screws, 2.75 inch #10 pan-head (.40 inch) screws per tile.
 4. Fasten tile each tile to battens with two 2 inch 10/11 gauge ring shank 3/8 inch diameter nails and 13-1/2 inches (343 mm) exposure.
 5. Cut tile, as tile installation progresses, for hip, valley, and wall conditions.
 6. Partial tiles shall be secured at two points or by two methods; screws, wires, adhesives and clips.
- Q. Install venting as tile installation progresses; locate in accordance with manufacturer's instructions.
- R. Trim:
1. Install trim pieces for hips, ridges, and rakes as tile installation progresses; cut shapes, set in bed of plastic roof cement, and secure in place with minimum 2 fasteners per piece for rake trim, and minimum 1 fastener per piece for hip and ridge trim.
 2. Cut special shapes for project conditions as required.
 3. Overlap trim piece ends minimum 3 inches (76 mm); seal overlapping surfaces with approved adhesives.
- S. Counter flashings:
1. Install counter flashings tight to substrates, with top edge of counter flashing concealing base flashings; lap end joints minimum 3 inches (76 mm).
 2. Fasten counter flashings using specified fasteners; fasten on vertical surfaces only, at maximum spacing 12 inches (305 mm) on center.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 075419

POLYVINYL-CHLORIDE (PVC/TPA) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanically-fastened thermoplastic PVC roofing system on wood deck, including:
2. Substrate board.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.

1. Base flashings and membrane terminations.
 - a. Indicate details meet requirements of NRCA required by this Section.
2. Tapered insulation, including slopes and crickets.
3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Samples for Verification: For the following products:

1. Sheet roofing, of color specified.

1.4 INFORMATIONAL SUBMITTALS

A. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.

B. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.

1. Include letter from Manufacturer written for this Project indicating approval of Installer.

C. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of compliance with performance requirements.

2. Product Compatibility: Indicate manufacturer has verified compatibility of roofing system components, including but not limited to: Roofing membrane, flashing sheets, adhesives, and sealants.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
 - E. Warranties: Unexecuted sample copies of special warranties.
 - F. Inspection Reports: Daily reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions taken to correct defective work.
- 1.5 CLOSEOUT SUBMITTALS
- A. Executed copies of warranties.
 - B. Maintenance Data: To include in maintenance manuals.
- 1.6 QUALITY ASSURANCE
- A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
 - B. Manufacturer Qualifications: Approved manufacturer listed in this Section, UL listed for roofing systems comparable to that specified for this Project, with minimum five years' experience in manufacture of thermoplastic roof membrane products in successful use in similar applications.
 1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
 - e. Sample warranty.
 2. Approved manufacturers must meet separate requirements of Submittals Article.
 - C. Roofing Inspector Qualifications: Contractor to provide a technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:

1. An authorized full-time technical employee of the manufacturer.
 2. An independent party certified as a Registered Roof Observer by the Roof Consultants Institute, retained by the Contractor or the Manufacturer and approved by the Manufacturer.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.
- E. Preinstallation Roofing Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, roofing Installer, roofing system manufacturer's representative,, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 2. Review drawings and specifications.
 3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 5. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 6. Review structural loading limitations of roof deck during and after roofing.
 7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 8. Review roof observation and repair procedures after roofing installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - 3. Remove temporary plugs from roof drains at end of each day.
 - 4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.9 WARRANTY

- A. Manufacturer: Manufacturer's standard warranty form, covering work of this Section, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period.
 - 1. Warranty Period: 20 years from date of completion.
- B. Installer Warranty: Installer's warranty signed by Installer, covering the Work of this Section, on form acceptable to Roofing Manufacturer and Owner.
 - 1. Warranty Period: 2 years from date of completion.
- C. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.
 - 1. Inspections to occur in following years: 2, 5, 10, and 15 following completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Incorporated. Contact Steve Tolsma at stolsma@tremcoinc.com. Provide specified products or pre-approved equivalent products.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to

defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 10,000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746/C 3746M, ASTM D 4272/D 4272M.
- B. Flashings and Fastening: Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
1. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
 2. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
- C. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- D. Energy Performance: Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.

2.3 MATERIALS, GENERAL

- A. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

2.4 THERMOPLASTIC MEMBRANE MATERIALS

- A. PVC Roof Membrane:
1. Thermoplastic PVC/TPA sheet, internally fabric reinforced, ASTM D4434 Type IV; Energy Star qualified, CRRC listed, and California Title 24 Energy Code compliant.
 - a. Basis of design product: Tremco, TPA Single Ply Roof Membrane.
 - b. Tensile Strength at 0 deg. F (-18 deg. C), minimum, ASTM D751: 300 lbf/in (1330 N).
 - c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D751: 100 lbf (440 N).
 - d. Elongation at 0 deg. F (-18 deg. C), minimum at fabric break, ASTM D751: 25 percent machine direction, 25 percent cross-machine direction.
 - e. Minimum Thickness, nominal, ASTM D751: 0.060 in (1.5 mm).
 - f. Color: White.
 - g. Solar Reflectance Index (SRI), ASTM E1980: 108 (White, initial) 84 (White, 3-year aged).

- h. Recycled Content, minimum: 25 percent preconsumer.
- B. Membrane Flashing: Manufacturer's standard smooth-backed sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet membrane.

2.5 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Membrane Flashing Adhesive:
 - 1. Bonding adhesive, contact-type solvent-based low VOC, for bonding TPA non-fleece-backed single ply membranes and flashings to substrates.
 - a. Basis of design product: Tremco, TPA LV Single Ply Bonding Adhesive.
 - b. VOC, maximum, ASTM D3960: <200 g/L.
- C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 mm by 3 mm) thick; with anchors.
- D. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch (25 mm wide by 1.3 mm) thick, prepunched.
- E. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to membrane roofing system manufacturer.
- F. Termination Joint Sealant: Silicone, S, NS, 25 or 50, NT: Single-component, nonsag, plus 25 to 50 percent and minus 25 to 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT, and compatible with adjacent materials.
- G. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.6 SUBSTRATE BOARDS

- A. Glass-mat-faced gypsum panel, ASTM C1177/C1177M.
 - 1. Thickness: 1/4 inch (6 mm).
- B. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

2.7 ROOF INSULATION MATERIALS

- A. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48) unless otherwise indicated.
 - 1. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where needed to provide 1/4 inch per 12 inches (1:48) unless otherwise indicated.

2.8 WALKWAY MATERIALS

- A. Walkway Material:
 - 1. Walkway roll, reinforced PVC/TPA membrane roll with serrated slip-resistant surface, fabricated for heat welding to compatible PVC/TPA membrane surface.
 - a. Basis of design product: Tremco, TPA Walkway Roll.
 - b. Roll Size: 36 inches by 60 foot (914 mm by 18.3 m).
 - c. Thickness / Color: Gray, 0.072 inch (2 mm).
 - d. Tensile, Grab ASTM D751: 200 lbf (890 N).
 - e. Tear Strength, Tongue: 45 lbf (200N).
 - f. Low Temp Flex: -40 deg F. (-40 deg C.).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Wood Roof Deck: Verify that deck is sound and dry and securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's written instructions and approved details.
- B. NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations; modify as required to comply with manufacturer's approved details.

3.4 SUBSTRATE BOARD

- A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
 - 1. Secure substrate board to deck using mechanical fasteners.

3.5 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Where crickets are indicated or required to provide positive slope to drain, make slope of crickets minimum of two times the roof slope and not less than ¼ inch in 12 inches.
- D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- E. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.6 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

- A. Mechanically fasten membrane roofing over area to receive roofing and install according to roofing system manufacturer's written instructions.
- B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.

- E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- F. In-Seam Attachment: Secure one edge of membrane sheet using fastening plates or metal battens centered within membrane seam and mechanically fasten membrane sheet to roof deck.
- G. Welded Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
 - 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - 3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- H. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor shall engage a qualified roofing inspector for a minimum of three full-time days on site to perform roof tests and inspections and to prepare start up, interim, and final reports. Roofing Inspector's quality assurance inspections shall comply with applicable criteria established in ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.10 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075419

SECTION 076200

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Manufactured through-wall flashing with snaplock receiver with counterflashing.
 - 2. Manufactured reglets with counterflashing
 - 3. Formed low-slope roof sheet metal fabrications.
 - 4. Formed equipment support flashing.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
- B. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.
- C. Samples for Verification: For each type of exposed finish.
 1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
 4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Product Certificates: For each type of coping and roof edge flashing that is SPRI ES-1 tested and FM Approvals approved.
- C. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 1. For copings and roof edge flashings that are SPRI ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.10 WARRANTY

- A. Special Warranty on Finishes: Contractor agrees provide proof of warranty and coordinate with the manufacturer and city for any future work for the repair and finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Sheet Metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- D. FM Approvals Listing: Manufacture and install copings and roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-60. Identify materials with name of fabricator and design approved by FM Approvals.

- E. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:
 - 1. Design Pressure: 30 psf.
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.
 - 1. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color: As selected by Architect from manufacturer's full range.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; with smooth, flat surface.
 - 1. Finish: 2D (dull, cold rolled).

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Synthetic Underlayment: Laminated or reinforced, woven polyethylene or polypropylene, synthetic roofing underlayment; bitumen free; slip resistant; suitable for high temperatures over 220 deg F; and complying with physical requirements of ASTM D 226/D 226M for Type I and Type II felts.

- C. Self-Adhering, High-Temperature Sheet: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
 - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F or higher.
 - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F or lower.
- D. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane and silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted

joints.

- G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Through-Wall, Ribbed, Sheet Metal Flashing: Manufacture through-wall sheet metal flashing for embedment in masonry, with ribs at 3-inch intervals along length of flashing to provide integral mortar bond. Manufacture through-wall flashing with snaplock receiver on exterior face to receive counterflashing.
 - 1. Stainless Steel: 0.016 inch thick.
- B. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junction and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Material: Stainless steel, 0.019 inch thick; Aluminum, 0.024 inch thick.
 - 2. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 3. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
 - 4. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
 - 5. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
 - 6. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 7. Finish: Mill and where exposed with manufacturer's standard color coating.

2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- E. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- G. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- H. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- I. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.
- J. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.
- K. Do not use graphite pencils to mark metal surfaces.

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Downspouts: Fabricate rectangular downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.
 - 1. Fabricated Hanger Style: to match existing in according to SMACNA's "Architectural Sheet Metal Manual."
 - 2. Manufactured Hanger Style: to match existing in according to SMACNA's "Architectural Sheet Metal Manual."
 - 3. Fabricate from the following materials:
 - a. Aluminum: 0.024 inch thick.

2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing: Fabricate in minimum 96-inch long, but not exceeding 12-foot long sections. Furnish with 6-inch wide, joint cover plates. Shop fabricate interior and exterior corners.
 - 1. Joint Style: [Overlapped, 4 inches wide. Butted with expansion space and 6-inch wide, concealed backup plate.
 - 2. Fabricate with scuppers spaced 10 feet apart, to dimensions required with 4-inch wide flanges and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
 - 3. Fabricate from the Following Materials:
 - a. Aluminum: 0.050 inch thick.
 - b. Stainless Steel: 0.019 inch thick.
- B. Copings: Fabricate in minimum 96-inch long, but not exceeding 12-foot long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, fasten and seal watertight. Shop fabricate interior and exterior corners.
 - 1. Coping Profile: To match existing in according to SMACNA's "Architectural Sheet Metal Manual."
 - 2. Joint Style: Butted with expansion space and 6-inch wide, concealed backup plate.
 - 3. Fabricate from the Following Materials:
 - a. Aluminum: 0.050 inch thick.
- C. Base Flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
 - 1. Aluminum: 0.040 inch thick.
 - 2. Stainless Steel: 0.019 inch thick.
- D. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
 - 2. Stainless Steel: 0.019 inch thick.

- E. Flashing Receivers: Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
 - 2. Stainless Steel: 0.016 inch thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.019 inch thick.
- G. Roof-Drain Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch thick.

2.9 WALL SHEET METAL FABRICATIONS

- A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch long, but not exceeding 12-foot long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings; and form with 2-inch high, end dams. Fabricate from the following materials:
 - 1. Stainless Steel: 0.016 inch thick.
- B. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch high, end dams. Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
 - 2. Stainless Steel: 0.016 inch thick.

2.10 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.019 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller. Cover underlayment within 14 days.
- D. Apply slip sheet, wrinkle free, over underlayment before installing sheet metal flashing and trim.

3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 - 5. Torch cutting of sheet metal flashing and trim is not permitted.
 - 6. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Coat concealed side of uncoated-aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing sheet metal flashing and trim directly on

cementitious or wood substrates, install underlayment and cover with slip sheet.

- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Rivets: Provide rivet joints in uncoated aluminum where necessary for strength.

3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Downspouts: Join sections with 1-1/2-inch telescoping joints.
 - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
 - 2. Provide elbows at base of downspout to direct water away from building.
 - 3. Connect downspouts to underground drainage system.
- C. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches in direction of water flow.

3.5 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance

requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.

- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
- C. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.
- D. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.
 - 1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 24-inch centers.
 - 2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.
- E. Copings: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for specified FM Approvals' listing for required windstorm classification.
- F. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- G. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant at 36-inch centers unless otherwise indicated.
- H. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Opening Flashings in Frame Construction: Install continuous head, sill and similar flashings to extend 4 inches beyond wall openings.

3.7 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.
- B. Overhead-Piping Safety Pans: Suspend pans from structure above, independent of other overhead items such as equipment, piping, and conduit, unless otherwise indicated on Drawings. Pipe and install drain line to plumbing waste or drainage system.

3.8 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.9 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**END OF SECTION
076200**

SECTION 092400

CEMENT PLASTERING

PART 1 – GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- B. Section Includes:
 - 1. Lath and Portland cement plaster and stucco as indicated.

1.2 DESIGN REQUIREMENTS:

- A. Provide pre-formulated products that require only addition of clean water for mixing.

1.3 SUBMITTALS

- A. Shop Drawings: Submit elevations and details indicating locations and types of components, splices, connections and accessory items. Indicate locations and types of framing substrates.
- B. Product Data: Submit manufacturer's catalog data for each material and component proposed for installation.
- C. Certificates: Furnish manufacturer's certification that materials meet or exceed Specification requirements.

1.4 QUALITY ASSURANCE

- A. Coordinate with related Work to provide backing support for items mounted on finished surfaces and to provide allowances for pipes and other items in wall cavities.
- B. Comply with the following as a minimum requirement:
 - 1. ANSI A42.3 Lathing and Furring for Portland Cement Based Plaster, Exterior and Interior.
 - 2. Federal Specifications (FS):
 - a. UU-B-790a - Grade D Building Paper, Vegetable Fiber: (Kraft Waterproofed, Water Repellent and Fire Resistant).
 - b. QQ-L-101a - Federal Specification for Lath, Metal and other Metal Plaster Bases.

3. ASTM Standards:

- a. ASTM A 570 - Hot-Rolled Carbon Steel Sheet and Strip, Structural Quality.
- b. ASTM A 611 - Steel, Cold-Rolled Sheet Carbon, Structural Quality.
- c. ASTM A 641 - Zinc-Coated (Galvanized) Carbon Steel Wire.
- d. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated by the Hot-Dip Process.
- e. ASTM C 150 - Portland Cement.
- f. ASTM C 206 - Finishing Hydrated Lime.
- g. ASTM C 897 - Aggregate for Job Mixed Portland Cement Based Plasters.
- h. ASTM C 926 - Application of Portland Cement Based Plaster.
- i. ASTM C 933 - Welded Wire Lath.

C. Exterior Lath: Where lath is fastened to horizontal wood supports, comply with CBC requirements.

D. Plaster: Conforming to general requirements of Stucco Manufacturers Association - Specifications and Standards for Manufactured Stucco Finishes.

1.5 DELIVERY, STORAGE AND HANDLING

A. Protect metal lathing and plastering materials before, during and after installation. In event of damage immediately provide required repairs and replacements.

B. Deliver and store Portland cement materials on the Project site in a manner to provide protection from exposure and damage by moisture. Pile materials to permit easy access for proper inspection and identification of each shipment. Stockpile adequate supplies of sand on the Project site to permit sampling and testing before installation. Store to avoid inclusion of foreign material.

C. Deliver stucco to the Project site in manufacturer's sealed and labeled packages.

PART 2 – PRODUCTS

2.1 LATH AND ACCESSORY MATERIALS

A. Each bundle of lath shall be sealed with a metal tag bearing the lath designation, weight and manufacturer's name.

B. Adhesives and sealers for water repellant backing: Types as recommended by manufacturer for installation with specified membrane sheet.

D. Expanded Metal Lath: ASTM C 841, small diamond mesh expanded metal lath, 3.4 pounds per square yard, expanded from steel sheets with hot-dip galvanized coating G60 in accordance with ASTM A 653. Lath shall be self-furring type for installation over sheathing, flat type for installation over spaced framing; and 3/8 inch ribbed lath for soffits and ceilings.

- E. Backing for Metal Lath: Reinforced, laminated water resistant paper backing conforming to Fed Spec UU-B-790A (1), manufactured by Fortifiber Corp. Super Jumbo Tex, USG, Inryco or Western Metal Lath. Paper backings shall provide flame spread rating of 25 or less when tested according to ASTM E 84 and shall bear UL label. Furnish for exterior plastering (except on soffits and ceilings).
 - 1. Furnish paper Grade D, 60 minute rating, on wood studs without sheathing, and on plywood sheathing.
 - 2. Furnish Grade B, 16-hour rating, on gypsum sheathing.
- F. Corner and Strip Reinforcing Lath: Flat or shaped lath reinforcing units, galvanized metal or wire lath types, no less than 2.5 pounds per square yard, outstanding legs minimum of 2 inches for wire lath and 3 inches for metal lath when formed for angle reinforcing. Furnish galvanized type for installation with galvanized metal lath.
- G. Plastering Accessories: Minimum 26 gage galvanized steel with expanded wings. PVC and zinc alloy are not permitted. Furnish casing beads, expansion screeds, foundation screeds, ventilating screeds and other items as indicated or required.
 - 1. Exterior Expansion Screeds: Sizes and profiles indicated or required, furnished with expanded wings unless otherwise indicated or required by installation.
 - 2. Drip Screed: Similar to Superior No. 10.
 - 3. Casing Beads: Milcor, Superior, USG, or equal, similar to Milcor Type 66 by 7/8 inch high for exterior plaster.
 - 4. Exterior Corner Reinforcement: Woven wire type with longitudinal wires, galvanized.
 - 5. Ventilating Screeds: Alabama Metal Industries, or equal, soffit vent screed, perforated web type, with integral plaster grounds.
 - 6. Foundation Weep Screeds: Alabama Metal Industries, or equal, integral plaster ground and weep screed.
- H. Screws: USG Type S and Type S12, "ClimaSeal" finish.
- I. Nails: 11 gage roofing nails, 7/16 inch head, barbed, diamond point, zinc-coated, 1-1/2 inch long for horizontal application; 1 inch long for vertical application. Furnish watered furring nails for fastening lath to wood framing.

2.2 PLASTER MATERIALS

- A. Exterior Stucco: As manufactured by California Stucco, La Habra, Highland Stucco, or Merlex Stucco, Inc. Furnish formulations requiring only addition of water for installation. Sand shall pass the No. 20 sieve. Mix and sand shall provide the specified finish. Furnish integral colored stucco in color as selected by Architect.
- B. Portland Cement: ASTM C 150, Type II, low alkali.
- C. Hydrated Lime: ASTM C 206, Type S.

- D. Finish Coat Plaster: Highland "Exterior Stucco," or equal, factory formulated blend of portland cement, hydrated lime, aggregates and color, requiring addition of water only at the Project site.
- E. Water: Clean, potable and from domestic source.
- F. Waterproofing Admix: Red Label Suconem by Super Concrete Emulsions Ltd., AntiHydro, or approved equal.
- G. Plaster Bonding Agent: "PlasterWeld", manufactured by Larsen Products Co., Jessup, MD, Upco Bonding Adhesive No. 705, or Merlex Stucco "Acrylex" or approved equal.
- H. Sand: Washed natural sand conforming to ASTM C 144, except gradation of sand shall be as follows:

Percentage retained, each sieve, by weight:

<u>Sieve Size</u>	<u>Maximum</u>	<u>Minimum</u>
No. 4	0	0
No. 8	10	0
No. 16	40	10
No. 30	65	30
No. 50	90	70
No. 100	100	95

- I. Base Coat Reinforcement: Alkali resistant fiberglass shorts, 1/2 inch chopped strands, Type AR, manufactured by OCF, PPG Industries, or equal.
- J. Plaster Patching Materials:
 - 1. Bonding Agent: Acrylic resin type, Acryl 60, LHP Bonder, or approved equal.
 - 2. Patching Plaster: Manufactured by Merlex Stucco, Inc., Orange, CA, or equal. Furnish fast setting, compatible with existing plaster materials, "Exterior Pronto Patch," Portland cement base coat material, requiring only addition of water. Material shall provide initial set within 20 minutes, and final set within one hour.
- K. Miscellaneous Materials
 - 1. Underlayment: Single ply self-adhesive waterproofing membrane as manufactured by W.R. Grace Company, Jiffy-Seal, or equal. Furnish for installation behind stress relief joints and backing on horizontal and vertical surfaces exposed to weather; under metal copings and flashings; and window jambs and sills.
 - 2. Provide additional components and materials required for a complete installation.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that overhead or concealed Work is finished, completed, tested and inspected as required before starting Work of this Section.

3.2 LATH INSTALLATION

- A. General: Where exterior and interior lath is fastened to horizontal wood supports, the current edition of the CBC shall be complied with. Refer to Section 01420: Testing and Inspection.
- B. Exterior Lathing, General
 - 1. Application of Metal Lath: Metal lath or wire fabric lath shall be installed in accordance with the provisions of CBC current editions. Lath shall be furred out from vertical supports or backing not less than 1/4 inch.
 - 2. Self-furring lath meets furring requirements. Furring of expanded metal lath is not required on supports providing a bearing surface width of 1-5/8 inch or less.
 - 3. Where external corner reinforcement is not installed, lath shall be furred out and carried around corners, extending and fastened to at least one support.
 - 4. A weep screed shall be provided at or below foundation plate line on exterior stud walls. Screed shall be installed a minimum of 4 inches above grade and shall be of a type permitting water to drain to exterior of building. Weather-resistant barrier and exterior lath shall cover and terminate on attachment flange of screed.

3.3 INSTALLATION- WEATHER BARRIER MEMBRANE

- A. Install two layer of underlayment over areas to receive lath with weather barrier membrane. Install horizontally with each course weather lapped 2 in. over layer below. Over wood based sheathing, install a second layer with laps offset from the first layer.
- B. Install lath over underlayment in accordance with manufacturer's instructions.
- C. Install single ply self-adhesive waterproofing membrane per manufacturer's recommendations in areas indicated on the Drawings.

3.4 PLASTER APPLICATION - GENERAL

- A. Install plaster in conformance with ASTM C 926.
- B. Install each plaster coat to an entire wall or ceiling panel without interruption to avoid cold joints and abrupt changes in uniform appearance of succeeding coats. Wet

plaster shall abut existing plaster at naturally occurring interruptions in plane of plaster (such as corner angles, openings and control joints) wherever possible. Cut joining, where necessary, square and straight and at least 6 inches away from a joining in preceding coat.

- C. Provide sufficient moisture in plaster mix or by curing methods to permit continuous and complete hydration of cementitious materials, considering climatic and Project site conditions.
- D. Provide sufficient time between coats to permit each coat to cure or develop enough rigidity to resist cracking or other damage when next coat is installed.

3.5 EXTERIOR PLASTERING

- A. Concrete surfaces, except where noted as "Exposed Concrete" or "Painted Concrete," shall be finished with stucco dash finish coats, as specified.
- B. Preparation of Surfaces:
 - 1. Exterior concrete and masonry surfaces to be plastered shall be free of oily or waxy substances, and loose or foreign material. Uniformly spray with nozzle-type water spray at least 12 hours before installation of plaster.
 - 2. Concrete and masonry surfaces to receive 5/8 inch thick Portland cement plaster shall be treated with bonding agent. This surface preparation shall not be installed instead of a brown coat of plaster.
 - 3. Concrete surfaces to receive stucco dash finish shall be lightly sandblasted to provide a roughened surface.
 - 4. Verify that lath has been installed securely and that grounds, screeds, casing beads and other accessories are straight, in correct position, and securely fastened in place.
- C. Number of Coats and Thickness: Exterior plaster shall be Portland cement as follows with minimum thickness from face of supports or surfaces to finish face of plaster as follows:
 - 1. Lathed Surfaces: 3 coats, scratch, brown and finish, 7/8 inch thick, one inch thick where required by CBC.
 - 2. Concrete and Masonry Base: 2 coats, brown and finish, 5/8 inch thick.
- D. Proportions:
 - 1. Proportion ingredients for Portland cement. Calibrated boxes are required to determine the accuracy of proportioning. Proportions shall adhere to current edition of CBC.
 - 2. Stucco Finish: Stucco shall be factory prepared, exterior type, colored stucco containing a portland cement base, required aggregates and mineral pigments. Colors shall be as selected by the Architect. Selected colors are not limited to standard stock colors and certain Work, such as ceilings, soffits and walls, may be finished in non-standard colors as selected.

- E. Mixing: Provide stucco mix, plaster and aggregate in proportions specified, furnishing only sufficient water to obtain proper consistency before installation. Do not mix any more material at any time than can be installed within 1/2 hour after mixing. Do not allow material to remain in mixer or mixing boxes overnight. Maximum allowable slump shall be 2-1/2 inch, based on a 2 inch x 4 inch x 6 inch slump cone.
- F. Application:
1. Scratch Coat: Install with sufficient material to completely cover laths and scratch across supports.
 2. Brown Coat: Rod to a straight, true, even surface and float to receive finish coat.
 3. Stucco Finish Coat: Install in 2 coats to a total thickness of 1/8 inch, each coat covering surface uniformly. First coat shall be installed to form texture pattern and second coat shall provide uniform color and texture.
 - a. First coat shall be installed by providing several passes with nozzle to completely cover surface.
 - b. The second coat shall be installed by doubling back same day, when first coat is sufficiently dry.
 - c. Over concrete surfaces, second coat shall be installed 24 hours after installation of first coat. In warm weather, first coat shall be cured by light water spray after material has set.
 - d. Protection: Protect those surfaces, which are not to receive dash finish coats. Such surfaces shall be shielded and shall have any sand left from dashing operation removed.
- G. Curing Exterior Plaster: Adhere to current edition of CBC for curing requirements.
- H. Option for Machine Application, Scratch and Brown Coats: Instead of hand installed plaster, the furnishing of plastering machines for interior or exterior scratch and brown coats is permitted. Machine installation shall be in accordance with the following:
1. Qualifications: Provide proper equipment and apparatus.
 2. Apparatus: Pump shall be equipped with an air pressure gage and required safety devices. Hoses and connections shall be tight and pressure shall be maintained constant.
 3. Tests: Tests for determining proper consistency of plaster mix shall be taken at nozzle using slump cone method. Tests shall be observed by the IOR at least twice each day and as often as deemed necessary. Perform required tests and maintain an accurate log of such tests to ascertain compliance with material slump requirements. Material slump shall not exceed 2-1/2 inches at nozzle. Furnish an adequate number of standard 2 inch x 4 inch x 6 inch slump cones for testing. Cones shall be on the Project site before Work is started and at all times during performance of the Work of this section.
 4. Proportion and Application: Proportioning, mixing, number of coats and thickness shall be same as specified for hand application. Cement aggregate and water shall be mixed to plaster machine. Plaster mix shall be projected into and conveyed through a hose to the nozzle at end of hose and deposited by pressure in its final

- position ready for manual straightening and finishing.
5. Follow-Up: Perform scoring operation of plaster, based on settings and drying conditions at time of installation. Curing shall be as previously specified.
 6. Protection: Before installing any plaster, thoroughly protect other adjacent Work.

3.7 QUALITY CONTROL:

- A. Finish exterior plaster to a uniform texture, free of imperfections and flat within 1/8 inch in 5 feet. Form a suitable foundation for paint and other finishing materials. Avoid joining marks in finish coats.

3.8 REPAIR REQUIREMENTS FOR DAMAGED PLASTER:

- A. Plaster Detached from Framing:
 1. Remove loose and broken plaster.
 2. Repair or replace damaged water-resistant backing and lath in compliance with specified standards.
 3. Remove stucco finish from surrounding area in the same plane by sandblasting.
 4. Install a scratch coat and a brown coat mixed with liquid bonding agent instead of water to the areas devoid of plaster.
 5. Install a coat of liquid bonding agent to entire wall plane.
 6. Install a 1/8 inch thick stucco finish coat to entire wall plane and match existing texture and color.
- B. Cracked Plaster - Unpainted:
 1. Remove loose material from crack with a wire brush.
 2. Remove stucco finish from entire wall plane by sandblasting.
 3. Fill crack with slurry of stucco and liquid bonding agent.
 4. Install a coat of liquid bonding agent to entire wall plane.
 5. Install 1/8 inch thick stucco finish to entire wall plane and match existing texture and color.
- C. Cracks Larger than 1/2 inch - Painted:
 1. Remove loose material from crack with a wire brush.
 2. Fill crack with slurry of one part plastic Portland cement to 3 parts masonry/stucco sand and liquid bonding agent to match existing texture of adjacent surface.
 3. Paint entire wall plane, color to match existing.
- D. Where patching of plaster over existing lath is feasible, fasten loose lath and install new lath with nails at 6 inch centers. Where metal is furnished, lap new lath over existing 6 inches and tie at 6 inch centers. Install paper backings as required, shingled into existing. Spray existing gypsum lath with water over a period of several hours to moisten it thoroughly. Install a bonding coat to the cut edges of existing plaster and plaster as specified above. Work deemed to be defective, shall be removed and replaced as required.

- E. Patching of Holes, Cracks, and Gouges: Holes, cracks, gouges, missing sections, and other defects in existing improvements shall be patched. For holes over 1 inch in size, cut small sections of lath and place in opening attached to existing material. Install 3 coats of plaster. For holes one inch and smaller, install bonding agent to existing surfaces and neatly fill hole with plaster, installing necessary coats to match adjacent surfaces, eliminate cracks and match existing surface texture. Cracks, gouges, and other defects shall be filled with plaster or spackle as required and neatly finished to match adjacent existing improvements.

3.10 CLEANING:

- A. Remove rubbish, debris, and waste material and legally dispose of off the Project site.

3.11 PROTECTION:

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION 092400

SECTION 092900 - GYPSUM BOARD

1.1 QUALITY ASSURANCE

- A. Mockups for the following:
 - 1. Levels of exposed gypsum board finish.
 - 2. Texture finishes.

1.2 MATERIALS

- A. Interior Gypsum Board: Match Existing thickness, type, and rating.
 - 1. Gypsum wallboard.
 - 2. Gypsum board, Type X.
- B. Texture Finishes:
 - 1. Match Adjacent finish. Blend into existing field of drywall.

END OF SECTION 092900

SECTION 099113

EXTERIOR PAINTING

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on

1. Exterior substrates:
2. The following substrates:
 - a. Portland Cement Plaster (stucco)
 - b. Ferrous Metal
 - c. Aluminum (not anodized or otherwise coated)
 - d. Wood

1.2 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 35 units at 85 degrees, according to ASTM D 523
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.
- H. EG: Ethylene Glycol. Ethylene glycol is listed as a hazardous air pollutant (HAP) by the
- I. U.S. EPA
- J. Blocking: Two painted surfaces sticking together such as a painted door sticking to a painted jamb.
- K. RAVOC: Reactivity adjusted VOC 'Reactivity' means the ability of a VOC to promote ozone formation.
- L. PDCA: Painting & Decorating Contractors of America www.pdca.org

- M. SSPC: Scopes of SSPC Surface Preparation Standards and Specifications.
- N. Owner – usage of the term “Owner” shall be construed to mean the actual owner of the Property or a duly authorized representative of the owner.
- O. Property – usage of the term “Property” shall be construed to mean the property location identified in paragraph 1.1 B. 1. of this specification at which location the work shall be performed.
- P. Painting Contractor – usage of the term “Contractor” shall be construed to mean the 3rd party contractor performing the painting portion of the project.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, no smaller than 7 inches by 10 inches (177.8 mm by 254 mm) or larger than 8.5 inches by 11 inches (215.9 mm by 279.4 mm).
 - 2. Label each Sample for project, owner’s agent, general contractor, painting contractor, paint color name and number, paint brand name, 'P' number if applicable, and application area.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas.
 - 2. VOC content.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials from the same product run that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Ten [10] percent, but not less than [1 gal. (3.8 L)] of each material and color applied.

1.5 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to

demonstrate aesthetic effects and set quality standards for materials and execution.

1. Owner's agent will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
 - b. Other Items: owner's agent will designate items or areas required.
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by owner's agent at a cost to be agreed upon by Contractor and Owner.
3. Approval of mockups does not constitute approval of deviations from the paint systems indicated unless owner's agent specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C) or more than 120 deg F (49 deg C).
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Surfaces must be clean and moisture free. Prime and paint as soon as possible. Do not apply paints in snow, rain, fog, or mist. No painting shall be done immediately after rain or foggy weather or when the temperature is below 50 °F. Substrate temperature must be 5 °F or more above dew point temperature while painting and during the coating's cure time. Avoid painting surfaces while they are exposed to a full, hot sun.
- B. Painting contractor should follow proper painting practices and exercise judgment based on his or her experience and project specific conditions as to when to proceed.
- C. WIND VELOCITY: Excessive wind velocity can seriously impair spray application, resulting in significant material loss, low film build, excessive dry spray or overspray, plus the possibility of depositing airborne spray mist on unprotected surfaces downwind from the work. Some of these adverse effects can be compensated for by material and equipment adjustments if winds are not too high. Generally speaking, wind velocity 15

m.p.h. or higher can cause sufficient spray application problems, in which case suspending work until conditions improve should be considered.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Dunn-Edwards Corporation. Subject to compliance with requirements, provide products manufactured or distributed by the Dunn-Edwards Corporation; Sherman Williams Corporation, Pratt and Lambert Paints or approved equal.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

C. Colorants: The use of colorants containing hazardous chemicals, such as ethylene glycol, is prohibited.

D. Colors: Match Existing or as Selected by owner's agent from manufacturer's full range.

1. Where color is selected prior to bid submittal, Contractor shall bid two (2), or more finish coats, as appropriate to the color selected, and shall expressly state number of finish and prime coats and type (full or spot) of prime coat.
2. When the final color has not been selected prior to bid submittal, Contractor may need to bid additional coats when submitting their bid. The Owner should be aware that if a color is chosen following the bid process and the color is significantly different from original color, a change order for an additional finish coat might be required.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
- C. Exterior Substrates:
 - 3. Concrete: 11 percent or less.
 - 4. Masonry (Clay and CMU): 11 percent or less.
 - 5. Wood: 15 percent or less.
 - 6. Plaster: 5 percent or less.
- D. Portland Cement Plaster Substrates: Verify that plaster is fully cured, including pH testing to determine that alkalinity is within limits established by the manufacturer.
- E. Exterior Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- F. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- G. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.
- B. Scraping or sanding surfaces of older buildings (especially pre-1978) may release dust containing lead or asbestos. EXPOSURE TO LEAD OR ASBESTOS CAN BE VERY HAZARDOUS TO YOUR HEALTH. Always wear appropriate personal protective equipment during surface preparation, and finish cleanup of any residues by water- washing all surfaces. For more information, see Dunn-Edwards brochure on "Surface Preparation Safety" or call EPA's National Lead Information Hotline at 1-800-424- LEAD, or visit www.epa.gov/lead or/asbestos, or contact your state or local Health Department.
- C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and re-prime substrate with compatible primers or apply bond coat as required to produce paint systems indicated.
- E. Where mildew is present, remove mildew by scrubbing with a commercial mildew remover, or, with a solution of one (1) part household bleach mixed in three (3) parts water by volume. The solution should be left on the surface for a minimum of twenty (20) minutes, rinsed thoroughly with clean water to remove any residue, and then allowed to dry completely prior to application of patching/caulking/prime/finish coat systems.
- F. Moisture: All areas that may cause paint failure due to moisture shall be addressed and eliminated. This would include, but is not limited to:
1. Gutters and downspouts not working properly.
 2. Previous coats of paint not adhering properly.
 3. Wood checking (cracks and splits in wood).
 4. Deteriorated caulking.
 5. Gaps between substrates.
 6. Rotten wood.
 7. Areas affected by water splashing.
 8. Painting in inclement weather.
 9. Painting a substrate where residual moisture exceeds limits stated in 3.1.B.
 10. Un-caulked nail holes.
- G. Pressure washing and surface preparation methods
1. Pressure wash or water blast to remove oil, grease, dirt, loose mill scale, and loose paint at pressures of 2500-3500 p.s.i. at a flow of 3.0-3.5 gallons per minute. This is the recommended standard for optimal efficiency.
- H. Prior to application of prime/finish interior and/or exterior coat systems, provide a clean, sound surface free of dust, dirt contaminants, mildew and efflorescence by use of a power wash and hand scraping or use of mechanical grinders where necessary. Additionally, areas are to be scrubbed with a bristle brush to insure complete removal of any residual salts. Remove all labels, stickers, price tags, etc. from surfaces before priming. Wood areas stamped with ink codes must be spot primed with blocking primers. Power wash areas to be coated to ensure that new salt deposits do not occur. Failure to do so may cause adhesion issues or result in delamination and invalidate any manufacturer warranty given or implied. After cleaning if there is still chalk evident, this condition must be brought to the owner's attention in writing before any further work is done.
- I. Cementitious Substrates: (concrete, stucco, masonry) Remove release agents, curing

compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

1. Wire brush all loose and peeling paint and dust all surfaces before spot priming or applying finish coats. Industry standards apply to applications of cracks, voids, and repairs. Any areas of repair shall be patched and dried before coatings are applied. Cracks should be repaired as follows: 1. Cracks less than 1/4" wide should be filled using Dunn-Edwards Brush Grade or approved equal Elastomeric Patch. 2. Cracks wider than 1/4" should be cut and scraped to a "V" shape and filled with Dunn-Edwards Trowel
 2. Grade Elastomeric Patch. Large cracks and holes may require repeated applications of patching materials to bring flush with adjacent substrate. Feather-in all repairs and caulking to blend with adjacent substrate.
 3. Large holes in stucco / plaster/ concrete will be patched with Rapid Set Premium Stucco Patch or Rapid Set Wunderfixx Concrete Patching Compound in appropriate texture to blend with existing texture. Allow stucco patch to cure to acceptable pH level
 4. (10) prior to application of prime/finish coat systems. Caulk large cracks in stucco / plaster/ cement with GE-Life Time 920 or approved equal.
 5. Spot prime over all patched areas, cracks, and holes then use an appropriate topping material to match existing surface level and texture.
- J. All Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing.
- a. SSPC-SP 1, "Solvent Cleaning."
 - b. SSPC-SP 2, "Hand Tool Cleaning."
 - c. SSPC-SP 3, "Power Tool Cleaning."
1. All ferrous metals should be thoroughly cleaned and all loose rust or mill scale be removed by wire brush, scraper and/or power tool, such as an electric drill with a wire brush attachment. Any rust spots or bare metal should receive the appropriate prime coat. Rust inhibited primer to be applied on all properly prepared surfaces where rust is evident. Any hard, glossy surfaces should be dulled. Previously painted ferrous metal in sound condition should be washed down with a strong detergent-type cleaner such as Krud-Kutter or Simple Green.
 2. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
 3. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
 - a. All galvanized gutters and flashing should be thoroughly cleaned to remove loose and peeling paint.

- b. Any bare galvanized metal should be wiped down with a non-petroleum solvent cleaner.
- c. Prime bare metal with the specified galvanized metal primer.
- d. Any rust on galvanized metal must be removed. Clean to bare metal and apply a rust inhibitive primer.

4. Aluminum Substrates: Remove loose surface oxidation.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations.

- 1. Use applicators and techniques suited for paint and substrate indicated.
- 2. The number of coats scheduled is the minimum number of coats required. Additional coat(s) shall be applied at no additional cost to the Owner, to completely hide base material, provide uniform color, and to produce satisfactory finish results.
- 3. Apply coatings without thinning except as specifically required by label directions, or required by these specifications. In such cases, thinning shall be the minimum reduction permitted.
- 4. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
- 5. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
- 6. Paint entire exposed surface of window frames and sashes.
- 7. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- 8. Priming may not be required on items delivered with prime or shop coats, unless otherwise specified. Touch up prime coats applied by others as required ensuring an even primed surface before applying finish coat.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Block Fillers: Provide block fill as scheduled to conform to the following PDCA

Standard P12-05.

- a. Level 3 - Premium fill: One or multiple coats of high performance block filler manufactured to be applied at a high dry film build. Block filler shall be back-rolled to eliminate voids and reduce the majority of the masonry profile depth.
- F. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed to view:
 - a. Equipment, including panel boards.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Tanks that do not have factory-applied final finishes.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by owner's agent, and leave in an undamaged condition.
- D. At completion of activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

A. Prepare, paint and finish all surfaces specified and agreed upon.

1. Provide paint finishes of even uniform color, free from cloudy or muddled appearance.
2. Properly correct all non-complying work to the satisfaction of owner and owner's representative and the representative of the paint manufacturer.
3. Finish all surfaces in accordance with the following schedule. Catalog product names and numbers refer to products as manufactured by the Dunn Edwards Company or approved equal, Los Angeles, California. Catalog color names and numbers refer to products as indicated in Drawing. Color not indicated, to be chosen by Architect from Manufacture standard color selection. Paint application finish schedule:

B. EXTERIOR SURFACES; PT-10 (Ferrous Metal):

1. Metal Stair, Railing, Gate, Exposed Metal Framing: Semi-gloss Finish (Total dry film thickness shall be no less than 4.5 mils):
 - 1st Coat: Devoe Bar-Rust 235V Multi-Purpose Epoxy Coating or approved equal
 - 2nd Coat: Devthane 379H or approved equal Polyurethane
 - 3rd Coat: Devthane 379H
 - Polyurethane or approved equal

SPECIAL NOTES AND INSTRUCTIONS:

1. MINIMAL PREPARATION For coatings requiring only minimal surface preparation, the surface needs to be prepared in accordance to SSPC-SP 1 and SSPC-SP 2 or SSPC-SP 3. Tightly adhered rust and or previous coating can remain provided it cannot be removed by lifting with a dull putty knife using moderate pressure. Use SSPC-SP 7 (NACE 4) to expedite the preparation of large areas.
2. The areas of rust that have deteriorated the fence to the point of holes in the substrate will need to be replaced prior to painting.
3. Due to the severe deterioration of many areas of the fence examination and correct preparation of the substrate is crucial to the success of the paint project.
4. For lead safety refer to 3.2 B. and Dunn-Edwards or approved equal PI sheets under Special Instructions.

C. EXTERIOR SURFACES; PT-11 (Cement Plaster):

1. Cement Plaster (Stucco): Flat Finish (Total dry film thickness shall be no less than 4.5 mils):
 - Primer: EFF-STOP Select Masonry Primer/Sealer (ESSL00)
 - 1st Coat: SPARTASHIELD or approved equal, Exterior 100%

Acrylic Flat Paint (SSHL10)

2nd Coat: SPARTASHIELD or approved equal, Exterior 100%

Acrylic Flat Paint (SSHL10)

SPECIAL NOTES AND INSTRUCTIONS:

1. On previously painted surfaces, wash, patch, and prime exposed areas. Fill and caulk voids, seams, and joints, especially around doors and windows to prevent moisture intrusion (if applicable). Surface must be dry and free of dirt, grease, and oil. Protect areas not being painted.

D. EXTERIOR SURFACES; PT-12 (Aluminum):

1. Unpainted Aluminum Metal: Flat Finish (Total dry film thickness shall be no less than 4.5 mils):

1st Coat: GALV-ALUM or approved equal Epoxy

Galvanized/Aluminum Metal Primer (43-7) 2nd Coat:

SPARTASHIELD or approved equal, Exterior 100% Acrylic Flat Paint (SSHL10)

3rd Coat: SPARTASHIELD or approved equal, Exterior 100% Acrylic Flat Paint (SSHL10)

SPECIAL NOTES AND INSTRUCTIONS:

1. Any chalkiness needs to be removed, must be washed and scrubbed off, and any flaking and/or peeling paint must be removed.
2. Surface must be dry and free of dirt, grease, and oil.
3. Protect areas not being painted.

E. EXTERIOR SURFACES;

1. Steel, Galvanized Steel, Non-Ferrous Metal, or Wood

1st Coat, Primer: Tnemec Steel, Series 1 or approved equal

Galvanized Steel and Non-Ferrous Metal: Tnemec Series 27 or approved equal WB

Wood: Tnemec Series 10-99W or approved equal

2nd Coat: Tnemec Series 2HS, Low VOC Tnemec-Gloss or approved equal

3rd Coat: Tnemec Series 2HS, Low VOC Tnemec-Gloss or approved equal

END OF SECTION 099113

SECTION 099123 - INTERIOR PAINTING

1.1 QUALITY ASSURANCE

- A. Mockups for each color and finish.

1.2 PAINT, GENERAL

- A. MPI-listed products.

1.3 SOURCE QUALITY CONTROL

- A. Testing: Owner engaged.

1.4 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board Substrates:
 - 1. Institutional low-odor/VOC latex system.

APPENDIX I

Progress Payment Request Form

Contract Daily Report

APPENDIX I
PROGRESS PAYMENT REQUEST FORM

TO: CITY OF MANHATTAN BEACH
Engineering Division, 1400 Highland Avenue, Manhattan Beach, CA 90266
PROJECT TITLE _____
PROJECT NO. _____

FROM: CONTRACTOR _____ Date _____
Address _____
Telephone _____
Submitted by _____

Progress Estimate # _____
Contract Award Amount \$ _____

No.	Description	Contract Quantity	Previous Quantity	Quantity This Estimate	Unit Price	Amount This Estimate	Total Quantity to Date	Total Amount to Date
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
	Total							
	Less Retention							
	Less Previous Billing(s)							
	Total Amount Due							

City Approval: _____ Date: _____

NOTE: An updated Project Schedule must be provided with each monthly progress payment in accordance with Section 6-1 of the General Provisions in addition to a Conditional Waiver and Release form per Section 9 -3.2.1



CONTRACT DAILY REPORT

CONTRACT NO.			DATE		REPORT NO	
CONTRACTOR						
SHIFT		HOURS WORKED From: To:		WEATHER		
CONTRACTOR MANPOWER (BY LABOR CLASS)		NO.	TOTAL HOURS	SUBCONTRACTOR MANPOWER		TOTAL HOURS
CONTRACTOR EQUIPMENT		NO.	TOTAL HOURS	SUBCONTRACTOR EQUIPMENT		TOTAL HOURS
DESCRIPTION OF WORK PERFORMED TODAY						
REMARKS BY CONTRACTOR (Delays, Interruptions, Deviations, Extra Work Activities, Unusual Occurrence's, etc.)						
CONTRACTOR		TITLE			DATE	
CITY COMMENTS AND/OR EXCEPTIONS						
CITY REPRESENTATIVE		TITLE			DATE	

APPENDIX II

Limited Asbestos & Lead-Based Paint Assessment Report - Live Oak Park, Recreation Center –
June 5, 2019

Limited Asbestos & Lead-Based Paint Assessment Report – Marine (Avenue) Park - June 5, 2019



LIMITED ASBESTOS & LEAD-BASED PAINT ASSESSMENT REPORT

Presented To:

Faithful & Gould
3400 North Central Avenue
Suite 2400
Pheonix, AZ 85014

Assessment Location:

Live Oak Park, Recreation Hall
1902 Valley Dr.
Manhattan Beach, CA 90266

Andersen Environmental Project No. 1304-584

Report Date: June 5, 2013

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APPENDICES

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APPENDIX B	XRF RESULTS
APPENDIX C	INSPECTOR'S CERTIFICATIONS
APPENDIX D	MAPS / FLOOR PLANS
APPENDIX E	DHS FORM 8552

1.0 INTRODUCTION

This report presents the results of Andersen Environmental's Limited Asbestos & Lead-Based Paint Assessment of the Recreation Hall located at 1902 Valley Dr., Manhattan Beach, CA 90266 (referred to hereunder as the subject property). This document is prepared for the sole use of The City of Manhattan Beach and any regulatory agencies that are directly involved in this project. No other party should rely on the information contained herein without prior written consent of The City of Manhattan Beach scope of services, inspection methodology, and results are presented below.

2.0 SCOPE OF WORK

The purpose of this inspection and survey is to identify the Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) present within the interiors and exteriors of the subject property building. As the asbestos sampling is destructive in nature, and may void any roof warranties, the roofing materials of the building were not sampled during this assessment.

Asbestos

The purpose of this assessment was to perform bulk sampling of suspect materials in order to determine the presence or absence of ACM associated with the two buildings at the subject property. The scope of this assessment included reviewing any provided building records and/or previous investigation records, visually identifying homogeneous areas and functional spaces, collecting bulk samples of suspect ACM, interpreting the laboratory results, producing a written report of our findings, recommendations, floor plans and approximations of ACM quantities.

Lead-Based Paint

The purpose of this assessment was to perform an X-Ray Fluorescence (XRF) survey of the two buildings onsite in order to determine which components may be covered with lead laden coatings. To comply with Title 17, EPA and HUD guidelines, painted and varnished surfaces in every accessible "room equivalent" were sampled for the presence of lead-based paint (LBP) and the condition of the painted surfaces was assessed. The intent was to ascertain the presence of LBP above the Los Angeles County action level using X-Ray Fluorescence. If LBP was found, the inspection would identify individual architectural components and their respective concentrations of lead in such a manner that this report would be used to characterize the presence of LBP at this property. The scope of work also included producing a written report of our findings and recommendations.

3.0 PROPERTY DESCRIPTION

The subject property consists of a single story wood framed building. Currently, the property is utilized as a recreation hall. The exterior finishes of the building consist of exterior stucco with wood framed windows and a built up roof. The interior finishes include plaster walls and ceilings, acoustic ceiling spray and ceramic or vinyl composite floor tiles.

4.0 INSPECTOR'S QUALIFICATIONS

Andersen Environmental performed the lead inspection at the site using a Niton XRF spectrum analyzer instrument. Freddy Torres has completed an EPA approved curriculum in Lead in Construction Inspector / Risk Assessor Training.

Benjamin Curry and Lamont Leiva of Andersen Environmental performed the asbestos inspection at the site. Lamont Leiva is certified by the State of California Division of Occupational Safety and Health (DOSH) as Certified Site Surveillance Technician and worked under the supervision of Benjamin Curry, a DOSH Certified Asbestos Consultant.

Personnel certificates have been provided in *Appendix C*.

5.0 TESTING PROTOCOL

Asbestos

The sampling was performed in accordance with requirements of the following regulations:

- Asbestos Hazard Emergency Response Act (AHERA); 40 CFR 763 Subpart E
- Asbestos School Hazard Abatement Reauthorization Act (ASHARA); Section 206 of the Toxic Substance Control Act
- National Emissions Standards for Hazardous Air Pollutants (NESHAPS); 40 CFR 61 Subpart M.

This report is a record of activities, observations, analytical results and recommendations performed to date.

Lead-Based Paint

The sampling was performed in accordance with requirements of the following regulations:

- Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housingⁱ.
- Title 17, California Code of Regulations
- EPA Lead Based Paint Program

XRF Testing: Testing of the painted surfaces was patterned after the inspection protocol in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housingⁱⁱ. In every “room equivalent” within the tested property, one representative surface of each “testing combination” was tested. Multiple readings were collected to resolve inconsistencies in the test results.

Regulatory Compliance: Several public (government) agencies have a published “regulatory action level” to classify LBP. To further complicate matters, some of the established “levels” are quantified in different units of measurement. Listed below are the current regulatory agencies that have defined LBP, along with the respective action level:

<u>Agency</u> (ppm ⁱⁱⁱ)	<u>Ordinance #</u>	<u>Action level (mg / cm²)</u>	<u>Action level</u>
HUD / EPA	24 CFR 35.86 & 40 CFR 745.103	1.0 mg / cm ²	5,000 ppm
L.A. County	Title 11, 11.28.010	0.7 mg / cm ²	600 ppm ^{iv}
OSHA / CAL OSHA	29 CFR 1926.62 & Title 8, 1532.1	Not Specified	600 ppm ^v

HUD / EPA have recently issued the following guidance regarding units of measurement for paint samples:

“Report lead paint amounts in mg/cm² because this unit of measurement does not depend on the number of layers of non-lead-based paint and can usually be obtained without damaging the painted surface. All measurements of lead in paint should be in mg/cm², unless the surface area cannot be measured or if all paint cannot be removed from the measured surface area. In such cases, concentrations may be reported in weight percent (%) or parts per million by weight (ppm).”^{vi}

Furthermore, EPA has previously issued guidance on lead content classification as follows:

“... The rule, at 24 CFR 35.86 and 40 CFR 745.103 states that a lead-based paint free finding must demonstrate that the building is free of ‘paint or other surface coatings that contain lead in excess of 1.0 milligrams per square centimeter (1.0 mg / cm²) or 0.5 percent by weight (5000 ppm).’ The State standards are not applicable, whether more or less stringent, since a State cannot amend Federal requirements.”^{vii}

In recognition of the various action levels the testing results are classified as follows for this report:

- Painted surfaces with readings at or above 0.7 mg / cm² are considered - Positive
- Painted surfaces with readings below 0.7 mg / cm² are considered - Negative

The individual readings have been provided on all field data sheets. Any future change in action levels by one of the regulating agencies may affect the classification of results.

For purposes of this survey, any material containing any detectable level of lead is subject to OSHA’s Lead Exposure in Construction Rule (29 CFR Part 1926). Any work that disturbs these materials must be performed in accordance with these and any other applicable standards.

6.0 METHOD OF TESTING

Asbestos

All samples were collected using a clean knife, chisel or the appropriate tools. The sample location was first moistened with water in order to limit dust release. Each sample was extracted carefully so as not to disturb adjacent materials while still penetrating through all layers of the material sampled. Each sample was sealed in the appropriate sized plastic zip lock bag and the bag then labeled with a unique identification number. The sample number, description and location was then recorded on a log and plotted on a floor plan of the structure or area. Sampling tools were cleaned after collecting each sample. Any excess dust or debris from the sample location was cleaned using a moistened cloth. Whenever possible, samples were collected from previously damaged portions of the material in order to minimize damage to the material.

A total of twenty one (21) samples were submitted to LA Testing in South Pasadena, California. LA Testing is accredited under the NIST/NVLAP program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis.

The analyses of the samples in this report were performed using polarized light microscopy using the EPA method 600/R-93/116. The phase abundances provided are visually estimated and expressed as percent area. Total percentage of sample constituents may total greater than 100 due to trace amounts. The limit of detection for this analytical method is less than one percent. In multilayer samples, unless otherwise specified, the asbestos concentration is reported for the layer where asbestos is found. These results lie within the statistical limits of variability calculated for standard reference samples routinely analyzed in the laboratory. On a per sample basis, the accuracy and precision of the results depend on the type of sample and its asbestos content.

Lead-Based Paint

Paint Testing: The method employed was X-ray fluorescence (XRF) using a Niton XLp 303A by Thermo Scientific, this unit uses a radioactive source of Cadmium 109. It was calibrated to NIST standard lead concentration samples prior to and after its use. Uncoated surfaces and other bare materials were not tested. The instrument was operated in "Quick Mode," where the duration for each test result is determined by a combination of:

- The actual reading relative to the designated action level;
- Age of the radioactive source;
- The substrate on which the test was taken.

The instrument's calibration was verified according to the manufacturer's specifications in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument.

The readings from this instrument produce a 95% confidence level that the "lead" reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level.

7.0 SUMMARY OF RESULTS

Asbestos

The following materials were found to contain asbestos and are considered ACM:

Material Description	Material Locations	Condition	Asbestos Percentage	Estimated Quantity*
Plaster	Throughout	Good	<1% Chrysotile	3,000
12" White VCT & Black Mastic	W. Hall	Good	2% Chrysotile	2,000
Spray Acoustic	Throughout	Good	4% Chrysotile	3,000

Material Description	Material Locations	Condition	Asbestos Percentage	Estimated Quantity*
9" Tan VCT & Black Mastic	Storage Room	Good	5-6% Chrysotile	1,000
Roofing Materials	Roof	Good	Presumed	3,000

* These quantities are only approximations. The exact quantities should be measured by the abatement contractor during the bidding process.

Samples that were found to contain less than one percent (<1%) asbestos by PLM analysis should be further analyzed using the 1000 point count method. This analysis method has a lower detection limit and may if performed yield results lower than the regulatory levels of Cal-OSHA.

All other suspect materials sampled during this assessment tested negative for asbestos.

Lead-Based Paint

Paint Sampling: All interior and exterior painted surfaces sampled during the inspection tested negative for lead lead-based paint.

8.0 RECOMMENDATIONS

Given the clients anticipated renovation of the subject property buildings, Andersen Environmental recommends the following:

Asbestos

Samples that were found to contain less than one percent (<1%) asbestos by PLM analysis should be further analyzed using the 1000 point count method. This analysis method has a lower detection limit and may if performed yield results lower than the regulatory levels of Cal-OSHA.

It is highly recommended that abatement monitoring be performed by the asbestos consultant (Andersen Environmental) if asbestos abatement is to be performed while non-abatement persons (employees, tenants, other building occupants, or general public) are present in adjacent areas. Abatement monitoring included the collection of air samples in adjacent areas to demonstrate that asbestos fibers are not migrating out of the regulated areas. In addition to air sampling, the monitoring includes oversight of the abatement contractor to ensure that the work is being conducted in compliance with all applicable regulations and in accordance with the scope of work and abatement specifications. Such abatement monitoring serves to limit the legal liabilities of the building owner.

If materials found to contain asbestos and/or presumed to contain asbestos are going to be disturbed or removed; by law, they must first be abated and properly disposed of by a licensed and Cal/OSHA registered asbestos abatement contractor prior to any renovation or demolition activities.

In as such that no destructive investigation has been performed during the survey, the report may not reveal concealed asbestos-containing materials. Subsequently, additional investigation including construction documents review and/or destructive investigation is recommended as a precaution to prevent accidental exposure when construction or demolition is planned for this facility. Any suspect

materials that are uncovered during construction activities; that were not sampled during this assessment, should be considered asbestos containing, unless sampled to prove otherwise.

Lead-Based Paint

All analyzed lead paints and glazes are not considered to be lead-based. However, the removal of material containing any detectable level of lead is subject to OSHA's Lead Exposure in Construction Rule (29 CFR part 1926) and Title 8, Section 1542.1 of the California Code of Regulations.

9.0 RENOVATION, REPAIR AND PAINTING (RRP) RULE

Anyone performing renovation, repair and painting projects that disturb painted surfaces in residences, child care facilities, and schools built before 1978 must be EPA RRP certified and follow specific lead safe work practices to prevent lead contamination. The rule applies where more than 6 square feet per room or 20 square feet outside will be "disturbed" by workers(s) being compensated.

10.0 INSPECTION LIMITATIONS

This Assessment was planned, developed, and implemented based on Andersen Environmental previous experience in performing asbestos and lead-based paint assessments. This inspection was patterned after Chapter 7 of the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision)* and NESHAPS; 40 CFR 61 Subpart M. Andersen Environmental utilized state-of-the-art-practices and techniques in accordance with regulatory standards while performing this assessment. Andersen Environmental evaluation of the relative risk of exposure to lead identified during this inspection/risk assessment is based on conditions observed at the time of the inspection. Andersen Environmental cannot be responsible for changing conditions that may alter the relative exposure risk or for future changes in accepted methodology. Andersen Environmental uses only qualified personnel to perform building surveys. Reasonable effort was made to survey accessible suspect materials. Additional suspect materials may be located between walls, in voids, or in other inaccessible areas; caution should be exercised regarding these areas.

Andersen Environmental cannot warrant that these buildings do not contain LBP or ACM in locations other than those identified in this report.

Enclosed are the diagram(s), actual test results, and all relevant certifications and licenses.

Survey and Report by:

Benjamin Curry
DOSH Certified Asbestos Consultant No. 09-4549
CDPH Certified Lead Inspector/Assessor/Supervisor No. 20747

-
- i 1997 Revision
 - ii 1997 Revision
 - iii Parts per million
 - iv Applies to sale and application of LBP.
 - v Applies to construction related activities
 - vi Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision).
 - vii Office of Pollution Prevention and Toxics, (August 20, 1996)



LIMITED ASBESTOS & LEAD-BASED PAINT ASSESSMENT REPORT

Presented To:

Faithful & Gould
3400 North Central Avenue
Suite 2400
Pheonix, AZ 85014

Assessment Location:

Marine Park
1625 Marine Ave.
Manhattan Beach, CA. 90266

Andersen Environmental Project No. 1304-584

Report Date: June 5, 2013

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APPENDICES

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APPENDIX B	XRF RESULTS
APPENDIX C	INSPECTOR'S CERTIFICATIONS
APPENDIX D	MAPS / FLOOR PLANS
APPENDIX E	DHS FORM 8552

1.0 INTRODUCTION

This report presents the results of Andersen Environmental's Limited Asbestos & Lead-Based Paint Assessment of 1625 Marine Ave., Manhattan Beach Ca. 90266 (referred to hereunder as the subject property). This document is prepared for the sole use of The City of Manhattan Beach and any regulatory agencies that are directly involved in this project. No other party should rely on the information contained herein without prior written consent of The City of Manhattan Beach scope of services, inspection methodology, and results are presented below.

2.0 SCOPE OF WORK

The purpose of this inspection and survey is to identify the Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) present within the interiors and exteriors of the subject property building. As the asbestos sampling is destructive in nature, and may void any roof warranties, the roofing materials of the building were not sampled during this assessment.

Asbestos

The purpose of this assessment was to perform bulk sampling of suspect materials in order to determine the presence or absence of ACM associated with the one building at the subject property. The scope of this assessment included reviewing any provided building records and/or previous investigation records, visually identifying homogeneous areas and functional spaces, collecting bulk samples of suspect ACM, interpreting the laboratory results, producing a written report of our findings, recommendations, floor plans and approximations of ACM quantities.

Lead-Based Paint

The purpose of this assessment was to perform an X-Ray Fluorescence (XRF) survey of the three buildings onsite in order to determine which components may be covered with lead laden coatings. To comply with Title 17, EPA and HUD guidelines, painted and varnished surfaces in every accessible "room equivalent" were sampled for the presence of lead-based paint (LBP) and the condition of the painted surfaces was assessed. The intent was to ascertain the presence of LBP above the Los Angeles County action level using X-Ray Fluorescence. If LBP was found, the inspection would identify individual architectural components and their respective concentrations of lead in such a manner that this report would be used to characterize the presence of LBP at this property. The scope of work also included producing a written report of our findings and recommendations.

3.0 PROPERTY DESCRIPTION

The subject property consists of a park with a Community Building, a Storage Building, an open pavilion and a small storage shed. The small storage shed is constructed of wood with wood siding and an asphalt shingled roof. The Community Building and Storage Building are constructed with CMU block walls on concrete slab foundations with pitched roofs finished with composite tiles. The interior finishes include drywall walls and ceilings with acoustic ceiling tile drop ceilings and vinyl floor tiles or concrete floors.

4.0 INSPECTOR'S QUALIFICATIONS

Andersen Environmental performed the lead inspection at the site using a Niton XRF spectrum analyzer instrument. Freddy Torres has completed an EPA approved curriculum in Lead in Construction Inspector / Risk Assessor Training.

Benjamin Curry and Lamont Leiva of Andersen Environmental performed the asbestos inspection at the site. Lamont Leiva is certified by the State of California Division of Occupational Safety and Health (DOSH) as Certified Site Surveillance Technician and worked under the supervision of Benjamin Curry, a DOSH Certified Asbestos Consultant.

Personnel certificates have been provided in *Appendix C*.

5.0 TESTING PROTOCOL

Asbestos

The sampling was performed in accordance with requirements of the following regulations:

- Asbestos Hazard Emergency Response Act (AHERA); 40 CFR 763 Subpart E
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This report is a record of activities, observations, analytical results and recommendations performed to date.

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XRF Testing: Testing of the painted surfaces was patterned after the inspection protocol in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housingⁱⁱ. In every “room equivalent” within the tested property, one representative surface of each “testing combination” was tested. Multiple readings were collected to resolve inconsistencies in the test results.

Regulatory Compliance: Several public (government) agencies have a published “regulatory action level” to classify LBP. To further complicate matters, some of the established “levels” are quantified in different units of measurement. Listed below are the current regulatory agencies that have defined LBP, along with the respective action level:

<u>Agency</u> (ppm ⁱⁱⁱ)	<u>Ordinance #</u>	<u>Action level (mg / cm²)</u>	<u>Action level</u>
HUD / EPA	24 CFR 35.86 & 40 CFR 745.103	1.0 mg / cm ²	5,000 ppm

L.A. County	Title 11, 11.28.010	0.7 mg / cm ²	600 ppm ^{iv}
OSHA / CAL OSHA	29 CFR 1926.62 & Title 8, 1532.1	<i>Not Specified</i>	600 ppm ^v

HUD / EPA have recently issued the following guidance regarding units of measurement for paint samples:

“Report lead paint amounts in mg/cm² because this unit of measurement does not depend on the number of layers of non-lead-based paint and can usually be obtained without damaging the painted surface. All measurements of lead in paint should be in mg/cm², unless the surface area cannot be measured or if all paint cannot be removed from the measured surface area. In such cases, concentrations may be reported in weight percent (%) or parts per million by weight (ppm).”^{vi}

Furthermore, EPA has previously issued guidance on lead content classification as follows:

“... The rule, at 24 CFR 35.86 and 40 CFR 745.103 states that a lead-based paint free finding must demonstrate that the building is free of ‘paint or other surface coatings that contain lead in excess of 1.0 milligrams per square centimeter (1.0 mg / cm²) or 0.5 percent by weight (5000 ppm).’ The State standards are not applicable, whether more or less stringent, since a State cannot amend Federal requirements.”^{vii}

In recognition of the various action levels the testing results are classified as follows for this report:

- Painted surfaces with readings at or above 0.7 mg / cm² are considered - Positive
- Painted surfaces with readings below 0.7 mg / cm² are considered - Negative

The individual readings have been provided on all field data sheets. Any future change in action levels by one of the regulating agencies may affect the classification of results.

For purposes of this survey, any material containing any detectable level of lead is subject to OSHA’s Lead Exposure in Construction Rule (29 CFR Part 1926). Any work that disturbs these materials must be performed in accordance with these and any other applicable standards.

6.0 METHOD OF TESTING

Asbestos

All samples were collected using a clean knife, chisel or the appropriate tools. The sample location was first moistened with water in order to limit dust release. Each sample was extracted carefully so as not to disturb adjacent materials while still penetrating through all layers of the material sampled. Each sample was sealed in the appropriate sized plastic zip lock bag and the bag then labeled with a unique identification number. The sample number, description and location was then recorded on a log and plotted on a floor plan of the structure or area. Sampling tools were cleaned after collecting each sample. Any excess dust or debris from the sample location was cleaned using a moistened cloth. Whenever possible, samples were collected from previously damaged portions of the material in order to minimize damage to the material.

A total of twenty nine (29) samples were submitted to LA Testing in South Pasadena, California. LA Testing is accredited under the NIST/NVLAP program for asbestos in bulk material by polarized light microscopy and the State of California for asbestos analysis.

The analyses of the samples in this report were performed using polarized light microscopy using the EPA method 600/R-93/116. The phase abundances provided are visually estimated and expressed as percent area. Total percentage of sample constituents may total greater than 100 due to trace amounts. The limit of detection for this analytical method is less than one percent. In multilayer samples, unless

otherwise specified, the asbestos concentration is reported for the layer where asbestos is found. These results lie within the statistical limits of variability calculated for standard reference samples routinely analyzed in the laboratory. On a per sample basis, the accuracy and precision of the results depend on the type of sample and its asbestos content.

Lead-Based Paint

Paint Testing: The method employed was X-ray fluorescence (XRF) using a Niton XLp 303A by Thermo Scientific, this unit uses a radioactive source of Cadmium 109. It was calibrated to NIST standard lead concentration samples prior to and after its use. Uncoated surfaces and other bare materials were not tested. The instrument was operated in “Quick Mode,” where the duration for each test result is determined by a combination of:

- The actual reading relative to the designated action level;
- Age of the radioactive source;
- The substrate on which the test was taken.

The instrument’s calibration was verified according to the manufacturer's specifications in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument.

The readings from this instrument produce a 95% confidence level that the “lead” reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level.

7.0 SUMMARY OF RESULTS

Asbestos

The following materials are presumed to contain asbestos and are considered ACM unless further sampling proves otherwise:

Material Description	Material Locations	Condition	Asbestos Percentage	Estimated Quantity*
Roofing Materials (Mastic & Felts)	Roof	Good	Presumed	3,000

* These quantities are only approximations. The exact quantities should be measured by the abatement contractor during the bidding process.

All other suspect materials sampled during this assessment tested negative for asbestos.

Lead-Based Paint

Paint Sampling: All interior and exterior materials sampled during the inspection tested negative for lead concentrations.

8.0 RECOMMENDATIONS

Given the clients anticipated renovation of the subject property buildings, Andersen Environmental recommends the following:

Asbestos

Samples that were found to contain less than one percent (<1%) asbestos by PLM analysis should be further analyzed using the 1000 point count method. This analysis method has a lower detection limit and may if performed yield results lower than the regulatory levels of Cal-OSHA.

It is highly recommended that abatement monitoring be performed by the asbestos consultant (Andersen Environmental) if asbestos abatement is to be performed while non-abatement persons (employees, tenants, other building occupants, or general public) are present in adjacent areas. Abatement monitoring included the collection of air samples in adjacent areas to demonstrate that asbestos fibers are not migrating out of the regulated areas. In addition to air sampling, the monitoring includes oversight of the abatement contractor to ensure that the work is being conducted in compliance with all applicable regulations and in accordance with the scope of work and abatement specifications. Such abatement monitoring serves to limit the legal liabilities of the building owner.

If materials found to contain asbestos and/or presumed to contain asbestos are going to be disturbed or removed; by law, they must first be abated and properly disposed of by a licensed and Cal/OSHA registered asbestos abatement contractor prior to any renovation or demolition activities.

In as such that no destructive investigation has been performed during the survey, the report may not reveal concealed asbestos-containing materials. Subsequently, additional investigation including construction documents review and/or destructive investigation is recommended as a precaution to prevent accidental exposure when construction or demolition is planned for this facility. Any suspect materials that are uncovered during construction activities; that were not sampled during this assessment, should be considered asbestos containing, unless sampled to prove otherwise.

Lead-Based Paint

All analyzed lead paints and glazes are not considered to be lead-based. However, the removal of material containing any detectable level of lead is subject to OSHA's Lead Exposure in Construction Rule (29 CFR part 1926) and Title 8, Section 1542.1 of the California Code of Regulations.

9.0 RENOVATION, REPAIR AND PAINTING (RRP) RULE

Anyone performing renovation, repair and painting projects that disturb painted surfaces in residences, child care facilities, and schools built before 1978 must be EPA RRP certified and follow specific lead safe work practices to prevent lead contamination. The rule applies where more than 6 square feet per room or 20 square feet outside will be "disturbed" by workers(s) being compensated.

10.0 INSPECTION LIMITATIONS

This Assessment was planned, developed, and implemented based on Andersen Environmental previous experience in performing asbestos and lead-based paint assessments. This inspection was patterned after

Chapter 7 of the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision)* and NESHAPS; 40 CFR 61 Subpart M. Andersen Environmental utilized state-of-the-art-practices and techniques in accordance with regulatory standards while performing this assessment. Andersen Environmental evaluation of the relative risk of exposure to lead identified during this inspection/risk assessment is based on conditions observed at the time of the inspection. Andersen Environmental cannot be responsible for changing conditions that may alter the relative exposure risk or for future changes in accepted methodology. Andersen Environmental uses only qualified personnel to perform building surveys. Reasonable effort was made to survey accessible suspect materials. Additional suspect materials may be located between walls, in voids, or in other inaccessible areas; caution should be exercised regarding these areas.

Andersen Environmental cannot warrant that these buildings do not contain LBP or ACM in locations other than those identified in this report.

Enclosed are the diagram(s), actual test results, and all relevant certifications and licenses.

Survey and Report by:

Benjamin Curry
DOSH Certified Asbestos Consultant No. 09-4549
CDPH Certified Lead Inspector/Assessor/Supervisor No. 20747

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- i 1997 Revision
 - ii 1997 Revision
 - iii Parts per million
 - iv Applies to sale and application of LBP.
 - v Applies to construction related activities
 - vi Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision).
 - vii Office of Pollution Prevention and Toxics, (August 20, 1996)