ABBREVIATIONS

AB	ANCHOR BOLT	FH
ACT ADJ	ACOUSTICAL TILE ADJACENT/ADJUSTABLE	FHC FIN
AFF	ABOVE FINISH FLOOR	FIN GR
AHU	AIR HANDLING UNIT	FL
ALT ALUM	ALTERNATE NO. ALUMINUM	FLR FR
ANOD	ANODIZED	ET
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	
APPD APPROX	APPROVED APPROXIMATELY	FTG FUT
ARCH	ARCHITECT	GA
ASSY AVG	ASSEMBLY AVERAGE	GALV
B/B	BACK TO BACK	GB GC
BLDG	BUILDING	GEN
BLKG BLST	BLOCKING BALLAST	GL GLZ
BM	BEAM/BENCH MARK	
BOS	BOTTOM OF STEEL	HC
BRG	BEARING	HD
BUR	BUILT UP ROOFING	HDW
C / C CAB	CENTER TO CENTER CABINET	HM
CB	CATCH BASIN	HORIZ HP
CBB	BOARD	 ЦТ
CEM CEM PLAS	CEMENT CEMENT PLASTER	HVAC
CER		HW
CF CF/CI	CONTRACTOR	HWH
	FURNISHED/CONTRACTOR	U
CF/OI	CONTRACTOR FURNISHED/OWNFR	IF IN
055	INSTALLED	INCL
CFF CFLG	COUD FORMED FRAMING COUNTER FLASHING	INSTL
CG CIP	CORNER GUARD	
CJ	CONTROL JOINT /	INV EL
CL	CENTERLINE	J BOX JT
CLG CLO	CEILING CLOSET	LAB
CLR	CLEAR	LAM
CLT CMU	CLEAT CONCRETE MASONRY UNIT	LBS LF
CO		LH
CONC	CONCRETE	LPT LT
COND CONST	CONDITION CONSTRUCTION	LTG
CONT	CONTINUE / CONTINUATION /	MAINT
CONTR	CONTRACTOR	MAX MECH
COORD COP	COORDINATE COPING	MED
CORR	CORRIDOR	MFG MFR
CPT CSK	CARPET COUNTER SUNK	MIN MISC
CT	CERAMIC TILE	MS
CU FT	CUBIC FOOT / CUBIC FEET	MTD MTL
CU YD CW	CUBIC YARDS COLD WATER	MULL
D	DEPTH / DEEP	N N/A
DEG	DEGREE	NCOMBL NIC
DEL DEMO	DELETE DEMOLITION	NO
DET	DETAIL	NOM NTS
DETN DEV	DEVELOPED	0/0 0A
	DRINKING FOUNTAIN	OC
DIAG	DIAGONAL	OD
DIM DISP	DIMENSION DISPENSER	OF OF/CI
DN		5.7 0 1
DS	DOWNSPOUT	OF/OI
DTL DWG	DETAIL DRAWING	OFF
E E ^	EAST	OH
EJ	EXPANSION JOINT	
EL FLFC	EASEMENT LINE FLECTRIC / ELECTRICAL	ORD
ELEV	ELEVATOR / ELEVATION	ORIG ORN
ENCL	ENCLOSURE	PERM
ENGR FOS	ENGINEER / ENGINEERING EDGE OF SLAB	PLAM
EQ	EQUAL	PLAS PLBG
EQUIP EST	EQUIPMENT ESTIMATE	PLYWD
EW	EACH WAY	PNL POL
EXP	EXPOSED / EXPAND /	PR PREFIN
EXT	EXTERIOR / EXTERNAL /	PRELIM
F/F	EXTINGUISHER FACE TO FACE	PROJ
FFEL		
FA	FIRE ALARM / FACE AREA / FRESH AREA	PTD
FACP FD	FIRE ALARM CONTROL PANEL FLOOR DRAIN	PTN
FDTN		PVC OTY
FUV	CABINET	RA
FE FEC	FIRE EXTINGUISHER	RB
		RBR RCP
FFE		

FIRE HYDRANT / FIRE HOSE
FIRE HOSE CABINET FINISH
FINISHED GRADE FIXTURE
FRAME / FIRE RATED / FIRE
FOOT / FEET / FIRE TREATED /
FULLY TEMPERED FOOTING
FUTURE
GALLONS
GALVANIZED GYPSUM BOARD
GENERAL CONTRACTOR
GLASS / GROUND LEVEL
GLAZING GROUND
GYPSUM BOARD HANDICAPPED ACCESSIBLE /
HOLLOW CORE
HARDWARE
HARDWOOD HOLLOW METAL
HORIZONTAL HIGH POINT / HORSEPOWER /
HIGH PRESSURE
AIR CONDITIONING HOT WATER
HOT WATER HEATER
DESIGN
NCHES
NCLUDING NSTALL
INSULATE / INSULATION
NVERT
INVERT ELEVATION JUNCTION BOX
LAMINATE
LAVATORY POUNDS
LINEAR FEET
light Lighting
MAINTENANOL
MECHANICAL MEDIUM
MANUFACTURING MANUFACTURER
MISCELLANEOUS MOP SINK
MOUNTED METAL
MULLION
NOT APPLICABLE
NONCOMBUSTIBLE NOT IN CONTRACT
NOT TO SCALE
OUT TO OUT OVERALL / OUTSIDE AIR
ON CENTER
OUTSIDE FACE OWNER
-URNISHED/CONTRACTOR INSTALLED
OWNER FURNISHED/OWNER
OFFICE OPPOSITE HAND / OVERHEAD
OVERHANG
OPPOSITE
OVERFLOW ROOF DRAIN ORIGINAL
PERMANENT PLATE / PROPERTY LINE
PLASTIC LAMINATE PLASTER / PLASTIC
PANEL
POLISHED PAIR / PIPE RAIL
PREFINISHED
PREPARATION
PROJECT PAINT / PRESSURE TREATED
POST TENSION CONCRETE

REINFORCED STEEL BAR
RECESSED
REFERENCE / REFRIGERATOR
REINFORCED /
REINFORCEMENT
REMOVE
RIGHT HAND
ROOF LEADER
RAILING
ROOM
ROUGH OPENING
RIGHT OF WAY
REFERENCE POINT
RATING
SOUTH
SALVAGE
SANITARY
SCHEDULE / SCHEDULED
SCHEMATIC
SCUPPER
SOLID CORE WOOD DOOR
SECTION
SOLIARE FOOT / SOLIARE
FEET / SUPPLY FAN
SINGLE
SHEET
SIMILAR
SEALANT
SPECIFICATION(S)
SUPPLY
SOLIARE
STAINLESS STEEL
SOUND TRANSMISSION
CLASS
STANDARD
STEEL
STORAGE
STRUCTURAL
SURFACE
SUSPENDED
SYMMETRICAL
TOP AND BOTTOM
TO BE DETERMINED
THICK / THICKNESS
THRESHOLD
THROUGH
TOP OF
TOP OF CONCRETE / TOP OF
CURB
PAVEMENT
TOP OF STEEL / TOP OF SLAB
TOP OF WALL
TREATED
TUBE STEEL
UNDERCUT
UNDERCUT UNDERWRITER'S LABORATORIES
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR WINDOW
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR WINDOW WIDE FLANGE
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR WINDOW WIDE FLANGE WATER RESISTANT / WEATHER RESISTANT /
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR WINDOW WIDE FLANGE WATER RESISTANT / WEATHER RESISTANT / WEIGHT
UNDERCUT UNDERWRITER'S LABORATORIES UNFINISHED UNLESS NOTED OTHERWISE URINAL UTILITY VARIES VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VENT THROUGH ROOF WEST / WIDTH / WIDE WITH WITHOUT WOOD BLOCKING WATER CLOSET / WALL COVERING WOOD / WOOD DOOR WINDOW WIDE FLANGE WATER RESISTANT / WEATHER RESISTANT WEIGHT WELDED WIRE FABRIC

REBAR

REC

REF

REM

REV

ROW

RTG

RTU

RVL

SALV

SCHEM

SCP SCWD

SD

SEC

SGL

SHT

SLNT

SPEC

SPLY

SPRT

STC

STL JST

STRUCT

STOR

SURF

SUSP

SYMM

TEMP

THRES

THRU

TOC

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VEST

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WBI

WDW

WWF

POLYVINYL CHLORIDE

RUBBER BASE / RESILIENT

REFLECTED CEILING PLAN

QUANTITY

BASE

RUBBER

RETURN AIR

THK

T&B

TBD

SECT

SAN SCHED

REQD

RGD INS

REINF

DER
PENING WAY CE POINT 9 UNIT
RAIN
OOT / SQUARE PPLY FAN
ATION(S)
S STEEL RANSMISSION D
ST
ED ICAL BOTTOM FERMINED NE TURE / TEMPORARY IICKNESS LD
DNCRETE / TOP OF
ASONRY ARAPET / TOP OF T FEEL / TOP OF SLAB ALL
EL
T RITER'S DRIES ED OTED OTHERWISE
MPOSITION TILE
E FIELD OUGH ROOF DTH / WIDE
DCKING .OSET / WALL G OOD DOOR
NGE ESISTANT / RESISTANT
VIRE FABRIC RDS

WORK.

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1 PLAN CHECK REVISIONS			2023.05.12
Revision	Ву	Appd	YYYY.MM.DD

ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

SANTA BARBARA METROPOLITAN TRANSIT DISTRICT TERMINAL 2 - RECOMMISSIONING

GENERAL NOTES

. GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO STARING WORK. INCLUDING UTILITIES AND ALL OTHER WORK AND FACILITIES THAT AFFECT THIS PROJECT. ANY DISCREPANCIES, CONFLICTS OR OMISSIONS, ETC. SHALL BE REPORTED TO PROJECT MANAGER BEFORE PROCEEDING WITH THE WORK. NO ALLOWANCE SHALL BE MADE FOR ANY EXTRA EXPENSE OR EXTENSION OF TIME DUE TO CONTRACTOR'S FAILURE OR NEGLECT OF COMPLETE EXAMINATION OF THE JOB SITE.

2. CONTRACTOR SHALL PROTECT AREAS FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING STRUCTURE OR EQUIPMENT SHALL BE CONTRACTOR'S RESPONSIBILITY AND SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE GENERAL CONTRACTOR. 3. ALL CONSTRUCTION WORK, ARCHITECTURAL, STRUCTURAL, ELECTRICAL, ETC. SHALL CONFORM TO THE SANTA BARBARA MUNICIPAL CODE AS WELL AS

THE ANY OTHER CODES AND STANDARDS APPLICABLE TO THE PROJECT SCOPE. 4. THE CONTRACTOR SHALL SUBMIT TO THE MTD A DETAILED CONSTRUCTION SCHEDULE INDICATING PHASING OF WORK FROM START TO FINISH OF PROJECT INCLUDING A CRITICAL PATH SCHEDULE.

5. ALL DIMENSIONS ARE FROM FINISHED FACE TO FINISHED FACE, UNLESS OTHERWISE NOTED.

6. ALL WORK LISTED SHOWN OR IMPLIED ON ANY CONSTRUCTION DOCUMENTS SHALL BE SUPPLIED AND INSTALLED BY THE GENERAL CONTRACTOR EXCEPT WHERE OTHERWISE NOTED. THE GENERAL CONTRACTOR SHALL CLOSELY COORDINATE HIS OR HER WORK WITH THAT OF OTHER SUB-CONTRACTORS

7. THE CONTRACTOR SHALL OBTAIN THE BUILDING PERMIT. EACH SUBCONTRACTOR SHALL OBTAIN SUCH PERMITS, LICENSES AND INSPECTIONS NECESSARY FOR PERFORMANCE OF HIS OR HER WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO THE OWNER 8. THE CONTRACTOR SHALL MAINTAIN A CORRECT AND COMPLETE SET OF CONSTRUCTION DOCUMENTS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION FOR USE BY ALL TRADES AND SHALL PROVIDE ALL SUBCONTRACTORS WITH CURRENT CONSTRUCTION DOCUMENTS AS REQUIRED. 9. THE GENERAL CONTRACTOR SHALL LEGALLY REMOVE ALL RUBBISH AND WASTE MATERIALS ON A REGULAR BASIS, INCLUDING THAT OF ALL SUBCONTRACTORS AND TRADES. HE OR SHE SHALL EXERCISE STRICT CONTROL OVER JOB CLEANING THROUGHOUT CONSTRUCTION, INCLUDING FINA CLEAN UP UPON COMPLETION OF WORK.

10. IT SHALL BE UNDERSTOOD, UNLESS OTHERWISE STATED, THAT ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE OF THE PROJECT BY THE MTD. 11. THE CONSTRUCTION DOCUMENTS ARE PROVIDED TO ILLUSTRATE THE DESIGN AND GENERAL TYPE OF CONSTRUCTION DESIRED AND IMPLY THE FINEST QUALITY OF CONSTRUCTION, MATERIALS AND WORKMANSHIP. THE GENERAL CONTRACTOR IN ASSUMING RESPONSIBILITY FOR THE WORK

INDICATED SHALL COMPLY WITH THE SPIRIT AS WELL AS THE LETTER IN WHICH THEY WERE DRAWN. 12. CONTRACTOR SHALL PROVIDE PROTECTION DURING CONSTRUCTION IN ACCORDANCE WITH CHAPTER 33 OF THE CALIFORNIA BUILDING CODE.

13. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS OR OTHER SUPPORT FOR ALL EQUIPMENT AND ALL OTHER ITEMS REQUIRING THE SAME. 14. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS

REGARDING THEIR EXACT MEANING PROJECT MANAGER SHALL BE NOTIFIED FOR CLARIFICATION. 15. IT IS THE CONTRACTORS RESPONSIBILITY TO INSURE THAT INSTALLATION METHODS CONFORM TO ALL BUILDING CODE REQUIREMENTS. THE MATERIALS SPECIFIED ARE INTENDED TO MEET CODE REQUIREMENTS AND DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND CODE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER IMMEDIATELY BY THE CONTRACTOR PRIOR TO PROCEEDING WITH

16. UNLESS OTHERWISE NOTED, DO NOT SCALE DRAWINGS, DIMENSIONS GOVERN. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS. 17. NO SUBSTITUTIONS OF SPECIFIED MATERIALS SHALL BE PERMITTED WITHOUT FIRST SUBMITTING SPECIFICATIONS, SAMPLES AND COST IMPACT FOR PROJECT MANAGER APPROVAL.

18. AT THE TIME OF BID SUBMITTAL, THE CONTRACTOR SHALL ADVISE PROJECT MANAGER IN WRITING OF ANY SPECIFIED MATERIALS OR EQUIPMENT WHICH ARE EITHER UNAVAILABLE OR WILL CAUSE A DELAY IN THE CONSTRUCTION COMPLETION SCHEDULE. 19. DEACTIVATE ALL UTILITY LINES IN CONTRACT AREA BEFORE STARTING WORK AND SECURE PERMISSION FROM OWNER PRIOR TO DEACTIVATION.

20. THE CONTRACTOR SHALL PATCH, REPAIR, REPLACE AND/OR REFINISH ANY EXISTING CONSTRUCTION IN THE CONTRACT AREA THAT IS DAMAGED DURING THE COURSE OF CONSTRUCTION ..

21. THE CONTRACTOR SHALL PROVIDE ALL WORK SHOWN ON THE DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE AS NOT IN CONTRACT (N.I.C). ITEMS MARKED "N.I.C" ARE NOT IN CONTRACT. 22. ANY REVISION OR ADDITIONAL WORK REQUIRED BY THE OWNER, FIELD CONDITIONS OR LOCAL GOVERNING AUTHORITIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER FOR APPROVAL BEFORE PROCEEDING REGARDLESS OF COST, TIME, OR MATERIAL INCREASE.

23. ENTERING INTO AN AGREEMENT WITH THE MTD INDICATES THAT THE CONTRACTOR(S) HAVE VISITED THE JOB SITE, FAMILIARIZED THEMSELVES WITH EXISTING CONDITIONS AND REVIEWED THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. 24. ANY AND ALL REVISIONS SHALL BE WRITTEN CHANGE ORDER FORM AND APPROVED AND AUTHORIZED BY PROJECT MANAGER BEFORE BEGINNING

WORK 25. BEFORE ACCEPTANCE BY THE GENERAL CONTRACTOR, THE COMPLETED CONSTRUCTION SHALL BE CLEANED, LABELS REMOVED, AND ALL OTHER

TOUCH UP COMPLETED. 26. THE CONTRACTOR SHALL SUBMIT SAMPLES OF MATERIAL FINISHES TO PROJECT MANAGER / ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. FAILURE TO DO SO WILL BE THE TOTAL RESPONSIBILITY AND LIABILITY OF THE CONTRACTOR WHETHER SPECIFIED CORRECTLY OR INCORRECTLY ON THE

CONTRACT DOCUMENTS THIS REQUIREMENT IS FOR DOUBLE CHECKING PURPOSES. 27. DAMAGE TO THEIR WORK BY SUBCONTRACTORS SHALL BE REPAIRED BY THE TRADE WHOSE WORK IS DAMAGED AND SHALL BE CHARGED TO THE SUBCONTRACTOR HAVING DAMAGED THE WORK.

28. ALL DISSIMILAR METALLIC MATERIAL SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO PREVENT ELECTROLYSIS.

29. PRODUCT DATA AND SHOP DRAWINGS AS APPLICABLE FOR ALL PRODUCTS AND MATERIALS UTILIZED ON THE PROJECT ARE TO BE SUBMITTED TO THE PROJECT MANAGER / ARCHITECT FOR REVIEW PRIOR TO PERFORMANCE OF THE WORK.

30. BY SUBMITTING A BID AND SUBSEQUENTLY PROCEEDING WITH THE WORK, THE CONTRACTOR REPRESENTS AND WARRANTS TO THE OWNER AND PROJECT MANAGER THAT: (1) TO THE BEST OF THE CONTRACTOR'S KNOWLEDGE, ALL DETAILS, CONSTRUCTION PROCEDURES, EQUIPMENT, AND MATERIALS SHOWN OR SPECIFIED IN THE CONSTRUCTION DOCUMENTS ARE CONSISTENT WITH SOUND, STANDARD, AND ACCEPTABLE PRACTICES WITHIN THE CONSTRUCTION INDUSTRY ALONG WITH ANY SPECIFIC STANDARDS THAT MAY APPLY TO THIS PARTICULAR PROJECT, AND (2) CONTRACTOR IS WILLING AND ABLE TO CONSTRUCT THE WORK IN ACCORDANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS WITHIN THE ALLOTTED TIME AND FOR THE SUBMITTED CONTRACT SUM. IF THE CONTRACTOR PERFORMS ANY PORTION OF THE WORK KNOWING IT TO BE IN ERROR OR IN VIOLATION OF ANY BUILDING CODES, BUILDING STANDARDS OR REQUIREMENTS, OR ANY LEGAL REQUIREMENTS OR WHICH, FROM THE CONTRACTORS REVIEW OF THE CONSTRUCTION AND CONTRACT DOCUMENTS, THE CONTRACTOR SHOULD REASONABLY HAVE KNOWN THAT THE DESIGN OF THE PROJECT OR THE CONSTRUCTION DOCUMENTS CONTAINED ERRORS, OMISSIONS, INCONSISTENCIES OR DISCREPANCIES, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY THEREFORE AND SHALL BEAR ALL COSTS ATTRIBUTABLE THERETO.

PLUMBING FIXTURE CALCULATIONS

PLUMBING OCCUPANT LOADS (CPC CHAPTER 4 TABLE 4-1)

SSUE FOR BID

Issued

PLAN CHECK RESUBMITTAL NO. 2

PLAN CHECK RESUBMITTAL NO.

LAN CHECK SUBMITTA

CCUPANCY TYPE	AREA (SF)	LOAD FACTOR / SF	# PERSONS
FFICE, GROUP B	2,660	150	17.73
OTAL			17.73
OTAL OCCUPANT LOAD = 18	9 MALE 9 FEMALE		
CCUPANCY TYPE	AREA (SF)	LOAD FACTOR / SF	# PERSONS
TORAGE, GROUP S-1	3,491	4000	0.87
OTAL			0.87
OTAL OCCUPANT LOAD = 1	1 MALE 1 FEMALE		

NOTE: CPC 422.2 SEPARATE FACILITIES EXCEPTION 3: IN BUSINESS AND MERCANTILE OCCUPANCIES WITH A TOTAL OCCUPANT LOAD OF 50 OR LESS INCLUDING CUSTOMERS AND EMPLOYEES, ONE TOILET FACILITY, DESIGNED FOR USE BY NO MORE THAN ONE PERSON AT A TIME, SHALL BE PERMITTED FOR USE BY BOTH SEXES.

DRINKING FOUNTAIN NOT REQUIRED FOR OCCUPANT LOAD OF 30 OR LESS (CPC 415.2).

PROVIDED: ONE SINGLE-OCCUPANCY ACCESSIBLE TOILET ROOM & ONE SINGLE-OCCUPANCY NON-ACCESSIBLE TOILET ROOM.

PROJECT TEAM

OWNER	
NAME:	SANTA BARBARA ME TRANSIT DISTRICT
CONTACT:	DAVID RZEPINSKI, M
ADDRESS:	5353 OVERPASS RD. GOLETA, CA 93111
PHONE: EMAIL:	(310) 692-0274 drzepinski@sbmtd.gov

<u>DESIGN TE</u>	AM:
NAME:	STANTEC ARC
CONTACT:	WILLIAM TODE DESIGN TEAM
ADDRESS:	801 S. FIGUER LOS ANGELES
PHONE:	(323) 387-8919

PROJECT INFORMATION

PROJECT ADDRESS: 5353 OVERPASS RD. GOLETA, CA 93111 LEGAL DESCRIPTION: APN 071-220-010 <u>ZONE</u>: IG

SITE AREA: 86,630 SF, 1.99 ACRES

RENOVATED WASH BUILDING = S-2 - MOTOR VEHICLE REPAIR EXISTING MAINTENANCE / OFFICE BUILDING = S-2 - MOTOR VEHICLE REPAIR EXISTING NORTH PARKING CANOPY = S-1 - PARKING EXISTING CENTER PARKING CANOPY = S-1 - PARKING *OCCUPANCIES FOR EXISTING BUILDINGS ARE UNCHANGED AND EXITING LOAD FACTOR(S) REMAIN UNCHANGED.

WASH BUILDING, EXISTING PARKING CANOPIES - IIB EXISTING MAINTENANCE/OFFICE BLDG - V

RENOVATED WASH BUILDING = 1,210 SQFT EXISTING NORTH PARKING CANOPY = 9,922 SQFT

PROJECT DESCRIPTION:

- 2. SITEWORK INCLUDES:
- D. ADDITION OF NEW VAN ACCESSIBLE PARKING SPACE.

- INCLUDING CONCRETE EQUIPMENT PAD, BOLLARDS, AND ELECTRICAL CONNECTION. FOR NEW FARE COLLECTION VAULT.
- INCLUDING: COUNTERTOP IN BREAK ROOM.
- RESTROOMS

- DESIGNATED FOR REMOVAL.
- COUNTY
- CONSTRUCTION.
- CONTRACTOR'S SOLE EXPENSE

Consultant



Los Angeles, CA 90017-3007

Permit/Seal	
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	DR CTION

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By Appd YYYY.MM.DI

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2023.07.1

023.05.1

ARA METROPOLITAN FRICT NSKI, MTD PROJECT MANAGER SS RD. 93111

CHITECTURE & STANTEC ENGINEERING D. AIA / PROJECT MANAGER ROA ST, SUITE 300, S, CA 90017

EXISTING BUILDINGS AND CANOPIES ARE UNSPRINKLERED

EXISTING MAINTENANCE / OFFICE BUILDING = 6,288 SQFT EXISTING CENTER PARKING CANOPY = 13,120 SQFT

THE SCOPE OF THE IMPROVEMENTS FOR THE TERMINAL 2 RECOMMISSIONING PROJECT IS LIMITED TO THE FOLLOWING:

1. OFFSITE WORK INCLUDES THE ADDITION OF A NEW PUBLIC SIDEWALK ALONG OVERPASS ROAD AND ADJACENT LANDSCAPING.

A. DEMOLITION OF EXISTING DAMAGED SITE WALL AND LANDSCAPING AROUND FACILITY PERIMETER. B. NEW PERIMETER SECURITY FENCING AND VEHICLE GATES ALONG WITH THE ADDITION OF NEW PEDESTRIAN GATES. C. REPLACEMENT OF EXISTING SITE LIGHTING.

3. REFURBISHMENT OF EXISTING BUS WASH BUILDING. INCLUDING REPLACEMENT OF WASH EQUIPMENT, ROOF STRUCTURE AND MEMBRANE, CONCRETE SLAB-ON-GRADE, DRAINAGE, AND LIGHTING. 4. UPGRADES TO THE EXISTING PARKING CANOPIES IS LIMITED TO REPLACEMENT OF LIGHT FIXTURES, ADDITION OF NEW SECURITY CAMERAS, AND THE ADDITION OF A NEW PUBLIC ADDRESS SYSTEM. INSTALLATION OF NEW ABOVE GROUND 12,000 GALLON DIESEL FUEL TANK,

6. INSTALLATION OF NEW STEEL FRAMED CANOPY ADJACENT TO FUEL TANK 7. MAINTENANCE REPAIRS TO THE EXISTING OFFICE/MAINTENANCE BUILDING A. REPAIR OF GYPSUM BOARD CEILING AND REPLACEMENT OF

B. REPLACEMENT OF EXISTING PLUMBING FIXTURES IN OFFICE AREA C. REPLACEMENT OF LIGHT FIXTURES IN MAINTENANCE BAYS. D. REPAINTING OF INTERIOR AND BUILDING EXTERIOR.

E. REPLACING THE ROOFTOP MECHANICAL UNIT. 8. ABATEMENT OF LEAD PAINT AND ASBESTOS IN AREAS IMPACTED BY OTHER WORK. REFER TO PROJECT SPECIFICATIONS FOR MORE INFORMATION. THE WORK DOES NOT CHANGE CURRENT BUS, EMPLOYEE, OR MTD NON-REVENUE FLEET PARKING QUANTITIES OR CONFIGURATIONS ON THE PROPERTY EXCEPT FOR THE ADDITION OF ONE VAN ACCESSIBLE PARKING STALL.

GENERAL DEMOLITION NOTES

1. THESE NOTES ARE APPLICABLE TO THE ENTIRE PROJECT AND ARE NOT SPECIFIC TO ANY ONE PARTICULAR SUBCONTRACTOR'S SCOPE OF WORK. 2. THE "LIMIT OF DEMOLITION" SHOWN IS APPROXIMATE AND IS GENERALLY

CONSIDERED TO BE THE MINIMUM REMOVAL REQUIREMENTS. CONTRACTOR MUST COORDINATE AS REQUIRED FOR COMPLETE DEMOLITION. 3. CONTRACTOR SHALL LEGALLY DISPOSE OF ALL DEMOLISHED MATERIALS OFF

4. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES NOT SPECIFICALLY

5. THE ON-SITE UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE AT AN APPROXIMATE LOCATION. THE EXTENT, LOCATIONS AND SIZES ARE UNKNOWN. THE CONTRACTOR SHALL POTHOLE AS REQUIRED TO LOCATE AND VERIFY THE UNDERGROUND UTILITY LINES PRIOR TO REMOVAL.

6. CONTRACTOR TO PROTECT AND PRESERVE IN PLACE ANY FOUND SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE RESET BY A LICENSED SURVEYOR AND THE APPROPRIATE PAPERWORK FILED WITH THE CITY OR

7. ALL HAZARDOUS MATERIALS ENCOUNTERED DURING SITE DEMOLITION SHALL BE REMEDIATED AND DISPOSED OF PER STATE, COUNTY, AND EPA REQUIREMENTS. 8. CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL UTILITY AGENCIES APPLICABLE TO THE PROJECT PRIOR TO THE START OF ANY DEMOLITION OR

9. ANY EXISTING UTILITIES AND/OR IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE OWNER AND AGENCY HAVING AUTHORITY, AT THE

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VICINITY MAP



ACCESSIBILITY STATEMENT	SH	EET INDEX
PROJECT COST EXCEEDS CURRENT VALUATION THRESHOLD THEREFORE THE FOLLOWING IMPROVEMENTS ARE PROPOSED TO COMPLY WITH CBC SECTION 11B-202 4 [.]	G-000 G-001	COVER, SHEET INDEX & GENERAL NO TYPICAL MOUNTING HEIGHTS, ACCE
 ACCESSIBLE ENTRANCE: THE MAIN ENTRY DOOR ADJACENT TO THE NEW ACCESSIBLE PARKING STALL MEETS CURRENT CLEARANCES. DOOR HARDWARE TO BE REPLACED WITH CODE COMPLIANT LEVEL TRIM AND DOOR CLOSER. ACCESSIBLE ROUTE TO THE ALTERED AREA: NO INTERIOR MODIFICATIONS ARE REQUIRED BEYOND THE ITEMS LISTED BELOW IN ORDER TO PROVIDE AN ACCESSIBLE ROUTE TO THE ALTERED PORTIONS OF THE BUILDING. ACCESSIBLE RESTROOMS THE EXISTING RESTROOMS ARE TO BE MODIFIED TO CONVERT BOTH INTO SINGLE-OCCUPANCY GENDER NEUTRAL RESTROOMS. ONE OF WHICH WILL BE MADE ACCESSIBLE PER NOTES ON PLANS. THE ADJACENT NON-ACCESSIBLE TROOM IS IMMEDIATELY ADJACENT TO THE ACCESSIBLE TOILET ROOM. A THIRD RESTROOM IN THE MAINTENANCE AREA IS BEING DEMOLISHED TO NO LONGER BE A RESTROOM IN ORDER TO PROVIDE A MINIMUM OF 50% ACCESSIBLE SINGLE-OCCUPANCY RESTROOMS. ACCESSIBLE TELEPHONES: NO TELEPHONES EXIST OR WILL BE PROVIDED WITHIN THE BUILDING. ACCESSIBLE DRINKING FOUNTAINI IS PROVIDE ADJACENT TO THE EXISTING RESTROOMS. A NEW VAN ACCESSIBLE PARKING SPACE IS PROVIDED AT THE SOUTH- EXISTING SPACE IS REQUIRED PER CBC TABLE 118-208.2. ACCESSIBLE PARKING A NEW VAN ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE PARKING SPACE IS REQUIRED PER CBC TABLE 118-208.2. ACCESSIBLE ROUTE FROM ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE PARKING SPACE IS REQUIRED PER CBC TABLE 118-208.2. ACCESSIBLE ROUTE FROM PUBLIC SIDEWALK TO ACCESSIBLE BUILDING ENTRANCE: FROM THE NEW VAN ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE BUILDING ENTRANCE: FROM THE NEW VAN ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE BUILDING ENTRANCE: FROM THE NEW VAN ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE BUILDING ENTRANCE: FROM THE NEW VAN ACCESSIBLE PARKING SPACE A NEW ACCESSIBLE BUILDING ENTRANCE: FROM THE NEW VAN ACCESSIBLE BARKING SPACE A NEW ACC	C-101 C-102 C-103 C-104 C-105 C-106 LD100 L-100 L-101 L-200 L-300 L-301 L-400 L-401 A-100 A-100 A-100 A-100 A-100 A-101 A-121 A-130 S-001 S-002 S-100 S-301 S-302 S-701 Q-121 M-001 M-002 M-003 MD-101 M-901 M-903 P-001 P-200 PD-201 P-202 P-201 P-202 P-601 P-901 P-901	SITE IMPROVEMENTS PUBLIC IMPROVEMENT DETAILS PUBLIC IMPROVEMENT DETAILS PUBLIC IMPROVEMENT DETAILS PUBLIC IMPROVEMENT DETAILS PUBLIC IMPROVEMENT DETAILS TREE PRESERVATION/DEMO PLAN IRRIGATION PLAN WELO CALCULATIONS PLANTING PLAN CONSTRUCTION DETAILS CONSTRUCTION DETAILS IRRIGATION SPECIFICATIONS LANDSCAPE SPECIFICATIONS LANDSCAPE SPECIFICATIONS DEMOLITION SITE PLAN SITE PLAN PLAN OFFICE/MAIN BUILDING PLAN WASH BUILDING PLANS FENCE AND GATE DETAILS GENERAL NOTES STRUCTURAL SPECIAL INSPECTIONS SITE PLAN - STRUCTURAL ENLARGED PLANS AND SECTIONS ENLARGED PLANS AND SECTIONS TYPICAL STRUCTURAL DETAILS WASH BUILDING EQUIPMENT PLAN LEGEND AND GENERAL NOTES MECHANICAL TITLE 24 COMPLIANCE MECHANICAL SCHEDULES AND DETA MECHANICAL SCHEDULES AND DETA MECHANICAL SPECIFICATIONS (1) MECHANICAL SPECIFICATIONS (2) MECHANICAL SPECIFICATIONS (3) PLUMBING COVER SHEET PLUMBING SCHEDULES PLUMBING MAIN BUILDING - GROUND PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING MAIN BUILDING - GROUND PLUMBING MAIN BUILDING - GROUND PLUMBING PETAILS PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING SETEPLAN PLUMBING PETAILS PLUMBING PETAILS PLUMBING SETEPLAN PLUMBING PETAILS PLUMBING PETAILS P
GOLETA MUNICIPAL CODE AND AMENDMENTS 2022 CALIFORNIA BUILDING CODE (CBC) 2022 CALIFORNIA ELECTRICAL CODE (CEC) 2022 CALIFORNIA MECHANICAL CODE (CMC)	E-001 E-002 E-003 E-004	GENERAL NOTES, SYMBOLS AND AB TITLE 24 COMPLIANCE DOCUMENTS TITLE 24 COMPLIANCE DOCUMENTS TITLE 24 COMPLIANCE DOCUMENTS TITLE 24 COMPLIANCE DOCUMENTS
2022 CALIFORNIA PLUMBING CODE (CPC) 2022 CALIFORNIA ENERGY CODE (CEnC) 2022 CALIFORNIA FIRE CODE (CFC) 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN) 2022 CALIFORNIA EXISTING BUILDING CODE (CEBC)	E-100 E-101 E-102 E-200 E-201 E-202 E-203 E-300 E-301 E-400 E-500 E-600 E-601 E-602 E-603	SINGLE LINE DIAGRAM LIGHTING SCHEDULES ELECTRICAL SCHEDULES ELECTRICAL SITE DEMOLITION PLAN ELECTRICAL SITE PLAN SITE LIGHTING PLAN SITE LIGHTING PHOTOMETRIC PLAN OFFICE/MAIN BUILDING ELECTRICAL VEHICLE WASH BUILDING ELECTRICAL VEHICLE WASH BUILDING ELECTRICAL ELECTRICAL DETAILS LIGHT FIXTURE CUTSHEETS ELECTRICAL SPECIFICATIONS ELECTRICAL SPECIFICATIONS ELECTRICAL SPECIFICATIONS ELECTRICAL SPECIFICATIONS
	T-000 T-002 T-100	SYMBOLS AND ABBREVIATIONS, TEL TELECOM CABLING ROUGH-IN SCHE

CAUTION

WATCH FOR OVERHEAD POWER LINES

FUEL SITE PLAN FUEL EQUIPMENT DETAILS FUEL EQUIPMENT SCHEDULES FUEL PROCESS FLOW DIAGRAM Title Project No.

Revision

SECURITY SITE PLAN

TELECOM DETAILS

TY-100 T-101

T-400

T-600

D-001

D-100

D-201

T-501

Client/Project Logo

TERMINAL 2 - RECOMMISSIONING

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D-601 D-611

Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT



Scale PROJ NO. 2014240805 Drawing No.





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The Contractor shall verify and b drawing - any errors or omissions The Copyrights to all designs and or use for any purpose other than

[ADVISORY SECTION 11B-216.2 APPLIES TO SIGNS THAT PROVIDE DESIGNATIONS, LABELS, OR NAMES FOR INTERIOR ROOMS OR SPACES WHERE THE SIGN IS NOT LIKELY

11B-216.3 DIRECTIONAL AND INFORMATIONAL SIGNS. SIGNS THAT PROVIDE DIRECTION TO OR INFORMATION ABOUT INTERIOR SPACES AND FACILITIES OF THE SITE SHALL

[ADVISORY 11B-216.3 DIRECTIONAL AND INFORMATIONAL SIGNS. INFORMATION ABOUT INTERIOR SPACES AND FACILITIES INCLUDES RULES OF CONDUCT, OCCUPANT

11B-216.4.1 EXIT DOORS. DOORS AT EXIT PASSAGEWAYS, EXIT DISCHARGE, AND EXIT STAIRWAYS SHALL BE IDENTIFIED BY TACTILE SIGNS COMPLYING WITH 11B-703.1

11B-216.5 PARKING. ACCESSIBLE PARKING SPACES SHALL BE IDENTIFIED BY SIGNS. PARKING SPACE IDENTIFICATION SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS IDENTIFYING VAN PARKING SPACES SHALL CONTAIN THE DESIGNATION "VAN ACCESSIBLE". SIGNS SHALL BE 60 INCHES MINIMUM ABOVE THE

11B-216.8 TOILET ROOMS AND BATHING ROOMS. WHERE EXISTING TOILET OR BATHING ROOMS ARE NOT ACCESSIBLE, DIRECTIONAL SIGNAGE INDICATING THE LOCATION WITH 11B-603 WITHIN THE FACILITY SHALL BE PROVIDED. SIGNS SHALL COMPLY WITH 11B-703.5 (VISUAL CHARACTERS) AND SHALL INCLUDE THE INTERNATIONAL SYMBOL

11B-703.3 BRAILLE. BRAILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH CBC SECTIONS 11B-703.3 AND 11B-703.4. BRAILLE DOTS SHALL HAVE A DOMED

11B-703.4.1 HEIGHT ABOVE FINISH FLOOR OR GROUND. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND. SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES (1525 MM) MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE.

11B-703.6.1 PICTOGRAM FIELD. PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6 INCHES (150 MM) MINIMUM. CHARACTERS AND BRAILLE SHALL NOT BE LOCATED IN THE 11B-703.6.3 TEXT DESCRIPTORS. PICTOGRAMS SHALL HAVE TEXT DESCRIPTORS LOCATED DIRECTLY BELOW THE PICTOGRAM FIELD. TEXT DESCRIPTORS SHALL COMPLY

ACCESSIBILITY DETAILS, AND SIGNAGE





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DEMOLITION NOTES

ALL ITEMS NOT SHOWN TO BE REMOVED OR RELOCATED ARE TO BE PROTECTED IN PLACE AS NECESSARY TO PREVENT DAMAGE

- 1 REMOVE TREE PER LANDSCAPE ARCHITECTURE PLANS.
- 2 PROTECT TREE DURING CONSTRUCTION. SEE LANDSCAPE ARCHITECTURE PLANS FOR OTHER INSTRUCTIONS.
- 5 SAWCUT CONCRETE AT LIMITS SHOWN. REMOVE AND DISPOSE OF ALL EXISTING ASPHALT, PCC IMPROVEMENTS. CONCRETE IMPROVEMENTS REMOVED TO THE NEAREST JOINT.
- 6 PROTECT IN PLACE.

CONSTRUCTION NOTES

- O CONSTRUCT PCC SIDEWALK PER SPPWC 112-2 AND COUNTY OF SANTA BARBARA ENGINEERING DESIGN STANDARDS 5-010, 5-040, AND 5-050. DOWEL SIDEWALK TO EXISTING CURB AND GUTTER PER SANTA BARBARA COUNTY STANDARD 4-045, DETAIL B.
- CONSTRUCT TYPE A2-6 PCC 6" CURB AND 24-INCH GUTTER PER SPPWC 120-3 AND COUNTY OF SANTA BARBARA ENGINEERING DESIGN STANDARDS 4-030.
- ONSTRUCT 8" THICK PCC DRIVEWAY PER COUNTY OF SANTA BARBARA ENGINEERING DESIGN STANDARDS 4-040 PLAN A. WIDTH PER PLAN.
- \bigcirc CONSTRUCT 6" THICK CLASS C2 PG 64–10 HOT MIX ASPHALT CONFORM.
- 1 FURNISH AND INSTALL NO. 5 ELECTRICAL PULLBOX PER CALTRANS STANDARD PLAN ES-8A AND ELECTRICAL PLANS.
- D FURNISH AND INSTALL 2" TYPE 3 CONDUIT WITH PULL ROPE FOR FUTURE STREETLIGHT CONDUCTORS PER CALTRANS STANDARD SPECIFICATIONS AND ELECTRICAL PLANS.
- (13) REPLACE WATER METER BOX PER GOLETA WATER DISTRICT STANDARD DETAIL 3-05.
- 23 CONSTRUCT TYPE A2-6 PCC 6" CURB PER COUNTY OF SANTA BARBARA ENGINEERING DESIGN STANDARDS 5-045.
- 24 PAINT CURB WITH RED TRAFFIC PAINT, LENGTH AS NOTED.

POST CONSTRUCTION REQUIREMENTS

IMPERVIOUS REMOVED:-1,040 S.F.NEW IMPERVIOUS:+3,770 S.F.IMPERVIOUS REPLACED:+1,040 S.F.

NET IMPERVIOUS: +3,770 S.F.

RESULT: THIS PROJECT MUST COMPLY WITH TIER 1 POST-CONSTRUCTION REQUIREMENTS.

LEG	END	
· · · · · · · · · · · · · · · · · · ·		CONSTRUCT
		CONSTRUCT MIX ASPHAL EXISTING AS WHICHEVER
		REMOVE CO REPLACE.
	∧	SAWCUT FLOWLINE
AC BOT CONC CP ELAL ELBX EJ FS GND IRBX IRVA MAPS O.R. PM SD SDMH SSCO SSMH T/ TOE TOP UMH WTVT WV VI V	ASPHALTI BOTTOM CONCRETE CONTROL ELECTRIC/ ELECTRIC/ ELECTRIC/ ELECTRIC/ EXPANSIO FLOW LINE FINISHED GAS METE GROUND IRRIGATIO IRRIGATIO IRRIGATIO IRRIGATIO FOUND M MAGNETIC SANTA B/ RECORDE SANTA B/ SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY SANITARY	C CONCRETE POINT AL AREA LIGH AL BOX AL CABINET IN JOINT E SURFACE ER N BOX N VALVE ONUMENT NUN NAIL ARBARA COUN ARBARA COUN ARBARA COUN MAP DINT RAIN RAIN MANHOLI SEWER CLEA SEWER MANH CURB SLOPE SLOPE I TYPE MANHO OSE BIB AULT ALVE

Client/Project Logo Client/Project Title SANTA BARBARA METROPOLITAN TRANSIT Stantec DISTRICT SANTA BARBARA TERMINAL 2 - RECOMMISSIONING ure Inc. a Street Suite 300 Project No. 0017-3007 • www.stantec.com 2014240805 5353 OVERPASS ROAD, GOLETA, CA 93111 rved Revision nd be responsible for all dimensions. DO NOT scale the ions shall be reported to Stantec without delay, and drawings are the property of Stantec. Reproduction than that authorized by Stantec is forbidden. _____ VSDBRFBH2023.03.14Dwn.Dsgn.Chkd.YYYY.MM.DD

76EX. DWY

TRUCT CONCRETE IMPROVEMENTS, AS NOTED.

TRUCT CLASS C2 PG 64-10 HOT SPHALT CONFORM MATCHING TING ASPHALT THICKNESS OR 3" EVER IS GREATER.

VE CONCRETE AS NOTED, DO NOT

LIGHT INET

NUMBER COUNTY OF MAPS COUNTY OFFICIAL

ANHOLE CLEANOUT MANHOLE

MANHOLE

PUBLIC IMPROVEMENTS PLAN







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L-100

.E		
DESCRIPTION		
. 1" ICV GLOBE VALVE RE REGULATION: 25P9 AINLESS STEEL SCREE	E WITH 1" HY1 <i>00</i> 51. FLOW RANGE: 51.	4
ABOVE GRADE ROM PVC LATERAL T RADE INSTALLATION.	O DRIP TUBING	28
.9 GPH DRIPLINE AT 18 ISE ON NEW TREES. INS DETAIL. LINE	8" O.C. APPROX. STALL FOR	21
DRIPLINE WITH 0.9 GP CK 9TRIPING. EMITTER CED AT 18" APART, U R PATTERN. INSTALL W ITTING9.	H FLOW. LIGHT RS AT 18" O.C. JITH EMITTERS ITH HUNTER PLD	2,173 L.F.
DESCRIPTION		
YELLOW LOCKING RUE ESS STEEL, WITH 3/4"	BBER COVER, NPT INLET,	I
FOR SCH 40 AND SC _Y WITH ASTM F1498, W 1/2" - 4".	H 80 PIPE, IITH "T" HANDLE,	1
L 'ALVE SHUT OFF VALV	E	1
65 ELECTRIC MASTER T THREADED INLET/ <i>O</i> L USE	VALVE, GLOBE ITLET, FOR	1
ACKFLOW PREVENTER ETE PAD AS SPECIFIE DETAIL. LOCATE PAD BTRUSIVE TO EXISTING VIEW LOCATION ON SIT	. INSTALL IN ID, OR D AND EQUIPMENT TREE ROOTS AT IE WITH	1
6 STATIONS, OUTDOOF EQUIRED. COMMERCIA	R MODEL, METAL AL USE.	1
REEZE SENSOR WITH C O HUNTER X-CORE AN AS NOTED. INCLUDES C INCLUDED.	DUTDOOR ND ACC GUTTER MOUNT	I
	R, 1 ⁴ SCHEDULE	I
AC, 2 AMP. 19CAPE SUB-METER IPE IRRIGATION METER	R, 0.50 - 30	1
READING AT HYDRAN	JT 434	1
E: PVC SCHEDULE 40		1,478 L.F.
C SCHEDULE 40		449.8 L.F.
C SCHEDULE 40 EX, S ORDINATE WITH CIVIL E	BER⊻ICE ENGINEER`S	31.4 L.F.
9 160 9DR 26 DR IRRIGATION PIPE. ATION PIPING AND THI JDE THROUGH 9LEEVIN IE9 BEYOND EDGE9 C	PIPE SLEEVE SIZE EIR RELATED NG MATERIAL DF PAVING <i>O</i> R	194.0 L.F.
NTITY NOTE: NT QUANTITY COUN PURPOSES ONLY. PONSIBLE TO CON NTITIES AND REQUIR ALS PRIOR TO FINA	TS ARE IFIRM RED AL BID	
R ALL IRRIGATIC 1959 ANY VEHICU ACCORDING TO	N MAINLINE, LAR OR THE FOLLOWIN	NG
<u>Y</u> 1 	REQUIRED 6LE -2" 6DR 35 P -2" 6DR 35 P -2" 6DR 35 P -2" 6DR 35 P -4" 6DR 35 P -4" 6DR 35 F -4" 6DR 35 F -4" 6DR 35 F -4" 6DR 35 F -6" 6DR 35 F	
Service Alert Call: 811 YS BEFORE YOU DIG	SCALE:	1/16" =1'-0" 16' 32'
ATION PLAN		
o. 0805	Scale As Indicated	
	Drawina No	-



WELO COMPLIANCE & CLOSE OUT

. CONTRACTOR SHALL PERFORM AND/OR SUPPLY INFORMATION REQUESTED IN THE "COUNTY OF SANTA BARBARA'S W.E.L.O. (2015) SUPPLEMENT LANDSCAPE DOCUMENTATION PACKAGE CERTIFICATION FORMS" W.E.L.O. CERTIFICATE OF COMPLETION + APPENDIX 'C' CERTIFICATE OF COMPLETION. COORDINATE WITH ARCHITECT \$ LANDSCAPE ARCHITECT AS NEEDED FOR SUBMITTAL

2. CONTRACTOR SHALL OBTAIN AN IRRIGATION AUDIT REPORT PER 3. CONTRACTOR SHALL PREPARE IRRIGATION SCHEDULE (UTILIZING

AUDIT DATA) FOR (A) ESTABLISHMENT PERIOD \$ (B) ESTABLISHED LANDSCAPE + SUBMIT TO LANDSCAPE ARCHITECT FOR INCLUSION IN CERTIFICATE OF COMPLETION SUBMITTAL 4. CONTRACTOR SHALL DEVELOP AND SUBMIT TO THE LANDSCAPE

ARCHITECT A MAINTENANCE SCHEDULE FOR INCLUSION IN THE CERTIFICATE OF COMPLETION AS REQUIRED BY WELO. MAINTENANCE ITEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO, ROUTINE INSPECTION AND ADJUSTMENT AND REPAIR OF THE IRRIGATION SYSTEM AND ITS COMPONENTS, REPLENISHING MULCH FERTILIZING, PRUNING, WEEDING ALL LANDSCAPE AREAS, AND REMOVING OBSTRUCTIONS TO EMISSION DEVICES. MAINTENANCE SCHEDULE SHALL ALSO INCLUDE TESTING & CLEANING OF DRIP IRRIGATION FILTER AND CHECKING OF PONT SOURCE EMITTERS.

CITY OF GOLETA WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT

HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN"

WELO WATER USE CALCULATIONS

dge	t Calculations					
(Et _o)	(0.62){(0.45 x LA) + (0.55 x SLA)}					
=	Maximum applied water allowance (ga	llons per year)				
=	Reference evaportranspiration from Ap	pendix A (inches	per year)			
=	ET adjustment factor (ETAF)					
=	Conversion factor (to gallons per square	e foot)				
=	Portion of the landscape area identifie	d as special landsc	ape are (squa	re feet)		
=	The additional ET adjustment factor for	special landscape	area (1.0 - 0.4	5 = 0.55)		
ns	update MAWA cells below					
=	14.90)(0.62){(0.45 X 3,931) + (0.55 X 0)					
=	49,244 gallons per year					
	dge (Et _o) = = = = = = = =	dget Calculations Et_o)(0.62){(0.45 x LA) + (0.55 x SLA)} = Maximum applied water allowance (gal = Reference evaportranspiration from Ap = ET adjustment factor (ETAF) = Conversion factor (to gallons per square = Portion of the landscape area identified = The additional ET adjustment factor for update MAWA cells below = (44.90)(0.62){(0.45 X 3,931) + (0.55 X 0) = 49,244 gallons per year	dget Calculations (Et_o)(0.62){(0.45 x LA) + (0.55 x SLA)} = Maximum applied water allowance (gallons per year) = Reference evaportranspiration from Appendix A (inches) = ET adjustment factor (ETAF) = Conversion factor (to gallons per square foot) = Portion of the landscape area identified as special landscape = The additional ET adjustment factor for special landscape ens update MAWA cells below = (44.90)(0.62){(0.45 X 3,931) + (0.55 X 0) = 49,244 gallons per year	dget Calculations (Et_o)(0.62){(0.45 x LA) + (0.55 x SLA)} = Maximum applied water allowance (gallons per year) = Reference evaportranspiration from Appendix A (inches per year) = ET adjustment factor (ETAF) = Conversion factor (to gallons per square foot) = Portion of the landscape area identified as special landscape area (squal = The additional ET adjustment factor for special landscape area (1.0 - 0.4) ens update MAWA cells below = (44.90)(0.62){(0.45 X 3,931) + (0.55 X 0) 49,244 gallons per year		

Hydrozone*	Zone/valve no.	Irrigation Method**	Area (SF)	% of Landscape
B - LW	1	DRIP	770	19.59%
A - LW	2	DRIP	875	22.26%
A - LW	3	DRIP	745	18.95%
A - LW	4	DRIP	1,541	39.20%
		29 		
	<u>ل</u>	Total:	3,931	100.00%
vdrozone		**Irrigation Method		
V = High Water Use Plants		B = Bubbler	·	
V = Moderate Water Use Plants		D = Drip		
= Low Water Use Plants				
ant factors utilize coefficients of	tained from WUC	OIS IV (2014)		

Estimated Total Water Use (E	TWU)				
$ETWU = (Et_o) \times (0.62) \times (PF/IE)$	x (LA)				
Estimated Total Water Use =	37,884	gallons			
Hydrozone Table for Calculati	ng ETWU				
Hydrozone	Plant Water Use Type	Yearly Et _o	Plant Factor (PF)*	Conversion Factor (0.62)	Irrigation E
A - Inline Drip	Low	44.90	0.20	0.62	C
B - Inline Drip, trees	Low	44.90	0.30	0.62	0
					Te

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TERMINAL 2 - RECOMMISSIONING

5353 OVERPASS ROAD, GOLETA, CA 9311 stn Architecture 2270449601.rvt KJTKJTCHKD2022.04.08Dwn.Dsgn.Chkd.YYYY.MM.DD

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SOI		AND CUERIEMEN								
<u>FER</u> 1 A.	GRO-POWER PLUS 5-3-1 WITH 1% SOIL PENETRANT AND 12% SULFUR FERTILIZER AND SOIL CONDITIONER; 1% IRON, 0.05% MANGANESE, 0.05% ZINK, OR EQUAL, MANUFACTURED BY GRO-POWER, INC.									
B.	IRON (CHELATE, POWDE	ER OR LIQUID.							
MULC	<u>H</u>									
А.	SHREE AGRIT IN SIZE MATER LANDS	DED WOODCHIF URF OR AGROMI : (0.25 INCH TO 1. RIAL, BROWN COL CAPE ARCHITEC	°S: "WALK ON BA IN, OR EQUAL, FIR .5 INCH), WITH SHF LOR, SUBMIT SAM CTS.	RK" FR <i>O</i> M BARK, VARIED REDDED IPLES T <i>O</i>						
B.	3/4 INCH "CALIFORNIA GOLD" CRUSHED ROCK, SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.									
A. B.	BONE GYPSI CALCI	MEAL: STANDAF JM: AGRICULTUR UM SULFATE.	RD HORTICULTUR: RAL GRADE; MININ	AL BRAND. 1UM 95 PERCENT						
D.		NIC AMENDMENT	9 IFD GHAVINGG: 1							
		DR CEDAR WITH BASED ON DRY I DETERMINED BY BASED ON DRY I EXCEED 2.5 MILLIO TEASURED IN THE	MINIMUM I PERCE WEIGHT. ORGANIG ASH ANALYSIS: M WEIGHT. SALINITY OHMS PER CENTI E SATURATION EX	CLOWCOD, FIIX, INT NITROGEN C CONTENT AS INIMUM 94% SHALL NOT METER AS CTRACT. SUBMIT						
	2. C	COMPOST: COMP EQUAL, DERIVED	2051 100 BY AG FROM 100% REC EED BY 119 COM	ROMIN, OR CYCLED PLANT						
	3. C	COUNCIL. SENERAL: THE S	ALT CONTENT (SC							
	4. e	OWEST POSSIBLE	E LEVEL. MATERIALS ARE 1	NOT						
	5. E	DO NOT USE CAL	CIUM CARBONATI ENT AND LOCAL (ECTED. E AS ALKALINE JIATER IS						
<u>A</u> .	 TREMARATION (FRE-PLANT PER 1000/SF PLANTING AREAS) STEP 1 - AFTER REVIEW OF ROUGH GRADING WITH LANDSCAPE ARCHITECT. 1. CULTIVATE TO DEPTH OF 9". 2. APPLY GYPSUM AT RATE OF 150 LBS PER 1000 SQUARE FEET. DO NOT CULTIVATE. 3. WATER TO LEACH GYPSUM THROUGH TOP 9" OF SOIL. 4. KEEP MOIST FOR 10 DAYS TO GERMINATE WEED SEEDS. 5. REMOVE WEEDS, POISON AND REMOVE PERENNIAL WEEDS. SMALL ANNUAL WEEDS MAY BE CULLIVATED INTERSE. 									
B.	STEP : CULTIV	2 - APPLY THE F ATE TO A DEPT	OLLOWING MATER H OF 6".	RIALS AND						
	MATER ORGA (WOOD	<u>RIAL</u> NIC MATERIAL > SHAVINGS/COM	RATE PER 14 4 CUBIC YAR 1POST)	<u>900 SQ. FT.</u> RDS						
	GRO-F	POWER PLUS (5-:	3-1) 25 LBS							
	ADD 9 WALK9	BOIL TO BRING G B, CURBS AND H	RADE T <i>O O</i> NE ING EADERS:	CH BELOW						
sion Fac	tor (0.62)	Irrigation Efficiency (IE)	Area (LA) (square feet)	ETWU (gallons)						
0.62		0.81	770	5,293						
0.62		0.81	3,161	32,591						

WELO DOCUMENTATION + **IRRIGATION DETAILS**

Revision









	<u>CONT</u>	WATER USE	
	36"BOX	LOW	
	24"BOX	LOW	
	24″B <i>O</i> ×	LOW	
	SIZE	WATER USE	<u>SPACING</u>
PUS AGAVE	5 GAL	LOW	48" O.C.
AGAVE	10 OR 15 GAL	LOW	84" O.C.
	5 GAL	LOW	48" O.C.
	15 GAL	LOW	60" O.C.
	5 GAL	LOW	36" O.C.
	15 GAL	LOW	48" O.C.
TSUCKLE	5 GAL	LOW	96" O.C.
	5 GAL	LOW	96" O.C.
	CONT	WATER USE	SPACING



		1		2	
D					
С					
В					
A					
	ISSUE FOR BID SUBMIT	TAL			

PLANNING DEPARTMENT SUBMITTAL

Revision







	1	2	
	MTD TERMINAL 2 RECOMMISSIONING	GOLETA, CA	B. Rec 1. F
	SECTION 32 80 00		P il s
	IRRIGATION		b c
	PART I - GENERAL		C
	1.01 DESCRIPTION OF WORK		f ç
	A. General		h
	items as shown on drawings and as specified	d herein. Work includes labor,	2. I S
	necessary for and incidental to performing of the work of	s, transportation, and services operations in connection with	
	on the drawings and/or specified herein.	this Section, complete as shown	1. F
	B. Related Sections		2. C C 3. F
	1.02 REFERENCES		il 4. L
	A. American Society for Testing and Materials (AST	VI)	5. S
	1. B88:Seamless Copper Water Tube2. D2466:Polyvinyl Chloride (PVC) Plastic	Pipe Fittings - Schedule 40	6. 5
-	1.03 QUALITY ASSURANCES		D. Man 1. F
	A. Installer Qualifications		c r
	1. Provide at least one person who shall be prese of Work, familiar with type of materials	ent at all times during installation specified herein and material	a E Taa
	performed in this Section. Coordinate Work wi	ith General Contractor.	E. 100
	 B. Fees, Codes and Standards 1 Pay applicable fees for State Test of Backflow 	Prevention Devices	2. T 3. (
	2. Comply with State, County, and Municipal code	es and regulations.	5. C
	C. Plastic Pipe 1. Provide manufacturer's guarantee that plastic	pipe has passed or is capable	1.06 DEL
	of passing the Acetone Immersion Test and defects.	nd is free from manufacturing	A. Deliv
	D. Drawings		B. Prot
	 Due to scale of drawings, it is not always fittings, and sleeves which may be require 	possible to indicate all offsets, ed. Investigate structural and	C. In e [.] cost
	tinished conditions affecting Work. Install W plantings, other site utilities, and architectural f	vork to avoid conflicts between eatures.	107 011
	1.04 GENERAL CONDITIONS		1.07 GUA
	A. Follow current printed manufacturer's specificati information not specified or graphically indicat	ons and drawings for items or ted in the most current set of	7. Oua 1. N 2. /
	construction drawings.		 c 3. 7
	B. Work involving substantial plumbing for installat prevention devices, and other related work shall	tion of copper piping, backflow be executed by a licensed and	c 4. (
	bonded plumbing contractor. Any necessary per beginning work.	rmits shall be obtained prior to	n
	C. Specified depths of pressure supply lines, laterals	s, and pitch of pipes as stated in	B. Gua 1. (
	this section are minimums. Settlement of trenches the final grading plans is cause for removal of	s lower than grades specified on finish grade treatment, refilling	h ,
	trenches, compacting and repairing of finish grade	Freatment.	
	is obvious that actual field conditions such as discrepancies and field dimensions vary from the	physical obstructions, grading	Gl
	drawings. Immediately bring any such discreption to proceeding with World	ancies to the attention of the k. If immediate notification is not	W
	given and such discrepancies exist, the Contracto for necessary revisions, as determined by the Lan	or shall assume full responsibility Idscape Architect.	
	E. Preserve and protect all existing trees, plants, mo	numents, structures, hardscape,	
	and architectural elements from damage due to V that damage does occur to inanimate objects o	vork in this section. In the event r structures, the Contractor will	
	repair or replace such damage to the satisfact representative. The Contractor at the Contractor	's expense will replace damage	
	kind.	naterial shall be replaced like IN	
	F. Trenching or other work required in this section u trees shall be done by hand or by other methods	Inder the limb spread of existing s to prevent damage or harm to	Pr
	limbs, branches, and roots.		Lo Da
	G. Trenching in areas where root diameter exceeds Exposed roots of this size shall be heavily wra	2 inches shall be done by hand. apped with moistened burlap to	Si
	avoid scarring or excessive drying. Where a tre proximity to roots that are less than 2 inches, the	enching machine is operated in wall of the trench shall be hand	Cc Ac
	trimmed, making clean cuts through roots.	I be closed within 24 because '	
	H. Trenches adjacent to or under existing trees shall when this is not possible, the side of trench clos	sest to the tree or trees affected	
	I. Protect maintain and coordinate work with other	contracts specifications trades	201 MAN
	and utilities. Extreme care shall be exercised in area due to existing utilities. Contractor shall be r	excavating and working in the responsible for damages caused	A. Prov
	by their operations. In the event that damage does the costs of such repairs unless other arrangem	s occur, the Contractor shall pay nents have been made with the	2.02 PIPI
	Owner.		A. Cop
	J. Use caution where trenches and piping cross hardscape, paths, or curbs. In the event that dam	existing roadways, sidewalks, nage does occur, the Contractor	B. Plas
	will repair such damage at the Contractor's expen	se.	1. F f
	1.05 SUBMITTALS		2. C
	1. Within thirty (30) days from date of Notice to P delivered to job site, submit a PDF documents	roceed and before materials are with complete lists of materials	
	a. Furnish manufacturer's name, catalog n technical data, and manufacturer's recom	number, complete catalog cut, mendations for installation and	ε 3 Ν
	operation. Circle, highlight, or otherwise proposed.	note model(s) and option(s)	5. F 4. F
	2. Do not permit materials to be installed until rev	iewed by Landscape Architect.	5. F
			4
ISSUE FOR BID SUBN			
ISSUE FOR BID SUBN			

- Record Drawings Record changes made during installation. Dimension from two permanent points of reference such as building corners, sidewalks, and road
- intersections, the location of the following:
- a. Point of connection or connection to existing water lines b. Electrical connections
- c. Gate or ball valves
- d. Routing of pressurized main line and control wires e. Control valves, quick coupling valves, or other valves
- f. Irrigation controller, weather or soil sensing devices, and other equipment
- a. Other related equipment
- h. Depth of pipe if different than specified
- Transfer Record Data to new, clean blackline prints of irrigation system and submit two (2) hardcopy and one PDF copy to Owner, and one (1) PDF copy to Landscape Architect.

Controller Charts

- Provide two (2) controller chart per controller.
- Show area controlled by automatic controller. Provide chart of maximum size controller will allow.
- Reduce Record Drawings for chart except when controller sequence is illegible after reduction; then enlarge to a readable size. Use different colors to highlight coverage of stations.
- Seal completed reduction of Record Drawings between 10 mil plastic laminate and post one (1) in controller and submit one (1) to Owner.
- Submit PDF copy of controller chart to Owner and Landscape Architect.

Manuals

Furnish two (2) hardcopy sets of service manuals to Owner, and one (1) PDF copy to Landscape Architect. Include manufacturer's catalog cuts, catalog numbers, price lists, local source, address and phone number, manufacturer's address, and operating instructions for equipment installed.

Tools and Equipment- Furnish:

- Two (2) sets of special tools required for removing, disassembling and adjusting sprinklers and valves installed. Two (2) keys for automatic controllers installed.
- One (1) quick coupler key and matching hose swivel for every five (or fraction of) quick coupler valves installed.

ELIVERY, STORAGE, AND REPLACEMENT

Deliver to job site and provide safe storage. Coordinate with General Contractor.

Protect materials from vandalism and other trades.

n event of damage, make repairs and replacements within seven (7) days at no cost to Owner. Review damage and method of repair with Landscape Architect.

GUARANTEE

Guarantee for One Year from Final Acceptance

- Materials are new and free from defects. Against defects of materials and workmanship and damage caused by defects.
- To make required replacements with new materials and correct damage caused by defects at no cost to Owner.
- Complete coverage of areas indicated to be irrigated on drawings including minor adjustments required by field conditions.

Guarantee

On company letterhead, type following information and submit two (2) hardcopies and one (1) PDF copy with original signatures to Landscape Architect:

GUARANTEE FOR IRRIGATION SYSTEM

We hereby guarantee that the irrigation system we have furnished and installed is free from defects in materials and workmanship and the Work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse or neglect excepted. We agree to repair or replace defects in materials and Workmanship including damages consequential to defects in materials and workmanship and repair or replacement, which develop during one (1) year after Final Acceptance of the Work, at no additional cost to the Owner. We agree to make such repairs and replacements within thirty (30) days after receipt of written notice. In the event of our failure to make such repairs and replacements within thirty (30) days of written notice, we authorize the Owner to proceed to have such repairs and replacements made at our expense and we will pay all costs and charges upon demand:

Project:

Location: Date of Final Acceptance

Signed: Company Name:

Address:

- PRODUCTS

MANUFACTURERS

Provide products of manufacturers indicated on drawings or equivalent.

PIPE AND TUBING

Copper: ASTM B88, Type L, hard-drawn copper tube and metal alloy solder type.

Plastic Pipe

KJT KJT 2023.05.12

By Appd YYYY.MM.DD

PLANNING DEPARTMENT SUBMITTA

Revision

ORIGINAL SHEET - ARCH E1

- Polyvinyl chloride (PVC), new and unused; no more than 15 percent less than
- full manufactured length. Continuously and permanently marked plastic pipe with following information:
- a. Manufacturer's name
- b. Pipe size
- c. IPS size (schedule number)
- d. Type of material e. Code number
- Non-pressure lateral lines, Schedule 40 PVC, bearing National Sanitation

SSUE FOR BID

lssued

PLAN CHECK RESUBMITTAL NO. 1

PLANNING DEPARTMENT SUBMITTAL

PLANNING /BUILDING DEPARTMENT SUBMITTA

- Foundation (NSF) seal, except as otherwise indicated on drawings.
- Pressure lines, 1/2 in. through 1-1/2 in., Schedule 40, bearing NSF seal. Pressure lines, 2 in. and larger, Class 315.
- Sleeves for lines under paving as shown on drawings, Class 160 or Schedule

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2023.10.04

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 2023.10.04

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 2023.05.12

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 2023.03.10

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 KJT
 2022.11.04

By Appd YYYY.MM.DD

- 7. Fittings for pipe, Schedule 40 polyvinyl chloride, Type I-II, bea and complying with requirements of ASTM D2466.
- 8. Nipples: Schedule 80.
- 9. For joining, use solvent complying with requirements of AST recommended by manufacturer of plastic pipe used: a. primer: Weld-on P-70 or equivalent
- b. clear solvent: Weld-on 710 or equivalent
- c. grey solvent: Weld-on 711 or equivalent
- C. Drip tubing
- 1. Polyethylene (P.E.) distribution tubing.
- 2. 'Dripline' w/ built-in pressure compensating emitters. 3. Fittings, plastic, compression or twist-lock.
- 2.03 DETECTABLE TAPE
- A. Minimum 5.5 composition film containing metalized layer laminate layers of inert plastic.
- 2.04 BRASS PIPE FITTINGS
- A. Furnish as indicated on drawings.
- 2.05 SPRINKLER HEADS
- A. Furnish as indicated on drawings.
- 2.06 HOSE FITTINGS
- A. Quick couplers: as detailed on drawings.
- 2.07 VALVES
 - A. Metal Ball valves: manufactured by Nibco, or equivalent, brass, c of size required for line indicated on the drawings. Install as detail
 - B. PVC Ball valves: Matco-Norca as shown on drawings, or equiva detailed.
 - C. Master Valve: 24-volt electric, normally closed-type with flow cont override as detailed on drawings.
 - D. Check valves: as shown on drawings.
 - E. Automatic control valves: 24-volt electric, normally closed-type v and manual override as detailed on drawings.
- 2.08 VALVE BOXES
- A. Black or green plastic, Carson, Ametek, Roby or equal, with lock as detailed. One valve per box.
- 2.09 CONTROLLER WIRES
- A. Twenty-four volt (24-volt) direct burial type. Size wire according manufacturer; no wire smaller than No. 14 gauge, except that mu 18 gauge, is permitted if used according to manufacturer's dire different colored pilot wires for valves. Provide white common wir
- 2.10 AUTOMATIC IRRIGATION CONTROLLER
 - A. Type and model number indicated on drawings. Mount in a manufacturer's instructions and per details. Coordinate location electrical source. Provide own circuit for controller. Controller mus least 15 feet away from a "high power user" (i.e., refrigerator, air large horsepower pump or motor).
- 2.11 WEATHER SENSING DEVICE
- A. As indicated on drawings. Provide batteries.
- 2.12 BACKFLOW PREVENTION DEVICES
- A. As shown on drawings.
- 2.13 PRESSURE REGULATORS
- A. As shown on drawings.
- 2.14 FLOW SENSOR
- A. As shown on drawings.
- 2.15 DRIP IRRIGATION
- A. Emitters: as specified on drawing, or equal, pressure-com self-cleaning. Install number and size (flow rate) as noted on in Install per manufacturer's specifications and as shown on drawings
- B. Flush Caps: as specified on drawings, or equal. Install as shown
- C. Drip staples: as shown on drawings.
- D. Air relief valve: as shown on drawings.
- 2.16 LANDSCAPE SUB-METER
- A. As shown on drawings.
- 2.17 OTHER MATERIALS
 - A. Provide other materials, not described but required to complete in are new and unused. Review these materials with Landscape

TRUE NATURE

LANDSCAPE ARCHITECTURE

KIMBERLY TRUE, MLA

315 Meigs Road Suite A-131

Santa Barbara, CA 93109

TrueNatureDesign.com

805-770-2100

PART III - EXECUTION

A. Inspection

Permit/Seal

ISSUEFOR BID

NO. 5596

NEEFOR

CONSTRUCTION

3.01 SURFACE CONDITIONS

4	5	6	7
Fittings for pipe, Schedule 40 polyvinyl chloride, Type I-II, bearing NSF seal	B. Discrepancies		C. 'Dripline' w/ built in emitters: Furnish and install as detailed.
Nipples: Schedule 80.	 In event of discrepancy between drawings an notify Landscape Architect. 	d actual conditions, immediately	D. Valves: Furnish and install in locations shown on plan according to details.
recommended by manufacturer of plastic pipe used:	Do not proceed with installation in area discrepancies have been fully resolved.	as of discrepancy until such	
 b. clear solvent: Weld-on 710 or equivalent c. arov solvent: Weld-on 711 or equivalent 			E. Valve Boxes: Furnish and install as detailed.
in tubing	3.02 PREPARATION		F. Automatic controllers: Mount in accordance with manufacturer's instructions. Provide own circuit for controller Controller must be installed at least 15 feet
Polyethylene (P.E.) distribution tubing. 'Dripline' w/ built-in pressure compensating emitters. Fittings, plastic, compression or twist-lock.	A. Field Measurements: Scaled dimensions are necessary measurements in field to ensure precise original design.	 approximate; verify. Make se fit of items in accordance with 	away from a "high power user" (i.e., refrigerator, air conditioner, or large horsepower pump or motor). Verify location of electricity. Coordinate with General Contractor and Electrical Contractor. Provide hook-up.
ETECTABLE TAPE	B. Preparation: Locate underground utilities and pro	tect. Remove rock or other such	G. Weather Station: Mount in clear, unobstructed location. Pair with both controllers
nimum 5.5 composition film containing metalized layer laminated between two yers of inert plastic.	Owner.		per manufacturer's specifications. Set for 1/4 rain snut off and 3 day rain delay.
RASS PIPE FITTINGS	3.03 TRENCHING		K. Controller Wires1. Install according to manufacturer's directions.
Irnish as indicated on drawings.	A. Trench with mechanical trencher or by hand. No	otify owner if rock is encountered	2. Tape wire together minimum 12 ft. 0 in. O.C. Do not tape to side of pressure nine In PVC sleeve under walks or paying wires may be in same sleeve as
PRINKLER HEADS	that cannot be removed in the aforementioned ma	anners.	pipe; do not tape to pipe in sleeve.
Irnish as indicated on drawings.	B. No wider than necessary to lay pipe.		3. Encase in plastic conduit wire passing under future or existing paving, construction, etc, extending conduit at least 12 in. beyond edges of the paving or construction
OSE FITTINGS	C. Straight with vertical sides and level bottoms.		 Install controller wires in common trench with pressure line wherever possible. Brovide, leaped, clack, at valves, and snake, wires, in trench to allow for
Jick couplers: as detailed on drawings.	D. Remove rocks, debris, and sharp objects.		 Source in the source of the sou
etal Ball valves: manufactured by Nibco, or equivalent, brass, or stainless steel	3.04 INSTALLATION OF PIPING		Scotch-Lok, OIR approved equal. Install splices in 6 in. to 10 in. diameter valve box.
size required for line indicated on the drawings. Install as detailed.	A General		3.06 BACKFILLING
'C Ball valves: Matco-Norca as shown on drawings, or equivalent. Install as tailed.	 Lay out piping system in accordance with the diagrammatic nature of drawings. 	Irrigation Plan, while recognizing	A Backfill only after review by Landscape Architect Backfill in the cool of the day:
aster Valve: 24-volt electric, normally closed-type with flow control and manual rerride as detailed on drawings.	2. Where piping is shown on drawings to be parallel and adjacent to planted areas, inte	under paved areas by running Intion is to install the piping in	backfill with fine materials free of rocks or sharp objects tamped to 85% compaction; 90% under paving. Leave grade flush and smooth.
neck valves: as shown on drawings.	planted areas. 3. Do not install a line parallel to and directly or berizental elegraphic between irrigation pin	ver another line. Minimum 6 in.	3.07 MAINTENANCE
Itomatic control valves: 24-volt electric, normally closed-type with flow control Id manual override as detailed on drawings.	minimum 1 in. soil between.	from lines of other trades	A. Continuously maintain involved areas of contract during progress of work and
ALVE BOXES	5. Mark headers on ground prior to layout of lawr	i heads.	during Maintenance Period of contract. Work includes: cleaning and adjustment of driplines and checking drip emitters for clogging and cleaning, insuring that any leaks in tubing, etc. are fixed immediately.
ack or green plastic, Carson, Ametek, Roby or equal, with lockable lid. Install detailed. One valve per box.	B. Piping Depth: Install piping with at least the follow	wing depth:	
ONTROLLER WIRES	1. Pressure Lines: 18 inches of	fcover	3.08 TESTING AND OBSERVATION
venty-four volt (24-volt) direct burial type. Size wire according to valve anufacturer; no wire smaller than No. 14 gauge, except that multi-strand wiring,	2. Sprinkler Laterals:12 inches of3. Sleeves under roadways:24 inches of	f cover	A. Forty Eight (48) hour notice required by Landscape Architect for observations.
ferent colored pilot wires for valves. Provide white common wires.	 Sleeves under walks or other paving: Press Sprinkler lat 	ure lines - 18 inches of cover erals - 12 inches of cover	 B. Closing in Work 1. Do not allow or cause work of this Section to be covered up or enclosed until it has been reviewed by Londonno Arabitect.
UTOMATIC IRRIGATION CONTROLLER	5. Drip Tubing: 2 inches of c	cover of mulch	has been reviewed by Landscape Architect.
pe and model number indicated on drawings. Mount in accordance with anufacturer's instructions and per details. Coordinate location and connect to	C. Piping under Paving		C. Flushing 1 Before backfilling main line and with all control valves in place but before
ectrical source. Provide own circuit for controller. Controller must be installed at ast 15 feet away from a "high power user" (i.e., refrigerator, air conditioner, or	1. Pipe under new walks and paving shall be la of paving or walks. Contractor will coordinate	with other trades.	lateral pipes are connected, completely flush and test main line and repair leaks
ge horsepower pump or motor).	 Pipe under existing concrete walks shall be ins Where cutting or breaking of existing principle 	stalled by jetting. avement is necessary secure	 Flush out each section of lateral pipe and drip tubing before drip emitters are
'EATHER SENSING DEVICE	permission from Owner before cutting or bre necessary repairs and replacements to appro	aking pavement and then make	allached.
indicated on drawings. Provide batteries.	cost to Owner.		D. Testing
ACKFLOW PREVENTION DEVICES	D. Inspection of Pipe and Fittings: Carefully ir	spect pipe and fittings before	 Make necessary provisions for thoroughly bleeding line of air and debris. Before testing, fill line with water for a period of at least 24 hours.
shown on drawings.	installation, removing dirt, scale, and burrs and r with markings up for visual inspection and verifica	reaming as required; install pipe ation.	3. After valves have been installed, test pressure lines with fittings exposed for two hours at 125 pounds pressure with gauge on pump, in presence of
RESSURE REGULATORS			Landscape Architect.
shown on drawings.	E. Plastic Pipe1. Exercise care in handling, loading, unloading	ıg, and storing plastic pipe and	sprinkler heads. Should it be determined by Landscape Architect that
OW SENSOR	fittings. 2. Store plastic pipe and fittings under cover unti	il ready to install.	make necessary arrangements to have adjustments accomplished prior to
shown on drawings.	 Transport pipe only on a vehicle with a bed I flat to avoid undue bending and concentrated 	ong enough to allow pipe to lay external load.	sprinklers. Do not commence planting operations until entire irrigation system operates properly.
nitters: as specified on drawing, or equal, pressure-compensating and	 Cut accurately with square ends. Repair dented and damaged pipe by cutf 	ting out damaged section and	F Final Review
If-cleaning. Install number and size (flow rate) as noted on irrigation legend. stall per manufacturer's specifications and as shown on drawings.	rejoining with a coupling.	make isinte in strict assordance	1. Thoroughly clean, adjust, and balance all systems.
ush Caps: as specified on drawings, or equal. Install as shown on drawings.	with manufacturer's recommended methods;	give solvent welds at least 15	2. Demonstrate entire system to Landscape Architect proving that remote control valves are properly balanced, that heads are properly adjusted for radius and
in stanles: as shown on drawings	before filling with water. Apply primer and suffiction of the second sec	olvent to both male and female per alignment, twist 1/4 turn and	efficient.
r relief valve: as shown on drawings.	hold for 15 seconds minimum. Clear solvent: lateral lines 1/2 in 1	1-1/2 in.	3. Final Acceptance will be given only when the plantings and irrigation system are acceptable, and when the signed Guarantee and valve keys have been delivered to Owner
	Primer and grey solvent: lateral lines 2 in. an 7. Centerload plastic pipe with a small amount (nd larger, all pressure lines of backfill to prevent arching and	4. 72 hours notice required for Final Review.
NDSCAPE SUB-METER	whipping under pressure. 8. Install approved dielectric couplings, unions, c	or fittings wherever two dissimilar	END OF SECTION 32 80 00
s shown on drawings.	metals are connected.		
HER MATERIALS	F. Drip Tubing:	2 22	
ovide other materials, not described but required to complete installation, which e new and unused. Review these materials with Landscape Architect.	 Polyetifylerie. Size and install as shown on place Dripline' w/ built-in pressure compensating e plans and manufacturer's specifications. Inst and manufacturer's specifications 	mitters. Furnish and install per all flush valves, etc. per details	
EXECUTION			
JRFACE CONDITIONS	G. Detectable Tape: Install on top of mainline pipe mainline trenches.	e where control wires are not in	
spection	3.05 INSTALLATION OF EQUIPMENT		
Prior to work of this Section, carefully inspect installed work of other trades and verify that such work is complete to point where this installation may properly commence.	A. Quick Couplers: Furnish and install as detailed.		
Verify that irrigation system may be installed in strict accordance with pertinent codes and regulations, the original design, the referenced standards, and manufacturer's recommendations.	B. Drip Irrigation System: Furnish and install as deta	ailed.	
HER MATERIALS ovide other materials, not described but required to complete installation, which a new and unused. Review these materials with Landscape Architect. EXECUTION JRFACE CONDITIONS spection Prior to work of this Section, carefully inspect installed work of other trades and verify that such work is complete to point where this installation may properly commence. Verify that irrigation system may be installed in strict accordance with pertinent codes and regulations, the original design, the referenced standards, and manufacturer's recommendations.	 F. Drip Tubing: 1. Polyethylene. Size and install as shown on pla 2. 'Dripline' w/ built-in pressure compensating e plans and manufacturer's specifications. Insta and manufacturer's specifications. G. Detectable Tape: Install on top of mainline pipe mainline trenches. 3.05 INSTALLATION OF EQUIPMENT A. Quick Couplers: Furnish and install as detailed. B. Drip Irrigation System: Furnish and install as detailed. 	ans. mitters. Furnish and install per all flush valves, etc. per details e where control wires are not in ailed. Client/Project SANTA BARBARA ME DISTRICT	Title IRRIGATION SPEC

801 South Figueroa Street Suite 300 Los Angeles, CA 90017-3007 Tel: (213) 955-9775 • www.stantec.com

Stantec

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DISTRICT TERMINAL 2 - RECOMMISSIONING Project No.

5353 OVERPASS ROAD, GOLETA, CA 93111 KJTKJTCHKD2022.04.08Dwn.Dsgn.Chkd.YYYY.MM.DD stn_Architecture_2270449601.rvt

Revision



2014240805

1	2	3 4	4 5	6	7
MTD TERMINAL 2 RECOMMISSIONING GOLETA, CA	 H. Do not store soil sterilant and pesticides with other landscape materials. Store in locked separate structure or vehicle. 	I. Guarantee that plants are species called out on plan. Should it be determined by Landscape Architect within one year of Final Acceptance that incorrect	2.07 PESTICIDES	 Add soil to bring grade to one inch below walks, curbs and headers or grades as noted on grading plans. 	 Trees: a. Raise trees that settle below grad
SECTION 32 90 00	1.05 JOB CONDITIONS	species was installed, replace with correct species at no additional cost to Owner. Install replacement plants one container size larger than called out on plans, to compensate for lost growing time.	 A. Do not use pesticides containing chlorinated hydrocarbons (DDT, Chlordane, Lindane) or organic phosphates (Parathon) or paraquat. 	3.05 HEADERBOARDS	b. Adjust stakes and guys to keep for growth.
LANDSCAPING	 A. Existing conditions: base bids on following conditions: 1. That existing ground elevations will be brought to elevations indicated, on grading plan. 	2.02 TOPSOIL	B. Glyphosate broad spectrum systemic herbicide, mix and apply per manufacturer's specifications. Mix with blue dve so that areas where herbicide is	A. Layout per drawings with gypsum or spray paint. Review layout with Landscape	c. Remove weeds and foreign grass
PART I - GENERAL	 2. That no pipes or artificial obstructions, other than those indicated will be encountered. Notify Landscape Architect if unforeseen obstructions are 	A. Natural, fertile, friable, sandy loam, characteristic of productive soils in the vicinity, 6.5 to 8.0 pH.	applied can be seen.	Architect prior to installation. Install straight to line and grade per drawings. Backfill on both sides and compact to density of undisturbed soil.	 General: a. Pruning: prune dead or broken
1.01 DESCRIPTION OF WORK	encountered. 3. That soil unsuitable for plant growth will be encountered under currently	B. Free of weeds, seeds, bermuda and kikuyu grass stolons, subsoil, clay lumps,	2.08 MULCH	3.06 TREE AND SHRUB PLANTING	eroded around trees and shrubs c. Poison Bermuda and/or K
 A. General 1. This section specifies requirements for landscaping as shown on drawings and as specified herein. 	paved areas and will be removed to depth of twelve (12) inches.	stones, roots, sticks, substances 1-1/2" or more in diameter and debris.	A. Tree chippings or Agromin ES-100 mulch or equal (submit samples)	A. Prior to excavating pits, place trees and shrubs as shown on drawings. Request review by Landscape Architect.	d. Notify Owner of each maintenar
B. Related Sections	 Coordinate and cooperate with other Contractors to enable work to proceed as rapidly and efficiently as possible. 	2.03 FERTILIZER AND SUPPLEMENTS	B. Gravel: color and size as specified on drawings.	B. Excavate pits twice diameter of container and 6" greater in depth. Dispose of	D. Poison or trap gophers or ground squirre
1. Section 32 80 00: Irrigation System	C. Sanitary Facilities	A. Gro-Power Plus, 5-3-1, or equivalent, manufactured by Southern California	2.09 HEADERBOARD	unsuitable material encountered.	days of notification.
A. Source Quality	for use by all personnel. Comply with all minimum requirements of all public agencies having jurisdiction. Maintain in a sanitary condition at all times.	2.04 SOIL AMENDMENTS	A. Provide as snown on drawings.	C. Broadcast bone meal over bottom of pit and scratch into soil at following rates:	E. Replace dead, stolen, vandalized, dama days of notice. Assume a 10% replacem to theft and vandalism 15 gallon and
 Provide plant materials conforming to State of California grading code of Nursery Stock, No. 1 grade, for quality and size. Use only nursery-grown stock 	D. Cleanup	A. Pre-emergents: may not be used without Owner's approval.	A Stake Rough sawn redwood 2x2x8 construction grade or Lodge Pole nine	15-gallon Plant 1 cup	regardless of cause.
 Plants: subject to review by Landscape Architect at place of growth or storage yard and upon delivery for conformity to specifications. Such review 	 Reep areas clean, neat, and ordeny. Clean paved surfaces at the end of each day. Remove deleterious materials and debris prior to Maintenance Period. 	B. Bone meal: standard horticultural brand.	fully treated with Copper napthanate Wood Preservative, 2-inch (minimal nominal size) diameter by 8 feet long, no split stakes.	1-gallon Plant 1/4 cup	 F. Replenish mulch to original depth in shru of maintenance.
 shall not preclude right to review and of rejection during progress of work. 3. Nomenclature: per <u>Sunset Western Garden Book</u>, 2012 or current nursery 	E. Protection	C. Gypsum: Agricultural grade; minimum 95 percent calcium sulphate.	B. Staking Materials: Wire-pliable, 12-gauge galvanized; hose 1/2-inch rubber or	D. Add backfill mix to pit and tamp to compact.	3.12 REPAIR AND REPLACEMENTS
B. Requirements of Regulatory Agencies	1. Protect the property from injury or loss. All damage to existing property (buildings, utilities, etc.) or planting (trees, shrubs, lawn, or ground cover) caused by the Landscape Contractor during his operation or as a result of	D. Nitrogen-fortified shavings: redwood, fir or cedar with minimum 0.40 percent nitrogen based on dry weight. Provide one of following or equivalent:	nylon reinforced plastic straps in figure 8 super tree tie or submit sample.	 E. Center plants in pits and fill pits with backfill mix. Set plants so top of root ball is 1" above adjacent grade at planting to allow for settling and to keep rootball 	A. Repair and/or replace damaged property
1. Perform work in accordance with all laws, codes, and regulations required by authorities in furnishing, transporting, and installing materials.	malfunction of installed work during the guarantee period shall be repaired at Landscape Contractor's expense.	Product Name Source	2.11 ROUT BARRIERS	from becoming too wet.	B Replace unacceptable plants with sar
 Certificates of inspection required by law for transportation shall accompany invoice for each shipment of plants. File copies of certificate with Landscape Architect after review of material 	 Cause minimum interference with workers, materials, or other equipment of other trades on the project. Landesane work shell not begin until all construction adjacent to the planting 	"Fir-Humus-Deck Bark" or Agri-Chip Nitrogen-fortified Redwood Shavings (805) 962-7005	A. High impact polyethylene or polystyrene manufactured specifically for this purpose.	F. Stake or guy trees immediately after planting. Windblown or broken trees not properly staked or guyed will be rejected. Details are general, adjust to fit individual trees.	specified in this Section.
C. Continuous Superintendence	 Landscape work shall not begin until all construction adjacent to the planting areas has been completed, unless otherwise directed by Owner or General Contractor. 	"Forest Humus" or Agri-Chip Nitrogen-fortified Redwood Shavings (805) 962-7005	2.12 SANDSTONE BOULDER	G Pruning: remove dead branches and weak crotches.	3.13 FINAL ACCEPTANCE
 Have one person responsible for work specified in this section continuously on job site throughout installation. 	1.06 SUBSTITUTIONS	2.05 Composted Material	1. Locally native Santa Barbara sandstone boulders obtained from a local source. Boulders to be clean and free of dirt and debris, attractive, with no	trees as determined by Landscape Architect.	A. Final acceptance of project will be g completion of work, punch list items
D. Certified Arborist: 1 As a minimum the tree work crew supervisor(s) must be a current	 A. Locate plants as soon as job is awarded. 1. Inform Landscape Architect of unavailable plants at least two weeks prior to 	A. Compost shall be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris wood wastes or other	artificial gouges or damage (small scratches or chips may be buffed out). Submit samples (photos OK) to Landscape Architect for approval. Size per	H. Cleanup: rake shrub areas smooth and remove debris.	replacement of plants under Guarantee Privile will assume maintenance of work.
International Society of Arboriculture (ISA) Certified Arborist. Their names and certification number(s) must be included in the bid document to be	anticipated planting.2. Be prepared with suggested available alternates and price difference.	organic materials not including manure or biosoids meeting the standards developed by the US Composting Council (USCC). The product shall be		3.07 GROUNDCOVER	B. If the installation is phased, Final Accepta
considered for this project. Any change in the status of the "Certified" individual(s) during the life of this contract must be reported to the Owner's Representative at the time of accurrence. All Certification numbers will be	B. Landscape Architect will select substitutes.	certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program).	A Washed gravel: 3/4" crushed angular California Gold color gravel	A. Space as indicated on drawings in triangular pattern in parallel rows. Plant 1/2 required spacing from edge of bed, 24" from trees, 36" from shrubs.	C If the Contractor waits until the end of
verified through the ISA's office.	1.07 GUARANTEE	B. Compost Quality Analysis:		B. Pull from flats gently, retaining soil around roots. Plant within one hour after	groundcover, etc., the Final Acceptance for continued until the newly planted areas are
03 SUBMITTALS	A. Plants 15 gallons and larger for one (1) year after Final Acceptance. Replace dead plants and plants not in vigorous, thriving condition as soon as weather	Before delivery of the soil, the supplier shall submit a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's	PART III - EXECUTION	removal from flat.	planted areas.
 A. Samples 1. Soil amendments with analysis prior to materials being brought on job site. 2. Submit photos of plants 15 gallops and larger from other than local 	permits and on notification by Landscape Architect. Replace plants which have partially died, thereby damaging shape, size or symmetry.	Compost Analysis Proficiency (CAP) program and using approved Test Methods for the Evaluation of Composting and Compost (TMECC). The lab report shall verify:	3.01 MEASUREMENT	3.08 MULCH	END OF SECTION 3
nurseries, with person standing next to trees for scale. Label photo with following information:	B. Replace with same kind and sizes as originally planted, at no cost to Owner. Provide one (1) year guarantee on replacement. Protect irrigation system and	1. Feedstock Materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and	A. Scaled dimensions are approximate: verify.	A. All areas except lawn and hydroseeded slopes.	
 a. Botanical and Common Name b. Name, Location, and Phone Number of Nursery Size of Container 	other piping, conduit, or other work during replacement. Repair damage immediately at no cost to Owner.	agricultural crop residues. 2. Organic Matter Content: 35% - 75% by dry weight. 3. Carbon and Nitrogon Patio: C:N < 25:1 and C:N>15:1	B. Inform Landscape Architect of discrepancies between drawings and field conditions.	B. Shrub areas: rake basins smooth. Apply solid layer of Gorilla hair	
d. Trunk Height to Lowest Branching e. Caliper at 3'-0" from ground	C. Excludes replacement of plants due to "acts of God."	 Carbon and Nitrogen Ratio. C.N < 25.1 and C.N > 15.1. Maturity/Stability: shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or 	C. Using a transit, verify that landscape areas can be graded to drain per code and	C. All beds adjacent to buildings or terraces: walk-on bark or Gorilla hair. Submit	
B. Invoices	 D. Guarantee 1. On company letterhead, type following information and submit two (2) copies 	leaves, or is hot (120F) upon delivery or rewetting is not acceptable. In addition any one of the following is required to indicate stability:	writing.	sample for owner's approval.	
 Copies of invoices for soil amendments, fertilizers, and materials specified herein. Invoice shall contain job site name, job site address, Contractor's name materials delivered quantities delivered and date 	with original signatures to Landscape Architect:	 a. Oxygen Test < 1.3 O2/unit TS/hr. b. Specific Oxygen Test < 1.5 O2/unit BVS c. Respiration test < 8C / unit VS / day 	3.02 FINISH GRADING	D. Groundcover and annual areas: apply 1" layer of nitrogen-fortified redwood shavings.	
C. Soil Testing	We hereby guarantee that the planting we have furnished and installed is	 d. Dewar test < 20 Temperature rise (degree Celsius) e. Solvita© > 5 index value 	A. Finish grade is to be even and smooth, providing positive surface drainage of planted areas. Inform Landscape Architect of discrepancies between drawings,	E. Keep all mulches away from plant stems. If soil stays too wet, uncover root balls.	
 Imported fill: provide soil analysis from composites of borrow area prior to delivery on job site. Evicting poils Evicting poils provide poil products of representative complete 	free from defects in materials and workmanship and the Work has been completed in accordance with the drawings and specifications, ordinary	5. Toxicity: any one of the following measures is sufficient to indicate non-toxicity.	specifications and field conditions which preclude establishing positive drainage.	3.09 PROTECTION AND CLEANUP	
2. Existing soil: Existing soil: provide soil analysis of representative samples from 6 locations of job site, as determined by Landscape Architect. Dig 12" and provide a representative amount of soil from profile. Mix soil samples	wear and tear and unusual abuse or neglect excepted. We agree to replace plants 15 gallons and larger for one (1) year after final acceptance due to plant's dving or partially dving, thereby damaging shape, size or symmetry.	 a. NH4-: NO3-N < 3 b. Ammonium < 500 ppm, dry basis c. Seed Germination > 80% of control 	B. Prior to soil preparation, remove all rocks over 1-1/2" in diameter, sticks, plaster, concrete, debris and foreign growth from planting areas.	A. Dispose of empty containers off site at end of each day.	
together well in a clean container, and extract a final sample which fits into a 1 gallon Ziploc bag. Send to agronomic soil testing lab within 24 hours.	Including damages consequential to defects in materials and workmanship and repair or replacement, which develop during one (1) year after Final	 d. Plant Trials > 80% of control e. Solvita© > 5 Index value 	C. Prior to planting, poison existing Bermuda grass or Kikuyu grass in accordance with spray manufacturor's instructions. This must be done from April	B. Clean paved areas.	
3. Imported topsoil: provide soil analysis performed by a certified testing laboratory prior to delivery to job site. Identify source location, percentages of silt clay, sand, organic matter, pH, mineral and plant putrient content of	Acceptance of the Work, at no additional cost to the Owner. We agree to make such repairs and replacements within thirty (30) days after receipt of written notice. In the event of our failure to make such repairs and	 Nutrient Content: provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B. Total Nitragon content 0.0% or above preferred. 	September.	C. Clean walks, walls, and windows muddled by planting operations.	
soil. Soils unsuitable for planting will be rejected.4. Provide soil analysis expressed in parts per million including the following:	replacements within thirty (30) days of written notice, we authorize the Owner to proceed to have such repairs and replacements made at our	 b. Boron: Total shall be <80 ppm; Soluble shall be <2.5 ppm. 7. Salinity: Must be reported; < 6.0 mmhos/cm. 	D. Establish finish grade in planting areas after soil preparation, settlement and planting as shown on drawings. Drain planting areas away from buildings at a	D. Provide traffic barriers as required to protect newly planted areas.	
a. Organic Content i. Zinc b. Nitrogen j. Manganese	expense and we will pay all costs and charges upon demand:	8. pH shall be between 6.5 and 8. May vary with plant species.	minimum of 5% for the first 5 feet. Grade against building shall be a minimum of 6" below the bottom of woodsiding or sills.	3.10 REVIEW/OBSERVATION	
c. Phosphorous K. Copper d. Potassium I. Iron e. Magnesium m. Boron	Project: Location: Date of Final Acceptance:	C. Compost rexture Compost shall be analyzed by an accredited lab using #200, 1/4 inch, 1/2 inch,	E. Establish finish grade at planter areas bordering curbs, headers, and walks 1" to	A. Request review at least 2 days prior to anticipated review date.	
f. Calcium n. pH g. Sodium o. ECe	Signed:	and 1 inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:	add topsoil as necessary to establish finish grade.	B. Required review observations by Landscape Architect:	
h. Sulfur	Company Name: Address:	Sieve Size Percent Passing (by weight) Min Max	3.03 SOIL PREPARATION WHERE TOPSOIL IS PLACED	 Fine grading of all areas prior to planting. Prior to planting with plants arranged per drawings. At each review, a punch list will be generated by the Londocone. Architect 	
in Santa Paula, CA, 853 Corporation St., Santa Paula, CA 93060, (805) 392-2000. Provide sample per laboratory protocol and submit sample with	PART II - PRODUCTS	1 inch 99 100 1/2 inch 90 100	A. Step 1 - Subsoil1. Cultivate to depth of 9".	Prior to the next review date, punch list items shall be completed. Failure to comply with the execution of the punch list may result in re-doing of areas to	
completed sample chain of custody form, available from their website at: http://www.fglinc.com/documents/FGLAgChain.pdf. Soils deemed	2.01 PLANTS	1/4 inch 40 90 No. 200 2 10	 Apply gypsum at rate of 25 lbs per 1000 square feet. Do not cultivate. Water to leach gypsum through top 9" of soil. 	correct problems.	
 6. Suitability of soil and chemical deficiencies will be determined by Landscape Architect Deliver test results to Landscape Architect 	A. Provide healthy and vigorous, well-branched and densely foliated plants when in leaf: free of disease, insect pests, eggs or larvae; with healthy, well-developed	D. Bulk Density: shall be between 500 and 1100 dry lbs/cubic yard.	 Keep moist for 10 days to germinate weed seeds. Remove weeds, poison and remove perennial weeds. Small annual weeds 	C. Final Review prior to starting Maintenance Period.1. When installation and punch list items are complete.	
 Soil under previous building or parking areas: tests at surface and six inches below grade by germinating radishes or annual rye grass. If germination 	root systems; and free from physical damage or adverse conditions that would prevent thriving growth.	E. Moisture Content shall be between 30% - 55% of dry solids.	may be cultivated in.	D. Maintenance Period Reviews	
fails, remove sterilized soil and place topsoil. 8. Test for percolation: dig a minimum of three, 36" deep holes in planting areas and fill with water. Depart amount of time it takes for water to	B. Provide plants true to species and variety and conforming to measurements	F. Inerts: compost shall be relatively free of inert ingredients, including glass, plastic, and paper, < 1% by weight or volume.	 B. Step 2 - Topsoil all areas previously paved or where soil unsuitable for plant growth has been encountered. Add topsoil to dopth of 2" or as required to bring soil to grades indicated on 	 Thirty (30) days into Maintenance Period. Sixty (60) days into Maintenance Period. 	
percolate. Deliver results to Landscape Architect.	C. Provide container stock grown for at least six (6) months, but not over two (2)	G. Weed seeds/pathogen destruction: provide proof of process to further reduce pathogens (PERP). For example, turned windrows must reach a minimum of 55	 grading plans. 2. Apply following materials and cultivate to a depth of 6": 	 3. Ninety (90) days into Maintenance Period. 4. Other times as may be required. 5. At each regions a number list will be generated by the Londonne Ambitact. 	
1.04 DELIVERY, STORAGE AND HANDLING	years in containers in which they are delivered. Cracked or broken root balls shall not be planted.	degrees Celsius for 15 days with at least 5 turnings during that period.	Material Rate per 1000 Square Feet	5. At each review, a punch list will be generated by the Landscape Architect. Items on the punch list shall be completed before the next review. Failure to comply. may result in extension of the 90-day Maintenance Period.	
A. Furnish standard products in manufacturer's containers bearing original labels showing quantity, analysis, and name of manufacturer.	D. If a plant species is not available, Landscape Architect will select substitute. (Refer to 1.06 Substitutions.)	H. Select Pathogens: Salmonella <3 MPN/4 grams of TS, or Coliform Bacteria < 10,000 MPN/gram	Nitrogen-fortified Wood 4 cubic yards Shavings or compost	Example: if punch list from Final Review is not completed for 30-day walkthrough, Maintenance Period will be extended 30 days.	
 B. Deliver plants in closed trucks or wrap specimens to prevent windburn. Windburned plants will be rejected. 	E. Do not prune prior to delivery.		Gro-Power Plus 50 lbs.	E. Review for FINAL ACCEPTANCE	
C. Provide protection for plants and products from weather conditions or other adverse conditions	F. Match in size plants of same species in rows.	 Trace Contaminants Metals (Lead Mercury, etc.) product must meet US EPA, 40 CFR 503 regulations. 	3.04 SOIL PREPARATION, GENERAL SITE (WHERE NO TOPOSOIL IS PLACED)	 At the 90 day review if the job is acceptable to Landscape Architect and Owner. If unsees at the 00 day review such as time will be achedulad. 	
D. Deliver plants with legible identification labels. Label trees, bundles of	G. Do not use root-bound, sunburned, or wind-tattered plants. Several plants of each species shall be uncanned and checked for root growth. In event that	2.06 PREPARED BACKFILL MIX	A. Step 1 - After review of rough grading with Landscape Architect.	2. If unacceptable at the 90 day review, another time will be scheduled	
containers of like shrubs, and groundcover plants. Use durable waterproof labels with water-resistant ink which will remain legible for at least sixty (60)	sample plants reviewed are found to be defective, entire lot or lots of plants represented by defective samples may be rejected. Such plants shall be	A. Prepare as follows for trees and shrubs:	 Cultivate to depth of 9". Apply gypsum at rate of 150 lbs. per 1000 square feet. Do not cultivate. 	A Continuously maintain plants after installation until Final Acceptance	
cays. E. Lift plants by container only. Plants with broken limbs, loose root balls, or loose	cost to Owner.	4 parts topsoil 1 part nitrogen-fortified shavings or compost	 6. Water to leach gypsum through top 9" of soil. 7. Keep moist for 10 days to germinate weed seeds. 	B. Maintenance Period:	
trunks will be rejected.	H. In event of disagreement as to condition of root system, root conditions of furnished plants will be determined by removal of earth from roots on not less	5 lbs Gro-Power Plus per cubic yard of backfill	8. Remove weeds, poison and remove perennial weeds. Small annual weeds may be cultivated in.	1. 90 days from completion of all punch list items from the Final Review.	
 Provide 24-nour advance notification of delivery schedule so material may be reviewed upon arrival at job site. Remove unacceptable material from the job site immediately. 	the two plants or more than 2 percent of total number of plants of each species or variety. Where plants are from several sources, roots of not less than two plants of each species or variety from each source will be reviewed. If sample	B. Prepare as follows for natives:	B. Step 2 - Apply the following materials and cultivate to a depth of 6".	C. Maintenance Schedules	
G. Deliver pesticides and soil fumigants to job site in original unopened containers.	plants are defective, entire lot or lots of plants may be rejected. Plants rendered unsuitable for planting due to this inspection will be considered samples and	4 parts topsoil 1 part sand	MaterialRate per 1000 Sq. Ft.Nitrogen-fortified5 cubic yards	 Groundcover and Shrub Beds: a. Weeding: remove weeds and foreign grasses at least once a week. 	
Containers that do not have legible label that identifies Environmental Protection Agency and State registration number, and manufacturer's registered uses will be rejected. Rejson may be used only with Owner's concerns.	provided at no cost to Owner.	0.5 part nitrogen-fortified shavings or compost 5 lbs. Gro-Power Plus per cubic yard of backfill	Wood Shavings or Compost	b. Cultivating: as required to keep soil surface loose.c. Replenish mulches to full depth after cultivation.	
be rejected. Poison may be used only with Owner's approval.			Gro-Power Plus 50 lbs.		
	[
ISSUE FOR BID SUBMITTAL		Permit/Seal Consult		Client/Project Logo Client/Project SANTA BARBARA METROPOLITAN	TRANSIT LANDSCAPE SPEC
			次没 Unstantec	DISTRICT	
		NO. 5596	Stantec 801 South Figuerog Street Suite 300	TERMINAL 2 - RECOMMISSIONING	
			RUE NATURELos Angeles, CA 90017-3007IDSCAPE ARCHITECTURETel: (213) 955-9775 • www.stantec.com		Project No.
		2023.10.04	KIMBERLY TRUE, MLA	5353 OVERPASS ROAD GOLETA CA 93111	2014240805

PLANNING DEPARTMENT SUBMITTAL Revision

ORIGINAL SHEET - ARCH E1

							Permit/Seal	Consultant	
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 							ISSUE FOR BID		
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							EONSTRUCTION 04/30/2025 EXP DATE	I KUE NAIUKE LANDSCAPE ARCHITECTURE	Tel: (213) 955-977
			ISSUE FOR BID			2023.10.04		KIMBERLY TRUE, MLA	
			PLAN CHECK RESUBMITTAL NO. 1	<u>KJT</u>	KJT	2023.05.12	OF CALIFU	315 Meigs Road Suite A-131	Copyright Res
			PLANNING /BUILDING DEPARTMENT SUBMITTAL	<u> </u>	KJT	2023.03.10		Santa Barbara, CA 93109	The Contractor shall verify a
<u> </u>	KJT	2023.05.12	PLANNING DEPARTMENT SUBMITTAL	<u> </u>	KJT	2022.11.04		TrueNatureDesign.com	drawing - any errors or omiss
Ву	Appd	YYYY.MM.DD	Issued	Ву	Appd	YYYY.MM.DD		805-770-2100	or use for any purpose othe

eserved

ify and be responsible for all dimensions. DO NOT scale the missions shall be reported to Stantec without delay. signs and drawings are the property of Stantec. Reproduction ther than that authorized by Stantec is forbidden.

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Revision

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that settle below grade to established elevation. s and guys to keep trees upright, erect and compensate eeds and foreign grasses from basins.

ine dead or broken branches from trees and shrubs. tments: fill to original grade areas that have settled or nd trees and shrubs. muda and/or Kikuya grass in accordance with 's instructions. er of each maintenance trip.

rs or ground squirrels and repair damage within seven (7)

n, vandalized, damaged, or dying plants within seven (7) me a 10% replacement of plants 5 gallons and smaller due sm. 15 gallon and larger are guaranteed for 1 year,

riginal depth in shrub and groundcover areas prior to end

damaged property and improvements due to actions of s employees or failure of employees to act.

e plants with same species, size and guarantee as

project will be given by Landscape Architect upon punch list items and Maintenance Period excluding under Guarantee Period. Upon Final Acceptance, owner nce of work.

ased, Final Acceptance may be given on an area basis at

s until the end of maintenance to re-plant bare lawn, Final Acceptance for a portion or all of the project may be wly planted areas are as established as originally

END OF SECTION 32 90 00

DSCAPE SPECIFICATIONS







		 		Permit/Seal	Consultant	
		 		ISSUE FOR BID		
 				NOT FOR CONSTRUCTION		Stantec Architect 801 South Figuero Los Angeles, CA 9 Tel: (213) 955-9775
	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2	 	2023.10.04 2023.07.10			Copyright Rese
023.05.12 (Y.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	 Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify and drawing - any errors or omission The Copyrights to all designs of an use for any purpose other t







GATE	SCHE	EDUL	E.
MATERIAL	SIZE	HW	REMARKS
MTL	PER DWGS	971	2, 3
MTL	PER DWGS	971	2, 3
			· · · · ·
	SCHE		F
DOOR	FRAME		
MAT'L	MAT'L	HW	REMARKS
S.C.	MTL	486	2
S.C.	MTL	054	
S.C.	WD	052	
S.C.	WD	052	
S.C.	WD	030	
S.C.	MTL	482	2
S.C.	WD	022	1
S.C.	WD	022	1
S.C.	WD	050	
S.C.	MTL	482	2
S.C.	MTL	032	
S.C.	WD	030	
S.C.	WD	030	
S.C.	WD	052	
S.C.	MTL	465	
S.C.	WD	030	
S.C.	MTL	032	
S.C.	MTL	052	
S.C.	MTL	462	

<u>FINISH</u>	<u>ES:</u>	PAINT	<u>S:</u>
LVT-1	VINYL FLOOR TILE MFR: MANNINGTON STYLE: AMTICO SIGNATURE COLLECTION, WOOD SIZE: 7.25" X 48" COLOR: TRANQUIL GRAIN (AROW8300) INSTALLATION: STAGGERED JOINTS, RANDOM LOCATION/ROOMS: 104, 105, 106, 110, 111, 112, 113, 114	PT-01:	FIELE MFR: COLC FINIS LOCA 002, 1 ACT (
B-1:	RUBBER WALL BASE MFR: ROPPE COLOR: LUNAR DUST 114 (DARK GRAY) TYPE: STANDARD TOE SIZE: 4-INCH ROOMS: INSTALL IN ALL LOCATIONS RECEIVING VINYL FLOOR TILE	PT-02:	ACCE MFR: COLC FINIS LOCA
ACT-1:	AND ROOM 101 ACOUSTICAL CEILING TILE MFR: ARMSTRONG STYLE: FISSURED, TEGULAR (ARMSTRONG ITEM #705) SIZE: 2' x 2' x 5/8"	PT-10:	EPOX MFR: COLC FINIS LOCA
GB-1:	T-GRID: EXISTING TO REMAIN, REPAINTED WHITE TO MATCH LOCATION/ROOMS: 105, 110, 111, 112, 113, 114	PT-11:	SAFE MFR: COLC FINIS
	FINISH: PT-1 LOCATION/ROOMS: 104, 106, 107, 108, 109 *CEILINGS ARE EXISTING AND ARE TO RECEIVE NEW PAINT. PATCH AND REPAIR AS REQUIRED TO LEVEL 4 FINISH.	PT-21:	LOCA FIELE MFR:
LAM-1:	PLASTIC LAMINATE MFR: WILSONART STYLE: SATIN STAINLESS - 4830K-18		COLC FINIS LOCA
	FINISH: LINEARITY LOCATION: WHERE INDICATED	PT-22:	FIELD MFR: COLC



A-101 3/16" = 1'-0"

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VEHICLE WASH BUILDING ROOF PLAN A-121 1/8" = 1'-0"

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4 VEHICLE WASH BUILDING RCP A-121 1/8" = 1'-0"



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SECTIONS AND DETAILS



B ELEVATIONS ARE SHOWN FOR REFERENCE ONLY FOR RELATIVE RIDGE AND VALLEY D FOR ALL ALL ROOFING PENETRATIONS AND FLASHINGS NOT SPECIFICALLY INDICATED, E SEE EQUIPMENT DRAWINGS FOR WASH EQUIPMENT DESIGNATIONS AND INFORMATION.



GENERAL NOTES:	IV. REINFORCED CONCRETE:
ALL STRUCTURAL WORK SHALL CONFORM TO THE DRAWINGS, THE PROJECT	 IV. REINFORCED CONCRETE: CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318 AND ACI 301 WITH MODIFICATION AS NOTED ON THE CONTRACT DOCUMENTS
ALL APPLICABLE REFERENCE STANDARDS, AS MODIFIED BY THE BUILDING CODE, INCLUDE: A. ASCE/SEI 7-16: MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES B. ACI 318-14: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE C. AISC 360-16: SPECIFICATION FOR STRUCTURAL STEFL BUILDINGS	 CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND BEAR THE WET SEAL OF A CIVIL ENGINEER LICENSED IN THE STATE OF THE PROJECT AND BE PROVIDED TO THE SEOR FOR REVIEW. EACH MIX DESIGN SHALL BEAR THE NAME OF THE PROJECT AND THE SPECIFIC USE.
 D. AISC 341-16: SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS E. AWS D1.1: STRUCTURAL WELDING CODE - STEEL F. ACI 117-10: STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIAL G. TMS 402-16: BUILDING CODE FOR MASONRY STRUCTURES 	 CONCRETE MODULUS OF ELASTICITY SHALL MEET THE MINIMUM PROVIDED IN ACI 318 SECTION 19.2.2 FOR THE 28-DAY STRENGTH SPECIFIED BELOW. TEST SHALL BE IN ACCORDANCE WITH ASTM C469.
 HIG 402 10: BOILDING CODE FORM/ CONTROL OF CONTROL OF	4. CONCRETE SHALL HAVE THE FOLLOWING ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS LOCATION STRENGTH, fc A. ALL LOCATIONS UON 3,000 PSI
HE SCOPE OF WORK IS NOT SOLELY DEFINED BY THESE DOCUMENTS. YPICAL DETAILS APPLY THROUGHOUT THE PROJECT, EVEN IF NOT SPECIFICALLY EFERENCED IN PLANS OR DETAILS. DETAILS OF CONSTRUCTION NOT FULLY SHOWN OR OTED ON THE DRAWINGS NOR CALLED OUT IN THE SPECIFICATIONS SHALL BE OF THE SAME IZE AND CHARACTER AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED.	 5. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE FOR II. CONCRETE EXPOSED T SOILS CONTAINING CORROSIVE ELEMENTS (SULFATES) SHALL COMPLY WITH IBC 1904.1. 6. FLY ASH MAY BE USED AS A SUBSTITUTE FOR PORTLAND CEMENT. WEIGHT OF FLY ASH SHALL NOT EXCEED 15% OF CEMENT WEIGHT. FLY ASH SHALL CONFORM TO ASTM C618 CLASS F AND LOSS OF IGNITION SHALL BE LIMITED TO 2%.
ALL FORCES INDICATED IN THE STRUCTURAL DRAWINGS ARE SERVICE LOADS AS DEFINED BY ASCE-7, UNLESS NOTED OTHERWISE. DO NOT USE SCALED DIMENSIONS; USE ONLY WRITTEN DIMENSIONS. WHERE NO DIMENSION S PROVIDED, CONSULT THE ARCHITECT FOR CLARIFICATIONS BEFORE PROCEEDING WITH	 MIXING OPERATIONS SHALL CONFORM TO ASTM C94. ALL CONCRETE NOT IN CONTACT WITH EARTH TO HAVE FINISH AS SPECIFIED BY ARCHITEC OR AS COVERED IN PROJECT SPECIFICATIONS. UNLESS OTHERWISE NOTED, NON- ARCHITECTURAL CONCRETE COLUMNS AND WALLS SHALL HAVE 3/4" CHAMFERED CORNER
SEE ARCHITECTURAL DRAWINGS FOR SITE POSITIONING AND PROJECT DATUM, REFERENCE IS (0-0") AS SHOWN ON ARCHITECTURAL DRAWINGS.	 9. AGGREGATE FOR NORMALWEIGHT CONCRETE SHALL CONFORM TO ALL REQUIREMENTS A TESTS OF ASTM C33 AND PROJECT SPECIFICATIONS 10. LIGHTWEIGHT CONCRETE SHALL HAVE AN AIR-DRY UNIT WEIGHT OF NOT MORE THAN
THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF PERSONS AND PROPERTY AND THE MEANS AND METHODS OF CONSTRUCTION.	115 PCF AND NOT LESS THAN 110 PCF (UNLESS HIGH VOLUME FLY ASH CONCRETE USED). LIGHTWEIGHT AGGREGATE SHALL CONFORM TO ASTM C330. TEST SHRINKAGE IN ACCORDANCE WITH ASTM C157. SHRINKAGE SHALL NOT EXCEED 0.0005 INCHES/INCH.
STRUCTURAL ELEMENTS SHALL BE CENTERED ABOUT GRIDLINES OR DIMENSION LINES, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE ENGINEERED DESIGNS OF TEMPORARY SHORING AND	 ALL CONCRETE SHALL BE REINFORCED. PROVIDE MINIMUM TEMPERATURE REINFORCEME AS REQUIRED BY ACI-318 IN ELEMENTS WHERE NO REINFORCEMENT IS INDICATED ON THE DRAWINGS.
BRACING AND MAKE SAFE ALL FLOORS, ROOFS, WALLS, EXCAVATIONS AND ADJACENT PROPERTY AS PROJECT CONDITIONS AND LOCAL BUILDING CODE REQUIRE. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL,	 DRY PACK OR GROUT UNDER BASE PLATES AND SILL PLATES SHALL BE 7000 PSI MIN AT 28 DAYS. CONCRETE PLACEMENT SHALL CONFORM TO ACI 304 AND PROJECT SPECIFICATIONS.
ELECTRICAL, PLUMBING, ETC. REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON PLAN. DISCREPANCIES AND/OR INTERFERENCES SHALL BE REPORTED TO THE ARCHITECT IMMEDIATELY. OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN	SANDBLAST ALL CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST 14. ALL REINFORCEMENT, ANCHOR BOLTS AND OTHER EMBEDDED ITEMS SHALL BE SECURELY HELD IN PLACE WHILE CONCRETE IS POURED. ADDITIONAL BARS TO BE PROVIDED BY THE CONTRACTOR FOR SUPPORT AS NEEDED.
DEFICIENT WORK AND WORK NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AS DENTIFIED BY THE ARCHITECT OR INSPECTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COMPENSATE OWNER FOR SERVICES ARISING FROM DEFICIENT WORK.	15. MECHANICAL, ELECTRICAL AND PLUMBING OPENINGS AND SLEEVES ARE SHOWN INDICATIVELY AND SMALL OPENINGS AND SLEEVES ARE NOT SHOWN. SEE SLAB EDGE, MECHANICAL, ELECTRICAL, PLUMBING AND OTHER TRADES FOR SIZE AND LOCATION OF A SLAB AND WALL OPENINGS AND SLEEVES. CONTRACTOR TO DEVELOP AND SUBMIT A SING COORDINATION DRAWING COMBINING ALL TRADES INDICATING ALL SLAB OPENINGS AND SLEEVES PRIOR TO POURING CONCRETE FOR REVIEW BY STRUCTURAL ENGINEER.
THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY REQUIRED DEWATERING OF THE SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL PREPARE ENGINEERED DESIGN AND SHALL BE RESPONSIBLE FOR CONFIRMING ADEQUACY OF AS BUILT STRUCTURE FOR ALL SURCHARGE LOADS RESULTING FROM COMPACTION AS WELL AS CRANES TRUCKS, BULLDOZERS OR ANY OTHER CONSTRUCTION EQUIPMENT. ENGINEERED DESIGNS SHALL BE PREPARED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE JURISDICTION AND SUBMITTED TO	16. ALL PIPE AND CONDUIT OPENINGS SHALL BE SLEEVED AND CAST IN PLACE UNLESS OTHERWISE NOTED. DO NOT SAWCUT, CORE OR CORE DRILL STRUCTURAL CONCRETE WITHOUT EXPLICIT DIRECTION FROM THE STRUCTURAL ENGINEER. DRILL BITS THAT CAN OR DAMAGE REINFORCING ARE NOT PERMITTED TO BE USED ON STRUCTURAL CONCRETE
ENGINEER OF RECORD FOR REVIEW. THE STRUCTURAL COMPONENTS BY THEMSELVES ARE A NON-SELF-SUPPORTING STRUCTURE. LATERAL FORCES DUE TO WIND, EARTHQUAKE, OR SOIL ARE CARRIED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE LATERAL SYSTEM. CERTAIN ELEMENTS SHOWN ON THE STRUCTURAL DRAWINGS (SUCH AS BRACING, ROOF AND FLOOR SLABS, AND CONCRETE IN COMPOSITE COLUMNS) ARE REQUIRED FOR OVERALL OR LOCAL STABILITY OF OTHER ELEMENTS (SUCH AS BEAMS, COLUMNS, AND WALLS). IF DUE TO SEQUENCING OF	 REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60, WELDED REINFORCING STEEL SHALL COMPLY WITH ASTM A706, GRADE 60. REINFORCEME SHALL ONLY BE WELDED WHERE SPECIFICALLY NOTED ON THE DRAWINGS. WELDING SHA CONFORM TO AWS D1.4 USING E90XX ELECTRODES.
CONSTRUCTION, THESE STABILITY ELEMENTS ARE NOT IN PLACE, THE CONTRACTOR SHALL ETAIN A STRUCTURAL ENGINEER LICENSED TO PERFORM THE WORK IN THE JURISDICTION WHERE THE PROJECT IS LOCATED, WHO SHALL INVESTIGATE WHERE TEMPORARY HORING/BRACING IS REQUIRED AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING. HE CONTRACTOR SHALL PROVIDE THIS SHORING/BRACING UNTIL THE REQUIRED TRUCTURAL FLEMENTS AND THEIR CONNECTIONS HAVE BEEN INSTALLED AND REACH THEIR	 WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTMA185 (FOR PLAIN WIRE) AND ASTMA497 (FOR DEFORMED WIRE). Fy = 70 000PSI. REINFORCING STEEL FOR CAST-IN-PLACE NONPRESTRESSED CONCRETE MEMBERS SHALL HAVE THE FOLLOWING CONCRETE COVER, SEE ACI 117 FOR TOLERANCES. <u>CONCRETE EXPOSED TO EARTH OR IN CONTACT WITH GROUND:</u>
FINAL DESIGN STRENGTHS. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT WHEN PLACED ON FRAMED FLOORS OR ROOFS. THE CONSTRUCTION MATERIAL LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING WHERE STRUCTURE IS NOT COMPLETE OR HAS. NOT ATTAINED DESIGN STRENGTH	A. CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH 3" EXPOSED TO WEATHER OR IN CONTACT WITH EARTH (#5 AND SMALLER) 1-1/2' B. EXPOSED TO WEATHER OR IN CONTACT WITH EARTH (#6 AND LARGER) 2" <u>CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:</u> 2" C. SLABS, JOISTS AND WALLS (#11 AND SMALLER) 3/4" D. SLABS, JOISTS AND WALLS (#14 AND LARGER) 1-1/2'
BUILDING TOLERANCES: STANDARD TOLERANCES SHALL BE BASED ON THE REQUIREMENTS OF THE AISC CODE OF STANDARD PRACTICE AND ACI 117, STANDARD SPECIFICATIONS FOR FOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.	 E. BEAMS, COLUMNS AND PEDESTALS 1-1/2" 5. EPOXY COATED REINFORCEMENT SHALL BE USED WHERE PERMANENTLY EXPOSED TO WATER, DEICING SALTS AND WHERE NOTED IN THE CONTRACT DOCUMENTS. 6. PROVIDE DOWELS OR CONTINUOUS REINFORCING BETWEEN ALL CONCRETE ELEMENTS. F
FOUNDATIONS:	FOUNDATIONS PROVIDE DOWELS OF SAME NUMBER AND SIZE AS THE VERTICAL REINFORCEMENT OF STRUCTURE ABOVE UNLESS NOTED OTHERWISE. FOR OTHER STRUCTURAL ELEMENTS VERTICAL DOWELS SHALL MATCH THE GREATER REINFORCING C EACH ELEMENT.
FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF. THIS VALUE IS BASED ON THE PRESUMPTIVE LOAD BEARING VALUES OF CBC SECTION 1806.	7. BAR SPLICES MAY BE DELETED AND CONTINUOUS REINFORCING USED AT CONTRACTORS OPTION. BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. IN FRAMED BEAM AND SLABS SPLICE TOP BARS AT MID-SPAN, BOTTOM BARS OVER SUPPORTS.
 WHERE SOIL CONDITIONS ARE FOUND DURING CONSTRUCTION THAT ARE QUESTIONABLE, A GEOTECHNICAL ENGINEER SHALL PROVIDE ADDITIONAL RECOMMENDATIONS. LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL EXPOSE EXISTING UTILITY LINES IN THE IMMEDIATE AREA TO DETERMINE THEIR EXACT INVERT ELEVATION, SIZE AND LOCATION RELATIVE TO THE FOUNDATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY INTERFERENCE WITH PILES, FOOTINGS OR FOUNDATION WALLS. 	 STEEL REINFORCEMENT SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR IN ACCORDANCE WITH ACI-315: "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", A SHALL INDICATE: MATERIAL AND GRADE BAR SCHEDULES WITH BAR LENGTHS AND BENT BAR DIAGRAMS ARRANGEMENT, SPACING, COVER, LAP LOCATIONS AND LENGTHS SPLICE DETAILS FOR MECHANICAL SPLICES SUPPORTS FOR CONCRETE REINFORCEMENT
CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, AND SEEPAGE. WATER SHALL NOT BE ALLOWED TO STAND IN TRENCHES OR FORMS BEFORE OR AFTER CONCRETE IS PLACED, AND SHALL BE PUMPED OUT. IF BOTTOMS OF TRENCHES BECOME SOFTENED DUE TO RAIN OR OTHER WATER BEFORE FOUNDATIONS ARE CAST. THE CONTRACTOR SHALL AT THEIR OWN EXPENSE	 9. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH ACI 31 AND THE 'MANUAL OF STANDARD PRACTICE' BY CRSI AS MODIFIED BY THE CONTRACT DOCUMENTS.
EXCAVATE THE SOFTENED MATERIAL AND REPLACE WITH CONCRETE. CONTRACTOR SHALL PROVIDE FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN THE EARTH BANKS AND ANY EXISTING STRUCTURE.	 ACTUAL YIELD STRENGTH BASED ON MILL TESTS SHALL NOT EXCEED SPECIFIED STRENG BY MORE THAN 18 ksi (RETESTS SHALL NOT EXCEED THIS VALUE BY MORE THAN 3 ksi). THI RATIO OF ACTUAL ULTIMATE TENSILE STRESS TO ACTUAL YIELD STRENGTH SHALL NOT BI LESS THAN 1.25.
EXCAVATIONS FOR FOOTINGS SHALL BE VERIFIED BY THE SPECIAL INSPECTOR PRIOR TO PLACING OF REINFORCING AND CONCRETE. CONTRACTOR SHALL NOTIFY THE INSPECTOR WHEN THE EXCAVATIONS ARE READY FOR INSPECTION.	 WELDING REINFORCING STEEL SHALL BE COMPLETED WITH LOW HYDROGEN ELECTRODE CONFORMANCE WITH AWS D1.4. ALL REINFORCING BENDS SHALL BE MADE COLD.
ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR MASONRY HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGNS, PERMITS AND	 13. LAP WELDED WIRE FABRIC BY 6" OR ONE AND A HALF FULL MESHES, WHICHEVER IS GREATER. 14. MARK ALL BARS SO IDENTIFICATION CAN BE MADE DURING IN-PLACE INSPECTION.
INSTALLATION OF BRACING AND PROTECTION.	VI. CONCRETE JOINTS:
LIVE LOAD: A. ROOFS: 20 PSF	 CONSTRUCTION JOINTS SHALL BE INSTALLED SUCH THAT STRENGTH AND APPEARANCE CONCRETE ARE NOT IMPAIRED, AT LOCATIONS INDICATED OR AS APPROVED BY THE ARCHITECT. SEE PROJECT SPECIFICATIONS FOR LIMITS ON LOCATION AND SPACING.
SNOW LOAD: N/A WIND LOAD: A. ULTIMATE DESIGN BASIC WIND SPEED V(ult) = 91 MPH B. RISK CATEGORY = II C. WIND EXPOSURE CATEGORY = C SEISMIC LOAD:	 SLAB ON GRADE CONTRACTION JOINTS SHALL BE PROVIDED TO CONTROL THE CRACKING PATTERNS AT LOCATIONS INDICATED, OR AS APPROVED BY THE ARCHITECT. LOCATE JOINTS AT COLUMN LINES WHERE APPLICABLE, WITH SPACING NOT TO EXCEED FEET AND RATIO OF LONG TO SHORT SIDE OR POUR NOT TO EXCEED 1.5. MAXIMUM
A. SITE CLASS = D [DEFAULT] B. RISK CATEGORY = II C. SEISMIC IMPORTANCE FACTOR = 1.0 D. MAPPED SPECTRAL RESPONSE a. SHORT PERIOD $S_S = 2.283 \text{ g}$ b. 1-SECOND PERIOD $S_1 = 0.805 \text{ g}$ E. DESIGN SPECTRAL RESPONSE (5% DAMPED)	RECTANGULAR SLAB AREA CONTROLLED BY JOINTING NOT TO EXCEED 225 SQUARE-FEE CONTRACTOR OPTION TO FORM EITHER SAWCUT OR TOOLED JOINTS.
a. SHORT PERIOD $S_{DS} = 1.826 \text{ g}$ b. 1-SECOND PERIOD $S_{D1} = 0.912 \text{ g}$	

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GENERAL NOTES

VII. STRUCTURAL STEEL:

- 1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360 2. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
- A. WIDE-FLANGE AND WT SECTIONS: ASTM A992 GRADE 50 (FY = 50 KSI) B. ANGLES AND CHANNELS: ASTM A36 (FY = 36 KSI)
- C. PLATES, BARS: ASTM A36 (FY = 36 KSI) D. MEMBERS BUILT-UP FROM PLATES: ASTM A572, GRADE 50 (FY = 50 KSI)
- E. ROUND HSS: ASTM A500 GRADE B (FY= 42 KSI) F. RECTANGULAR HSS: ASTM A500 GRADE B (FY=46 KSI)
- 3. TOP OF STEEL ELEVATION SHALL BE AT BOTTOM OF DECK, UNLESS NOTED OTHERWISE.
- 4. WHERE A MEMBER IS INDICATED AS BENT, FACETTED OR CRANKED, ENSURE FULL MEMBER CAPACITY IS PROVIDED THROUGH JOINT. MEMBER SPLICES SHALL ALSO HAVE FULL MEMBER CAPACITY UNLESS OTHERWISE NOTED.
- FIELD CUTTING OR DRILLING STRUCTURAL STEEL IS STRICTLY PROHIBITED WITHOUT PRIOR REVIEW AND APPROVAL BY SEOR. ALL HOLES AND CUTS SHALL BE PERFORMED IN THE SHOP AS IDENTIFIED ON STRUCTURAL DRAWINGS OR SHOP DRAWINGS.
- 6. BOLTED CONNECTIONS: A. STANDARD CONNECTIONS
- a. MINIMUM BOLTED CONNECTIONS SHALL BE MADE WITH TWO A325N, TYPE 1 BOLTS, 3/4 DIAMETER. ALTERNATELY, A325X, A490N OR X, OR LARGER BOLTS MAY BE SUBSTITUTED
- b. NUTS SHALL CONFORM TO ASTM A563 AND WASHERS SHALL CONFORM TO ASTM F436 7. WALL BRIDGING SHALL BE SPACED AT 5'-0" MAX. c. BOLT HOLES IN STEEL SHALL BE 1/16" LARGER THAN THE NOMINAL SIZE OF BOLT.
- EXCEPT ANCHORS BOLTS. d. EXCEPT AS NOTED BELOW, HIGH STRENGTH BOLTS SHALL BE SNUG-TIGHT AS DEFINED IN 'SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS' SECTION
- B. SLIP-CRITICAL CONNECTIONS: SLIP-CRITICAL BOLTS SHALL BE FULLY TENSIONED WITH FRAYING SURFACE PREPARATION CLASS A. BOLTS SHALL BE TIGHTENED BY THE METHODS DETAILED IN 'SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS' SECTION 8.2 TO MINIMUM TENSIONS SPECIFIED IN TABLE 8.1. SLIP-CRITICAL CONNECTIONS SHALL BE USED IN THE FOLLOWING LOCATIONS a. WHERE REQUIRED IN THE AISC PROVISIONS.
- b. WHERE NOTED ON THE DRAWINGS. c. WHEN OVERSIZED HOLES ARE USED.
- d. AT ALL CANTILEVER CONNECTIONS.

C. SEISMIC/WIND CONNECTIONS: a. SEISMIC/WIND CONNECTIONS SHALL BE PRE-TENSIONED. b. BOLTS ARE DESIGNED AS BEARING CONNECTIONS.

- c. SEISMIC/WIND CONNECTIONS SHALL BE USED AT ALL BEAMS, BRACES AND COLUMNS IN BRACED FRAMES OR MOMENT FRAMES AND WHERE NOTED ON THE PLANS. THESE CONNECTIONS DO NOT NEED TO BE DESIGNED AS SLIP-CRITICAL UNLESS NOTED ON THE PLANS.
- D. PRE-TENSIONED BOLTED CONNECTIONS: PRE-TENSIONED BOLTED CONNECTIONS SHALL BE FULLY TENSIONED AND USED IN THE FOLLOWING LOCATIONS: a. WHERE REQUIRED IN THE AISC PROVISIONS.
- b. WHERE NOTED ON THE DRAWINGS. c. AT ALL CONNECTIONS WITHIN 5 FEET OF COLUMNS. d. AT ALL CONNECTIONS FOR MEMBERS DIRECTLY OR INDIRECTLY SUPPORTING COLUMNS, POSTS, STRUTS, BRACES, MECHANICAL EQUIPMENT AND STAIRS. e. FOR ALL BOLTS WITH TENSION LOADS (END PLATE CONNECTIONS, HANGERS, BRACES
- OR BEAMS) . ANCHOR STUDS, SHEAR STUDS, AND DEFORMED ANCHORS.
- A. WELDED STUDS (HEADED OR THREADED) SHALL BE ASTM A108. MINIMUM DIAMETER SHALL BE 3/4" UNLESS NOTED OTHERWISE B. DEFORMED ANCHORS SHALL BE ASTM A496 C. STUDS AND ANCHORS SHALL BE WELDED ACCORDING TO MANUFACTURER'S
- RECOMMENDATIONS
- 8. WEI DED CONNECTIONS: A. ALL WELDS SHALL CONFORM TO AWS D1.1. WELDING ELECTRODES SHALL BE CLASS E70XX. MINIMUM FILLET WELD SIZE SHALL BE 1/4" UNLESS NC C. WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS, REFER TO SPECIFICATIONS. D. WHERE FIELD WELDING IS SPECIFICALLY NOTED, THE DESIGNATION IS GIVEN AS A
- SUGGESTED CONSTRUCTION PROCEDURE ONLY. THE CONTRACTOR SHALL DETERMINE SUITABILITY OF SHOP OR FIELD WELDING FOR ALL CONDITIONS. ALL BOLTED CONNECTIONS MUST BE IN ADDITION TO THESE REQUIREMENTS.
- E. WELD LENGTHS SPECIFIED ON PLANS ARE THE NET EFFECTIVE LENGTH. WELD SIZE SHALL BE AISC MINIMUM UON AS LARGER WELD
- F. ALL CJP WELDS SHALL BE MADE WITH FILLER METAL WITH A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT -20 DEGREES F. NDT AND INSPECTIONS PER THE 'STRUCTURAL TESTING AND INSPECTIONS' SHEET. G. CONTRACTOR TO PROVIDE WELDING PROCEDURE SPECIFICATION FOR REVIEW AND APPROVAL BY SEOR.
- 9. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. NO FABRICATION OF STEEL SHALL COMMENCE WITHOUT APPROVED SHOP DRAWINGS.
- 10. STEEL FINISHES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE IN ARCHITECTURAL SPECIFICATIONS: A. INTERIOR TO RECEIVE ENCASEMENT OR SPRAY-ON FIREPROOFING: NONE B. INTERIOR TO RECEIVE FINISH PAINT: REFER TO SPECIFICATIONS
- C. EXTERIOR: HOT-DIPPED GALVANIZED COATING CONFORMING TO ASTM A123 OR HIGH-PERFORMANCE COATING AT CONDITIONS AS IDENTIFIED IN SPECIFICATIONS.
- 1. FIREPROOFING: REFER TO ARCHITECTURAL PLANS FOR MINIMUM HOURLY VALUES OF STEEL FIRE PROTECTION FOR DETERMINING THE THICKNESS OF SPRAY APPLIED FIREROOFING. THE STRUCTURAL FRAME CONSISTS OF COLUMNS AND GIRDERS, BEAMS, TRUSSES, AND SPANDRELS HAVING DIRECT CONNECTIONS TO THE COLUMNS AND BRACING MEMBERS DESIGNED TO CARRY GRAVITY LOADS. FLOOR OR ROOF MEMBERS THAT HAVE NO CONNECTION TO COLUMNS SHALL BE CONSIDERED SECONDARY MEMBERS.
- 12. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS). IN GENERAL, AESS IS NOT DESIGNATED ON THE STRUCTURAL DRAWINGS.
- 13. CONTRACTOR SHALL HOLD A PRE-DETAILING CONFERENCE TO DEFINE THE FOLLOWING: A. STEEL COLUMN LENGTH ADJUSTMENT FOR ELASTIC SHORTENING EFFECTS. B. STEEL TRUSS CAMBERING
- C. ELEMENTS AFFECTED BY STEEL ERECTION PROCEDURE, SUCH AS MEMBER SIZES CONNECTIONS, SPLICES, BASE PLATES, ANCHOR BOLTS, ROCK ANCHORS, ETC. D. ERECTION PROCEDURES AND SEQUENCES WITH REGARD TO TEMPERATURE EFFECTS.

VIII. STEEL ROOF DECK:

- 1. THE STEEL DECK SHALL BE OF DEPTH AND GAUGE SHOWN ON THE STRUCTURAL DRAWINGS. STEEL DECK SIZE HAS BEEN SPECIFIED BASED ON 3-SPAN DESIGN VALUES, CONTRACTOR SHALL REVIEW ACTUAL SPAN CONDITIONS FOR ALL DECK LAYOUTS WHEN DESIGNING SHORING. ALL ROOF DECK AND ACCESSORIES SHALL BE GALVANIZED CONFORMING TO ASTM A653 WITH A MINIMUM YIELD STERNGTH OF 38 ksi. GALVANIZED DECK SHALL BE ZINC COATED ASTM A653-G60. FOR DECK EXPOSED TO WEATHER USE G90. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3.
- 2. MINIMUM BEARING ON STEEL DECK ON SUPPORTS SHALL BE 2". ALL 3" STEEL DECK SHALL HAVE MINIMUM BEARING OF 3". NONCOMPOSITE UNITS SHALL BE FASTENED AS NOTED ON THE PLANS. AT MINIMUM CONNECT THE STEEL SUPPORTS AT THE ENDS OF THE UNITS AND AT INTERMEDIATE SUPPORTS BY A MINIMUM OF FOUR CONNECTIONS PER 3'-0" OF WIDTH. WHERE TWO UNITS ABUT, EACH UNIT SHALL BE SO FASTENED TO THE STEEL FRAMING. THE SIDE LAPS OF ADJACENT UNITS SHALL BE FASTENED BETWEEN SUPPORTS BY CONNECTIONS AT A MAXIMUM SPACING OF 1'-0" ON CENTER UNLESS NOTED OTHERWISE. DECK UNITS SHALL BE CONNECTED TO THE STEEL SUPPORTS AT THE SIDE BOUNDARIES AT A MAXIMUM SPACING OF 1'-0" ON CENTER. ALL WELDS ON STEEL DECK EXPOSED TO WEATHER SHALL BE DE-SLAGGED, CLEANED, AND TOUCHED-UP WITH A ZINC RICH PRIMER.
- 3. WHERE STEEL MEMBERS ARE PARALLEL TO THE DECK FLUTES AND AT THE SAME ELEVATION OF THE BOTTOM OF THE DECK, ADJUST DECK LAYOUT AND WELD DECK TO STEEL WITH SAME WELDING AS REQUIRED FOR SIDE BOUNDARIES.
- 4. HANGERS SUPPORTED BY METAL DECKING ONLY OR METAL DECKING WITH INSULATED FILL SHALL BE ATTACHED TO STEEL BARS, 3/8" ROUND x 12" OR 1 1/2" SQUARE x 12" FLAT, PLACED PERPENDICULAR TO FLUTES. ONLY LIGHT DUCTWORK (12"x16" MAX), PIPING (1 1/2" ROUND PIPING MAX) OR CEILINGS MAY BE HUNG FROM SUCH INSTALLATIONS. HANGERS MUST BE TWO FLUTES APART WHERE THEY OCCUR ON THE SAME DECK SPAN.
- 5. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. FOR SIZES AND LOCATIONS OF OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. SEE TYPICAL DETAILS FOR FRAMING SUPPORT AT DECK OPENINGS.
- 6. THE STEEL DECK FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STEEL DECK FOR ARCHITECT'S REVIEW PRIOR TO FABRICATION.

- IX. COLD FORMED METAL FRAMING (CFMF)
- 1. STRUCTURAL MEMBERS SHALL BE AS NOTED ON THE STRUCTURAL DRAWINGS AND CONFORM TO ASTM C955 AND ASTM A653. MINIMUM YIELD STRENGTH: A. 43 MILS (18 GA) AND THINNER 33ksi B. 54 MILS (16 GA) AND THICKER 50ksi
- 2. MINIMUM SIZE, THICKNESS, AND OTHER SECTION PROPERTIES SHALL COMPLY WITH THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) SPECIFICATIONS AND ICC-ES 3064P. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL FOR SUBSTITUTIONS.
- WELDING: A. WELDING ELECTRODES SHALL BE CLASS E60XX B. WELDS SHALL BE PERFORMED BY QUALIFIED WELDERS. . WELDING SHALL COMPLY WITH AWS D1.3 D. ALL FIELD WELDING SHALL BE SPECIALLY INSPECTED.
- E. METAL FRAMING THINNER THAN 18 GAUGE SHALL NOT BE WELDED. 4. SCREWS SHALL BE SELF-TAPPING AND COMPLY WITH ASTM C1513.
- 5. TRACK MEMBERS SHALL BE MINIMUM SAME GAGE AS ATTACHED STUDS. TRACKS REQUIRED AT TOP AND BOTTOM OF ALL WALLS. STUDS SHALL BEAR FLAT ON THE WEB OF TRACKS, SEE DETAILS FOR ATTACHMENT. CONTINUOUS TRACKS SHALL BE WELDED OR SCREWED, WIRE TIES ARE NOT PERMITTED.
- 6. WEB PUNCH-OUTS SHALL BE GREATER THAN 10" FROM ENDS OR BEARING POINTS. COORDINATE LOCATIONS WITH BRACING.

X. CONCRETE MASONRY:

- ALL CONCRETE MASONRY UNITS (CMU) SHALL BE NORMAL WEIGHT OR LIGHT WEIGHT AGGREGATE CONFORMING TO THE REQUIREMENTS OF ASTM C-90 TYPE II. PROVIDE TWO-CELL HOLLOW BLOCK WITH NOMINAL FACE SIZE 8"X16" WITH 6", 8" OR 12" NOMINAL THICKNESS AT LOCATIONS AS SHOWN ON ARCHITECTURAL DRAWINGS. MINIMUM EXTERIOR WALL NOMINAL THICKNESS SHALL BE 8". ALL UNITS SHALL BE PLACED IN RUNNING BOND.
- 2. MORTAR AND GROUT MIX DESIGNS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL MIX DESIGNS SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND BE WET STAMPED BY A CIVIL ENGINEER LICENSED IN THE STATE OF THE PROJECT.
- 3. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL BE fm=2000 PSI, DETERMINED BY THE UNIT STRENGTH METHOD.
- MORTAR SHALL CONFORM TO ASTM C270 TYPE M OR S, MINIMUM COMPRESSIVE STRENGTH = 2000 PSI
- 5. GROUT SHALL CONFORM TO ASTM C476, MINIMUM COMPRESSIVE STRENGTH 2000 PSI
- 6. BOND BEAMS AND ALL CELLS WITH VERTICAL REINFORCEMENT SHALL BE FULLY GROUTED. VERTICAL REINFORCEMENT SHALL BE SECURED IN PLACE PRIOR TO GROUT PLACEMENT
- 7. HORIZONTAL JOINT REINFORCEMENT SHALL BE WELDED "LADDER" OR "TRUSS" DESIGN, CONFORMING TO ASTM A951, WITH WIRE CONFORMING TO ASTM A82. FOR REINFORCEMENT AT EXTERIOR WALLS, HOT-DIP GALVANIZE TO ASTM A153 (1.50Z/FT2). FOR INTERIOR WALLS, MILL GALVANIZE TO ASTM A641 (0.10Z/FT2)
- 8. VERTICAL REINFORCEMENT SHALL BE CONTINUOUS BETWEEN SUPPORTS WITH MINIMUM SPLICE LENGTHS OF 2'-6". PROVIDE ADDITIONAL BARS EACH CORNER, END OF WALL, EDGE OF OPENING, AND EDGE WHERE WALL IS INTERRUPTED BY STEEL COLUMN. 9. THE FIRST BLOCK COURSE ON FOOTING SHALL BE FILLED SOLID WITH GROUT.
- 10. CONCRETE BLOCK BELOW BEAM BEARING POINTS SHALL BE FILLED SOLID WITH GROUT FOR A MINIMUM OF TWO COURSES IN DEPTH AND FOR A WIDTH OF 24".
- 11. ALL MASONRY WALLS SHALL BE ADEQUATELY BRACED DURING CONSTRUCTION. FLOOR AND ROOF DIAPHRAGMS PROVIDE STABILITY FOR WALLS. UNTIL THESE ARE IN PLACE, MASONRY WALLS SHALL NOT BE BUILT HIGHER THAN 10 TIMES THEIR THICKNESS WITHOUT BRACING.
- 2. REINFORCEMENT SHALL BE SUPPORTED TO PREVENT DISPLACEMENTS BEYOND TOLERANCES AND BY 1/2" CLEAR MINIMUM FROM WALLS OF MASONRY UNITS PRIOR TO GROUTING.
- 13. ALIGN FOOTING DOWELS WITH CELLS. CELLS TO BE IN VERTICAL ALIGNMENT. 14. CLEANOUTS SHALL BE PROVIDED FOR GROUT POURS WHICH EXCEED 5'-4".

XI. MECHANICAL AND ADHESIVE ANCHORS

- 1. ADHESIVE ANCHORS AND DOWELS INSTALLED INTO CONCRETE: A. "SET-XP" BY SIMPSON STRONG TIE (ESR#2508) B. "HIT-RE 500-V3" BY HILTI, INC. (ESR#3814) C. "PURE110+BY DEWALT (ESR-3298)
- 2. ADHESIVE ANCHORS AND DOWELS INSTALLED INTO GROUT-FILLED CMU: A. "EPOXY SET-TIE SET" BY SIMPSON STRONG TIE (ESR#1772) B. "HIT HY-270" BY HILTI, INC. (ESR#4143) C. "AC100+GOLD" BY DEWALT (ESR-3200)
- 3. EXPANSION ANCHORS INSTALLED INTO CONCRETE OR GROUT-FILLED CMU: A. "STRONG-BOLT 2" BY SIMPSON STRONG-TIE (ESR#3037) B. "KWIK BOLT TZ" BY HILTI, INC. (ESR#1917) C. "POWER-STUD+SD2" BY DEWALT (ESR-2502)
- 4. SCREW ANCHORS INSTALLED INTO CONCRETE OR GROUT-FILLED CMU A. "TITEN HD" BY SIMPSON STRING-TIE (ESR-2713; ESR-1056) B. "KH-EZ" BY HILTI, INC. (ESR-3027; ESR-3056) C. "SCREW-BOLT+" BY DEWALT (ESR-3889; ESR-4042)
- 5. ADHESIVE ANCHORS: ASTM A36 THREADED RODS WITH ASTM A 563 GRADE A NUTS AND ANSI B18.22.1 TYPE A WASHERS, UNLESS OTHERWISE NOTED. ANCHORS DESIGNATED AS ASTM A193 GRADE B7 THREADED RODS TO USE ASTM A 563 GRADE DH HEAVY HEX NUTS AND ASTM F 436 WASHERS.
- 6. ADHESIVE DOWELS: ASTM A615 GRADE 60 REINFORCING STEEL.
- 7. ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ICC-ES REPORT AND MANUFACTURERS RECOMMENDATIONS
- 8. UNLESS OTHERWISE NOTED, PROVIDE MINIMUM EMBEDMENT OF ANCHORS PER ICC-ES REPORT & MANUFACTURERS RECOMMENDATIONS.
- 9. CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH MECHANICAL OR ADHESIVE ANCHORS.
- 10. PRIOR TO ALL DRILLING OR CORING, THE CONTRACTOR SHALL (1) VERIFY THE EXISTING CONCRETE OR MASONRY THICKNESS TO PREVENT DAMAGE TO THE OPPOSITE FACE OF CONCRETE AND MAINTAIN 1 -1 /2 " CLEAR COVER U.N.O., AND (2) IDENTIFY EXISTING REINFORCING LOCATIONS BY PACHOMETER, PROBING, CHIPPING, ETC. TO AVOID DAMAGE EXISTING REINFORCING.
- 11. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE, FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT, IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
- 12. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION TO SUPPORT SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) CERTIFIED THROUGH ACI/CRSI OR EQUIVALENT (ACI 318-14 17.8.2.2)
- 13. ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS (ACI 318-14 17.1.2)



1. ALL STRUCTURAL SAWN LUMBER SHALL BE DOUGLAS FIR LARCH AS GRADED BY THE WWPA

OR WCLIB WITH THE FOLLOWING MINIMUM GRADES, UNLESS NOTED OTHERWISE:

2. ALL STRUCTURAL COMPOSITE LUMBER (SCL) OR ENGINEERED LUMBER SHALL BE AS

XII. STRUCTURAL LUMBER

FOLLOWS

A. 2X OR 3X STUDS: NO. 2

C. 2X OR 3X JOISTS: NO. 2

REVIEW AND APPROVAL.

ARCHITECTURAL DRAWINGS.

REQUIRMENTS ABOVE.

WITH CBC TABLE 2304.10.1.

EXPOSED TO WEATHER SHALL BE GALVANIZED.

PREVENT SPLITTING OF THE WOOD

PREVENT SPLITTING OF THE WOOD.

7/8 OF THE SCREW ROOT DIAMETER.

STANDARDS OF ANSI/ASME B18.2.1.

HAVE FULL BEARING ON THE SILL PLATE.

SHALL NOT BE FORCIBLY DRIVEN INTO PLACE

E. LAG SCREWS SHALL BE TURNED, NOT DRIVEN INTO PLACE.

WASHERS WHERE BEARING AGAINST DIRECTLY AGAINST WOOD.

TIGHTENED BEFORE CLOSING IN OR AT COMPLETION OF JOB.

WALLS, AND AT MIDSPAN OF JOISTS SPANNING GREATER THAN 10 FEET.

DOUGLAS FIR.

1. NAILS:

OTHERWISE

NAIL DIAMETER.

NOTED OTHERWISE

THE SCREWS.

13. BOLTS AND LAG SCREWS

BOLT DIAMETER.

THF SHANK.

10d NAILS AT 12" OC.

SPAN.

ALTERNATIVE.

SHOWN IN THE DETAILS.

MEMBER END.

12 WOOD SCREWS

3. STRUCTURAL GLUE LAMINATED TIMBER (GLT):

B. 4X AND LARGER POSTS OR STUDS: NO. 1

D. 4X AND LARGER BEAMS OR JOISTS, CONCEALED: NO. 1

E. 4X AND LARGER BEAMS OR JOISTS, EXPOSED: SELECT STRUCTURAL

A. I-JOISTS: TJI JOISTS MANUFACTURED BY WEYERHAUSER (ESR-1153)

B. LSL: TIMBERSTRAND LSL MANUFACTURED BY WEYERHAUSER (ESR-1387)

C. LVL: MICROLLAM LVL (2.0E) MANUFACTURED BY WEYERHAUSER (ESR-1387

D. PSL: PARALLAM PSL (2.0E) MANUFACTURED BY WEYERHAUSER (ESR-1387)

ACCRODANCE WITH CBC 2303.1.3. ANSI/AITC A190.1 AND ASTM D3737

MAXIMUM MOISTURE CONTENT OF 15% AT THE TIME OF ENCLOSURE.

PROVIDED BY THE CONTRACTOR TO PREVENT DECAY.

C. GLT EXPOSED TO WEATHER SHALL BE RATED FOR EXTERIOR USE BY THE

E. SUBSTITUTION OF PRODUCTS LISTED ABOVE SHALL BE SUBMITTED TO ENGINEER FOR

A. GLT FABRICATION SHALL BE PERFORMED IN AN APPROVED FABRICATORS SHOP IN

B. GLT BEAMS SHALL BE 24F-V8 WITH A CAMBER OF R=1600' UNLESS NOTED OTHERWISE.

MANUFACTURER. FLASHING AND WATERPROOFING OF THE EXPOSED ENDS SHALL BE

D. ALL GLT MEMBERS SHALL HAVE APPEARANCE CLASSIFICATION AS SPECIFIED ON THE

4. ALL STRUCTURAL TIMBER FRAMING SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19% AT

MANUFACTURE. TIMBER FLOOR FRAMING, INCLUDING JOISTS AND BEAMS, WITH MORE THAN

2 FRAMED LEVELS ABOVE THEM SHALL BE DESIGNATED AS 'S-DRY' OR 'MC15' AND HAVE A

5. CONTRACTOR SHALL PROVIDE AT LEAST THREE RANDOM MOISTURE READINGS PERFORMED

APPROVAL TO ENCLOSURE TO VERIFY IN SERVICE MOISTURE CONTENT TO SATISFY THE

6. ALL LUMBER LOCATED IN DIRECT CONTACT WITH CONCRETE OR MASONRY INCLUDING BUT

NOT LIMITED TO SILL PLATES, NAILERS, AND LEDGERS SHALL BE PRESSURE TREATED

7. ALL HARDWARE SHALL BE SIMPSON STRONG-TIE CO INSTALLED PER MANUFACTURERS

8. MINIMUM FASTENING AND NAILING OF TIMBER COMPONENTS SHALL BE IN ACCORDANCE

9. FASTENERS SHALL BE PROVIDED NEW AND WITHOUT EXCESSIVE RUST. ALL FASTENERS

10. ALL METAL FASTENERS IN CONTACT WITH PRESERVATIVE-TREATED LUMBER SHALL BE

B. MINIMUM NAIL PENETRATION SHALL BE 10 TIMES THE SHANK DIAMETER UNLESS NOTED

C. EDGE DISTANCES, END DISTANCES, AND FASTENER SPACINGS SHALL BE SUFFICIENT TO

D. BORED PILOT HOLES SHALL BE PERMITTED FOR ALL NAILS TO HELP PREVENT WOOD

FROM SPLITTING. BORED HOLES SHALL BE MANDATORY FOR 20d AND LARGER NAILS

E. TOE NAILS SHALL BE DRIVEN AT AN ANGLE OF APPROXIMATELY 30 DEGREES WITH THE

A. WOOD SCREWS SHALL MEET THE DIMENSIONAL STANDARDS OF ANSI/ASME B18.6.1.

B. MINIMUM SCREW PENETRATION SHALL BE 10 TIMES THE SCREW DIAMETER UNLESS

E. WOOD SCREWS SHALL BE TURNED. NOT DRIVEN INTO PLACE. SOAP OR OTHER

C. EDGE DISTANCES, END DISTANCES, AND FASTENER SPACINGS SHALL BE SUFFICIENT TO

D. BORED LEAD HOLES SHALL BE PROVIDED WITH A DIAMETER EQUAL TO APPROXIMATELY

A. BOLTS AND LAG SCREWS SHALL CONFORM TO ASTM A307 AND MEET THE DIMENSIONAL

B. HOLES FOR BOLTS SHALL BE A MINIMUM 1/32" TO A MAXIMUM OF 1/16" LARGER THAN THE

C. BOLTS SHALL BE ACCURATELY ALIGNED IN MAIN MEMBERS AND SIDE PLATES. BOLTS

D. BORED LEAD HOLES FOR LAG SCREWS SHALL BE 40-70% OF THE SHANK DIAMETER AT

F. ALL BOLTS, NUTS, AND LAG SCREWS SHALL BE PROVIDED WITH FLAT OR MALLEABLE

14. ALL BUILT UP, DOUBLE 2X BEAMS AND JOISTS SHALL BE FASTENED TOGETHER WITH 2-ROWS

15. PROVIDE DOUBLE FLOOR JOISTS UNDER PARTITION WALLS RUNNING PARALLEL TO JOIST

16. PROVIDE SOLID BLOCKING IN JOIST FRAMING ABOVE ALL SUPPORTS, BELOW PARTITION

17. SUPPORT ALL UPPER LEVEL POSTS AND TRIMMERS IN LOWER LEVELS WITH EQUIVALENT

18. FIRE BLOCK STUD WALLS AT MID-HEIGHT WHERE STUD LENGTH EXCEEDS 10 FEET.

STRAPS WHICH DO NOT REQUIRE THE CUTTING OF STUDS ARE AN ACCEPTABLE

23. HOLDOWNS SHALL BE INSTALLED 1/2" MINIMUM ABOVE THE PLATE TO ALLOW FOR

WITHOUT FILLERS. DO NOT BEND HOLDOWN ANCHORS. TIGHTEN ANCHORS PER

MANFACTURERS RECOMMENDATIONS PRIOR TO COVERING THE WALL FRAMING

21. WHERE POSTS ARE SPECIFIED WITH CAPS AND/OR BASES, THE LOAD SHALL BE

TRANSFERRED TO THE FOUNDATION BY VERTICAL GRAIN ONLY.

FRAMING AND/OR BLOCKING OR OTHERWISE FRAME POSTS THROUGH FLOOR SYSTEMS.

19. NOTCHING OR CUTTING STUDS TO CLEAR ANCHOR BOLTS IS NOT PERMITTED. STUDS SHALL

20. LET-IN BRACES SHALL NOT BE USED FOR TEMPORARY BRACING ON ANY WALL FRAME. STEEL

22. DO NOT CUT, BORE, COUNTERSINK OR NOTCH WOOD MEMBERS EXCEPT WHERE EXPLICITY

TIGHTENING OF THE ANCHOR BOLT. THE HOLDOWN SHALL BE INSTALLED TIGHT TO THE POST

G. ALL BOLTS AND LAG SCREWS SHALL BE TIGHTENED UPON INSTALLATION AND RE-

THE THREADED PORTION OF THE SCREW, AND THE SAME DIAMETER AS THE SHANK AT

LUBRICANTS MAY BE PROVIDED TO FACILITATE INSERTION AND TO PREVENT DAMAGE TO

WHEN UTILIZED BORED HOLES SHALL HAVE A DIAMETER NOT EXCEEDING 75% OF THE

MEMBER AND STARTED APPROXIMATELY 1/3 THE LENGTH OF THE FASTENER FROM THE

STAINLESS STEEL OR OTHERWISE CERTIFIED BY THE MANUFACTURER TO RESIST

CORROSION CAUSED BY THE SPECIFIC TREATMENT APPLIED TO THE WOOD.

A. ALL NAILS SHALL BE COMMON WIRE NAILS UNLESS NOTED OTHERWISE

RECCOMENDATIONS. SUBSTITUTION OF EQUIVALENT HARDWARE FROM AN ALTERNATE

MANUFACTURER SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL

AT WALL AND FLOOR FRAMING IN THE PRESENCE OF THE BUILDING INSPECTOR PRIOR TO

THE TIME OF ENCLOSURE, REGARDLESS OF THE MOISTURE CONTENT AT THE TIME OF

XIII. MECHANICAL/ELECTRICAL/PLUMBING SYSTEM SUPPORTS

1. THE CONTRACTOR SHALL DESIGN AND SUPPLY ALL ADDITIONAL MISCELLANEOUS METALS AND SYSTEM SUPPORT COMPONENTS THAT ARE NECESSARY TO SUPPORT ALL MECHANICAL, ELECTRICAL (TELECOM, AUDIO VISUAL, ETC.) AND PLUMBING/FIRE PROTECTION SYSTEMS. SUCH METALS AND SUPPORT COMPONENTS AND THEIR CONNECTIONS SHALL BE PROVIDED AS NECESSARY TO DIRECTLY AND CONCENTRICALLY IMPOSE LOADS ON THE PRIMARY STRUCTURE. STEEL ROOF DECK SHALL NOT DIRECTLY SUPPORT THESE SYSTEMS. THE CONNECTIONS TO THE PRIMARY STRUCTURE ARE SUBJECT TO THE REQUIREMENTS OF THE MISCELLANEOUS METALS SECTION ABOVE.

XIV. EXISTING STRUCTURE & EXISTING CONDITIONS

- 1. CONTRACTOR IS TO NOTIFY ENGINEER OF QUESTIONABLE EXISTING STRUCTURAL COMPONENTS (MASONRY WALLS, STEEL BEAMS & LINTEL, EXPOSED FOUNDATIONS, ETC.) AND FRAMING CONNECTIONS WHEN ENCOUNTERED.
- 2. CONTRACTOR TO VERIFY EXACT LOCATION OF ALL EXISTING STRUCTURAL COMPONENTS THAT WILL BE CONNECTED TO NEW FRAMING PRIOR TO STEEL FABRICATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING DIMENSIONS AND COORDINATE THESE DIMENSIONS WITH THE STEEL FABRICATOR PRIOR TO STEEL FABRICATION TO ENSURE ARCHITECTURAL AND STRUCTURAL DESIGN CONCEPT. CONTRACTOR SHALL NOTIFY ARCHITECT AND/OR ENGINEER OF DISCREPANCIES.

XV. QUALITY ASSURANCE AND SPECIAL INSPECTIONS

- OWNER WILL ENGAGE AN INDEPENDENT TESTING AGENCY TO PERFORM THE TESTS AND INSPECTIONS SHOWN ON THE 'STRUCTURAL TESTING AND INSPECTIONS' SHEET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE PRIOR NOTICE TO ALLOW FOR COMPLETION OF THESE REQUIREMENTS.
- . CONTRACTOR SHALL SUBMIT A STATEMENT OF RESPONSIBILITY TO THE BUILDING DEPARTMENT AND OWNER PRIOR TO WORK ON WIND OR SEISMIC FORCE RESISTING SYSTEMS AND COMPONENTS WHICH ARE LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.

XVI. DEFERRED STRUCTURAL SUBMITTALS

- 1. SOME STRUCTURAL SYSTEMS ARE DEFINED AS VENDOR-DESIGNED COMPONENTS PER THE STRUCTURAL DOCUMENTS. THESE ELEMENTS OF THE DESIGN ARE DEFERRED SUBMITTAL COMPONENTS AND HAVE NOT BEEN PERMITTED UNDER THE BASE BUILDING APPLICATION. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT THE STAMPED COMPONENT SYSTEM DOCUMENTS TO THE BUILDING OFFICIAL FOR APPROVAL
- 2. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATION THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
- 3. SUBMITTALS TO BE PREPARED BY A LICENSED ENGINEER LAWFULLY ELIGIBLE TO DESIGN THE ELEMENT OR COMPONENT (SPECIALTY ENGINEER) AND SHALL BE SEALED IN ACCORDANCE WITH STATE LAW. SUBMITTALS SHALL INCLUDE: A. CALCULATIONS
- B. DIAGRAMS SHOWING LOADS APPLIED TO THE PRIMARY STRUCTURE INCLUDING MAGNITUDES, LOCATIONS, AND DIRECTIONS, SEPARATED INTO DEAD, LIVE, WIND AND/OR SEISMIC COMPONENTS. C. ERECTION OR DESIGN DRAWINGS AS NECESSARY TO DESCRIBE THE SYSTEM OR COMPONENT AND ITS CONNECTION TO THE PRIMARY STRUCTURE.
- 4. SUBMIT (1) REPRODUCIBLE COPY, (1) SET SEALED COPY FOR THE SEOR'S FILE, AND ADDITIONAL COPIES AS NECESSARY FOR THE BUILDING DEPARTMENT. SUBMITTALS CONTAINING EXCEPTIONS, CORRECTIONS, OR OTHER REVIEW COMMENTS ARE NOT ACCEPTABLE FOR SUBMITTAL TO THE BUILDING DEPARTMENT.
- 5. THE SEOR'S REVIEW IS STRICTLY LIMITED TO THE FOLLOWING: A. DRAWINGS AND CALCULATIONS ARE PROPERLY SEALED
- B. LOAD CRITERIA IS CONSISTENT WITH CONTRACT DOCUMENTS. C. CONNECTIONS TO THE PRIMARY STRUCTURE ARE CONSISTENT WITH THE PRIMARY STRUCTURE DESIGN. D. THE BASE STRUCTURE IS CAPABLE OF SUPPORTING IMPOSED LOADS.
- 6. THE SPECIALTY ENGINEER'S SEAL WILL CERTIFY THAT THE ITEMS DESIGNED BY THE SPECIALTY ENGINEER CONFORM TO THE CRITERIA WITHIN THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES AND STANDARDS.
- 7. IF THE LOADS IMPOSED ON THE STRUCTURE EXCEED THE CRITERIA WITHIN THE CONTRACT DOCUMENTS THE SUBMITTALS WILL BE REJECTED. CHANGES TO THE PRIMARY STRUCTURE TO ACCOMMODATE SPECIALTY ITEMS WILL ONLY BE MADE AT COST AFTER
- 8. THE FOLLOWING LIST INCLUDES THE ITEMS THAT ARE DEFINED AS DEFERRED STRUCTURAL SUBMITTAL COMPONENTS. REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND CIVIL DRAWINGS FOR ADDITIONAL DEFERRED SUBMITTAL COMPONENTS. A. SEISMIC/WIND ANCHORAGE FOR (N) FUEL TANK





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TERMINAL 2 - RECOMMISSIONING

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Revision

Title

HC HI ΗK HSS INF INT JST

)	INCHES INFORMA ^T INTERIOR JOIST JOINT KIPS KNEE BRA
	ANGLE

ABBREVIATIONS

# &		LB	POUND
∝ @	AND	LF LG	LENGTH
AB	ANCHOR BOLT	LLBB	LONG LEG BACK TO
ACS	ALL COMMON SIDES		
ADDL			LONG LEG VERTICAL
, LOO	EXPOSED STRUCTURAL	LO	LOW
		LT WT	
ALT ARCH,	ACHITECT,	LVL MAX	
ARCH'L	ARCHITECTURAL	MC	MOMENT CONNECTION
BL		MCJ	MASONRY CONTROL
BLKG	BLOCKING	MECH	JOINT
BM	BEAM	MEZZ	MEZZANINE
BN	BOUNDARY NAILING	MFR,	MANUFACTURER
BOB	BOTTOM OF BOTTOM OF BEAM	MANUF	
BOD	BOTTOM OF DECK	MIL	MILLIMETER
BOS	BOTTOM OF STEEL	MIN	MINIMUM
BOT, BOTT	BOTTOM	MISC	
BP	BASE PLATE	MTL	MASONNY OPENING
BRBF	BUCKLING RESTRAINED	Ν	NORTH
BRG		NA	NOT APPLICABLE
BTWN	BETWEEN	NDT	NON-DESTRUCTIVE TESTING
С	CHANNEL	NEW, (N)	NEW
CB		NIC	NOT IN CONTRACT
CEN	CARRIED COLUMIN CENTER	NTS	NOT TO SCALE
CFMF	COLD-FORMED METAL	OC	OPPOSITE HAND
		OPNG	OPENING
CIP		OPP	OPPOSITE
CJP	COMPLETE JOINT	OWSJ	OPEN WEB STEEL JOIST
<u>.</u>	PENETRATION	PJP	PARTIAL JOINT
CL	CENTERLINE		PENETRATION
CMU	CONCRETE MASONRY	PL	PLATE POLINDS PER LINEAR
	UNIT	1 []	FOOT
		PLYWD	PLYWOOD
CONN	CONNECT,	PSF	POUNDS PER SQUARE
	CONNECTION	PSI	POUNDS PER SQUARE
CONT		-	INCH
CWI	CERTIFIED WELDING	R RFF	RADIUS REFER REFERENCE
	INSPECTOR	REINF	REINFORCED,
D, DIA			REINFORCEMENT
DBA	ANCHOR		
DBL	DOUBLE	REQ'MT	REQUIREMENTS
DEF	DEFORMED, DEFINITION	S,	
		REQMIS	REVISION
DTL		SAD	SEE ARCHITECTURAL
DIAG	DIAGONAL	00	DRAWINGS
DN DWG	DOWN	SC SCHED	SLIP CRITICAL SCHEDULE
EA	EACH	SCJ	SAWN CONTROL JOINT
EF	EACH FACE	SECT	SECTION
EJ	EXPANSION JOINT	SF	SQUARE FEET
	ELEVATOR	SHT'G	
ELEV			SHEATHING
ELEV EN	EDGE NAILING	SIM	SIMILAR
ELEV EN EOR	EDGE NAILING ENGINEER OF RECORD	SIM SOG	SIMILAR SLAB ON GRADE
ELEV EN EOR EOS	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB	SIM SOG SPA	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING
ELEV EN EOR EOS EQ EQ SPA	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE	SIM SOG SPA SQ SSH	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE
ELEV EN EOR EOS EQ EQ SPA ES	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE	SIM SOG SPA SQ SSH STD	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD
ELEV EN EOR EQ EQ SPA ES EW	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY	SIM SOG SPA SQ SSH STD STL	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E)	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING	SIM SOG SPA SQ SSH STD STL STRUCT	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR	SIM SOG SPA SQ SSH STD STL STRUCT SUPP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF MASONRY TOP OF STEEL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF MASONRY TOP OF STEEL TOP OF STRUCTURAL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOA FOC FOM FT ETC	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET EQUINC	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STRUCTURAL CONCRETE
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOA FOC FOM FT FTG FY	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOT	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FNDN FF EL FN FOA FOA FOC FOM FT FTG FY GA	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOT TOW	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF ANGLE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOC TOF TOM TOS TOSC TOSL TOSL TOT TOW TYP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STEEL TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOA FOC FOM FT FTG FY GA GALV GB GL B	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF ANGLE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED LAMINATED	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSL TOSL TOT TOW TYP UON	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOC TOF TOM TOS TOSC TOSL TOSL TOT TOW TYP UON	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOT TOW TYP UON V, VERT VIF	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOULOW CORE	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOC TOF TOM TOS TOSC TOSL TOSL TOT TOW TYP UON V, VERT VIF W	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOC TOF TOM TOS TOSC TOSL TOSL TOT TOW TYP UON V, VERT VIF W W/	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSL TOF TOM TOS TOSL TOT TOW TYP UON V, VERT VIF W W/ W/O WB	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF CONCRETE TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT
ELEV EN EOR EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOC TOF TOM TOS TOSC TOSL TOSL TOSL TOT TOW TYP UON V, VERT VIF W W/ W/O WB WBBP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSL TOF TOM TOS TOSL TOT TOW TYP UON V, VERT VIF W W/ W/ W/O WB WHSS	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FDN, FT EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS IN INFO	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES INFORMATION	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOC TOF TOM TOS TOSC TOSL TOSL TOT TOW TYP UON V, VERT VIF W W/ W/O WB BBP WHSS	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE WELDED HEADED STEEL STUD
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FNDN FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS IN INFO INT	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF ANGLE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES INFORMATION INTERIOR	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOT TOW TYP UON V, VERT VIF W W/ V/O WB WBBP WHSS WP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE WELDED HEADED STEEL STUD WORKING POINT, WORK
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FDN, FDN, FF EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS IN INFO INT JST IT	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES INFORMATION INTERIOR JOIST	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOC TOF TOM TOS TOSC TOSL TOSL TOSL TOT TOW TYP UON V, VERT VIF W W/ W/ W/O WB WBBP WHSS WP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE WELDED HEADED STEEL STUD WORKING POINT, WORK POINT
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FD FDN, FT EL FN FOA FOC FOM FT FTG FY GA GALV GB GLB GT H, HORIZ HC HI HK HSS IN INFO INT JST JT K	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GLUED-LAMINATED BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES INFORMATION INTERIOR JOIST JOINT KIPS	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOSL TOSL TOSL TOSL TOT TOW TYP UON V, VERT VIF W W/ W/ W/O WB BBP WHSS WP WRT WT	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE WELDED HEADED STEEL STUD WORKING POINT, WORK POINT WITH RESPECT TO WEIGHT
ELEV EN EOR EOS EQ EQ SPA ES EW EXIST, (E) EXT FD FDN, FDN, FDN, FDN, FDN, FDN, FDN, F	EDGE NAILING ENGINEER OF RECORD EDGE OF SLAB EQUAL EQUAL SPACE EACH SIDE EACH SIDE EACH WAY EXISTING EXTERIOR FLOOR DRAIN FOUNDATION FINISH FLOOR ELEVATION FIELD NAILING FACE OF ANGLE FACE OF CONCRETE FACE OF MASONRY FEET FOOTING YIELD STRESS GAGE, GUAGE GALVANIZED GRADE BEAM GIRDER TRUSS HORIZONTAL HOLLOW CORE HIGH HOOK HOLLOW STRUCTURAL STEEL INCHES INFORMATION INTERIOR JOIST JOINT KIPS KNEE BRACE	SIM SOG SPA SQ SSH STD STL STRUCT SUPP T&B TEMP THK TO TOC TOF TOM TOS TOSC TOSL TOT TOW TYP UON V, VERT VIF W W/ W/O WB WBBP WHSS WP	SHEATHING SIMILAR SLAB ON GRADE SPACES, SPACING SQUARE SHORT SLOTTED HOLE STANDARD STEEL STRUCTURE, STRUCTURE, STRUCTURAL SUPPORT TOP AND BOTTOM TEMPORARY THICK TOP OF CONCRETE TOP OF FOUNDATION TOP OF FOUNDATION TOP OF STRUCTURAL CONCRETE TOP OF STRUCTURAL CONCRETE TOP OF SLAB TOTAL TOP OF SLAB TOTAL TOP OF WALL TYPICAL UNLESS OTHERWISE NOTED VERTICAL VERIFY IN FIELD WIDE FLANGE WITH WITHOUT WIND BRACE BASEPLATE WELDED HEADED STEEL STUD WORKING POINT, WORK POINT WITH RESPECT TO WEIGHT

SYMBOLS

UBBLE	1114111	SLAB STEP/ DEPRESSION
TION MARK	mmmm	SLOPE UP
DN MARK	TULINITI	SLOPE DOWN
TION		RIDGE
MARK		VALLEY
ON NUMBER	<u> </u>	SLAB THICKNESS CHANGE

GENERAL NOTES



	1							
ТҮРЕ	FREQ	UENCY	REQUIRED INSPECTIONS AND/OR TESTS	REFERENCES CODES/STANDARDS	ТҮРЕ	FREQUENCY	REQUIRED INSPECTIONS AND/OR TESTS	
		STR	UCTURAL STEEL	CBC 1705.2.1		COLD-		С
1. QUALITY ASSURANCE	OBSE	RVE	REVIEW MATERIAL TEST REPORTS AND CERTIFICATIONS AS LISTED IN AISC 360 SECTION N3.2 FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.	AISC 360 AISC 341	1. PRIOR TO DECK PLACEMENT	PERFORM	VERIFY COMPLIANCE OF MATERIALS (DECK AND ALL DECK ACCESSORIES) WITH CONSTRUCTION DOCUMENTS, INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS	A F
2. PRIOR TO WELDING	OBSE	RVE	INSPECT WELDER QULAIFICATION RECORDS AND CONTINUITY RECORDS.	CONSTRUCTION		PERFORM	DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES	S
	PERF	ORM	WPS AVAILABLE.	DOCUMENTS	2. AFTER DECK PLACEMENT	PERFORM	VERIFY COMPLIANCE OF DECK AND ALL DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS.	
	PERF	ORM	MANUFACTURER CERTIFICATES FOR WELDING AVAILABLE.			PERFORM	VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCITON DOCUMENTS.	
	OBSE	RVE	MATERIAL IDENTIFICATION (TYPE/GRADE).			PERFORM	DOCUMENT ACCEPTANCE OR REJECTION OF INSTALLATION OF DECK AND DECK ACCESSORIES.	
	OBSE	RVE	WELDER IDENTIFICATION SYSTEM.		3. PRIOR TO WELDING	OBSERVE	WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	
	OBSE	RVE	FIT UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) JOINT PREPARATIONS 			OBSERVE	MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	
			 DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) CLEANLINESS (CONDITION OF STEEL SURFACES) TACKING (TACK WELD QUALITY AND LOCATION) 			OBSERVE	MATERIAL INDENTIFICATION (TYPE/GRADE)	_
			BACKING TYPE AND FIT (IF APPLICABLE)	-		OBSERVE		_
	OBSE	RVE	BACKING (INCLUDING JOINT GEOMETRY) • JOINT PREPARATIONS		4. DURING WELDING	OBSERVE		
			 DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) CLEANLINESS (CONDITION OF STEEL SURFACES) 			OBSERVE		_
							ENVIRONMENTAL CONDITIONS (WIND SPEED, MOISTORE, TEMPERATURE)	_
			FIT-UP OF FILLET WELDS				VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND	_
		τν Ε	 DIMENSIONS (ALIGNMENT, GAPS AT ROOT) CLEANLINESS (CONDITION OF STEEL SURFACES) 		5. AFTER WELDING	PERFORM	PERIMETER WELDS.	_
2. DURING WELDING			CONTROL AND HANDLING OF WELDING CONSUMABLES			PERFORM	VERIFY REPAIR ACTIVITIES	
	OBSE	RVE	PACKAGING EXPOSURE CONTROL			PERFORM	DOCUMENT ACCEPTANCE OR REJECTION OF WELDS	
	OBSE	RVE	USE OF QUALIFIED WELDERS		6. PRIOR TO MECHANICAL	OBSERVE	MANUFACTURER INSTALLATION INSTRUCTIONS AVAILABLE FOR MECHANICAL	
	OBSE	RVE	NO WELDING OVER CRACKED TACK WELDS		FASTENING	OBSERVE	PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION	
	OBSE	RVE	WIND SPEED WITHIN LIMITS PRECIPITATION AND TEMPERATURE			OBSERVE	PROPER STORAGE FOR MECHANICAL FASTENERS	
	OBSE	RVE	WPS FOLLOWED SETTINGS ON WELDING EQUIPMENT 		7. DURING MECHANICAL FASTENING	OBSERVE	FASTENERS ARE POSITIONED AS REQUIRED	
			TRAVEL SPEED SELECTED WELDING MATERIALS SHIELDING GAS TYPE/ ELOW PATE			OBSERVE	FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS	
			 PREHEAT APPLIED INTERPASS TEMPERATURE MAINTENED (MIN/MAX) 		8. AFTER MECHANICAL FASTENING	PERFORM	CHECK SPACING, TYPE, AND INSTALLATION OF SUPPORT FASTENERS	
			PROPER POSITION (F, V, H, OH) INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED			PERFORM	CHECK SPACING, TYPE, AND INSTALLATION OF SIDELAP FASTENERS	
	OBSE	RVE	WELDING TECHNIQUES INTERPASS AND FINAL CLEANING EACH DASS WITHIN PROFILE LIMITATIONS 			PERFORM	CHECK SPACING, TYPE, AND INSTALLATION OF PERIMETER FASTENERS	
			EACH PASS WITHIN PROFILE LIMITATIONS EACH PASS MEETS QUALITY REQUIREMENTS			PERFORM	VERIFY REPAIR ACTIVITIES	_
	PERF	ORM	PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS			PERFORM	DOCUMENT ACCEPTANCE OR REJECTION OF MECHANICAL FASTENERS	
3. AFTER WELDING		RVE					CONCRETE	C
			WELDS MEET VISUAL ACCEPTANCE CRITERIA		1. REINFORCEMENT	PERIODIC	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY	2 2
			CRACK PROHIBITION WELD/ BASE-METAL FUSION CRATER CROSS SECTION					C
			WELD PROFILES WELD SIZE		2. REINFORCING BAR WELDING	PERIODIC	VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	- A
			POROSITY				INSPECT ALL OTHER WELDS	_
	PERF	ORM DRM	ARC STRIKES K-AREA; WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR	-	3. ANCHORS	PERIODIC		A
			STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INPSECT THE WEB K-AREA FOR CRACKS WITHIN 3-INCHES OF THE WELD.	-				
	PERF	ORM	WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES		4. ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	CONTINUOUS	INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	<i>F</i>
	PERF	ORM	PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)			PERIODIC	REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN	
	PERF	ORM	BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	-			ACCORDANCE WITH ACI318: 17.8.2 OR OTHER QUALIFICATION PROCEDURES.	
	PERF	ORM		-	5. DESIGN MIX	PERIODIC	VERIFY USE OF REQUIRED DESIGN MIX	
	PERF				6 PRIOR TO CONCRETE PLACEMENT	CONTINUOUS		1
							CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	0
OF WELDED JOINTS			SECTION N5.5. SEE GENERAL NOTES FOR RISK CATEGORY.		7. DURING PLACEMENT	CONTINUOUS	TECHNIQUES	CE
5. PRIOR TO BOLTING	PEFO	RM	MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	-		PERIODIC	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	S (
	OBSE	RVE	FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	-	8. PRESTRESSED CONCRETE	CONTINUOUS	APPLICATION OF PRESTRESSING FORCES	A
	OBSE	RVE	LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)				GROUTING OF BONDED PRESTRESSING TENDONS	A
	OBSE	RVE	CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	-	9. PRECAST CONCRETE	PERIODIC	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	
	OBSE	RVE	CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.		10. IN-SITU CONCRETE STRENGTH	PERIODIC	VERIFY IN-SITU CONCRETE STRENGTH: • PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE	A
	OBSE	RVE	PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIUES AND METHODS				PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTRUAL SLABS	
	OBSE	RVF	USED. NOT APPLICABLE FOR SNUG-TIGHT JOINTS. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER		11. FORMWORK	PERIODIC	INSPECT FORMWORK FOR SHAPE, LOCATION, ABD DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	Δ
6. DURING BOLTING		RVE	FASTENER COMPONENTS FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE					
		RVE	JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE					
	- OBSE	RVE	FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING					
	OBSE	RVE	FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION. PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID					
		NVI RM	VERIFY PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS					
		A141	SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE					
			CONSTRUCTION DRAWINGS. VERIFY DIAMETER, GRADE, TYPE, AND LENGTH OF					

ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

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	 						NOT FOR CONSTRUCTION		Stantec Consulti 801 South Figuera Los Angeles, 900 Tel: (213) 955-977
1 PLAN CHECK REVISIONS Revision	 Appd	2023.05.12 YYYY.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	JR JR JR By	JR JR JR Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Res The Contractor shall verify or drawing - any errors or omi. The Copyrights to all design or use for any purpose othe

		SPE
TYPE		FREQUENC
1. BEARING MATERIAL	V	PERIODIC
2. EXCAVATIONS	V	PERIODIC
3. FILL MATERIALS	V	PERIODIC
4. PRIOR TO PLACEMENT OF FILL	V	PERIODIC
5. DURING PLACEMENT OF FILL	V	CONTINUO

PECIAL INSPECTION AND TEST REQUIREMENTS

CY	REQUIRED INSPECTIONS AND/OR TESTS	REFERENCES CODES/STANDARE
	SOILS	CBC 1705.6
	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	GEOTECHNICAL REPORT
	VERIFY EXCAVATIONS ARE EXTENDED TO THE PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	CONSTRUCTION DOCUMENTS
	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	
	PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY.	
US	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	

STATEMENT	OF SPECIAL	INSPECTIONS

STATEMENT OF SPECIAL INSPECTIONS						
INSPECTION AND TESTING REQUIREMENTS ON THIS SHEET ARE IN ACCORDANCE WITH SECTION 1705 OF THE CALIFORNIA BUILDING CODE (CBC) AND HAVE BEEN IDENTIFIED AS A STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY CBC SECTION 1704.3. THE OWNER OF THE OWNER'S AUTHORIZED AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PROVIDE THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION AS REQUIRED BY CBC SECTION 1705 AND IDENTIFY THE APPROVED AGENCIES TO THE BUILDING OFFICIAL. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL THAT ARE IDENTIFIED IN CBC SECTION 110. SPECIAL INSPECTORS SHALL BE QUALIFIED IN ACCORDANCE WITH CBC SECTION 1704.2.1, AND ALL OTHER APPLICABLE SECTIONS AND STANDARDS.						
SPECIAL INSPEC STRUCTURAL WO FOR REQUIRED N	TIONS AND TESTS INDICATED ON THIS SHEET ARE FOR THE DRK, SEE OTHER DISCIPLINES DRAWINGS AND SPECIFICATIONS NONSTRUCTURAL SPECIAL INSPECTIONS AND TESTS.					
	DEEINITIONS					
	DEFINITIONS					
SPECIAL INSPECTION	INSPECTION OF CONSTRUCTION REQUIRING THE EXPERTISE OF AN APPROVED SPECIAL INSPECTOR IN ORDER TO ENSURE COMPLIANCE WITH THE BUILDING CODE AND THE APPROVED CONSTRUCTION DOCUMENTS.					
SPECIAL INSPECTOR	A QUALIFIED PERSON EMPLOYED OR RETAINED BY AN APPROVED AGENCY AND APPROVED BY THE BUILDING OFFICIAL AS HAVING THE COMPETENCE NECESSARY TO INSPECT A PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION.					
PERIODIC	SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF WORK.					
CONTINUOUS	SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS PRESENT CONTINUOUSLY WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED					
OBSERVE	THE INSPECTOR SHALL OBSERVE THESE FUNCTIONS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING OBSERVATIONS.					
PERFORM	THESE INSPECTIONS SHALL BE PERFORMED FOR EACH CONNECTION OR MEMBER, AND COMPLETED PRIOR TO THE FINAL ACCEPTANCE OF THE ITEM.					
V	INDICATES SPECIAL INSPECTION OF ITEM IS REQUIRED FOR THE WORK DEFINED IN THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT.					



STRUCTURAL SPECIAL INSPECTIONS AND





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.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	JR JR JR JR By	JR JR JR Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Reserved The Contractor shall verify and be responsible for drawing - any errors or omissions shall be reporte The Copyrights to all designs and drawings are t or use for any purpose other than that authorized

SANTA BARBARA METROPOLITAN TRANSIT

Project No. 2014240805 Revision

Title SITE PLAN - STRUCTURAL





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Scale As indicated Drawing No. **S-301**



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∖S-302 /

3/4" = 1'-0"

SECTION 1 AT WALL



SUMP/ TRENCH PIT SECTION



- 'S/LTT20' TENSION TIE AT EACH JOIST w/ 1/2"Ø F1554 GR 36 THREADED ROD, DRILL & EPOXY TO CMU WALL (4 1/2" EMBED)

- METAL JOIST SEE PLAN

- L3X3X3/8 LEDGER ANGLE w/ 1/2"Ø F1554 GR 36 THREADED RODS @ 24"

------ FOR GRATING, EMBEDS, ETC. SEE DETAIL 5/-SLAB THK -SLAB REINF ------PER PLAN SEE NOTE SEE PLAN -+•





TRENCH AT SLAB ON GRADE 1/2" = 1'-0"





8 SECTION 2 AT WALL



- REINF TO MATCH SIZE AND SPACING OF SLAB REINF

ENLARGED PLANS AND SECTIONS





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TENSION LAP SPLICE LENGTH (Lst) (CASE #1)									
	F	f'c=30	00 PSI	f'c=4000 PSI		f'c=5000 PSI		f'c=6000 PSI	
SIZE	⊢y (ksi)	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	60	29	22	25	20	22	17	21	16
#4	60	38	29	33	25	30	22	27	21
#5	60	47	36	40	31	36	29	34	26
#6	60	56	43	48	38	44	34	40	31
#7	60	82	62	70	55	64	49	59	44
#8	60	94	72	81	62	73	56	66	51
#9	60	105	81	91	70	82	62	74	57
#10	60	118	91	103	79	92	70	83	65
#11	60	131	101	113	87	101	78	92	72
#11	75	164	126	142	109	127	98	116	90
#1/				CE					

#4	60	29	22	25	19	23	17	21	
#5	60	36	28	31	24	28	22	26	
#6	60	43	33	37	29	34	26	31	
#7	60	63	48	54	42	49	38	45	
#8	60	72	55	62	48	56	43	51	
#9	60	81	62	70	54	63	48	57	
#10	60	91	70	79	61	71	54	64	
#11	60	101	78	87	67	78	60	71	
#11	75	126	97	109	84	98	75	89	
#14	60	121	93	105	81	94	72	86	
#14	75	151	116	131	101	117	90	107	
[

DEV. LENGTH OF BARS IN TENSION (Ld) (CASE #1)

	F	f'c=30	f'c=3000 PSI		f'c=4000 PSI		f'c=5000 PSI		f'c=6000 PSI	
SIZE	⊢y (ksi)	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	60	6	6	6	6	6	6	6	6	
#4	60	8	8	7	7	6	6	6	6	
#5	60	10	10	9	9	8	8	7	7	
#6	60	12	12	10	10	9	9	9	9	
#7	60	14	14	12	12	11	11	10	10	
#8	60	16	16	14	14	12	12	11	11	
#9	60	18	18	15	15	14	14	13	13	
#10	60	20	20	17	17	16	16	14	14	
#11	60	22	22	19	19	17	17	16	16	
#11	75	28	28	24	24	21	21	20	20	
#14	60	38	38	33	33	29	29	27	27	
#14	75	47	47	41	41	36	36	33	33	

DEV. LENGTH OF STD. HOOK IN TENSION (Ldh) (CASE #1

D REINF	
Federal	

APPLIES WHERE REINFORCING IS NOT SHOWN OTHERWISE ON PLANS, SECTIONS, DETAILS, OR WALL ELEVATIONS WALL THK REINFORCING OPENING 'T' EACH WAY REINF 6" #4 @ 12" CENTER 1-#5 8" #4 @ 10" CENTER 2-#5 10" #4 @ 16" EA FACE 2-#6 12" #4 @ 12" EA FACE 2-#6 14" #4 @ 12" EA FACE 2-#7 16" #5 @ 15" EA FACE 2-#7 18" #5 @ 14" EA FACE 2-#8 20" #5 @ 12" EA FACE 2-#8

CONCRETE WALL NOTES:

8

S-701

SIZE

SIZE

NTS

ON STRUCTURAL DRAWINGS.

MINIMUM REINF IN CONCRETE WALLS









MAXIMUM OPENING SIZE SHALL BE 8FT FOR USE WITH THE

DEV. LENGTH OF STD. HOOK IN TENSION (Ldh) (CASE #2)

#3 60 6 6 6 6 6 6 6 6

#4 60 8 8 7 7 6 6 6 6

#5 | 60 | 10 | 10 | 9 | 9 | 8 | 8 | 7 | 7
 #6
 60
 12
 12
 10
 10
 9
 9
 9
 9

 #7
 60
 14
 12
 12
 11
 11
 10
 10

#8 60 16 16 14 14 12 12 11 11

*#*9 60 18 18 15 15 14 14 13 13

#10 60 20 20 17 17 16 16 14 14

#11 60 22 22 19 19 17 17 16 16

#11 75 28 28 24 24 21 21 20 20

#14 60 38 38 33 33 29 29 27 27

#14 75 47 47 41 41 36 36 33 33

DEV.LENGTH OF BARS IN TENSION (Ld) (CASE #2)

#3 | 60 | 33 | 25 | 28 | 22 | 25 | 20 | 23 | 18

#4 60 43 33 37 29 34 26 31 24

#5 60 54 42 47 36 42 32 38 30

#6 | 60 | 65 | 50 | 56 | 43 | 50 | 39 | 46 | 35 #7 60 94 72 81 63 73 56 67 51

#8 60 107 83 93 72 83 64 76 59

#9 60 121 93 105 81 94 72 86 66 #10 | 60 | 136 | 105 | 118 | 91 | 106 | 81 | 96 | 74 #11 | 60 | 151 | 116 | 131 | 101 | 117 | 90 | 107 | 82

#11 75 189 145 164 126 146 113 134 103 #14 60 181 140 157 121 141 108 128 99 #14 75 227 174 196 151 176 135 160 123

f'c=3000 PSI | f'c=4000 PSI | f'c=5000 PSI | f'c=6000 PSI

TOP OTHER TOP OTHER TOP OTHER TOP OTHER

f'c=3000 PSI

3. FOR WALLS WITH DBL CURTAIN OF REINF, VERTICAL BARS SHALL BE PLACED CLOSET TO THE WALL SURFACE WHERE VERT AND HORZ REINF ARE EQUAL. WHERE VERT AND HORZ REINF ARE DIFFERENT SIZE OR SPACING, THE LAYER WITH THE GREATER STEEL PER AREA SHALL BE PLACED CLOSEST TO THE SURFACE, UNLESS OTHERWISE NOTED ON DRAWINGS

ABOVE SCHEDULE. FOR OPENINGS GREATER THAN 8 FT NOT OTHERWISE DETAILED CONTACT ENGINEER.

1. FOR LOCATION OF WALL OPENINGS REFER TO STRUCTURAL

DRAWINGS. CONTACT ENGINEER FOR OPENINGS NOT SHOWN





f'c=4000 PSI | f'c=5000 PSI | f'c=6000 PS

TOP OTHER TOP OTHER TOP OTHER TOP OTHER

CONCRETE WALL REINFORCING DETAILS











- NOTES: 1. TABULATED VALUES ARE IN INCHES FOR NORMAL WEIGHT CONCRETE AND UNCOATED REINF STEEL. FOR LIGHT WEIGHT CONCRETE INCREASE LENGTHS BY 30%. FOR EPOXY COATED BARS INCREASE LENGTHS BY 50%. TABULATED LAP SPLICE LENGTHS ARE FOR CLASS B SPLICES AS DEFINED IN ACI 318. FOR CLASS A SPLICES REDUCE LENGTH BY 30%. CLASS A
- SPLICES MAY BE USED WHEN SPECIFICALLY CALLED ON DRAWINGS AND IF ONE HALF OR LESS OF THE TOTAL NUMBER OF BARS ARE SPLICED WITHIN THE REQ'D LAP LENGTH. 3. BAR DEVELOPMENT LENGTHS AND SPLICE LENGTHS OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE INCREASED BY 20% FOR A 3-BAR BUNDLE
- AND 33% FOR A 4-BAR BUNDLE. 4. TOP BARS ARE DEFINED AS HORIZONTAL BARS W/ MORE THAN 12" OF CONCRETE CAST BLW THE BAR.
- 5. FOR CONCRETE COMPRESSION DEVELOPMENT LENGTH, Ldc, (ONLY WHERE INDICATED ON DRAWINGS). USE 19 BAR DIAMETER
- 6. FOR COMPRESSION LAP SPLICE LENGTH, Lcs, (ONLY WHERE INDICATED ON DRAWINGS) USE 30 BAR DIAMETER, NOT LESS THAN 12". 7. MECHANICAL SPLICES MAY BE USED AT CONTRACTOR'S OPTION. MECHANICAL SPLICES SHALL BE TYPE 2 AS DEFINED IN ACI 318 AND SHALL
- DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH (Fy) OF THE SPLICED BAR. 8. WHERE MECHANICAL SPLICES ARE USED, STAGGER ADJACENT SPLICES BY 24" OC.
- 9. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED IN TENSION, Lst SHALL BE THE GREATER OF Ld OF THE LARGER BAR AND Lst OF THE SMALLER BAR. 10. CASE #1 AND #2 ARE DEFINED AS FOLLOWS:
- BEAMS AND COLUMNS

USE CASE #1: WHEN CONCRETE COVER IS AT LEAST 1.0db AND CENTER TO CENTER SPACING IS AT LEAST 2.0db. USE CASE #2: WHEN CONCRETE COVER IS LESS THAN 1.0db OR CENTER TO CENTER SPACING IS LESS THAN 2.0db. WALLS

- USE CASE #1 HORIZONTAL BARS = TOP BARS
- VERT BARS = OTHER BARS.
- ALL OTHER MEMBERS
- USE CASE #1: WHEN CONCRETE COVER IS AT LEAST 1.0db AND CENTER TO CENTER SPACING IS AT LEAST 3.0db. USE CASE #2: WHEN CONCRETE COVER IS LESS THAN 1.0db OR CENTER TO CENTER SPACING IS LESS THAN 3.0db.



STIRRUPS AND TIES

135 DEGREE HOOK

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TENSION LAP SPLICE LENGTH (Lst) (CASE #2) #3 | 60 | 43 | 33 | 36 | 29 | 33 | 26 | 30 | 23

SIZE #7 60

#14 USE MECHANICAL SPLICE

#8 60 #9 60 157 121 137 105 122 94 112 86 #10 | 60 | 177 | 137 | 153 | 118 | 138 | 105 | 125 | 96 #11 60 196 151 170 131 152 117 139 107 #11 75 246 189 213 164 190 147 174 134

#4 60 56 43 48 38 44 34 40 31 #5 60 70 55 61 47 55 42 49 39 #6 60 85 65 73 56 65 51 60 46 122 94 105 82 94 73 87 66 121 94 108 83 99 77 139 | 108

f'c=3000 PSI f'c=4000 PSI f'c=5000 PSI f'c=6000 PSI TOP OTHER TOP OTHER TOP OTHER TOP OTHER

L____,

180 DEGREE STANDARD HOOK

TYPICAL STRUCTURAL DETAILS



BUS WASH EQUIPMENT SCHEDULE							
TAG	DESCRIPTION	MANUFACTURER	MODEL	SPEC			
	-	1					
BS28	CARBON FILTER	NS WASH SYSTEMS		11 11 26			
BW01	DETERGENT ARCH	NS WASH SYSTEMS	PAR-500-14	11 11 26			
BW02	BRUSH SYSTEM PACKAGE	NS WASH SYSTEMS	SYS-3000-14	11 11 26			
BW05	SYS-3000 CONTROL PANEL	NS WASH SYSTEMS	SYS-3000	11 11 26			
BW08	DUAL FINAL RINSE ARCH	NS WASH SYSTEMS	POR-500-14	11 11 26			
BW09	GUIDE RAIL SYSTEM WITH STAINLESS STEEL SKID PLATES	NS WASH SYSTEMS	RCR-500 & GSP-500	11 11 26			
BW11	SINGLE TANK WATER SOFTENER	NS WASH SYSTEMS	930-5607	11 11 26			
BW12	SINGLE RO RINSE ARCH	NS WASH SYSTEMS	DIA-500-14	11 11 26			
BW13	ELECTRIC EYE ACTIVATION SYSTEM	NS WASH SYSTEMS	SYS-90-T	11 11 26			
BW15	15 HP SELF PRIMING PUMP	NS WASH SYSTEMS	520-1704	11 11 26			
BW16	TWIN CYCLONIC SEPARATORS	NS WASH SYSTEMS	900-9247 (STAND) & 900-9247 (CYCLONIC)	11 11 26			
BW17	5 HP FRESH WATER PUMP	NS WASH SYSTEMS	PMP-00	11 11 26			
BW18	1,500 GAL RECLAIM TANK	NS WASH SYSTEMS	940-1285R	11 11 26			
BW20	10 HP WASH (BRUSH) WATER PUMP	NS WASH SYSTEMS	210-6208 (MOTOR) & 520-1700 (PUMP)	11 11 26			
BW22	RECLAIM WATER CONTROL PANEL	NS WASH SYSTEMS	CP-WWS-220	11 11 26			
BW23	1,500 GAL FRESH WATER TANK	NS WASH SYSTEMS	940-1285R	11 11 26			
BW24	1,500 GAL RO WATER TANK	NS WASH SYSTEMS	940-1285R	11 11 26			
BW25	2 HP RINSE ARCH PUMP	NS WASH SYSTEMS	520-1705	11 11 26			
BW26	2 HP RO RINSE ARCH PUMP CONTROL PANEL	NS WASH SYSTEMS	CP-ROS	11 11 26			
BW27	RO UNIT WITH CONTROL PANEL	NS WASH SYSTEMS	ROS-5000T	11 11 26			
BW30	5 HP AIR COMPRESSOR	NS WASH SYSTEMS	HP-5.0	11 11 26			

FL	.OW	LAY	OUT

1. 3"Ø GALV. PIPE SCH. 40 W/ STRAINER (SI), 3"0 VERTICAL CHECK VALVE (VCV1) & 3" BRASS CAM COUPLER QUICK DISCONNECT (BCC0D1) (BY AME) FROM SUMP PIT TO 15HP SELF PRIMING PUMP INLET PLUMBED (SEE "PIT INSTALLATION DETAILS")

2. 3/4" Ø GALV. CLOSED PIPE SCH. 40 W/ BALL VALVE FROM TEE'D OF LINE 1 PLUMBED (THIS LINE IS USED FOR PRIMING THE SUCTION OF THE 15HP SELF PRIMING PUMP). 3. 3" Ø GALV. PIPE SCH. 40 W/ BALL VALVE & FLEXIBLE CONNECTION FROM 15HP SELF PRIMING PUMP OUTLET THRU TWIN CYCLONIC

SEPARATORS TO 1500 GAL. RECLAIM TANK PLUMBED (REQUIRE: 3" PVC SCH. 80 TANK BULKHEAD FITTING (TBF2) (BY AME)) 4. 2" Ø GALV. PIPE SCH. 40 W/ BALL VALVE & SOLENOID VALVE (SV1) (BY AME) FOR FRESH WATER MAKE-UP FROM CITY WATER TO 1500

GAL. RECLAIM TANK PLUMBED (EXTEND ABOUT 6 INCH OF PIPE INTO THE TANK FOR AIR GAP) 5. 2"Ø GALV. PIPE SCH. 40 W/ BALL VALVE, UNION, FLEXIBLE CONNECTION & IN-UNE FILTER W/ 100 MESH (ILF1) (BY AME) FROM 1500 GAL. RECLAIM TANK TO 10HP BRUSH WATER PUMP INLET PLUMBED (REQUIRE: 2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF1) (BY AME))

6. 1-1/2"Ø GALV. PIPE SCH. 40 W/ FLEXIBLE CONNECTION, CHECK VALVE (RATED O MIN. 400 PSI), BALL VALVES & SOLENOID VALVE (SV2) (BY AME) FROM 10HP BRUSH WATER PUMP OUTLET TO BRUSH PACKAGE SYSTEM INLET PLUMBED 7. 1-1/2"Ø GALV. PIPE SCH. 40 W/ SOLENOID VALVE (SV3) (BY AME) FROM 1-1/2" TEE TO SINGLE DETERGENT ARCH INLET

8. 1/2"FLEXIBLE TUBING (BY AME) FROM WATER SOFTENER TO BRINE TANK PLUMBED 9. 1 "Ø RUBBER HOSE FROM SINGLE TANK WATER SOFTNER OUTLET TO CARBON FILTER INLET PLUMBED

10. (2 PLACES) 3"Ø RUBBER HOSE CONNECTING (2) 1500GAL RECLAIM TANK AND (2) 1500GAL R.O. TANK, PLUMBED 11. 1-1/2"Ø GALV. PIPE SCH. 40 W/ FLEXIBLE CONNECTION, CHECK VALVE (RATED & MIN. 200 PSI), BALL VALVES , SOLENOID VALVE (SV4)

(BY AME) FROM 5HP FRESH WATER PUMP OUTLET TO DUAL FINAL RINSE ARCH INLET PLUMBED 12. 1-1 /2"Ø PVC PIPE SCH. 80 W/ FLEXIBLE CONNECTION & PVC SCH. 80 BALL VALVE FROM 1500 GAL. RO WATER TANK TO 2HP RO RINSE ARCH PUMP INLET PLUMBED (REQUIRE: 1-1/2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF3) (BY AME))

13. 1 "Ø PVC PIPE SCH. 80 W/ FLEXIBLE CONNECTION, PVC SCH. 80 BALL VALVE. PVC SCH. 80 CHECK VALVE & PVC SOLENOID VALVE (SV5) (BY AME) FROM 2HP RO RINSE ARCH PUMP OUTLET TO SINGLE RO RINSE ARCH INLET PLUMBED 14. (2 PLACÉS) 2"Ø GALV. PIPE SCH. 40 W/ BALL VALVE FOR CONTINUOUS DRAIN FROM 1500 GAL RECLAIM TANK TO RECOVERY PIT PLUMBED (SEE "RECLAIM TANK INSTALLATION DETAIL") (REQUIRE: 2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF1) (BY AME))

15. 3"Ø GALV. PIPE SCH. 40 FOR OVERFLOW FROM 1500 GAL. RECLAIM TANK TO RECOVERY PIT PLUMBED (CAN BE MANIFOLDED OR TEE'D IN THE CONTINUOUS DRAIN LINE & THEN PIPE ITS TO THE RECOVERY PIT). (REQUIRE: 3" PVC SCH. 80 TANK BULKHEAD FITTING (TBF2) (BY AME)) 16. 3"Ø PVC PIPE SCH. 40 W/ UNION FROM 1.0 CU. YD. SLUDGE CART TO RECOVERY PIT PLUMBED (REQUIRE: 3" PVC SCH. 80 TANK

BULKHEAD FITTING (TBF2) (BY AME)) 17. 1 "Ø GALV. PIPE SCH. 40 Ŵ/ BALL VÁLVE & RUBBER HOSE FROM CITY WATER TO SINGLE TANK WATER SOFTNER INLET PLUMBED

(RUBBER HOSE CAN BE USED FOR FINAL CONNECTION). 18. 1 "Ø PVC PIPE SCH. 80 W/ RUBBER HOSE & CHECK VALVE FROM CARBON FILTER OUTLET TO RO-UNIT INLET PLUMBED (RUBBER HOSE CAN BE USED FOR FINAL CONNECTION). 19. 1 "Ø PVC PIPE SCH. 80 W/ PVC SCH. 80 BALL VALVE FROM RO-UNIT OUTLET TO 1500 GAL. RO WATER TANK PLUMBED (EXTEND ABOUT

6 INCH OF PIPE INTO THE TANK FOR AIR GAP). 20. 1 "Ø PVC PIPE SCH. 80 FOR WASTE WATER FROM RO-UNIT TO RECOVERY PIT PLUMBED 21. (2 PLACES) 1/2"Ø PVC PIPE SCH. 80 FOR BACKWASH FROM CARBON FILTER AND SINGLE TANK WATER SOFTNER TO RECOVERY PIT

OR SEWER PLUMBED (RUBBER HOSE CAN BE USED FOR FINAL CONNECTION). 22. (2 PLACES) 2"Ø PVC SCH. 80 SHORT NIPPLE W/ BALL VALVE & CAP FOR DRAIN FROM 1500 GAL. RO WATER TANK PLUMBED (CONNECT IT TOWARD THE BOTTOM OF THE TANK) (REQUIRE: 2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF1)) 23. (2 PLACES) 1/2"Ø COMPRESSED AIR LINE W/ BALL VALVE & 3/8" AIR RETRACT MANIFOLD (BY NAME) FROM AIR SOURCE TO (2) 3/8" AIR RETRACT MANIFOLD INLET PLUMBED (USE 3/8 FLEXIBLE TUBING FOR FINAL CONNECTION AT THE MANIFOLD)

24. (4 PLACES) 3/8"Ø FLEXIBLE AIR LINES & POLY FLOW TEE (BY AME) FROM (2) 3/8" AIR RETRACT MANIFOLD OUTLET (4-WAY SOLENOID VALVE LOĆATED ON 3/8" AIR RETRACT MANIFOLD) TO (4) AIR CYLÍNDERS PLUMBED (EACH CYLINDER REQUIRES TWO AIR LINES, SEE AIR CYLINDERS DETAILS) 25. 2"Ø PVC SCH. 80 SHORT NIPPLE W/ BALL VALVE & CAP FOR DRAIN FROM 1500 GAL. FRESH WATER TANK PLUMBED (CONNECT IT

TOWARD THE BOTTOM OF THE TANK) 26. 2"Ø GALV. PIPE SCH. 40 W/ BALL VALVE & FLEXIBLE CONNECTION FROM 1500 GAL FRESH WATER TANK TO 5HP FINAL RINSE PUMP INLET PLUMBED (REQUIRE: 2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF1) (BY AME)) 27. 2"Ø GALV. PIPE SCH. 40 W/ BALL VALVE & SOLENOID VALVE (SV6) (BY AME) FOR FRESH WATER SUPPLY FROM CITY WATER TO 1500

GAL FRESH WATER TANK PLUMBED (HAVE AT LEAST 6 INCH AIR GAP ABOVE OVERFLOW PIPE) 28. 2"Ø GALV. PIPE SCH. 40 FOR OVERFLOW FROM 1500 GAL. FRESH WATER TANK TO RECOVERY PIT PLUMBED (CAN BE MANIFOLD OR TEE'D IN W/ OTHERS DRAINS IS ACCEPTABLE). (REQUIRE: 2" PVC SCH. 80 TANK BULKHEAD FITTING (TBF1) (BY AME))



MUST PRIME THE SUCTION FOR FIRST USE OR AFTER CLEANING VERTICAL CHECK VALVE OR CLEANING Y-STRAINER (TO PRIME: OPEN 3/4" BALL VALVE, ADD WATER UNTIL ITS OVERFLOW & THEN CLOSE THE BALL VALVE). (I.E. SUCTION PIPE MUST FILL W/ WATER BEFORE TURNING THE PUMP ON).

> N.O. FLOAT -SWITCH N.O. FLOAT-SWITCH

CAM COUPLER QUICK DISCONNECT-**→**¥ _ S.S. BARREL SCREEN W/ CHAIN -STRAINER

TRENCH DRAIN SUMP PIT

TAG

DESCRIPTION

BW02 BRUSH SYSTEM PACKAGE

BW05 SYS-3000 CONTROL PANEL

BW15 15 HP SELF PRIMING PUMP

BW17 5 HP FRESH WATER PUMP

BW25 2 HP RINSE ARCH PUMP

BW30 5 HP AIR COMPRESSOR

PANFI

BW20 10 HP WASH (BRUSH) WATER PUMP

BW22 RECLAIM WATER CONTROL PANEL

BW26 2 HP RO RINSE ARCH PUMP CONTROL

BW27 RO UNIT WITH CONTROL PANEL

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INTO PLUMBING TRENCH



BW11 BS28 BW25

١	MODEL	COMMENTS
	1	1
	SYS-3000-14	PROVIDE 208V, 3PH, 37.5A POWER FROM SYS-3000 CONTROL PANEL.
L	SYS-3000	PROVIDE 208V, 3PH 90.0A TO PANEL. (ESTIMATED 70.9 FLA); PROVIDE WEATHER-TIGHT ENCLOSURE.
Ρ	520-1704	PROVIDE 208V, 3PH, 46.2A POWER FROM WATER CONTROL PANEL; PROVIDE REMOVABLE ALUMINUM COVER.
)	PMP-00	PROVIDE 208V, 3PH, 16.7A POWER FROM SYS-3000 CONTROL PANEL; PROVIDE REMOVABLE ALUMINUM COVER.
ER PUMP	210-6208 (MOTOR) & 520-1700 (PUMP)	PROVIDE 208V, 3PH, 30.8A POWER FROM WATER CONTROL PANEL; PROVIDE REMOVABLE ALUMINUM COVER.
DL PANEL	CP-WWS-220	PROVIDE 208V, 3PH 100.0A TO PANEL. (ESTIMATED 77.0 FLA); PROVIDE WEATHER-TIGHT ENCLOSURE.
	520-1705	PROVIDE 208V, 3PH, 7.5A POWER FROM RINSE ARCH PUMP CONTROL PANEL; PROVIDE REMOVABLE ALUMINUM COVER.
IP CONTROL	CP-ROS	PROVIDE 208V, 3PH 10.0A TO PANEL. (ESTIMATED 7.5 FLA) PROVIDE WEATHER-TIGHT ENCLOSURE.
PANEL	ROS-5000T	PROVIDE 208V, 3PH 10.0A TO PANEL. (ESTIMATED 6.6 FLA) PROVIDE WEATHER-TIGHT ENCLOSURE.
	HP-5.0	PROVIDE 208V, 3PH, 16.7A POWER FROM SYS-3000 CONTROL PANEL; PROVIDE REMOVABLE ALUMINUM COVER.





INDUSTRIAL EQUIPMENT GENERAL NOTES ALL INDUSTRIAL EQUIPMENT SHOWN ON THESE DRAWINGS IS BASED ON A SPECIFIED MANUFACTURER. ANY MODIFICATION AND/OR SUBSTITUTION OF SAID EQUIPMENT IS SUBJECT TO COMPLETE COORDINATION BY THE CONTRACTOR OF ALL CONNECTIONS SERVICES, OPENING SIZE AND ANY OTHER CONSTRUCTION RELATED CONTRACTOR SHALL TEST OPERATION OF EXISTING INDUSTRIAL EQUIPMENT WITH OWNER PRESENT PRIOR TO RELOCATION AND AFTER IT IS INSTALLED IN THE NEW FACILITY. EXISTING EQUIPMENT SHALL OPERATE IN THE SAME OR BETTER CONDITION AS PREVIOUSLY INSTALLED. COORDINATE SCHEDULE OF REMOVAL WITH OWNER. CONTRACTOR TO VERIFY AND COORDINATE ALL STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS OF EQUIPMENT WITH MANUFACTURER'S APPROVED SHOP DRAWINGS THIS LAYOUT IS PROVIDED FOR GENERAL LOCATION OF INDUSTRIAL EQUIPMENT. UNLESS SPECIFICALLY LOCATED BY DIMENSIONS ON THE DRAWINGS, THE EQUIPMENT SHALL BE PLACED NEAR THE LOCATION ON THE DRAWINGS BUT IN THE MOST OPERATIONALLY EFFICIENT POSITION AND ORIENTATION. COORDINATE WORK WITH ARCHITECTURAL FEATURES SO THE INTERFERENCE BETWEEN PIPING, EQUIPMENT, MECHANICAL WORK AND BUILDING STRUCTURE IS AVOIDED. SEISMICALLY BRACE ALL FIXED EQUIPMENT AND STORAGE EQUIPMENT PER LOCAL AND STATE SEISMIC RESTRAINT GUIDELINES. ALL EXTERIOR WASH EQUIPMENT SHALL BE IN WEATHER-TIGHT ENCLOSURES (TYPICAL FOR CONTROL PANELS) OR BE PROVIDED WITH REMOVABLE ALUMINUM OR STAINLESS STEEL COVERS (WITH HANDLES OR HANDHOLES ON MULTIPLE SIDES) PROVIDED BY EQUIPMENT ABBREVIATIONS ABOVE FINISH FLOOR COMPRESSED AIR CONTRACTOR FURNISHED CONTRACTOR INSTALLED CUBIC FEET PER MINUTE FINISH FLOOR FILTER REGULATOR FILTER REGULATOR LUBRICATOR GALLONS PER MINUTE HIGH PRESSURE NATURAL GAS NOT TO SCALE OWNER FURNISHED CONTRACTOR INSTALLED OWNER FURNISHED OWNER INSTALLED SAND/OIL INTERCEPTOR UNDERGROUND UNLESS NOTED OTHERWISE SYMBOLS KEYNOTE NUMBER INDUSTRIAL EQUIPMENT TAG

OFOI

	ABBR	REVIATIONS	RE	EAL OBJEC	Т	SYMBOL	PIPING COMPONENTS	
	AAV		A	A	A			
	A/C ADA	AIR CONDITIONING UNIT AMERICANS WITH DISABILITIES ACT		A	Ą		ISOLATION VALVE (GENERIC)	
	ADJ AFC	ADJUSTABLE ABOVE FINISHED CEILING		Ц Д	Ĩ			
	AFF AFG	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE	□ ∳			——	BUTTERFLY VALVE NPS 6 AND LESS	
	AL AP	ALUMINUM ACCESS PANEL		Ø	P	——іГі-——	BUTTERFLY VALVE NPS 8 AND MORE	
	APD AVG	AIR PRESSURE DROP AVERGAGE	മ്		8	фф	BALL VALVE	(
П	BAS BDD	BUILDING AUTOMATION SYSTEM BACKDRAFT DAMPER	-=	- H	Ċ		PLUG VALVE	CH
	BHP	BRAKE HORSEPOWER	->	-₽			NEEDLE VALVE	Cł
	BOD		Ŕ		0 1		CHECK VALVE (GENERIC)	(
	BTU	BRITISH THERMAL UNIT			Ø	——I&I——	BALANCING VALVE	CH
	°C	CELSIUS		Å g	Д д			Cł
	CAV		2-WAY					C/
	C/W dB	COMPLETE WITH DECIBEL(S)	2-WAY		₽₽₽		TWO-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE	
	DB DDC	DRY BULB TEMEPRATURE DIRECT DIGITAL CONTROL	3-WAY □□ 10	Å 🛱		—ķ—	3-WAY CONTROL VALVE (GENERIC)	CI
	DEG DIA./Ø	DEGREE DIAMETER	3-WAY	Ĩ			THREE-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE	
	DIFF DIV	DIFFERENTIAL DIVISION		呂		——	SOLENOID 2-WAY CONTROL VALVE	
	DN DWG	DOWN DRAWING				—————————————————————————————————————	SOLENOID 3-WAY CONTROL VALVE	
	EAT EA	ENTERING AIR TEMPERATURE EXHAUST AIR					FLOAT OPERATED VALVE ACTUATOR	
	EA (D) EA (G)	EXHAUST AIR, DISHWASH EXHAUST AIR, GENERAL	GI	Ц С	8	\$	SAFETY OR RELIEF VALVE	
	EA (K)							
	EA (LAB)	EXHAUST AIR, LAUNDRY/DRYER	>	<u>∱</u> _∱ ~~Am	1 R			r ı
	EAV EA (W)	EXHAUST AIR VALVE EXHAUST AIR, WASHROOM	C		å			'
	ED EER	EXISTING TO BE DEMOLISHED (DEMOLITION PLANS) ENERGY EFFICIENCY RATIO	101	ā	<u>@</u>		SUCTION DIFFUSER	
	EG ER	ETHELYENE GLYCOL EXISTING RELOCATED (NEW CONSTRUCTION PLANS)	FOI		A	—©—	PUMP (GENERIC)	
	ERL ESP	EXISTING TO BE RELOCATED (DEMOLITION PLANS) EXTERNAL STATIC PRESSURE		\square	Ø	— ,	Y STRAINER (GENERIC)	Н
С	EWT EXIST / E	ENTERING WATER TEMPERATURE EXISTING (DEMOLITION PLANS)	⊗	ۍ ۲	ل		STEAM TRAP (GENERIC)	
	°F FLA	FAHRENHEIT FULL LOAD AMPERAGE		÷	¢	<u>}</u>	AUTOMATIC AIR VENT	<u>—</u> Н
	FP	FIRE PROTECTION				<u>~ 卒</u>	MANUAL AIR VENT	
	FPS	FEET PER SECOND	е	P		<u> </u> П	VACUUM BREAKER	
	GA	GAUGE		₽ === []		<u> </u>	SHOCK ABSORBER	
	GAL GC	GALLON (US) GENERAL CONTRACTOR		,	 			R
	GPM HEPA	GALLONS PER MINUTE HIGH EFFICIENCY PARTICULATE AIR (FILTER)	(ک) ۲-	ũ	_	Ų		F
	HP HR	HORSEPOWER HOUR					SIGHT FLOW GLASS	F
	HVAC HZ	HEATING / VENTILATING / AIR CONDITIONING HERTZ		Ħ	\bigcirc	— <u>XXX</u> —	FLEXIBLE CONNECTOR	
	IE IN	INVERT ELEVATION INCHES				— <u>—</u> —	EXPANSION JOINT	;
	IN WG IPLV	INCHES WATER GAUGE INTEGRATED PART LOAD VALUE					GUIDE	(
	kW kWh	KILOWATT KILOWATT HOUR				—×—	ANCHOR	(
	LAT LBS	LEAVING AIR TEMPERATURE POUNDS				1%	FLOW ARROW	P
	LF	LINEAR FEET	_	_		_ +		,
	M	METER		ŭ				
	MBH					, ;	PIPE CROSS	
	MFR	MANUFACTURER	•			لم 	PIPING ELBOW UP	
	MIN			1		C	PIPING ELBOW DOWN	
	N/A NC	NOT APPLICABLE NOISE CRITERIA					PIPING TEE UP	
В	NC NIC	NORMALLY CLOSED NOT IN CONTRACT				<u> </u>	PIPING TEE DOWN	
	NO NPS	NORMALLY OPEN NOMINAL PIPE SIZE	•	0	ø	—— ——	UNION CONNECTION	
	NTS OA	NOT TO SCALE OUTSIDE AIR	D	¢	0		FLANGED CONNECTION	
	OFCI OFE	OWNER FURNISHED, CONTRACTOR INSTALLED OWNER FURNISHED EQUIPMENT			Ø			
	OFOI PG	OWNER FURNISHED / OWNER INSTALLED PROPYLENE GLYCOL	CO ^L	CO ^L	۲		STANDARD CI FAN-QUT IN LINE END OF RUN	
	POE POS	POINT OF ENTRANCE POINT OF SERVICE		_		Ю CO	STANDARD CLEAN-OUT THROUGH FLOOR END OF RUN	
	PPM PSI	PARTS PER MILLION POUNDS PER SQUARE INCH				<u></u> O	STANDARD CLEAN-OUT THROUGH FLOOR IN LINE	
	PSIA PSIG	POUNDS PER SQUARE INCH, ABSOLUTE POUNDS PER SQUARE INCH, GAGE						
	PTS							
	RA	RETURN AIR RELIEF AIR						
	REQD							
	RPM	REVOLUTIONS PER MINUTE				<i>`\\\\\\\\\\\\\</i>	HH- DEMOLITION	
	SP							
	SRV	SAFETY RELIEF VALVE					CTE POINT OF CONNECTION OF NEW TO EXISTING SYSTEM	
	TEMP						POINT OF DISCONNECTION OF DEMOLITION FROM	
	TSP	TOTAL STATIC PRESSURE THERMOSTAT						
	TYP UC	TYPICAL UNDER CUT (DOOR)				L	CAP OFF EXISTING	
	UG UP	UNDERGROUND UP				2	PETAIL NUMBER	
A	VAV VFD	VARIABLE AIR VOLUME VARIABLE FREQUENCY DRIVE			,/ 1 1	?		
	VIF VTR	VERIFY IN FIELD VENT-THRU-ROOF					DETAIL IS SHOWN	
	W/ W/O	WITH WITHOUT					ELEVATION NUMBER	
	WB WG	WET BULB TEMPERATURE WATER GAUGE				?	EXTERIOR ELEVATIONS	
	ZN-#	ZONE					SHEET ON WHICH ELEVATION IS SHOWN	
		R BID SURMITTAI						
	IJJUE FUI	אווואוסטכ קוס א אווואוסטכ אוס א						
Ş								

Revision

ORIGINAL SHEET - ARCH E1

By Appd YYYY.MM

PIPING SYSTEMS (HVAC)

______2 1/2"—____ PIPE SIZE BBD BOILER BLOWDOWN BOILER FEED WATER BR-BR-BRINE RETURN BRINE SUPPLY CHWR(G) CHILLED WATER RETURN - GLYCOL CHILLED WATER RETURN - PROCESS CHWS(G) CHILLED WATER SUPPLY - GLYCOL CHWS(P) CHILLED WATER SUPPLY - PROCESS CONDENSER WATER RETURN CONDENSER WATER RETURN (COOLING TOWER) CWS(CT) CONDENSER WATER SUPPLY (COOLING TOWER) DUAL TEMPERATURE RETURN (HOT OR CHILLED) DUAL TEMPERATURE SUPPLY (HOT OR CHILLED) FOF FUEL OIL FILL FOR FUEL OIL RETURN FOS FUEL OIL SUPPLY FOV FUEL OIL VENT HEAT PUMP WATER RETURN HPWS HEAT PUMP WATER SUPPLY HRR HEAT RECOVERY LOOP RETURN HRS HEAT RECOVERY LOOP SUPPLY HUR HEATING WATER RETURN HWR(G) HEATING WATER RETURN - GLYCOL HWS HEATING WATER SUPPLY HWS(G) HEATING WATER SUPPLY - GLYCOL G NATURAL GAS PG-PG-PROPANE GAS REFRIGERANT HOT GAS REF(L) REFRIGERANT LIQUID REF(S) REFRIGERANT SUCTION REF(V) REFRIGERANT VENT RELIEF VENT STEAM (NOMINAL PRESSURE) CS(##) STEAM - CLEAN (NOMINAL PRESSURE) C(##) STEAM CONDENSATE (NOMINAL PRESSURE) PC(##) STEAM PUMPED CONDENSATE (NOMINAL PRESSURE) SV-STEAM VENT ē 🖉 PIPE INSULATION

>	AIR FLOW ARROW
18"x12" 18"x12"	RECTANGULAR DUCT AND SIZE*
<u>18"ø</u> 18"ø	ROUND DUCT AND SIZE*
2 18"x12"ø } 18"x12"ø→	FLAT OVAL DUCT AND SIZE*
18"x12"	EXTERIOR DUCT TREATMENT*
18"x12" 18	RECTANGULAR DUCT WITH ACOUSTIC DUCT SECTION, SUPPLY AIR. SIZE* IS I APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, OUTSIDE AIR, APPLIES
	DUCT SECTION, RETURN AIR. APPLIES
	DUCT SECTION, EXHAUST AIR. APPLIE
	FLEXIBLE DUCT
	ELBOW TURN, SUPPLY DOWN. APPLIES
	ELBOW TURN, OUTSIDE AIR DOWN. AP
	ELBOW TURN, RETURN DOWN. APPLIE
	ELBOW TURN, EXHAUST DOWN. APPLI
↓∏™₽ТТ↓	CHANGE IN DUCT ELEVATION RISING I
Ţ <u>Ľ₽₩</u> IJŢ ⊢	CHANGE IN DUCT ELEVATION DROPPI
	(0.25 R/W DEFAULT)
\mathcal{D}	ELBOW, RECTANGULAR, SMOOTH RAD DEFAULT)
5	ELBOW, ROUND, SMOOTH RADIUS (1.5
س	MITERED ELBOW, RECTANGULAR, WIT
	RECTANGULAR TO ROUND TRANSITIO
	DUCT ACCESS DOOR (TOP, SIDE, BOT
	FLEXIBLE CONNECTION
	BACKDRAFT DAMPER
	MANUAL DAMPER
	MOTORIZED DAMPER
	FIRE DAMPER
	SMOKE DAMPER
₹	SMOKE AND FIRE DAMPER
	DUCT SILENCER
\bigotimes	CONTROL DEVICE (REFER TO CONTRO
	AIR FLOW MEASURING STATION (REFE
QUANTITY TYPE - SIZE (IN.)	AIR OUTLET OR INLET TAG (REFER TO
- VOLUME (CFM)	
	RECTANGULAR DIFFUSER, SUPPLY. OI FLOW DIRECTION.
	RECTANGULAR REGISTER OR GRILLE,
	RECTANGULAR REGISTER OR GRILLE,
	ROUND DIFFUSER, SUPPLY
_	
	DOOR GRILLE OR LOUVER
* +	TRANSFER GRILLE OR I OUVER
	COIL (REFER TO CONTROLS LEGEND)
	,

VENTILATION (HVAC)

TANGULAR DUCT AND SIZE* ND DUCT AND SIZE* OVAL DUCT AND SIZE* RIOR DUCT TREATMENT* FANGULAR DUCT WITH ACOUSTIC LINING* SECTION, SUPPLY AIR. SIZE* IS HORIZONTAL DIM. x VERTICAL DIM. IES TO RECT., ROUND AND OVAL T SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL SECTION, RETURN AIR. APPLIES TO RECT., ROUND AND OVAL T SECTION, EXHAUST AIR. APPLIES TO RECT., ROUND AND OVAL IBLE DUCT W TURN, SUPPLY DOWN. APPLIES TO RECT., ROUND AND OVAL W TURN, OUTSIDE AIR DOWN. APPLIES TO RECT., ROUND AND OVAL W TURN, RETURN DOWN. APPLIES TO RECT., ROUND AND OVAL W TURN, EXHAUST DOWN. APPLIES TO RECT., ROUND AND OVAL NGE IN DUCT ELEVATION RISING IN DIRECTION INDICATED NGE IN DUCT ELEVATION DROPPING IN DIRECTION INDICATED CAP W, RECTANGULAR, SMOOTH RADIUS WITH SPLITTER VANES R/W DEFAULT) W, RECTANGULAR, SMOOTH RADIUS WITHOUT VANES (1.5 R/W AULT) OW, ROUND, SMOOTH RADIUS (1.5 R/W DEFAULT) RED ELBOW, RECTANGULAR, WITH TURNING VANES FANGULAR TO ROUND TRANSITION ACCESS DOOR (TOP, SIDE, BOTTOM) IBLE CONNECTION KDRAFT DAMPER UAL DAMPER ORIZED DAMPER DAMPER KE DAMPER KE AND FIRE DAMPER T SILENCER TROL DEVICE (REFER TO CONTROLS LEGEND) LOW MEASURING STATION (REFER TO CONTROLS LEGEND) DUTLET OR INLET TAG (REFER TO SCHEDULE) TANGULAR DIFFUSER, SUPPLY. OPTIONAL ARROWS SHOW THE / DIRECTION. TANGULAR REGISTER OR GRILLE, RETURN TANGULAR REGISTER OR GRILLE, EXHAUST ND DIFFUSER, SUPPLY AR DIFFUSER WALL REGISTER OR GRILLE, SUPPLY WALL GRILLE, RETURN OR EXHAUST ERCUT DOOR R GRILLE OR LOUVER NSFER GRILLE OR LOUVER

EQUIPMENT TAG

(ID-#

— QUANTITY TYPE

LENGTH (FT)

- CAPACITY (MBH)

RADIATION HEATING TAG (REFER TO SCHEDULE)

* NOTE: ALL DUCT SIZES ARE INTERIOR, FREE DIMENSIONS (ALWAYS WIDTH X HEIGHT IN FLOOR PLAN AND SECTION)

GENERAL SYMBOLS

	- SECTION NUMBER	0000	ROOM TAG
	WALL SECTIONS	(M01)	KEY NOTE TAG
	- SHEET ON WHICH SECTION IS SHOWN	SLOPE	SLOPE ARROW
− → FLOOR →	— FLOOR OR ROOF LEVEL NAME — VERTICAL ELEVATION		CIRCULAR BREAK SYMBOL
Ν		\checkmark	CIRCLE BREAK SYMBOL
		0	REFERENCE SYMBOL - DIAMOND
	NORTH ARROW		REFERENCE SYMBOL - HEXAGON
<u>^?</u>	DRAWING REVISION	X	REFERENCE SYMBOL - TRIANGLE
	MATCH LINE	\triangleright	REFERENCE SYMBOL - CIRCLE
0 <u> </u>	GRAPHIC SCALES - ENGINEERING	0	REFERENCE SYMBOL - ROTATED HEXAGON
		¢	CENTER LINE
EL. 10000	ELEVATION	×	GRID BUBBLE AND LINE

			Permit/Seal	Consultant	
			ISSUE FOR BID		Stan
			NOT FOR CONSTRUCTION		Stantec Consulting Services Inc. 801 South Figueroa Street Suite 300 Los Angeles, 90017-3007 Tel: (213) 955-9775 • www.stantec.com
By Appd YYYY.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	CI/FL GY 2023.10.0 SK GY 2023.05.1 CI GY 2023.03.1 By Appd YYYY.MM.L			Copyright Reserved The Contractor shall verify and be responsible for all dimensions. I drawing - any errors or omissions shall be reported to Stantec with The Copyrights to all designs and drawings are the property of Stc or use for any purpose other than that authorized by Stantec is for

5		otes	 (GENERAL NO
1. SUPPORTS	AND ATTACHMENTS OF ALL EQUIPMENT TO BE INSTALLED AS A PA	ART OF THIS PROJECT SHALL	1. CONTRACTOR SHALL VISIT SITE	TO REVIEW SCOPE OF WORK PRI
BE DETAILE 1616A.1.18. 2. SEE STRUC	ED ON CONSTRUCTION DOCUMENTS, EXCEPT THOSE EXEMPT BY T		2. DRAWINGS ARE DIAGRAMMATIC VERIFY ALL DIMENSIONS AND CO BE COORDINATED BASED ON AC	AND SHALL NOT BE SCALED TO D ONDITIONS IN THE FIELD BEFORE TUAL FIELD MEASUREMENTS AND
		NOTES	3. COORDINATE REQUIREMENTS O AND INCIDENTAL LABOR, INCLUE REQUIRED TO ACHIEVE A COMPI	F NEW WORK WITH OTHER TRADE ING PARTS AND ACCESSORIES, C LETE FULLY FUNCTIONING INSTA
1. FLEX DUCT RETURN AIR 2. SYSTEMS T BALANCE R	MAY BE USED, BUT IS LIMITED TO A MAXIMUM OF SEVEN (7) FEET A DISTRIBUTION DEVICES ONLY. D BE BALANCED TO SUPPLY AIR IN QUANTITIES SHOWN ON PLANS.	AT BRANCH ENDS OF RUNS TO SUPPLY &	 PRIOR TO FABRICATION, CONTR SCALE) OF ALL PROJECT WORK DRAWINGS SHALL INCLUDE DET AND PIPING WITH DUCT AND PIP TRADES AS REQUIRED TO ACHIE 	ACTOR SHALL PREPARE FULLY CO AND SUBMIT TO THE OWNER'S RE AILED PLAN VIEW LAYOUTS (1/4" S E SIZES AND ELEVATIONS ABOVE EVE INTENDED ARCHITECTURAL E
3. INSULATE A 4. DUCT INSUL	LL SUPPLY AND RETURN DUCTWORK EXTERNALLY EXCEPT WHERE	E SHOWN WITH A LINING. IOT TO EXCEED A FLAME SPREAD OF 25	5. AVOID ROUTING PIPING ABOVE F ELECTRICAL EQUIPMENT OR CAI JOINTS, FITTINGS, VALVES OR S OF EQUIPMENT OR TRAY. PROV	ELECTRICAL EQUIPMENT AND CAE BLE TRAYS IS UNAVOIDABLE, INST IMILAR COMPONENTS SHALL BE L 'IDE DRIP PAN(S) WITH MOISTURE
5. ALL REQUIR BY THE GEN	ED CEILING/WALL ACCESS PANELS ARE FURNISHED UNDER THE M ERAL CONTRACTOR. SUBMIT SHOP DRAWINGS FOR REVIEW PRIO	ECHANICAL SECTION AND INSTALLED R TO INSTALLATION.	6. ALL WORK SHALL COMPLY WITH CALIFORNIA BUILDING CODE (CE (CPC) 2022 CALIFORNIA FIRE CC	THE CALIFORNIA CODE OF REGU SC), 2022 CALIFORNIA MECHANICA
6. UPON COMP DESIGN CAF ACCORDAN	PLETION OF THE TEST AND BALANCE OF THE HVAC SYSTEMS AND VACITY, AIR-BORNE SOUND LEVEL MEASUREMENTS SHALL BE MAD CE WITH SPECIFICATIONS AND LOCAL ORDINANCES.	WITH THE SYSTEM OPERATING AT E TO FIELD VERIFY NOISE EMISSIONS IN FROM DUST AND POLLUTANTS; SEAL	 ALL WORK MUST BE PERFORMEN CONSTRUCTION SHALL BE ORGA DISTURBANCE OF PATIENTS AND ANY REQUIRED SYSTEM SHUTDO 	2 IN ACCORDANCE WITH THE GEN NIZED IN SUCH A MANNER AS TO STAFF. NOTIFY OWNER'S REPR OWNS, DISTURBANCE OF OR ENC
8. EXISTING DI NATIONAL A REPAIRED C	INVAC DUCTS/EQUIPMENT STORED ON SITE. JCTWORK TO REMAIN SHALL BE CLEANED IN ACCORDANCE WITH T IR DUCT CLEANERS ASSOCIATION AND INSPECTED FOR ANY LEAK IR REPLACED.	HE CURRENT PUBLISHED STANDARDS OF THE AGES. ANY DAMAGED INSULATION SHALL BE	ACTIVITIES SUCH AS MASONRY I VIBRATION TRANSMITTED TO OC OCCUPIED AREAS AT ALL TIMES TRAFFICWAYS CRITICAL TO THE	DRILLING AND SAWCUTTING ONLY CUPIED AREAS TO THE GREATES . DO NOT OBSTRUCT OR OTHERV ONGOING OPERATION OF THE F/
9. CORRODED 10. REMOVE DL SEAL AIRTIC	DUCTWORK SHALL BE REPLACED AS REQUIRED. CTWORK TO POINTS INDICATED. PATCH OPENINGS THAT ARE NOT SHT PER SMACNA IN ACCORDANCE WITH SPECIFICATIONS.	REUSED WITH LIKE-GAUGE SHEET METAL,	9. CONTRACTOR SHALL COMPLY W PROCEDURES THROUGHOUT CC MEASURES AND CONTAINMENT/ PROTECT OCCUPIED AREAS AND (INCLUDING DUST, SMOKE, FUM	ITH THE FACILITY'S INFECTION OF INSTRUCTION OF THE PROJECT. ISOLATION OF CONSTRUCTION A(DASSOCIATED HVAC SYSTEMS FF ES AND ODORS) GENERATED BY (
	APPLICABLE CO	DES	10. MEANS, METHODS AND TIMING O REPRESENTATIVE INSOFAR AS 1 ACCEPTANCE BY THE AUTHORIT)F WORK SHALL BE COORDINATED THEY AFFECT FACILITY OPERATIC TY HAVING JURISDICTION AND MU
THE CONTRACT ADOPTED EDITI 2022 CALIFORN PART 1, TITLE 2 2022 CALIFORN PART 2, TITLE 2 2022 CALIFORN PART 3, TITLE 2 2022 CALIFORN PART 4, TITLE 2 2022 CALIFORN PART 5, TITLE 2 2022 CALIFORN PART 6, TITLE 2 2022 CALIFORN PART 9, TITLE 2 2022 CALIFORN PART 9, TITLE 2 2022 CALIFORN PART 9, TITLE 2 2022 CALIFORN PART 9, TITLE 2 2022 CALIFORN PART 11, TITLE WHERE LAWS A PREVAIL.	OR SHALL COMPLY WITH ALL APPLICABLE LAWS AND CODES AND ONS OF: IA BUILDING STANDARDS ADMINISTRATIVE CODE 4, CALIFORNIA CODE OF REGULATIONS (CCR) IA BUILDING CODE 4, CCR IA ELECTRICAL CODE 4, CCR IA MECHANICAL CODE 4, CCR IA PLUMBING CODE 4, CCR IA BUILDING EFFICIENCY STANDARDS 4 CCR IA BUILDING EFFICIENCY STANDARDS 4 CCR IA FIRE CODE 4, CCR IA GREEN CODE 24, CCR ND CODES ARE FOUND TO BE IN CONFLICT WITH EACH OTHER, TH OUTDOOR CLIMATE CO SANTA BARBARA, CA 1: 9 FEET A CLIMATE ZONE: 6 ESIGN DRY BULB/COINCIDENT WET BULB: 90°F DB /69°F WB SIGN TEMPERATURE: 36°F DEMOLITION NOT RACTOR SHALL VISIT THE SITE AND BE THOROUGHLY FAMILIARIZE BIDDING, INFORMATION GIVEN ON THESE DRAWINGS BUT CANNOT BE GUARA . SUCH INFORMATION BEFORE PROCEEDING WITH ANY NEW WORY HE CONTRACT ALL WORK REQUIRED TO PRODUCE THE INDICATED WITTING A BID THE CONTRACTOR SHALL BE HELD TO HAVE MADE : SING SHALL NOT SCALE DRAWINGS. DIMENSIONS MISSING FROM PHE LOVER AND SCALE DRAWINGS. DIMENSIONS MISSING FROM PHE LOVERATURE STOR SHALL WORK REQUIRED TO PRODUCE THE INDICATED WITTING A BID THE CONTRACTOR SHALL BE HELD TO HAVE MADE : SORS UNFAMILIARITY WITH THE SITE AND LE FACILITY REPRESENTATIV	E MORE STRINGENT REQUIREMENTS WILL E MORE STRINGENT REQUIREMENTS WILL CNDDITIONS ES UNITH THE EXISTING CONDITIONS XISTING INSTALLATION HAS BEEN XISTING INSTALLATION HAS BEEN XISTED ACCURATE IN ALL RESPECTS. C THAT MAY BE AFFECTED. INCLUDE AS RESULT. SUCH EXAMINATIONS OF THE SITE AND IGHT RESULTING FORM THE ANS OR NEEDED FOR EXECUTION OF E BEFORE WORK IS INSTALLED.	 11. REFERENCE OF MODITIONAL DRAWN 12. THE EQUIPMENT MANUFACTURE SUBSTITUTIONS OF ANY EQUIPM REPRESENTATIVE. ANY PROPORIN IN THE SPECIFICATIONS; MUST ME HAVING JURISDICTION. PERFOR OR EXCEED THOSE SPECIFIED C CALCULATIONS FOR EQUIPMENT OF SUBMITTAL OF ANY SUBSTITI RECORD. SUBSTITUTIONS REQUIPMENT OF SUBMITTAL OF ANY SUBSTITI RECORD. SUBSTITUTIONS REQUINOT ALLOWED. 13. WHERE EXISTING UTILITIES NOT IMMEDIATELY. SUPPORT AND PE SOLUTION. 14. CUTTING AND DEMOLITION WOR OR DAMAGE PORTIONS OF EXIS 15. OWNER RESERVES THE RIGHT T OR MATERIALS NOT DESIRED BY CONTRACTOR AT THE CONTRAC 16. COORDINATE METHOD, ROUTE A PRIOR TO ANY REMOVAL. 17. PATCH AND REPAIR ANY DAMAG RESULTING FROM PROJECT WO PATCHWORK AND REPAIR REQU OTHERWISE. PATCHES AND REF 18. SEAL AND PROTECT ALL PIPE, D AND MATERIALS USED FOR TRE/ MARSHAL APPROVED. 19. ALL LOCATIONS FOR CORING THE LICENSED STRUCTURAL ENGINE REINFORCEMENT. 20. ALL ROOFING AND FLASHING EL SHALL REFER TO ARCHITECTUR 21. CONTRACTOR MAY SUBSTITUTE RECTANGULAR DUCT OF EQUIV/J DRAWING SUBMITTAL WHERE SU 22. CONTRACTOR SHALL LOORDINA ELECTRICAL AND FIRE ALARM. 23. CONTRACTOR SHALL LABEL ALL METAL TAGS. TAGS SHALL TO B ATTACHED WITH JACK CHAIN MA 24. PROTECT DUCT OPENINGS AND DURING CONSTRUCTION TO COU HVAC IS USED DURING CONSTRI IMMEDIATELY PRIOR TO OCCUP/ CONSTRUCTION. (CalGreen 5.504 	RS AND MODELS SPECIFIED ON T IENT ARE ALLOWED WITHOUT FIR SED SUBSTITUTIONS MUST BE FR IATCH THE PHYSICAL CONFIGUR/ IS, INLET AND OUTLET CONFIGUR T SEISMIC CERTIFICATION REQU MANCE FEATURES AND CONSTRU- IN THE DRAWINGS AND IN THE SP SUPPORT AND ANCHORAGE SH/ JTION FOR REVIEW BY THE ARCH JRING CHANGES TO THE CONTRA SHOWN ON THE DRAWINGS ARE COTECT UTILITIES UNTIL PROVISIO K SHALL NOT COMPROMISE STRU- TING WORK TO REMAIN. O RETAIN ALL MATERIALS AND EC 'THE OWNER SHALL BE REMOVED TOR'S EXPENSE. ND TIMING OF MATERIAL AND DE E TO WALLS, FLOORS, CEILINGS, RK. REFER TO ARCHITECTURAL F IREMENTS. MATCH EXISTING FIN 'AIRS SHALL RESTORE FINISH TO UCT AND CONDUIT PENETRATION ATMENT OF PENETRATIONS THRC IROUGH CONCRETE SLAB FLOORS' ER. USE X-RAY IMAGING WHEN N EMENTS SHOWN ON THESE DRAV AL DRAWINGS FOR ALL ROOFING NEW ROUND OR RECTANGULAR ALENT OR GREATER CROSS-SECT JCH SUBSTITUTIONS OCCUR. ITE FINAL THERMOSTAT LOCATIO VALVES SEQUENTIALLY USING TI E 2" DIAMETER AND FABRICATED DE FROM THE SAME MATERIAL. MECHANICAL EQUIPMENT DURING VALVES SEQUENTIALLY USING TI E 2" DIAMETER AND FABRICATED DE FROM THE SAME MATERIAL. MECHANICAL EQUIPMENT DURING VALVES SEQUENTIALLY USING TI E AND 5.504.3).
4. INTERRUP CONDUIT, OF ANY AN	IL BE CLARIFIED OR PROVIDED BY THE FACILITY REPRESENTATIV FION OF EXISTING SERVICES: THE CONTRACTOR'S ATTENTION IS C PIPING, ETC. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR D ALL DAMAGE CAUSED BY HIM OR HIS WORK TO EXISTING BUILDI	E BEFORE WORK IS INSTALLED. CALLED TO THE PRESENCE OF EXISTING, THE PROPER AND APPROVED REPAIR	MECH	IANICAL SHE
SHALL BE S THE FACILI THE EXIST FURNISH A ANY EXIST WORK RF(SCHEDULED TO MINIMIZE INCONVENIENCE TO THE FACILITY, AND A TY REPRESENTATIVE. NEW WORK AND INSTALLATIONS SHALL NOT ING FACILITY. THE COMPLETED PROJECT SHALL BE A PROPERLY F LL LABOR AND MATERIALS REQUIRED TO RELOCATE, REMOVE, RE ING PIPING TO ACCOMMODATE THE WORK. CONTRACTOR SHOULD QUIRED TO MINIMIZE SHUTDOWN TIME.	AT TIMES AS APPROVED IN ADVANCE BY TIMPAIR THE PROPER FUNCTIONING OF UNCTIONING ENTITY THROUGHOUT. INSTALL, RECONNECT, REPLACE, ETC. O CONSIDER IN HIS BID ANY EXTRA	M-001 LEG M-002 MEC M-003 MEC MD101 MEC	END AND GENERAL NOTES CHANICAL TITLE 24 COMPLIANCE CHANICAL SCHEDULES AND DETAI CHANICAL MAIN BUILDING - DEMO
5. EQUIPMEN CONTRAC ⁻ PREMISES	T FIXTURE, PIPING ETC. THAT ARE TO BE REMOVED/DEMOLISHED FOR UNLESS NOTED FOR SALVAGE BY FACILITY AND SHALL BE REM	SHALL BE THE PROPERTY OF THIS NOVED IN ITS ENTIRELY FROM THE	M-101 MEC M-701 MEC M-901 MEC	HANICAL MAIN BUILDING - NEW FL HANICAL CONTROLS CHANICAL SPECIFICATIONS (1)
6. BEFORE DI SURVEYEE TO BE REC REPRESEN	EMOLITION COMMENCES ON SITE, ALL EXISTING EQUIPMENT TO BI AND VALIDATED TO ESTABLISH CONDITION AND CAPACITIES. ANY ORDED AT THIS STAGE BY THE CONTRACTOR AND A FULL WRITTE ITATIVE FOR REVIEW. THE REPORT WILL INCLUDE PHOTOGRAPHIC	E RETAINED AND REUSED WILL BE EXISTING DAMAGE TO EQUIPMENT IS N REPORT SUBMITTED TO THE FACILITY EVIDENCE OF DAMAGE.	M-902 MEC M-903 MEC	HANICAL SPECIFICATIONS (2) HANICAL SPECIFICATIONS (3)
7. CONTRACT DESIGN IN MISTAKEN	OR TO CROSS REFERENCE DEMOLITION & NEW CONSTRUCTION D TENT BEFORE PROCEEDING WITH ANY DEMOLITION WORK. ANY PIL LY DEMOLISHED SHALL BE RESTORED AT CONTRACTOR'S COST.	PRAWINGS TO ENSURE CONSISTENCY IN PE, VALVE, EQUIPMENT THAT IS		
8. ALL POWEI PRIOR TO	R SUPPLIES TO EXISTING EQUIPMENT TO BE REMOVED SHALL BE DEMOLITION STARTS. THIS PROCESS SHALL BE COORDINATED WI	ISOLATED AND MADE SAFE PER NEC TH FACILITY REPRESENTATIVES.		
9. CONTRACT FACILITY R	OR TO DO PRE-DEMOLITION SURVEY AND RED TAG UTILITIES FOR EPRESENTATIVE ALL PROPOSED UTILITY SHUT DOWN AND ISOLA	DEMOLITION. COORDINATE WITH TION PRIOR TO DEMOLITION.		
				NON-INFRIN
				DOES NOT ADVERS LIFE SAFETY AND/C BUILDING.
				NOTE: NOT A ABBREVIATIC
antec	Client/Project Logo	Client/Project SANTA BARBARA METR DISTRICT	opolitan transit	Title LEGEND ANE
	1	1		1

Reserved rify and be responsible for all dimensions. DO NOT scale the r omissions shall be reported to Stantec without delay. lesigns and drawings are the property of Stantec. Reproduction a other than that authorized by Stantec is forbidden.



TERMINAL 2 - RECOMMISSIONING

5353 OVERPASS ROAD, GOLETA, CA 93111

CI CI GY 2022.04.08 Dwn. Dsgn. Chkd. YYYY.MM.DD stn_mechanical_2014240805.rvt

L NOTES

F WORK PRIOR TO SUBMISSION OF BID.

CALED TO DETERMINE EXACT PLACEMENT OF NEW WORK. LD BEFORE PROCEEDING WITH WORK. EXACT PLACEMENT SHALL MENTS AND CONDITIONS.

THER TRADES AND PROVIDE ALL NECESSARY APPURTENANCES ESSORIES, CONNECTIONS, SYSTEM START-UP AND TESTING AS NING INSTALLATION READY FOR OPERATION.

ARE FULLY COORDINATED DETAILED SHOP DRAWINGS (DRAWN TO OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL. SHOP OUTS (1/4" SCALE MINIMUM) SHOWING EQUIPMENT, DUCTWORK ONS ABOVE FINISHED FLOOR. COORDINATE WORK WITH OTHER ITECTURAL ELEVATIONS.

NT AND CABLE TRAYS. WHERE INSTALLATION OF PIPING ABOVE DABLE, INSTALL PIPING WITH A MINIMUM NUMBER OF JOINTS. SHALL BE LOCATED A MINIMUM OF 36 INCHES FROM EACH SIDE MOISTURE DETECTION ABOVE CRITICAL EQUIPMENT.

E OF REGULATIONS, TITLE 24 (2022 EDITION), INCLUDING THE 2022 MECHANICAL CODE (CMC), 2022 CALIFORNIA PLUMBING CODE ALIFORNIA ELECTRICAL CODE (CEC).

/ITH THE GENERAL CONDITIONS OF THE PRIME CONTRACT.

NER AS TO MINIMIZE DISRUPTION TO FACILITY OPERATIONS AND NER'S REPRESENTATIVE A MINIMUM OF 48 HOURS IN ADVANCE OF E OF OR ENCROACHMENT INTO OCCUPIED AREAS. PERFORM TTING ONLY DURING DESIGNATED HOURS; DAMPEN NOISE AND E GREATEST EXTENT POSSIBLE. MAINTAIN EGRESS FROM FOR OTHERWISE IMPEDE PEDESTRIAN OR VEHICULAR ON OF THE FACILITY.

FECTION CONTROL RISK ASSESSMENT (ICRA) POLICIES AND PROJECT. AIR BALANCE PRECAUTIONS, DUST PROTECTION RUCTION ACTIVITIES SHALL BE MAINTAINED AT ALL TIMES TO YSTEMS FROM CONTAMINATION BY AIRBORNE POLLUTANTS RATED BY CONSTRUCTION ACTIVITIES.

OORDINATED WITH AND APPROVED BY THE OWNER'S Y OPERATIONS. MEANS AND METHODS ARE STILL SUBJECT TO ION AND MUST COMPLY WITH DESIGN AND CODE INTENT. ERIA.

CIFIED ON THE DRAWINGS SERVE AS THE BASIS OF DESIGN. NO VITHOUT FIRST OBTAINING APPROVAL FROM THE OWNER'S MUST BE FROM ONE OF THE ALTERNATE MANUFACTURERS LISTED CONFIGURATION AND REQUIREMENTS OF THE SPECIFIED MODEL T CONFIGURATION, REQUIRED CLEARANCES, ACCESS AND POWER TION REQUIREMENTS WHERE MANDATED BY THE AUTHORITY ID CONSTRUCTION OF ANY PROPOSED SUBSTITUTION SHALL MEET) IN THE SPECIFICATIONS. STRUCTURAL ENGINEERING ORAGE SHALL BE SUBMITTED BY THE CONTRACTOR AT THE TIME Y THE ARCHITECT, MECHANICAL AND STRUCTURAL ENGINEERS OF THE CONTRACT DOCUMENTS BY MEANS OF A CHANGE ORDER ARE

WINGS ARE ENCOUNTERED, NOTIFY OWNER'S REPRESENTATIVE L PROVISIONS CAN BE MADE FOR RELOCATION OR OTHER

OMISE STRUCTURAL INTEGRITY OF THE EXISTING CONSTRUCTION

RIALS AND EQUIPMENT REMOVED FROM THE PROJECT. ANY ITEMS E REMOVED FROM THE OWNER'S PROPERTY BY THE

RIAL AND DEBRIS REMOVAL WITH OWNER'S REPRESENTATIVE

S, CEILINGS, CABINETS, HARDWARE, WINDOWS, FIXTURES, ETC. TECTURAL PLANS AND SPECIFICATIONS FOR DRYWALL AND FINISH ISTING FINISHES AS CLOSELY AS POSSIBLE UNLESS NOTED E FINISH TO "LIKE NEW" CONDITION.

NETRATIONS OF FLOORS, WALLS, CEILINGS AND ROOF. METHODS TIONS THROUGH RATED ASSEMBLIES SHALL BE U.L. AND FIRE

SLAB FLOORS AND WALLS SHALL BE CONFIRMED BY A CALIFORNIA GING WHEN NECESSARY TO LOCATE STRUCTURAL SLAB

THESE DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR L ROOFING AND FLASHING DETAILS.

TANGULAR DUCT SHOWN ON PLANS WITH ROUND OR ROSS-SECTIONAL AREA. CONTRACTOR TO INDICATE ON SHOP

AT LOCATIONS WITH OTHER TRADES, INCLUDING ARCHITECTURAL,

LY USING THE EXISTING FACILITY TAG INVENTORY LIST. USE ABRICATED OF BRASS OR STAINLESS STEEL. TAGS SHALL BE

IENT DURING CONSTRUCTION. LIMIT USE OF PERMANENT HVAC ARY FOR MATERIAL AND EQUIPMENT INSTALLATION. IF PERMANENT V-8 FILTERS ON RETURNS, AND REPLACE ALL FILTERS LDING IS OCCUPIED DURING ALTERATION, AT THE CONCLUSION OF

SHEET LIST

DTES MPLIANCE AND DETAILS ING - DEMOLITION PLAN - HVAC ING - NEW FLOOR - HVAC ONS (1) ONS (2) ONS (3)

-INFRINGEMENT STATEMENT BEST OF MY KNOWLEDGE, THE WORK DESCRIBED HEREIN NOT ADVERSELY AFFECT OR COMPROMISE THE EXISTING AFETY AND/OR FIRE PROTECTION SYSTEMS FOR THIS

E: NOT ALL SYMBOLS, SYSTEMS, AND REVIATIONS MAY BE USED ON THIS PROJECT

ID AND GENERAL NOTES

Project No. 2014240805

Revision



This document is used to demonstrate compliance for path outlined in 140.4, or 141.0(b)2 for alterations. Project Name: Santa Base Project Address:	mechanical systems that a Irbara Metro Transit District T 5353 Overpass Road, Gole	e within the scope of th Renovation Report Page: Ra, CA 93111 Date Prepare	e permit application and are d:	demonstrating compli	ance using the prescriptive (Page 1 of 2023-03-09T13:03:00-05
A. GENERAL INFORMATION 01 Project Location (city)	Goleta	04 Total	Conditioned Floor Area		1850
02 Climate Zone 03 Occupancy Types Within Project: • Office	6	05 Total 06 # of S	Unconditioned Floor Area tories (Habitable Above Grad	de)	0
B. PROJECT SCOPE					
This table Includes mechanical systems or component 140.4, 170.2(b) or 141.0(b)2 and 180.2(b)2 for alterat 01 Air System(s)	s that are within the scope ions.	of the permit application 02 Vet System Components	and are demonstrating com	03 Dry System Co	criptive path outlined in
Heating Air System Cooling Air System Mechanical Controls	Water	Economizer		Air Economizer Electric Resistance F Fan Systems	Heat
Mechanical Controls (existing to remain, or new)	altered Coolin	g Towers s		Ductwork (existing t Ventilation	o remain, altered or new
	Doncis			Zonar Systemsy Term	innai boxes
Desistantian Number		Converted Date Trime		Desumental	ian Cafeuran Faarm Cada A
Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresider	itial Compliance	Generated Date/Time: Report Version: 2022.(Schema Version: rev 20	.000 0220101	Documentat Co Report Go	non Software: Energy Code A mpliance ID: 93504-0323-00 enerated: 2023-03-09 10:03
STATE OF CALIFORNIA					
Mechanical Systems CERTIFICATE OF COMPLIANCE Project Name: Santa Ba	arbara Metro Transit District T	2 Renovation Report Page:		CALIFO	DRNIA ENERGY COMMISS NRCC-MC (Page 5 of
		Date Prepare	d:		2023-03-09T13:03:00-0
This table is used to demonstrate compliance with mo 141.0(b)2E 180.2(b)2 for altered space conditioning sp 01 02 03	indatory controls in 110.2 c ystems. 04	nd 120.2 and prescriptiv	e controls in 140.4(f) and (n) 06 07	, 170.2(c)4D 170.2(c)4l	L or requirements in 09
System Name System System Being Serv	ed Thermostats a 110.2(b) & (c) ¹ , 120.2 red 160.3(a)2A or 141.0(b)	(a) Controls Co 22 & 120.2(e) & 120	lation cone Demand Respondent ntrols 110.12 120.2(1 2(g) 8 160 2(2) 20	b) & Supply Air Temp. Reset 140.4(f) &	Window Interlocks pe 140.4(n) & 170.2(c)4
RTU-1 Single zone <= 25,000	180.2(b)2 ft ² Setback	160.3(a)2D 120 160 160 Auto Timer NA Switch 22	3(a)2F Single one NA: PTAC, PTHP, Rr	n AC, HP Zone	NA: No operable windc
¹ FOOTNOTES: Gravity gas wall heaters, gravity floor h have setback thermostats.	eaters, gravity room heate	rs, non-central electric h	eaters, fireplaces or decoration	ve gas appliances, woo	d stoves are not requirea
19 20 21 Space Name or Item Tag Mechanical Ventilation Required per Conditioned Floor Area (ft ²) # of Bedrooms	22 23 r 120.1(b) & 160.2(b)2 # of Dwelling Units Required Min OA CFM ¹	24 25 Ventilation per Design Supply Air CFM CFM	26 Local Exhaust	Air Filtration	27 per 120.1(c) & 160.2(b)1
Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresider	itial Compliance	Generated Date/Time: Report Version: 2022.(Schema Version: rev 2	.000)220101	Documentat Co Report G	ion Software: Energy Code / mpliance ID: 93504-0323-00 enerated: 2023-03-09 10:03
state of california Mechanical Systems				CALIFO	DRNIA ENERGY COMMISS
CERTIFICATE OF COMPLIANCE Project Name: Santa Ba	arbara Metro Transit District T.	Renovation Report Page: Date Prepare	d:		NRCC-M0 (Page 9 of 2023-03-09T13:03:00-0
Q. MANDATORY MEASURES DOCUMENTATION	LOCATION				
LINS TADIP IS USPA TO TADICATP WAPPP MODADATORY MPASE	01 through MCH	No	P	02 lan sheet or construct	2 ion document location
Compliance with Mandatory Measures documented to Mandatory Measures Note Block				04	1
Compliance with Mandatory Measures documented to Mandatory Measures Note Block	03 Iandatory Measure		P	lan sheet or constructi 9.	+ ion document location 8
Compliance with Mandatory Measures documented to Mandatory Measures Note Block Neating Equipment Efficiency per 110.1 Cooling Equipment Efficiency per 110.1 Furnace Standby Loss Control per 110.2(d) Duct Insulation per 120.4	03 landatory Measure		P	lan sheet or constructi 9. 18 N/ M-001, M-002,	+ ion document location 8 3 A M-101, M-701
Compliance with Mandatory Measures documented in Mandatory Measures Note Block Meating Equipment Efficiency per 110.1 Cooling Equipment Efficiency per 110.1 Furnace Standby Loss Control per 110.2(d) Duct Insulation per 120.4 Heat Pump with Supplemental electric Resistance Hee The air duct and plenum system is designed per 120.4 Kitchen range hoods shall be rated for sound in accor	03 landatory Measure ater Controls per 110.2(b) I(a)-(f) Jance with Section 7.2 of A	SHRAE 62.2	P	lan sheet or constructi 9: 18 N/ M-001, M-002, M-0 M-1 N/	+ ion document location 8 3 A M-101, M-701 102 01 A

1 PLAN CHECK REVISIONS

Revision

ORIGINAL SHEET - ARCH E1

STATE OF CALIFORNIA		STATE OF CALIFORNIA	
CERTIFICATE OF COMPLIANCE	CALIFORNIA ENERGY COMMISSION NRCC-MCH-E		
Project Name: Santa Barbara Metro Transit District 12 Kenovation Report Page: Date Prepared:	(Page 2 01 10) 2023-03-09T13:03:00-05:00	Project Name: Santa Barbara I	Date Prepared:
		F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)	
C. COMPLIANCE RESULTS Table C will indicate if the project data input into the compliance document is compliant with mechanical requirements. This table is not ed	itable by the user. If this table says "DOES	Dry System Equipment Sizing (includes air conditioners, co	ondensers, heat pumps, VRF, furnaces and unit heaters
NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D., or the table indicated as not compliant for guidance. 01 02 03 04 05 06 07	08 09		
System Summary 110.1, 110.2, 140.4(, 170.2(c)ANDFans/ Economizers 	AND Cooling Towers 110.2(e)2 Compliance Results (See Table M) COMPLIES with	Name or Item TagEquipment Category per Tables 110.2, 140.4(a)2 and 170.2(c)3aiiEquipment T Equipment TRTU-1Unitary Heat PumpsAir-co	Type per Tables 110.2 and Title 20 Smallest Size Available ¹ He 140.4(a) and 170.2(c)1 Per Design (kBtu/h) voled, pkg (3 phase) Yes 51
Yes AND Yes AND Yes AND Yes AND Yes Mandatory Measures Compliance (See Table Q for Details)	AND Exceptional Conditions	¹ FOOTNOTES: Equipment shall be the smallest size, within th 140.4(a) and 170.2(c)1. Healthcare facilities are excepted. ² It is common practice to show rated output capacity on the ³ If equipment is heating only, leave cooling output and load ⁴ Authority Having Jurisdiction may ask for load calculations	he available options of the desired equipment line, neces e equipment schedule. Sensible cooling output comes fro I blank. If equipment is cooling only, leave heating output s used for compliance per 140.4(b) and 170.2(c).
D. EXCEPTIONAL CONDITIONS This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form. The permit applicant has indicated on Table J that ventilation calculations have been attached or included elsewhere on the plans.		Dry System Equipment Efficiency (other than Package Term 01 02 Name or Item Size Category	ninal Air Conditioners (PTAC) and Package Terminal He 03 04 05 Heating Mode Rating Bating Efficiency
E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.		Tag (Btu/h)	Condition Efficiency Unit Required per (°F) Tables 110.2 /
F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)		RTU-1 <65,000	Title 20 HSPF 8
Space Conditioning System Information 01 02 03 04 0	5 06	G. PUMPS	
System Name Quantity System Serving System Status Space RTU-1 1 Single zone New/ Addition Offer	e Type Utilizing Recovered Heat	This section does not apply to this project.	
Registration Number: Generated Date/Time:	Documentation Software: Energy Code Ace	Registration Number:	Generated Date/Time:
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101	Compliance ID: 93504-0323-0003 Report Generated: 2023-03-09 10:03:06	CA Building Energy Efficiency Standards - 2022 Nonresidential Co	mpliance Report Version: 2022.0.000 Schema Version: rev 20220101
STATE OF CALIFORNIA		STATE OF CALIFORNIA	
	CALIFORNIA ENERGY COMMISSION NRCC-MCH-E		
Project Name: Santa Barbara Metro Transit District T2 Renovation Report Page: Date Prepared:	(Page 6 of 10) 2023-03-09T13:03:00-05:00	Project Name: Santa Barbara I	Metro Transit District T2 Renovation Report Page: Date Prepared:
28 Is this a balanced system ⁴ 29 Meeting Outside Air Requirem	nents?		Dwelling Units: Total duct
² FOOTNOTES: Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes pre ² Kitchen range hood will be verified per NA7.18.1 to confirm model is rated by HVI or AHAM.	veedence.		Duct leakage testing po
³ Air filtration requirements apply to the following three system types per 120.1(c)1A: space conditioning systems utilizing ducts to supply a systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery occupiable space.	ir to occupiable space; supply-only ventilation ventilation systems providing outside air to	11 No The scope of the project	t includes only duct systems serving healthcare facilities
⁴ A balanced ventilation system provides ventilation airflow to each dwelling-unit at a rate equal to or greater than the required minimum i	ate, but not more than twenty percent.	12 Yes Duct system provides co 13 Yes The space conditioning	onditioned air to an occupiable space for a constant volu system serves less than 5,000 ft ² of conditioned floor a
K. TERMINAL BOX CONTROLS		14 No The combined surface a 15 Yes The scope of the project	area of the ducts is more than 25% of the total surface a t includes extending an existing duct system, which is co
This section does not apply to this project.		16 No The scope of the project and diagnostic testing in	t includes an existing duct system that is documented to n accordance with procedures in the Reference Nonresi
This table is used to show compliance with mandatory pipe insulation requirements found in 120.3 and mandatory requirements found in 1	20.4(g) for duct sealing.	17 Yes All Ductwork and plenu 18 Yes All ductwork is an exten	ms with pressure class ratings shall be constructed to Se nsion of an existing duct system
01 weather shall be installed with a cover suitable for outdoor service. Insulation covering chilled water p outside the conditioned space shall have a Class I or Class II vapor retarder. All penetrations and joints	iping and refrigerant suction piping located of which shall be sealed.	19 No Ductwork serving individ 20 < 25 ft of new or replace	ement space conditioning ducts installed
Duct Leakage Testing The answers to the questions below apply to the following duct systems: SUPPLY/RET NR/ Common Use: Duct leakage testing shall	not exceed 6% per No.	21 N-2.1 Pust insulation N-value	ő.
URN NA7.5.3 required for these systems.	ems?	M. COOLING TOWERS This section does not apply to this project.	
		N. DECLARATION OF REQUIRED CERTIFICATES OF INST	TALLATION
			Form/Title
		NRCI-MCH-01-E - Must be submitted for all buildings	
Registration Number: Generated Date/Time:	Documentation Software: Energy Code Ace	Registration Number:	Generated Date/Time:
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Schema Version: rev 20220101	Compliance ID: 93504-0323-0003 Report Generated: 2023-03-09 10:03:06	CA Building Energy Efficiency Standards - 2022 Nonresidential Co	mpliance Report Version: 2022.0.000 Schema Version: rev 20220101
state of california Mechanical Systems	CALIFORNIA ENERGY COMMISSION		Eligible for 20
CERTIFICATE OF COMPLIANCE Project Name: Santa Barbara Metro Transit District T2 Renovation Report Page:	NRCC-MCH-E (Page 10 of 10)		
Project Address: Date Prepared:	2023-03-09T13:03:00-05:00	Cortificate of Dr.	aduat Datinga
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
Documentation Author Name: Documentation Is accurate and complete.		AHRI Type : HSP-A (Single-Package Heat Pump Air-Source	B)
Company: Signature Date:		Outdoor Unit Model Number (Condenser or Single Package The manufacturer of this DAIKIN product is responsible for the	e) : DPS005AHHY***-4
Address: 800 S. Figueroa St, Ste 300 CEA/ HERS Certification Identification (if applicable): City/State/Zip: Los Angeles, CA 90017 Phone:		Rated as follows in accordance with the latest edition of AH Air-Source Heat Pump Equipment and subject to rating accu	RI 210/240 - 2017 with Addendum 1, Performance Rating of Unita uracy by AHRI-sponsored, independent, third party testing:
I certify the following under penalty of perjury, under the laws of the State of California: 1. The information provided on this Certificate of Compliance is true and correct.		Cooling Capacity (A2) - Single or High Stage (95F), SEER : 18.05	, btuh : 56000
 I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this of Title 24, Part 1 and Part 6 of the California Code of Regulations. 	f Compliance (responsible designer) s Certificate of Compliance conform to the requirements	EER (A2) - Single or High Stage (95F) : 12.65 Heating Capacity (H12) - Single or High Stage (47F	-):51000
 The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicat plans and specifications submitted to the enforcement agency for approval with this building permit application. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made 	ole compliance documents, worksheets, calculations, available to the enforcement agency for all applicable	HSPF (Region IV) : 9.80	
inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to Responsible Designer Name: Responsible Designer Name: Company: Out of the Section of Complexity Section of Complexity Section of Complexity Section of Company: Out of the Section of Complexity Section of Complex	to the building owner at occupancy.		
Address: 800 S. Figueroa St, Ste 300 City/State/Zip: Los Angeles, CA 90017 Phone:			CERTIFIED www.ahridirectory.org
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		The Department of Energy has published updated energy efficiency m metric (SEER) and the 2023 metric (SEER2). Efficiency requirements about updated energy efficiency metrics.	hetrics for central air conditioners and heat pumps. This publication reflects are published at 10 C.F.R. 430.32(c). Please refer to www.AHRInet.org for
Registration Number: Generated Date/Time:	Documentation Software: Energy Code Ace	 Eligibility for the 2022 Non-Business Energy Property Tax Credit provide it is for general informational purposes only. Eligibility for tax credit mat warranty, express or implied or assumes any legal liability or responsitives of a divibility for the 1020 ADM and the purpose. 	vided on this AHRI Certificate is not intended to constitute tax or legal advic ty not constitute the most up to date information. AHRI makes no represent bility for the accuracy, completeness, any third party's use of, or the results it disclosed on the AHRI Directory for Certified Peed 19 Certified Peed to the constitute the constant of the certified Peed 19 Certified Peed to the Certified Peed 19
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		AHRI does not endorse the product(s) listed on this Certificate and m the product(s) listed on this Certificate. AHRI expressly disclaims all i unauthorized alteration of data listed on this Certificate. Certified rati directory at www.ahridirectory.org. TERMS AND CONDITIONS This Certificate and its contents are proprietary products of AHRI. This confidential reference purposes. The contents of this Certificate.	hakes no representations, warranties or guarantees as to, and assumes no liability for damages of any kind arising out of the use or performance of t ings are valid only for models and configurations listed in the is Certificate shall only be used for individual, personal and not, in whole or in part, be reproduced; copied; disseminated;



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Registration Number:

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H. FAN SYSTEMS & AIR ECON This table is used to demonstrate process loads are exempt from th System RTU-1 Quantit 1 01 02 03 1 01 02 03 1 Fan Fan Quy 1 Tag Fan Type Qty 1 RTU-1 1 1 1 I FOOTNOTES: Fans serving space ² Low-turndown single-zone VAV j airflow and use no more than 30 served by the equipment shall har 3 Fan system allowance includes f ⁴ Filter pressure loss can only be c 5 Computer room economizers muters and a or both. ⁶ Computer room economizers muters 01 01 Name or Ite O1 Name or Ite	OMIZERS compliance with prescriptiv hese requirements and do no fan System Status Compo Compo Compo es with design background no fan system must be capable percent of the design wattag ive fixed loads. fan system base allowance. counted once per fan system. an system that combines a sii ust meet requirements of 144 em Tag	e requireme t need to be System Zoning Soment onent bise goals be of and confi ge at that ai ngle cabinet	ents found i e included ir DOAS Se <1.0 Dw kW U elow NC35 igured to re irflow. No n t fan system will be docu.	in 140.4(n Table H erving velling Jnits Jnits educe air, nore than	Date Prepared: c), 140.4(e), 140. f. Not Serving Dwelling Units 05 Airflow through Component (%) Fan System All- flow to 50 percent n 10 percent of to her supply fans.	.4(m), 170.2(c)3 Fan System Airflow (cfm) 06 Water Gauge (w.g) owance (kW) ³ nt of design he design load	, and 170.2(2,000 07 Allow Compone nt Allowance	c)4A for fan s Site Elevation 08 ance Fan Allowance (watt/cfm) 3	ystems. Fa 1,596.3 09 Design Electrical Input Power Method Manufactu rer provided Fan Syste Outp	2023-03-09T13 an systems served Economizer 10 Design Motor Nameplate Horsepower m Electrical ut (kW)	ving only Fixed Tempera re 11 Design Electrica Input Power (kW) 2
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H. FAN SYSTEMS & AIR ECON This table is used to demonstrate process loads are exempt from th System RTU-1 Quantit y 1 01 02 03 Fan Name or Item Fan Type Qty RTU-1 1 1 FOOTNOTES: Fans serving space ² Low-turndown single-zone VAV j airflow and use no more than 30 served by the equipment shall have ³ Fan system allowance includes f ⁴ Filter pressure loss can only be con- ⁵ Complex Fan System means a far or both. ⁵ Computer room economizers mu Fan Energy Index (FEI) 01 Name or Ite RTU-1	OMIZERS e compliance with prescriptive hese requirements and do no 1 Fan System Status New 04 Composite es with design background no fan system must be capable percent of the design wattag ve fixed loads. fan system base allowance. counted once per fan system. an system that combines a sii ust meet requirements of 144 em Tag	e requireme t need to be System D Zoning 1 onent oise goals be of and confi ge at that ai ngle cabinet 0.9(a) and w	ents found i e included ir OOAS Se <1.0 Dw kW U elow NC35 igured to re irflow. No n t fan system will be docu.	in 140.4(n Table H erving velling Jnits Jnits educe air, nore that	c), 140.4(e), 140. f. Not Serving Dwelling Units 05 Airflow through Component (%) Fan System Alle flow to 50 percent n 10 percent of to her supply fans.	A(m), 170.2(c)3 Fan System Airflow (cfm) 06 Water Gauge (w.g) owance (kW) ³ nt of design he design load exhaust fans.	, and 170.2(2,000 07 Allow Compone nt Allowance	c)4A for fan s Site Elevation 08 a ance a Fan Allowance (watt/cfm) 3 N	ystems. Fa 1,596.3 09 Design Electrical Input Power Method Manufactu rer provided Fan Syste Outp	Economizer 10 Design Motor Nameplate Horsepower m Electrical ut (kW)	ving only Fixed Temperat re 11 Design Electrica Input Power (kW) 2
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Registration Number: CA Building Energy Efficiency Stand:	ards - 2022 Nonresidential Com	pliance		Generato Report V Schema	ed Date/Time: /ersion: 2022.0.000 Version: rev 20220	D D101		Docu Re	Compli Compli Port Gener	Software: Energ iance ID: 93504 rated: 2023-03-0	y Code Ac -0323-000 09 10:03:0
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					Date Prepared:				D.	2023-03-09T13	:03:00-05:
). DECLARATION OF REQUIRE	ED CERTIFICATES OF ACCE	PTANCE									
		-	ores (Title						Syst	tems/Spaces T	o Be Field
		F	orm/litle							Verified	
IRCA-MCH-02-A - Outdoor Air m upply Fan VFD Acceptance (if ar	nust be submitted for all new oplicable) since testing activit	/ly installed l ties overlap.	HVAC units	. Note: N	MCH-02-A can be	e performed in c	onjunction	with MCH-07	A		
IRCA-MCH-04 - Air Distribution I	Duct Leakage								SUPF	PLY/RETURN	
IRCA-MCH-05-A - Air Economize	er Controls								RTU-	1	
IRCA-MCH-13-A Automatic FDD	for Air Handling Units and Ze	one Termina	al Units Acc	eptance	8				RTU-	1	
RCA-MCH-22 MF Duct Leakage									SUPF	PLY/RETURN	
DECLARATION OF REQUIRE	D CERTIFICATES OF VERIF	ICATION									
		F	orm/Title						Syst	tems/Spaces T	o Be Fiel
			,							Verified	
		11	D								

STATE OF CALIFORNIA Mechanical Systems

CERTIFICATE OF COMPLIANCE

katings

ndum 1, Performance Rating of Unitary Air-Conditioning & dependent, third party testing:

Eligible for 2022 Federal Tax Credit



				MECHANIC	AL VENTIL	ATION				
	T2	4 AREA BASIS		T24 C	CCUPANCY B	BASIS	ASHRAE 62.1		MINIMUM	
SPACE	CONDITIONED AREA (SQFT)	MIN CFM PER AREA	MIN CFM BY AREA	NUMBER OF PEOPLE	CFM PER PERSON	MIN CFM BY OCCUPANT	CFM	REQ'D VENT AIRFLOW (CFM)	PROVIDED OSA (CFM)	COMPLIES?
105 SUPERVISOR	184	0.15	30	2	15	30	20	30	30	YES
106 DRIVER'S LOUNGE	403	0.15	60	4	15	60	45	60	65	YES
104 STORAGE	75	0.15	10	0	15	0	0	10	15	YES
107 MENS	134	0.5	65	1	15	10	0	65	150	YES
108 WOMENS	133	0.15	20	1	15	10	0	20	150	YES
109 JANITOR	30	0	0	0	15	0	0	0	0	YES
110 CORRIDOR	267	0.15	40	1	15	20	16	40	45	YES
111 OFFICE A	135	0.15	20	1	15	20	15	20	25	YES
112 OFFICE B	181	0.15	25	2	15	25	20	25	30	YES
113 COUNTING ROOM	146	0.15	20	1	15	20	16	20	25	YES
114 SHOP OFFICE	146	0.5	75	1	15	20	16	20	25	YES
							TOTAL =	310	560	

Generated Date/Time:

Report Version: 2022.0.000

Schema Version: rev 20220101

CALIFORN	IA ENERGY CO	OMMISSION
	1	NRCC-MCH-E
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1,596.3	Economizer	Fixed Temperatu re
09	10	11
	Design	
Design Electrical Input Power Method	Motor Nameplate Horsepower	Design Electrical Input Power (kW)
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Fan Syste Outp	m Electrical ut (kW)	2

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MECHANICAL TITLE 24 COMPLIANCE





7 M-003	MAIN DUCT CO	NNECT	ION			6 RE M-003 NTS	ECTANGULAR
					Permit/Seal	Consultant	
					ISSUE FOR BID		J
					NOT FOR CONSTRUCTION		Stantec Consulti 801 South Figuer Los Angeles, 900 Tel: (213) 955-977
(.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	CI/FL SK CI By	GY GY GY Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Res The Contractor shall verify or drawing - any errors or omis The Copyrights to all design

ROUND DUCT BRANCH TO RECTANGULR

Issued

FURNISH THIS TYPE CONNECTION FOR BRANCHES WITH LESS THAN 25% OF TOTAL AIR FLOW.

PROVIDE FLUORESCENT COLORED MARKERS ON CEILING AT ALL MANUAL VOLUME DAMPER LOCATION.



ROUND DUCT BRANCH TO ROUND MAIN 3 DUCT CONNECTION M-003 NTS

1. FOR MANUAL VOLUME DAMPER SEE DETAIL 2/M-002.

NOTES:



									Dl	JCT SYSTE	EM AP	PLICA	FION S	CHEDU	JLE										
			DESIGN C	RITERIA	CON	STRUC	CTION	PF	RODUCT	MA	TERIAL			LIN	ER				INS	SULATI	ON			FA	CTOR
SYSTEM	APPLICATION	LOCATION	MAX VELOCITY (FPM)	MAX FRICTION (IN-WG/100')	DESIGN SYSTEM PRESSURE (IN-WG)	SEAL CLASS	MAX LEAKAGE RATE	SINGLE WALL	DOUBLE WALL SOLID LINER DOUBLE WALL PERF LINER	G90 PVC COATED GALV SHEET STEEL	ALUMINUM	304 STAINLESS STEEL	FIBERGLASS	FLEXIBLE ELASTOMERIC	THICKNESS (IN)	DENSITY (LB/FT ³)	FIBERGLASS BLANKET	FIBERGLASS BOARD	FLEXIBLE ELASTOMERIC	FIRE RATED WRAP	FIRE RATED BOARD	THICKNESS (IN)	DENSITY (LB/FT ³)	ASJ	ASJ-SS
		CONCEALED	1,000	0.10	2	A	6	Х		X							Х					1.5	1.5		
	LOW PRESSURE	EXPOSED	1,000	0.10	2	A	6	X		X								X				1.5	2.25		
		CONCEALED	1,800	0.18	6	A	6	Х		X							Х					1.5	1.5		
	WEDIOW FRESSURE	EXPOSED	1,500	0.18	6	A	6	X		X								X				1.5	2.25		
	A1 1	CONCEALED	1,000	0.10	2	A	6	X		X							Х					1.5	1.5		
	ALL	EXPOSED	1,000	0.10	2	A	6	X		X								X				1.5	2.25		

										[DUCT	SYST	EM A	PPLI	CATIC	ON SC	HEDU	ILE										
			DESIGN (CRITERIA	CONS	STRUC	TION	F	PRODUC	СТ		Μ	ATERIA	٨L			LIN	ER				INS	ULATI	ON			FA	CTOR
SYSTEM	APPLICATION	LOCATION	MAX VELOCITY (FPM)	MAX FRICTION (IN-WG/100')	DESIGN SYSTEM PRESSURE (IN-WG)	SEAL CLASS	MAX LEAKAGE RATE	SINGLE WALL	DOUBLE WALL SOLID LINER	DOUBLE WALL PERF LINER	G90 GALV SHEET STEEL	G90 PVC COATED GALV SHEET STEEL	ALUMINUM	304 STAINLESS STEEL	316 STAINLESS STEEL	FIBERGLASS	FLEXIBLE ELASTOMERIC	THICKNESS (IN)	DENSITY (LB/FT ³)	FIBERGLASS BLANKET	FIBERGLASS BOARD	FLEXIBLE ELASTOMERIC	FIRE RATED WRAP	FIRE RATED BOARD	THICKNESS (IN)	DENSITY (LB/FT ³)	ASJ	ASJ-SS
		CONCEALED	1,000	0.10	2	А	6	Х			Х									Х					1.5	1.5	1	
	LOW PRESSURE	EXPOSED	1,000	0.10	2	А	6	Х			Х										Х				1.5	2.25		
SUPPLY AIR		CONCEALED	1,800	0.18	6	А	6	Х			Х									Х					1.5	1.5	1	
		EXPOSED	1,500	0.18	6	Α	6	X			X										Х				1.5	2.25		
	٨	CONCEALED	1,000	0.10	2	А	6	Х			Х									Х					1.5	1.5		
	ALL	EXPOSED	1,000	0.10	2	A	6	X			X										Х				1.5	2.25		

									DUCT SY	STEM A	PPLI	CATIO	N SCH	IEDULE								
			DESIGN	RITERIA	CONS	STRUC	TION	PRODUCT		MATERI								INS		ON		
			DEGIGITE						>													
SYSTEM	APPLICATION	LOCATION	MAX VELOCITY (FPM)	MAX FRICTION (IN-WG/100')	DESIGN SYSTEM PRESSURE (IN-WG)	SEAL CLASS	MAX LEAKAGE RATE	SINGLE WALL DOUBLE WALL SOLID LINER	LINER G90 GALV SHEET STEEL G90 PVC COATED GAL	SHEET STEEL ALUMINUM	304 STAINLESS STEEI	316 STAINLESS STEEI	FIBERGLASS	FLEXIBLE ELASTOMERIC THICKNESS (IN)	DENSITY (LB/FT ³)	FIBERGLASS BLANKE	FIBERGLASS BOARD	FLEXIBLE ELASTOMERIC	FIRE RATED WRAP	FIRE RATED BOARD	THICKNESS (IN)	DENSITY (LB/FT ³)
		CONCEALED	1,000	0.10	2	А	6	X	X							X					1.5	1.5
	LOW PRESSURE	EXPOSED	1,000	0.10	2	А	6	Х	X								X				1.5	2.25
		CONCEALED	1,800	0.18	6	Α	6	X	X							X					1.5	1.5
	MEDIUM PRESSURE	EXPOSED	1,500	0.18	6	Α	6	Х	X								X				1.5	2.25
	A I I	CONCEALED	1,000	0.10	2	А	6	X	X							Х					1.5	1.5
	411						-											1			L	0.0-

													RO	OF TOP	HEAT PU	MP UNIT S	CHEDULI	Ξ
R	ACTERIST	CS							CON	MPONENTS							C	:0
JN	I UNIT DIM	ENSIONS			DX CO	OLING C	OIL				HEATI	NG			FILTER		COMPR	E
-	WIDTH (IN)	LENGTH (IN)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EDB (F)	EWB (F)	LDB (F)	LWB (F)	MAX APD (IN-WG)	TOTAL CAPACITY (MBH)	EAT (F)	LAT (F)	MAX APD (IN-WG)	MERV RATING	MAX APD - CLEAN (IN-WG)	Max APD - Dirty (IN-WG)	NO. OF COMP.	Т

52.0

0.50

51

57.0 80.0

0.5 13 0.50

59.0 80.0 65.0 53.0

68.0

67 87

CHEDULE	HEDULE																			
CONDENSER FANS									CAPACITY AND PERFORMANCE				ELECTRICAL							
COMPRESSOR FANS			SUPPLY				POWERED EXHAUST													
NO. OF COMP.	TYPE OF COMP.	NO. OF FANS	ESP (IN-WG)	TSP (IN-WG)	BHP	HP	SPEED (RPM)	ESP (IN-WG)	BHP	HP	SPEED (RPM)	OMINAL CAPACITY (TONS)	EER	T24 MIN EER	REFRIG TYPE	REFRIG CHARGE (LB)	VOLTS	PHASE	MCA	MOP
1	SCROLL	1	1.0	2.2	1.3	4	1,893	0.5	0.5	1.3	2,131	5.0	12.6	11.0	R410A	17	208	3	30.2	40

DUCT BRANCH ~

MAIN DUCT

NOTES:

M-003 NTS

INSULATION 🔨

HANDLE WITH LOCKING QUADRANT ~

INSULATION STAND-OFF

INSIDE END BEARING

DAMPER BLADE -

<u>NOTES</u>

0.75











1 FLEXIBLE DUCT CONNECTOR





1. FURNISH THIS TYPE CONNECTION FOR BRANCHES WITH LESS THAN 25% OF TOTAL AIR FLOW.

RECTANGULAR DUCT BRANCH TO MAIN

FOR MANUAL VOLUME DAMPER SEE DETAIL 6/ M-002.

3. SLIP-IN VOLUME DAMPER HOUSING WILL NOT BE ALLOWED.

DUCT CONNECTION













LOCK DAMPER DURING AIR BALANCE AND MARK QUADRANT TO RECORD AIR BALANCED DAMPER POSITION.

PROVIDE "HAT" SECTION AT QUADRANT FOR ALL EXTERNALLY INSULATED DUCTWORK.

PROVIDE FLUORESCENT COLORED MARKERS ON CEILING AT ALL VOLUME DAMPERS LOCATIONS.

MANUAL VOLUME DAMPER











115V Service Equired	MANUFACTURER	MODEL NUMBER	NOTES
Y	DAIKIN	DPS005	ALL



MECHANICAL MAIN BUILDING - LOFT DEMOLITION- HVAC



MECHANICAL MAIN BUILDING -DEMOLITION PLAN - HVAC



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.MM.DD	PLAN CHECK RESOLUTION TO THE PLAN CHECK SUBMITTAL	CI By	GY Appd	2023.03.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify an drawing - any errors or omissi. The Copyrights to all designs or use for any purpose other t



DESIGNATION SUPPLY AIR RESET INCREMENT SUPPLY AIR RESET TIME DELAY SUPPLY AIR TEMPERATURE WARM-UP/PRE-COOL RUN-TIME TEMPERATURE RESET HIGH LIMIT TEMPERATURE RESET LOW LIMIT TEMPERATURE RESET TIME DELAY

CO2 LEVEL SETPOINT

SEQUENCE OF OPERATION (RTU-1):

WARM-UP/PRE-COOL MODE:

TEMPERATURE SETPOINT.

UNOCCUPIED MODE:

 SUPPLY FAN STATUS SUPPLY FAN ON/OFF

LEAVING COIL TEMPERATURE

OUTDOOR AIR DAMPER CONTROL

RETURN AIR DAMPER CONTROL

SPACE TEMPERATURE SETPOINT

ECONOMIZER CONTROL

 SPACE TEMPERATURE RETURN AIR CO2 SENSOR

ECONOMIZER/OUTSIDE AIR CONTROL:

 RETURN AIR TEMPERATURE SENSOR DISCHARGE AIR TEMPERATURE SENSOR OUTSIDE AIR TEMPERATURE SENSOR DIRTY FILTER ON/OFF SWITCH

POSITION.

OCCUPIED/UNOCCUPIED DESIGNATION:

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					NOT FOR CONSTRUCTION		Stantec Consultin 801 South Figuero Los Angeles, 9001 Tel: (213) 955-9775
(Y.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	CI/FL SK CI By	GY GY GY Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Rese The Contractor shall verify an drawing - any errors or omiss The Copyrights to all designs or use for any purpose other

UNIT TO BE PROVIDED WITH MANUFACTURER'S STANDALONE CONTROL AND SHALL BE ABLE TO, AT A MINIIMUM, PERFORM THE FOLLOWING:

THE EQUIPMENT FACTORY CONTROLLER SHALL INITIATE OCCUPIED AND UNOCCUPIED MODES PER SCHEDULES FURNISHED BY THE OWNER.

EQUIPMENT FACTORY CONTROLS SHALL PERFORM WARM-UP/PRE-COOL SEQUENCE BASED ON PROGRAMMED BUILDING OCCUPIED/UNOCCUPIED SCHEDULE. IF OCCUPIED SETPOINT IS MET PRIOR TO THE SCHEDULED OCCUPIED CHANGEOVER TIME BY MORE THAN THE OCCUPIED ENGAGEMENT ALLOWANCE SETPOINT, THE WARM-UP/PRE-COOL RUN-TIME SETPOINT SHALL BE ADJUSTED 5 MINUTES LATER. IF OCCUPIED SETPOINT IS NOT MET BY THE OCCUPIED MODE START TIME, THE WARM-UP/PRE-COOL RUN-TIME SETPOINT SHALL BE ADJUSTED BY 5 MINUTES EARLIER.

OCCUPIED MODE - SUPPLY FAN SPEED CONTROL: EQUIPMENT FACTORY CONTROLS SHALL MODULATE SUPPLY FANS AS REQUIRED TO MAINTAIN THE SPACE TEMEPERATURE SETPOINT.

OCCUPIED MODE - RELIEF FAN SPEED CONTROL: WHEN ECONOMIZER COOLING IS ENABLED, EQUIPMENT FACTORY CONTROLS SHALL MODULATE RELIEF FANS IN CONJUNCTION WITH OSA DAMPER

OCCUPIED MODE - DISCHARGE TEMPERATURE CONTROL: EQUIPMENT FACTORY CONTROLS SHALL CONTROL ECONOMIZER FUNCTION AND MECHANICAL COOLING/HEATING TO MAINTAIN DISCHARGE

IF SPACE SUPPLY FAN SPEED IS AT THE TEMPERATURE RESET HIGH LIMIT FOR A PERIOD GREATER THAN THE TEMPERATURE RESET TIME DELAY, THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE LOWERED BY THE SUPPLY AIR RESET INCREMENT SET POINT. IF SUPPLY FAN SPEED IS AT OR BELOW THE TEMPERATURE RESET LOW LIMIT FOR A PERIOD GREATER THAN THE TEMPERATURE RESET TIME DELAY, DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE INCREASED BY THE SUPPLY AIR RESET INCREMENT SET POINT. ONCE TEMPERATURE IS RESET, IT SHALL NOT RESET AGAIN UNTIL THE TEMPERATURE RESET TIME DELAY HAS BEEN ACHIEVED.

EQUIPMENT FACTORY CONTROLS SHALL MODULATE OUTSIDE/RETURN AIR DAMPERS BETWEEN THE SCHEDULED MINIMUM OSA POSITION AND THE MIN OSA DCV RESET POSITION TO MAINTAIN CO2 SETPOINT, AND SHALL INCREASE OUTSIDE AIR FOR ECONOMIZER COOLING VIA DRY BULB TEMPERATURE CONTROL. CONTROL SHALL BE FULLY MODULATING. UPON DETECTION OF A CO2 SENSOR FAILURE, OUTSIDE AIR DAMPER POSITION SHALL BE SET TO THE MIN OSA DCV INCREASE POSITION, OR HIGHER AS INDICATED BY ECONOMIZER CONTROLS.

EQUIPMENT FACTORY CONTROLS SHALL START EQUIPMENT IN FULL RECIRCULATION MODE (UNLESS ECONOMIZER COOLING IS REQUIRED), AND MAINTAIN UNOCCUPIED SPACE TEMPERATURE SETPOINT.

PROVIDE ALL POINTS AS REQUIRED FOR A COMPLETE OPERATING SYSTEM, INCLUDING AT A MINIMUM, THE FOLLOWING:

OUTDOOR AIRFLOW MONITORING STATION

SETPOINTS	
MINIMUM RANGE	INITIAL SETPOINT (ADJUSTABLE)
0-5° F	1.0° F
1-10 MINUTES	5 MINUTES
0-80°F	55°F
0-180 MINUTES	60 MINUTES
0-100%	95%
0-100%	70%
0-120 MINUTES	5 MINUTES
0-2000 PPM	700 PPM



MECHANICAL CONTROLS



				L	
		DIVISION	I 23: HEATING, VENTILATING, AND ,	AIR CONDITIONING	
	PART	1 - GENERAL INSTRUCTIONS			
	1.1 A	GENERAL REQUIREMENTS		AND SUPPLEMENTARY CONDITIONS OF THESE	
	Α.	SPECIFICATIONS APPLY TO AND DIVISION EXCEED THO THOROUGHLY FAMILIAR WI SECTION, OR BOTH. WORK APPLIANCES, TRANSPORTA REQUIRED BY THE DRAWIN FACILITATE THE FUNCTION	THIS SECTION AND THE GENERAL A SE OF DIVISION 01, THIS SECTION TH ALL ITS CONTENTS AS TO REQU REQUIRED UNDER THIS DIVISION I TION, SERVICES, AND LABOR REQ GS AND SPECIFICATIONS, OR REA OF EACH SYSTEM AS IMPLIED BY	ERE THE REQUIREMENTS OF THIS SECTION AND DIVISION TAKE PRECEDENCE. BECOME UIREMENTS THAT AFFECT THIS DIVISION, INCLUDES ALL MATERIAL, EQUIPMENT, QUIRED TO COMPLETE THE ENTIRE SYSTEM AS SONABLY INFERRED TO BE NECESSARY TO THE DESIGN AND THE EQUIPMENT SPECIFIED.	1
	В.	THE SPECIFICATIONS AND E WORK DESCRIBED IN ONE S DISCREPANCIES, NOTIFY TH WORK INVOLVED.	DRAWINGS FOR THE PROJECT ARE SHALL BE PROVIDED AS IF DESCRI HE ENGINEER AND REQUEST CLAF	E COMPLEMENTARY, AND ANY PORTION OF BED IN BOTH. IN THE EVENT OF RIFICATION PRIOR TO PROCEEDING WITH THE	
	C.	DRAWINGS ARE GRAPHIC R SHOW THE MATERIALS AND LOCATIONS, AND CONNECT GENERAL ARRANGEMENT C ELEVATIONS, OFFSETS, CO AS A GUIDE WHEN LAYING C INTO THE DESIGNATED SPA WILL ENSURE A COMPLETE	EPRESENTATIONS OF THE WORK THEIR RELATIONSHIP TO ONE AN IONS. THEY CONVEY THE SCOPE ()F THE SYSTEMS WITHOUT SHOWI NTROL LINES, AND OTHER INSTAL OUT THE WORK AND TO VERIFY TH CES, AND WHICH WHEN INSTALLE , COORDINATED, SATISFACTORY, J	UPON WHICH THE CONTRACT IS BASED. THEY OTHER, INCLUDING SIZES, SHAPES, OF WORK, INDICATING THE INTENDED ING ALL OF THE EXACT DETAILS AS TO LATION REQUIREMENTS. USE THE DRAWINGS IAT MATERIALS AND EQUIPMENT WILL FIT ED PER MANUFACTURERS' REQUIREMENTS, AND PROPERLY OPERATING SYSTEM.	1
	1.2	DEFINITIONS			
	Α.	REFERENCES CONTAINED I CONSTRUCTION SPECIFICA DIVISIONS 01 THROUGH 13 I 1995 EDITION. THE CORRES EDITION ARE AS FOLLOWS:	N THIS SPECIFICATION FOLLOW THE TIONS INSTITUTE (CSI) MASTERFC PROVIDED WITH THIS PROJECT MA PONDING DIVISION REFERENCES	HE NUMBERING SYSTEM DEFINED IN THE DRMAT 2004 EDITION. SPECIFICATION AY REFERENCE THE CSI MASTERFORMAT S BETWEEN THE 2004 EDITION AND 1995	
		2004 EDITION DIVISION 21 – FIRE SUPPRES	SION DIVIS	EDITION SION 15	
		DIVISION 22 – PLOMBING DIVISION 23 – HVAC DIVISION 26 – ELECTRICAL DIVISION 27 – COMMUNICATIO	DIVIS DIVISION 15 DIVIS DIVIS	SION 15 SION 16	
		DIVISION 28 – ELECTRONIC S	AFETY AND SECURITY	DIVISION 16	1
	В.	FURNISH: "TO SUPPLY AND	DELIVER TO THE PROJECT SITE, R	READY FOR UNLOADING, UNPACKING,	
	C.	INSTALL: "TO PERFORM ALL ACTUAL UNLOADING, UNPA	OPERATIONS AT THE PROJECT SI CKING, ASSEMBLING, ERECTING, F	ITE INCLUDING, BUT NOT LIMITED TO, THE PLACING, ANCHORING, APPLYING, WORKING	
	П	TO DIMENSION, FINISHING, AND SIMILAR OPERATIONS, PROVIDE: "TO FURNISH AND	CURING, PROTECTING, CLEANING, COMPLETE, AND READY FOR THE	, TESTING, COMMISSIONING, STARTING UP I INTENDED USE."	
	E.	FURNISHED BY OWNER (OR OWNER OR UNDER OTHER I THIS DIVISION, COMPLETE A INCIDENTAL TO THE WORK	OWNER-FURNISHED) OR FURNISH DIVISIONS OR CONTRACTS, AND IN ND READY FOR INTENDED USE, IN NECESSARY FOR PROPER INSTAL	HED BY OTHERS: "AN ITEM FURNISHED BY THE NSTALLED UNDER THE REQUIREMENTS OF NCLUDING ALL ITEMS AND SERVICES LATION AND OPERATION. INCLUDE THE	
	F.	ENGINEER: WHERE REFERE DESIGN PROFESSIONAL FO AUTHORIZED REPRESENTA SUPPLEMENTARY CONDITIONING	INCED IN THIS DIVISION, "ENGINEE R THE WORK UNDER THIS DIVISION TIVE OF THE ARCHITECT, AS DEFIN ONS. WHEN USED IN THIS DIVISION IGATIONS TO THE ENGINEER, IN AN	ER" IS THE ENGINEER OF RECORD AND THE N, AND IS A CONSULTANT TO, AND AN NED IN THE GENERAL AND/OR I, ENGINEER MEANS INCREASED DDITION TO INVOLVEMENT BY AND	
	G.	AHJ: THE LOCAL CODE AND WORK.	ITECT. /OR INSPECTION AGENCY (AUTHO	RITY) HAVING JURISDICTION OVER THE	
	H.	CMATT: CERTIFIED ACCEPT PERFORM ACCEPTANCE TE ACCEPTANCE TESTS AS RE TECHNICIAN SHALL BE CER CERTIFICATION PROVIDER.	ANCE MECHANICAL TEST TECHNIC STS AND COMPLETE THE DOCUME QUIRED BY THE CALIFORNIA BUILI TIFIED BY AN AUTHORIZED MECHA	CIAN. A PROFESSIONAL CERTIFIED TO ENTATION REQUIRED FOR NONRESIDENTIAL DING ENERGY EFFICIENCY STANDARDS. ANICAL ACCEPTANCE TEST TECHNICIAN	
	Ι.	NRTL: NATIONALLY RECOGN 1910.7 (E.G., UL, ETL, CSA), A TESTING LABORATORIES AN CHARACTERISTICS REQUIR ARE ACCEPTABLE TO THE A	NIZED TESTING LABORATORY, AS I AND ACCEPTABLE TO THE AHJ OVI ND STANDARDS LISTED ARE USED ED AND ARE NOT INTENDED TO RI AH LAND STANDARDS THAT MEET	DEFINED AND LISTED BY OSHA IN 29 CFR ER THIS PROJECT. NATIONALLY RECOGNIZED ONLY TO REPRESENT THE ESTRICT THE USE OF OTHER NRTLS THAT THE SPECIFIED CRITERIA	
	J.	SUBSTITUTION: CHANGES IN FROM THOSE REQUIRED BY SUBSTITUTIONS INCLUDE V	N PRODUCTS, MATERIALS, EQUIPM 7 THE CONTRACT DOCUMENTS AN ALUE ENGINEERING PROPOSALS. CAUSE: CHANGES PROPOSED BY	MENT, AND METHODS OF CONSTRUCTION D PROPOSED BY CONTRACTOR.	
		CHANGED PROJECT C OR UNAVAILABILITY O 2. SUBSTITUTIONS FOR NOT REQUIRED IN OR	ONDITIONS, SUCH AS UNAVAILABI F REQUIRED WARRANTY TERMS. CONVENIENCE: CHANGES PROPO DER TO MEET OTHER PROJECT RE	ILITY OF PRODUCT, REGULATORY CHANGES, SED BY CONTRACTOR OR OWNER THAT ARE EQUIREMENTS BUT MAY OFFER ADVANTAGE	
	K.	THE TERMS "APPROVED EQ "ACCEPTED BY OR ACCEPT SPECIFIED". THE TERM "APP ACCEPTABLE TO THE AHJ C	UAL", "EQUIVALENT", OR "EQUAL" / ABLE TO THE ENGINEER AS EQUIV ?ROVED" SHALL MEAN LABELED, L ?VER THIS PROJECT.	ARE USED SYNONYMOUSLY AND SHALL MEAN /ALENT TO THE ITEM OR MANUFACTURER ISTED, OR BOTH, BY AN NRTL, AND	
	1.3	PREBID SITE VISIT			
	<u></u> .	TO THE CONDITIONS UNDER REQUIREMENT SHALL NOT COMPENSATION OVER AND	RESTREET THE FROPOSE RECONSIDERED SUFFICIENT JUST ABOVE THE CONTRACT PRICE.	IE. FAILURE TO COMPLY WITH THIS TIFICATION TO REQUEST OR OBTAIN EXTRA	
	1.4 A.	MATERIAL AND WORKMANS	HIP QUIPMENT, AND APPARATUS UND	ER THIS CONTRACT UNLESS OTHERWISE	
		STATED HEREIN, OF BEST G PRACTICE, AND FREE FROM THE DRAWINGS ARE NOT NI DESCRIPTIONS OF THE TRIN	¿UALITY NORMALLY USED FOR THE 1 DEFECTS. MODEL NUMBERS LIST ECESSARILY INTENDED TO DESIGI VI GOVERN MODEL NUMBERS.	E PURPOSE IN GOOD COMMERCIAL TED IN THE SPECIFICATIONS OR SHOWN ON NATE THE REQUIRED TRIM, WRITTEN	
	В.	PIPE, PIPE FITTINGS, PIPE S THE UNITED STATES OR CE	PECIALTIES AND VALVES SHALL B RTIFIED TO MEET THE SPECIFIED	BE MANUFACTURED IN PLANTS LOCATED IN ASTM AND ANSI STANDARDS.	
	C.	WORK PERFORMED UNDER WHEN COMPLETED, TO THE THE FINEST POSSIBLE BY E CODES AND LAWS.	THIS CONTRACT SHALL PROVIDE SATISFACTION OF THE ARCHITEC XPERIENCED MECHANICS. INSTAL	A NEAT AND "WORKMANLIKE" APPEARANCE CT AND ENGINEER. WORKMANSHIP SHALL BE LATIONS SHALL COMPLY WITH APPLICABLE	
ISS	ue for bid	SUBMITTAL			

- D. THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING, DUCTS, AIR DEVICES, AND SQUEAKS IN ROTATING COMPONENTS SHALL NOT BE ACCEPTABLE. MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL GRADE EQUIPMENT SHALL NOT BE ACCEPTED UNLESS OTHERWISE INDICATED.
- REMOVE FROM THE PREMISES WASTE MATERIAL PRESENT AS A RESULT OF WORK, INCLUDING CARTONS, CRATING, PAPER, STICKERS, AND/OR EXCAVATION MATERIAL NOT USED IN BACKFILLING, ETC. CLEAN EQUIPMENT INSTALLED UNDER THIS CONTRACT TO PRESENT A NEAT AND CLEAN INSTALLATION AT THE TERMINATION OF THE WORK.
- REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION. PROVIDE ALL SAFETY LIGHTS, GUARDS, AND WARNING SIGNS REQUIRED FOR THE PERFORMANCE OF THE WORK AND FOR THE SAFETY OF THE PUBLIC.

MANUFACTURERS

WITH ANY RANKING OR PREFERENCE.

- IN OTHER ARTICLES WHERE LISTS OF MANUFACTURERS ARE INTRODUCED, SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE MANUFACTURERS SPECIFIED. WHERE A LIST IS PROVIDED, MANUFACTURERS ARE LISTED ALPHABETICALLY AND NOT IN ACCORDANCE
- C. WHERE MANUFACTURERS ARE NOT LISTED. PROVIDE PRODUCTS SUBJECT TO COMPLIANCE WITH REQUIREMENTS FROM MANUFACTURERS THAT HAVE BEEN ACTIVELY INVOLVED IN MANUFACTURING THE SPECIFIED PRODUCT FOR NO LESS THAN 5 YEARS.

COORDINATION

- COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS ARE INSTALLED AT THE PROPER TIME. WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.
- B. UNLESS OTHERWISE INDICATED, THE GENERAL CONTRACTOR SHALL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR WITH INFORMATION WHERE CHASES AND OPENINGS ARE REQUIRED. CONTRACTOR SHALL KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT AND SHALL EXECUTE WORK IN A MANNER AS TO NOT INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.
- C. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALE DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.
- D. PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

ORDINANCES AND CODES

WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ, INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE FOLLOWING:

- NATIONAL ELECTRIC CODE (NEC)
- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) UNDERWRITERS LABORATORIES (UL)
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE.
- WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE REFERENCED CODES. STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE. WHERE CONFLICTS BETWEEN
- VARIOUS CODES, ORDINANCES, RULES, AND REGULATIONS EXIST, COMPLY WITH THE MOST STRINGENT. PROMPTLY BRING ALL CONFLICTS OBSERVED BETWEEN CODES, ORDINANCES, RULES, REGULATIONS, REFERENCED STANDARDS. AND THESE DOCUMENTS TO THE ATTENTION OF THE ARCHITECT AND ENGINEER FOR FINAL RESOLUTION. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY VIOLATION OF
- THE LAW. D. PROCURE AND PAY FOR PERMITS AND LICENSES REQUIRED FOR THE ACCOMPLISHMENT OF THE WORK HEREIN DESCRIBED. WHERE REQUIRED. OBTAIN. PAY FOR, AND FURNISH CERTIFICATES OF INSPECTION.
- PROTECTION OF EQUIPMENT AND MATERIALS

STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS DELIVERED TO JOB SITE. FOR MATERIALS AND EQUIPMENT SUSCEPTIBLE TO CHANGING WEATHER CONDITIONS, DAMPNESS, OR TEMPERATURE VARIATIONS, STORE INSIDE IN CONDITIONED SPACES. FOR MATERIALS AND EQUIPMENT NOT SUSCEPTIBLE TO THESE CONDITIONS. COVER WITH WATERPROOF. TEAR-RESISTANT. HEAVY TARP OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT, PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REJECTED AND CONTRACTOR SHALL FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND AT HIS OWN EXPENSE.

- KEEP PREMISES BROOM CLEAN OF FOREIGN MATERIAL CREATED DURING WORK PERFORMED UNDER THIS CONTRACT. PIPING, EQUIPMENT, ETC. SHALL HAVE A NEAT AND CLEAN APPEARANCE AT THE TERMINATION OF THE WORK.
- C. PLUG OR CAP OPEN ENDS OF DUCTWORK AND PIPING SYSTEMS WHILE STORED AND INSTALLED DURING CONSTRUCTION WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

SUBSTITUTIONS

SSUE FOR BI

Issued

Revision

ORIGINAL SHEET - ARCH E

By Appd YYYY.MM.DD

PLAN CHECK RESUBMITTAL NO

LAN CHECK SUBMITTA

TO OWNER

- MATERIALS, PRODUCTS, EQUIPMENT, AND SYSTEMS DESCRIBED IN THE BIDDING DOCUMENTS ESTABLISH A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEARANCE AND QUALITY TO BE MET BY THE PROPOSED SUBSTITUTION. THE BASE BID SHALL INCLUDE ONLY THE PRODUCTS FROM MANUFACTURERS SPECIFICALLY NAMED IN THE DRAWINGS AND SPECIFICATIONS. TO REQUEST A SUBSTITUTION, REQUEST THE SUBSTITUTION REQUEST FORM FROM THE ARCHITECT OR ENGINEER. COMPLETE AND SEND THE SUBSTITUTION REQUEST FORM FOR EACH MATERIAL, PRODUCT, EQUIPMENT, OR SYSTEM THAT IS PROPOSED TO BE SUBSTITUTED. THE BURDEN OF PROOF OF THE MERIT OF THE PROPOSED SUBSTITUTION IS UPON THE PROPOSER.
- UNLESS STATED OTHERWISE IN WRITING TO THE ENGINEER BY THE CONTRACTOR. CONTRACTOR WARRANTS TO THE ENGINEER, ARCHITECT, AND OWNER THE FOLLOWING: PROPOSED SUBSTITUTION HAS BEEN FULLY INVESTIGATED AND DETERMINED TO MEET OR EXCEED THE SPECIFIED WORK IN ALL RESPECTS UNLESS STATED OTHERWISE IN THE SUBSTITUTION
- REQUEST. PROPOSED SUBSTITUTION IS CONSISTENT WITH THE CONTRACT DOCUMENTS AND WILL PRODUCE INDICATED RESULTS, INCLUDING FUNCTIONAL CLEARANCES, MAINTENANCE SERVICE, AND
- SOURCING OF REPLACEMENT PARTS. 3. PROPOSED SUBSTITUTION HAS RECEIVED NECESSARY APPROVALS OF AUTHORITIES HAVING
- JURISDICTION. SAME WARRANTY WILL BE FURNISHED FOR PROPOSED SUBSTITUTION AS FOR SPECIFIED WORK. IF ACCEPTED SUBSTITUTION FAILS TO PERFORM AS REQUIRED, CONTRACTOR SHALL REPLACE SUBSTITUTE MATERIAL OR SYSTEM WITH THAT ORIGINALLY SPECIFIED AND BEAR COSTS INCURRED
- THEREBY COORDINATION, INSTALLATION, AND CHANGES IN THE WORK AS NECESSARY FOR ACCEPTED SUBSTITUTION WILL BE COMPLETE IN ALL RESPECTS.
- C. NO SUBSTITUTIONS WILL BE CONSIDERED UNLESS THE SUBSTITUTION REQUEST FORM IS COMPLETED AND ATTACHED WITH THE APPROPRIATE SUBSTITUTION DOCUMENTATION. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN REQUEST FOR APPROVAL TO BID HAS BEEN

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ISSUE FOR BID

NOT FOR

CONSTRUCTION

BIDS.

- 1.10 SUBMITTALS
- RESUBMITTAL.
- DRAWING FILES" FOR PROCEDURES TO BE USED.
- REQUIREMENTS ARE NOT MET.
- SUBMITTAL
- RELATIVE TO EACH ITEM.
- 1.11 ELECTRONIC DRAWING FILES
- 1.12 RECORD DRAWINGS (AS-BUILT DRAWINGS)
- B. SEE DIVISION 01 AND GENERAL CONDITIONS FOR ADDITIONAL INFORMATION.
- 1.13 OPERATION AND MAINTENANCE INSTRUCTIONS
- SHIPPED WITH THE EQUIPMENT ITSELF FOR INCLUSION IN THIS BROCHURE.
- C. INCLUDE RECORD DRAWINGS AS DESCRIBED ABOVE
- 1.14 SPARE PARTS
 - FOR THIS PROJECT:
 - BEFORE TURNING SYSTEM OVER TO OWNER.
- 1.15 TRAINING

Consultant

- - Stantec Consulting Services Inc.



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RECEIVED BY THE ENGINEER AT LEAST TEN (10) CALENDAR DAYS PRIOR TO THE DATE FOR RECEIPT OF

D. IF THE PROPOSED SUBSTITUTION IS APPROVED PRIOR TO RECEIPT OF BIDS, SUCH APPROVAL WILL BE STATED IN AN ADDENDUM. BIDDERS SHALL NOT RELY UPON APPROVALS MADE IN ANY OTHER WAY. VERBAL APPROVAL WILL NOT BE GIVEN. NO SUBSTITUTIONS WILL BE CONSIDERED AFTER THE CONTRACT IS AWARDED UNLESS SPECIFICALLY PROVIDED IN THE CONTRACT DOCUMENTS.

ASSEMBLE AND SUBMIT FOR REVIEW SHOP DRAWINGS. MATERIAL LISTS. MANUFACTURER PRODUCT LITERATURE FOR EQUIPMENT TO BE FURNISHED, AND ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS UNDER THIS CONTRACT. PROVIDE SUBMITTALS IN SUFFICIENT DETAIL SO AS TO DEMONSTRATE COMPLIANCE WITH THESE CONTRACT DOCUMENTS AND THE DESIGN CONCEPT. PRIOR TO TRANSMITTING SUBMITTALS, VERIFY THAT THE EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, WILL FIT THE AVAILABLE SPACE, AND MAINTAIN MANUFACTURER RECOMMENDED SERVICE CLEARANCES. IF THE SIZE OF EQUIPMENT FURNISHED MAKES NECESSARY ANY CHANGE IN LOCATION OR CONFIGURATION, SUBMIT A SHOP DRAWING SHOWING THE PROPOSED LAYOUT.

B. TRANSMIT SUBMITTALS AS EARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW FOR TWO WEEKS ENGINEER REVIEW TIME, PLUS TO/FROM MAILING TIME VIA THE ARCHITECT, PLUS A DUPLICATION OF THIS TIME FOR RESUBMITTAL, IF REQUIRED. ONLY RESUBMIT THOSE SECTIONS REQUESTED FOR

C. SUBMITTALS SHALL CONTAIN THE PROJECT NAME, APPLICABLE SPECIFICATION SECTION, SUBMITTAL DATE, EQUIPMENT IDENTIFICATION ACRONYM AS USED ON THE DRAWINGS, AND THE CONTRACTOR'S STAMP. THE STAMP SHALL CERTIFY THAT THE SUBMITTAL HAS BEEN CHECKED BY THE CONTRACTOR COMPLIES WITH THE DRAWINGS AND SPECIFICATIONS. AND IS COORDINATED WITH OTHER TRADES. MANUFACTURER PRODUCT LITERATURE SHALL INCLUDE SHOP DRAWINGS, PRODUCT DATA, PERFORMANCE SHEETS, SAMPLES AND OTHER SUBMITTALS REQUIRED BY THIS DIVISION. HIGHLIGHT MARK, LIST, OR INDICATE THE MATERIALS, PERFORMANCE CRITERIA, AND ACCESSORIES THAT ARE BEING PROPOSED. GENERAL PRODUCT CATALOG DATA NOT SPECIFICALLY NOTED TO BE PART OF THE SPECIFIED PRODUCT WILL BE REJECTED AND RETURNED WITHOUT REVIEW.

D. SUBMITTALS AND SHOP DRAWINGS SHALL NOT CONTAIN THE FIRM NAME, LOGO, SEAL, OR SIGNATURE OF THE ENGINEER. THEY SHALL NOT BE COPIES OF THE WORK PRODUCT OF THE ENGINEER. IF THE CONTRACTOR DESIRES TO USE ELEMENTS OF SUCH PRODUCT, REFER TO PARAGRAPH "ELECTRONIC

E. SEPARATE SUBMITTALS ACCORDING TO INDIVIDUAL SPECIFICATION SECTIONS. ILLEGIBLE SUBMITTALS WILL BE REJECTED AND RETURNED WITHOUT REVIEW. CATALOG DATA SHALL BE PROPERLY BOUND, IDENTIFIED, INDEXED AND TABBED IN A 3-RING BINDER. EACH ITEM OR MODEL NUMBER SHALL BE CLEARLY MARKED AND ACCESSORIES INDICATED. LABEL THE CATALOG DATA WITH THE EQUIPMENT IDENTIFICATION ACRONYM OR NUMBER AS USED ON THE DRAWINGS AND INCLUDE PERFORMANCE CURVES, CAPACITIES, SIZES, WEIGHTS, MATERIALS, FINISHES, WIRING DIAGRAMS, ELECTRICAL REQUIREMENTS AND DEVIATIONS FROM SPECIFIED EQUIPMENT OR MATERIALS. FOR EQUIPMENT WITH MOTOR STARTERS OR VFDS, INCLUDE SHORT CIRCUIT CURRENT RATINGS. MARK OUT INAPPLICABLE ITEMS. SHOP DRAWINGS WILL BE RETURNED WITHOUT REVIEW IF THE ABOVE-MENTIONED

PROVIDE THE QUANTITY OF SUBMITTALS REQUIRED BY DIVISION 01. IF NOT INDICATED AND HARD-COPY SETS ARE PROVIDED, SUBMIT A MINIMUM OF SIX (6) COPIES. REFER TO DIVISION 01 FOR ACCEPTANCE OF ELECTRONIC SUBMITTALS FOR THIS PROJECT. FOR ELECTRONIC SUBMITTALS, CONTRACTOR SHALL SUBMIT THE DOCUMENTS IN ACCORDANCE WITH THE PROCEDURES SPECIFIED IN DIVISION 01. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER THAT THE SUBMITTALS HAVE BEEN POSTED. IF ELECTRONIC SUBMITTAL PROCEDURES ARE NOT DEFINED IN DIVISION 01, CONTRACTOR SHALL INCLUDE THE WEBSITE, USER NAME, AND PASSWORD INFORMATION NEEDED TO ACCESS THE SUBMITTALS. FOR SUBMITTALS SENT BY E-MAIL, CONTRACTOR SHALL COPY THE DESIGNATED REPRESENTATIVES OF THE ARCHITECT AND ENGINEER. CONTRACTOR SHALL ALLOW FOR THE ENGINEER REVIEW TIME AS SPECIFIED ABOVE IN THE CONSTRUCTION SCHEDULE. CONTRACTOR SHALL SUBMIT ONLY THE DOCUMENTS REQUIRED TO PURCHASE THE MATERIALS AND/OR EQUIPMENT IN THE ELECTRONIC

G. THE CHECKING AND SUBSEQUENT ACCEPTANCE OF SUBMITTALS BY THE ENGINEER AND/OR ARCHITECT SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS, ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES, OMISSIONS OF COMPONENTS OR FITTINGS: COORDINATION OF ELECTRICAL REQUIREMENTS; AND NOT COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS AND ADJACENT WORK. PROCEED WITH THE PROCUREMENT AND INSTALLATION OF EQUIPMENT ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS

A. IN PREPARATION OF SHOP DRAWINGS OR RECORD DRAWINGS, CONTRACTOR MAY, AT HIS OPTION, OBTAIN ELECTRONIC DRAWING FILES IN AUTOCAD OR DXF FORMAT ON CD-ROM DISK, DVD DISK, FLASH DRIVE OR DIRECT DOWNLOAD, AS DESIRED, FROM THE ENGINEER FOR A SHIPPING AND HANDLING FEE OF \$200 FOR A DRAWING SET UP TO 12 SHEETS AND \$15 PER SHEET FOR EACH ADDITIONAL SHEET. CONTACT THE ARCHITECT FOR WRITTEN AUTHORIZATION AND ENGINEER FOR THE NECESSARY RELEASE AGREEMENT FORM AND TO SPECIFY SHIPPING METHOD AND DRAWING FORMAT. IN ADDITION TO PAYMENT, THE WRITTEN AUTHORIZATION FROM THE ARCHITECT AND RELEASE AGREEMENT FORM FROM THE ENGINEER MUST BE RECEIVED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.

DURING PROGRESS OF THE WORK IN THIS DIVISION, CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE DURING THE INSTALLATION OF THE SYSTEM. UPON COMPLETION OF THE WORK, ACCURATELY TRANSFER ALL RECORD INFORMATION TO THREE IDENTICAL SETS OF THE APPROVED SHOP DRAWINGS. INSERT ONE SET INTO EACH COPY OF THE MANUAL DESCRIBED BELOW.

A. DURING CONSTRUCTION, COLLECT AND COMPILE A COMPLETE BROCHURE OF EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, PARTS LISTS, APPROVED SUBMITTALS AND SHOP DRAWINGS, WARRANTIES, AND DESCRIPTIVE LITERATURE AS FURNISHED BY THE EQUIPMENT MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS.

B. SUBMIT THREE COPIES OF LITERATURE BOUND IN APPROVED BINDERS WITH INDEX AND TABS SEPARATING EQUIPMENT TYPES TO THE ARCHITECT, FOR ENGINEER'S REVIEW, AT THE TERMINATION OF THE WORK. PAPER CLIPS, STAPLES, RUBBER BANDS, LOOSE-LEAF BINDING, AND MAILING ENVELOPES ARE NOT CONSIDERED APPROVED BINDERS. FINAL APPROVAL OF SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL BE WITHHELD UNTIL THIS EQUIPMENT BROCHURE IS RECEIVED AND DEEMED COMPLETE BY THE ARCHITECT AND ENGINEER. INSTRUCT WORKMEN TO SAVE REQUIRED LITERATURE

D. REFER TO DIVISION 01 FOR ACCEPTANCE OF ELECTRONIC MANUALS FOR THIS PROJECT. FOR ELECTRONIC MANUALS, REFER TO PARAGRAPH "SUBMITTALS" FOR REQUIREMENTS.

A. FURNISH TO OWNER, WITH RECEIPT, THE FOLLOWING SPARE PARTS FOR THE EQUIPMENT FURNISHED

ONE SET OF SPARE FILTERS OF EACH TYPE REQUIRED FOR EACH UNIT. IN ADDITION TO THE SPARE SET OF FILTERS, INSTALL NEW FILTERS PRIOR TO TESTING, ADJUSTING, AND BALANCING WORK AND FURNISH ONE COMPLETE SET OF BELTS FOR EACH FAN.

FURNISH THREE OPERATING KEYS FOR EACH TYPE OF AIR OUTLET AND INLET THAT REQUIRE THEM.

A. AT A TIME MUTUALLY AGREED UPON BETWEEN THE OWNER AND CONTRACTOR, PROVIDE THE SERVICES OF A FACTORY TRAINED AND AUTHORIZED REPRESENTATIVE TO TRAIN OWNER'S DESIGNATED PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED FOR THIS PROJECT.

B. PROVIDE TRAINING TO INCLUDE, BUT NOT BE LIMITED TO, AN OVERVIEW OF THE SYSTEM AND/OR EQUIPMENT AS IT RELATES TO THE FACILITY AS A WHOLE; OPERATION AND MAINTENANCE PROCEDURES

AND SCHEDULES RELATED TO STARTUP AND SHUTDOWN. TROUBLESH MAINTENANCE AND APPROPRIATE OPERATOR INTERVENTION; AND RE OPERATION AND MAINTENANCE MANUALS.

- C. SUBMIT A CERTIFICATION LETTER TO THE ARCHITECT STATING THAT REPRESENTATIVE HAS BEEN TRAINED AS SPECIFIED HEREIN. LETTER ATTENDEES AND SUBJECT OF TRAINING. THE CONTRACTOR AND THE SIGN THE CERTIFICATION LETTER INDICATING AGREEMENT THAT THE
- D. SCHEDULE TRAINING WITH OWNER WITH AT LEAST 7 DAYS ADVANCE

1.16 WARRANTIES

- A. WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL WORKMANSHIP, DESIGN, OR MATERIAL FOR A PERIOD OF 12 MONTHS I COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONG CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARF REMEDY ALL DEFECTS, OCCURRING WITHIN THE WARRANTY PERIOD(S CONDITIONS AND DIVISION 01.
- B. WARRANTIES SHALL INCLUDE LABOR AND MATERIAL, INCLUDING TRAV REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER, AN OWNER, ARCHITECT, AND ENGINEER.
- C. PERFORM THE REMEDIAL WORK PROMPTLY, UPON WRITTEN NOTICE
- D. AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER PROPERLY EXECUTED, INCLUDING TERM LIMITS FOR WARRANTIES EX PERIOD AND ANY ACTIONS THE OWNER MUST TAKE IN ORDER TO MAIN WARRANTY INSTRUMENT SHALL BE ADDRESSED TO THE OWNER AND AND TERM.

PART 2 - GENERAL MATERIALS AND INSTALLATION

- 2.1 BUILDING OPERATION
- A. COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE A SPECIFICATION. BUILDING SHALL BE IN OPERATION DURING NORMAL WORK REQUIRING INTERRUPTION OF BUILDING OPERATION AT A TIME OPERATION AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TI DAYS IN ADVANCE OF WORK.

2.2 EXISTING EQUIPMENT REUSE AND REMOVAL

- A. REMOVE ALL UNUSED EQUIPMENT, DUCTWORK, PIPING, AND ASSOCIA AND PIPING AT MAINS AND SEAL AIR AND WATER TIGHT.
- B. PROVIDE ITEMS OF HVAC SYSTEMS MODIFICATION REQUIRED BECAUS NOTED ON THE DRAWINGS OR NECESSARY FOR PROPER OPERATION. CONSTRUCTION TECHNIQUES WHEN MODIFYING EXISTING SYSTEMS COORDINATE ADDITIONAL REQUIREMENTS WITH GENERAL CONTRAC
- C. SEAL AIRTIGHT EXISTING DUCTWORK REQUIRED TO BE ABANDONED I TERMINATION OF THE WORK.
- D. CAP AND SEAL WEATHERTIGHT EXISTING ROOF CURBS AND ROOF OPE PLACE AS A RESULT OF EQUIPMENT REMOVAL.
- E. CLEAN AND REBALANCE EXISTING DUCTWORK, DIFFUSERS, REGISTER REUSE AS REQUIRED OR AS INDICATED ON DRAWINGS.
- F. CLEAN AND REFURBISH EXISTING HVAC EQUIPMENT INTENDED FOR R OPERATION INCLUDING REPLACEMENT OF FILTERS, BELTS, MOTORS, INTERLOCKS.

2.3 EXCAVATION AND BACKFILLING

- A. PERFORM EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION THIS CONTRACT. TRENCHES SHALL BE OF SUFFICIENT WIDTH. CRIB OI CAVE-IN OR SETTLEMENT. DO NOT EXCAVATE TRENCHES CLOSE TO C BUILDING WITHOUT PRIOR CONSULTATION WITH THE ARCHITECT. USE TO KEEP TRENCHES FREE OF WATER. BACKFILL TRENCHES IN MAXIMU DRY EARTH IN A MANNER TO PREVENT FUTURE SETTLEMENT.
- B. EXCAVATION AS SPECIFIED HEREIN SHALL BE CLASSIFIED AS COMMO EXCAVATION SHALL COMPRISE THE SATISFACTORY REMOVAL AND DIS WHATEVER SUBSTANCES AND OF EVERY DESCRIPTION ENCOUNTERE THE LIMITS OF THE WORK AS SPECIFIED AND SHOWN ON THE DRAWIN PERFORMED TO THE LINES AND GRADES INDICATED ON THE DRAWING MATERIALS THAT ARE CONSIDERED UNSUITABLE FOR BACKFILL AND WHICH IS NOT REQUIRED FOR BACKFILL TO THE SATISFACTION OF THE

2.4 CUTTING AND PATCHING

- A. CONFORM TO THE REQUIREMENTS IN DIVISION 01. CUT WALLS, FLOOR OF THE FACILITY AS REQUIRED TO INSTALL WORK UNDER THIS DIVISI ARCHITECT PRIOR TO CUTTING. DO NOT CUT OR DISTURB STRUCTUR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBL OTHER PORTIONS OF THE FACILITY AS REQUIRED BY WORK UNDER T MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION INCLUDING FIRE AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF AD SATISFACTORY TO THE ARCHITECT.
- 2.5 ROUGH-IN
- A. COORDINATE WITHOUT DELAY ALL ROUGHING-IN WITH OTHER DIVISIO ROUGH-IN EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE SH

2.6 CONCRETE BASES

- A. PROVIDE CONCRETE BASES (E.G., HOUSEKEEPING PADS) FOR EQUIPM DRAWINGS AND AS SPECIFIED HEREIN. CONCRETE BASES SHALL HAVE SHALL BE A MINIMUM OF 4 INCHES GREATER THAN THE FOOTPRINT OF SUPPORTING AND SHALL HAVE A MINIMUM HEIGHT OF 3-1/2 INCHES.
- B. CONSTRUCT EQUIPMENT BASES OF A MINIMUM 28 DAY, 4000 PSI CONC CONCRETE INSTITUTE STANDARD BUILDING CODE FOR REINFORCED LATEST APPLICABLE RECOMMENDATIONS OF THE ACI STANDARD PRA BE COMPOSED OF CEMENT CONFORMING TO ASTM C150 TYPE I, AGGR AND POTABLE WATER. EXPOSED EXTERIOR CONCRETE SHALL CONTAI ENTRAINMENT
- C. UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE STRUCTURAL DRA BASES AND HOUSEKEEPING PADS WITH NO. 4 REINFORCING BARS CO W2.9 X W2.9 WELDED WIRE MESH CONFORMING TO ASTM A185. PLACE CENTER WITH A MINIMUM OF TWO BARS EACH DIRECTION.
- D. PROVIDE GALVANIZED ANCHOR BOLTS FOR EQUIPMENT PLACED ON CONTRACT OF A DECEMBER O HOUSEKEEPING PADS OR ON CONCRETE SLABS. ANCHOR BOLTS SIZE BE AS RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT.

2.7 SUPPORT SYSTEMS

- A. STRUCTURAL STEEL USED FOR SUPPORT OF EQUIPMENT, DUCTWORK AND CONFORM TO ASTM DESIGNATION A-36.
- B. SUPPORT MECHANICAL COMPONENTS FROM THE BUILDING STRUCTU COMPONENTS FROM CEILINGS, OTHER MECHANICAL OR ELECTRICAL STRUCTURAL ELEMENTS.



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HOOTING, SERVICING, PREVENTIVE EVIEW OF DATA INCLUDED IN THE
THE OWNER'S DESIGNATED SHALL INCLUDE DATE, TIME, OWNER'S REPRESENTATIVE SHALL TRAINING HAS BEEN PROVIDED.
NOTICE.
DEFECTS DUE TO FAULTY FROM DATE OF SUBSTANTIAL SER WARRANTY IN THE RANTY EXCEEDS 12 MONTHS. S), AS STATED IN THE GENERAL
/EL EXPENSES. MAKE REPAIRS OR ND TO THE SATISFACTION OF THE
FROM THE ENGINEER OR OWNER.
ALL WARRANTIES, IN WRITING AND TENDING BEYOND THE ONE YEAR NTAIN WARRANTY STATUS. EACH STATE THE COMMENCEMENT DATE
ARCHITECTURAL PORTIONS OF THIS WORKDAY HOURS. ACCOMPLISH WHEN THE BUILDING IS NOT IN R AND/OR TENANT. COORDINATE ENANT A MINIMUM OF SEVEN (7)
TED SUPPORTS. CAP DUCTWORK
SE OF BUILDING REMODELING, AS . MATCH EXISTING MATERIALS AND JNLESS SPECIFIED OTHERWISE.
N PLACE OR NOT IN USE AT THE
ENINGS TO BE ABANDONED IN
RS, AND GRILLES INTENDED FOR
EUSE AS REQUIRED FOR PROPER REMOTE CONTROLS, AND SAFETY
OF UNDERGROUND WORK UNDER R BRACE TRENCHES TO PREVENT OLUMNS AND WALLS OF NEW E PUMPING EQUIPMENT IF REQUIRED JM 6 INCH LAYERS OF WELL-TAMPED
N EXCAVATION. COMMON SPOSITION OF MATERIAL OF D, INCLUDING ROCK, IF ANY, WITHIN IGS. EXCAVATION SHALL BE GS. DISPOSE OF EXCAVATED SURPLUS OF EXCAVATED MATERIAL E ARCHITECT.
RS, CEILINGS, AND OTHER PORTIONS ON. OBTAIN PERMISSION FROM THE AL MEMBERS WITHOUT PRIOR E. PATCH WALLS, FLOORS, AND HIS DIVISION. PATCHING SHALL E RATINGS, IF APPLICABLE. REPAIR DJOINING SURFACES IN A MANNER
ONS. CONCEAL PIPING, CONDUIT, AND IOWN.
IENT WHERE INDICATED ON THE E CHAMFERED EDGES. SIZE OF BASE F THE EQUIPMENT THAT IT IS
CRETE CONFORMING TO AMERICAN CONCRETE (ACI 318-99) AND THE CTICE MANUAL. CONCRETE SHALL REGATE CONFORMING TO ASTM C33, IN 5 TO 7 PERCENT AIR
AWINGS, REINFORCE EQUIPMENT NFORMING TO ASTM A615 OR 6X6 - EREINFORCING BARS 24 INCHES ON
CONCRETE EQUIPMENT BASES AND , NUMBER AND PLACEMENT SHALL
(AND PIPING SHALL BE NEW, CLEAN,
RE. DO NOT SUPPORT MECHANICAL COMPONENTS, AND OTHER NON-

MECHANICAL SPECIFICATIONS (1)



	2.8 A.	ACCESS DOORS PROVIDE ACCESS DOORS FOR ALL CONCEALED EQUIPMENT WHERE INDICATED OR AS REQUIRED, EXCEPT WHERE ABOVE LAY-IN CEILINGS. ACCESS DOORS SHALL BE ADEQUATELY SIZED FOR THE DEVICES SERVED WITH A MINIMUM SIZE OF 18 INCHES X 18 INCHES. ACCESS DOORS MUST BE OF THE PROPER CONSTRUCTION FOR TYPE OF CONSTRUCTION IN WHICH IT IS INSTALLED. OBTAIN ARCHITECT'S APPROVAL OF TYPE, SIZE, LOCATION AND COLOR BEFORE ORDERING. PROVIDE FACTORY-FABRICATED AND ASSEMBLED UNITS, COMPLETE WITH ATTACHMENT DEVICES AND FASTENERS READY FOR INSTALLATION, CONCEALED HINGES, FLUSH SCREWDRIVER-OPERATED CAM LOCK, AND ANCHOR STRAPS. PROVIDE	E.
D	2.9	ACCESS DOORS MANUFACTURED BY MILCOR, TITUS, ZURN, OR EQUAL. PENETRATIONS	
	A.	PROVIDE SLEEVES FOR PIPES PASSING THROUGH ABOVE GRADE CONCRETE OR MASONRY WALLS, CONCRETE FLOOR OR ROOF SLABS. SLEEVES ARE NOT REQUIRED FOR CORE DRILLED HOLES IN EXISTING MASONRY WALLS, CONCRETE FLOORS OR ROOFS. PROVIDE 10 GAUGE GALVANIZED STEEL SLEEVES FOR SLEEVES 6 INCHES AND SMALLER. PROVIDE GALVANIZED SHEET METAL SLEEVES FOR LARGER THAN 6 INCHES. SCHEDULE 40 PVC SLEEVES ARE ACCEPTABLE FOR INSTALLATION IN AREAS WITHOUT RETURN AIR PLENUMS.	2.13 A.
	В.	SEAL ELEVATED FLOOR, EXTERIOR WALL AND ROOF PENETRATIONS WATERTIGHT AND WEATHERTIGHT WITH NON-SHRINK, NON-HARDENING COMMERCIAL SEALANT. PACK WITH MINERAL WOOL AND SEAL BOTH ENDS WITH MINIMUM OF 1/2 INCH OF SEALANT.	B.
	C.	SEAL AROUND PENETRATIONS OF FIRE RATED ASSEMBLIES. COORDINATE FIRE RATINGS AND LOCATIONS WITH THE ARCHITECTURAL DRAWINGS. REFER TO ARCHITECTURAL SPECIFICATIONS FOR FIRE STOPPINGS. PROVIDE A PRODUCT SCHEDULE FOR UL LISTING, LOCATION, WALL OR FLOOR RATING AND	
_	D.	EXTEND PIPE INSULATION FOR EACH PENETRATION FIRE STOP SYSTEM. EXTEND PIPE INSULATION FOR INSULATED PIPE THROUGH FLOOR, WALL AND ROOF PENETRATIONS, INCLUDING FIRE RATED WALLS AND FLOORS. THE VAPOR BARRIER SHALL BE MAINTAINED. SIZE SLEEVE FOR A MINIMUM OF 1 INCH ANNULAR CLEAR SPACE BETWEEN INSIDE OF SLEEVE AND OUTSIDE OF	
	E.	INSULATION. PROVIDE PREFABRICATED ROOF CURBS MANUFACTURED BY CUSTOM CURB, INC., PATE COMPANY, THYCURB OR APPROVED EQUAL. PROVIDE ROOF CURB WITH FACTORY INSTALLED WOOD NAILER; WELDED, 18-GAUGE GALVANIZED STEEL SHELL, BASE PLATE AND FLASHING; 1-1/2 INCH THICK, 3 POUND RIGID INSULATION; FULLY MITERED 3-INCH RAISED CANT; COVER OF WEATHER-RESISTANT, WEATHER- PROOF MATERIAL AND PIPE COLLAR OF WEATHER-RESISTANT MATERIAL WITH STAINLESS STEEL PIPE	C. D. E.
	F.	CLAMPS. PROVIDE BOX FRAMES FOR RECTANGULAR OPENINGS WELDED 12-GAUGE GALVANIZED STEEL ATTACHED TO FORMS AND OF A MAXIMUM DIMENSION ESTABLISHED BY THE ARCHITECT. NOTIFY THE GENERAL CONTRACTOR OR ARCHITECT REFORE INSTALLING ANY BOX OPENINGS NOT SHOWN ON THE	
С	G.	ARCHITECTURAL OR STRUCTURAL DRAWINGS. SEAL CONCRETE OR MASONRY EXTERIOR WALL PENETRATIONS BELOW GRADE WITH "WALL PIPES" AND MECHANICAL SLEEVE SEALS. PROVIDE CAST IRON "WALL PIPES" WITH INTEGRAL WATERSTOP RING	
Ū	Н.	MANUFACTURED BY JAY R. SMITH, JOSAM, WADE, WATTS OR ZURN. PROVIDE MODULAR MECHANICAL SLEEVE SEALS, MANUFACTURED BY CALPICO, METRAFLEX, OR THUNDERLINE / LINK SEAL. SEAL ELEVATED CONCRETE SLAB WITH WATER PROOF MEMBRANE PENETRATIONS WITH "WALL PIPES"	2.14
		CLAMPING FLANGE AND CLAMPING RING. PROVIDE CAST IRON "WALL PIPES" WITH INTEGRAL WATERSTOP RING MANUFACTURED BY JAY R. SMITH, JOSAM, WADE, WATTS OR ZURN.	A.
	ı. I	BE CAST IRON SOIL PIPE TWO NOMINAL PIPE SIZES LARGER THAN THE PIPE SERVED.	
	J.	SLAB ON GRADE. SLEEVES SHALL BE ONE NOMINAL PIPE SIZE LARGER THAN THE PIPE SERVED AND TWO PIPE SIZES LARGER THAN PIPE SERVED FOR DUCTILE IRON PIPES WITH RESTRAINING RODS. SEAL WATER- TIGHT WITH SILICONE CAULK.	В.
	K.	PROVIDE 1/2 INCH THICK CELLULAR FOAM INSULATION AROUND PERIMETER OF NON-PRESSURE PIPE PASSING THRU CONCRETE SLAB ON GRADE. INSULATION SHALL EXTEND TO 2 INCHES ABOVE AND BELOW THE CONCRETE SLAB.	2.15 A.
	2.10 A.	FIRESTOPPING SEALANTS AND ACCESSORIES SHALL HAVE FIRE-RESISTANCE RATINGS INDICATED, AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES IN ACCORDANCE WITH UL 2079 OR ASTM E 814, OR OTHER NRTL ACCEPTABLE TO AHJ.	B.
	В.	MANUFACTURERS: HILTI, RECTORSEAL, SPECIFIED TECHNOLOGIES INC., UNITED STATES GYPSUM COMPANY, OR 3M CORP.	
	C.	THROUGH AND MEMBRANE PENETRATION FIRESTOPPING SYSTEMS PRODUCT SCHEDULE: PROVIDE UL LISTING, LOCATION, WALL OR FLOOR RATING, AND INSTALLATION DRAWING FOR EACH PENETRATION FIRE STOP SYSTEM.	C.
В	D.	WHERE PROJECT CONDITIONS REQUIRE MODIFICATION TO QUALIFIED TESTING AND INSPECTING AGENCY'S ILLUSTRATIONS FOR A PARTICULAR FIRESTOPPING CONDITION, SUBMIT ILLUSTRATION, WITH MODIFICATIONS MARKED, APPROVED BY PENETRATION FIRESTOPPING MANUFACTURER'S FIRE- PROTECTION ENGINEER AS AN ENGINEERING JUDGMENT OR EQUIVALENT FIRE-RESISTANCE-RATED ASSEMBLY. INCLUDE QUALIFICATIONS DATA FOR TESTING AGENCY.	
	2.11	MOTORS AND STARTERS	
	Α.	PROVIDE MOTORS AND STARTING EQUIPMENT WHERE NOT FURNISHED WITH THE EQUIPMENT PACKAGE. MOTORS SHALL HAVE COPPER WINDINGS, CLASS B INSULATION, AND STANDARD SQUIRREL CAGE WITH STARTING TORQUE CHARACTERISTICS SUITABLE FOR THE EQUIPMENT SERVED. MOTORS CONTROLLED BY VARIABLE FREQUENCY DRIVES SHALL BE RATED FOR VOLTAGE PEAKS AND MINIMUM RISE TIMES IN ACCORDANCE WITH NEMA MG1, PART 31. MOTORS CONTROLLED BY VARIABLE FREQUENCY DRIVES SHALL BE PROVIDED WITH A SHAFT GROUNDING SYSTEM EQUAL TO AEGIS SGR BEARING PROTECTION RING, INPRO/SEAL CURRENT DIVERTER RING (CDR) OR APPROVED EQUAL. MOTORS FOR AIR HANDLING EQUIPMENT SHALL BE SELECTED FOR QUIET OPERATION. EACH MOTOR SHALL BE CHECKED FOR PROPER ROTATION AFTER ELECTRICAL CONNECTION HAS BEEN COMPLETED. PROVIDE DRIP-PROOF ENCLOSURE FOR LOCATIONS PROTECTED FROM WEATHER AND NOT IN AIR STREAM OF FAN; AND TOTALLY ENCLOSED FAN COOLED ENCLOSURE FOR MOTORS EXPOSED TO WEATHER. MOTORS SHALL BE MANUFACTURED BY CENTURY, GENERAL ELECTRIC, LOUIS ALLIS, WESTINGHOUSE, OR APPROVED EQUAL	D.
_	В.	PROVIDE EVERY MOTOR, EXCEPT FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS WITH AN APPROVED TYPE OF "BUILT-IN" THERMAL OVERLOAD PROTECTION, WITH A MOTOR STARTER. EACH	E.
		STARTER SHALL BE PROVIDED WITH OVERLOAD HEATERS SIZED TO THE MOTOR RATING, AND EVERY THREE-PHASE MOTOR STARTER SHALL HAVE OVERLOAD HEATERS IN EACH PHASE. AMBIENT COMPENSATED HEATERS SHALL BE INSTALLED WHEREVER NECESSARY. UNLESS NOTED OTHERWISE, MOTOR STARTERS SHALL BE FURNISHED BY THE DIVISION 23 CONTRACTOR FOR INSTALLATION AND CONNECTION BY THE DIVISION 26 CONTRACTOR. STARTERS SHALL BE ALLEN-BRADLEY, CLARK, FURNAS, SQUARE D, OR APPROVED EQUAL.	2.16 A.
	2.12 A.	VARIABLE FREQUENCY DRIVES PROVIDE PWM VARIABLE FREQUENCY DRIVES (VFD) TO CONTROL FAN OR PUMP MOTORS AS INDICATED	
	_	ON THE DRAWINGS. PROVIDE VFD AS MANUFACTURED BY AC TECHNOLOGY, ASEA BROWN BOVERI, DANFOSS, RELIANCE ELECTRIC, OR YASKAWA. INCLUDE AN INTEGRAL, DOOR-INTERLOCKED INPUT CIRCUIT BREAKER OR FUSED DISCONNECT WHICH MAY BE PADLOCKED IN THE "OFF" POSITION.	В.
A	В.	CONTACTORS, MECHANICALLY AND ELECTRICALLY INTERLOCKED, TO ISOLATE THE INVERTER OUTPUT FROM LINE VOLTAGE. THE INVERTER INPUT SHALL BE ISOLATED BY EITHER A THIRD MAGNETIC CONTACTOR OR A SECOND DISCONNECT SWITCH TO ALLOW REMOVAL OF POWER TO THE INVERTER FOR SERVICE WHILE STILL OPERATING THE MOTOR ACROSS THE LINE. BYPASS SHALL INCLUDE A 120/1/60 CONTROL TRANSFORMER, FUSED ON BOTH THE PRIMARY AND SECONDARY, AND BI-METALLIC THERMAL MOTOR OVERI OAD RELAYS WITH ADJUSTABLE TRIP SETTINGS	
	C.	PROVIDE INPUT AC LINE REACTORS WITHOUT EXCEPTION. REACTORS SHALL BE MINIMUM 3 PERCENT IMPEDANCE, AND "K" RATED PER IEEE C57-110 FOR HARMONIC CURRENT CONTENT. REACTORS SHALL BE INTEGRAL TO THE DRIVE ENCLOSURE WITHOUT NEED FOR FIELD WIRING.	C.
	D.	THE VFD SHALL HAVE AN RS-485 PORT AS STANDARD. THE STANDARD PROTOCOLS SHALL BE JOHNSON CONTROLS N2 BUS, MODBUS, AND SIEMENS BUILDING TECHNOLOGIES FLN. OPTIONAL PROTOCOLS FOR	
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BACNETC, DEVICENET, ETHERNET, LONWORKS, AND PROFIBUS SHALL BE AVAILABLE. EACH INDIVIDUAL DRIVE SHALL HAVE THE PROTOCOL IN THE BASE VFD. THE USE OF THIRD PARTY GATEWAYS AND MULTIPLEXERS IS NOT ACCEPTABLE. ALL PROTOCOLS SHALL BE "CERTIFIED" BY THE GOVERNING AUTHORITY. USE OF NON-CERTIFIED PROTOCOLS IS NOT ALLOWED. THE VFD SHALL ALLOW THE DDC SYSTEM TO CONTROL THE DIGITAL AND ANALOG OUTPUTS OF THE DRIVE VIA THE SERIAL INTERFACE. THIS CONTROL SHALL BE INDEPENDENT OF ANY VFD FUNCTION. IN ADDITION, ALL THE DIGITAL AND ANALOG INPUTS OF THE DRIVE SHALL BE CAPABLE OF BEING MONITORED BY THE DDC SYSTEM.

DRIVE SUPPLIER SHALL PROVIDE JOBSITE START-UP, OWNER TRAINING, AND A ONE-YEAR PARTS AND ON-SITE LABOR WARRANTY. MULTIPLE VISITS SHALL BE INCLUDED TO ALLOW FOR TUNING AND TROUBLESHOOTING OF THE CONTROLS SYSTEM AS REQUIRED.

2.13 ELECTRICAL WIRING

- HIGH VOLTAGE WIRING IS DEFINED AS 50 VOLTS OR HIGHER. LOW VOLTAGE WIRING IS DEFINED AS LESS THAN 50 VOLTS. LINE VOLTAGE WIRING SHALL BE PROVIDED BY DIVISION 26. LINE VOLTAGE CONTROL AND INTERLOCK WIRING FOR MECHANICAL SYSTEMS SHALL ALSO BE PROVIDED BY DIVISION 26. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY DIVISION 23. FURNISH WIRING DIAGRAMS TO DIVISION 26 AS REQUIRED FOR PROPER EQUIPMENT HOOKUP. COORDINATE WITH DIVISION 26 THE ACTUAL WIRE SIZING AMPS FOR MECHANICAL EQUIPMENT (FROM THE EQUIPMENT NAMEPLATE) TO ENSURE PROPER INSTALLATION.
- PROVIDE POWER AND COMMUNICATION WIRING WITH TRANSIENT PROTECTION IN ACCORDANCE WITH IEEE C62.41.2. ALL CONTROL AND INTERLOCK WIRING SHALL COMPLY WITH THE NEC. CONTROL WIRING SHALL BE SIZED TO ACCOMMODATE THE VOLTAGE DROP ASSOCIATED WITH THE DISTANCE BETWEEN THE CONTROL DEVICE AND THE CONTROLLER. CONTROL WIRING NOT INSTALLED IN CONDUIT SHALL BE UL RATED FOR PLENUM INSTALLATION. ALL NEC CLASS 1 (LINE VOLTAGE) WIRING SHALL BE UL LISTED IN APPROVED RACEWAY ACCORDING TO THE NEC AND DIVISION 26 REQUIREMENTS. MAXIMUM ALLOWABLE VOLTAGE FOR CONTROL WIRING SHALL BE 120 V. ALL LOW-VOLTAGE WIRING SHALL MEET NEC CLASS 2 REQUIREMENTS. LOW-VOLTAGE POWER CIRCUITS SHALL BE SUB-FUSED WHEN REQUIRED TO MEET CLASS 2 CURRENT LIMIT.
- CONDUIT FOR CONTROL WIRING: EMT WITH COMPRESSION FITTINGS, COLD ROLLED STEEL, ZINC COATED OR ZINC-COATED RIGID STEEL WITH THREADED CONNECTIONS.
- PULL AND JUNCTION BOXES: SIZE ACCORDING TO NUMBER, SIZE, AND POSITION OF ENTERING RACEWAY D. AS REQUIRED BY NATIONAL ELECTRICAL CODES. ENCLOSURE TYPE SHALL BE SUITED TO LOCATION.
- INSTALL WIRING PARALLEL TO BUILDING LINES WHEREVER POSSIBLE. CONCEAL ALL CONTROL WIRING IN FINISHED ROOMS. DO NOT INSTALL CLASS 2 WIRING IN RACEWAY CONTAINING CLASS 1 WIRING. BOXES AND PANELS CONTAINING HIGH VOLTAGE WIRING AND EQUIPMENT MAY NOT BE USED FOR LOW-VOLTAGE WIRING EXCEPT FOR THE PURPOSE OF INTERFACING THE TWO WIRES (E.G., RELAYS AND TRANSFORMERS). ALL WIRE-TO DEVICE AND WIRE-TO-WIRE CONNECTIONS SHALL BE MADE AT A TERMINAL BLOCK OR TERMINAL STRIP. ALL RUNS OF COMMUNICATION WIRING SHALL BE UNSPLICED LENGTH WHEN THAT LENGTH IS COMMERCIALLY AVAILABLE. VERIFY THE INTEGRITY OF THE ENTIRE NETWORK FOLLOWING THE CABLE INSTALLATION. USE APPROPRIATE TEST MEASURES FOR EACH PARTICULAR CABLE. LABEL ALL WIRING AND CABLING AT EACH END WITHIN 2 INCHES OF TERMINATION WITH THE CONTROLLER TERMINATION NUMBER. LABEL CONTROL DEVICES USED IN THE SYSTEM WITH PERMANENT LABELS USING THE IDENTIFIERS THAT MATCH THE RECORD DOCUMENTS.

2.14 EQUIPMENT FURNISHED BY OTHERS

- PROVIDE NECESSARY EQUIPMENT AND ACCESSORIES THAT ARE NOT PROVIDED BY THE EQUIPMENT SUPPLIER OR OWNER TO COMPLETE INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS IN LOCATIONS AS INDICATED ON THE DRAWINGS, SPECIFIED HEREIN, OR BOTH. EQUIPMENT AND ACCESSORIES NOT PROVIDED BY THE EQUIPMENT SUPPLIER MAY INCLUDE, BUT NOT BE LIMITED TO FLUES, VENTS, INTAKES, ASSOCIATED ROOF JACKS AND CAPS TO OUTDOORS, DAMPERS, IN-LINE FANS, ROOF FANS, AND CONTROL INTERLOCKS, ETC. AS REQUIRED FOR PROPER OPERATION OF THE COMPLETE SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT ROUGH-IN DIMENSIONS AND SHALL VERIFY THEM WITH ARCHITECT AND/OR EQUIPMENT SUPPLIER PRIOR TO SERVICE INSTALLATIONS.

2.15 SYSTEM TESTING AND ADJUSTING

- UPON COMPLETION OF EACH PHASE OF THE INSTALLATION, TEST EACH SYSTEM IN CONFORMANCE WITH LOCAL CODE REQUIREMENTS AND AS NOTED BELOW. FURNISH LABOR AND EQUIPMENT REQUIRED TO TEST EACH SYSTEM INSTALLED UNDER THIS CONTRACT. ASSUME ALL COSTS INVOLVED IN MAKING THE TESTS AND REPAIRING AND/OR REPLACING ANY DAMAGES RESULTING THEREFROM.
- B. FINAL SYSTEM TESTING, BALANCING AND ADJUSTMENTS (TAB) SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), ASSOCIATED AIR BALANCE COUNCIL (AABC) OR TESTING, ADJUSTING AND BALANCING BUREAU (TABB). TAB SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE CERTIFIED AGENCIES PROCEDURAL STANDARD FOR TESTING, ADJUSTING AND BALANCING AND SHALL COMPLY WITH THE STRICTEST INTERPRETATION OF THAT STANDARD FOR EXECUTION AND REPORTING OF ALL TAB WORK.
- С WORK SHALL INCLUDE BUT NOT BE LIMITED TO: PERFORM TEST READINGS ON FANS, UNITS, COILS, PUMPS, ETC, AND ADJUST EQUIPMENT TO DELIVER SPECIFIED AMOUNTS OF AIR. PREPARE TESTING AND BALANCING REPORT LOG SHOWING AIR SUPPLY QUANTITIES. AIR ENTERING AND LEAVING TEMPERATURES AND PRESSURES AT DESIGN FLOW, FAN AND UNIT TEST READINGS, MOTOR VOLTAGE AND AMP DRAWS, ETC., AND SUBMIT SIX COPIES OF THE FINAL COMPILATION OF DATA TO THE ARCHITECT FOR EVALUATION AND APPROVAL BEFORE FINAL INSPECTION OF THE PROJECT. BALANCE AIR SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT FOR TERMINAL DEVICES AND BRANCH LINES AND PLUS OR MINUS 5 PERCENT FOR MAIN DUCTS AND AIR HANDLING EQUIPMENT OF THE AMOUNT OF AIR SHOWN ON THE DRAWINGS. TAB CONTRACTOR SHALL RECORD SPACE TEMPERATURES AND MAKE ADJUSTMENTS IN AIRFLOW TO EACH DIFFUSER TO OBTAIN UNIFORM TEMPERATURE (NO GREATER THAN +/- 3 F) IN SPACES. DOCUMENT TEMPERATURES AND ADJUSTMENTS IN TAB REPORT. ADJUST EQUIPMENT TO OPERATE AS INTENDED BY THE SPECIFICATION. TAB REPORT SHALL INCLUDE A 'REPORT SUMMARY/REMARKS' SECTION IN ACCORDANCE WITH THE PROCEDURAL STANDARD THAT PROVIDES BOTH SYSTEM SET UP AND A SUMMARY OF DEFICIENCIES AS DEFINED BY THE PROCEDURAL STANDARD.
- TAB CONTRACTOR SHALL BE RESPONSIBLE TO CALIBRATE, SET, AND ADJUST AUTOMATIC TEMPERATURE CONTROL SENSORS, ACTUATORS AND CONTROL DEVICES. CHECK PROPER SEQUENCING OF INTERLOCK SYSTEMS, AND OPERATION OF SAFETY CONTROLS, ADJUST THERMOSTATS, AND CONTROL SETPOINTS, LIMITS AND TIME BASED ADJUSTMENT TO OPERATE IN ACCORDANCE WITH THE PERFORMANCE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. ADJUST PUMPS, FANS, ETC. FOR PROPER AND EFFICIENT OPERATION. CERTIFY TO ARCHITECT THAT ADJUSTMENTS HAVE BEEN MADE AND THAT SYSTEM IS OPERATING SATISFACTORILY. CALIBRATE, SET, AND ADJUST AUTOMATIC TEMPERATURE CONTROLS. CHECK PROPER SEQUENCING OF INTERLOCK SYSTEMS, AND OPERATION OF SAFETY CONTROLS.
- DIVISION 23 CONTRACTOR SHALL ALIGN BEARINGS AND REPLACE BEARINGS THAT HAVE DIRT OR FOREIGN MATERIAL IN THEM WITH NEW BEARINGS WITHOUT ADDITIONAL COST TO THE OWNER.

2.16 VIBRATION ISOLATION

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Revision

ORIGINAL SHEET - ARCH E

- PROVIDE VIBRATION ISOLATION EQUIPMENT AND MATERIALS BY A SINGLE MANUFACTURER. IF TYPE AND DEFLECTION FOR SPECIFIC EQUIPMENT IS NOT SPECIFIED WITHIN THE CONTRACT DOCUMENTS. REFERENCE ASHRAE HANDBOOK "HVAC APPLICATIONS" OR PROVIDE PER MANUFACTURER'S RECOMMENDATIONS. APPROVED MANUFACTURERS INCLUDE AMBER BOOTH, KINETICS NOISE CONTROL, MASON INDUSTRIES, INC., VIBRATION ELIMINATOR CO., INC., AND VIBRATION MOUNTING AND CONTROLS, PROVIDED THEIR SYSTEMS ARE IN COMPLIANCE WITH THE SPECIFIED DESIGN AND PERFORMANCE REQUIREMENTS.
- GENERAL REQUIREMENTS: SELECT VIBRATION ISOLATORS BY THE WEIGHT DISTRIBUTION TO PRODUCE UNIFORM DEFLECTION. VIBRATION ISOLATORS SHALL HAVE EITHER KNOWN UN-DEFLECTED HEIGHTS OR CALIBRATION MARKINGS SO THAT. AFTER ADJUSTMENT. THE STATIC DEFLECTION CAN BE VERIFIED. THUS DETERMINING THAT THE LOAD IS WITHIN THE PROPER RANGE OF THE ISOLATOR. ISOLATORS SHALL OPERATE IN THE LINEAR PORTION OF THEIR LOAD VERSUS DEFLECTION CURVES. SPRING ISOLATORS SHALL HAVE 50 PERCENT EXCESS CAPACITY WITHOUT BECOMING COIL BOUND. COAT VIBRATION ISOLATORS WITH FACTORY-APPLIED PAINT. COAT VIBRATION ISOLATORS EXPOSED TO WEATHER AND OTHER CORROSIVE ENVIRONMENTS WITH FACTORY-APPLIED CORROSION RESISTANCE PROTECTION. INSTALL AND ADJUST VIBRATION ISOLATORS IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.
- PIPE CONNECTIONS. PROVIDE FLEXIBLE CONNECTORS FOR PIPING SYSTEM CONNECTIONS ON EQUIPMENT SIDE OF SHUTOFF VALVES FOR ALL PUMPS, MECHANICAL EQUIPMENT SUPPORTED OR SUSPENDED BY SPRING ISOLATORS, AND WHERE INDICATED ON DRAWINGS. FABRICATE FLEXIBLE PIPING CONNECTORS FROM STAINLESS STEEL OR RUBBER MATERIALS AS SUITABLE FOR SYSTEM FLUID. FLEXIBLE PIPING CONNECTORS SHALL BE BELLOWS. SPHERICAL OR BRAIDED HOSE TYPE AS RECOMMENDED BY THE MANUFACTURER FOR THE APPLICATION.

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CI GY 2023.03.10

By Appd YYYY.MM.DL

- ISOLATOR TYPES: D.

 - TYPE W OR EQUAL.
 - TYPE 30N OR EQUAL
 - LOWER CURBS SHALL HAVE PROVISION FOR 2 INCHES INSULATION. DUCT CONNECTIONS SHALL BE
 - TYPE RSC, OR EQUAL
- SEISMIC CONTROLS FOR MEPF SYSTEMS 2.17 RISK/OCCUPANCY CATEGORY: SITE SOIL CATEGORY SEISMIC DESIGN CATEGORY: 4. COMPONENT IMPORTANCE FACTOR:
- D DISTANCE FROM STRUCTURE OF THE SUPPORTED ELEMENT.
- ENGINEER FOR REVIEW AND APPROVAL SEISMIC ANALYSIS LISTING ALL APPLICABLE SEISMIC DESIGN CRITERIA.
- INSTALLATION DETAILS OF ALL BRACING USED.
- CAPACITY OF MATERIALS UTILIZED FOR CONNECTIONS.
- G. MAXIMUM RESTRAINT RATINGS.
- Η. SHOP DRAWINGS.

2.18 AIR FILTERS

- ACCEPTANCE.
- AND PROVIDE A NEW SET OF FILTERS IN THE UNIT.
- 2.19 REFRIGERANT AND OIL
 - MAINTAIN IT FOR FULL TERM OF THE GUARANTEE
- 2.20 IDENTIFICATION

 - DIRECTION OF FLOW.

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1. TYPE WP (WAFFLE PADS): PROVIDE 5/16 INCH THICK NEOPRENE PADS RIBBED OR WAFFLED ON BOTH SIDES. MANUFACTURE PADS WITH BRIDGE BEARING QUALITY NEOPRENE, AND SELECT FOR A MAXIMUM DUROMETER OF 50 AND DESIGNED FOR 15 PERCENT STRAIN. INCORPORATE STEEL LOAD-SPREADING PLATES WHERE REQUIRED BETWEEN THE EQUIPMENT AND THE NEOPRENE PAD. IF THE ISOLATOR IS BOLTED TO THE STRUCTURE, INSTALL A NEOPRENE VIBRATION ISOLATION WASHER AND SLEEVE (UNIROYAL TYPE 620/660 OR AS APPROVED) SHALL BE INSTALLED UNDER THE BOLT HEAD BETWEEN THE STEEL WASHER AND THE BASE PLATE. PROVIDE MASON INDUSTRIES

2. TYPE SPNH (SPRING AND NEOPRENE HANGERS): PROVIDE A STEEL SPRING IN SERIES WITH A NEOPRENE ISOLATING ELEMENT. THE SPRING SHALL HAVE A MINIMUM ADDITIONAL TRAVEL TO SOLID EQUAL TO 50 PERCENT OF THE SPECIFIED DEFLECTION. THE NEOPRENE ELEMENT SHALL HAVE A STATIC DEFLECTION OF NOT LESS THAN 0.3 INCHES WITH A STRAIN NOT EXCEEDING 15 PERCENT. UNLESS OTHERWISE SPECIFIED, THE STATIC DEFLECTION OF SPNH HANGERS SHALL BE 2 INCHES. SPRING DIAMETER AND HANGER BOX HOLE SIZE SHALL BE LARGE ENOUGH TO PERMIT THE HANGER ROD TO SWING THROUGH A 30 DEGREE ARC. PROVIDE NEOPRENE SLEEVE WHERE THE LOWER HANGER ROD PASSES THROUGH THE STEEL HANGER BOX, SUCH THAT THE HANGER ROD CANNOT CONTACT THE STEEL HANGER. THE DIAMETER OF THE CLEAR HOLE IN THE HANGER BOX SHALL BE AT LEAST 3/4 INCH LARGER THAN THE DIAMETER OF THE HANGER ROD. WHEN INSTALLED, DO NOT COCK THE SPRING ELEMENT AND DO NOT ALLOW THE HANGER BOX TO ROTATE THROUGH A FULL 360 DEGREE ARC WITHOUT ENCOUNTERING OBSTRUCTIONS. PROVIDE MASON INDUSTRIES

3. TYPE SPNM (SPRING AND NEOPRENE MOUNTS): PROVIDE FREE-STANDING AND LATERALLY STABLE STEEL SPRING WITHOUT A HOUSING. DESIGN SPRINGS SO THE RATIO OF THE HORIZONTAL TO VERTICAL SPRING CONSTANT IS BETWEEN ONE AND TWO. THE SPRING DIAMETER SHALL BE NOT LESS THAN 80 PERCENT OF THE COMPRESSED HEIGHT OF THE SPRING AT RATED LOAD. LOADED SPRINGS SHALL HAVE A MINIMUM ADDITIONAL TRAVEL TO SOLID EQUAL TO 50 PERCENT OF THE SPECIFIED STATIC DEFLECTION. UNLESS OTHERWISE SPECIFIED. THE MINIMUM STATIC DEFLECTION OF SPNM ISOLATORS FOR EQUIPMENT MOUNTED ON GRADE SLABS SHALL BE 1 INCH, AND THE MINIMUM STATIC DEFLECTION FOR EQUIPMENT MOUNTED ABOVE GRADE LEVEL SHALL BE 2 INCHES BOND TWO TYPE WP ISOLATION PADS SANDWICHING A 16 GAUGE STAINLESS OR GALVANIZED STEEL SEPARATOR PLATE TO THE ISOLATOR BASEPLATE. UNLESS OTHERWISE SPECIFIED, ISOLATORS NEED NOT BE BOLTED TO THE FLOOR FOR INDOOR INSTALLATIONS. IF THE BASE PLATES ARE BOLTED TO THE STRUCTURE, INSTALL A NEOPRENE VIBRATION ISOLATION WASHER AND SLEEVE (UNIROYAL TYPE 620/660 OR AS APPROVED) UNDER THE BOLT HEAD BETWEEN THE STEEL WASHER AND THE BASE PLATE. PROVIDE MASON INDUSTRIES TYPE SLFH OR EQUAL TYPE CMB (CURB MOUNTED BASE): CURB MOUNTED BASE FOR ROOF-MOUNTED EQUIPMENT SHALL BE A STRUCTURAL STEEL BASE MOUNTED DIRECTLY TO THE STRUCTURE WITH AN UPPER FLOATING SECTION ON ADJUSTABLE STEEL SPRINGS. THE UPPER FRAME SHALL PROVIDE CONTINUOUS SUPPORT FOR THE EQUIPMENT. STEEL SPRINGS SHALL REST ON 1/4 INCH MINIMUM THICKNESS NEOPRENE PADS AND SHALL HAVE A MINIMUM STATIC DEFLECTION OF 2 INCHES UNLESS OTHERWISE SPECIFIED. ALL-DIRECTIONAL SNUBBER BUSHINGS SHALL BE 1/4 INCH MINIMUM THICKNESS NEOPRENE. ALL HARDWARE SHALL BE CADMIUM OR ZINC ELECTROPLATED TO PROVIDE A RUST RESISTANT FINISH. WEATHER PROOFING SHALL CONSIST OF A CONTINUOUS GALVANIZED FLEXIBLE COUNTERFLASHING NAILED OVER THE LOWER CURB'S WATERPROOFING AND JOINED AT THE CORNERS BY EPDM BELLOWS. ALL SPRING LOCATIONS SHALL HAVE ACCESS PORTS WITH REMOVABLE WATERPROOF COVERS TO ALLOW FOR ADJUSTMENT OR REPLACEMENT OF SPRINGS.

MADE USING A LENGTH OF FLEXIBLE DUCT DIMENSIONED TO MATCH THE EQUIPMENT OPENING, USING A FOAM RUBBER GASKET TO SEAL AGAINST THE UNIT BOTTOM. PROVIDE MASON INDUSTRIES 5. TYPE NR (NEOPRENE MOUNTS): PROVIDE NEOPRENE, RUBBER-IN-SHEAR MOUNTS FOR LIGHT

WEIGHT, SUSPENDED EQUIPMENT SUPPORTED FROM STRUCTURE WITH ALL THREAD ROD AND ANGLE IRON OR UNISTRUT. PROVIDE MASON INDUSTRIES TYPE HMIB OR EQUAL

I, II OR III CONTRACTOR'S SEISMIC ENGINEER TO DETERMINE CONTRACTOR'S SEISMIC ENGINEER TO DETERMINE. DETERMINED FROM ASCE 7-2010.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE REQUIREMENTS FOR SEISMIC BRACING OF MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. SEISMIC PROTECTION CRITERIA USED TO DETERMINE SEISMIC BRACING REQUIREMENTS OF ALL MECHANICAL. ELECTRICAL, AND PLUMBING SYSTEMS SHALL BE DETERMINED BY THE APPLICABLE CODE ADOPTED IN THE PROJECT JURISDICTION. WHERE NOT ALREADY DETERMINED WITHIN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACTING A LICENSED PROFESSIONAL ENGINEER TO ESTABLISH BUILDING SITE CLASS, SEISMIC DESIGN CATEGORY, SEISMIC ZONE, OR ANY OTHER CRITERIA NECESSARY TO DETERMINE THE REQUIREMENTS FOR SEISMIC BRACING ON MECHANICAL, ELECTRICAL, AND/OR PLUMBING SYSTEMS.

SEISMIC BRACING OF FIRE PROTECTION SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE PROVISIONS OF NFPA 13 (2010 OR LATER EDITION).

THE CONTRACTOR SHALL DETERMINE THE TYPE AND LOCATION OF SEISMIC BRACING REQUIRED FOR THE MECHANICAL, ELECTRICAL, AND PLUMBING ELEMENTS SHOWN ON THE DRAWINGS BASED ON THE ESTABLISHED SEISMIC CRITERIA, THE SIZE AND WEIGHT OF THE SUPPORTED ELEMENT, AND THE

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING SHOP DRAWING INFORMATION TO THE AHJ AND THE

DESCRIPTIVE CATALOG DATA OF SEISMIC BRACING MATERIALS.

SHOP DRAWINGS SHOWING BRACING TYPE AND LOCATION.

CALCULATIONS SHOWING THAT THE SEISMIC RESTRAINTS MEET THE SEISMIC REQUIREMENTS. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF THE PROJECT AND EMPLOYED BY THE MANUFACTURER OF THE SEISMIC BRACING PRODUCTS. CALCULATIONS SHALL INCLUDE DEAD LOADS, STATIC SEISMIC LOADS, AND

SEISMIC BRACING, RESTRAINTS, ISOLATORS, AND ISOLATION MATERIALS SHALL BE OF THE SAME MANUFACTURER AND SHALL BE CERTIFIED BY THE MANUFACTURER. APPROVED MANUFACTURERS ARE: AMBER/BOOTH COMPANY, INC., B-LINE/TOLCO, ISAT, KINETICS NOISE CONTROL, INC., LOOS & COMPANY. INC., MASON INDUSTRIES, INC., UNI-STRUT, OR VIBRO-ACOUSTICS. EACH DEVICE SHALL HAVE A PRE-APPROVAL NUMBER FROM CALIFORNIA OSHPD OR OTHER RECOGNIZED GOVERNMENT AGENCY SHOWING

SEISMIC BRACING MEASURES TO BE APPLIED TO MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT/SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AS WELL AS MANUFACTURER'S REQUIREMENTS. THE MOST STRINGENT CRITERIA SHALL APPLY. ALL ANCHOR CONNECTIONS TO STRUCTURE FOR SUPPORT OF MECHANICAL AND ELECTRICAL EQUIPMENT, REGARDLESS OF THE NEED FOR SEISMIC RESTRAINTS, SHALL BE SHOWN ON

PROVIDE FARR 30/30, PLEATED, THROWAWAY TYPE FILTERS, OR SIMILAR AS MANUFACTURED BY AIR FILTER, INC., AMERICAN AIR FILTER, FLANDERS, OR APPROVED EQUAL, UNLESS OTHERWISE INDICATED AIR UNITS SHALL HAVE NEW FILTERS INSTALLED WHEN THEY ARE OPERATED BEFORE FINAL

IF HVAC EQUIPMENT IS USED DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL PROVIDE ONE SET OF FILTERS WHEN THE UNIT IS STARTED AND REPLACE FILTERS WHEN NEEDED, BUT NOT LESS THAN EVERY MONTH. ON THE DAY OF SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL CLEAN THE UNIT

PROVIDE FULL REFRIGERANT AND OIL CHARGE IN NEW AIR CONDITIONING REFRIGERATION SYSTEMS, AND

PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED. SEMI-RIGID SNAP-ON OR PERMANENT ADHESIVE PRESSURE-SENSITIVE VINYL PIPE MARKERS. COLOR CODE PIPE MARKERS TO COMPLY WITH ANSI A13.1 B. INSTALL PIPE MARKERS ON EACH HVAC PIPING SYSTEM AND INCLUDE ARROWS TO SHOW NORMAL

- LOCATE PIPE MARKERS AND COLOR BANDS WHEREVER PIPING IS EXPOSED TO VIEW IN OCCUPIED SPACES, MACHINE ROOMS, ACCESSIBLE MAINTENANCE SPACES (SHAFTS, TUNNELS, PLENUMS) AND EXTERIOR NON-CONCEALED LOCATIONS.
- PROVIDE PLASTIC LAMINATE OR BRASS VALVE TAG ON EVERY VALVE, COCK AND CONTROL DEVICE IN D. EACH HVAC PIPING SYSTEM: EXCLUDE CHECK VALVES, VALVES WITHIN FACTORY-FABRICATED EQUIPMENT UNITS, AND SHUT-OFF VALVES AT HVAC TERMINAL DEVICES AND SIMILAR ROUGH-IN CONNECTIONS OF END-USE FIXTURES AND UNITS.
- E. PROVIDE MANUFACTURER'S STANDARD LAMINATED PLASTIC. COLOR CODED EQUIPMENT MARKERS. CONFORM TO THE FOLLOWING COLOR CODE: GREEN FOR COOLING; YELLOW FOR HEATING; YELLOW/GREEN FOR COMBINATION COOLING AND HEATING; BROWN FOR ENERGY RECLAMATION; BLUE FOR OTHER EQUIPMENT TYPES. CONFORM TO ANSI A13.1 FOR HAZARDOUS EQUIPMENT.
- PROVIDE STENCILED SIGNS FOR EQUIPMENT IDENTIFICATION AT CONTRACTOR'S OPTION OR WHERE DISTANCE OF REQUIRED IDENTIFICATION REQUIRES LETTERING LARGER THAN 1 INCH HEIGHT. STENCIL PAINT SHALL BE EXTERIOR TYPE, OIL-BASED, ALKYD ENAMEL, MINIMUM 1-1/4 INCH HEIGHT OR GREATER AS REQUIRED FOR LONG DISTANCE IDENTIFICATION, WHITE OR BLACK COLOR FOR BEST CONTRAST.
- PROVIDE DUCT MARKERS OR PROVIDE STENCILED SIGNS AND ARROWS INDICATING DUCTWORK SERVICE G. AND FLOW DIRECTION IN BLACK OR WHITE LETTERING FOR BEST CONTRAST WITH DUCT OR INSULATION COLOR. LOCATE MARKERS MAXIMUM 50 FEET ALONG EACH DUCT SIDE AND WITHIN 5 FEET OF ALL CONTROL AND BALANCING DAMPERS OR BRANCH DUCTS MORE THAN 25 FEET LENGTH AND WITHIN 5 FEET ON EACH SIDE OF WALL, FLOOR, AND CEILING PENETRATIONS. PROVIDE ADDITIONAL MARKERS IN CONGESTED AREAS OR AT MULTIPLE DUCT RUNS AS REQUIRED FOR CLARITY.

PART 3 - DUCT INSULATION, DUCTWORK, ACCESSORIES, FLUES AND FANS

3.1 DUCT INSULATION

- A. PROVIDE FIBERGLASS DUCT LINER WITH FIBERS FIRMLY BONDED TOGETHER WITH A THERMOSETTING RESIN. LINER SURFACE SHALL SERVE AS A BARRIER AGAINST INFILTRATION OF DUST AND DIRT, SHALL MEET ASTM C1338 FOR FUNGI RESISTANCE, AND SHALL BE CLEANABLE USING DUCT CLEANING METHODS AND EQUIPMENT OUTLINED BY NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION (NAIMA) DUCT CLEANING GUIDE. INSTALL WITH LINER ADHESIVE AND MECHANICAL FASTENERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. DUCTWORK SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. INCREASE SHEET METAL BY LINER THICKNESS IN BOTH DIRECTIONS WHERE LINER IS INSTALLED.
- PROVIDE RECTANGULAR LINER CONFORMING TO ASTM C1071, TYPE I OR II THAT IS 1-1/2 INCH THICK, 1-1/2 POUND DENSITY, MINIMUM CERTAINTEED CORP. "TOUGHGARD" OR EQUIVALENT, JOHNS MANVILLE, OWENS-CORNING, OR KNAUF.
- PROVIDE LINER ON THE FOLLOWING INTERIOR AIR DUCTS AND WHERE SPECIFIED ON THE DRAWINGS: С. EXPOSED ROUND AND RECTANGULAR SUPPLY DUCTWORK AND THE FIRST 15 FEET OF DUCT DOWNSTREAM OF EQUIPMENT OUTLETS OR 5 FEET PAST FIRST ELBOW, WHICHEVER IS GREATER. 2. EXPOSED ROUND AND RECTANGULAR RETURN DUCTWORK AND THE FIRST 15 FEET OF DUCT
- UPSTREAM OF EQUIPMENT OUTLETS, WHICHEVER IS GREATER.
- AT INTERFACE OF LINED AND WRAPPED DUCTWORK, OVERLAP LINED DUCTWORK AT LEAST 2 FEET BEYOND WRAPPED INSULATION.
- COVER CONCEALED, RIGID DUCTWORK WITH ASTM C553, TYPE II FLEXIBLE FIBERGLASS INSULATION. INSTALLED INSULATION SHALL BE 1-1/2 INCH THICK, 1-1/2 POUND DENSITY, MINIMUM R-4.2 DUCT WRAP, CERTAINTEED OR EQUIVALENT JOHNS MANVILLE, OWENS-CORNING, OR KNAUF WITH HEAVY-DUTY FOIL-SCRIM-KRAFT FACING, AND WITH JOINTS TAPED WITH 3 INCH WIDE FOIL TAPE AS FOLLOWS: ROUND AND RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK.
- ROUND AND RECTANGULAR OUTSIDE AIR DUCTWORK. ROUND AND RECTANGULAR EXHAUST AND RELIEF AIR DUCTWORK WITHIN 10 FEET OF EXTERIOR DISCHARGE.
- COVER OUTDOOR AIR. EXHAUST AIR AND RELIEF AIR PLENUMS CONNECTED TO EXTERIOR LOUVERS WITH 1-1/2 INCH THICK, 1.5 POUND DENSITY, RIGID FIBERGLASS INSULATION CONFORMING TO ASTM C612. CLASS 2.
- G. INSULATING MATERIALS, ADHESIVES, COATINGS, ETC., SHALL NOT EXCEED FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATING OF 50 PER ASTM E84. CONTAINERS FOR MASTICS AND ADHESIVES SHALL HAVE U.L. LABEL.
- FOR SUPPLY AND RETURN DUCTWORK LOCATED EXTERIOR TO THE BUILDING, INSULATION SHALL BE н MINIMUM R-8.0. PROVIDE INSULATION AND JACKET IN ACCORDANCE WITH ONE OF THE FOLLOWING THREE OPTIONS:
 - EXTERIOR INSULATION AND JACKET CONSISTING OF 2 INCH THICKNESS OF ARMATUFF FLEXIBLE ELASTOMERIC INSULATION OR EQUIVALENT MEETING ASTM C534 WITH INTEGRAL 12 MILS THICK UV RESISTANT CLADDING LAMINATED AT FACTORY. COVER ALL SEAMS WITH ARMATUFF SEAL TAPE. EXTERIOR INSULATION CONSISTING OF 2 INCH THICKNESS OF FLEXIBLE ELASTOMERIC INSULATION MEETING ASTM C534 OR 3 LB DENSITY RIGID FIBERGLASS MEETING ASTM C612, AND JACKET
 - CONSISTING OF 20 GAUGE CORRUGATED ALUMINUM JACKET WITH ALUMINUM FITTING COVERS AND MINIMUM THREE ALUMINUM ATTACHMENT BANDS PER SECTION. EXTERIOR INSULATION CONSISTING OF 2 INCH THICKNESS OF FLEXIBLE ELASTOMERIC INSULATION MEETING ASTM C534 OR 3 LB DENSITY RIGID FIBERGLASS MEETING ASTM C612, AND JACKET CONSISTING OF 15.5 MILS THICK VENTURECLAD PLUS UV RESISTANT CLADDING.
- INSTALL EXTERIOR DUCTWORK WITH SUFFICIENT SLOPE TO ENSURE THAT WATER CANNOT POND ANYWHERE ON THE DUCT. DRAINAGE MUST BE ACHIEVED BY SLOPING DUCTWORK – NOT BY VARYING THE INSULATION THICKNESS. LOCATE LONGITUDINAL SEAMS OF OUTER SHELL (ALUMINUM, FLEXIBLE ELASTOMERIC, OR CLADDING AS APPLICABLE) AT BOTTOM OF DUCT. INSTALL CLADDING IN STRICT CONFORMANCE WITH CLADDING MANUFACTURER'S INSTRUCTIONS.
- 3.2 DUCTWORK

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- PROVIDE GALVANIZED STEEL DUCTWORK AND HOUSINGS AS SHOWN ON DRAWINGS. CONSTRUCT Α. DUCTWORK INCLUDING FITTINGS AND TRANSITIONS IN CONFORMANCE WITH CURRENT SMACNA STANDARDS RELATIVE TO GAUGE, BRACING, JOINTS, ETC. MINIMUM THICKNESS OF DUCT SHALL BE 26-GAUGE SHEET METAL. REINFORCE HOUSINGS AND DUCTWORK OVER 30 INCHES WITH 1-1/4 INCH ANGLES NOT LESS THAN 5'-6" ON CENTERS, AND CLOSER IF REQUIRED FOR SUFFICIENT RIGIDITY TO PREVENT VIBRATION. SUPPORT HORIZONTAL RUNS OF DUCT FROM STRAP IRON HANGERS ON CENTERS NOT TO EXCEED 8'-0". DO NOT SUPPORT CEILING GRID, CONDUITS, PIPES, EQUIPMENT, ETC. FROM DUCTWORK. COORDINATE ROUTING OF DUCTWORK WITH OTHER CONTRACTORS SUCH THAT PIPING, ELECTRICAL CONDUIT, AND ASSOCIATED SUPPORTS ARE NOT ROUTED THROUGH THE DUCTWORK.
- CONSTRUCT NON-VAV SUPPLY DUCTS TO MEET SMACNA POSITIVE PRESSURE OF 3 INCHES W.G. Β. CONSTRUCT RETURN, OUTDOOR AND EXHAUST DUCTWORK UPSTREAM OF FANS TO MEET SMACNA NEGATIVE PRESSURE OF 2 INCHES W.G.
- CONSTRUCT VAV PRIMARY SUPPLY AIR DUCTS (UPSTREAM OF TERMINAL BOXES) TO MEET SMACNA POSITIVE PRESSURE OF 4 INCHES W.G. CONSTRUCT VAV SECONDARY SUPPLY AIR DUCTS (DOWNSTREAM OF TERMINAL BOXES) TO MEET SMACNA POSITIVE PRESSURE OF 2 INCHES W.G.
- PROVIDE MILL PHOSPHATIZED OR GALVANEALED FINISH FOR EXPOSED DUCTWORK TO BE FIELD PAINTED. D SHOP TREATED SHEET METAL SHALL HAVE GALVANIZED METAL PRIMER APPLIED IN THE SHOP AFTER FABRICATION AND PRIOR TO SHIPPING.
- SEAL DUCTWORK WITH HEAVY LIQUID SEALANT, HARDCAST IRONGRIP 601, DESIGN POLYMER DP 1010, E. UNITED MCGILL DUCT SEALER OR APPROVED EQUAL, APPLIED ACCORDING TO SEALANT MANUFACTURER'S INSTRUCTIONS. SEAL ALL LONGITUDINAL AND TRANSVERSE DUCTWORK JOINTS AIRTIGHT TO MEET SMACNA SEAL CLASS A. TAPES AND MASTICS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A.
- PROVIDE RADIUS ELBOWS, TURNS, AND OFFSETS WITH A MINIMUM CENTERLINE RADIUS OF 1-1/2 TIMES THE DUCT WIDTH. WHERE SPACE DOES NOT PERMIT FULL RADIUS ELBOWS. PROVIDE SHORT RADIUS ELBOWS WITH A MINIMUM OF TWO CONTINUOUS SPLITTER VANES. VANES SHALL BE THE ENTIRE LENGTH OF THE BEND. PROVIDE MITERED ELBOWS WHERE SPACE DOES NOT PERMIT RADIUS ELBOWS, WHERE SHOWN ON THE DRAWINGS, OR AT THE OPTION OF THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. MITERED ELBOWS LESS THAN 45 DEGREES SHALL NOT REQUIRE TURNING VANES. MITERED ELBOWS 45 DEGREES AND GREATER SHALL HAVE SINGLE THICKNESS TURNING VANES OF SAME GAUGE AS DUCTWORK, RIGIDLY FASTENED WITH GUIDE STRIPS IN DUCTWORK. VANES FOR MITERED ELBOWS SHALL BE PROVIDED IN ALL SUPPLY AND EXHAUST DUCTWORK AND IN RETURN AND OUTSIDE AIR DUCTWORK THAT HAS AN AIR VELOCITY EXCEEDING 1000 FPM. DO NOT INSTALL VANES IN GREASE DUCTWORK.
- G. DUCTS SHALL BE CONNECTED TO FANS. FAN CASINGS AND FAN PLENUMS BY MEANS OF FLEXIBLE CONNECTORS. FLEXIBLE CONNECTORS SHALL BE NEOPRENE COATED GLASS CLOTH CANVAS



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	CONNECTIONS, DURO-DYNE, ELGEN, VENTFABRIC OR EQUAL. FLEX FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED RATING N JOINTS AND INSTALL WITH MINIMUM 1-1/2 INCHES SLACK.	(IBLE CONNECTORS SHALL HAVE A OT HIGHER THAN 50. MAKE AIRTIGHT	PART 5 - TEMPERATURE CONTROLS 5.1 GENERAL REQUIREMENTS				
	H. PROVIDE BALANCING DAMPERS, MANUFACTURED BY CESCO, GREE INDUSTRIES, POTTORFF, RUSKIN, TAMCO, OR APPROVED EQUAL, W WHEREVER NECESSARY FOR COMPLETE CONTROL OF AIR FLOW. S CONTROLLED BY LOCKING QUADRANTS; PROVIDE YOUNG REGULA THE DAMPER ROD. RECTANGULAR VOLUME DAMPERS SHALL BE OF	ENHECK, LOUVERS & DAMPERS, NAILOR VHERE SHOWN ON DRAWINGS AND SPLITTER DAMPERS SHALL BE TOR OR VENTLOK END BEARINGS FOR PPOSED BLADE INTERLOCKING TYPE	A. PROVIDE A COMPLETE SYSTEM OF PANELS, THERMOSTATS, SENSORS WIRING REQUIRED TO PROVIDE THE	TEMPERATURE CONTROLS , TIME SWITCHES, OVERRIE E DESIRED CONTROL SYST	E INCLUDING CONTROLLERS, CONTROLLERS, CONTROLLERS, ACTUATORS, RELAYS, A EMS SPECIFIED ON THE DRAWINGS	RATION	
D	 ROUND VOLUME DAMPERS SHALL BE SINGLE-BLADE TYPE CONSIST A SHAFT. I. WHERE ACCESS TO DAMPERS THROUGH A HARD CEILING IS REQUI TECHNOLOGY MODEL RT-250 OR EQUAL BY YOUNG'S REGULATOR 	IRED, PROVIDE A METROPOLITAN AIR CONCEALED, CABLE OPERATED	AND MAINTENANCE DATA, INCLUDIN PROCEDURES INDEXED FOR EACH CLEANING METHODS AND MATERIA	G TROUBLE-SHOOTING MA CONTROLLER AND THERM LS, AND CALIBRATION TOLE	NNECTIONS BETWEEN FIELD INSTA	IOD,	
	VOLUME DAMPER WITH REMOTE OPERATOR. DAMPER SHALL BE AD FACE OR FRAME WITH STANDARD 1/4 INCH NUTDRIVER OR FLAT SC ATTACH TO DAMPER AS ONE PIECE WITH NO LINKAGE ADJUSTMEN DAMPER CONTROL SHALL BE PROVIDED WITH NO SLEEVES, SPRIN LOOSE AFTER INSTALLATION. SUPPORT CABLE ASSEMBLY TO AVO	DJUSTABLE THROUGH THE DIFFUSER CREWDRIVER. CABLE ASSEMBLY SHALL T. POSITIVE, DIRECT, TWO-WAY GS OR SCREW ADJUSTMENTS TO COME ID BENDS AND KINKS IN CABLE.	EQUIPMENT AND PACKAGE WIRING SIZED TO ACCOMMODATE THE VOL DEVICE AND THE CONTROLLER. D. PROVIDE SUPERVISION AND ON-JOI	FURNISHED WITH THE HVA TAGE DROP ASSOCIATED V B CHECKOUT SERVICE AS F	C EQUIPMENT. CONTROL WIRING S VITH THE DISTANCE BETWEEN THE REQUIRED TO ENSURE THAT INSTAI	HALL BE CONTROL	
	J. ROUND OR OVAL DUCTWORK SHALL BE SEMCO, UNITED, HERCULES WITH SMOOTH INTERIOR SURFACE, WITH LOW PRESSURE (DUCT PI 2 INCHES W.G.) ROUND DUCTWORK GAUGES PER THE FOLLOWING DUCT CONSTRUCTION STANDARDS FOR GAUGES WHEN PRESSURE	S INDUSTRIES OR EQUAL, SHEETMETAL, RESSURE CLASS UP TO AND INCLUDING TABLE (REFERENCE SMACNA HVAC ES EXCEED 2 INCHES W.G.):	AND OPERATION OF THE TEMPERA SPECIFICATIONS, AND SEQUENCES OF ONE YEAR FOLLOWING THE ACC DEFECTS OCCURRING DURING THIS	TURE CONTROL SYSTEM M OF OPERATION. THE SYST EPTANCE OF THE SYSTEM PERIOD AT NO ADDITION	EETS REQUIREMENTS OF THE DRAY EM SHALL BE GUARANTEED FOR A BY THE ARCHITECT/ENGINEER. CO AL COST TO THE OWNER.	VINGS, PERIOD RRECT	
	1. SIZE DUCT GAUGE FITTING GAUGE 14" & UNDER 26 24 15" THRU 26" 24 22 28" THRU 36" 22 20 38" THRU 50" 20 20		E. INSTALL CONTROL DEVICES WITH T UNLESS OTHERWISE NOTED ON TH 5.2 WIRING	OP OF DEVICE AT 48 INCHE E PLANS.	ES AFF TO MEET ADA REQUIREMEN	TS	
	K. LEWIS & LAMBERT, LINX INDUSTRIES LINDAB SAFE, OR APPROVED FROUND DUCTWORK AND FITTINGS MAY BE SUBSTITUTED FOR SPEC	EQUAL FACTORY-MANUFACTURED CIFIED ROUND BRANCH DUCTWORK, AT	 A. PROVIDE ELECTRICAL AND CONTRO 5.3 THERMOSTAT CONTROL EQUIPMEN A. MANUFACTURERS AND MODEL NUM 	DL WIRING AS SPECIFIED U T IBERS ARE LISTED FOR RE	NDER THE SECTION "ELECTRICAL W FERENCE AS TO QUALITY AND FEA ⁻	/IRING." TURES	
	L. LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2 DIAMETER AND LESS SHALL BE PREFABRICATED, SPOT-WELDED AN CONTINUOUSLY WELD FITTINGS LARGER THAN 24 INCHES IN DIAME	INCHES W.G.) FITTINGS 24 INCHES IN ND INTERNALLY SEALED.	REQUIRED FOR THE CONTROL DEV CONTROLS, TRANE, OR EQUAL. B. SEVEN DAY PROGRAMMABLE, OCCU AND COOLING SYSTEMS. ORDER TH	CES. PROVIDE CONTROL E JPIED/UNOCCUPIED THERM IERMOSTAT WITH MULTI-S	DEVICES BY HONEYWELL, JOHNSON MOSTATS FOR MODULATING OF HEA FAGE CAPABILITY AS REQUIRED TO	ATING MATCH	
	GAUGE FOR 36 INCH FITTINGS AND UNDER, 20 GAUGE FOR LARGER CONICAL TYPE. SEAL LONGITUDINAL AND TRANSVERSE DUCTWOR SEALANT APPLIED ACCORDING TO MANUFACTURER'S INSTRUCTIO MEDIUM PRESSURE (DUCT PRESSURE CLASS 3 INCHES TO 6 INCHE BY SMACNA	R SIZES. 90 DEGREE TEES SHALL BE K JOINTS AIRTIGHT WITH HEAVY LIQUID NS. PROVIDE GAUGE THICKNESS IN S W.G.) DUCTWORK AS RECOMMENDED	SCHEDULED UNIT COOLING/HEATIN C. REMOTE SENSORS INTEGRATED W	G STAGES. TH THE THERMOSTAT.			
С	 3.3 FLEXIBLE DUCT A. LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2 (DUCT PRESSURE CLASS 2.1 INCH TO 6 INCHES W.G.) ELEXIBLE DUCK 	INCHES W.G.) AND MEDIUM PRESSURE	6.1 DESCRIPTION PERFORM ACCEPTANCE TEST PROCEDURES REFERENCE JOINT APPENDICES FOR THE BI	S IN ACCORDANCE WITH TH JILDING ENERGY EFFICIEN	E SPECIFICATIONS LISTED IN THE CY STANDARDS OF CALIFORNIA. RE	FERENCE	
	THERMAFLEX TYPE G-KM, M-KE, JPL TYPE SILVER JACKET, OR EQU/ PROTECTIVE VAPOR BARRIER, U.L.181 CLASS 1, ACOUSTICAL INSUL INSULATION. PROVIDE CPE LINER WITH STEEL WIRE HELIX MECHAN BONDED TO THE LINER.	AL (FIRE RETARDANT POLYETHYLENE) _ATED DUCT, R-8.0 FIBERGLASS NICALLY LOCKED OR PERMANENTLY	WHICH SHALL BE TESTED. SUBMIT NON-RES SYSTEM FOR WHICH THE CMATT IS RESPON	IDENTIAL CERTIFICATE OF SIBLE.	ACCEPTANCE (NRCA) FORMS FOR I	EACH	
	 B. FLEXIBLE DUCT RUNS SHALL NOT EXCEED 5 FEET IN LENGTH, AND 3 AND STRAIGHT AS POSSIBLE AVOIDING TIGHT TURNS. INSTALL FLEX MANUFACTURER'S INSTRUCTIONS. SUPPORT FLEXIBLE DUCT AT M/ 6 INCHES OF BENDS. BENDS SHALL NOT EXCEED A CENTERLINE RA SAG SHALL NOT EXCEED 1/2 INCH. SUPPORTING MATERIAL IN DIRE/ NOT BE LESS THAN 1-1/2 INCHES IN WIDTH. 	SHALL BE INSTALLED FULLY EXTENDED XIBLE DUCT IN ACCORDANCE WITH AXIMUM 5 FEET ON CENTER AND WITHIN ADIUS OF ONE DUCT DIAMETER. DUCT CT CONTACT WITH THE DUCT SHALL		END OF SECTION 23			
	C. CONNECT FLEXIBLE DUCT TO RIGID METAL DUCT OR AIR DEVICES A MANUFACTURER. AT A MINIMUM, INSTALL TWO WRAPS OF DUCT TA CONNECTION AND A METALLIC OR NON-METALLIC CLAMP OVER THI TAPE OR A CLAMP OVER THE OUTER JACKET. DUCT CLAMPS SHALL UL-181B AND MARKED 181B-C. DUCT TAPE SHALL BE LABELED IN AC 181B-FX.	AS RECOMMENDED BY THE APE AROUND THE INNER CORE E TAPE AND TWO WRAPS OF DUCT BE LABELED IN ACCORDANCE WITH CCORDANCE WITH UL 181B AND MARKED					
	3.4 SMOKE DETECTORS	DITION TO LOCATIONS REQUIRED BY					
	THE SPECIFICATIONS. PROVIDE SMOKE DETECTORS MANUFACTUR MANUFACTURERS: NOTIFIER; SIMPLEXGRINNELL; SIEMENS-CERBEF GAMEWELL-FCI; FIKE CORPORATION; FARENHYT OR APPROVED EQ B. DUCT MOUNTED SMOKE DETECTOR: PHOTOELECTRIC DETECTOR /	ED BY THE FOLLOWING RUS DIVISION; KIDDE/EDWARDS; QUAL.					
	ISOLATOR DETECTOR MOUNTING BASE. PROVIDE FOR VARIATIONS AND 4000 FEET PER MINUTE. PROTECT THE MEASURING CHAMBER AN AIR EXHAUST TUBE AND AN AIR SAMPLING INLET TUBE THAT EX SUPPORT TUBING LONGER THAN 36 INCHES AT BOTH ENDS. PROV GASKETS TO FACILITATE LOCATING AND MOUNTING OF THE HOUSI	IN DUCT AIR VELOCITY BETWEEN 100 FROM DAMAGE AND INSECTS. PROVIDE TENDS THE FULL WIDTH OF THE DUCT. IDE DRILLING TEMPLATES AND NG.					
В	C. COMPLY WITH THE "SMOKE-SENSING FIRE DETECTORS" SECTION IN NFPA 72 FOR SMOKE DETECTOR SPACING. DO NOT INSTALL SMOKE AND NOT CLOSER THAN 3 FEET FROM AN AIR SUPPLY DIFFUSER OF DETECTORS NOT CLOSER THAN 12 INCHES FROM ANY PART OF A L ABOVE PENDANT MOUNTED OR INDIRECT LIGHTING. INSTALL A CO IS NOT PLACED IN SERVICE DURING CONSTRUCTION. COVER SHALL SYSTEM TESTING. REMOVE COVER PRIOR TO SYSTEM TURNOVER. ACCORDANCE WITH NFPA 72 AND LOCAL FIRE DEPARTMENT REQU	N THE "INITIATING DEVICES" CHAPTER IN E DETECTORS IN A DIRECT AIR FLOW R RETURN AIR OPENING. LOCATE .IGHTING FIXTURE AND NOT DIRECTLY VER ON EACH SMOKE DETECTOR THAT L REMAIN IN PLACE EXCEPT DURING TEST ALL DETECTORS IN IREMENTS.					
	PART 4 - HVAC EQUIPMENT						
	 4.1 ROOFTOP UNITS (HEAT PUMP) 3-20 TONS A. PROVIDE PACKAGE ROOFTOP HEAT PUMP UNITS AS SCHEDULED O AAON, CARRIER, DAIKIN, JOHNSON CONTROLS, TRANE, OR YORK, C DIRECT-DRIVE HERMETIC COMPRESSORS WITH INTERNAL SPRING 	ON THE DRAWINGS, MANUFACTURED BY COMPLETE WITH FACTORY INSTALLED VIBRATION ISOLATION, BUILT-IN MOTOR					
	THERMAL OVERLOAD PROTECTION, CRANKCASE HEATER, AND LOW EXPANSION EVAPORATING AND CONDENSING COILS, MINIMUM SEE MINIMUM HSPF OR COP RATING (HEATING) AS REQUIRED BY THE AF IF SCHEDULED ON THE DRAWINGS; CENTRIFUGAL EVAPORATOR BL FILTERS; PROPELLER TYPE CONDENSER FAN; ELECTRIC SUPPLEM	N PRESSURE SWITCHES; DIRECT R OR EER RATING (COOLING) AND PPLICABLE ENERGY CODE OR GREATER OWER; AIR FILTER RACK WITH MERV 13 ENTAL HEAT MODULES CONSTRUCTED					
	FEATURES AND CONTROLS INCLUDING AUTOMATIC RESET HIGH LIN MICRO-PROCESSOR CONTROLS INCLUDING ANTI-SHORT CYCLE TIN MINIMUM "ON" TIME CONTROLS; BUILT-IN THERMAL OVERLOAD PRC COMPRESSORS; REVERSING VALVE, SUCTION LINE ACCUMULATOF	MIT; COMPLETE FACTORY INSTALLED MERS, TIME DELAY RELAYS AND DTECTION ON MOTORS AND R, FLOW CONTROL CHECK VALVE, AND					
	WEATHERTIGHT HOUSING CONSTRUCTED OF ZINC COATED, HEAVY WEATHER-RESISTANT BAKED ENAMEL FINISH; MINIMUM INSULATED ROOF CURB WITH MINIMUM HEIGHT OF 12 INCHES FOR ROOFS WITH ROOFS WITH INSULATION OR AS SCHEDULED ON THE DRAWINGS; & CONNECTION, PROVIDE SLOPED ROOF CURB AS REQUIRED TO MA	Y GAUGE, GALVANIZED STEEL WITH DOWNFLOW VIBRATION ISOLATION H NO INSULATION, 14 INCHES FOR SINGLE POINT ELECTRICAL POWER					
A	THAT UNIT IS INSTALLED LEVEL. PROVIDE GUARDS OR LOUVERED F COIL FROM HAIL OR OTHER DAMAGE. PROVIDE A 125 VAC, 20 AMP E MOUNTED TO UNIT READY FOR FIELD WIRING WITH A COVER UL LIS WHEN IN USE. PROVIDE HONEYWELL OR EQUAL ELECTRONIC PROV PROVIDE UNIT COMPLETE WITH MANUFACTURER'S ONE YEAR GUA	PANELS TO PROTECT THE CONDENSER DUPLEX CONVENIENCE RECEPTACLE STED FOR WET AND DAMP LOCATIONS GRAMMABLE TYPE THERMOSTAT. RANTEE ON COMPONENTS PLUS AN					
	ADDITIONAL FOUR YEAR GUARANTEE ON THE COMPRESSORS. FOR ECONOMIZER ASSEMBLY, THE ASSEMBLY SHALL BE COVERED WITH WARRANTY, CERTIFIED TO OPERATE THROUGH 60,000 DAMPER OP CERTIFIED TO MEET LEAKAGE REQUIREMENTS SPECIFIED UNDER	R UNITS EQUIPPED WITH AN H MINIMUM 5 YEAR MANUFACTURER ENING AND CLOSING CYCLES, AND THE SECTION, "CONTROL DAMPERS."					
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5					NOT FOR CONSTRUCTION		Stantec Const 801 South Figu Los Angeles, Tel: (213) 955-
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Project No. 2014240805 Revision

Title MECHANICAL SPECIFICATIONS (3)



GEN	ERAL	ES

1. THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2022 CALIFORNIA FIRE CODE, 2022 CALIFORNIA PLUMBING CODE, 2022 CALIFORNIA BUILDING CODE AND ALL OTHER APPLICABLE CODES & REGULATIONS.

2. SEE ARCHITECTURAL AND EQUIPMENT DRAWINGS FOR EXACT LOCATION OF ALL EQUIPMENT AND PLUMBING FIXTURES.

3. COORDINATE ALL LOCATIONS, SIZES AND ELEVATIONS OF ALL SLEEVES THROUGH STRUCTURES WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.

4. COORDINATE AND VERIFY EXACT LOCATION, SIZE, POINT OF CONNECTIONS AND ELEVATIONS OF UTILITY SERVICE PIPING BEFORE TRENCHING OR INSTALLATION. 5. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR WALL AND PARTITION CONSTRUCTION AND

THICKNESS WHERE PLUMBING PIPING, VALVES OR EQUIPMENT ARE INDICATED. 6. ALL VALVES SHALL BE LOCATED TO BE READILY ACCESSIBLE. ACCESS PANELS SHALL BE INSTALLED WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS OR NON-REMOVABLE CEILINGS.

7. COORDINATE ALL PIPING AND EQUIPMENT LOCATIONS WITH OTHER TRADES.

8. OFFSET ALL VERTICAL PIPES TO AVOID BEAMS & ANY OTHER STRUCTURAL OBSTRUCTIONS NOT SHOWN ON PLANS. 9. BECAUSE OF THE SMALL SCALE OF THE DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED FOR A COMPLETE PLUMBING SYSTEM. THE

CONTRACTOR WILL CAREFULLY INVESTIGATE THE STRUCTURAL, FINISH CONDITIONS, AS WELL AS WORKS OF OTHER SERVICES THAT AFFECTS ALL HIS WORK AND WILL COORDINATE AND ARRANGE SUCH WORK ACCORDINGLY, FURNISHING REQUIRED FITTINGS, TRAPS, VALVES AND ACCESSORIES TO MEET SUCH CONDITIONS THAT MAYBE REQUIRED FOR A COMPLETE PLUMBING SYSTEM. 10. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE OF WORK AND TO INDICATE

GENERAL ARRANGEMENT. THEY ARE NOT INTENDED TO SHOW EVERY DETAIL INCLUDING OFFSET OR FITTING OR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING THE WORK. EXCEPT AS OTHERWISE INDICATED, LOCATIONS OF ITEMS ARE APPROXIMATE ONLY. EXACT LOCATIONS NECESSARY TO SECURE PROPER CONDITIONS AND RESULTS MUST BE DETERMINED AT PROJECT SITE AND MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.

11. EXCEPT AS OTHERWISE INDICATED, MAKE REASONABLE MODIFICATIONS IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH OTHER WORK OR FOR PROPER EXECUTION OF WORK. 12. INCLUDE WORK NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER INSTALLATION

AND OPERATION OF A SYSTEM OR PIECE OF EQUIPMENT IN WORK. 13. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS AND INFORMATION.

14. REFER TO CIVIL DRAWINGS FOR ADDITIONAL SITE UTILITY INFORMATION AND DETAILS.

15. CONTRACTOR SHALL OBTAIN APPROVAL FROM STRUCTURAL ENGINEER FOR PENETRATIONS THROUGH STRUCTURAL ELEMENTS PRIOR TO START OF WORK. INSTALL SLEEVES FOR ALL PIPES PENETRATING THROUGH STRUCTURAL ELEMENTS.

16. ALL HORIZONTAL WASTE PIPING SHALL SLOPE AT 2% MINIMUM.

17. ALL SANITARY SEWER VENTS TERMINATING THROUGH THE ROOF SHALL BE INSULATED TO PREVENT CONDENSATION FROM FORMING AND SHALL INCLUDE A VAPOR BARRIER JACKET ON THIS INSULATION. ALL COLD WATER AND STORM WATER PIPING EXPOSED IN PLENUMS OR ABOVE CEILINGS SHALL BE INSULATED TO PREVENT CONDENSATIONS.

18. WATER HAMMER ARRESTORS SHALL BE PROVIDED AT EVERY BRANCH TO MULTIPLE FIXTURES AND ON EVERY FLOOR FOR BOTH HOT AND COLD WATER.

19. PROVIDE TRAP PRIMERS TO ALL FLOOR SINK AND FLOOR DRAINS IN THE BUILDING INCLUDING SHOWER DRAINS. CONCEALED TRAP PRIMER VALVES SHALL BE PROVIDED WITH ACCESS PANELS. COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.

20. RAINWATER DRAINAGE SYSTEMS PIPE SIZING IS BASED ON 2.0 INCH RAINFALL PER HOUR AND 100 YEARS RETURN. 21. PROVIDE CONDENSATE DRAIN PIPING TO ALL FAN COIL UNITS AND MECHANICAL EQUIPMENT W/

TRAP, UNIONS & FLEXIBLE CONNECTIONS AND SPILL TO APPROVED RECEPTACLE OR CONNECT TO LAVATORY/SINK TAILPIECE. PROVIDE OVERFLOW CONDENSATE DRAIN AND TERMINATE AT FLOOR SINK OR OTHER APPROVED VISIBLE LOCATION. INSULATE ALL CONDENSATE AND OVERFLOW DRAIN PIPING INSIDE THE BUILDING. SLOPE ALL CONDENSATE DRAIN PIPING @ 1/8" PER FOOT.

22. SANITARY VENTS THRU ROOFS SHALL TERMINATE AT LEAST 10' AWAY FROM, OR 3' ABOVE ANY OPERABLE WINDOW AND 25' AWAY FROM COMBUSTION AIR OPENINGS AND FRESH AIR INTAKES. PROVIDE VENTS WITH VANDAL PROOF VENT CAPS.

23. COMPLIANCE TO ASSEMBLY BILL 1953 AND SECTION 116875 OF THE HEALTH & SAFETY CODE FOR LEAD CONTENT. a. ALL PLUMBING PIPES, FITTINGS, FIXTURES, VALVES, SOLDER, FLUX OR INSTALLATION SHALL BE FURNISHED LEAD FREE. b. ALL PLUMBING SUBMITTALS SHALL HAVE DOCUMENTATION INDICATING LEAD FREE MANUFACTURING

23. CONTRACTOR TO IMPLEMENT PRACTICES AND PROCEDURES TO MEET THE PROJECT'S ENVIRONMENTAL PERFORMANCE GOALS, WHICH INCLUDE ACHIEVING LEED SILVER CERTIFICATION. THE CONTRACTOR SHALL ENSURE THAT THE REQUIREMENTS RELATED TO WATER EFFICIENCY THROUGH WATER USE REDUCTION ARE IMPLEMENTED TO THE FULLEST EXTENT. SUBSTITUTIONS, OR OTHER CHANGES TO THE WORK OR MATERIAL PROPOSED BY THE CONTRACTOR OR THEIR SUBCONTRACTORS,

SHALL NOT BE ALLOWED IF SUCH CHANGES COMPROMISE THE STATED LEED PERFORMANCE REQUIREMENT. MAXIMUM FLOW/FLUSH RATES FOR PLUMBING FIXTURES ARE LISTED BELOW: a. WATER CLOSET : 1.28 GALLONS PER FLUSH b. URINAL : 0.125 GALLONS PER FLUSH

c. LAVATORY : 0.35 GALLONS PER MINUTE OR 0.20 GALLONS PER CYCLE SHOWER : 1.75 GALLONS PER MINUTE e. SINKS : 1.5 GALLONS PER MINUTE

AND CONTENT.

24. HOT WATER & DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. SEE CBC 1115b.4.3(4)

25. NO SHARP OR ABRASIVE SURFACE ALLOWED UNDER LAVATORIES.

26. ALL FIXTURES, EQUIPMENT, PIPING, AND MATERIALS SHOULD BE LISTED.

27. ALL FAUCETS IN THE PUBLIC RESTROOMS SHALL BE SELF CLOSING OR SELF CLOSING METERING FAUCETS.

28. PUBLIC LAVATORIES SHALL HAVE CONTROLS TO LIMIT THE WATER TEMPERATURE TO 110°F.

29. PLUMBING PIPES INSTALLED IN THE EXTERIOR WALLS, ATTIC, CRAWL SPACES OR OUTSIDE OF THE BUILDING SHALL BE PROTECTED FROM FREEZING.

30. SUSPENDED PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED THOSE SHOWN IN TABLE 313.3 [2019 CALIFORNIA PLUMBING CODE].

31. PRIOR TO UTILIZATION OF NEWLY CONSTRUCTED POTABLE WATER PIPING SYSTEMS, ALL AFFECTED POTABLE WATER PIPING SHALL BE DISINFECTED USING PROCEDURE PRESCRIBED IN 2022 CALIFORNIA PLUMBING CODE SECTIONS 609.10(1) THROUGH 609.10(4).

32. PLUMBING FIXTURES SERVED FROM RECYCLED WATER SYSTEM SHALL HAVE A SIGNAGE THAT INDICATED THAT THE SYSTEM SERVING THE FIXTURE IS RECYCLED WATER SYSTEM.

CALGREEN NOTES

* (TO BE PART OF TESTING & BALANCING SCOPE)

Α

NEW PLUMBING FIXTURES AND FITTINGS SHALL NOT EXCEED THE MAXIMUM ALLOWABLE FLOW RATE SPECIFIED IN TABLE 5.303.2.3 (CALGREEN 5.303.2).

B. FOR ALL NEW EQUIPMENT, AN OPERATION & SYSTEMS MANUAL SHALL BE PROVIDED TO THE FIELD NSPECTOR AT THE TIME OF FINAL INSPECTION. (CALGREEN 5.410.4.5)

C. THE HVAC, REFRIGERATION, AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CFC OR HALONS. (CALGREEN 5.508.1)

SEISMIC NOTES

1613 AND ASCE 7-10 SECTIONS 13.3, 13.4 AND 13.6.

OR PLUMBED TO THE BUILDING.

1. CONTRACTOR SHALL PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING FOR ALL PLUMBING EQUIPMENT AND REQUIRED PIPING. 2. ALL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN 2019 CBC, SECTION

VENT RISER

WASTE WITH

WALL BOX

VENT THRU ROOF

WALL CLEANOUT WASTE DROP

WEATHERTIGHT

Issued

WATER FIXTURE UNITS

WATER HAMMER ARRESTOR

WATER CLOSET (WATER COLUMN)

VR VTR

W/

WB

WC WCO

WD

WFU

WHA

WΤ

A. THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS.

A.1. EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON A FLOOR OR ROOF.

A.2. EQUIPMENT WEIGHING LESS THAN 20 POUNDS AND SUSPENDED FROM A ROOF, CEILING OR HUNG FROM A WALL.

A.3. EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIRBRATION ISOLATORS.

A.4. TEMPORARY OR MOVEABLE EQUIPMENT THAT IS NOT HARDWIRED

A.5. THE CONTRACTOR SHALL SUBMIT THE ANCHORAGE DETAILS AND CALCULATIONS FOR ITEMS NOT SHOWN ON THE DRAWINGS AND FOR ALL SUBSTITUTED EQUIPMENT THAT IS GREATER IN WEIGHT OR VARIES MORE THAN 10% IN LENGTH, HEIGHT OR WIDTH FROM THE APPROVED DETAILS TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW (ALLOW 4-WEEK REVIEW PERIOD). FOLLOWING THE REVIEW BY THE STRUCTURAL ENGINEER OF RECORD, THE CONTRACTOR SHALL SUBMIT THE ANCHORAGE DETAILS AND CALCULATIONS TO THE ARCHITECT (THIS SHALL BE DONE AT LEAST 12 WEEKS PRIOR TO THE SCHEDULED

EQUIPMENT INSTALLATION). THE CONTRACTOR'S STRUCTURAL ENGINEER

3. PIPING SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-05 SECTION 13.3 AS DEFINED IN ASCE 7-05

SHALL PARTICIPATE IN ALL BACK CHECKING PROCEDURES.

SECTION 13.6.8, 13.6.7 AND 13.6.5.5, ITEM 6 RESPECTIVELY. A. THE BRACING AND ATTACHMENT TO STRUCTURE SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS WITH AN OPA NUMBER SUCH AS MASON INDUSTRIES (OPA 349) OR ISAT (OPA 485) AS MODIFIED TO

B. COPIES OF THE MANUAL SHALL BE ON THE JOBSITE PRIOR TO STARTING HANGING AND BRACING PIPING SYSTEMS.

SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

C. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

4. THE CALCULATIONS AND DETAILS SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD SHALL BE SEALED AND SIGNED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA. THE CALCULATIONS SHALL DEMONSTRATE THE FOLLOWING:

A. THE ADEQUACY OF ANCHORAGE UNDER ALL APPLICABLE LOAD CONDITIONS PRESCRIBED BY THE CALIFORNIA BUILDING CODE.

B. THE STRUCTURAL ELEMENTS, WHICH ARE RESISTING THE ANCHORAGE LOADS; SUCH AS CONCRETE FILL ON METAL DECK AND

STEEL BEAMS, ARE NOT STRESSED BEYOND ITS ACCEPTABLE VALUE. 5. FOR ALL VIBRATION ISOLATORS AND THEIR ANCHORAGES, THE CONTRACTOR SHALL PROVIDE CALCULATIONS, DETAILS AND TEST DATA TO SUBSTANTIATE THE ISOLATOR'S CAPACITY FOR VERTICAL AND LATERAL LOADS. CALCULATIONS MUST ALSO BE SUBMITTED TO SUBSTANTIATE THE SIZE, QUANTITY, LOCATION AND CONNECTION TO STRUCTURE. THE DRAWINGS MUST BE MADE CONSISTENT WITH THE CALCULATIONS. THE MANUFACTURER. EQUIPMENT AND STRUCTURAL ATTACHMENT PROCEDURE MUST BE CLEARLY SPECIFIED. ISOLATORS WHICH SUPPORT A COMPONENT INSIDE THE ACTUAL UNIT WILL NOT BE

6. WHERE CONCRETE AND MASONRY EXPANSION OR ADHESIVE TYPE ANCHORS ARE USED, THE ANCHORAGE DETAILS AND CALCULATIONS SHALL INDICATE MANUFACTURER, ICBO REPORT NO., TYPE, DIAMETER, MINIMUM EMBEDMENT, CONCRETE TYPE AND STRENGTH.

REVIEWED

7. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. LOCATE REINFORCEMENT BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.

8. NO POWDER DRIVEN FASTENERS AND/OR SHOT PINS ARE ALLOWED FOR HANGING PLUMBING SYSTEMS.

9. ALL EXPANSION ANCHORS SHALL HAVE 50% OF THE BOLTS TESTED. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE PASS, THEN RESUME THE INITIAL TESTING FREQUENCY. TESTING SHALL OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS, IN ACCORDANCE WITH IR19-1.

10. SEE STRUCTURAL DRAWINGS FOR CONCRETE EXPANSION ANCHOR MATERIAL AND TESTING REQUIREMENTS.

11. WHERE PLUMBING PIPING CROSSES BUILDING SEISMIC JOINTS, PROVIDE FLEXIBLE SEISMIC JOINT WITH A HORIZONTAL/VERTICAL MOVEMENT CAPACITY AS SPECIFIED BY THE STRUCTURAL ENGINEER. SUPPORT FLEXIBLE SEISMIC JOINT ASSEMBLY ON BUILDING STRUCTURE AT EACH END OF THE ASSEMBLY USING HANGERS WITH SEISMIC BRACING. GAS PIPING EXPANSION SEISMIC JOINT SHALL BE AGA APPROVED.

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Revision	Ву	Appd	ΥY

ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

ABBRI	EVIATIONS							
A AW ABC ABV	ACCESSIBLE ACID WASTE LINE ABOVE CEILING ABOVE		PLUMBING	RF		т	SYMBOI	PIPING COMPC
AD AFF	ACCESS DOOR ABOVE FINISHED FLOOR	2 1/2"	PIPE SIZE		<u>下</u>	五	OTMEOL	
AFG AFR	ABOVE FINISHED GRADE ABOVE FINISHED ROOF	XX	PIPING ROUTED BELOW SLAB OR GRADE		H T	O T	-	ISOLATION VALVE (GENERIC)
AP ARCH'L	ACCESS PANEL ARCHITECTURAL	AV	ACID VENT	Ø		0 T		GATE VALVE
BFF	BELOW FINISHED FLOOR	AW	ACID WASTE ABOVE GRADE OR ELOOR		ů.	ð		GLOBE VALVE
BTU BFG	BRITISH THERMAL UNIT BELOW FINISHED GRADE			Ť	Î A	j j	—–-I[i——-	BUTTERFLY VALVE NPS 6 AND LESS
CD	CONDENSATE DRAIN		COMPRESSED AIR (NOMINAL PRESSURE)	N	٢	Õ	—–-I[i——-	BUTTERFLY VALVE NPS 8 AND MORE
CFH CI	CUBIC FEET PER HOUR CAST IRON	CA(##)		ď		â	ф—	BALL VALVE
CL CLG	CLEAR CEILING	CD(P)		- =	- H	Q		PLUG VALVE
CO CONN	CLEANOUT CONNECT (CONNECTION)				->		— X —	NEEDLE VALVE
CONT CWD(R)	CONTINUATION COLD WATER DROP (RISER)	U		Ā		8		CHECK VALVE (GENERIC)
DF	DRINKING FOUNTAIN	DIR				Ō	l&I	BALANCING VALVE
DIA DWGS	DIAMETER DRAWINGS	DW			_	-	——————————————————————————————————————	FLOW LIMITING VALVE
FA	FACH	DCW	DOMESTIC COLD WATER	ion o		ਠੂ ਜ਼ਿ		PRESSURE REDUCING VALVE
EC	ELECTRICAL CONTRACTOR	DCW(S)	DOMESTIC COLD WATER SOFTENED	2-WAY	[₽] Ţ	₽ ₽		2-WAY CONTROL VALVE (GENERIC)
EL	ELEVATION FLECTRIC WATER COOLER	DHW	DOMESTIC HOT WATER	2-WAY	Ĩ			TWO-WAY ELECTRIC CONTROL VALVE
(E)	EXISTING	DHWR	DOMESTIC HOT WATER RECIRCULATION	3-WAY	×	ā ģ		3-WAY CONTROL VALVE (GENERIC)
FCO FD	FLOOR CLEANOUT FLOOR DRAIN	D	DRAIN	3-WAY			·	THREE-WAY ELECTRIC CONTROL VAL
FIN FLR FPS	FINISHED FLOOR FIRE PROTECTION SYSTEM	GW	GREASE WASTE	-11 CP	習	8	&	SOLENOID 2-WAY CONTROL VALVE
FS(R) FS	FIRE SPRINKLER (RISER) FLOOR SINK	H	HUMIDIFICATION				<u> </u>	SOLENOID 3-WAY CONTROL VALVE
F.U. FUT	FIXTURE UNITS FUTURE	LV	LABORATORY VENT					FLOAT OPERATED VALVE ACTUATOR
GA	GAUGE OR GAGE	LW	LABORATORY WASTE	a	Ê.	8		SAFETY OR RELIEF VALVE
GC	GENERAL CONTRACTOR GRADE CLEANOUT	G	NATURAL GAS				↓ ∧	ANGLE VALVE
GI GPF	GALVANIZED IRON GALLONS PER FLUSH	GV	NATURAL GAS VENT				+ Z	BOILER STOP AND CHECK VALVE
GPM GV	GALLONS PER MINUTE GATE VALVE	NPCW	NON-POTABLE COLD WATER		十一十 甲巴吗	Ē	-BFP-	BACKFLOW PREVENTER (GENERIC)
GWH	GAS WATER HEATER	NPCW(S)	NON-POTABLE COLD WATER SOFTENED	@	24	å		MULTI-PURPOSE VALVE (SHUTOFF. BA
HB HDR	HOSE BIBB HEADER	NPHW	NON-POTABLE HOT WATER	Ø	Ō	<u>@</u>		SUCTION DIFFUSER
HP HWD(R)	HORSEPOWER HOT WATER DROP (RISER)	NPHW(S)	NON-POTABLE HOT WATER SOFTENED	FOR				PUMP (GENERIC)
LE.	INVERT ELEVATION	PTS	PNEUMATIC TRANSPORT	-		Ø		
IMB	ICE MAKER BOX	PG	PROPANE GAS	\otimes	∽∽ 骨	び 介	· > '	STEAM TRAP (GENERIC)
KW	KILOWATT		RECYCLED WATER	Δ	•	•	_~_ <u>}</u>	
LAV LPG	LAVATORY LIQUIFIED PETROLUM GAS	RO	REVERSE OSMOSIS	\bigtriangleup			_~ 	
		ROR	REVERSE OSMOSIS RECIRCULATING	6	8		Ÿ	
MAX MBH	THOUSANDS BTU'S PER HR	SL	SAMPLING LINE	Ĺ,			Q	
MECHL	MECHANICAL MANUFACTURER	SAN	SANITARY DRAIN	Щ	Ů		μ	
MIIN (NI)		SAN(O)	SANITARY DRAIN (OIL)	\bigcirc	م	_		
(IN) NI(P)C	NOT IN (PLUMBING) CONTRACT	SAN(P)	SANITARY PUMPED	(<u>)</u> 		Ŀ	 Џ	
ОН	OVERHEAD	SAN(RAD)	SANITARY RADIOACTIVE					
OFD		ST	STORM DRAIN	h-d	h—1	\sim		
DOC		ST(0)	STORM OVERFLOW	ĻЦ	Щ	0		
POC PSI	POINT OF CONNECTION POUNDS SQUARE INCH	ST(P)	STORM PUMPED					EXPANSION JOINT
PAIR	PRESSURE AND TEMPERATURE RELIEF	VAC	VACUUM (AIR)				<u> </u>	GUIDE
(R)	RISER REMOVE	VAC(EX)	VACUUM PUMP EXHAUST				— <u>X</u> —	ANCHOR
RC RD	ROOF-CEPTOR ROOF DRAIN	V	VENT				1%	FLOW ARROW
(REL) REQMTS	REQUIREMENTS	V(O)	VENT (OIL)				t	PIPING SLOPE
RPBP	ROUGH-IN REDUCED PRESSURE BACKFLOW	V(SE)	VENT (SEWAGE EJECTOR)		C]	PIPE CAP
RWL	RAIN WATER LEADER	•	PIPE INSULATION	<u></u>			~	PIPE BREAK
S		·	FIXTURE TRAP	⊊∏⊐			<u>، المحمد المحم</u>	PIPE CROSS
SAN SB	SANITARY SEWER SERVICE BOX	СВ 🔿	CATCH BASIN	Q			0	PIPING ELBOW UP
SCD	SECONDARY CONDENSATE DRAIN SHOWER	MH ()	MANHOLE	ст Ц			C	PIPING ELBOW DOWN
SOC	SHUT OFF COCK SHUT OFF VALVE							PIPING TEE UP
SS	STAINLESS STEEL STRUCTURAL	FD Ø	FLOOR DRAIN					PIPING TEE DOWN
	SUFFLT/WASTE BUX		FUNNEL FLOOR DRAIN	0	0	٥		UNION CONNECTION
TOT.	TOTAL		TRAP PRIMER	Ф	Ф	O		FLANGED CONNECTION
		`∠(D	D	Ø		CONCENTRIC REDUCER
TYP	TYPICAL			D	D	0	D	ECCENTRIC REDUCER
UF				CO ^d	CO ^d			STANDARD CLEAN-OUT IN LINE END O
	UNDERGROUND UNDERWRITERS' LABORATORY	- QUANTITY	PLUMBING FIXTURE TAG (REFER TO SCHEDULE)				——(O CO	STANDARD CLEAN-OUT THROUGH FLC
UNO US	UNLESS NUTED UTHERWISE UNDER SLAB						<u></u> O	STANDARD CLEAN-OUT THROUGH FLC
	VACUUNI BREAKER VALVE BOX VENT HEADED							
VH VLV	VENT HEADER VALVE							

					Permit/Seal	Consultant	
					ISSUE FOR BID		Sta
					NOT FOR CONSTRUCTION		Stantec Consulting Services Inc. 801 South Figueroa Street Suite 300 Los Angeles, 90017-3007 Tel: (213) 955-9775 • www.stantec.c
(YYY.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	CI/FL SK CI By	GY GY GY Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Reserved The Contractor shall verify and be responsible for all dimen drawing - any errors or omissions shall be reported to Stank The Copyrights to all designs and drawings are the propert or use for any purpose other than that authorized by Stank

IPONENTS

RIC) VALVE, BUTTERFLY TYPE RIC) ROL VALVE, BUTTERFLY TYPE

OFF, BALANCING AND CHECK)

E END OF RUN JGH FLOOR END OF RUN

JGH FLOOR IN LINE

<u>GENERA</u>	L SYMBOLS
· <i>4/////////</i>	DEMOLITION
	EXISTING
	NEW WORK
СТЕ	POINT OF CONNECTION OF NEW TO EXISTING SYSTEM
	POINT OF DISCONNECTION OF DEMOLITION FROM EXISTING
	CAP OFF EXISTING
	- DETAIL NUMBER
	DETAIL CALLOUTS - SHEET ON WHICH DETAIL IS SHOWN
	- ELEVATION NUMBER
A1 A101	EXTERIOR ELEVATIONS
	- SHEET ON WHICH ELEVATION IS SHOWN
	- ELEVATION NUMBER
1 Ref A101 1 Ref 1 A101 1 Ref 1 Ref 1 Ref 1 Ref	INTERIOR ELEVATIONS
	- SHEET ON WHICH ELEVATION IS SHOWN
	- SECTION NUMBER
SIM A909	BUILDING SECTIONS
	- SHEET ON WHICH SECTION IS SHOWN
	- SECTION NUMBER
1 (A909)	WALL SECTIONS
	- SHEET ON WHICH SECTION IS SHOWN
PLOOR 0'-0"	- FLOOR OR ROOF LEVEL NAME - VERTICAL ELEVATION
	NORTH ARROW
1	DRAWING REVISION
— · · · —	MATCH LINE
<u> </u>	GRAPHIC SCALES - ENGINEERING
EL. 10000	ELEVATION
+ 0000	ELEVATION - CEILING
	DATUM ELEVATION
0000	ROOM TAG
(M01)	KEY NOTE TAG
SLOPE	SLOPE ARROW
\sim	CIRCULAR BREAK SYMBOL
\sim	CIRCLE BREAK SYMBOL
	REFERENCE SYMBOL - DIAMOND
	REFERENCE SYMBOL - HEXAGON
X	REFERENCE SYMBOL - TRIANGLE

heet Number PIUMRI PLUMBIN PLUMBIN PLUMBING DRAINAG PLUMBING PRESSUR PLUMBING PLUMBING PLUMBING PLUMBING PLUMBING SPECIFICATIONS (3)



REFERENCE SYMBOL - CIRCLE

CENTER LINE

GRID BUBBLE AND LINE

REFERENCE SYMBOL - ROTATED HEXAGON

Plumbing Sheet List
Sheet Name
G COVER SHEET
G SCHEDULES
G SITE
G MAIN BUILDING - GROUND DEMOLITION PLAN - E & PRESSURIZED
G MAIN BUILDING - GROUND FLOOR - DRAINAGE & RIZED
G VEHICLE WASH BUILDING - DRAINAGE & PRESSURIZED
G DETAILS
G SPECIFICATIONS (1)
G SPECIFICATIONS (2)

NOTE: NOT ALL SYMBOLS, SYSTEMS, AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

PLUMBING COVER SHEET



		1		2		
D						
С						
В						
A						
	ISSUE FOR BID SUBMITT	AL				
:27:18 AM			2 PLAN CHECK REVISIONS			2023.07
27/2023 10::			1 PLAN CHECK REVISIONS Revision		By Appd	2023.05 2023.05 YYYY.MI

								PLU	JMBING FIXTU	RES SCHEDULE									
									FIXTURE TYPE :W	ATER CLOSET									
UNIT IDENTIFICATION	SAN VENT	TRAP	CW	HW	MATERIAL	TYPE	STRAINER / TRAPWAY	MOUNTING	HEIGHT (IN)	RIM CONTOUR	WATER CONSUMPTION (GPF)	SPUD LOCATION	COLOR	TOILET SEAT	FLUSH VALVE	MC	DDEL	MANUFACTURER	NOTES
WC-1	4" 2"	-	2"	-	VITREOUS CHINA	SIPHON JET	-	ADA - FLOOR	17"	ELONGATED	1.1/1.6	TOP	WHITE	BEMIS COMMERCIAL 1955SSCT	СОМВО	WETS-2	2449.1200	SLOAN	1, 2, 3, 4,7
WC-2	4" 2"	-	2"	-	VITREOUS CHINA	SIPHON JET	-	FLOOR	15"	ELONGATED	1.1/1.6	TOP	WHITE	BEMIS COMMERCIAL 1955SSCT	СОМВО	WETS-2	-2449.1200	SLOAN	1, 4,7
				•				FI	FIXTURE TYP	E: URINAL									
UNIT IDENTIFICATION	SAN VENT	TRAP	CW	HW	MATERIAL	TYPE	STRAINER / TRAPWAY	MOUNTING	HEIGHT (IN)	SPUD LOCATION	WATER CONSUMPTION (GPF)	OUTLET LOCATION	COLOR	WASTE FITTING	FLUSH VALVE	MC	DDEL	MANUFACTURER	NOTES
UR-1	2" 2"	-	1-1/2"	-	VITREOUS CHINA	BLOWOUT	GRID	ADA - WALL	17"	TOP	0.125	BACK	WHITE	-	FV-1	410UHE	ECASCADE	MANSFIELD	1, 2, 3, 4,7
UR-2	2" 2"	-	1-1/2"	-	VITREOUS CHINA	BLOWOUT	GRID	WALL	24"	TOP	0.125	BACK	WHITE		FV-1	410UHE	ECASCADE	MANSFIELD	1, 4,7
	I	1	1	1	1	1	1		FIXTURE TYPE: F	LUSH VALVES	1	1			1			1	
UNIT IDENTIFICATION	OPERATOR	T	YPE	PRESSURE RATING (PSIG)		MATERIA	VA	EXPOS	SED FINISH	STYLE		Consumpti (GPF)	ON	MOE	DEL		MANUFACT	URER	NOTES
FV-1	SENSOR	EXPOSE	D - URINAL	15		SEMI-RED BRA	ASS	POLISH	IED CHROME	-		0.125		ECOS 818	86-0.125		SLOAN		1, 2, 4, 6,7
	C		ISIZES				FIXTURE C	FI HARACTERISTI	XTURE TYPE: LAV/ CS	ATORIES & SINKS				AC	CCESSORIES	3			
UNIT IDENTIFICATION	SAN VENT	TRAP	CW	HW	MATERIAL	TYPE	DIMENSIONS (IN)	QUANTITY OF HOLES	HOLE SPACING (IN)	MOUNTING MATERIAL	SOAP DISPENSER	FAUCET	MOUNT	DRAIN	TRAP GUARD	MIXING VALVE	MODEL	MANUFACTURER	NOTES
SK-1	2" 2"	1 1/4"	3/4"	3/4"	STAINLESS STEEL	SINK	30"X18"X6"	1	-	UNDERMOUNT CLIPS	-	F-2	ADA - UNDERMOUNT	GRID	YES	MV-1	PORTSMOUTH 30X18	AMERICAN STANDARD	6, 7
					1			FIX	TURE TYPE: BOTTL	E FILLING STATION	 						1	1	
							FIX TURE C		5				CTRICAL		ACCESSOF	RIES	_		
IDENTIFICATION	SAN VENT	TRAP	CW	HW	FINISH	TYPE	DIMENSIONS (IN)	CAPACIT (GPH)	BOTTLE FILLING STATION	MOUNTING	VOLTS	FLA	PHASE	RATED WATTS	TRAP GUARD	MIXING VALVE	MODEL	MANUFACTURER	NOTES
BFS-1	1 1/2" 1 1/2"	1 1/4"	1/2"	-	STAINLESS STEEL	BOTTLE FILLING STATION	17-7/8"X11-7/8"X41-1/4"	8	YES	WALL	115	1	60	370	-	-	LZ8WSSSMC	ELKAY	7
								FIXTU		RIES & SINKS FAUCI	ET								
UNIT IDENTIFICATION	TYPE	MIXING	HOT	r / Cold Cators	BODY TYPE	CENTER SPACING	BODY MATERIAL	FINISH	CONSUMPTION (GPM)	MOUNTING TYPE	VALVE HANDLE TYPE	HANDLE SIZE (IN)	VANDAL RESISTANT	SPOUT TYPE	SPOUT	OUTLET	MODEL	MANUFACTURER	NOTES
F-1	MANUAL	-		-	-	-	CAST BRASS	POLISHED CHROME	1.5	DECK	LEVER	-	YES	VANDAL PROOF	GOOS	SNECK	350-GN2FCABCP	CHICAGO FAUCETS	1, 2, 5, 6,7
								PI I		L RES SCHEDUI F									
											-								

TION AREA OR SYSTEM	MSERVED	PIPE LOCATION	PIPE SIZE (DN)	STAINLESS STEEL	COPPER DWV TUBE	COPPER TYPE K	COPPER TYPE L - ASTM B 88	MECHANICAL	SOLDERED	BRAZED (FOR MEDICAL GAS - SEE NOTE 10)	SOLVENT CEMENT	OPERATING TEMPERATURE (°F)	MINIMUM WORKING PRESSURE (PSI)	TEST PRESSURE (kPa)	TEST DURATION (HRS)	ACCEPTANCE LEVEL
IWR DOMESTIC WAT		ABOVEGROUND	NPS 1 1/2 AND SMALLER				X		X			40 - 140	100	150	12	ZERO LOSS
	ATER		NPS 2 AND SMALLER			x	^		^	x		40 - 140	100	150	12	7FR01099
FOLIPMENT WA	ASTE	ABOVEGROUND	ALL SIZES		X				X	~		40 - 140	100	150	12	7FR01059
TOIL FT ROOMS / SINKS / MIS	SC FLOOR DRAINS	ABOVEGROUND	ALL SIZES					(X			X	30 - 140	0.5	NOTE 3	12	7FR010SS
TOILET ROOMS / SINKS / MIS	SC FLOOR DRAINS	UNDERGROUND	ALL SIZES								X	30 - 140	0.5	NOTE 3	12	7FR010SS
	HWR DOMESTIC W/ EQUIPMENT W EQUIPMENT W V TOILET ROOMS / SINKS / MIS V TOILET ROOMS / SINKS / MIS V TOILET ROOMS / SINKS / MIS V TOILET ROOMS / SINKS / MIS	HWR DOMESTIC WATER EQUIPMENT WASTE V V TOILET ROOMS / SINKS / MISC FLOOR DRAINS V TOILET ROOMS / SINKS / MISC FLOOR DRAINS	HWR DOMESTIC WATER ABOVEGROUND HWR DOMESTIC WATER ABOVEGROUND HWR DOMESTIC WATER ABOVEGROUND HWR DOMESTIC WATER UNDER BUILDING SLAB EQUIPMENT WASTE ABOVEGROUND V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND V TOILET ROOMS / SINKS / MISC FLOOR DRAINS UNDER GROUND	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER UNDER BUILDING SLAB NPS 2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER HWR DOMESTIC WATER UNDER BUILDING SLAB NPS 2 AND SMALLER EQUIPMENT WASTE ABOVEGROUND ALL SIZES V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES V TOILET ROOMS / SINKS / MISC FLOOR DRAINS UNDERGROUND ALL SIZES	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER HWR DOMESTIC WATER UNDER BUILDING SLAB NPS 2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES X V TOILET ROOMS / SINKS / MISC FLOOR DRAINS UNDERGROUND ALL SIZES X	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 TO NPS 4 HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER Y TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES X V TOILET ROOMS / SINKS / MISC FLOOR DRAINS UNDER GROUND ALL SIZES V	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER X HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER X HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER X HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER X HWR DOMESTIC WATER ABOVEGROUND NPS 2 AND SMALLER X EQUIPMENT WASTE ABOVEGROUND ALL SIZES X X V TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES X X	HWRDOMESTIC WATERABOVEGROUNDNPS 1 1/2 AND SMALLERXXHWRDOMESTIC WATERABOVEGROUNDNPS 2 TO NPS 4XXHWRDOMESTIC WATERUNDER BUILDING SLABNPS 2 AND SMALLERXXHURSTIC WATERUNDER BUILDING SLABNPS 2 AND SMALLERXXTOILET ROOMS / SINKS / MISC FLOOR DRAINSABOVEGROUNDALL SIZESXXVTOILET ROOMS / SINKS / MISC FLOOR DRAINSUNDERGROUNDALL SIZESXX	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER X X X HWR DOMESTIC WATER ABOVEGROUND NPS 21 0 NPS 4 X X X HWR DOMESTIC WATER ABOVEGROUND NPS 210 NPS 4 X X X HWR DOMESTIC WATER ABOVEGROUND NPS 210 NPS 4 X X X HWR DOMESTIC WATER ABOVEGROUND NPS 220 NPS 4 X X X HWR DOMESTIC WATER ABOVEGROUND NPS 220 NPS 4 X X X Y TOILET ROOMS / SINKS / MISC FLOOR DRAINS ABOVEGROUND ALL SIZES X X X	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER X X X X X X X X X X X X X X X X X X X	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER X X X X X X X X X X X X X X X X X X X	HWR DOMESTIC WATER ABOVEGROUND NPS 1 1/2 AND SMALLER ABOVEGROUND NPS 2 TO NPS 4 X X X X X X X X X X X X X X X X X X	HINER DOMESTIC WATER ABOVEGROUND NPS 11/2 AND SMALLER ABOVEGROUND NPS 21 O NPS 4 X X X X X X X X X X X X X X X X X X	HURT DOMESTIC WATER ABOVEGROUND NPS 11/2 AND SMALLER X X X X X 40-140 100 HWR DOMESTIC WATER ABOVEGROUND NPS 11/2 AND SMALLER X X X 40-140 100 100 HWR DOMESTIC WATER ABOVEGROUND NPS 11/2 AND SMALLER X X X 40-140 100 150 HWR DOMESTIC WATER ABOVEGROUND NPS 2/2 ND SMALLER X X X 40-140 100 150 HWR DOMESTIC WATER ABOVEGROUND NPS 2/2 ND SMALLER X X X 40-140 100 150 HWR DOMESTIC WATER ABOVEGROUND NPS 2/2 ND SMALLER X X X X 40-140 100 150 HWR DOMESTIC WATER UNDER BUILUNG SLAB NPS 2/2 ND SMALLER X X X X X 40-140 100 150 HWR DOMESTIC WATER ABOVEGROUND ALL SZES X X X X X X X X X 100 150 <td>Numerican and the second of the second of</td>	Numerican and the second of

MARK	NUMBER	CLIMATE	PI
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	By	Appd	YYYY.MM.DD			The Copyrights to all designs or use for any purpose other

HOSE BIBB SCHEDULE								
PIPE SIZE	HOSE CONNECTION SIZE	MANUFACTURER	MODEL NUMBER	NOTES				
3/4"	3/4"	WATTS	SC8-6	1,2				
M BREAKER. TURES ARE COMPI	LIANT WITH THE BUY AMERICA ACT P	RIOR TO PURCHASE.						

	BACKFLOW PREVENTER										
MARK	NUMBER	SIZE	GPM	PRESSURE DROP AT MAX FLOW (PSI)	MANUFACTURER	MODEL NUMBER	NOTES				
RPBP	1	1"	-	-	WATTS	SS009	1,2				
RPBP	2	2"	75	11	WILKINS	375	1,2				
NOTES: 1. SEE DETAIL 2. CONTRACT	NOTES: 1. SEE DETAIL 3/P-601 2. CONTRACTOR SHALL CONFIRM ALL PLUMBING FIXTURES ARE COMPLIANT WITH THE BUY AMERICA ACT PRIOR TO PURCHASE.										





PLUMBING SCHEDULES

Scale

Drawing No. **P-002**



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GENERAL NOTES GENERAL NOTES APPLY TO ALL SHEETS IN THE S ARE ON. EACH SERIES OF SHEETS WILL START
1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE T
2. DRAWINGS ARE DIAGRAMMATIC: DETERMINE LOCATIONS OF SYS
 NEITHER ACCURACY NOR COMPLETION OF UTILITY LOCATIONS SI DETERMINE EXACT LOCATIONS OF EXISTING UTILITY IN FIELD, WH EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTI WORK OF THIS SECTION.
4. PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT LOCAL CODES AND DRAWINGS
 IT SHALL BE THE RESPONSIBILITY OF PLUMBING CONTRACTOR TO THAT OF ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), B SPRINKLER, PLUMBING, STRUCTURAL, AND GENERAL ARCHITECTURAL
 ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO INVOLVED.
 NO WORK SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING DRAWINGS WHICH IS IN VIOLATION OF SUCH CODES SHALL BE BR CONSTRUCTION MANAGER AND THE OWNER'S REPRESENTATIVE INSTALLATION OF THE WORK INVOLVED.
8. PIPING PENETRATING CEILING AND WALLS SHALL BE INSTALLED V PLATED ESCUTCHEONS AT THE PENETRATION. PIPING PENETRAT BE FLASHED IN AN APPROVED MANNER AND SHALL BE SEALED WI RATED PARTITIONS SHALL BE PROTECTED AS REQUIRED BY LOCA
 MANUFACTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO E PERFORMANCE AND MATERIALS.
10. INSTALLATION SHALL ADHERE TO MANUFACTURERS' REQUIREMENT
11. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERI
12. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTIC EQUIPMENT WITH THE ELECTRICAL DRAWINGS AND SHALL FURNIS VOLTAGES SHOWN HEREIN.
13. PROVIDE SHUTOFF VALVES ON BRANCH PIPING AND ON SUPPLIES EQUIPMENT. PROVIDE BALL VALVES ON WATER MAIN BRANCHES I INDICATED ON DRAWINGS. VALVES SHALL BE ACCESSIBLE.
14. CONCRETE PADS AND PLATFORMS FOR WORK OF THIS SECTION CONTRACTOR. PROVIDE INFORMATION AND HARDWARE AS NECE
15. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERENCE WIT
16. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CI
STRESS ON PIPING.
18. VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRI ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTU
TRADES.
AND DIRECTION OF FLOW PRIOR TO BEGINNING WORK.
21. ALL PLUMBING INTER-CONNECTIONS BETWEEN WASH BAY EQUIPI CONTRACTOR. REFER TO WASH EQUIPMENT MANUFACTURER SHU EQUIPMENT PLAN SHEET Q-121 FOR LAYOUT DETAILS.
22. EXISTING FLOOR SINK(S) AND ASSOCIATED PIPING SERVING EXIS DEMOLISH. REFER TO EXISTING 1981 RECORD PLUMBING DRAWIN
KEY NOTES KEY NOTES ARE NUMBERED SEQUENTIALLY FRO THEY ARE PROJECT SPECIFIC. ONLY THE KEY SHEET WILL BE LISTED ON TH
P10NEW 2" BACKFLOW PREVENTER AND 2" PRESSURE REE REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR DEP11REFER TO EXISTING 1981 PLUMBING SHEET P-1 FOR COP132" DOMESTIC COLD WATER SERVICE POC.P28EXISTING 6" SANITARY SEWER SHOWN FOR REFERENC PLUMBING SHEET P-1 FOR DETAILS.
P29 EXISTING SAND & GREASE INTERCEPTOR SHOWN FOR EXISTING 1981 PLUMBING SHEET P-5/04 FOR INTERCEP P30 EXISTING INTERIOR PIPING OF THE GREASE INTERCEP PVC PIPING AND MEET DISTRICT STANDARD SPECIFICA PLUMBING SHEET P-5/04 FOR INTERCEPTOR DETAILS. P31 INSTALL SCHIER SV24 SEWER SAMPLING PORT WITH H- DOWNSTREAM OF MAINTENANCE AND OFFICE BUILDING SEWER INVERT SHALL BE FIELD VERIFIED BY THE CONT CONSTRUCTION.
EXISTING OFFICE (PER 1981 DRAWINGS) EXISTING SHOPS (PER 1981 DRAWINGS) VEHICLE WASH BUILDING (EMERGENCY OVERFLOW)
TOTAL
1. OVERFLOW SHALL DISCHARGE TO SANITARY SEWER IN THE EVENT OF PUMP FAILURE ONLY. NO FLOW SANITARY SEWER DURING NORMAL OPERATION.

E SERIES THAT THEY T OVER AT NOTE 1.

TO ALL DRAWINGS MARKED P. STEMS AND COMPONENTS IN FIELD. SHOWN ON DRAWINGS IS GUARANTEED. WHETHER OR NOT SHOWN ON DRAWINGS.

IT PLUMBING CODE AND ALL APPLICABLE

TO COORDINATE PLUMBING WORK WITH , ELECTRICAL, HVAC, PROCESS PIPING,

F THE CONSTRUCTION MANAGER AND THE TO THE INSTALLATION OF THE WORK

NING CODES. ANY WORK SHOWN ON THE BROUGHT TO THE ATTENTION OF THE VE AND SHALL BE RESOLVED PRIOR TO THE

WITH CHROME (STAINLESS HERE NOTED) ATING EXTERIOR WALLS AND ROOFS SHALL WEATHER TIGHT. PIPING PENETRATING OCAL CODE AUTHORITY (SEE DETAILS). D ESTABLISH STANDARDS OF QUALITY FOR

ERIODIC SERVICE.

FICS AND REQUIREMENTS OF PLUMBING NISH EQUIPMENT WIRED FOR THE

ES TO INDIVIDUAL FIXTURES AND S IN ACCESSIBLE LOCATIONS AND WHERE

N WILL BE PROVIDED BY GENERAL CESSARY TO COORDINATE WORK. WITH FIRE-PROOFING WORK. CLEAR OF CEILING INSERTS.

D GUIDES AS NECESSARY TO PREVENT

RIOR TO RUNNING ANY PIPING. REFER TO TURES AND EQUIPMENT. E COORDINATED WITH WORK OF OTHER

STE PIPE INVERTS BELOW FLOOR, PIPE SIZE

IIPMENT SHALL BE INSTALLED BY THE SHOP DRAWINGS AND WASH BUILDING

KISTING WASH EQUIPMENT SHALL BE VINGS FOR LOCATIONS.

FROM P1 TO THE LAST KEY NOTE. KEY NOTES USED ON A SPECIFIC N THAT SHEET.

EDUCING VALVE SHOWN FOR DETAILS.

CONTINUATION.

ENCE ONLY. REFER TO EXISTING 1981

R REFERENCE ONLY. REFER TO EPTOR DETAILS. EPTOR SHALL BE REPLACE WITH NEW CATIONS. REFER TO EXISTING 1981

H H-20 LOAD RATED CAST IRON COVER DING CONNECTION POINT. SANITARY ONTRACTOR PRIOR TO THE START OF

57 F.U. 5 F.U. 86 GPM (172 F.U)¹ MAX. 234 FIXTURE UNITS

OW IS EXPECTED TO BE DISCHARGE TO

PLUMBING SITE





	(E) SHOP OFFICE	(E) COUNTING ROOM	
PRESSURIZED			
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		GENERAL NOTES GENERAL NOTES APPLY TO ALL SHEETS IN THE SERIES THAT THEY ARE ON. EACH SERIES OF SHEETS WILL START OVER AT NOTE 1.						
1.	GENERAL	NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARK						
2.	DRAWING	GS ARE DIAGRAMMATIC: DETERMINE LOCATIONS OF SYSTEMS AND COMPONENT						
3.	NEITHER DETERMI EXERCIS WORK OF	ACCURACY NOR COMPLETION OF UTILITY LOCATIONS SHOWN ON DRAWINGS IS NE EXACT LOCATIONS OF EXISTING UTILITY IN FIELD, WHETHER OR NOT SHOWN E CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSA THIS SECTION.						
4.	PLUMBIN LOCAL C	G WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND A ODES AND DRAWINGS						
5.	IT SHALL THAT OF SPRINKLI	BE THE RESPONSIBILITY OF PLUMBING CONTRACTOR TO COORDINATE PLUMBIN ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), ELECTRICAL, HVAC, PRC ER, PLUMBING, STRUCTURAL, AND GENERAL ARCHITECTURE.						
6.	ANY INTE OWNER'S INVOLVE	RFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MA REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF TD.						
7.	NO WORI DRAWING CONSTRI INSTALLA	K SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING CODES. ANY WORK SH GS WHICH IS IN VIOLATION OF SUCH CODES SHALL BE BROUGHT TO THE ATTENT JCTION MANAGER AND THE OWNER'S REPRESENTATIVE AND SHALL BE RESOLVE ATION OF THE WORK INVOLVED.						
8.	PIPING P Plated e Be flase Rated P	ENETRATING CEILING AND WALLS SHALL BE INSTALLED WITH CHROME (STAINLES ESCUTCHEONS AT THE PENETRATION. PIPING PENETRATING EXTERIOR WALLS A HED IN AN APPROVED MANNER AND SHALL BE SEALED WEATHER TIGHT. PIPING ARTITIONS SHALL BE PROTECTED AS REQUIRED BY LOCAL CODE AUTHORITY (SE						
9.	MANUFA	CTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS MANCE AND MATERIALS.						
10.	INSTALLA	ATION SHALL ADHERE TO MANUFACTURERS' REQUIREMENTS.						
11.	PROVIDE	ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.						
12.	Contra(Equipme Voltage	CTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS INT WITH THE ELECTRICAL DRAWINGS AND SHALL FURNISH EQUIPMENT WIRED F IS SHOWN HEREIN.						
13.	PROVIDE Equipme Indicate	SHUTOFF VALVES ON BRANCH PIPING AND ON SUPPLIES TO INDIVIDUAL FIXTUR INT. PROVIDE BALL VALVES ON WATER MAIN BRANCHES IN ACCESSIBLE LOCATION D ON DRAWINGS. VALVES SHALL BE ACCESSIBLE.						
14.	CONCRE CONTRAC	TE PADS AND PLATFORMS FOR WORK OF THIS SECTION WILL BE PROVIDED BY G CTOR. PROVIDE INFORMATION AND HARDWARE AS NECESSARY TO COORDINATE						
15.	15. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERENCE WITH FIRE-PR							
16.	RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSE							
17.	PROVIDE STRESS (PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY STRESS ON PIPING.						
18.	VERIFY E ARCHITE	XACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIL CTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.						
19.	PIPING S TRADES.	HALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH W						
20.	PLUMBIN AND DIRE	G CONTRACTOR TO CONFIRM EXISTING SANITARY WASTE PIPE INVERTS BELOW ECTION OF FLOW PRIOR TO BEGINNING WORK.						
21.	all plun Contrac Equipme	IBING INTER-CONNECTIONS BETWEEN WASH BAY EQUIPMENT SHALL BE INSTALL CTOR. REFER TO WASH EQUIPMENT MANUFACTURER SHOP DRAWINGS AND WAS INT PLAN SHEET Q-121 FOR LAYOUT DETAILS.						
22.	EXISTING DEMOLIS	FLOOR SINK(S) AND ASSOCIATED PIPING SERVING EXISTING WASH EQUIPMENT H. REFER TO EXISTING 1981 RECORD PLUMBING DRAWINGS FOR LOCATIONS.						
		KEY NOTES KEY NOTES ARE NUMBERED SEQUENTIALLY FROM P1 TO THE LAST KEY THEY ARE PROJECT SPECIFIC. ONLY THE KEY NOTES USED ON A SPEC SHEET WILL BE LISTED ON THAT SHEET.						
	D04							
	P01 P02	EXISTING PLUMBING FIXTORE TO REMAIN. DEMOLISH EXISTING WATER CLOSET. PLUMBING DOMESTIC COLD WATER, SAN DRAINAGE, AND SANITARY VENT PIPES SHALL REMAIN FOR CONNECTION TO THE WATER CLOSET UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL COORD						
	P03	EXISTING INVERT, SIZE, AND LOCATION PRIOR TO CONSTRUCTION. DEMOLISH EXISTING URINAL. PLUMBING DOMESTIC COLD WATER, SANITARY DF SANITARY VENT PIPES SHALL REMAIN FOR CONNECTION TO THE NEW URINAL ON NOTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE EXISTING INVERT,						
	P04	LUCATION PRIOR TO CONSTRUCTION. DEMOLISH EXISTING SINK. PLUMBING DOMESTIC COLD WATER, DOMESTIC HOT SANITARY DRAINAGE, AND SANITARY VENT PIPES SHALL REMAIN FOR CONNEC NEW SINK UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE						
	P32	INVERT, SIZE, AND LOCATION PRIOR TO CONSTRUCTION. DEMOLISH EXISTING SHOWER. EXISTING FLOOR DRAIN AND ASSOCIATED PIPIN REMOVE DOMESTIC COLD WATER AND HOT WATER PIPING BACK TO MAIN ABOV ELIMINATE DEAD ENDS.						
	P33	DEMOLISH EXISTING WATER CLOSET. PLUMBING SANITARY DRAINAGE AND SAN PIPES SHALL BE FLUSHED WITH THE SURFACE AND CAPPED. REMOVE DOMEST WATER PIPING BACK TO MAIN ABOVE CELLING TO ELIMINATE DEAD ENDS						
	P34	DEMOLISH EXISTING URINAL. PLUMBING SANITARY DRAINAGE AND SANITARY V SHALL BE FLUSHED WITH THE SUBFACE AND CADDED DEMOLE DOMESTIC COL						
	P35	DEMOLISH EXISTING DRINKING FOUNTAIN. PLUMBING DOMESTIC COLD WATER, DRAINAGE, AND SANITARY VENT PIPES SHALL REMAIN FOR CONNECTION TO TH DRINKING FOUNTAIN UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL CO						

RIES THAT THEY VER AT NOTE 1.

ALL DRAWINGS MARKED P. MS AND COMPONENTS IN FIELD. WN ON DRAWINGS IS GUARANTEED. THER OR NOT SHOWN ON DRAWINGS.

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AND REQUIREMENTS OF PLUMBING EQUIPMENT WIRED FOR THE

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JIDES AS NECESSARY TO PREVENT

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PIPE INVERTS BELOW FLOOR, PIPE SIZE

NT SHALL BE INSTALLED BY THE DRAWINGS AND WASH BUILDING

IG WASH EQUIPMENT SHALL BE SFOR LOCATIONS.

P1 TO THE LAST KEY NOTE. TES USED ON A SPECIFIC SHEET.

IC COLD WATER, SANITARY R CONNECTION TO THE NEW ACTOR SHALL COORDINATE RUCTION. WATER, SANITARY DRAINAGE, AND TO THE NEW URINAL UNLESS ATE EXISTING INVERT, SIZE, AND

ATER, DOMESTIC HOT WATER, REMAIN FOR CONNECTION TO THE R SHALL COORDINATE EXISTING

ND ASSOCIATED PIPING TO REMAIN. G BACK TO MAIN ABOVE CEILING TO

RY DRAINAGE AND SANITARY VENT PED. REMOVE DOMESTIC COLD TE DEAD ENDS. AGE AND SANITARY VENT PIPES MOVE DOMESTIC COLD WATER D ENDS.

MESTIC COLD WATER, SANITARY R CONNECTION TO THE NEW ONTRACTOR SHALL COORDINATE RUCTION.

PLUMBING MAIN BUILDING - GROUND DEMOLITION PLAN - DRAINAGE & PRESSURIZED





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PIPE INVERTS BELOW FLOOR, PIPE SIZE

ENT SHALL BE INSTALLED BY THE P DRAWINGS AND WASH BUILDING

IG WASH EQUIPMENT SHALL BE S FOR LOCATIONS.

P1 TO THE LAST KEY NOTE. OTES USED ON A SPECIFIC T SHEET.

UMBING DOMESTIC COLD WATER, ONTRACTOR SHALL COORDINATE RUCTION. DOMESTIC COLD WATER, SANITARY R SHALL COORDINATE EXISTING

OMESTIC COLD WATER, DOMESTIC PIPES. THE CONTRACTOR SHALL NOR TO CONSTRUCTION. STING PLUMBING DOMESTIC COLD OR REPOSITION CONNECTIONS AS . THE CONTRACTOR SHALL IOR TO CONSTRUCTION.

PLUMBING MAIN BUILDING - GROUND FLOOR - DRAINAGE & PRESSURIZED





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23.05.12 Y.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	<u>Сі</u> Ву	GY Appd	2023.03.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify and drawing - any errors or omissic The Copyrights to all designs c or use for any purpose other th

	GENERAL NOTES GENERAL NOTES APPLY TO ALL SHEETS IN THE SERIES THAT THEY ARE ON. EACH SERIES OF SHEETS WILL START OVER AT NOTE 1.						
1.	GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED P.						
2.	DRAWINGS ARE DIAGRAMMATIC: DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.						
3.	NEITHER ACCURACY NOR COMPLETION OF UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING UTILITY IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFOR WORK OF THIS SECTION.						
4.	PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND ALL APPLICABLE LOCAL CODES AND DRAWINGS						
5.	IT SHALL BE THE RESPONSIBILITY OF PLUMBING CONTRACTOR TO COORDINATE PLUMBING WORK WITH THAT OF ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), ELECTRICAL, HVAC, PROCESS PIPING, SPRINKLER, PLUMBING, STRUCTURAL, AND GENERAL ARCHITECTURE.						
6.	ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND THE OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.						
7.	NO WORK SHALL BE INSTALLED IN VIOLATION OF ANY GOVERNING CODES. ANY WORK SHOWN ON THE DRAWINGS WHICH IS IN VIOLATION OF SUCH CODES SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND THE OWNER'S REPRESENTATIVE AND SHALL BE RESOLVED PRIOR TO THI INSTALLATION OF THE WORK INVOLVED.						
8.	PIPING PENETRATING CEILING AND WALLS SHALL BE INSTALLED WITH CHROME (STAINLESS HERE NOTED PLATED ESCUTCHEONS AT THE PENETRATION. PIPING PENETRATING EXTERIOR WALLS AND ROOFS SHAL BE FLASHED IN AN APPROVED MANNER AND SHALL BE SEALED WEATHER TIGHT. PIPING PENETRATING RATED PARTITIONS SHALL BE PROTECTED AS REQUIRED BY LOCAL CODE AUTHORITY (SEE DETAILS).						
9.	MANUFACTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FO PERFORMANCE AND MATERIALS.						
10.	INSTALLATION SHALL ADHERE TO MANUFACTURERS' REQUIREMENTS.						
11.	PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.						
12.	CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS AND SHALL FURNISH EQUIPMENT WIRED FOR THE VOLTAGES SHOWN HEREIN.						
 PROVIDE SHUTOFF VALVES ON BRANCH PIPING AND ON SUPPLIES TO INDIVIDUAL FIXTURI EQUIPMENT. PROVIDE BALL VALVES ON WATER MAIN BRANCHES IN ACCESSIBLE LOCATIO INDICATED ON DRAWINGS. VALVES SHALL BE ACCESSIBLE. 							
14.	CONCRETE PADS AND PLATFORMS FOR WORK OF THIS SECTION WILL BE PROVIDED BY GENERAL CONTRACTOR. PROVIDE INFORMATION AND HARDWARE AS NECESSARY TO COORDINATE WORK.						
15.	SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERENCE WITH FIRE-PROOFING WORK.						
16.	RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.						
17.	PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.						
18.	VERIFY EXACT SIZES, LOCATIONS, INVERTS AND ELEVATIONS PRIOR TO RUNNING ANY PIPING. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL FIXTURES AND EQUIPMENT.						
19.	PIPING SHALL NOT RUN OVER ELECTRICAL PANELS AND SHALL BE COORDINATED WITH WORK OF OTHER TRADES.						
20.	PLUMBING CONTRACTOR TO CONFIRM EXISTING SANITARY WASTE PIPE INVERTS BELOW FLOOR, PIPE SI. AND DIRECTION OF FLOW PRIOR TO BEGINNING WORK.						
21.	IBING INTER-CONNECTIONS BETWEEN WASH BAY EQUIPMENT SHALL BE INSTALLED BY THE CTOR. REFER TO WASH EQUIPMENT MANUFACTURER SHOP DRAWINGS AND WASH BUILDING NT PLAN SHEET Q-121 FOR LAYOUT DETAILS.						
22.	EXISTING FLOOR SINK(S) AND ASSOCIATED PIPING SERVING EXISTING WASH EQUIPMENT SHALL BE DEMOLISH. REFER TO EXISTING 1981 RECORD PLUMBING DRAWINGS FOR LOCATIONS.						
	KEY NOTES KEY NOTES ARE NUMBERED SEQUENTIALLY FROM P1 TO THE LAST KEY NOTE. THEY ARE PROJECT SPECIFIC. ONLY THE KEY NOTES USED ON A SPECIFIC SHEET WILL BE LISTED ON THAT SHEET.						
	P11 REFER TO EXISTING 1981 PLUMBING SHEET P-1 FOR CONTINUATION.						
	P12 NEW 2" BACKFLOW PREVENTER AND 2" DOMESTIC COLD WATER SERVICE TO BUS WASH. P15 4" SANITARY DRAIN OVERFLOW PIPE FROM SUMP PIT. INVERT ELEVATION SHALL BE 24" BELOW TOP OF SUMP PIT. PIPE SHALL SLOPE AT 1% TO CONNECT TO EXISTING 6" SANITARY PIPE. THE CONTRACTOR SHALL COORDINATE EXISTING INVERT, SIZE, AND LOCATION PRIOR TO CONSTRUCTION						
	P16 2" DCW HEADER CAPABLE OF 75 GPM AT 60 PSI SHALL SERVE BUS WASH EQUIPMENT. P17 2" DOMESTIC COLD WATER POC TO (E) COLD WATER SUPPLY. REFER TO SHEET P-200 FOR						
	P18 2" DCW PIPE W/ BALL VALVE & SOLENOID VALVE FOR MAKE-UP SUPPLY TO WATER RECLAMATION TANK, EXTEND 6" OF PIPE LENGTH INTO THE TANK FOR THE AIR GAP.						
	P19 2" DCW PIPE W/ BALL VALVE & SOLENOID VALVE TO POTABLE WATER TANK. EXTEND 6" OF PIPE LENGTH INTO THE TANK FOR THE AIR GAP.						
	P20 1" DCW PIPE W/ BALL VALVE AND RUBBER HOSE TO SINGLE TANK WATER SOFTENER.						
	PROVIDE BACKFLOW PREVENTER RPBP-1. P21 DRAINAGE AND OVERFLOW FROM WASH BAY EQUIPMENT SHALL PENETRATE THROUGH EXTERIOR WALL AND SPILL TO GRADE AT WASH BAY, PIPING SHALL BE INSTALLED WITH A 90						
	DEGREE ELBOW DIRECTED TOWARDS GRADE TO REDUCE SPLASHING. P22 CAST-IN-PLACE UTILITY TRENCH FOR 3" PIPE FROM SUMP PIT TO PRIME PUMP. CAST-IN-PLACE UTILITY TRENCH SHOWN FOR REFERENCE ONLY. REFER TO STRUCTURAL						
	P23 3" PIPE FROM SUMP PIT TO STUB UP 6" ABOVE SLAB. REFER TO WASH EQUIPMENT MANUFACTURER SHOP DRAWINGS AND WASH BUILDING EQUIPMENT PLAN SHEET Q-121 FOR CONTINUATION.						
	P24 2" DCW PIPE TO BE INSTALLED BELOW GRADE.						
	P25 CAST-IN-PLACE TRENCH DRAIN AND SUMP PIT WITH GRATING SHOWN FOR REFERENCE ONLY. REFER TO WASH STRUCTURAL AND ARCHITECTURAL DRAWINGS.						
	P26 ALL PLUMBING INTER-CONNECTIONS BETWEEN WASH BAY EQUIPMENT SHALL BE INSTALLED BY THE CONTRACTOR. REFER TO WASH EQUIPMENT MANUFACTURER SHOP DRAWINGS AND WASH BUILDING EQUIPMENT PLAN SHEET Q-121 FOR LAYOUT DETAILS. P27 4" OVERELOW SHALL USE EXISTING FOOTING SLEEVE DEFER TO ARCHITECTURAL						
	DRAWINGS FOR DETAILS.						



_____ Title

Project No. 2014240805 Revision

Client/Project Logo

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SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

TERMINAL 2 - RECOMMISSIONING

Client/Project

5353 OVERPASS ROAD, GOLETA, CA 93111

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S THAT THEY RAT NOTE 1.

NOTE: SCOPE OF WORK ON THIS DRAWING IS SUBJECT TO BID ALTERNATE NO. 1, SEE CLOUDED NOTES.

PLUMBING VEHICLE WASH BUILDING -DRAINAGE & PRESSURIZED



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	DIVISION 22: PLUMBING	F.	CLEAN EQUIPMENT INSTALLED UNDER THIS CONTRACT TO F THE TERMINATION OF THE WORK. REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAM,	AGED AS A RESULT OF WORK PERFORMED	D.	IF THE PROPOSED SUBSTITUTION IS APPROVI STATED IN AN ADDENDUM. BIDDERS SHALL NO VERBAL APPROVAL WILL NOT BE GIVEN. NO S IS AWARDED UNLESS SPECIFICALLY PROVIDE
	1 1 GENERAL REQUIREMENTS		JURISDICTION. PROVIDE ALL SAFETY LIGHTS, GUARDS, AND PERFORMANCE OF THE WORK AND FOR THE SAFETY OF TH	WARNING SIGNS REQUIRED FOR THE E PUBLIC.	1.10	SUBMITTALS
D	A. ALL REQUIREMENTS UNDER DIVISION 01 AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THESE SPECIFICATIONS APPLY TO THIS SECTION AND DIVISION. WHERE THE REQUIREMENTS OF THIS SECTION AND DIVISION EXCEED THOSE OF DIVISION 01, THIS SECTION AND DIVISION TAKE PRECEDENCE. BECOME THOROUGHLY FAMILIAR WITH ALL ITS CONTENTS AS TO REQUIREMENTS THAT AFFECT THIS DIVISION, SECTION, OR BOTH. WORK REQUIRED UNDER THIS DIVISION INCLUDES ALL MATERIAL, EQUIPMENT,	1.5 A.	MANUFACTURERS IN OTHER ARTICLES WHERE LISTS OF MANUFACTURERS AR WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE	E INTRODUCED, SUBJECT TO COMPLIANCE MANUFACTURERS SPECIFIED.	A.	ASSEMBLE AND SUBMIT FOR REVIEW SHOP D LITERATURE FOR EQUIPMENT TO BE FURNISH CONTRACTORS UNDER THIS CONTRACT. PRO DEMONSTRATE COMPLIANCE WITH THESE CO TRANSMITTING SUBMITTAL, VERIFY THAT THE SUITABLE FOR THE INTENDED USE. WILL FIT T
	APPLIANCES, TRANSPORTATION, SERVICES AND LABOR REQUIRED TO COMPLETE THE ENTIRE SYSTEM AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS, OR REASONABLY INFERRED TO BE NECESSARY TO FACILITATE THE FUNCTION OF EACH SYSTEM AS IMPLIED BY THE DESIGN AND EQUIPMENT SPECIFIED.	В. С.	WHERE A LIST IS PROVIDED, MANUFACTURERS ARE LISTED WITH ANY RANKING OR PREFERENCE. WHERE MANUFACTURERS ARE NOT LISTED, PROVIDE PROD	ALPHABETICALLY AND NOT IN ACCORDANCE UCTS SUBJECT TO COMPLIANCE WITH	B.	RECOMMENDED SERVICE CLEARANCES. IF TH CHANGE IN LOCATION OR CONFIGURATION, S TRANSMIT SUBMITTALS AS EARLY AS REQUIR
	B. THE SPECIFICATIONS AND DRAWINGS FOR THE PROJECT ARE COMPLEMENTARY, AND ANY PORTION OF WORK DESCRIBED IN ONE SHALL BE PROVIDED AS IF DESCRIBED IN BOTH. IN THE EVENT OF DISCREPANCIES, NOTIFY THE ENGINEER AND REQUEST CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK INVOLVED.	1.6	REQUIREMENTS FROM MANUFACTURERS THAT HAVE BEEN SPECIFIED PRODUCT FOR NO LESS THAN 5 YEARS. COORDINATION	ACTIVELY INVOLVED IN MANUFACTURING THE		WEEKS ENGINEER REVIEW TIME, PLUS TO/FR OF THIS TIME FOR RESUBMITTAL, IF REQUIRE RESUBMITTAL.
	C. DRAWINGS ARE GRAPHIC REPRESENTATIONS OF THE WORK UPON WHICH THE CONTRACT IS BASED. THEY SHOW THE MATERIALS AND THEIR RELATIONSHIP TO ONE ANOTHER, INCLUDING SIZES, SHAPES, LOCATIONS, AND CONNECTIONS. THEY CONVEY THE SCOPE OF WORK, INDICATING THE INTENDED GENERAL ARRANGEMENT OF THE SYSTEMS WITHOUT SHOWING ALL OF THE EXACT DETAILS AS TO ELEVATIONS, OFFSETS, CONTROL LINES, AND OTHER INSTALLATION REQUIREMENTS. USE THE DRAWINGS AS A GUIDE WHEN LAYING OUT THE WORK AND TO VERIFY THAT MATERIALS AND EQUIPMENT WILL FIT INTO THE DESIGNATED SPACES, AND WHICH WHEN INSTALLED PER MANUFACTURERS' REQUIREMENTS, WILL ENSURE A COMPLETE. COORDINATED, SATISFACTORY, AND PROPERLY OPERATING SYSTEM	А. В.	COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT SYSTEMS ARE INSTALLED AT THE PROPER TIME, WILL FIT TH PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MA INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE REL OWNER. UNLESS OTHERWISE INDICATED, GENERAL CONTRACTOR S	T THE VARIOUS COMPONENTS OF THE HE AVAILABLE SPACE, AND WILL ALLOW INTENANCE. COMPONENTS WHICH ARE OCATED AT NO ADDITIONAL COST TO THE HALL PROVIDE CHASES AND OPENINGS IN	C.	SUBMITTALS SHALL CONTAIN THE PROJECT N DATE, EQUIPMENT IDENTIFICATION ACRONYN STAMP. THE STAMP SHALL CERTIFY THAT THE COMPLIES WITH THE DRAWINGS AND SPECIFI MANUFACTURER PRODUCT LITERATURE SHA PERFORMANCE SHEETS, SAMPLES AND OTHE MARK, LIST, OR INDICATE THE MATERIALS, PE PROPOSED. GENERAL PRODUCT CATALOG DA
_	1.2 DEFINITIONS A. REFERENCES CONTAINED IN THIS SPECIFICATION FOLLOW THE NUMBERING SYSTEM DEFINED IN THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) MASTEREORMAT 2004 EDITION SPECIFICATION		CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR OPENINGS WHEN REQUIRED. CONTRACTOR SHALL KEEP INF ENGAGED IN THE CONSTRUCTION OF THE PROJECT AND SH AS NOT TO INTERFERE WITH OR DELAY THE WORK OF OTHE	WITH INFORMATION WHERE CHASES AND FORMED AS TO THE WORK OF OTHER TRADES ALL EXECUTE HIS WORK IN SUCH A MANNER R TRADES.	D.	SPECIFIED PRODUCT WILL BE REJECTED AND SUBMITTALS AND SHOP DRAWINGS SHALL NC THE ENGINEER. THEY SHALL NOT BE COPIES CONTRACTOR DESIRES TO USE ELEMENTS OF DRAWING FILES" FOR PROCEDURES TO BE US
	DIVISIONS 01 THROUGH 13 PROVIDED WITH THIS PROJECT MAY REFERENCE THE CSI MASTERFORMAT 1995 EDITION. THE CORRESPONDING DIVISION REFERENCES BETWEEN THE 2004 EDITION AND 1995 EDITION ARE AS FOLLOWS:	C.	FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIA HELD RESPONSIBLE FOR ERRORS WHICH COULD HAVE BEE VERIFICATION.	SCALED DIMENSIONS. CONTRACTOR SHALL TIONS MAY OCCUR. CONTRACTOR SHALL BE N AVOIDED BY PROPER CHECKING AND	E.	SEPARATE SUBMITTALS ACCORDING TO INDIA WILL BE REJECTED AND RETURNED WITHOUT IDENTIFIED, INDEXED AND TABBED IN A 3-RING CLEARLY MARKED AND ACCESSORIES INDICA
	2004 EDITION1995 EDITIONDIVISION 21 – FIRE SUPPRESSIONDIVISION 15DIVISION 22 – PLUMBINGDIVISION 15	D.	PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT T FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED II DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIR	THE TYPES OF CEILING, WALL, OR FLOOR N THE SPECIFICATIONS OR SHOWN ON THE ED TRIM.		IDENTIFICATION ACRONYM OR NUMBER AS US CURVES, CAPACITIES, SIZES, WEIGHTS, MATE REQUIREMENTS AND DEVIATIONS FROM SPEC MOTOR STARTERS OR VFDS, INCLUDE SHORT
	DIVISION 23 – HVAC DIVISION 15 DIVISION 26 – ELECTRICAL DIVISION 16	1.7	ORDINANCES AND CODES			ITEMS. SHOP DRAWINGS WILL BE RETURNED ARE NOT MET.
С	 DIVISION 27 – COMMUNICATIONS DIVISION 16 DIVISION 28 – ELECTRONIC SAFETY AND SECURITY DIVISION 16 B. FURNISH: "TO SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, 	А.	WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MI APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING J ASSOCIATED INSTALLATION WORK PERFORMED UNDER THI WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCA STANDARDS AS SET FORTH BY THE FOLLOWING:	NIMUM, BE IN CONFORMANCE WITH URISDICTION. EQUIPMENT FURNISHED AND S CONTRACT SHALL BE IN STRICT COMPLIANCE L AHJ, INCLUDING ANY AMENDMENTS AND	F.	PROVIDE THE QUANTITY OF SUBMITTALS REQ SETS ARE PROVIDED, SUBMIT A MINIMUM OF ELECTRONIC SUBMITTALS FOR THIS PROJEC ⁻ SUBMIT THE DOCUMENTS IN ACCORDANCE W
	ASSEMBLY, INSTALLATION AND SIMILAR OPERATIONS." C. INSTALL: "TO PERFORM ALL OPERATIONS AT THE PROJECT SITE INCLUDING, BUT NOT LIMITED TO, THE ACTUAL UNLOADING, UNPACKING, ASSEMBLING, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, TESTING, COMMISSIONING, STARTING UP		 NATIONAL ELECTRIC CODE (NEC) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) UNDERWRITERS LABORATORIES (UL) 			CONTRACTOR SHALL NOTIFY THE ARCHITECT IF ELECTRONIC SUBMITTAL PROCEDURES ARI INCLUDE THE WEBSITE, USER NAME, AND PAS SUBMITTALS. FOR SUBMITTALS SENT BY E-MA REPRESENTATIVES OF THE ARCHITECT AND F
	AND SIMILAR OPERATIONS, COMPLETE, AND READY FOR THE INTENDED USE." D. PROVIDE: "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE." E. EURNISHED BY OWNER (OR OWNER EURNISHED) OR EURNISHED BY OTHERS: "AN ITEM EURNISHED BY		 AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASI AMERICAN SOCIETY OF HEATING, REFRIGERATION, AN AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) 	ME) ID AIR CONDITIONING ENGINEERS (ASHRAE)		REVIEW TIME AS SPECIFIED ABOVE IN THE CO THE DOCUMENTS REQUIRED TO PURCHASE T SUBMITTAL.
	THE OWNER OR UNDER OTHER DIVISIONS OR CONTRACTS, AND INSTALLED UNDER THE REQUIREMENTS OF THIS DIVISION, COMPLETE, AND READY FOR THE INTENDED USE, INCLUDING ALL ITEMS AND SERVICES INCIDENTAL TO THE WORK NECESSARY FOR PROPER INSTALLATION AND OPERATION. INCLUDE THE INSTALLATION UNDER THE WARRANTY REQUIRED BY THIS DIVISION."	B.	9. OTHER NATIONAL STANDARDS AND CODES WHERE AF WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIRE STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAK VARIOUS CODES, ORDINANCES, RULES, AND REGULATIONS	PLICABLE. EMENTS OF THE REFERENCED CODES, E PRECEDENCE. WHERE CONFLICTS BETWEEN EXIST. COMPLY WITH THE MOST STRINGENT.	G.	AND SUBSEQUENT ACCEPTAN SHALL NOT RELIEVE THE CONTRACTOR FROM AND SPECIFICATIONS, ERRORS IN DIMENSION OF COMPONENTS OR FITTINGS; COORDINATIO COORDINATING ITEMS WITH ACTUAL BUILDING
	F. ENGINEER: WHERE REFERENCED IN THIS DIVISION, "ENGINEER" IS THE ENGINEER OF RECORD AND THE DESIGN PROFESSIONAL FOR THE WORK UNDER THIS DIVISION, AND IS A CONSULTANT TO, AND AN AUTHORIZED REPRESENTATIVE OF THE ARCHITECT, AS DEFINED IN THE GENERAL AND/OR SUPPLEMENTARY CONDITIONS. WHEN USED IN THIS DIVISION, ENGINEER MEANS INCREASED	C.	PROMPTLY BRING ALL CONFLICTS OBSERVED BETWEEN CO REFERENCED STANDARDS, AND THESE DOCUMENTS TO TH ENGINEER FOR FINAL RESOLUTION. CONTRACTOR WILL BE	DES, ORDINANCES, RULES, REGULATIONS, E ATTENTION OF THE ARCHITECT AND HELD RESPONSIBLE FOR ANY VIOLATION OF	1.11	PROCUREMENT AND INSTALLATION OF EQUIP RELATIVE TO EACH ITEM. ELECTRONIC DRAWINGS
	INVOLVEMENT BY AND OBLIGATIONS TO THE ENGINEER, IN ADDITION TO INVOLVEMENT BY AND OBLIGATIONS TO THE ARCHITECT. G. AHJ: THE LOCAL CODE AND/OR INSPECTION AGENCY (AUTHORITY) HAVING JURISDICTION OVER THE WORK.	D.	PROCURE AND PAY FOR PERMITS AND LICENSES REQUIRED HEREIN DESCRIBED. WHERE REQUIRED, OBTAIN, PAY FOR, A TO OWNER.	OFOR THE ACCOMPLISHMENT OF THE WORK AND FURNISH CERTIFICATES OF INSPECTION	A.	IN PREPARATION OF SHOP DRAWINGS OR RECOBTAIN ELECTRONIC DRAWING FILES IN AUTO DRIVE, OR DIRECT DOWNLOAD, AS DESIRED, I OF \$200 FOR A DRAWING SET UP TO 12 SHEET
	H. NRTL: NATIONALLY RECOGNIZED TESTING LABORATORY, AS DEFINED AND LISTED BY OSHA IN 29 CFR 1910.7 (E.G., UL, ETL, CSA), AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT. NATIONALLY RECOGNIZED TESTING LABORATORIES AND STANDARDS LISTED ARE USED ONLY TO REPRESENT THE CHARACTERISTICS REQUIRED AND ARE NOT INTENDED TO RESTRICT THE USE OF OTHER NRTLS THAT	1.8 A.	PROTECTION OF EQUIPMENT AND MATERIAL STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MAT MATERIALS AND EQUIPMENT SUSCEPTIBLE TO CHANGING W	ERIAL AFTER DELIVERY TO JOB SITE. FOR /EATHER CONDITIONS, DAMPNESS, OR		AGREEMENT FORM AND TO SPECIFY SHIPPING PAYMENT, WRITTEN AUTHORIZATION FROM T ENGINEER MUST BE RECEIVED BEFORE ELEC
В	ARE ACCEPTABLE TO THE AHJ AND STANDARDS THAT MEET THE SPECIFIED CRITERIA. I. SUBSTITUTION: CHANGES IN PRODUCTS, MATERIALS, EQUIPMENT, AND METHODS OF CONSTRUCTION FROM THOSE REQUIRED BY THE CONTRACT DOCUMENTS AND PROPOSED BY CONTRACTOR. SUBSTITUTIONS INCLUDE VALUE ENGINEERING PROPOSALS. 1. SUBSTITUTIONS FOR CAUSE: CHANGES PROPOSED BY CONTRACTOR THAT ARE REQUIRED DUE TO		TEMPERATURE VARIATIONS, STORE INSIDE IN CONDITIONED NOT SUSCEPTIBLE TO THESE CONDITIONS, COVER WITH WA OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL DAMAGED E REJECTED AND CONTRACTOR SHALL FURNISH NEW EQUIPM OWN EXPENSE.	D SPACES. FOR MATERIALS AND EQUIPMENT ATERPROOF, TEAR-RESISTANT, HEAVY TARP OM PLASTER, DIRT, PAINT, WATER, OR BY CONSTRUCTION ACTIVITIES SHALL BE MENT AND MATERIAL OF A LIKE KIND AT HIS	1.12 A.	RECORD DRAWINGS (AS-BUILT DRAWINGS) DURING PROGRESS OF THE WORK IN THIS DIV RECORD OF ALL CHANGES MADE DURING THE WORK, ACCURATELY TRANSFER ALL RECORD APPROVED SHOP DRAWINGS INSERT ONE SE
	CHANGED PROJECT CONDITIONS, SUCH AS UNAVAILABILITY OF PRODUCT, REGULATORY CHANGES, OR UNAVAILABILITY OF REQUIRED WARRANTY TERMS. 2. SUBSTITUTIONS FOR CONVENIENCE: CHANGES PROPOSED BY CONTRACTOR OR OWNER THAT ARE NOT REQUIRED IN ORDER TO MEET OTHER PROJECT REQUIREMENTS BUT MAY OFFER ADVANTAGE	В.	KEEP PREMISES BROOM CLEAN OF FOREIGN MATERIAL CRE THIS CONTRACT. PIPING, EQUIPMENT, ETC. SHALL HAVE A N TERMINATION OF THE WORK.	ATED DURING WORK PERFORMED UNDER EAT AND CLEAN APPEARANCE AT THE	B. 1.13	SEE DIVISION 01 AND GENERAL CONDITIONS F
	J. THE TERMS "APPROVED EQUAL", "EQUIVALENT", OR "EQUAL" ARE USED SYNONYMOUSLY AND SHALL MEAN	C.	PLUG OR CAP OPEN ENDS OF PIPING SYSTEMS WHILE STOF WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS	ED AND INSTALLED DURING CONSTRUCTION INTO THE SYSTEMS.	Α.	DURING THE COURSE OF CONSTRUCTION, CO EQUIPMENT FURNISHED AND INSTALLED ON T
	 "ACCEPTED BY OR ACCEPTABLE TO THE ENGINEER AS EQUIVALENT TO THE ITEM OR MANUFACTURER SPECIFIED". THE TERM "APPROVED" SHALL MEAN LABELED, LISTED, OR BOTH, BY AN NRTL, AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT. K. THE TERM LEAD FREE REFERS TO THE WETTED SURFACE OF PIPE, FITTINGS AND FIXTURES IN POTABLE 	D.	KEEP THE MANUFACTURER-PROVIDED PROTECTIVE COVER TRENCH DRAINS DURING CONSTRUCTION. REMOVE COVERI POLISH EXPOSED SURFACES.	INGS ON FLOOR DRAINS, FLOOR SINKS AND NGS AT THE TERMINATION OF THE WORK AND		INSTRUCTIONS, MANUFACTURER'S CATALOG SUBMITTALS AND SHOP DRAWINGS, WARRAN EQUIPMENT MANUFACTURER. INCLUDE AN IN OWNER, ARCHITECT, ENGINEER, GENERAL CO CONTENTS.
	WATER SYSTEMS THAT HAVE A WEIGHTED AVERAGE LEAD CONTENT OF LESS THAN OR EQUAL TO 0.25% PER SAFE DRINKING WATER ACT AS AMENDED JANUARY 4, 2011 SECTION 1417. 1.3 PREBID SITE VISIT	1.9 A.	SUBSTITUTIONS MATERIALS, PRODUCTS, EQUIPMENT, AND SYSTEMS DESCR A STANDARD OF REQUIRED FUNCTION, DIMENSION, APPEAR PROPOSED SUBSTITUTION. THE BASE BID SHALL INCLUDE C	IBED IN THE BIDDING DOCUMENTS ESTABLISH ANCE AND QUALITY TO BE MET BY THE NLY THE PRODUCTS FROM MANUFACTURERS	В.	SUBMIT THREE COPIES OF LITERATURE BOUN SEPARATING EQUIPMENT TYPES TO THE ARC THE WORK. PAPER CLIPS, STAPLES, RUBBER
	A. PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.		SPECIFICALLY NAMED IN THE DRAWINGS AND SPECIFICATIO THE SUBSTITUTION REQUEST FORM FROM THE ARCHITECT SUBSTITUTION REQUEST FROM FOR EACH MATERIAL, PROD PROPOSED TO BE SUBSTITUTED. THE BURDEN OF PROOF O SUBSTITUTION IS UPON THE PROPOSER	ONS. TO REQUEST A SUBSTITUTION, REQUEST OR ENGINEER. COMPLETE AND SEND THE PUCT, EQUIPMENT, OR SYSTEM THAT IS F THE MERIT OF THE PROPOSED		CONTRACT SHALL BE WITHHELD UNTIL THIS E COMPLETE BY THE ARCHITECT AND ENGINEE SHIPPED WITH THE EQUIPMENT ITSELF FOR IN
	1.4 MATERIAL AND WORKMANSHIP A. PROVIDE NEW MATERIAL FOLIPMENT AND APPARATUS UNDER THIS CONTRACT UNLESS OTHERWISE	В.	UNLESS STATED OTHERWISE IN WRITING TO THE ENGINEER WARRANTS TO THE ENGINEER, ARCHITECT, AND OWNER TH	BY THE CONTRACTOR, CONTRACTOR	D.	REFER TO DIVISION 01 FOR ACCEPTANCE OF ELECTRONIC MANUALS, REFER TO PARAGRAF
	STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM DEFECTS. MODEL NUMBERS LISTED IN SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM, WRITTEN DESCRIPTIONS OF THE TRIM GOVERNMODEL NUMBERS		 PROPOSED SUBSTITUTION HAS BEEN FULLY INVESTIG THE SPECIFIED WORK IN ALL RESPECTS UNLESS STAT REQUEST. PROPOSED SUBSTITUTION IS CONSISTENT WITH THE (CONTRACT DOCUMENTS AND WILL PRODUCE	1.14 A	SPARE PARTS
	 B. PIPE, PIPE FITTINGS, PIPE SPECIALTIES AND VALVES SHALL BE MANUFACTURED IN PLANTS LOCATED IN THE UNITED STATES OR CERTIFIED TO MEET THE SPECIFIED ASTM AND ANSI STANDARDS. 		 INDICATED RESULTS, INCLUDING FUNCTIONAL CLEAR, SOURCING OF REPLACEMENT PARTS. 3. PROPOSED SUBSTITUTION HAS RECEIVED NECESSAR JURISDICTION. 	ANCES, MAINTENANCE SERVICE, AND Y APPROVALS OF AUTHORITIES HAVING	Δ.	FLUSHOMETER REPAIR KITS, AND WATER CLC THIS PROJECT.
A	C. WORK PERFORMED UNDER THIS CONTRACT SHALL PROVIDE A NEAT AND "WORKMANLIKE" APPEARANCE WHEN COMPLETED, TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER. WORKMANSHIP SHALL BE THE FINEST POSSIBLE BY EXPERIENCED MECHANICS. INSTALLATIONS SHALL COMPLY WITH APPLICABLE		 SAME WARRANTY WILL BE FURNISHED FOR PROPOSE IF ACCEPTED SUBSTITUTION FAILS TO PERFORM AS R SUBSTITUTE MATERIAL OR SYSTEM WITH THAT ORIGIN THEREBY 	D SUBSTITUTION AS FOR SPECIFIED WORK. EQUIRED, CONTRACTOR SHALL REPLACE NALLY SPECIFIED AND BEAR COSTS INCURRED	1.15 A.	TRAINING AT A TIME MUTUALLY AGREED UPON BETWEE OF A FACTORY TRAINED AND AUTHORIZED RE
	D. THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING AND SQUEAKS IN ROTATING COMPONENTS SHALL NOT BE ACCEPTABLE. MATERIALS AND EQUIPMENT	C.	 6. COORDINATION, INSTALLATION, AND CHANGES IN THE SUBSTITUTION WILL BE COMPLETE IN ALL RESPECTS. NO SUBSTITUTIONS WILL BE CONSIDERED UNLESS THE SUB AND ATTA SUPER VIEW AND ATTA SUPAR VIEW AND ATTA SUPER VIEW AND ATTA SUPER VIEW AND ATTA SUP	WORK AS NECESSARY FOR ACCEPTED	B.	PERSONNEL ON THE OPERATION AND MAINTE PROVIDE TRAINING TO INCLUDE, BUT NOT BE EQUIPMENT AS IT RELATES TO THE FACILITY AND SCHEDULES RELATED TO STARTUR AND
	SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL GRADE EQUIPMENT SHALL NOT BE ACCEPTED UNLESS OTHERWISE INDICATED. E. REMOVE FROM THE PREMISES WASTE MATERIAL PRESENT AS A RESULT OF HIS WORK, INCLUDING CARTONS, CRATING, PAPER, STICKERS, AND/OR EXCAVATION MATERIAL NOT USED IN BACKEULING, ETC.		AND ATTACHED WITH THE APPROPRIATE SUBSTITUTION DO CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN RECEIVED BY THE ENGINEER AT LEAST TEN (10) CALENDAR BIDS.	COMENTATION. NO SUBSTITUTION WILL BE REQUEST FOR APPROVAL TO BID HAS BEEN DAYS PRIOR TO THE DATE FOR RECEIPT OF	C.	MAINTENANCE AND APPROPRIATE OPERATOR OPERATION AND MAINTENANCE MANUALS. SUBMIT A CERTIFICATION LETTER TO THE ARC
	CARTONS, CRATING, PAPER, STICKERS, AND/OR EXCAVATION MATERIAL NOT USED IN BACKFILLING, ETC.					REPRESENTATIVE HAS BEEN TRAINED AS SP
				Permit/Seal Consul	tant	
		·		ISSUE FOR BID		Star
				NOT FOR CONSTRUCTION		Stantec Consulting Services Inc. 801 South Figueroa Street Suite 300 Los Angeles, 90017-3007 Tel: (213) 955-9775 • www.stantec.com
0:27:33 AM		 	ISSUE FOR BID CI/FL GY 2023.10.04 PLAN CHECK RESUBMITTAL NO. 1 SK GY 2023.05.12			Copyright Reserved The Contractor shall verify and be responsible for all dimensions
7/2023 1	Revision By Appd	- YYYY.MM.DD	PLAN CHECK SUBMITTAL CI GY 2023.03.10 Issued By Appd YYYY.MM.DD			The Copyrights to all designs and drawings are the property of S or use for any unrose other than that authorized by Stantec wi

Revision

ORIGINAL SHEET - ARCH E

TION IS APPROVED PRIOR TO RECEIPT OF BIDS, SUCH APPROVAL WILL BE IDDERS SHALL NOT RELY UPON APPROVALS MADE IN ANY OTHER WAY. BE GIVEN. NO SUBSTITUTIONS WILL BE CONSIDERED AFTER THE CONTRACT FICALLY PROVIDED IN THE CONTRACT DOCUMENTS.

REVIEW SHOP DRAWINGS, MATERIAL LISTS, MANUFACTURER PRODUCT T TO BE FURNISHED, AND ITEMS REQUIRING COORDINATION BETWEEN CONTRACT. PROVIDE SUBMITTALS IN SUFFICIENT DETAIL SO AS TO E WITH THESE CONTRACT DOCUMENTS AND THE DESIGN CONCEPT. PRIOR TO VERIFY THAT THE EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND D USE, WILL FIT THE AVAILABLE SPACE, AND MAINTAIN MANUFACTURER EARANCES. IF THE SIZE OF EQUIPMENT FURNISHED MAKES NECESSARY ANY DNFIGURATION, SUBMIT A SHOP DRAWING SHOWING THE PROPOSED LAYOUT. ARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW FOR TWO

IME, PLUS TO/FROM MAILING TIME VIA THE ARCHITECT, PLUS A DUPLICATION ITAL, IF REQUIRED. ONLY RESUBMIT THOSE SECTIONS REQUESTED FOR

THE PROJECT NAME, APPLICABLE SPECIFICATION SECTION, SUBMITTAL CATION ACRONYM AS USED ON THE DRAWINGS, AND THE CONTRACTOR'S ERTIFY THAT THE SUBMITTAL HAS BEEN CHECKED BY THE CONTRACTOR NGS AND SPECIFICATIONS, AND IS COORDINATED WITH OTHER TRADES. LITERATURE SHALL INCLUDE SHOP DRAWINGS, PRODUCT DATA, MPLES AND OTHER SUBMITTALS REQUIRED BY THIS DIVISION. HIGHLIGHT, MATERIALS, PERFORMANCE CRITERIA, AND ACCESSORIES THAT ARE BEING UCT CATALOG DATA NOT SPECIFICALLY NOTED TO BE PART OF THE E REJECTED AND RETURNED WITHOUT REVIEW.

WINGS SHALL NOT CONTAIN THE FIRM NAME, LOGO, SEAL, OR SIGNATURE OF NOT BE COPIES OF THE WORK PRODUCT OF THE ENGINEER. IF THE JSE ELEMENTS OF SUCH PRODUCT, REFER TO PARAGRAPH "ELECTRONIC EDURES TO BE USED.

ORDING TO INDIVIDUAL SPECIFICATION SECTIONS. ILLEGIBLE SUBMITTALS JRNED WITHOUT REVIEW. CATALOG DATA SHALL BE PROPERLY BOUND, BBED IN A 3-RING BINDER. EACH ITEM OR MODEL NUMBER SHALL BE ESSORIES INDICATED. LABEL THE CATALOG DATA WITH THE EQUIPMENT OR NUMBER AS USED ON THE DRAWINGS AND INCLUDE PERFORMANCE , WEIGHTS, MATERIALS, FINISHES, WIRING DIAGRAMS, ELECTRICAL TIONS FROM SPECIFIED EQUIPMENT OR MATERIALS. FOR EQUIPMENT WITH INCLUDE SHORT CIRCUIT CURRENT RATINGS. MARK OUT INAPPLICABLE BE RETURNED WITHOUT REVIEW IF THE ABOVE MENTIONED REQUIREMENTS

SUBMITTALS REQUIRED BY DIVISION 01. IF NOT INDICATED AND HARD-COPY T A MINIMUM OF SIX (6) COPIES. REFER TO DIVISION 01 FOR ACCEPTANCE OF OR THIS PROJECT. FOR ELECTRONIC SUBMITTALS, CONTRACTOR SHALL ACCORDANCE WITH THE PROCEDURES SPECIFIED IN DIVISION 01. THE ARCHITECT AND ENGINEER THAT THE SUBMITTALS HAVE BEEN POSTED. PROCEDURES ARE NOT DEFINED IN DIVISION 01. CONTRACTOR SHALL NAME, AND PASSWORD INFORMATION NEEDED TO ACCESS THE LS SENT BY E-MAIL, CONTRACTOR SHALL COPY THE DESIGNATED ARCHITECT AND ENGINEER. CONTRACTOR SHALL ALLOW FOR THE ENGINEER ABOVE IN THE CONSTRUCTION SCHEDULE. CONTRACTOR SHALL SUBMIT ONLY TO PURCHASE THE MATERIALS AND/OR EQUIPMENT IN THE ELECTRONIC

UENT ACCEPTANCE OF SUBMITTALS BY THE ENGINEER AND/OR ARCHITECT NTRACTOR FROM RESPONSIBILITY FOR DEVIATIONS FROM THE DRAWINGS RS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES, OMISSIONS GS; COORDINATION OF ELECTRICAL REQUIREMENTS; AND NOT ACTUAL BUILDING CONDITIONS AND ADJACENT WORK. PROCEED WITH THE LATION OF EQUIPMENT ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS

RAWINGS OR RECORD DRAWINGS, CONTRACTOR MAY, AT HIS OPTION, NG FILES IN AUTOCAD OR DXF FORMAT ON CD-ROM DISK, DVD DISK, FLASH AD. AS DESIRED. FROM THE ENGINEER FOR A SHIPPING AND HANDLING FEE T UP TO 12 SHEETS AND \$15 PER SHEET FOR EACH ADDITIONAL SHEET. OR WRITTEN AUTHORIZATION AND ENGINEER FOR THE NECESSARY RELEASE SPECIFY SHIPPING METHOD AND DRAWING FORMAT. IN ADDITION TO RIZATION FROM THE ARCHITECT AND RELEASE AGREEMENT FORM FROM THE ED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.

WORK IN THIS DIVISION, CONTRACTOR SHALL MAINTAIN AN ACCURATE ADE DURING THE INSTALLATION OF THE SYSTEM. UPON COMPLETION OF THE FER ALL RECORD INFORMATION TO THREE IDENTICAL SETS OF THE . INSERT ONE SET INTO EACH COPY OF THE MANUAL DESCRIBED BELOW.

AL CONDITIONS FOR ADDITIONAL INFORMATION.

NCE INSTRUCTIONS

NSTRUCTION, COLLECT AND COMPILE A COMPLETE BROCHURE OF) INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE JRER'S CATALOG SHEETS, WIRING DIAGRAMS, PARTS LISTS, APPROVED WINGS, WARRANTIES, AND DESCRIPTIVE LITERATURE AS FURNISHED BY THE . INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, EER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF

TERATURE BOUND IN APPROVED BINDERS WITH INDEX AND TABS PES TO THE ARCHITECT, FOR ENGINEER'S REVIEW, AT THE TERMINATION OF APLES, RUBBER BANDS, LOOSE-LEAF BINDING, AND MAILING ENVELOPES ARE) BINDERS. FINAL APPROVAL OF SYSTEMS INSTALLED UNDER THIS ELD UNTIL THIS EQUIPMENT BROCHURE IS RECEIVED AND DEEMED CT AND ENGINEER. INSTRUCT WORKMEN TO SAVE REQUIRED LITERATURE ENT ITSELF FOR INCLUSION IN THIS BROCHURE.

S AS DESCRIBED ABOVE

ACCEPTANCE OF ELECTRONIC MANUALS FOR THIS PROJECT. FOR ER TO PARAGRAPH "SUBMITTALS" FOR REQUIREMENTS.

RECEIPT. THE SPARE PARTS FOR FAUCET WASHERS AND O-RINGS. , AND WATER CLOSET TANK REPAIR KITS FOR THE FIXTURES FURNISHED FOR

D UPON BETWEEN THE OWNER AND CONTRACTOR, PROVIDE THE SERVICES) AUTHORIZED REPRESENTATIVE TO TRAIN OWNER'S DESIGNATED TION AND MAINTENANCE OF THE EQUIPMENT PROVIDED FOR THIS PROJECT.

JDE. BUT NOT BE LIMITED TO, AN OVERVIEW OF THE SYSTEM AND/OR TO THE FACILITY AS A WHOLE; OPERATION AND MAINTENANCE PROCEDURES O STARTUP AND SHUTDOWN. TROUBLESHOOTING. SERVICING. PREVENTIVE RIATE OPERATOR INTERVENTION; AND REVIEW OF DATA INCLUDED IN THE NCE MANUALS.

ITER TO THE ARCHITECT STATING THAT THE OWNER'S DESIGNATED I TRAINED AS SPECIFIED HEREIN. LETTER SHALL INCLUDE DATE, TIME, ATTENDEES AND SUBJECT OF TRAINING. THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL SIGN THE CERTIFICATION LETTER INDICATING AGREEMENT THAT THE TRAINING HAS BEEN PROVIDED.

- D. SCHEDULE TRAINING WITH OWNER WITH AT LEAST 7 DAYS ADVANCE NOTICE. 1.16 WARRANTIES
- A. WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL DEFECTS DUE TO FAULTY WORKMANSHIP, DESIGN, OR MATERIAL FOR A PERIOD OF 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONGER WARRANTY IN THE CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARRANTY EXCEEDS 12 MONTHS. REMEDY ALL DEFECTS, OCCURRING WITHIN THE WARRANTY PERIOD(S), AS STATED IN THE GENERAL CONDITIONS AND DIVISION 01.
- WARRANTY SHALL INCLUDE A GUARANTEE OF FREE CIRCULATION OF LIQUIDS THROUGHOUT THE SYSTEM B AS INTENDED WITHOUT LEAKS, EXCESSIVE NOISE, OR WATER HAMMER.
- WARRANTIES SHALL INCLUDE LABOR AND MATERIAL, INCLUDING TRAVEL EXPENSES. MAKE REPAIRS OR REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER, ARCHITECT, AND ENGINEER.
- D. PERFORM THE REMEDIAL WORK PROMPTLY, UPON WRITTEN NOTICE FROM THE ENGINEER OR OWNER. AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER ALL WARRANTIES, IN WRITING AND PROPERLY EXECUTED, INCLUDING TERM LIMITS FOR WARRANTIES EXTENDING BEYOND THE ONE YEAR
- PERIOD AND ANY ACTIONS THE OWNER MUST TAKE IN ORDER TO MAINTAIN WARRANTY STATUS. EACH WARRANTY INSTRUMENT SHALL BE ADDRESSED TO THE OWNER AND STATE THE COMMENCEMENT DATE AND TERM.

PART 2 - GENERAL MATERIALS AND INSTALLATION

2.1 BUILDING OPERATION

COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE ARCHITECTURAL PORTIONS OF THIS SPECIFICATION. ACCOMPLISH WORK REQUIRING INTERRUPTION OF BUILDING OPERATION AT A TIME WHEN THE BUILDING IS NOT IN OPERATION AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER AND/OR TENANT. COORDINATE INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TENANT A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF WORK.

2.2 EXISTING EQUIPMENT REUSE AND REMOVAL

- PROVIDE ITEMS OF PLUMBING SYSTEMS MODIFICATION REQUIRED BECAUSE OF BUILDING REMODELING, Α. AS NOTED ON THE DRAWINGS, OR NECESSARY FOR PROPER OPERATION. MATCH EXISTING MATERIALS AND CONSTRUCTION TECHNIQUES WHEN MODIFYING EXISTING SYSTEMS. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR AND ARCHITECT.
- B. SEAL EXISTING FLOOR DRAINS TO BE ABANDONED OR NOT IN USE AT COMPLETION OF WORK GAS-TIGHT WITH PLUG. CLEAN P-TRAP OF DEBRIS. PROVIDE BLANK GRATE. COVER DRAINS WITH FLOOR MATERIAL MATCHING ADJACENT AREA IN FINISHED PORTIONS OF THE BUILDING.
- NEW FLOOR DRAINS SHALL BE CONNECTED TO THE EXISTING SANITARY DRAINAGE SYSTEM AS SHOWN С. ON THE DRAWINGS OR AS REQUIRED. SAW-CUT EXISTING CONCRETE FLOOR AS REQUIRED TO INSTALL NEW UNDERFLOOR LINES, AND PATCH TO MATCH EXISTING SUB-FLOOR. REFER TO ARCHITECTURAL SPECIFICATIONS FOR FINISH FLOOR PATCHING REQUIREMENTS.
- D. EXISTING PLUMBING FIXTURES WHERE INDICATED ON THE DRAWINGS TO BE REUSED SHALL BE CLEANED, REPAIRED, PROVIDED WITH NEW WASHERS, ETC. AS REQUIRED TO PUT THEM INTO GOOD OPERATING CONDITION.
- E. PATCH HOLES WEATHER-TIGHT IN EXISTING ROOFS CAUSED BY REMOVAL OF PLUMBING ITEMS SUCH AS PIPING.
- MAKE CONNECTION OF NEW PIPE TO SIMILAR EXISTING WASTE, WATER AND GAS PIPE USING STANDARD FITTINGS AND JOINING PRACTICES
- 2.3 EXCAVATION AND BACKFILLING
- PERFORM EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION OF UNDERGROUND WORK UNDER THIS CONTRACT. TRENCHES SHALL BE OF SUFFICIENT WIDTH. CRIB OR BRACE TRENCHES TO PREVENT CAVE-IN OR SETTLEMENT. DO NOT EXCAVATE TRENCHES CLOSE TO COLUMNS AND WALLS OF NEW BUILDING WITHOUT PRIOR CONSULTATION WITH THE ARCHITECT. USE PUMPING EQUIPMENT IF REQUIRED TO KEEP TRENCHES FREE OF WATER. BACKFILL TRENCHES IN MAXIMUM 6 INCH LAYERS OF WELL-TAMPED DRY EARTH IN A MANNER TO PREVENT FUTURE SETTLEMENT.
- R EXCAVATION AS SPECIFIED HEREIN SHALL BE CLASSIFIED AS COMMON EXCAVATION. COMMON EXCAVATION SHALL COMPRISE THE SATISFACTORY REMOVAL AND DISPOSITION OF MATERIAL OF WHATEVER SUBSTANCES AND OF EVERY DESCRIPTION ENCOUNTERED, INCLUDING ROCK, IF ANY, WITHIN THE LIMITS OF THE WORK AS SPECIFIED AND SHOWN ON THE DRAWINGS. EXCAVATION SHALL BE PERFORMED TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. DISPOSE OF EXCAVATED MATERIALS THAT ARE CONSIDERED UNSUITABLE FOR BACKFILL AND SURPLUS OF EXCAVATED MATERIAL WHICH IS NOT REQUIRED FOR BACKFILL TO THE SATISFACTION OF THE ARCHITECT.

2.4 COINCIDENTAL DAMAGE

- Α REPAIR STREETS, SIDEWALKS, DRIVES, PAVING, WALLS, FINISHES, AND OTHER FACILITIES DAMAGED IN THE COURSE OF THE WORK. REPAIR MATERIALS SHALL MATCH EXISTING CONSTRUCTION. REPAIR WORK SHALL MEET ALL REQUIREMENTS OF THE OWNER, LOCAL AUTHORITIES HAVING JURISDICTION, AND MEET THE SATISFACTION OF THE ARCHITECT.
- 2.5 CUTTING AND PATCHING
- CONFORM TO THE REQUIREMENTS IN DIVISION 01. CUT WALLS, FLOORS, CEILINGS, AND OTHER PORTIONS OF THE FACILITY AS REQUIRED TO INSTALL WORK UNDER THIS DIVISION. OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO CUTTING. DO NOT DISTURB STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBLE. PATCH WALLS, FLOORS, AND OTHER PORTIONS OF THE FACILITY AS REQUIRED BY WORK UNDER THIS DIVISION. PATCHING SHALL MATCH ORIGINAL MATERIAL AND CONSTRUCTION INCLUDING FIRE RATINGS, IF APPLICABLE. REPAIR AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF ADJOINING SURFACES IN A MANNER SATISFACTORY TO THE ARCHITECT.
- 2.6 ROUGH-IN
- COORDINATE WITHOUT DELAY ALL ROUGHING-IN WITH OTHER DIVISIONS. CONCEAL PIPING, CONDUIT, AND ROUGH-IN EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE SHOWN.
- 2.7 CONCRETE BASES
- PROVIDE CONCRETE BASES (E.G., HOUSEKEEPING PADS) FOR EQUIPMENT WHERE INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN. CONCRETE BASES SHALL HAVE CHAMFERED EDGES. SIZE OF BASE SHALL BE A MINIMUM OF 4 INCHES GREATER THAN THE FOOTPRINT OF THE EQUIPMENT THAT IT IS SUPPORTING AND SHALL HAVE A MINIMUM HEIGHT AS DESCRIBED BELOW.
- CONSTRUCT EQUIPMENT BASES OF A MINIMUM 28 DAY, 4000 PSI CONCRETE CONFORMING TO AMERICAN B CONCRETE INSTITUTE STANDARD BUILDING CODE FOR REINFORCED CONCRETE (ACI 318-99) AND THE LATEST APPLICABLE RECOMMENDATIONS OF THE ACI STANDARD PRACTICE MANUAL. CONCRETE SHALL BE COMPOSED OF CEMENT CONFORMING TO ASTM C150 TYPE I. AGGREGATE CONFORMING TO ASTM C33. AND POTABLE WATER. EXPOSED EXTERIOR CONCRETE SHALL CONTAIN 5 TO 7 PERCENT AIR ENTRAINMENT.
- C. UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE STRUCTURAL DRAWINGS, REINFORCE EQUIPMENT BASES AND HOUSEKEEPING PADS WITH NO. 4 REINFORCING BARS CONFORMING TO ASTM A615 OR 6X6 -W2.9 X W2.9 WELDED WIRE MESH CONFORMING TO ASTM A185. PLACE REINFORCING BARS 24 INCHES ON CENTER WITH A MINIMUM OF TWO BARS EACH DIRECTION.
- D. PROVIDE GALVANIZED ANCHOR BOLTS FOR EQUIPMENT PLACED ON CONCRETE EQUIPMENT BASES AND HOUSEKEEPING PADS OR ON CONCRETE SLABS. ANCHOR BOLTS SIZE, NUMBER AND PLACEMENT SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT.
- E. CONCRETE EQUIPMENT BASES SHALL HAVE MINIMUM HEIGHTS IN ACCORDANCE WITH THE FOLLOWING:



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PLUMBING SPECIFICATIONS (1)



5	6	
GS SHOWING BRACING TYPE AND LOCATION. DETAILS OF ALL BRACING USED.	WITH INSULATION SEALER. EXCEPTION FOR VERTICAL DIAMETER OF THE VERTICAL PIPE AND EXTEND CLAMF	PIPING: PROVIDE CLAN
3 SHOWING THAT THE SEISMIC RESTRAINTS MEET THE SEISMIC REQUIREMENTS.	INSULATION AND VAPOR BARRIER WITH WET COAT OF LARGER COLD PIPING AT HANGERS, PROVIDE 8 INCH L	JAPOR BARRIER LAP C' DNG SECTIONS OF HIG
D IN THE STATE OF THE PROJECT AND EMPLOYED BY THE MANUFACTURER OF THE RODUCTS. CALCULATIONS SHALL INCLUDE DEAD LOADS, STATIC SEISMIC LOADS, AND	UNICELLULAR PIPING INSULATION MEETING ASTM C 53, SUPPORTS AND ENCASED IN STEEL INSULATION SHIEL	4-01A, TYPE I WITH INTE D BY COOPER B-LINE, /
<pre>{IALS UTILIZED FOR CONNECTIONS.</pre> <pre> </pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <!--</td--><td>EQUAL. INSULATION SHALL BE CONTINUOUS ALONG TH WHERE PIPING IS EXPOSED AT FIXTURES. FOR PIPES 2</td><td>E PIPE SURFACE, EXCE</td></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	EQUAL. INSULATION SHALL BE CONTINUOUS ALONG TH WHERE PIPING IS EXPOSED AT FIXTURES. FOR PIPES 2	E PIPE SURFACE, EXCE
D SHALL BE CERTIFIED BY THE MANUFACTURER. APPROVED MANUFACTURERS ARE: PANY, INC., B-LINE/TOLCO, ISAT, KINETICS NOISE CONTROL, INC., LOOS & COMPANY,	PROTECTION SHIELDS INSTALLED BETWEEN HANGER # LENGTH REQUIREMENTS:	ND PIPE WHICH MEETS
FROM CALIFORNIA OSHPD OR OTHER RECOGNIZED GOVERNMENT AGENCY SHOWING JT RATINGS.	 NPS 1-1/4 AND SMALLER: INSULATION SHALL BE O a. RETAIN ONE OR MORE OF SIX SUBPARAGR, b. CELLULAR GLASS: 1-1/2 INCHES THICK 	NE OF THE FOLLOWING APHS BELOW.
EASURES TO BE APPLIED TO MECHANICAL, ELECTRICAL, AND PLUMBING	c. FLEXIBLE ELASTOMERIC: 1 INCH THICK. d. MINERAL-FIBER, PREFORMED PIPE INSULAT	ION, TYPE I: 1 INCH TH
DES AS WELL AS MANUFACTURER'S REQUIREMENTS. THE MOST STRINGENT PLY. ALL ANCHOR CONNECTIONS TO STRUCTURE FOR SUPPORT OF MECHANICAL AND	2. NPS 1-1/2 AND LARGER: INSULATION SHALL BE OF	JE OF THE FOLLOWING
IENT, REGARDLESS OF THE NEED FOR SEISMIC RESTRAINTS, SHALL BE SHOWN ON	 b. CELLULAR GLASS: 1-1/2 INCHES THICK. c. FLEXIBLE ELASTOMERIC: 1 INCH THICK. 	
	d. MINERAL-FIBER, PREFORMED PIPE INSULAT C. COVER FITTINGS WITH ZESTON. KNAUF. OR EQUAL ON	ION, TYPE I: 1 INCH TH E-PIECE PVC PREMOLI
	FITTING COVERS, JACKETS AND ADHESIVES SHALL NOT SMOKE DEVELOPMENT RATING OF 50 PER ASTM E84. F	EXCEED FLAME SPRE
ED OR NOTED ON THE DRAWINGS ARE SUBJECT TO THE APPROVAL OF LOCAL CODE Y APPROVAL BEFORE INSTALLING ANY MATERIAL OR JOINING METHOD.	COMPLIANCE WITH MANUFACTURER'S RECOMMENDAT ARE NOT APPROVED BY THE LOCAL AHJ, MITER INSUL/	ONS. WHERE PREMOL
COLD, HOT AND HOT WATER RECIRCULATION): DOMESTIC WATER PIPING INSTALLED	3.3 PIPING JOINTS	
FITTINGS AND SOLDERED CONNECTIONS MADE UP WITH 95/5 SOLDER. BRAZED (MED TEE CONNECTIONS (T-DRILL) MAY BE USED IN COPPER LINES WHERE APPROVED (ION SHALL BE MADE WITH BRAZED SILVER SOLDER (SILFOS), JOINTS IN	A. COPPER TUBING: JOINTS IN HARD TEMPER TUBING SH SOLDER EXCEPT WHERE TUBING IS INSTALLED BELOW	ALL BE SOLDERED JO GRADE OR BELOW TI
H MANUFACTURER'S INSTRUCTIONS.	JOINTS SHALL BE SOLDERED WITH SILVER SOLDER (SIL SHALL BE OF THE FLARED TYPE INSTALLED IN COMPLI/ DECOMMENDATIONS	FOS). JOINTS IN SOF ANCE WITH THE FITTIN
THESTIC WATER PIPING 2 INCH AND SMALLER SHALL BE TYPE "K" SOFT TEMPER TH FLARED COPPER ALLOY FITTINGS AND CONNECTIONS, OR TYPE "K" HARD TEMPER TH CONVENTIONAL WROUGHT COPPER FITTINGS AND SILVER SOLDER (SIL-FOS)	B. THREADED STEEL PIPE: THREADED JOINTS SHALL BE	FULL AND CLEAN, CUT
FEW UNDERGROUND COPPER PIPING JOINTS AS POSSIBLE. AT BUILDING SERVICE TS SHALL BE INSTALLED UNDER OR WITHIN 5 FEET OF THE BUILDING. INSTALL	(3) THREADS EXPOSED BEYOND THE FITTINGS. MAKE JO COMPOUND AND PAINT EXPOSED THREADS OF FERRO HAS BEEN TESTED AND PROVEN TIGHT NO CALLYING	JINTS TIGHT WITH GR JS PIPE WITH ACID-RE LAMP-WICK OR OTHE
FING DELOW GRADE OUTSIDE BUILDING AT ADEQUATE DEPTH TO PREVENT	PERMITTED FOR CORRECTION OF DEFECTIVE JOINTS.	
/IESTIC WATER PIPING 3 INCH AND LARGER SHALL BE CLASS 52 DUCTILE IRON IREMENTS OF ANSI / AWWA STANDARD C151/A21.51. PIPING SHALL BE DOUBLE CCORDANCE WITH ANSI / AWWA STANDARD C104/A21 4 EITTINGS SHALL HAVE	AT A 45 DEGREE ANGLE TO WITHIN 1/16 INCH OF THE IN FOURTH GREATER DEPTH THAN THE PIPE WALL THICK	SIDE WALL, AND BUIL NESS. WELDING SHAI
3. AT CONTRACTOR'S OPTION, PIPE JOINTS IN STRAIGHT RUNS (NOT AT FITTINGS) AND JER OR WITHIN 5 FEET OF THE BUILDING SLAB MAY BE PUSH-ON JOINTS. JOINTS SHALL	OXY-ACETYLENE, PERFORMED IN CONFORMANCE WITH AND ONLY BY EXPERIENCED CERTIFIED WELDERS.	THE ASME CODE FO
EQUIREMENTS OF ANSI A21.11.	D. CAST IRON PIPE BELOW GRADE: JOINTS IN BELL AND S NEOPRENE COMPRESSION GASKETS, TYSEAL OR EQU	PIGOT CAST IRON W
CAST IRON SOIL PIPE WITH HUB AND SPIGOT FITTINGS WITH NEOPRENE GASKET 3TM A74, MANUFACTURED BY AB & I FOUNDRY, CHARLOTTE OR TYLER PIPE AND EMARK OF THE CISPLAND NSE, HUB ESS MARTE AND VENT DIDE TO NOT DEDMITTED	ASTM C1540 AND FM 1680, ANACO HUSKY #HD-2000, CL/ MISSION "HEAVYWEIGHT" OR PROFLO "HD"	(IVIP-ALL "HI TORQUE"
PVC SCHEDULE 40 DWV ASTM D2665 PIPE WITH PVC MEETING ASTM B1784, "SOLID 2454-B WITH ASTM 2665 SOCKET FITTINGS WITH SOLVENT WELD JOINTS IS ALSO	E. CAST IRON PIPE ABOVE GRADE: JOINTS IN HUBLESS PI BY ANACO, IDEAL, MISSON OR TYLER. JOINTS IN STORM DRAINS, SHALL BE HEAVY DUTY COURTINGS MEETING	PE SHALL BE STAND, I PIPING, INCLUDING ASTM C1540 AND EM
APPROVED BY CODE. WASTE AND VENT PIPE ABOVE SLAB INSIDE BUILDING SHALL BE I SOIL PIPE AND FITTINGS, MEETING ASTM A888 AND CISPI 301, MANUFACTURED BY AB LOTTE OR TYLER PIPE AND BEARING THE TRADEMARK OF THE CISPI AND NEE	CLAMP-ALL "HI TORQUE" 80 IN. LB, IDEAL TRIDON "HD" C	R MISSION "HEAVY
ID VENT ABOVE SLAB: WASTE AND VENT PIPE ABOVE SLAB INSIDE BUILDING SHALL BE	F. PVC PIPE: CLEAN JOINTS FREE FROM DEBRIS AND MOI EACH JOINT. APPLY SOLVENT CEMENT MEETING ASTM ACCORDANCE WITH ASTM D2855.	DI UKE. APPLY PVC D2564 AND MAKE JC
LOTE OR TYLER PIPE AND BEARING AS IM A888 AND CISPI 301, MANUFACTURED BY AB LOTTE OR TYLER PIPE AND BEARING THE TRADEMARK OF THE CISPI AND NSF. PVC ASTM D2665 PIPE WITH PVC MEETING ASTM B1784, "SOLID WALL" CELL CLASS 12454-B	G. DISSIMILAR PIPES ABOVE GRADE: MAKE CONNECTION	
CKET FITTINGS WITH SOLVENT WELD JOINTS IS ALSO PERMITTED WHERE APPROVED HERE OTHERWISE NOTED ON DRAWINGS. (NOTE: PVC PIPING IS NOT ALLOWED IN REPORT	ADAPTER GASKET WITH STAINLESS STEEL SHIELD AND MISSION FLEXSEAL MR56 SERIES	HOSE CLAMPS, FEI
NSIDE BUILDING SHALL BE SAME AS SPECIFIED FOR INTERIOR WASTE AND VENT PIPE.	H. DISSIMILAR PIPES BELOW GRADE: MAKE CONNECTION DISSIMILAR WASTE PIPE USING SHIELDED ADAPTER CO	OF NEW WASTE PIF
/ SERVICE: PIPING FROM POINTS NOTED FIVE FEET OUTSIDE THE BUILDING WALL /C WITH DRAINAGE TYPE BELL AND SPIGOT FITTINGS AND NEOPRENE GASKET JOINTS	ADAPTER GASKET WITH STAINLESS STEEL SHIELD AND SEWER COUPLINGS.	HOSE CLAMPS, FE
SCHEDULE 80 PVC PIPE AND FITTINGS, SOLVENT WELDED TYPE, INSTALLED PER	I. CPVC PIPE: CLEAN JOINTS FREE FROM DEBRIS AND M TO EACH JOINT. APPLY SOLVENT CEMENT MEETING AS)ISTURE. APPLY CF TM F493 AND MAKE
CREVICES WHERE CONTAMINATION MAY ACCUMULATE. SLOPE PIPING AT A 1) ALLOW FOR DRAINAGE.] [COORDINATE REQUIREMENTS FOR PVC PIPE WITH ASTM	ACCORDANCE WITH ASTM D2855.	
LITY DEIONIZED WATER. LUMBING FIXTURES AND EQUIPMENT: 1-1/4 INCH AND LARGER WASTE CONNECTIONS	A. GENERAL: CLEAN PIPE THOROUGHLY PRIOR TO INSTA	LLATION. REAM ENI
'S TO CAST IRON PIPE SHALL BE "DWV" COPPER WITH WROUGHT COPPER DRAINAGE NITH COPPER SWEAT OR COMPRESSION JOINTS AT FIXTURE TRAP CONNECTIONS AND AT CONNECTIONS TO CAST IRON PIPE	CUT PIPE ACCURATELY TO MEASUREMENTS TAKEN ON FOR INSTALLATION OF COVERINGS WHERE REQUIRED ALIGN PIPE CONNECT IT SECURELY AND SUPPORT IT	THE JOB. INSTALL V PIPE SHALL NOT BE FROM THE BUILDING
DENSATE DRAIN INSIDE BUILDING: INDIRECT AND CONDENSATE DRAIN PIPE INSTALLED	AS SPECIFIED BELOW. PROVIDE CHROME-PLATED ESC FLOORS OR WALLS OF FINISHED SPACES. RUN PIPES F	JTCHEONS ON PIPE REELY THROUGH F
SHALL BE TYPE "M" HARD COPPER WITH WROUGHT COPPER FITTINGS FOR 1" AND " COPPER WITH WROUGHT COPPER DRAINAGE PATTERN FITTINGS FOR 1-1/4" AND PER COPPER TUBE AND SOLDERED CONNECTIONS MADE WITH 95/5 SOLDER LASTM 453	USING PIPE SLEEVES. DO NOT GROUT IN PLACE UNLES INSTALL PIPE CONCEALED IN FINISHED SPACES WHER! FERROUS AND COPPER PIPE CONNECT DIFLECTRIC U	> REQUIRED FOR S EVER POSSIBLE. US NION SHALL HAVE /
ANIZED STEEL PIPE WITH GALVANIZED MALLEABLE IRON FITTINGS] [SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS WHERE ALLOWED BY CODE. (NOTE: PVC PIPING IS NOT	THREADED NYLON INSERT, AND INSULATING PRESSUR CONNECTION MADE WITHOUT INSULATING UNIONS WIL	E GASKET. NO FERF L BE ALLOWED.
TRETURIN AIR PLEINUMS). INSTALL CLEANOUTS AT ELBOWS GREATER THAN 45	B. HANGER & SUPPORTS: PIPE HANGERS SHALL BE AS DF EQUAL BY ANVIL, MICHIGAN, TRUSCON, OR UNISTRUT.	SCRIBED IN THE SE
ENSATE DRAIN OUTSIDE BUILDING: INDIRECT AND CONDENSATE DRAIN PIPE THE BUILDING ABOVE GROUND SHALL BE ASTM A53 SCHEDULE 40 GALVANIZED STEEL ZED MALLEABI F IRON FITTINGS, TERMINATE AT NEAREST ROOF DRAIN, GUTTER OR	BEAM CONNECTORS AND ALL THREAD HANGER RODS. BETWEEN JOISTS AND OTHER STRUCTURAL MEMBERS INSTALLATION DO NOT HANG PIPES FROM OTHER PIPE	PROVIDE ENGINEER AS REQUIRED TO F
3 SHOWN DRAWINGS. INSTALL CLEANOUTS AT ELBOWS GREATER THAN 45 DEGREES.	RODS AND SPACE HANGERS AT INTERVALS AS SPECIFIC WITHIN 1 FOOT OF EACH ELBOW AND TEE. PROVIDE SU	ED IN "HANGER SP PPORTS WITHIN 1
RGE: SUMP PUMP DISCHARGE PIPING ABOVE GRADE SHALL BE ASTM A53 SCHEDULE EL PIPE WITH GALVANIZED MALLEABLE IRON FITTINGS. SUMP PUMP DISCHARGE DE SHALL BE ASTM D-1785 SCHEDULE 40 PVC PIPF WITH SOCKET WEI D PRESSURE	CONNECTION. PROVIDE TWO NUTS ON THREADED SUP INSTALL HANGER TYPES OR SUPPORTS FOR VARIOUS	PORTS TO SECURE
	1. COPPER TUBE: ADJUSTABLE BAND HANGERS FC	
WITH SCHEDULE 80 PIPE MEETING ASTM D 1785 WITH CPVC SCHEDULE 80 SOCKET TING ASTM F 439.	SHALL DE D-LINE #B3170 CT COPPER PLATED ADJ BAND HANGERS FOR INSULATED COPPER TUBE ? ADJUSTABLE BAND SWIVEL RING TYPE. CLEVIS H	INCHES AND SMAL ANGERS FOR INSU
ENT INSULATION	AND LARGER SHALL BE B-LINE #B3100 GALVANIZE COPPER TUBE 2 INCHES AND SMALLER TO WALLS COATED EXTENSION SPLIT PINC PIPE OF AMOUNTS 2	D STEEL CLEVIS T 3 OR IN CHASES WI 8 INCH THREADED
COLD WATER, HOT WATER, HOT WATER RECIRCULATION, INDIRECT AND VPIPE (WITHIN BUILDING) WITH ONE-PIECE FIBERGLASS INSULATION WITH ALL-	CEILING FLANGES. SUPPORT COPPER TUBE IN CH PLASTIC OR COPPER BRACKETS SECURED TO ST	ASES AND WALLS / RUCTURE AND U-B
TH SELF-SEALING LAP TO PROVIDE A CONTINUOUS VAPOR BARRIER BY CERTAINTEED, R ARMSTRONG. PROVIDE INSULATION THICKNESS AS FOLLOWS: COLD PIPING	PIPE. RISER CLAMPS TO SUPPORT VERTICAL COF COATED STEEL, CUT INSULATION, SEAL VAPOR B	ARRIER, AND ATTA
CONDENSATE AND AUXILIARY CONDENSATE PIPING TWATER AND HOT WATER RETURN PIPING: 1" THICK FOR 3/4" AND SMALLER AND 1- T AND LARGERI ISPECIEIER: BELOW TWO BARACRAPHIC IS FOR 2012 CALLER AND 1-	2. STEEL PIPE: ADJUSTABLE BAND HANGERS FOR 2 ADJUSTABLE BAND SWIVEL RING TYPE. CLEVIS H	INCH AND SMALLE ANGERS FOR 2-1/2 SER CLAMPS TO CL
I AND LANGER JOFEOILIER. DELOW I WO PARAGRAPHS IS FOR 2013 CALIFORNIA I. KEEP BELOW AND DELETE ABOVE. IN FIBERGLASS INSULATION ON VENT PIPING WITHIN SIX FEET OF VENT THROUGH THE	B-LINE #B3373 GALVANIZED STEEL CLEVIS TYPE. RIS	
RGLASS INSULATION ON DOMESTIC COLD AND HOT WATER PIPES INSTALLED IN WALLS PROVIDE FIBERGLASS INSULATION ON DOMESTIC COLD AND HOT WATER PIPES	3. CAST IRON PIPE: ADJUSTABLE BAND HANGERS F INCH AND LARGER SHALL BE B-LINE #B3100 GALV SUPPORT VERTICAL PIPE SHALL BE B-LINE #B337	OR 2 INCH AND SM ANIZED STEEL CLE 3 GALVANIZED STE
WALLS AND CHASES. H THICK, FIBERGLASS INSULATION FOR WATER, SANITARY, WASTE, OR GREASE	4. PVC PIPE: ADJUSTABLE BAND HANGERS FOR 3 IN	ICH AND SMALLER.
IN UNHEATED SPACES WHERE INDICATED ON THE DRAWINGS. ER HEATERS, STORAGE TANKS, HOT WATER PUMPS, ETC. THAT ARE NOT FACTORY	AND LARGER SHALL BE B-LINE #B3100 GALVANIZE VERTICAL PIPE SHALL BE B-LINE #B3373 GALVANI	ZED STEEL.
OVIDE PIPE HANGERS AND RISER CLAMPS SIZED FOR THE OUTSIDE DIAMETER OF ATION TO HANGER OR RISER OF AMP FOR VERTICAL PIPE, SEAL EXPOSED INSULATION		
TION TO HANGER OR RISER CLAMP FOR VERTICAL PIPE. SEAL EXPOSED INSULATION		
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PROVIDE DOMESTIC COLD WATER,
CONDENSATE DRAIN PIPE (WITHIN
SERVICE JACKET WITH SELF-SEALI
OWENS-CORNING OR ARMSTRONG

CLAMPS SIZED FOR THE OUTSIDE ATION. SEAL PENETRATIONS OF LAP CEMENT. FOR 2-1/2" AND F HIGH DENSITY, HIGH KNAUF OR FLEXIBLE H INTEGRAL HIGH DENSITY PIPE INE, ARMACELL, OR APPROVED , EXCEPT AT VALVES, UNIONS, AND ER USING FIBERGLASS OR RTS, PROVIDE INSULATION IEETS THE FOLLOWING MINIMUM

MOLDED INSULATING COVERS. SPREAD RATING OF 25 AND EN COVERS AND PIPING WITH NSTALL PIPE INSULATION IN EMOLDED INSULATING FITTINGS

D JOINTS USING LEAD-FREE 95/5 N THE BASE SLAB, IN WHICH CASE SOFT TEMPER COPPER TUBING ITTING MANUFACTURER'S

CUT WITH NOT MORE THAN THREE H GRAPHITE BASE PIPE JOINT D-RESISTING PAINT AFTER PIPING THER MATERIAL WILL BE

CPVC PRIMER MEETING ASTM F656 E JOINT WHILE WET AND IN

7

O SINGLE "VEE" TYPE. BEVEL PIPE BUILD UP THE WELD TO ONE HALL BE EITHER ELECTRIC OR E FOR PRESSURE PIPE WELDING,

N WASTE AND VENT PIPE SHALL BE LESS PIPE BELOW SLAB SHALL BE QUE" 80 IN. LB, IDEAL TRIDON "HD",

NDARD CISPI 310 NSF CERTIFIED NG CONNECTIONS TO ROOF FM 1680, ANACO HUSKY #SD-2000, YWEIGHT".

C PRIMER MEETING ASTM F656 TO JOINT WHILE WET AND IN

PIPE TO NEW OR EXISTING TING ASTM C1460 WITH NEOPRENE ERNCO, PROFLEX 3000 SERIES OR

PIPE TO NEW OR EXISTING IG ASTM C1173 WITH NEOPRENE ERNCO, 1056 SERIES OR MISSION

NDS OF PIPE TO REMOVE BURRS. L WITH ADEQUATE CLEARANCE BE SPRUNG OR BENT. NEATLY NG STRUCTURE WITH HANGERS PES PASSING THROUGH CEILINGS, FLOOR AND WALL PENETRATIONS STRUCTURAL FIRE INTEGRITY. JSE A DIELECTRIC UNION WHERE A ZINC-PLATED STEEL BODY, A RROUS METAL-TO-COPPER

SPECIFICATIONS BY B-LINE OR RS TO THE STRUCTURE WITH SIDE ERED SUPPORT STRUTS PROVIDE A RIGID HANGING UCTWORK. PROVIDE HANGER PACING". PROVIDE SUPPORT I FOOT OF EACH EQUIPMENT RELY FASTEN THE SUPPORT. NS:

TUBE 3 INCHES AND SMALLER WIVEL RING TYPE. ADJUSTABLE ALLER SHALL BE B-LINE #B3170 NF ULATED COPPER TUBE 4 INCHES TYPE. SUPPORT EXPOSED VITH B-LINE #B3198RCT COPPER D ROD AND B-LINE #B3199CT S AT PLUMBING FIXTURES WITH BOLTS SIZED TO BARE ON THE . BE B-LINE #B3373CT COPPER ACH TO BARE TUBE.

ER SHALL BE B-LINE #B3170 NF 2 INCH AND LARGER SHALL BE B-SUPPORT VERTICAL PIPE SHALL BE

MALLER. CLEVIS HANGERS FOR 3 LEVIS TYPE. RISER CLAMPS TO

R. CLEVIS HANGERS FOR 4 INCH TYPE. RISER CLAMPS TO SUPPORT

MBING SPECIFICATIONS (2)



+		1	2
	C.	INSULATION PROTECTION SHIELDS: B-LINE #B3151 OF SHALL COVER HALF OF THE CIRCUMFERENCE OF THE MANUFACTURER FOR PIPE SIZE AND THICKNESS OF IN	18 GAUGE GALVANIZED SHEET METAL. SHIELD PIPE AND SHALL BE OF LENGTH INDICATED BY ISULATION.
	D.	HANGER SPACING, ROD SIZES & CONNECTORS: CONN #B3031 OR #B3033 BEAM CLAMPS AS REQUIRED. CONN MALLEABLE IRON SINGLE TYPE INSERTS WITH MALLEA CONSTRUCTION WITH B-LINE #B3058 SIDE BEAM CONN SPACING AND ROD SIZES AS FOLLOWS:	IECT RODS TO STEEL BEAMS OR JOISTS WITH B-LINE IECT RODS TO CONCRETE WITH B-LINE #3014 ABLE IRON NUT. CONNECT RODS IN WOOD IECTORS. HANG AND SUPPORT PIPING WITH
		 a. COPPER TUBE: 1-1/2 INCH AND SMALLER - - EVERY 10 FEET WITH 3/8INCH HANGER ROD HANGER RODS; 3 INCH - EVERY 10 FEET WI INCH HANGER RODS. SUPPORT VERTICAL 0 b. STEEL PIPE: 1 INCH AND SMALLER - EVERY THROUGH 2 INCH - EVERY 10 FEET WITH 3/8 EVERY 10 FEET WITH 1/2 INCH HANGER ROD RODS. SUPPORT VERTICAL STEEL PIPE EVE C. CAST IRON PIPE: EVERY 10 FEET AND WITH WITH 3/8 INCH HANGER RODS; 3 INCH WITH HANGER RODS; 6 INCH WITH 3/4 INCH HANO HANGER RODS. SUPPORT VERTICAL CAST d. PVC PIPE: SUPPORT ALL PIPES SIZES EVER HANGER RODS; 2 INCH WITH 1/2 INCH HANO HANGER RODS; 4 INCH AND LARGER WITH 5 PIPE EVERY 4 FEET. 	EVERY 6 FEET WITH 3/8 INCH HANGER RODS; 2 INCH DDS; 2-1/2 INCH - EVERY 10 FEET WITH 3/8 INCH ITH 1/2 INCH RODS, 4 INCH - EVERY 10 FEET WITH 5/8 COPPER TUBE EVERY 10 FEET. (8 FEET WITH 3/8 INCH HANGER RODS; 1-1/4 INCH 8 INCH HANGER RODS; 2-1/2 INCH AND 3 INCH - DS, 4 INCH - EVERY 10 FEET WITH 5/8 INCH HANGER ERY 10 FEET. HIN 1 FOOT OF EACH JOINT. 2 INCH AND SMALLER 1 1/2 INCH HANGER RODS; 4 INCH WITH 5/8 INCH GER RODS; 8 INCH AND LARGER WITH 7/8 INCH IRON PIPE EVERY 15 FEET. RY 4 FEET. 1-1/2 INCH AND SMALLER WITH 3/8 INCH GER RODS; 2-1/2 INCH AND 3 INCH WITH 1/2 INCH STATES AND AND 3 INCH WITH 1/2 INCH
	E.	SUPPORTS ON ROOF: SUPPORT PIPING ON ROOF WITH MANUFACTURED BY B-LINE, ERICO, MIRO OR PORTABL CLOSED CELL POLYETHYLENE BLOCKS WITH EMBEDDE ENGINEERED SUPPORT STRUTS WITH FACTORY PLAST CAPTIVATED AT THE SHOULDER WHEN ATTACHMENT N STRUT SYSTEM. ALL NUTS, BRACKETS AND CLAMPS SH SUPPORT PIPE WITH SPACING AS DESCRIBED ABOVE A SUPPORTS ON 18 INCH X 18 INCH X 3/16 INCH THICK RO ROOF MATERIAL.	H PRE-ENGINEERED ROOF PIPE SUPPORTS LE PIPE HANGERS: 4 INCH X 4 INCH X 12 INCH LONG ED PRE-ENGINEERED SUPPORT STRUT OR PRE- TIC BASES. TWO PIECE STRAPS SHALL BE NUT IS TIGHTENED AND DESIGNED FOR USE WITH HALL HAVE THE SAME FINISH AS THE CHANNELS. AT A MINIMUM 7 INCHES ABOVE THE ROOF. SET DOF WALKWAY MATERIAL COMPATIBLE WITH ACTUAL
	F.	SUPPORTS ON FLOOR: SUPPORT PIPING FROM THE FL INSULATED COPPER TUBE, SHALL BE B-LINE B3093 GAI SHANK FOR HEIGHT ADJUSTMENT AND FLOOR STAND	LOOR WHERE REQUIRED FOR FERROUS PIPE OR LVANIZED STEEL WITH PIPE SADDLE, THREADED SECURED TO THE FLOOR.
	G.	BELOW GROUND INSTALLATION FOR SOIL, WASTE, AND UNIFORM SLOPE OF NOT LESS THAN 1/8 INCH PER FOO THAN 1/4 INCH PER FOOT FOR PIPING 3 INCH OR SMALL LAY PIPE AT UNIFORM SLOPE, FREE FROM SAGS, WITH DIRECTION FROM HORIZONTAL TO VERTICAL, AT FIXTL WITH SANITARY "TEES" OR SHORT SWEEP "ELLS". MAK HORIZONTAL OR HORIZONTAL TO HORIZONTAL WITH L COMBINATION "Y AND 1/8 BEND" FITTINGS, OR 45 DEGR BEND AND "Y" FITTINGS INSTALL PIPE WITH THE BARR	D STORM: INSTALL SOIL AND WASTE PIPING TO A DT FOR PIPING 4 INCH OR LARGER, AND NOT LESS LER. SLOPE STORM PIPING AT 1/8 INCH PER FOOT. HUB END UPSTREAM. MAKE CHANGES IN JRE BRANCHES AND OTHER BRANCH CONNECTIONS E CHANGES IN DIRECTION FROM VERTICAL TO ONG RADIUS FITTINGS, LONG SWEEPING "ELLS", REE "ELLS" (1/8 BEND FITTINGS), 1/6 BEND OR 1/16 IFL OF THE PIPE ON FIRM SOLID FARTH FOR ITS
		ENTIRE LENGTH, AND EXCAVATE HOLES FOR THE PIPE WITH UNIFORM GRADE TO LINE WITH BATTEN BOARDS ENDS OF PIPE WITH A STOPPER WHEN PIPE LAYING IS IN BELLS FOR UNIFORM CAULKING. PROVIDE A SMOOT OR TAPPING OF SOIL AND WASTE LINES, AND SADDLE AND INSTALL SOIL AND WASTE LINES AS INDICATED ON SUCH A MANNER AS TO MAINTAIN PROPER CLEARANCE PIPE, VERIFY ELEVATION OF CONNECTION POINT OF EX TENANT CONNECTIONS INDICATED ON THE DRAWINGS INDICATED INVERT FLEVATION POINT WHILE MAINTAIN	E BELLS. LAY PIPE IN A STRAIGHT LINE AND INSTALL SET NOT MORE THAN 24'-0" APART. CLOSE OPEN NOT IN PROGRESS. CENTER SPIGOTS ACCURATELY TH AND UNIFORM INVERT IN THE SYSTEM. DRILLING HUBS AND BANDS ARE NOT PERMITTED. LOCATE N THE DRAWINGS. DETERMINE EXACT LOCATIONS IN E. PRIOR TO INSTALLATION OF ANY BUILDING DRAIN XISTING SEWER, SERVICE LINE OR EXISTING S. IF THE INSTALLATION WILL NOT TIE INTO THE HING PROPER FALL NOTIFY ARCHITECT SO THAT AN
		ALTERNATIVE MAY BE DETERMINED. INSTALL PLASTIC SERVICE INDICATED CONTINUOUSLY ALONG ITS LENG FEET OUTSIDE THE BUILDING. INSTALL DETECTABLE PL OF SERVICE INDICATED CONTINUOUSLY ALONG ITS LE STORM PIPE FIVE FEET OUTSIDE THE BUILDING.	UNDERGROUND WARNING TAPE WITH NAME OF TH FOR BURIED SOIL, WASTE AND STORM PIPE FIVE LASTIC UNDERGROUND WARNING TAPE WITH NAME NGTH OVER BURIED PLASTIC SOIL, WASTE AND
	H.	ABOVE GROUND INSTALLATION FOR SOIL, WASTE, AND UNIFORM SLOPE OF NOT LESS THAN 1/8 INCH PER FOO THAN 1/4 INCH PER FOOT FOR PIPING 3 INCH OR SMALL LAY PIPE AT UNIFORM SLOPE FREE FROM SAGS. SUPP CHANGES IN DIRECTION FROM HORIZONTAL TO VERTIC CONNECTIONS WITH SANITARY "TEES" OR SHORT SWE VERTICAL TO HORIZONTAL OR HORIZONTAL TO HORIZO SWEEPING "ELLS", COMBINATION "Y AND 1/8 BEND" FIT 1/6 BEND OR 1/16 BEND AND "Y" FITTINGS. PROVIDE A S DRILLING OR TAPPING OF SOIL AND WASTE LINES, AND LOCATE AND INSTALL SOIL AND WASTE LINES AS INDIC LOCATIONS IN SUCH A MANNER AS TO MAINTAIN PROP	O STORM: INSTALL SOIL AND WASTE PIPING TO A DT FOR PIPING 4 INCH OR LARGER, AND NOT LESS LER. SLOPE STORM PIPING AT 1/8 INCH PER FOOT. PORT PIPE WITHIN 12 INCHES OF EACH JOINT. MAKE CAL, AT FIXTURE BRANCHES AND OTHER BRANCH EEP "ELLS". MAKE CHANGES IN DIRECTION FROM ONTAL WITH LONG RADIUS FITTINGS, LONG TINGS, OR 45 DEGREE "ELLS" (1/8 BEND FITTINGS), SMOOTH AND UNIFORM INVERT IN THE SYSTEM. D SADDLE HUBS AND BANDS ARE NOT PERMITTED. CATED ON THE DRAWINGS. DETERMINE EXACT PER CLEARANCE.
	I.	PLUMBING VENT: CONNECT PLUMBING VENT PIPES TO DRAWINGS OR AS REQUIRED BY THE INSTALLATION PE CODES OFFICIAL, AND EXTEND VENT PIPES FULL SIZE UNIFORM SLOPE SO AS TO DRAIN BACK BY GRAVITY TO THROUGH THE ROOF SHALL BE MINIMUM 3 INCH SIZE E TURN FLASHING DOWN INTO STACKS AT LEAST 2 INCH DIRECTIONS FROM THE PIPE AT THE ROOF LINE. APPLY THREADS. VENT LINES SHALL BE AIR AND WATER TIGH THEM TO A HORIZONTALLY VENTED LINE AS SHOWN O	O FIXTURE DRAIN PIPES AS INDICATED ON THE RACTICES ADOPTED AND ENFORCED BY LOCAL THROUGH THE ROOF LINE. GRADE PIPE TO A O THE DRAINAGE PIPING SYSTEM. VENTS PASSING EXCEPT IN TROPICAL CLIMATES, PER LOCAL CODES. IES, AND EXTEND FLASHING 24 INCHES IN ALL Y WHITE LEAD PIPE DOPE ON MALE STEEL PIPE IT. VENT FLOOR DRAINS INDIVIDUALLY OR CONNECT ON THE DRAWINGS.
	J.	DOMESTIC WATER: ARRANGE COLD, HOT, AND HOT W. LOWEST POINT IN EACH SYSTEM. INSTALL AT LEAST OF AT CONNECTION POINTS OF EACH PIECE OF EQUIPMENT REQUIRED TO ALLOW PROPER MAINTENANCE. PROVID ALLOWANCE FOR EXPANSION AND CONTRACTION WHE WATER PIPING OCCURS IN EXTERIOR WALLS, HOLD PIP OF WALL AND INSTALL INSULATION BATT OR OTHER IN EXTERIOR WALL FACE. INSTALL PLASTIC UNDERGROU INDICATED CONTINUOUSLY ALONG ITS LENGTH FOR DE BUILDING.	ATER RECIRCULATION PIPING TO DRAIN AT THE NE PIPE UNION ADJACENT TO ALL SHUTOFF VALVES, NT, AND ELSEWHERE IN THE SYSTEM WHERE DE UNIONS OF THE GROUND JOINT TYPE. MAKE ERE REQUIRED BY THE INSTALLATION. WHERE PE AS CLOSE AS POSSIBLE TO THE INTERIOR FACE ISULATION (MINIMUM R-8) BETWEEN PIPING AND THE ND WARNING TAPE WITH NAME OF SERVICE OMESTIC WATER PIPE FIVE FEET OUTSIDE THE
	3.5 A. 3.6	PIPING SANITIZATION SANITIZE THE ENTIRE DOMESTIC WATER PIPING SYSTE SOLUTION CONTAINING NOT LESS THAN 50 PPM AVAIL/ FOR A MINIMUM OF 24 HOURS, WITH EACH VALVE BEIN AFTER COMPLETION, FLUSH SYSTEM WITH CITY WATER INCOMING CITY WATER LEVEL.	EM (COLD, HOT, AND HOT WATER RETURN) WITH A ABLE CHLORINE. KEEP SOLUTION IN THE SYSTEM IG OPERATED SEVERAL TIMES DURING THE PERIOD. R UNTIL CHLORINE RESIDUAL IS LOWERED TO
	A. B.	PROVIDE MANUFACTURER'S STANDARD PRE-PRINTED, PRESSURE-SENSITIVE VINYL PIPE MARKERS. PIPE MAR ANSA A13.1. INSTALL PIPE MARKERS ON EACH PLUMBING PIPING SY DIRECTION OF FLOW	, SEMI-RIGID SNAP-ON OR PERMANENT ADHESIVE, RKERS SHALL BE COLOR-CODED COMPLYING WITH YSTEM AND INCLUDE ARROWS TO SHOW NORMAL
	C. D.	LOCATE PIPE MARKERS AND COLOR BANDS WHEREVE SPACES, MACHINE ROOMS, ACCESSIBLE MAINTENANC EXTERIOR NON-CONCEALED LOCATIONS. PROVIDE PLASTIC LAMINATE OR BRASS VALVE TAG ON EACH PLUMBING PIPING SYSTEM; EXCLUDE CHECK VA EQUIPMENT UNITS, PLUMBING FIXTURE FAUCETS, CON SHUT-OFF VALVES AT PLUMBING FIXTURES AND SIMIL/ AND UNITS.	ER PIPING IS EXPOSED TO VIEW IN OCCUPIED E SPACES (SHAFTS, TUNNELS, PLENUMS) AND N EVERY VALVE, COCK AND CONTROL DEVICE IN LVES, VALVES WITHIN FACTORY-FABRICATED NVENIENCE AND LAWN-WATERING HOSE BIBBS, AND AR ROUGH-IN CONNECTIONS OF END-USE FIXTURES
	ISSUE FOR BID S	UBMITTAL	

Revision

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PART 4 - PLUMBING SPECIALTIES

4.1 AIR ADMITTANCE VALVES

PROVIDE AIR ADMITTANCE VALVES WHERE INDICATED ON DRAWINGS. AIR ADMITTANCE VALVES SHALL MEET ASSE 1050 OR 1051 WHERE APPLICABLE BY STUDOR, OATEY, PROSET, RECTORSEAL, OR EQUAL. INSTALL PER CODE AND MANUFACTURER REQUIREMENTS.

WATER HAMMER ARRESTORS, AND TRAPS 4.2

- PROVIDE WATER HAMMER ARRESTORS AT VALVES OR BATTERIES OF FIXTURES AS INDICATED ON THE DRAWINGS TO PREVENT WATER HAMMER. ARRESTORS SHALL BE JOSAM, SIOUX CHIEF, SMITH, PRECISION PLUMBING PRODUCTS, PROFLO, WADE, WATTS, OR ZURN, STAINLESS STEEL BELLOWS TYPE, OR O-RING SEALED AND LUBRICATED ACETAL PISTON. INSTALL WATER HAMMER ARRESTORS PER THE PLUMBING AND DRAINAGE INSTITUTE (PDI) WH-201 INSTALLATION INSTRUCTIONS. INSTALLATION OF ARRESTORS AT BATTERIES OF FIXTURES PRECLUDES THE REQUIREMENT FOR INDIVIDUAL AIR CHAMBERS AT EACH BATTERY FIXTURE. SUBMIT CERTIFICATION THAT WATER HAMMER ARRESTORS COMPLY WITH NSF 61 ANNEX G AND/OR NSF 372.
- PROVIDE WATER-SEAL TRAPS ON FLOOR DRAINS, FIXTURES AND EQUIPMENT WITH DRAIN CONNECTIONS, INCLUDING TRAPS NOT FURNISHED IN COMBINATION WITH FIXTURES AND EQUIPMENT. PLACE TRAP AS CLOSE TO THE FIXTURE OR DRAIN AS POSSIBLE. EXPOSED TRAPS IN FINISHED SPACES SHALL BE CHROME-PLATED BRASS.
- PROVIDE CONVENTIONAL "P" TYPE TRAP, WATER-SEALED SELF-CLEANING DESIGN. FULL "S" TRAPS OR TRAP STANDARDS SHALL BE USED ONLY WHERE SPECIFICALLY CALLED FOR ON THE DRAWINGS OR ELSEWHERE IN THIS SPECIFICATION. TRAP WATER SEALS SHALL NOT BE LESS THAN 2 INCHES, AND DEEP SEAL TRAPS SHALL BE PROVIDED WHERE SPECIFIED OR INDICATED. EACH TRAP NOT INTEGRAL WITH THE FIXTURE OR FLOOR DRAIN OR INSTALLED BELOW THE BASE SLAB SHALL BE PROVIDED WITH AN ACCESSIBLE CLEANOUT OF ADEQUATE SIZE. PROVIDE TRAP PRIMERS WHERE REQUIRED BY CODE AND WHERE INDICATED ON THE DRAWINGS.
- CLEANOUTS, FLOOR DRAINS AND ROOF DRAINS 4.3
- CLEANOUTS, FLOOR DRAINS AND ROOF DRAINS SHALL BE BY ONE MANUFACTURER IF POSSIBLE. ACCEPTABLE MANUFACTURERS ARE JOSAM, SIOUX CHIEF, SMITH, WADE, WATTS, AND ZURN. ACCEPTABLE MANUFACTURERS OF PLASTIC FLOOR DRAINS ARE SIOUX CHIEF, JOSAM, OATEY, JONESPEC OR PLASTIC ODDITIES. PROVIDE LONG SWEEP FITTINGS FOR CLEANOUT EXTENSIONS; SHORT SWEEPS AT START OF RUNS OR CHANGE IN DIRECTION AND COMBINATION WYE AND EIGHT BEND FITTINGS IN HORIZONTAL RUNS. INSTALL CLEANOUTS WITH A MINIMUM OF 18 INCHES CLEAR ALL AROUND, CONSULT LOCAL CODES FOR OTHER REQUIREMENTS, FOR EASY SYSTEM MAINTENANCE. INSTALL PLUG WITH TEFLON JOINT COMPOUND.
- FLOOR DRAINS: AS SCHEDULED ON THE DRAWINGS.
- C. TRENCH DRAINS: AS SCHEDULED ON THE DRAWINGS
- FLOOR CLEANOUTS: AS SCHEDULED ON THE DRAWINGS. INSTALL CLEANOUTS AT POINTS AS NOTED ON THE DRAWINGS, AT THE BUILDING EXIT; AT A MINIMUM OF EVERY 50 FEET IN HORIZONTAL SOIL AND WASTE LINES; AND AT TURNS OF PIPE GREATER THAN 45 DEGREES CLEANOUTS SHALL BE FULL SIZE OF THE PIPE UP TO 4 INCHES, AND 4 INCH SIZE FOR PIPES LARGER THAN 4 INCHES. DETERMINE THE TYPE OF FLOOR COVERING TO BE USED AT EACH FLOOR CLEANOUT LOCATION AND PROVIDE TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKERS, RECESSED FOR TILE AND SCORIATED FOR UNFINISHED FLOOR). ROUGH-IN AND INSTALL EACH FLOOR CLEANOUT FLUSH WITH THE FINISHED FLOOR CONSTRUCTION.
- EXTERIOR CLEANOUTS: AS SCHEDULED ON THE DRAWINGS. INSTALL CLEANOUTS AT POINTS AS NOTED ON THE DRAWINGS, AT THE BUILDING EXIT: AT A MINIMUM OF EVERY 100 FEET IN HORIZONTAL SOIL. WASTE AND STORM SERVICE LINES. EMBED EACH EXTERIOR CLEANOUT IN AN 18 INCH X 18 INCH X 8 INCH BLOCK OF CONCRETE, FLUSH WITH FINISHED GRADE.
- WALL CLEANOUTS: AS SCHEDULED ON THE DRAWINGS. INSTALL WALL CLEANOUTS AT POINTS AS NOTED ON THE DRAWINGS; AT THE FOOT OF EACH SOIL, WASTE OR INTERIOR DOWNSPOUT STACK; AT HORIZONTAL SOIL AND WASTE BRANCHES LONGER THAN FIVE FEET NOT SERVED BY A FLOOR CLEANOUT CONSULT LOCAL CODES FOR INSTALLATION AT SPECIFIC FIXTURE TYPES. INSTALL WALL CLEANOUTS ABOVE THE FLOOD RIM OF THE FIXTURE SERVED WITHIN FOUR FEET OF THE FLOOR AND INSTALL EXTENSIONS FROM THE CLEANOUT TEE TO THE WALL TO LOCATE THE PLUG WITHIN 2 INCH OF THE WALL WHERE REQUIRED. INSTALL CLEANOUTS ON URINALS AND SINKS WHERE REQUIRED BY CODE.
- ROOF DRAINS: AS SCHEDULED ON THE DRAWINGS. PROVIDE WITH ROOF SUMP RECEIVER, EXTENSION, G SECONDARY FLASHING CLAMPS AND UNDERDECK CLAMP AS REQUIRED: PROVIDE EXPANSION JOINTS WHERE REQUIRED. PROVIDE OVERFLOW ROOF DRAINS WHERE INDICATED ON THE DRAWINGS WITH INLET FLOW LINE 2 INCHES ABOVE THE PRIMARY ROOF DRAIN INLET.

4.4 VALVES, STRAINERS, HOSE BIBBS, AND UNIONS

- PLUMBING SYSTEM VALVES SHALL BE DESIGNED FOR 125 PSI STEAM WORKING PRESSURE AND 200 PSI COLD WATER PRESSURE. INSTALL VALVES ON THE HOT AND COLD WATER LINES AT THE WATER HEATER CONNECTIONS AND OTHER ITEMS OF EQUIPMENT, AT BRANCHES FROM MAINS SERVING GROUPS OF FIXTURES, AND AT OTHER PLACES INDICATED OR REQUIRED BY THE INSTALLATION TO ALLOW EASE OF FUTURE MAINTENANCE. SUBMIT CERTIFICATION THAT VALVES, FITTINGS AND SPECIALTIES COMPLY WITH NSF 61 ANNEX G AND / OR NSF 372. EXCEPT FOR THE FOLLOWING: HOSE BIBBS, HYDRANTS, BACKFLOW PREVENTERS ISOLATING IRRIGATION OR MECHANICAL MAKE-UP SYSTEMS, EMERGENCY MIXING VALVES AND TRAP PRIMERS.
- GATE VALVES 2 INCH AND SMALLER: CLASS 125, RISING STEM, SOLDERED LEAD FREE CAST BRONZE BODY AND PARTS, SWEAT ENDS, WITH WEDGE DISC. BY APOLLO # 102S-LF, HAMMOND # UP-668, MILWAUKEE # UP668 OR NIBCO # S-113-LF
- GATE VALVES 2-1/2 INCH AND LARGER: CLASS 125, NON-RISING STEM, IRON BODY FLANGED WEDGE GATE WITH BRASS SEATS AND STEM BY APOLLO # 611, HAMMOND IR # 1138, MILWAUKEE # F-2882 OR NIBCO #619.
- BALL VALVES 2 INCH AND SMALLER (MAY BE USED IN LIEU OF GATE VALVES UP TO 2 INCH): CLASS 150, D TWO PIECE LEAD FREE CAST BRONZE BODY, WITH SWEAT ENDS, CHROME PLATED BRONZE BALL WITH CONVENTIONAL PORT, 600 PSI, BLOW-OUT PROOF STEM BY APOLLO # 70-LF-200, HAMMOND # UP8501 MILWAUKEE # UPBA-150.
- GLOBE VALVES 2 INCH AND SMALLER: CLASS 125, LEAD FREE CAST BRONZE BODY AND BRASS DISC, WITH SWEAT ENDS BY APOLLO # 102S-LF, HAMMOND # UP-688, MILWAUKEE # UP688 OR NIBCO # S-113-LF.
- GLOBE VALVES 2-1/2 INCH AND LARGER: CLASS 125, STRAIGHT IRON BODY FLANGED VALVE WITH BRASS TRIM BY APOLLO # 711-F, HAMMOND # IR-116, MILWAUKEE # F-2981 OR NIBCO # 7-18-B.
- SWING CHECK VALVES 2 INCH AND SMALLER: CLASS 125, LEAD FREE CAST BRONZE BODY AND WITH SWEAT ENDS BY APOLLO # 163S-LF, MILWAUKEE #UP-1509, OR NIBCO # S-413-Y-LF. INSTALL IN HORIZONTAL PIPE RUNS.
- SWING CHECK VALVES 2-1/2 INCH AND LARGER: CLASS 125, CAST IRON BODY WITH BRASS TRIM BY APOLLO # 910-F, HAMMOND # IR1124, MILWAUKEE # F2974 OR NIBCO # F-918. INSTALL IN HORIZONTAL PIPE RUNS.
- LIFT CHECK VALVES 2 INCH AND SMALLER: CLASS 125, LEAD FREE CAST BRONZE BODY, STAINLESS STEEL SPRING AND WITH SWEAT ENDS BY HAMMOND # LP-947 OR NIBCO # S-413-Y-LF. INSTALL IN VERTICAL PIPE OR IN HORIZONTAL RUNS WHERE REQUIRED.
- WAFER CHECK VALVES FOR 2-1/2 INCH AND LARGER: CLASS 125 IRON BODY WITH STAINLESS STEEL GUIDE AND RESILIENT SEAT BY APOLLO # 910-WB, CENTERLINE # 800 OR MILWAUKEE # 8800. INSTALL IN VERTICAL PIPE.
- POINT OF USE THERMOSTATIC MIXING VALVES: THERMOSTATIC MIXING VALVES SHALL BE AS SCHEDULED ON THE DRAWINGS OR EQUAL BY ACORN ENGINEERING CO., BRADLEY, LEONARD, POWERS, OR WATTS MEETING ASSE 1070 WITH LEAD FREE BRASS BODY, NON-CORROSIVE INTERNAL PARTS, TAMPER RESISTANT TEMPERATURE ADJUSTMENT, UNION INLETS AND CHECK STOPS WITH STRAINERS. INSTALL VALVE AT PUBLIC LAVATORIES AND HANDWASHING SINK LOCATIONS IN ACCESSIBLE LOCATION. SET TEMPERATURE AS SCHEDULED ON THE DRAWINGS.
- EMERGENCY MIXING VALVES: EMERGENCY MIXING VALVES SHALL BE POWERS AS SCHEDULED ON THE DRAWINGS OR EQUAL BY ACORN ENGINEERING CO., BRADLEY, LEONARD, LAWLER, OR HAWS MEETING ASSE 1071 COMPLETE WITH CHROME-PLATED BRASS BODY CONSTRUCTION, FULL FLOW COLD WATER BY-PASS, NON-CORROSIVE INTERNAL PARTS, TAMPER RESISTANT TEMPERATURE ADJUSTMENT, DIAL THERMOMETER, UNION INLETS WITH STRAINERS, CHECKS, AND STOPS.

- CONNECTIONS.
- 0 DRAIN VALVES AND INTERIOR HOSE BIBBS: AS SPECIFIED ON THE DRAWINGS OR EQUAL BY PRIER, SMITH, WATTS, OR WOODFORD.
- SPEAKMAN, T&S BRASS, WATTS OR ZURN.
- SMITH, SPEAKMAN, T&S BRASS, WATTS OR ZURN.
- INSIDE BUILDING.

BUILDING.

- U
- ACCEPTED.

- 4.5
- PRV FOR SYSTEM DRAIN DOWN.
- SERVED AND SEAL WITH CAULK.
- SEAL WITH CAULK.
- 4.6 SYSTEM ACCESSORIES
- BE INSTALLED WHERE INDICATED OR REQUIRED.
- INSTALLED WHERE INDICATED OR REQUIRED.
- REQUIRED.
- DISCHARGE IS COMPLETE.

PART 5 - PLUMBING FIXTURES AND EQUIPMENT

PLUME	BING FIX	TURES

5.1

- 5.2 PLUMBING FIXTURE TRIM

SUBMIT CERTIFICATION THAT FAUCETS AND TRIM COMPLY WITH NSF 61 ANNEX G AND / OR NSF 372. EXCEPT FOR THE FOLLOWING: FAUCETS NOT USED FOR DRINKING WATER OR COOKING, SHOWER VALVES AND HEADS OR FLUSH VALVES.

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					NOT FOR CONSTRUCTION		Stantec Consulting Services Inc. 801 South Figueroa Street Suite 300 Los Angeles, 90017-3007 Tel: (213) 955-9775 • www.stantec.com	SANTA BARBARA	TERMINAL 2 - RECOMMISSIONING	Project N
/M.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	CI/FL SK CI By	GY GY GY Appd	2023.10.04 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Reserved The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.		5353 OVERPASS ROAD, GOLETA, CA 93111 stn_mechanical_2014240805.rvt CI FL GY 2022.04.08 Dwn. Dsgn. Chkd. YYYY.MM.DD	Revision

M. BALL VALVES FOR DEIONIZED WATER: BALL VALVES SHALL BE BY CHEMITROL. R&G SLOANE OR FISHER. VALVES SHALL BE SCHEDULE 80 PVC TRUE UNION FULL PORT BALL TYPE WITH SOLVENT WELDED

STRAINERS: STRAINERS 2 INCH AND SMALLER SHALL BE WATTS #LFS777SI WITH LEAD FREE CAST BRONZE BODY AND SOLDERED ENDS, BRASS CAP AND MONEL 40 MESH SCREEN. STRAINERS 2-1/2 INCH AND LARGER SHALL BE WATTS #77F-DI-FDA-125 WITH FLANGED IRON BODY WITH FUSED FDA EPOXY COATING, BOLTED IRON CAP AND STAINLESS STEEL SCREEN WITH 1/16 INCH PERFORATIONS. STRAINERS SIZE 2-1/2 INCH AND LARGER SHALL HAVE A 1 INCH BLOW-OFF LINE WITH A 1 INCH GATE VALVE CONNECTED TO THE BLOW-OFF CONNECTION AND SHALL BE EXTENDED TO THE NEAREST FLOOR DRAIN.

EXPOSED INTERIOR HOSE BIBBS: AS SPECIFIED ON THE DRAWINGS OR EQUAL BY CHICAGO, SMITH,

HOT & COLD WATER MIXING HOSE BIBBS: AS SPECIFIED ON THE DRAWINGS OR EQUAL BY CHICAGO,

WALL HYDRANTS: AS SPECIFIED ON THE DRAWINGS OR EQUAL BY JOSAM, PRIER, SMITH, WADE, WATTS, WOODFORD OR ZURN. PROVIDE ACCESSIBLE SHUTOFF VALVE AND WATER HAMMER ARRESTOR INSIDE

MILD CLIMATE WALL HYDRANTS: AS SPECIFIED ON THE DRAWINGS OR EQUAL BY JOSAM, MIFAB, SMITH, WATTS, WOODFORD OR ZURN. PROVIDE ACCESSIBLE SHUTOFF VALVE AND WATER HAMMER ARRESTOR

SANITARY POST HYDRANTS: AS SPECIFIED ON THE DRAWINGS BY HOEPTNER OR EQUAL BY WOODFORD. SANITARY ROOF HYDRANTS: AS SCHEDULED ON THE DRAWINGS BY MAPA WITH NO SUBSTITUTIONS

UNIONS: FERROUS UNIONS SHALL BE CRANE OR EQUAL. COMBINATION IRON AND BRASS. GROUND JOINT WITH SCREWED ENDS. COPPER UNIONS SHALL BE STREAMLINE OR EQUAL, CAST BRONZE SWEAT TYPE WITH GROUND JOINT. FERROUS TO COPPER UNIONS SHALL BE UNIVERSAL CONTROLS OR EQUAL, DIELECTRIC TYPE WITH THREADED NYLON INSERT.

W. FLOW CONTROL VALVES: FOR INSTALLATION IN HOT WATER RECIRCULATION LINES, SHALL BE BELL & GOSSETT #LF-CB1/2S "CIRCUIT SETTER" OR EQUAL BY ARMSTRONG OR NIBCO WITH LEAD FREE CAST BRONZE BODY AND BRASS BALL, TFE SEAT RINGS, CALIBRATED ORIFICE, MEMORY STOP, READOUT VALVES WITH INTERNAL CHECK VALVES, DRAIN PORT AND SWEAT CONNECTIONS. PROVIDE BALL VALVE, STRAINER AND CHECK VALVE UPSTREAM AND UNION AND BALL VALVE DOWNSTREAM OF EACH FLOW CONTROL VALVE. SET THE FLOW CONTROL VALVES TO THE FLOWS AS INDICATED ON THE DRAWINGS.

AUTOMATIC FLOW CONTROL VALVES: FOR INSTALLATION IN HOT WATER RECIRCULATION LINES, SHALL BE FLOW DESIGN, INC #ICSS OR EQUAL BY VICTAULIC WITH STAINLESS STEEL BODY AND FLOW CARTRIDGE AND SWEAT CONNECTIONS. PROVIDE BALL VALVE, STRAINER AND CHECK VALVE UPSTREAM AND UNION AND BALL VALVE DOWNSTREAM OF EACH AUTOMATIC FLOW CONTROL VALVE. PROVIDE FLOW CONTROL VALVE CARTRIDGES OF THE FLOWS AS INDICATED ON THE DRAWINGS.

PRESSURE REDUCING VALVES: SELF-CONTAINED TYPE SHALL BE OF THE TYPE AS SCHEDULED AND INDICATED ON THE DRAWINGS BY WILKINS OR EQUAL BY CASH-ACME OR WATTS.

PRESSURE REDUCING VALVES: PILOT OPERATED TYPE SHALL BE AS SCHEDULED ON THE DRAWINGS BY WILKINS OR EQUAL BY CLAY-VAL, OCV OR WATTS.

AA. BACKFLOW PREVENTERS: SHALL BE OF THE TYPE AS SCHEDULED AND INDICATED ON THE DRAWINGS BY WATTS OR EQUAL BY CONBRACO, FEBCO OR WILKINS.

WATER SERVICE ENTRANCE: PRESSURE REDUCING VALVE AND BACKFLOW PREVENTER

PROVIDE A BACKFLOW PREVENTER (BFP) OF TYPE REQUIRED BY LOCAL CODE, AND A PRESSURE REDUCING VALVE (PRV) IF REQUIRED BY WATER PRESSURE GREATER THAN 80 PSI, ON THE DOMESTIC WATER SERVICE IMMEDIATELY DOWNSTREAM OF THE BACKFLOW PREVENTER AT THE WATER SERVICE ENTRY. SET THE PRESSURE REDUCING VALVE AS INDICATED ON THE DRAWINGS. PROVIDE A PRESSURE GAUGE AND HOSE BIBB WITH ISOLATION VALVE DOWNSTREAM OF THE BACKFLOW PREVENTER AND / OR

FOR WATER SERVICES 2 INCH AND SMALLER, PROVIDE A TYPE "K" SOFT COPPER TUBE THAT RUNS CONTINUOUSLY FROM FIVE FEET OUTSIDE THE BUILDING WITH SWEEPING BEND TO 12 INCHES ABOVE THE FLOOR SLAB. PROVIDE A SHUTOFF VALVE AT 12 INCHES ABOVE THE FLOOR. THERE SHALL BE NO FITTINGS UNDER THE FLOOR SLAB. PROVIDE A PVC SLEEVE TWO PIPE SIZES LARGER THAN THE WATER PIPE

FOR WATER SERVICES 3 INCH AND LARGER, PROVIDE DUCTILE IRON PIPE AND FITTINGS FROM FIVE FEET OUTSIDE THE BUILDING TO 12 INCHES ABOVE THE FLOOR. PROVIDE A SHUTOFF VALVE AT 12 INCHES ABOVE THE FLOOR. PROVIDE A PVC SLEEVE TWO PIPE SIZES LARGER THAN THE WATER PIPE SERVED AND

THERMOMETERS SHALL BE AMERICAN 3 INCH BI-METAL DIAL TYPE WITH SEPARABLE SOCKET, AND SHALL

PRESSURE GAUGES SHALL BE ASHCROFT 3 INCH DIAL TYPE WITH SHUT-OFF COCK, AND SHALL BE

PROVIDE TRAP PRIMERS WHERE REQUIRED BY LOCAL AUTHORITIES. TRAP PRIMERS SHALL BE AS SPECIFIED ON THE DRAWINGS BY MIFAB OR EQUAL BY PRECISION PLUMBING PRODUCTS "PRIME RITE" OR SIOUX CHIEF WITH BRASS BODY AND INTEGRAL VACUUM BREAKER. PROVIDE DISTRIBUTION BOX WHERE MORE THAN ONE TRAP IS INDICATED TO BE PRIMED ON THE DRAWINGS. PROVIDE ACCESS PANEL WHERE

TRAP SEALS SHALL BE BY PROSET SYSTEMS OR EQUAL BY MIFAB, SMITH OR SURE SEAL SYSTEMSOF MOLDED PVC ELASTOMER THAT ALLOWS THE FLOW OF WASTE WATER AND CLOSES UPON TERMINATION OF FLOW. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. DO NOT TOUCH ELASTOMERIC PLUG OR ALLOW CONTACT WITH PRIMER OR SOLVENT CEMENT. OR, SHALL BE BY SURE SEAL, INC. OF SMOOTH, SOFT, FLEXIBLE, ELASTOMERIC PVC MATERIAL WITH A FLAPPER CLOSURE. THE FLOW OF WASTEWATER ALLOWS FLAPPER TO OPEN AND ADEQUATELY DISCHARGE TO FLOOR DRAIN THROUGH ITS INTERIOR. THE FLAPPER CLOSES AND RETURNS TO ORIGINAL MOLDED SHAPE AFTER WASTEWATER

FURNISH AND INSTALL COMMERCIAL GRADE PLUMBING FIXTURES, SEE THE DRAWINGS FOR QUANTITIES AND DESCRIPTIONS. PROVIDE CHINA FIXTURES AS SCHEDULED BY AMERICAN-STANDARD OR APPROVED EQUAL BY GERBER, KOHLER, SLOAN VALVE CO, TOTO OR ZURN. PROVIDE STAINLESS STEEL SINKS AS SCHEDULED BY ELKAY OR EQUAL BY JUST. PROVIDE ELECTRIC WATER COOLERS AS SCHEDULED BY ELKAY OR APPROVED EQUAL BY ACORN / AQUA, HALSEY TAYLOR OR HAWS. PROVIDE MOP SINKS AS SCHEDULED BY MUSTEE OR EQUAL BY ACORN ENGINEERING CO., FIAT, FLORESTONE, OR STERN-WILLIAMS. PROVIDE EMERGENCY EQUIPMENT AS SCHEDULED BY GUARDIAN OR EQUAL BY BRADLEY, CHICAGO, ENCON, HAWS OR SPEAKMAN. PROVIDE FIXTURES OF SAME MANUFACTURER WHERE POSSIBLE.

FIXTURES SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN SHALL BE FURNISHED AND INSTALLED. SET FIRM AND TRUE, CONNECTED TO REQUIRED PIPING SERVICES, THOROUGHLY CLEANED, LEFT CLEAN AND READY FOR USE. EXPOSED FITTINGS AND PIPING AT THE FIXTURES SHALL BE CHROME-PLATED, AND WATER SUPPLY PIPING SHALL BE VALVED AT EACH FIXTURE.

VITREOUS CHINA FIXTURES SHALL BE OF THE BEST GRADE VITREOUS WARE, WITHOUT PIT HOLES OR BLEMISHES, AND THE OUTLINES SHALL BE GENERALLY TRUE. THE ENGINEER RESERVES THE RIGHT TO REJECT ANY PIECES WHICH, IN HIS OPINION, ARE FAULTY. FIXTURES SET AGAINST WALLS SHALL HAVE GROUND BACKS AND SHALL BE CAULKED WITH SILICONE SEALANT OF A MATCHING COLOR.

- B. FIXTURE TRIM SHALL HAVE THE MANUFACTURER'S NAME STAMPED CLEARLY AND VISIBLY ON EACH ITEM.
- C. PROVIDE FAUCETS AS SCHEDULED ON DRAWINGS BY CHICAGO, DELTA-COMMERCIAL, SPEAKMEN, T&S BRASS OR ZURN.
- PROVIDE SINGLE LEVER HANDLE FAUCETS AS SCHEDULED ON DRAWINGS BY CHICAGO, DELTA-D. COMMERCIAL, KOHLER OR SYMMONS.
- PROVIDE ELECTRONIC FAUCETS AS SCHEDULED ON THE DRAWINGS BY SLOAN OR EQUAL BY ZURN. FIXTURE P-TRAPS SHALL BE 17 GAUGE BRASS BODY WITH CLEANOUT. 17 GAUGE SEAMLESS TUBULAR WALL BEND WITH CAST BRASS SLIP NUT, SHALLOW STEEL FLANGE, ALL CHROME PLATED BY MCGUIRE,
- G. LAVATORY, SINK, AND WATER CLOSET SUPPLIES SHALL BE SOLID BRASS ANGLE OR STRAIGHT TYPE WITH FULL TURN BRASS STEM, WHEEL HANDLE, OR LOOSE KEY TYPES AS NOTED ON DRAWINGS, SHALLOW STEEL FLANGE, 3/8 INCH COPPER RISER FLANGE, ALL CHROME PLATED, FINAL CONNECTION AS REQUIRED BY MCGUIRE, BRASS CRAFT, EBC, PROFLO OR ZURN.
- H. LAVATORY DRAINS SHALL BE GRID TYPE CHROME PLATED 17 GAUGE BRASS OPEN GRID WITH 1-1/4 INCH X 6 INCH LONG SEAMLESS BRASS TAILPIECE AND BRASS LOCKNUT WITH HEAVY RUBBER BASIN WASHER AND FIBER FRICTION WASHER, BY MCGUIRE, BRASS CRAFT, DEARBORN BRASS, EBC, PROFLO, WATTS BRASS AND TUBULAR OR ZURN.
- SINK DRAINS SHALL BE BASKET TYPE WITH CHROME PLATED FORGED BRASS BASKET STRAINER AND STRAINER BODY WITH 1-1/2 INCH X 4 INCH LONG SEAMLESS BRASS TAILPIECE AND CAST BRASS LOCK AND COUPLING NUTS BY MCGUIRE, BRASS CRAFT, DEARBORN BRASS, EBC, PROFLO OR ZURN.
- PROVIDE HANDICAP INSULATION KITS FOR LAVATORIES AND SINKS ON EXPOSED WATER AND WASTE PIPES AND FITTINGS, INCLUDING OFFSET DRAIN AND CONTINUOUS WASTE COVERS WHERE REQUIRED BY BROCAR, MCGUIRE, PLUMBEREX "PRO-2000", PROFLO, TRAP-WRAP OR TRU-BRO.
- PROVIDE FLUSH VALVES AS SPECIFIED ON DRAWINGS: SLOAN OR APPROVED EQUAL BY DELANEY OR Κ. ZURN WITH CHROME PLATED BRASS BODY, CHLORAMINE RESISTANT DIAPHRAGM WITH PROTECTED ORIFICE, SCREW DRIVER ANGLE STOP, NON-HOLD OPEN FEATURE AND SWEAT ADAPTER KIT. PROVIDE ADA HANDLES ON ADA COMPLIANT FIXTURES. PROVIDE SOLID PIPE RING SUPPORTS FOR URINAL FLUSH TUBES ANCHORED SECURELY TO WALL WHERE INDICATED ON THE DRAWINGS.
- PROVIDE SMITH, JOSAM, WADE, WATTS, OR ZURN CHAIR CARRIERS FOR MOUNTING WALL MOUNTED WATER CLOSETS AND LAVATORIES AS DESCRIBED ON THE DRAWINGS. SECURELY FASTEN CARRIERS TO FLOOR AND TEST PER MANUFACTURER'S RECOMMENDATIONS PRIOR TO INSTALLATION OF PARTITIONS. SECURE WALL-MOUNTED WATER CLOSET CARRIERS TO FLOOR WITH 3/8 INCH ANCHOR BOLTS, INCLUDING THE ANCHOR FOOT.

PART 6 - ALTERNATES

6.1 DESCRIPTION

REFER TO THE ARCHITECTURAL PORTION OF THE SPECIFICATION FOR LIST OF ALTERNATES. APPLICABLE SECTIONS OF THE BASE SPECIFICATIONS SHALL APPLY TO ALL WORK REQUIRED BY THE ALTERNATE UNLESS OTHERWISE SPECIFIED. DETERMINE WHETHER OR NOT AND HOW EACH ALTERNATE AFFECTS WORK. INCLUDE LABOR, MATERIALS, EQUIPMENT, AND TRANSPORTATION SERVICES NECESSARY FOR AND INCIDENTAL TO THE COMPLETION OF WORK UNDER EACH PARTICULAR ALTERNATE. FURNISH SEPARATE BID FOR EACH ALTERNATE APPLICABLE TO WORK, STATING THE AMOUNT TO BE ADDED OR DEDUCTED FROM THE BASE BID

END OF SECTION 22

END OF SECTION 23

BRASS CRAFT, DEARBORN BRASS, EBC, PROFLO, WATTS BRASS AND TUBULAR OR ZURN.

MBING SPECIFICATIONS (3)

0805



1	2	3	4	5		
						[
	ELECTRICAL PLAI	N CONVENTIONS	CODE	COMPLIANCE		ADA M
	DETAIL CALL-OUT/REFERENCE # DETAIL NO. SHEET PLAN REFERENCE NO. REFERENCE NOTE CALL-OUT	FEEDER DESIGNATION EQUIPMEN F# FEEDER DESIGNATION NO. REFERS TO FEEDER SCHEDULE M# INCLUDED ON THE SINGLE LINE P# DIAGRAM. SCHEDULE NOTES FS# FEEDER SPECIFICATION, CONDUIT FS#	NT DESIGNATION EQUIPMENT DESIGNATION: "M" - MECHANICAL "P" - PLUMBING "FS" - FOOD SERVICE - CALIFORNIA	ED IN THESE PLANS AND SPECIFICATIONS SHALL CONFORM TO AND BE INSTAL ORDINANCES ENFORCED BY THE LOCAL AUTHORITY HAVING JURISDICTION A DS, AND ORDINANCES SHALL BE THE LATEST EDITION WITH CALIFORNIA AND LC N THESE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED TO CONFLI CE, ASSEMBLY BILL, ETC. CODE OF REGULATIONS TITLE 24 DRNIA GREEN BUILDING STANDARDS CODE	LED IN COMPLIANCE WITH APPLICABLE CODES, T TIME OF PERMITTING. UNLESS OTHERWISE NOTED, DCAL JURISDICTION AMENDMENTS AS APPLICABLE. CT WITH ANY STATE LAW, CODE OF REGULATION,	DEVICE PROTRUDING OBJ MOUNTED)
	HUMBERED SHEET NOTE A LUMINAIRE DESIGNATION Ig,b BRANCH CIRCUIT, SWITCHLED	BRANCH CIRCUIT ↓ DESIGNATION	LIGHT DISTRIBUTION LIGHT DISTRIBUTION INDICATED BY ARROWS CALIFORNIA CALIFORNIA	RNIA ELECTRICAL CODE)RNIA FIRE CODE)RNIA BUILDING CODE ACCESSIBILITY CODE		RECEPTACLE, CON TELEPHONE, CATV
D	ELECTRICAL ABB	REVIATIONS	GENER	ALNOTES		DEVICES ABOVE A DEEP COUNTER/O
	- A - A AMPERE ABV ABOVE AC ALTERNATING CURRENT ADJ ADJACENT	GCGENERAL CONTRACTOROPROWNER PROJGFCIGROUND FAULT CIRCUIT INTERRUPTER0&MOPERATION 8GFIGROUND FAULT CIRCUIT INTERRUPTEROSAOFFICE OF THGNDGROUNDOSHPDOFFICE of STAGRSGALVANIZED RIGID STEELPLANNING &	JECT REQUIREMENTS & MAINTENANCE IE STATE ARCHITECT ATEWIDE HEALTH DEVELOPMENT JECT REQUIREMENT WORK PERFORM 1. FURNISH LA ETC. AS RE	<u>ED</u> \BOR, MATERIALS, EQUIPMENT, COMPONENTS, TOOLS, TRANSPORTATION TO/F \QUIRED TO SUPPORT AND IMPLEMENT THE ELECTRICAL WORK SHOWN ON THE	ROM THE WORK SITE, AND NECESSARY SERVICES CONSTRUCTION DOCUMENTS.	
	AFS FUSED SWITCH AMPERAGE RATING AFF ABOVE FINISH FLOOR AFG ABOVE FINISH GRADE AHJ AUTHORITY HAVING JURISDICTION AIC AMPERES INTERRUPTING CAPACITY AI	GWS GANG WITH SWITCH OVED OVERCOAD -H- -P- -P- H HEIGHT P POLE HID HIGH INTENSITY DISCHARGE PA PUBLIC ADDR HO HIGH OUTPUT PB PULLBOX	2. "PROVIDE" 2. "PROVIDE" 3. PERMITS SH ELECTRICA	AS USED ON THE CONSTRUCTION DOCUMENTS, IS DEFINED AS "FURNISH AND I FALL BE OBTAINED FOR ELECTRICAL WORK. ARRANGE INSPECTIONS WITH THE / AL INSPECTOR PRIOR TO BEGINNING WORK.	INSTALL". AHJ AND OBTAIN ACCEPTANCE. CONSULT WITH THE	FIRE ALARM PULL S
	AL ALUMINUM APCD AIR POLLUTION CONTROL DISTRICT ATS AUTOMATIC TRANSFER SWITCH AV AUDIBLE/AUDIO VISUAL AWG AMERICAN WIRE GAGE	HOA HAND-OFF-AUTO PC PHOTOCELL HP HORSEPOWER PC PLUMBING CO HPF HIGH POWER FACTOR PH PHASE HPS HIGH PRESSURE SODIUM PNL PANEL -1- POC POINT OF CO	ONTRACTOR 4. ELECTRICA	L WORK SHALL BE PERFORMED BY A CALIFORNIA STATE LICENSED ELECTRICIAN	N. CONDITIONS PERMIT. OBTAIN ACCEPTANCE OF	OTHERS). NOTES 1) DEVICES SHA
	BFG BELOW FINISH GRADE BLDG BUILDING BOD BASIS OF DESIGN - C -	ID IDENTIFICATION PV PHOTOVOLTA IG ISOLATED GROUND - R - IBC INTERNATIONAL BUILDING CODE (R) RELOCATE(D) - J - RECEPT RECEPTACLE J-BOX JUNCTION BOX REQ'D REQUIRED	EQUIPMEN CLEARANC 6. ELECTRICA	I DIMENSIONS PRIOR TO INSTALLATION THROUGH SUBMITTAL REVIEW. CALIFOR SES SHALL BE MAINTAINED.	RNIA ELECTRICAL CODE (CEC) MINIMUM WORKING VARIATIONS IN EQUIPMENT	2) PRIOR TO RO LOCATIONS V SHALL BE TO I WAINSCOTIN
	CA CALIFORNIA CATV CABLE TELEVISION CB CIRCUIT BREAKER CBC CA BUILDING CODE CFC CA FLECTRICAL CODE	K KILO RM ROOM KVA KILOVOLTAMPS RMC RIGID METAL (KW KILOWATT RMV REMOVE - L - RPLC REPLACE LC LIGHTING CONTROL RS RAPID START	CONDUIT TO AVOID 7. DRAWING	CONFLICT WITH OTHER TRADES OR PORTIONS OF WORK, SATISFY THE DESIGN F ICE OF ADJUSTMENTS FROM THE ARCHITECT/ENGINEER.	REQUIREMENTS, AND MEET CODE MINIMUMS. OBTAIN	3) EXCEPTIONS:
	CF COMPACT FLUORESCENT CF COMPACT FLUORESCENT CFC CA FIRE CODE CLG CEILING CL CENTER LINE CKI CIRCUIT	LRA LOCKED ROTOR AMPS - S - LS LIFE SAFETY BRANCH SC SIGNAL CABIN LT LIGHT SCC SHORT CKT C LTG LIGHTING SFM STATE FIRE MA	NET REQUAN URRENT ARSHAL 8. NOTIFY THE	TITY OF J-BOXES AND PULL BOXED AS REQUIRED TO IMPLEMENT ELECTRICAL WE ENTS.	FICATION, AND/OR ACTUAL FIELD CONDITIONS.	GENERAL 1. DEVICE AND EC
	CNT'R CONTRACTOR C.O. CONDUIT ONLY (W/PULLROPE) CR CRITICAL BRANCH CSFM CALIFORNIA SFM CT CURPENT TRANSCORMER	- M - SL SWITCH LEG MC MECHANICAL CONTRACTOR SPEC SPECIFICATIO MCA MINIMUM CIRCUIT AMPS SPST SINGLE POLE MCB MAIN CIRCUIT BREAKER SQ SQUARE MECH MECHANICAL SUPE	9. COORDINA SINGLE THROW 10. RACEWAY	ATE ELECTRICAL WORK WITH THE WORK OF OTHER TRADES.	SED STRUCTURE AND WHERE SPECIFICALLY ALLOWED	LOCATIONS WI
	CU COPPER - D - (D) DEMOLITION / DEMOLISH D DEPTH DSA DEPTH	MFR MANUFACTURER SVC SERVICE MFS MAIN FUSIBLE SWITCH SW SWITCH MH METAL HALIDE - T - MLO MAIN LUGS ONLY T TRANSFORME MOCP MAXIMUM OCP TBP TO BE DEMON	ER 11. EXPOSED C	CONDUIT BELOW 7' AFF, AND WHERE SUBJECT TO PHYSICAL DAMAGE, SHALL F	E INSTALLED IN GRS CONDUIT.	PER PLANS). <u>WIRING</u> 3. SEPARATE NEUT
C	DC DIRECT CURRENT DIA DIAMETER DPST DOUBLE POLE SINGLE THROW - E - (E) EXISTING	MPOE MAIN POINT OF ENTRY TC TIME CLOCK MSB MAIN SWITCHBOARD TEL TELEPHONE MT MOUNT TS TIME SWITCH MT MOUNTING HEIGHT TSP TWISTED SHIEL MTS MANUAL TRANSFER SWITCH TTB TELEPHONE	LDED PAIR ERMINAL BOARD 13. FLUSH MOU	NDUIT ONLY IS SHOWN ON THE DRAWINGS AND/OR INSTALLED FOR FUTURE PI PE. UNTED PANELBOARDS/LOAD CENTERS SHALL HAVE A MINIMUM OF (1) 3/4" C.	ROVISIONS, 1" AND LARGER, INSTALL A NYLON PULL O. INSTALLED FROM THE PANEL TO AN ACCESSIBLE	4. FEEDERS AND B BE BONDED TO DOCUMENTS O CONDUIT AND
	(EXN) EXISTING IN NEW LOCATION (EXR) EXISTING TO BE RELOCATED EC ELECTRICAL CONTRACTOR ELEC ELECTRICAL EMERGENCY	MTTB MAIN TELEPHONE TERMINAL BOARD TTC TELEPHONE TE MTTC MAIN TELEPHONE TERMINAL CABINET TX TRANSFORME - N - TYP TYPICAL (N) NEW - U - N NEUTRAL CONDUCTOR UC UNDERCABIN	ERMINAL CABINET ER ET OR UNDERCOUNTER ET OR UNDERCOUNTER ET OR UNDERCOUNTER ET OR UNDERCOUNTER ET OR UNDERCOUNTER	¿EA, FOR EVERY FOUR BRANCH CIRCUIT SPARES AND/OR SPACES.BIDDING, CONSULT PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENT	S. IF PROJECT SPECIFICATIONS HAVE NOT BEEN	DRAWINGS. IT S HOMERUN. GR OVERCURRENT PRO
	EMERGENER ENDERGENER EMIT ELECTRIC METALLIC TUBING EOL END OF LINE RESISTOR EOR ENGINEER OF RECORD - F - (F) ELITURE	N3R NEMA 3R UG UNDERGROUI NAT'L NATIONAL UGPS UNDERGROUI NC NORMALLY CLOSED UL UNDERWRITER NEC NATIONAL ELECTRICAL CODE UON UNLESS OTHER NEMA NAT'L FEC MANUFACTURER'S ASSOC USA UG SVC ALER	ND PROVIDED ND PROVIDED ND PULL SECTION RS LABORATORIES 2. RWISE NOTED SPECIFICA	REQUEST THEM FROM THE ARCHITECT AND/OR ENGINEER OF RECORD. THE SUBMISSION OF BID REVIEW EXISTING FIELD CONDITIONS AND MAKE PROPI- TIONS.	ER ADJUSTMENTS AS OUTLINED IN THE PROJECT	 THERMAL OVER PROVIDED INTE WHERE INDICA
	FÁCP FIRE ALARM CONTROL PANEL FAT FIRE ALARM TERMINAL FBO FURNISHED BY OTHERS FLA FULL LOAD AMPS FLR FLOOR	NICNOT IN CONTRACT- V -NLNIGHT LIGHTVVOLTNONORMALLY OPEN, NUMBERVAVOLT AMPERENPFNORMAL POWER FACTORVACVOLT ALTERN,NTSNOT TO SCALEVOLTVOLTAGE	ES ATING CURRENT 3. OBTAIN EN 1. COMPLETE	GINEERING PRE-APPROVAL FOR ALTERNATE PRODUCT AS OUTLINED IN THE PRODUCT AS OUTLINED IN THE PRODUCT AS OUTLINED IN THE PROJECT SPECIFICATIONS. SUBJECT SPECIFICATIONS. SUBJECT SPECIFICATIONS.	OJECT SPECIFICATIONS.	MARKING AND CLE
	FLUOR FLUORESCENT FF FUSES FOR FS FUSIBLE SWITCH FVNR FULL VOLTAGE NON-REVERSING - G -	- O -VRVANDAL-RESIOAHOVERALL HEIGHT- W -OCON CENTERWWIDTH, WIRE (OCPOVERCURRENT PROTECTIONWIUWHILE-IN-USEODOUTSIDE DIAMETERWPWEATHERPROTECTION	OR WATT ARCHITECT	, AND AHJ. .ECTRICAL SYSTEM AND COMPONENTS TO ENSURE PROPER PERFORMANCE. <i>M</i> RATE SYSTEM PERFORMANCE TO THE OWNER AND OBTAIN ACCEPTANCE.	AKE CORRECTIONS WHERE REQUIRED.	REQUIRED IN C
	G GROUNDING CONDUCTOR	OH OVERHEAD -X- XFMR TRANSFORME	3. PROVIDE R 4. PROVIDE C	ECORD DRAWINGS PER THE PROJECT SPECIFICATIONS TO THE OWNER.		GENER
	LIGHTING	SWITCHES POWER & COMMUNICA	TION MATERIAL 1. FURNISHED	MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS SPECIFICALLY NOTED OTH	ERWISE IN THE CONSTRUCTION DOCUMENTS.	
	O or	\$ SPST ↓ SINGLE RECE \$² DPDT ↓ DUPLEX REC \$³ 3-WAY ↓ HALF-SWITCH	EPTACLE 2. FURNISHED EPTACLE 2. FURNISHED HED DUPLEX RECEPTACLE 3. FURNISHED	MATERIAL, EQUIPMENT, AND FIRE STOP THROUGH PENETRATIONS SHALL BE LISTED LISTING AGENCY. PRODUCT LISTINGS SHALL BE PROVIDED TO THE EOR AT T	TED BY UL OR AN EQUIVALENT NATIONALLY IME OF SUBMITTAL REVIEW. ANUFACTURER REQUIREMENTS, SUBJECT TO REVIEW,	2. EGRESS ILLUMIN
	RECESSED DOWNLIGHT RECESSED WALL WASH DOWNLIGHT PECESSED TROFFER	 \$⁴ 4-WAY \$⁵ STAND ALONE DIMMER \$⁴ DOUBLE DUF \$⁵ TIMER SWITCH \$⁶ SPECIAL DUF 	CHED RECEPTACLE PLEX RECEPTACLE PLEX RECEPTACLE PLOCAL AH INSPECTION INSP	2 PRETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS	S SPECIFIED IN CBC CHAPTER 7 AND COMPLY WITH	OF EGRESS TO T 3. BRANCH CIRCI
	RECESSED TROFFER RECESSED PROCEDURE LIGHT RECESSED STEP LIGHT	\$P PILOT LIGHT ⊕	RPOSE RECEPTACLE - SINGLE PHASE PHYSICAL I UNTED FLUSH IN FLOOR IN FIRE RAT	INCLOSURE AROUND EQUIPMENT (INCLUDING LUMINAIRES, PANELS, OUTLETS, PER APPROVED MANUFACTURER THROUGH-PENETRATION FIRESTOP SYSTEM D'ED ASSEMBLIES SHALL NOT EXCEED 16 SQ. IN., OR MORE THAN 100 SQ. IN. FOI	ETC.) AS APPLICABLE. PENETRATIONS SHALL BE ETAILS. ELECTRICAL OUTLET BOXES INSTALLED FLUSH R ANY 100SQ. FT. OF WALL.	4. LUMINAIRE COI ARCHITECTURA 5. THE CONTRACT
В	→→ STRIP LIGHT LUMINAIRE WITH EMERGENCY BATTERY OR PACK OR EMERGENCY BRANCH CIRCU	 \$• DEVICE MOUNTED ABOVE COUNTER	UNTED AT PEDESTAL 2. THE PROJE TO: BEAMS DOCUMEN	CT STRUCTURAL ENGINEER AND ARCHITECT SHALL APPROVE PENETRATION OF , COLUMNS, FOOTINGS, ETC.), PERFORM WORK IN ACCORDANCE TO STRUCT ITS.	STRUCTURAL MEMBERS (INCLUDING BUT NOT LIMITED URAL DETAILS INCLUDED IN THE CONSTRUCTION	
	TRACK LIGHT	PC PHOTOSENSOR/PHOTOCELL ▼ TELEPHONE I PP POWER PACK ▽ COMMUNIC LV# LOW VOLTAGE SWITCHBANK ▽ COMMUNIC	DEVICE (DATA/TEL) 2. WHERE AN	L EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AN .E. 7-16.	ND VERTICAL FORCES IDENTIFIED IN THE 2019 CBC	
	EMERGENCY LUMINAIRE AREA LIGHT (EXTERIOR) O BOLLARD (EXTERIOR)	FIRE ALARM FIRE ALARM FIRE ALARM CONTROL PANEL COMBINATIO	OUTLETENGINEERCT SWITCH (FUSED/UN-FUSED)3.THE STRUCON MOTOR STARTER/DISCONNECTLOADS DU	AND AHJ. TURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTUR E TO ELECTRICAL EQUIPMENT.	ES ABILITY TO SUPPORT HANGER AND/OR BRACE	
	 UP LIGHT (FLUSH IN GRADE) DIRECTIONAL GROUND MOUNTED LIGHT 	ANN ANNUNCIATER PANEL SITE CORD DROF	P RECEPTACLE MECHANICAL & 1. PROVIDE L	PLUMBING SYSTEMS	TERIOR MECHANICAL UNIT MOUNTED DISCONNECT	
	EXIT SIGN (CHEVRON DIRECTIONS NOTI EXIT SIGN (WALL MOUNTED) RACEWAYS & CONDUCTORS	TED) AUDIBLE-VISUAL ON CIRCUIT BRE. F FLOW SWITCH	AKER 2. CONDUITS	SYSTEM FOR MECHANICAL CONTROLS SHALL BE THE RESPONSIBILITY OF THE ME SHALL BE INSTALLED IN ACCORDANCE TO DIVISION 26 SPECIFICATIONS.	CHANICAL/MECHANICAL CONTROL CONTRACTOR.	
	UNDERGROUND CONDUIT CONDUIT (CONCEALED IN STRUC	I TAMPER SWITCH FUSE P PULL STATION CTURE) B BELL CTURE	STUBS 4. PROVIDE P	4" SQUARE JUNCTION BOX WITH 1-GANG RING AND 1/2" CONDUIT TO ACCE OR TO THE ASSOCIATED MECHANICAL UNIT AS REQUIRED. "OWER WIRING CONNECTIONS TO EXHAUST FANS. EXHAUST FANS SHALL BE PR	SSIBLE CEILING SPACE ABOVE AT EACH THERMOSTAT	
	OVERHEAD CONDUCTORS (NOT CONDUIT)	TIN (SD) SMOKE DETECTOR W/ BASE SD DUCT MOUNTED SMOKE DETECTOR W/ BASE - FLUSH MOUN	T PANEL CONTRAC	OR. OWER AND FIRE ALARM WIRING TO DUCT MOUNTED SMOKE DETECTORS. DUC BY THE MECHANICAL CONTRACTOR.	CT MOUNTED SMOKE DETECTORS PROVIDED &	
	HOMERUN CONDUIT. CROSS MA DENOTE NUMBER OF CONDUCTO EXAMPLE: 3-HOT AND 1-NEUTRAL GROUND CONDUCTOR NOT SHO CONDUCTOR NOT SHO	AKKS Image: Book of the second of the seco	OUNT PANEL			
	CONDUIT TURNS DOWN (AWAY F VIEWER)	FROM MISCELLANEOUS CHIME CONCREDUCTION OF THE CONCR	ANSFORMER (RATING NOTED)			
A		NC NURSE CALL ↓ THREE PHASE → ⊢ RELAY	E WYE CONNECTION			
			R R WITH CT'S			
ISSUE FOR BID SUBMITTAL		Permit/Seal	Consultant		Client/Project Logo	Client/Pr
		ISSUE F(OR BID	Stantec		SANT DISTR
		NOT	FOR	Stantec Architecture Inc. 801 South Figueroa Street Suite 300 Los Angeles, CA 90017-3007	SANTA BARBARA	TERM
PM s		CONSTR	UCTION	Tel: (213) 955-9775 • www.stantec.com Copyright Reserved		5353 O
9/26/2023 4:07:1/	2 PLAN CHECK REVISIONS2023.07.10PLAN CHECK RESUBMITTAL NO. 11 PLAN CHECK REVISIONS2023.05.12PLAN CHECK RESUBMITTALRevisionByAppdYYYY.MM.DDIssued	Image: Description of the sector of		The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.		stn_Architect

WORK IDENTIFIED IN THESE PLANS AND SPECIFIC
NDARDS, AND ORDINANCES ENFORCED BY THE
DES, STANDARDS, AND ORDINANCES SHALL BE 1
DRK IDENTIFIED IN THESE CONSTRUCTION DOCUM
CAL ORDINANCE, ASSEMBLY BILL, ETC.
CALIFORNIA CODE OF REGULATIONS TITLE 24
2022 CALIFORNIA GREEN BUILDING STANDAR
2022 CALIFORNIA ELECTRICAL CODE
2022 CALIFORNIA FIRE CODE

WORI 1.	<u><pre>K PERFORMED</pre></u> FURNISH LABOR, MATERIALS, EQUIPMENT, COP ETC. AS REQUIRED TO SUPPORT AND IMPLEME
2.	"PROVIDE" AS USED ON THE CONSTRUCTION E
3.	PERMITS SHALL BE OBTAINED FOR ELECTRICAL ELECTRICAL INSPECTOR PRIOR TO BEGINNING
4.	ELECTRICAL WORK SHALL BE PERFORMED BY A
5.	INSTALL EQUIPMENT AT LOCATIONS INDICATED EQUIPMENT DIMENSIONS PRIOR TO INSTALLATI CLEARANCES SHALL BE MAINTAINED.
6.	ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ALIGNMENT/INSTALLATION THAT MAY BE NECT TO AVOID CONFLICT WITH OTHER TRADES OR ACCEPTANCE OF ADJUSTMENTS FROM THE AI
7.	DRAWINGS DO NOT SHOW THE EXTENT OF J-B THE QUANTITY OF J-BOXES AND PULL BOXED A REQUIREMENTS.
8.	NOTIFY THE ARCHITECT/ENGINEER OF DISCREF
9.	COORDINATE ELECTRICAL WORK WITH THE W
10.	RACEWAYS WITHIN THE BUILDING SHALL BE CO BY THE ARCHITECT/OWNER. WHERE APPROVE PROPERLY SUPPORTED PER CODE.
11.	EXPOSED CONDUIT BELOW 7' AFF, AND WHER
12.	WHERE CONDUIT ONLY IS SHOWN ON THE DRA CORD/ROPE.
13.	FLUSH MOUNTED PANELBOARDS/LOAD CENTE CEILING AREA, FOR EVERY FOUR BRANCH CIR
<u>BIDDII</u> 1.	<u>NG</u> PRIOR TO BIDDING, CONSULT PROJECT SPECIF PROVIDED, REQUEST THEM FROM THE ARCHITE
2.	PRIOR TO THE SUBMISSION OF BID REVIEW EXIS SPECIFICATIONS.
3.	OBTAIN ENGINEERING PRE-APPROVAL FOR AL
<u>FINAL</u> 1.	ACCEPTANCE COMPLETE ACCEPTANCE TESTING AS REQUIR ARCHITECT, AND AHJ.
2.	TEST THE ELECTRICAL SYSTEM AND COMPONE DEMONSTRATE SYSTEM PERFORMANCE TO THI
3.	PROVIDE RECORD DRAWINGS PER THE PROJE
4.	PROVIDE O&M MANUALS PER THE PROJECT SI
<u>MATE</u> 1.	<u>RIAL</u> FURNISHED MATERIAL AND EQUIPMENT SHALL
2.	FURNISHED MATERIAL, EQUIPMENT, AND FIRE S RECOGNIZED LISTING AGENCY. PRODUCT LIST
3.	FURNISHED MATERIAL AND EQUIPMENT SHALL INSPECTION, AND APPROVAL BY THE AHJ.
<u>PENE</u> 1.	<u>IRATIONS</u> CONDUIT PENETRATIONS THROUGH FIRE RATE LOCAL AHJ REQUIREMENTS. PROVIDE MEANS PHYSICAL ENCLOSURE AROUND EQUIPMENT (INSTALLED PER APPROVED MANUFACTURER TH IN FIRE RATED ASSEMBLIES SHALL NOT EXCEED
2.	THE PROJECT STRUCTURAL ENGINEER AND AR TO: BEAMS, COLUMNS, FOOTINGS, ETC.), PERI DOCUMENTS.
<u>EQUIF</u> 1.	<u>PMENT ANCHORAGE</u> ELECTRICAL EQUIPMENT SHALL BE ANCHOREE AND A.S.C.E. 7-16.
2.	WHERE ANCHORAGE DETAILS ARE NOT SHOW ENGINEER AND AHJ.
3.	THE STRUCTURAL ENGINEER OF RECORD SHAL LOADS DUE TO ELECTRICAL EQUIPMENT.
MECH	HANICAL & PLUMBING SYSTEMS
1.	PROVIDE LIQUID TIGHT FLEXIBLE CONDUIT BRA SWITCH AND ROOF JACK, FOR POWER AND C
2.	CONDUIT SYSTEM FOR MECHANICAL CONTRO CONDUIT SHALL BE INSTALLED IN ACCORDAN
3.	PROVIDE A 4" SQUARE JUNCTION BOX WITH 1 LOCATION OR TO THE ASSOCIATED MECHANI
4.	PROVIDE POWER WIRING CONNECTIONS TO E CONTRACTOR.

	GC	GENERAL CONTRACTOR	OPR	OWNER PROJECT REQUIREMENTS	
PERE	GECI		08.M	OPERATION & MAINTENANCE	
	GICI				WC
JVE	GH	GROUND FAULT CIRCUIT INTERRUPTER	OSA	OFFICE OF THE STATE ARCHITECT	1
ERNATING CURRENT	GND	GROUND	OSHPD	OFFICE of STATEWIDE HEALTH	
JACENT	GRS	GAI VANIZED RIGID STEEL		PLANNING & DEVELOPMENT	
ED SWITCH AMPERAGE RATING	GWS	GANG WITH SWITCH			
	0,,,3	OANO WIIII SWITCH		OVEREDIND	
JVE FINISH FLOOR	- H -		- P -		2.
DVE FINISH GRADE	Н	HEIGHT	Р	POLE	
THORITY HAVING JURISDICTION	HID	HIGH INTENSITY DISCHARGE	PA	PUBLIC ADDRESS	2
PERES INITERRI IPTINIC CAPACITY	HO		PR	PULLBOX	5.
				DUOTOCEU	
JMINUM	HOA	HAND-OFF-AUTO	PC	PHOTOCELL	
POLLUTION CONTROL DISTRICT	HP	HORSEPOWER	PC	PLUMBING CONTRACTOR	
iomatic transfer switch	HPF	HIGH POWER FACTOR	PH	PHASE	4.
	HPS	HIGH PRESSURE SODIUM	PNI	PANFI	
	1		POC		-
	- -		TUC DV		5.
	ID	IDENTIFICATION	PV	PHOTOVOLIAIC	
ow finish grade	IG	ISOLATED GROUND	- R -		
DING	IBC	INTERNATIONAL BUILDING CODE	(R)	RELOCATE(D)	
			RECEPT		
IS OF DESIGN	- J -				1
	J-ROX	JUNCTION BOX	REQID	REQUIRED	0.
NDUIT	- K -		RLA	RUNNING/RATED LOAD AMPS	
LIFORNIA	К	KILO	RM	ROOM	
	KVΔ	KILOVOLTANAPS	PMC		
	K VV	KILOWATI	RIMV	REMOVE	
BUILDING CODE	- L -		RPLC	REPLACE	-
ELECTRICAL CODE	LC	LIGHTING CONTROL	RS	RAPID START	/.
MPACTELUORESCENT	IRA	LOCKED ROTOR AMPS	- S -		
			ŝČ		
FIRE CODE	LS		30		
LING	LI	LIGHI	SCC	SHORT CKT CURRENT	
NTER LINE	ltg	LIGHTING	SFM	STATE FIRE MARSHAL	Q
CUIT	LV	LOW VOLTAGE	SHT	SHEET	0.
	- 14 -		SI	SWITCH LEC	
	MC		SDEC	SPECIFICATION	9
NDUII ONLY (W/PULLROPE)	MC	MECHANICAL CONTRACTOR	SPEC	SPECIFICATION	/ .
TICAL BRANCH	MCA	MINIMUM CIRCUIT AMPS	SPST	SINGLE POLE SINGLE THROW	
LIFORNIA SFM	MCB	MAIN CIRCUIT BREAKER	SQ	SQUARE	10
	MECH	MECHANICAL	SLIRE		
	MED		SVC		
PPER			SVC	SERVICE	
	MES	MAIN FUSIBLE SWITCH	SW	SWIICH	
MOLITION / DEMOLISH	MH	METAL HALIDE	- T -		
РТН	MLO	MAIN LUGS ONLY	Т	TRANSFORMER	11.
	MOCP				
	MOCI		TDK		10
ECI CURRENI	MPOE	MAIN POINT OF ENTRY	IC .	IIMECLOCK	12.
METER	MSB	MAIN SWITCHBOARD	TEL	TELEPHONE	
UBLE POLE SINGLE THROW	MT	MOUNT	TS	TIME SWITCH	
	MT HT	MOUNTING HEIGHT	TSP		
	A ATS				13.
	10113		TID		
STING IN NEW LOCATION	MIIR	MAIN TELEPHONE TERMINAL BOARD	IIC	IELEPHONE IERMINAL CABINET	
STING TO BE RELOCATED	MTTC	MAIN TELEPHONE TERMINAL CABINET	TX	TRANSFORMER	
CTRICAL CONTRACTOR	- N -		TYP	TYPICAL	
	(NI)		- 11 -		
	(14)		- 0 -		.
ERGENCY	N	NEUTRAL CONDUCTOR	UC	UNDERCABINET OR UNDERCOUNTER	
CTRIC METALLIC TUBING	N3R	NEMA 3R	UG	UNDERGROUND	
) of line resistor	NAT'L	NATIONAL	UGPS	UNDERGROUND PULL SECTION	
	NC		111		2.
SINCER OF RECORD					
	NEC	NATIONAL ELECTRICAL CODE	UON	UNLESS OTHER WISE NOTED	
UKE	NEMA	NAT'L ELEC MANUFACTURER'S ASSOC	USA	UG SVC ALERI	
ALARM CONTROL PANEL	NIC	NOT IN CONTRACT	- V -		3
ALARM TERMINAL	NI	NIGHTLIGHT	V	VOLT	0.
	NO				
			VA VA		FIN
l load AMPS	NPF	NORMAL POWER FACTOR	VAC	VOLI ALIERNATING CURRENT	1 1 1 1
OR	NTS	NOT TO SCALE	VOLT	VOLTAGE	.
ORESCENT	- 0 -		VR	VANDAL-RESISTANT	
			- W/ -		
			•• - \\\/		
IRLE 2MIICH	UC	UN CENTER	VV	WIDTH, WIKE OK WATT	2.
L VOLTAGE NON-REVERSING	OCP	OVERCURRENT PROTECTION	WIU	WHILE-IN-USE	
	OD	outside diameter	WP	WEATHERPROOF	

	SWITCHES		POWER & (COMMUNICATION
CEILING MOUNT LUMINAIRE	\$	SPST	φ	SINGLE RECEPTACLE
WALL MOUNT LUMINAIRE	\$ ²	DPDT	Ф	DUPLEX RECEPTACLE
PENDANT MOUNT LUMINAIRE	\$ ³	3-WAY	Ф	HALF-SWITCHED DUPLEX RECEPTACLE
RECESSED DOWNLIGHT	\$ ⁴	4-WAY	Ø	FULLY-SWITCHED RECEPTACLE
RECESSED WALL WASH DOWNLIGHT	\$ _D	stand alone dimmer	\	DOUBLE DUPLEX RECEPTACLE
RECESSED TROFFER	\$	TIMER SWITCH	\otimes	SPECIAL PURPOSE RECEPTACLE - THREE PHASE
RECESSED PROCEDURE LIGHT	\$ ^P	PILOT LIGHT	Ф	SPECIAL PURPOSE RECEPTACLE - SINGLE PHASE
RECESSED STEP LIGHT	\$ ^ĸ	KEY OPERATED	\Leftrightarrow	DEVICE MOUNTED FLUSH IN FLOOR
STRIP LIGHT	\$ •	DEVICE MOUNTED ABOVE COUNTER	р Ф	DEVICE MOUNTED AT PEDESTAL
LUMINAIRE WITH EMERGENCY BATTERY	T	SPLASH	Φ^{\bullet}	DEVICE MOUNTED ABOVE COUNTER SPLASH
PACK OR EMERGENCY BRANCH CIRCUIT CONNECTION	OS	OCCUPANCY SENSOR	Ĵ	JUNCTION BOX
TRACK LIGHT	PC	PHOTOSENSOR/PHOTOCELL	The second secon	TELEPHONE DEVICE
\geq directional flood light	PP	POWER PACK	\bigtriangledown	COMMUNICATIONS DEVICE (DATA/TEL)
EMERGENCY LUMINAIRE	LV#	LOW VOLTAGE SWITCHBANK	TV	TELEVISION OUTLET
AREA LIGHT (EXTERIOR)	FIRE ALAR	1		DISCONNECT SWITCH (FUSED/UN-FUSED)
BOLLARD (EXTERIOR)		FIRE ALARM CONTROL PANEL		COMBINATION MOTOR STARTER/DISCONNECT
	ANN	ANNUNCIATER PANEL	\boxtimes	
	Η	HORN	Jell	CORD DROP RECEPTACLE
	\vee	VISUAL	\hat{D}	MOIOR
	AV	AUDIBLE-VISUAL	0	
	F	FLOW SWITCH		
YS & CONDUCTORS	T	TAMPER SWITCH		
	Ρ	PULL STATION	— <u> </u>	
CONDUIT (CONCEALED IN STRUCTURE)	B	BELL	«»	DRAW-OUT STUBS
OVERHEAD CONDUCTORS (NOT IN CONDUIT)	SD	SMOKE DETECTOR W/ BASE	÷	GROUND
	SD-	DUCT MOUNTED SMOKE DETECTOR	Ø N/	PHASE
Homerun conduit. Cross marks		BASE		
DENOTE NUMBER OF CONDUCTORS - EXAMPLE: 3-HOT AND 1-NEUTRAL.		HEAT DETECTOR		
GROUND CONDUCTOR NOT SHOWN.		END OF LINE RESISTOR		SURFACE PANEL WITH WORKING CLEARANCE NOTED
CONDUIT TURNS UP (TOWARDS VIEWER)	FSD	FIRE SMOKE DAMPER		
CONDUIT TURNS DOWN (AWAY FROM VIEWER)	MISCELLAN	EOUS	Ţ	DRY TYPE TRANSFORMER (RATING NOTED)
	©	CHIME	\wedge	THREE PHASE DELTA CONNECTION, NEUTRAL
	NC	NURSE CALL	\bigtriangleup	GROUNDED
			Ļ	THREE PHASE WYE CONNECTION
				RELAY
			(M)	UTILITY METER
			\$-M)	UTILITY METER WITH CT'S

10UNTING HEIGHTS

DEVICE	MOUNTING HEIGHT	NOTES
PROTRUDING OBJECT (WALL MOUNTED)	LEADING EDGE BETWEEN 27'' AND 80'' AFF.	OBJECT SHALL NOT PRC CIRCULATION PATH.
RECEPTACLE, COMMUNICATION, TELEPHONE, CATV, ETC.	+15" AFF TO THE BOTTOM OF THE OUTLET BOX.	APPLICABLE TO RECEPT, SWITCHES INTENDED TO PER CBC 11B-308.1.1 (SV
luminaire switches	+48" AFF TO THE TOP OF THE OUTLET BOX.	OUTLET(S) SHALL BE INST THE BOTTOM OF THE OU FLOOR OR WORKING PL
DEVICES ABOVE A 20"-25" DEEP COUNTER/OBSTRUCTION	+46" (MAX.) TO THE TOP OF THE OUTLET BOX (SIDE APPROACH). +44" (MAX.) TO THE TOP OF THE OUTLET BOX (FORWARD APPROACH).	COORDINATE WITH ARC OBSTRUCTIONS SHALL N THE WALL BENEATH THE
FIRE ALARM PULL STATIONS	BETWEEN +42" - 48" MAX TO THE TOP OF THE ACTIVATING HANDLE.	
OUTLET BOX FOR THERMOSTAT (BY OTHERS).	BETWEEN +42" - 48" MAX TO THE TOP OF THE OUTLET BOX.	VERIFY WITH MECHANIC

L MOUNT PER MATRIX ABOVE UNLESS OTHERWISE NOTED PER PLANS. DUGH-IN, THE ELECTRICAL CONTRACTOR SHALL VERIFY MOUNTING HEIGHTS FOR DEVICES AND EQUIPMENT CONNECTION WITH THE ARCHITECT OR OWNER. WHERE DEVICES ARE LOCATED ABOVE COUNTERS AND SHELVING, SPECIAL ATTENTION ENSURE OUTLETS AND COVER PLATES DO NOT CONFLICT WITH EDGES OF COUNTER SPLASH, SHELVING TRIM, G, ETC. CONSULT ARCHITECTURAL DETAILS AND INTERIOR ELEVATIONS, AS THEY SHALL GOVERN WHERE THERE IS CONFLICT CAL PLANS. APPLIANCES (I.E. KITCHEN RANGES, DISHWASHERS, ETC.) WHICH DO NOT HAVE CONTROLS LOCATED ON APPLIANCE.

AL POWER & COMMUNICATION PLAN NOTES

QUIPMENT FINAL LOCATION SHALL BE FIELD VERIFIED WITH ALL TRADES DURING ROUGH-IN. OBTAIN ACCEPTANCE OF EXACT TH ARCHITECT/OWNER REPRESENTATIVES TO AVOID CONFLICT WITH FURNITURE, CASEWORK, ETC.

INSTALLED IN EXTERIOR LOCATIONS SHALL BE PROVIDED WITH A WEATHERPROOF WHILE-IN-USE COVER (LOCKING AS REQUIRED

ITRAL CONDUCTORS SHALL BE INSTALLED FOR EACH BRANCH CIRCUIT AS INDICATED PER CONSTRUCTION DOCUMENTS. BRANCH CIRCUITS SHALL CARRY A GROUNDING CONDUCTOR, SHALL BE INSTALLED IN EACH CONDUIT/RACEWAY AND SHALL

THE METALLIC COMPONENTS OF THE RACEWAY SYSTEM. GROUNDING CONDUCTORS SHALL BE SIZED PER THE CONSTRUCTION DR CEC REQUIREMENTS, WHICHEVER IS GREATER. MAINTAIN THE UNIFORMITY AND CONTINUITY OF THE GROUNDING SYSTEM IN RACEWAYS. GROUND CONDUCTORS SHALL BE SIZED AS INDICATED IN CEC TABLE 250.122, UNLESS OTHERWISE NOTED ON THE Shall be permitted to utilize a single ground conductor when branch circuits are combined in a single OUND CONDUCTOR SHALL BE SIZED FOR THE LARGEST OVERCURRENT DEVICE.

<u>)TECTION</u> RLOAD PROTECTION SHALL BE PROVIDED FOR ALL MOTORS WHERE REQUIRED PER CEC 430. OVERLOAD PROTECTION MAY BE EGRAL TO EQUIPMENT.

TED ON THE CONSTRUCTION DOCUMENTS, FUSIBLE DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL ELEMENT TIME USES SHALL BE SIZED AS NOTED PER THE CONSTRUCTION DOCUMENTS AND/OR PER MANUFACTURER REQUIREMENTS. VERIFY ATION WITH EQUIPMENT NAMEPLATE INFORMATION DURING SUBMITTAL REVIEW, PRIOR TO PROCUREMENT.

<u>EARANCE</u> QUIPMENT SHALL BE PROVIDED WITH FIELD OR FACTORY MARKING INDICATING THE POTENTIAL ARC FLASH HAZARDS AS CEC 110.16 AND 110.21. CE AT ELECTRICAL EQUIPMENT SHALL BE MAINTAINED AS REQUIRED PER CEC 110.

AL LIGHTING PLAN NOTES

POWERED EXIT SIGNS, EMERGENCY LUMINAIRES, AND EMERGENCY BATTERY PACKS SHALL BE PROVIDED WITH A CONSTANTLY ANCH CIRCUIT CONNECTION FOR CHARGING. EXIT SIGNAGE AND EMERGENCY LIGHTING SHALL BE INSTALLED WITH WIRING MPLIANT WITH CEC ARTICLE 700.12(F). IN NO INSTANCE SHALL AN EXIT SIGN HAVE A "FEED THROUGH" BRANCH CIRCUIT

VATION SHALL MEET OR EXCEED CODE REQUIREMENTS. EMERGENCY LIGHTING SHALL BE PROVIDED ALONG THE INTERIOR PATH THE EXTERIOR EXIT DISCHARGE AND/OR AREA OF REFUGE AS REQUIRED PER THE CBC.

UIT CONDUCTORS SHALL BE A MINIMUM OF #12 THWN, UNLESS OTHERWISE NOTED OR REQUIRED BY THE CEC.

INTROL SWITCHES SHALL BE INSTALLED ON THE STRIKE SIDE OF THE DOOR UNLESS OTHERWISE NOTED PER THE PLANS. REFER TO al plans.

ION. FORMS CAN BE DOWNLOADED ON-LINE AT : https://energycodeace.com/NonresidentialForms/2019









roject TA BARBARA METROPOLITAN TRANSIT ICT

AINAL 2 - RECOMMISSIONING

VERPASS ROAD, GOLETA, CA 93111 ______JH ____JH ____WT 2023.07.10 ______Dwn. ____Dsgn. Chkd. YYYY.MM.DD ture_2270449601.rvt

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Revision

OTRUDE MORE THAN 4" INTO THE

TACLES (30 AMPS AND LESS), CONTROLS, AND BE USED BY THE OCCUPANT OF THE ROOM SWITCHES) AND 11B-308.1.2 (RECEPTACLES). STALLED NO LESS THAN +15" MEASURED FROM UTLET BOX TO THE LEVEL OF THE FINISHED LATFORM.

CHITECTURAL PLANS. NOT EXTEND MORE THAN 25" FROM RECEPTACLE/DEVICE.

CAL PRIOR TO ROUGH IN.

TOR SHALL BE RESPONSIBLE TO COMPLETE CEC T-24 INSTALLATION CERTIFICATION AND LIGHTING ACCEPTANCE



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_____ _ _ _ Consultant Permit/Seal _____ _____ _____ _____ ____ ____ _____ ____ ____ _____ ____ **ISSUE FOR BID** _____ _____ _____ _____ _____ ____ ____ _____ _____ ____ NOT FOR _____ ____ ____ _____ ____ ____ ____ CONSTRUCTION _____ _____ ____ _____ ____ _____ 2023.10.02 2023.07.10 2023.05.12 _____ ISSUE FOR BID _____ PLAN CHECK RESUBMITTAL NO. 2 2023.07.10 2023.05.12 PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL By Appd YYYY.MM.DD Issued



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DR 120-VOLT RECEPTACLE new or complete replaceme led in office areas, lobbies, c	es AND CONTROLLED REC ent electrical power distribut conference rooms, kitchen ar	tion systems to a reas in office spa	demonstrate comp aces, copy rooms a	liance with 130.5(d)/ 1 nd hotel/motel guest re	60.6(d) Both controlled and unco poms.	ontrolled	B. PROJECT SCOP This table includes 01	PE electrical systems ti 02	hat are within 03	the scope of the po	ermit applic 05	ation.	06	
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DINGS							P1	New electrical	144			least one sta demand resp	ndards based messa ponse after receiving	ging protocol which ; a demand respons
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nitted for all buildings		Form/Title					¹ FOOTNOTES: Adding ² If common use area	g only new feeders and as in a multifamily are	d branch circuits submetered. ra	triggers Voltage Dro ting is for submeter s	op 130.5(c)/1 size servina c	60.6(c), no other require ommon use areas.	ments from 130.5/160.	6 are required.
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cate of Compliance docu	mentation is accurate and	d complete.					C. COMPLIANCE	RESULTS				·		
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DECLARATION STATEME htty of perjury, under the laws of th	ENT ne State of California:						D. EXCEPTIONAL	CONDITIONS	I			I	I	
vided on this Certificate of Complia ivision 3 of the Business and Profes	nce is true and correct. ssions Code to accept responsibility	for the building des	sign or system design ic	dentified on this Certificate o	f Compliance (responsible designer)		This table is auto-f	illed with uneditable	e comments be	ecause of selection	s made or d	ata entered in tables t	hroughout the form.	
and performance specifications, ma I Part 6 of the California Code of Re eatures or system design features i	aterials, components, and manufac egulations. identified on this Certificate of Com	tured devices for th	e building design or sys	stem design identified on this	s Certificate of Compliance conform to the	e requirements	E. ADDITIONAL F	REMARKS						
ons submitted to the enforcement a ompleted signed copy of this Certifi	agency for approval with this buildi icate of Compliance shall be made a	ing permit application available with the bu	on. uilding permit(s) issued	I for the building, and made a	available to the enforcement agency for all	l applicable	This table includes	remarks made by tl	he permit appl	icant to the Autho	rity Having .	lurisdiction.		
tand that a completed signed copy	of this Certificate of Compliance is	required to be inclu Respon	uded with the documen insible Designer Signatu	ntation the builder provides t Ire:	o the building owner at occupancy.		F. SERVICE ELECT	RICAL METERING		1			111 400 E() (4	
		Date S	Signed:		<u>}</u>		This table includes that provide power	new or replacemen r to common use are	t electrical ser eas must meet	vice systems OR eq the following met	uipment to ering requir	demonstrate complia rements. Submetered s	nce with 130.5(a) / 1 systems providing po	60.6(a). For multifa wer to dwelling uni
+ Engineering, Corp		2023 License	l-03-09 :e:					01	02	Require	d Metering	03 Capabilities per Table	130 5 -A	04
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							This table includes	entirely new or con	nplete replace	ment electrical pow	ver distribut	ion systems to demon	strate compliance wi	th 130.5(b)/ 160.6(
							in the service do no therefore load type	ot need to be shown es on those submete	. For multifam ered systems a	ily occupancies, su lso do not need to	bmetered s	ystems that provide po	ower to dwelling unit	s do not need to m
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							Load Type P1	per Table 130.5-B ¹	Minin	Load per Table 130	I.5-B	Compliance Method ²	Location of Require Doc	ements in Construc cuments
							Plug Loads and a	ppliances less than 2	25kVA Al Grou 25 kV	l plug loads in aggr ups of plug loads ex A connected load i less than 5000 s	regate kceeding n an area of	Method 1: Switchboards, motor control centers, or panelboard loads disaggregated for each load type	een achieved is sta	E-102
							¹ FOOTNOTES: For ea ² Method 1: Switchbor Method 2: Switchbor	ach separate load type oards/ motor control c ards/ motor control ce	, up to 10% of the senters/ panelboan ters/ pa	he connected load m pard loads disaggreg rd supply other distr	ay be of any a ated for each ibution equip	type. I load type. ment with loads disaggr	egated for each load ty	pe.

0.6 and 160.9 fc cupancies will a r 180.1(a) or 18 oject Name	or electrical systems Ilso use this docume 10.2 (b)4Bvii	nt to demonstr	Santa Barbara Metro	ppolitan Transit Dia	O(b)2P for alterations	For multifamily	addition or alte		liance will be a	(Page 1 of 5
oject Address:	ORMATION			5353 Overpass F	Road Date Prepared:					3/9/202
01 Project Lo	ocation (city)	Go	bleta		02 Climate Z 03 Occupant	one cy Types Within	Project:	All	6 Other Occupa	ancies
PROJECT SCO nis table includes 01	PE s electrical systems t 02	hat are within	the scope of the per 04	rmit application.		06				07
ectrical Service Designation/ Description	Scope of Work ¹	Rating ² (kVA)	Utility Provided Metering System Exception to 130.5(a)/ 160.6(a) ³	System subject to CA Elec Code Article 517 Exception to 130.5(a)and	De	mand Response	e Controls		Provides pov units/comm only in n occu	ver to dwelling on living areas nultifamily apancy
P1	New electrical service equipment and meter	: 144		(b)	Where required, de which are capable of least one standards demand response Sections 120.2/16 mechanical, indoo Compliance docum	mand response receiving and au s based messagi after receiving a 50.3, 130.1/160 or lighting, and s ients will indicat	controls must h utomatically res ng protocol whi a demand respo 1.5, and 130.3/ 1 sign lighting Cer te when deman	be specified ponding to at ch enables nse signal. .60.5, and tificate of d response		
gistration Num Building Energy TE OF CALIFOR ECTRICAL P ECTRICAL P	aber: any Efficiency Standa ANIA Power Distrib COMPLIANCE COM	ards - 2022 Non Dution Calculated from guidance or see 02 rration for ring 130.5(b)/ 60.6(b) 2 Table G) Yes e comments be he permit appli t electrical serv eas must meet 02 Rating ¹ In D 144 a multifamily	Inta Barbara Metrop	Ger ance Reg Sch bolitan Transit Dis 3353 Overpass R alculations in Tab eferenced below Drop L60.6(c) ble H) AND amade or data en ity Having Jurisdi alignment to demo pring requiremen 03 Metering Capat listorical Peak Demand (kW) Ling is for subme	herated Date/Time: port Version: 2022.0.00 hema Version: rev 2022 strict Report Page: load Date Prepared: 04 Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I) Yes hered in tables throug iction. 04 Controlled Receptacles 130.5(d)/ 160.6(d) (See Table I) Yes 130.5(d)/ 160.6(d) (See Table I) (See Table I) (Se	0 0101	s table says "CO 160.9 J) 0.6(a). For mult rer to dwelling u 0.6(a). For mult E-1	Docume Renort Gen CALIFORNI MPLIES with E Compl CC Compl CC Compl CC Compl CC Compl CC Compl CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC COMPL CC CC COMPL CC CC CC CC CC CC CC CC CC CC CC CC CC	entation Softwa C EnergyPro-206 errated: 2023-C A ENERGY (C C C C C C C C C C C C C C C C C C C	are: EnergyPro
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		STATE OF CALIFORNIA Indoor Lighting CERTIFICATE OF COMPLIANCE	CALIFORNIA ENERGY COMMISSI NRCC-L ¹	state of california DN Indoor Lighting I-E CERTIFICATE OF COMPLIANCE	STATE OF CALIFORNIA SION Indoor Lighting CALIFORNIA ENERGY COMMISSION LTI-E CERTIFICATE OF COMPLIANCE
		Project Name: Santa Barbara Metropolitan Project Address: 5353	Transit District Report Page: (Page 7 o Overpass Road Date Prepared: 3/9/20	Project Name: Santa Barbara Metropolitan Transit District Report Page: (Page 4 23 Project Address: 5353 Overpass Road Date Prepared: 3/9/	This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.
		DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I certify that this Certificate of Compliance documentation is accurate	and complete.	H. INDOOR LIGHTING CONTROLS (Not including PAFs) Area Level Controls	Project Address: 5353 Overpass Road Date Prepared: 3/9/2023
		Documentation Author Name: Heather A. Gray Company: Gray Electrical Consulting + Engineering, Corp	Signature Date: 2023-03-09	04 05 06 07 08 09 10 11 12 Complete Building or Area Complete Building or Area Manual Area Multi-Level Shut-Off Controls Primary/Sky Secondary Interlocked Systems Field Inspector	A. GENERAL INFORMATION 01 Project Location (city) Goleta 04 Total Conditioned Floor Area (ft ²) 3,071 02 Climate Zone 6 05 Total Unconditioned Floor Area (ft ²) 0
		Address: P.O. Box 368 City/State/Zip: Santa Maria CA 93456	CEA/ HERS Certification Identification (if applicable): Phone: (805) 361-0525	Area Description Category Primary Function Area 130.1(a) / 160.5(b)4A 130.1(b) / 160.5(b)4B 130.1(c) // 160.5(b)4C Daylighting 130.1(d) / 160.5(b)4D 130.1(d) / 140.6(a)1/ 170.2(e)2A MA/Garage NA/Garage NA/Garage NA/Garage NA/Garage NA/Garage	03 Occupancy Types Within Project (select all that apply): 06 # of Stories (Habitable Above Grade) 1 • All Other Occupancies
D		RESPONSIBLE PERSON'S DECLARATION STATEMENT I certify the following under penalty of perjury, under the laws of the State of California: 1. The information provided on this Certificate of Compliance is true and correct.		Maintenance/Wash Bays Auto Repair Readily Accessible Dimmer Occupancy Sensor NA:Garage NA:Garage 0 0 0 0 0 0 0	B. PROJECT SCOPE This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or
		 I am eligible under Division 3 of the Business and Professions Code to accept responsi The energy features and performance specifications, materials, components, and mar of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of plans and specifications, submitted to the enforcement agency for approval with this b 	bility for the building design or system design identified on this Certificate of Compliance (responsible designer) sufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requireme Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, suilding permit application.	ts Plan Sheet Showing Daylit Zones:	Id1.0(b)2 / 180.2(b)4 for alterations. Scope of Work Conditioned Spaces Unconditioned Spaces 01 02 03 04 05
		 I will ensure that a completed signed copy of this Certificate of Compliance shall be m inspections. I understand that a completed signed copy of this Certificate of Complian Responsible Designer Name: Heather A. Gray 	ade available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable the is required to be included with the documentation the builder provides to the building owner at occupancy. Responsible Designer Signature:	I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used.	My Project Consists of (check all that apply): Calculation Method Area (ft ²) Calculation Method Area (ft ²) New Lighting System New Lighting System - Parking Garage Area Category Method 3071 Area Category Method 0
		Company: Gray Electrical Consulting + Engineering, Corp Address: P.O. Box 368	Date Signed: 2023-03-09 License: E18927	Conditioned spaces 01 02 03 04 05 06 Area Description Complete Building or Area Category Primary Exaction Area Allowed Density (W/#2) Area (ft ²) Allowed Wattage (W/atta) Additional Allowance / Adjustm	ent
		City/State/Zip: Santa Maria CA 93456	Phone: (805) 361-0525	Maintenance Bays Auto Repair 0.55 3,070.9 1,689 No No TOTALS: 3,070.9 1,689 See Tables J, or P for detail	
				J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM This section does not apply to this project.	
		Registration Number: CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance	Generated Date/Time: Documentation Software: EnergyP Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-00. Schema Version: rev 20220101 Report Generated: 2023-03-09 10:15:	o Registration Number: Generated Date/Time: Documentation Software: Energy 3 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-G 8 Schema Version: rev 20220101 Report Generated: 2023-03-09 10:1	Pro Registration Number: Generated Date/Time: Documentation Software: EnergyPro 033 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-0033 :48 Schema Version: rev 20220101 Report Generated: 2023-03-09 10:15:48
				state of california Indoor Lighting	STATE OF CALIFORNIA STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION CALIFORNIA ENERGY COMMISSION
				CERTIFICATE OF COMPLIANCE NRCC Project Name: Santa Barbara Metropolitan Transit District Report Page: (Page 5 Project Address: 5353 Overpass Road Date Prepared: 3/9/	CERTIFICATE OF COMPLIANCE NRCC-LTI-E Project Name: Santa Barbara Metropolitan Transit District Report Page: (Page 2 of 7) 2023 Project Address: 5353 Overpass Road Date Prepared: 3/9/2023
				K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE	C. COMPLIANCE RESULTS
				L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY	Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts) Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts) Compliance Results Lighting in 01 02 03 04 05 06 07 08 09
C				This section does not apply to this project.	conditioned and unconditioned spaces must not be combined for Area Category Area Adjusted Adjustments PAF Lighting combined for Area Category Adjusted Total
				This section does not apply to this project.	compliance per 140.6(c)1 140.6(c)2 / 140.6(c)26 / 170.2(e)4B Allowed (Watts) 140.6(a)2 / (Watts) 140.6(a)2 / (Watts) 140.6(b)1 / 170.2(e) 170.2(e)4A (+) (+) (Watts) 140.6(a)2 / (Total and
				N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS This section does not apply to this project.	Conditioned 1,689 0 = 1,689 ≥ 1,520 0 = 1520 COMPLIES Unconditioned
				O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE This section does not apply to this project.	Rated Power Reduction Compliance (See Table Q for Details)
				P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF)) This section does not apply to this project.	D. EXCEPTIONAL CONDITIONS This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.
				Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS	E. ADDITIONAL REMARKS This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.
				R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS	
				This section does not apply to this project.	
				Registration Number: Generated Date/Time: Documentation Software: Energy CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-0 Schema Version: rev 20220101 Report Generated: 2023-03-09 10:11	Pro Registration Number: Generated Date/Time: Documentation Software: EnergyPro 033 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-0033 :48 Schema Version: rev 20220101 Report Generated: 2023-03-09 10:15:48
				STATE OF CALIFORNIA Indoor Lighting CALIFORNIA ENERGY COMMIS	STATE OF CALIFORNIA SION Indoor Lighting CALIFORNIA ENERGY COMMISSION
				CERTIFICATE OF COMPLIANCE NRCC Project Name: Santa Barbara Metropolitan Transit District Report Page: (Page 6 Project Address: 5353 Overpass Road Date Prepared: 3/9/	CERTIFICATE OF COMPLIANCE NRCC-LTI-E of 7) Project Name: Santa Barbara Metropolitan Transit District Report Page: (Page 3 of 7) 2023 Project Address: 5353 Overpass Road Date Prepared: 3/9/2023
					F. INDOOR LIGHTING FIXTURE SCHEDULE
				This section does not apply to this project.	This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.
B				T. DWELLING UNIT LIGHTING This section does not apply to this project.	Obsigned Wattage: Conditioned Spaces 01 02 03 04 05 06 07 08 09 10 Name or Item Complete Luminaire Modular Small Aperture & Watts per How is Wattage Total Number Excluded per 140.6(a)3 / Field Inspector
				U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION Form/Title	Tag Description (Track) Fixture luminaire ² determined of Luminaires 170.2(e)2C Pass Fail C6A Type C6A 56W LED No NA 56 Mfr. Spec 16 No 896 □ C6B Type C6B 78W LED No NA 78 Mfr. Spec 8 No 624 □
				NRCI-LTI-E - Must be submitted for all buildings	Total Designed Watts: CONDITIONED SPACES 1,520 ¹ FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.
				V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE Form/Title Systems/Spaces To Be F Verified	eld
				NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls. Maintenance/Wash Bays	G. MODULAR LIGHTING SYSTEMS This section does not apply to this project.
					H. INDOOR LIGHTING CONTROLS (Not including PAFs) This table includes lighting controls for conditioned and unconditioned spaces. Deside a lower for the second states of the seco
					Mandatory Demand Response 110.12(c) O1 O2 O3 Shut-off controls 130.1(c) / 160.5(b)4C Field Inspector
					NA < 4,000W subject to multilevel See Area/Space Level Controls Image: Control Science Control Scie
				Registration Number: Generated Date/Time: Documentation Software: Energy CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-0 Schema Version: rev 20220101 Benort Generated: 2023.03-09 10-1	Pro Registration Number: Generated Date/Time: Documentation Software: EnergyPro 033 CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance Report Version: 2022.0.000 Compliance ID: EnergyPro-20644-0323-0033 v/8 Schema Version: rev 20220101 Benort Generated: 2023-03-00 10:15:48
					GRAY ELECTRICAL CONSULTING + ENGINEERING, CORP
A					2529 PROFESSIONAL PKWY SUITE A - P.O. BOX #368 SANTA MARIA CA 93455 WWW GECECORP.COM
					DRAWINGS, SPECIFICATIONS, AND OTHER
					ELECTRONIC FORM, PREPARED BY GRAY ELECTRICAL CONSULTING + ENGINEERING,
					USE SOLELY WITH RESPECT TO THIS PROJECT UNLESS OTHERWISE AUTHORIZED IN WRITING. GRAY ELECTRICAL CONSULTING +
					ENGINEERING, CORP SHALL BE DEEMED THE AUTHOR AND OWNER OF THE INSTRUMENTS OF SERVICE AND SHALL RETAIN ALL COMMON
					LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING COPYRIGHTS.
ISSUE FOR BID SUBMITTAL		Perm	nit/Seal Consultant		Client/Project Title TITLE 24 COMPLIANCE DOCUMENTS -
			ISSUE FOR BID	JStantec	DISTRICT INDOOR LIGHTING
			NOT FOR	Stantec Architecture Inc. 801 South Figueroa Street Suite 300	TERMINAL 2 - RECOMMISSIONING
			CONSTRUCTION	Los Angeles, CA 90017-3007 Tel: (213) 955-9775 • www.stantec.com	Project No. Scale PROLNO 2014240805
MA 6127-13 PM	2 PLAN CHECK REVISIONS 2023.07.10 PLAN CHECK RESUBMIT 1 PLAN CHECK REVISIONS 2023.07.10 PLAN CHECK RESUBMIT	IAL NO. 2 2023.0.02 IAL NO. 1 2023.05.12		Copyright Reserved The Contractor shall verify and be responsible for all dimensions. DO NOT scale the	5353 OVERPASS ROAD, GOLETA, CA 93111 stn Architecture 2270449601 rvt III III III III III III III III III I
ORIGINAL SHEET - ARCH E1	Revision By Appd 2023.05.12 YYYY.MM.DD PLAN CHECK SUBMITTAL	By Appd YYYY.MM.DD		arawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.	Dwn. Dsgn. Chkd. YYYY.MM.DD

Indoor Lighting			
Project Name:	anta Barbara Metropolitan Transit District	Report Page:	(Page 7 of 7)
Project Address:	5353 Overpass Road	Date Prepared:	3/9/2023
DOCUMENTATION AUTHOR'S DECLARATION STA	TEMENT		
I certify that this Certificate of Compliance docu	mentation is accurate and comple	ete.	
Documentation Author Name: Heather A. Gray		Documentation Author Signature:	lavesto
Company: Grav Electrical Consulting + Engineering, Corp		Signature Date: 2023-03-09	
Address: P.O. Box 368		CEA/ HERS Certification Identification (if	applicable):
City/State/Zip: Santa Maria CA 93456		Phone: (805) 361-0525	
 The energy features and performance specifications, mo of Title 24, Part 1 and Part 6 of the California Code of Rt The building design features or system design features i plans and specifications submitted to the enforcement I will ensure that a completed signed copy of this Certifi inspections. I understand that a completed signed copy 	sterials, components, and manufactured device gulations. dentified on this Certificate of Compliance are agency for approval with this building permit a cate of Compliance shall be made available with of this Certificate of Compliance is required to	es for the building design or system design consistent with the information provided pplication. In the building permit(s) issued for the buil be included with the documentation the b	identified on this Certificate of Compliance conform to the requirements on other applicable compliance documents, worksheets, calculations, lding, and made available to the enforcement agency for all applicable builder provides to the building owner at occupancy.
Responsible Designer Name: Heather A. Grav		Responsible Designer Signature:	abs
Company: Gray Electrical Consulting + Engineering, Corp		Date Signed: 2023-03-09	
Address: P.O. Box 368		License: E18927	
City/State/Zip: Santa Maria CA 93456		Phone: (805) 361-0525	
Registration Number:	Generat	ted Date/Time:	Documentation Software: EnergyPro
CA Building Energy Efficiency Standards - 2022 Nonresident	ial Compliance Report	Version: 2022.0.000	Compliance ID: EnergyPro-20644-0323-0033 Report Generated: 2023-03-09 10:15:48





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STATE OF CALIFORNIA Outdoor Lighting			STATE OF CALIFORNIA Outdoor Lighting		CAL		STATE OF CALIFORNIA Outdoor Lighti	ng				
CERTIFICATE OF COMPLIANCE Project Name: Santa Barbara Metropolita	n Transit District Report Page:	NRCC-LTO-E (Page 7 of 8)	CERTIFICATE OF COMPLIANCE Project Name:	Santa Barbara Metropolitan Transit District Report Page	e:	NRCC-LTO-E (Page 4 of 8)	CERTIFICATE OF COMP This document is used	LIANCE d to demonstrate complia	nce with requirer	nents in 110.9, 130.0, 130	0.2, 140.7, and 141	1.0(b)2i
Project Address: 5353	3 Overpass Road Date Prepared:	3/9/2023	Project Address:	5353 Overpass Road Date Prepar	red:	3/9/2023	nonresidential and he the prescriptive path	otel/motel occupancies. It for multifamily and mixed	is also used to do	ocument compliance with Multifamily includes dor	requirements in 10 rmitory and senior	60.5, 1 r living ;
			F. OUTDOOR LIGHTING F	IXTURE SCHEDULE			Project Name: Project Address:		Santa Barba	ara Metropolitan Transit Dist 5353 Overpass Ro	oad Date Prepared:	
Form/	Title	Systems/Spaces To Be Field	For new or altered lighting s the spaces covered by the p installed and replacement h	systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires ermit application are included in the Table below. For altered lighting system uminaires being installed as part of the project scope are included lie, existin	s being installed and any existing luminaires rema ns using the Existing Power method per 141.0(b)21 ng luminaires remaining or existing luminaires hei	ining or being moved within only new luminaires being on moved are not included)	A. GENERAL INFOR	RMATION				
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except fo	or alterations where controls are added to <= 20 lumina	aires. Canopies;	Outdoor lighting attached to lighting is included here.	o multifamily buildings and controlled from the inside of a dwelling unit are i	included in Table H. and are not included here. All	other multifamily outdoor	01 Project Location 02 Climate Zone	n (city)	Goleta 6		— 04 Total Illur	minate
			Designed Wattage:	02 03 04 05	06 07 08	09 10	03 Outdoor Lightin	ng Zone per Title 24 Part 1 - Undeveloped Parkland	10.114 or as des	gnated by Authority Havi ate - Urban Clusters	Ing Jurisdiction (AH	ال: tJ): th - Mu:
			⁴ Compliance with mandatory s	hielding requirements is required for luminaires with initial lumen output >= 6,200 u	nless exempted by 130.2(b)/ 160.5(c)	I	LZ-1: Low - Rura 05 Occupancy Type	al Areas es within Project	LZ-3: Moder	ately High - Urban Areas	•••	
			G. SHIELDING REQUIREM	1ENTS (BUG)			Warehouse					
			H. OUTDOOR LIGHTING				B. PROJECT SCOPE					
			This table demonstrates con existing to remain (ie untou	npliance with controls requirements for all new or altered luminaires installe ched) and luminaires which are removed and reinstalled (wirina only) do not	ed as part of the permit application. For alteration t need to be included in this table even if thev are	projects, luminaires which are within the spaces covered by	This table includes ou 170.2(e)6 or 141.0(b)	utdoor lighting systems th)2L / 180.2(b)4Bv for alter	at are within the a	scope of the permit applic	cation and are dem	nonstra
			the permit application. Outdoor lighting for nonresi	idential buildings, parking garages and common service areas in multifamily	v buildings must be documented separately from c	utdoor lighting attached to	My Project Consists	of: 01				
			multifamily buildings and co Mandatory Controls for No	ontrolled from the inside of a dwelling unit nresidential Occupancies, Parking Garages & Common Areas in Multifamil	y Buildings		New Lightin	ng System hting System	M	ust Comply with Allowand your alteration increasing	ces from 140.7 / 1 g the connected lig	.70.2(e) ghting l
			01	02 03	04	05	% of Existi	03 ing Luminaires Being Alter	red ¹	Sum Total of Lumii	04 naires Being Addeo	ed or Al
			Area Description	130.2(c)1 / 160.5(c) 130.2(c)2 / 160.5(c)	130.2(c)3 / 160.5(c)	Pass Fail	C < 10% C = 2	>= 10% and < 50%] >= 50%	a define the project's lum	alpaires	
			Canopies ¹ FOOTNOTE: Text has been abb	Photocontrol Provided reviated, please refer to Table 160.5-A to confirm compliance with the specific light s	Provided source technologies listed.		¹ FOOTNOTES: % of E	Existing Luminaires Being	Altered = (Sum To	tal of Luminaires Being Aa	dded or Altered / E	Existing
			² Authority having jurisdiction m ³ Recessed luminaires marked fo	nay ask for cutsheets or other documentation to confirm compliance of light source. or use in fire-rated installations, and recessed luminaires installed in non-insulated ce	ilings are excepted from ii and iii.							
Registration Number:	Generated Date/Time:	Documentation Software: EnergyPro	Registration Number:	Generated Date/Time	e: Do	cumentation Software: EnergyPro	Registration Number:			Gene	erated Date/Time:	
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance	Report Version: 2022.0.000 Schema Version: rev 20220101	Compliance ID: EnergyPro-20644-0323-0032 Report Generated: 2023-03-09 10:15:48	CA Building Energy Efficiency	Standards - 2022 Nonresidential Compliance Report Version: 2022 Schema Version: rev	2.0.000 Compliand 20220101 Repor	e ID: EnergyPro-20644-0323-0032 t Generated: 2023-03-09 10:15:48	CA Building Energy Eff	ficiency Standards - 2022 No	nresidential Compli	ance Repo Schei	ort Version: 2022.0.00 ma Version: rev 2022)00 220101
STATE OF CALIFORNIA			STATE OF CALIFORNIA				STATE OF CALIFORNIA					
Outdoor Lighting		CALIFORNIA ENERGY COMMISSION	Outdoor Lighting		CAI	IFORNIA ENERGY COMMISSION	Outdoor Lightin					
Project Name: Santa Barbara Metropolita Project Address: 5353	n Transit District Report Page: 8 Overpass Road Date Prepared:	(Page 8 of 8) 3/9/2023	Project Name: Project Address:	Santa Barbara Metropolitan Transit District Report Page 5353 Overpass Road Date Prepa r	e: red:	(Page 5 of 8) 3/9/2023	Project Name: Project Address:		Santa Barba	ara Metropolitan Transit Dist 5353 Overpass Ro	rict Report Page: oad Date Prepared:	:
										· · · ·		
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	e and complete.		I. LIGHTING POWER ALLO	DWANCE (per 140.7 / 170.2(e))	01		C. COMPLIANCE RE	ESULTS				
Documentation Author Name: Heather A. Gray	Documentation Author Signature:	×b	Hardscape Allowance is per Allowances are per Table 14	Table 140.7-A/Table 170.2-R while "Use it or lose it" 10.7-B /Table 170.2-S. Indicate which allowances are being	"Use it or lose it" Allowance (select all tha	t apply) (select all that apply)	Results in this table a to Table D. Exception	are automatically calculated al Conditions for guidance	ed from data inpu e or see applicable	t and calculations in Table Table referenced below.	es F through N. No)te: If a
Company: Gray Electrical Consulting + Engineering, Corp	Signature Date: 2023-03-09		used to expand sections for lose it" allowances shall not Outdoor lighting attached to	user input. Luminaires that qualify for one of the "Use it or c qualify for another "Use it or lose it" allowance. Allowance	e Per Sales Frontage C e Application Table K	rnamental Area	Calculation 01	02	D3	140.7 / 170.2(e)6 or 141.0	0(b)2L / 180.2(b)4	1 Bv 06
Address: P.O. Box 368 City/State/Zip:	CEA/ HERS Certification Identification (if applicab	le):	dwelling unit are included ir outdoor lighting is included	n Table H. and are not included here. All other multifamily here.	ow) Table J Table K	Table L Table M	General Hardscape	Per Si Application + Si	ales Or	namental	ecific Exis	sting wer
Santa Maria CA 93456 RESPONSIBLE PERSON'S DECLARATION STATEMENT	(805) 361-0525		Calculated General Hardsca	pe Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/N 2 03 04 05	Motel 06 07	08 09	140.7(d)1 / 170.2(e)6	140.7(d)2 / 140 170.2(e)6 (See 7	.7(d)2 1 Fable K) (Se	70.2(e)6 ee Table L) (5aa Tabl	d)2 / 141.0(e)6 180.2((b)2L / 2(b)4Bv
I certify the following under penalty of perjury, under the laws of the State of California: The information provided on this Certificate of Compliance is true and correct. Lam eligible under Division 3 of the Business and Professions Code to accent response	ibility for the building design or system design identified on this Car	tificate of Compliance (reconnsible designer)	Area Des	Area Wattage Allowance (AWA) scription Illuminated Area Allowed Density Area Allow	Linear Wattage Allowance (LW wance Perimeter Length Allowed Density Line	A) Total General ar Allowance AWA + LWA	(See Table I) 1,328 +	(See Table J)	+	+ 622.4	4 OR	able N)
 The energy features and performance specifications, materials, components, and ma of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Cartificate of The building design features or system design features identified on this Cartificate of the building design features or system design features identified on this Cartificate of the building design features or system design features identified on this Cartificate of the building design features or system design features identified on the Cartificate of the building design features of the cartificate of the c	nufactured devices for the building design or system design identifie	ed on this Certificate of Compliance conform to the requirements	Pedestrian	(ft²) (W/ft²) (Watt Walkways 1030 0.021 21.6	ts) (lf) (W/lf) 5 298 0.2	(Watts) (Watts) 59.6 81			Shielding C Controls C	ompliance (See Table G fo ompliance (See Table H fo	or Details) or Details)	
 and specifications submitted to the enforcement agency for approval with this I will ensure that a completed signed copy of this Certificate of Compliance shall be n 	building permit application. nade available with the building permit(s) issued for the building, an	d made available to the enforcement agency for all applicable	Automotive	Hardscape 32270 0.021 677.	7 1595 0.2 Initial Wattage Allowance for Entire	319 997 Site (Watts): 250		ONDITIONS				
Responsible Designer Name: Heather A. Gray	Responsible Designer Signature:				Instances of Initial Wattage Allowanc Total General Hardscape Allowa	e (LZ 0 only) ¹ ance (Watts): 1328	This table is auto-fille	ed with uneditable comme	ents because of se	lections made or data ent	tered in tables thro	oughou
Company: Gray Electrical Consulting + Engineering, Corp	Date Signed: 2023-03-09						E. ADDITIONAL REI	MARKS				
Address: P.O. Box 368 City/State/Zip:	License: E18927 Phone:		J. LIGHTING ALLOWANCE This section does not apply	to this project.			This table includes re	emarks made by the perm	it applicant to the	Authority Having Jurisdic	ction.	
Santa Maria CA 93456	(805) 361-0525		K. LIGHTING ALLOWANC	E: SALES FRONTAGE								
			This section does not apply	to this project.								
			L. LIGHTING ALLOWANCE	E: ORNAMENTAL								
			This section does not apply	to this project.								
Registration Number:	Generated Date/Time:	Documentation Software: EnergyPro	Registration Number:	Generated Date/Time	e: Do	cumentation Software: EnergyPro	Registration Number:			Gene	erated Date/Time:	
CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance	Report Version: 2022.0.000 Schema Version: rev 20220101	Compliance ID: EnergyPro-20644-0323-0032 Report Generated: 2023-03-09 10:15:48	CA Building Energy Efficiency	Standards - 2022 Nonresidential Compliance Report Version: 2022 Schema Version: rev	2.0.000 Complianc 20220101 Repor	e ID: EnergyPro-20644-0323-0032 t Generated: 2023-03-09 10:15:48	CA Building Energy Eff	ficiency Standards - 2022 No	nresidential Compli	ance Repo Scher	ort Version: 2022.0.00 ma Version: rev 2022	00 20101
			STATE OF CALIFORNIA				STATE OF CALIFORNIA	ng				
			CERTIFICATE OF COMPLIANCE	Canta Davia va Matuanalitan Transit District Desart Desa	CA	IFORNIA ENERGY COMMISSION NRCC-LTO-E	CERTIFICATE OF COMP	LIANCE	Conto Dorbo	ve Metropoliton Tropolt Dist	wist Demont Demo	
			Project Address:	5353 Overpass Road Date Prepar	e. red:	3/9/2023	Project Address:		Santa barba	5353 Overpass Ro	oad Date Prepared:	
				CE: PER SPECIFIC AREA			E OUTDOOR LIGHT	TING FIXTURE SCHEDU	F			
			This table includes areas usi applicable. However, multip	ing the wattage allowance per specific area from Table 140.7-B /Table 170.2 le specific area allowances may not be taken for the exact same area on the	P-S. More than one specific area allowance may be e site.	taken in a single project, if	For new or altered lig the spaces covered by	ghting systems demonstra y the permit application a	ting compliance v re included in the	vith 140.7 / 170.2(e)6 all ı Table below. For altered i	new luminaires bei lighting systems us	ing ins
			01	02 03 04 CALCULATED ALLOWANCE	05 06 07 08	09 10	installed and replace Outdoor lighting atta	ment luminaires being ins ached to multifamily build	talled as part of t ings and controlle	he project scope are inclu ed from the inside of a dwo	ided (ie, existing lu relling unit are inclu	ıminair luded in
			Area Description	Specific Area Type per Table 140.7-B Specific Area Density	Extra Luminaire Watts per # of	Design Watts	Designed Wattage:	c/C.		02	05	
				(ft ²) ² (W/ft ²)	(Watts) Item Tag	159.6	01	02		03 04	05	-
			North Canopy	NonSalesCanopy 9006 0.3	2431.6	259.6	Name or Item Tag	Complete Luminaire Des	cription	Watts per uminaire ^{1, 2} How is Wattage determine	Total Number Luminaires ²	Lur St
					Total Design Watts for this A	rea: 259.6	S1A		Linear	54 Mafr Succ	1	
			Central Canory	NonSalesCanopy 13776 0.3	S2 26.6 8	212.8	S1B	Type S1B 54W LED	Linear	54 Mfr. Spec		+
					S4 25 6	150	52 S2	Type S2 26.6W LED	Linear	26.6 Mfr. Spec	c 14	+-
					Total Design Watts for this A Total Allowance	rea: 362.8 (Watts) All Areas: 622.4	S3	Type S3 25W LED	Linear	25 Mfr. Spec	c 6	
			¹ FOOTNOTES: See Table 140.7- ² For luminaires indicated in Tab	B /Table 170.2-S for rules for calculating the specific areas (ft ² for these additional lig ble F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear f	ghting allowances. feet should be indicated in column 08 instead of numbe	r of luminaires.	S4	Type S4 25W LED	Linear	25 Mfr. Spec	c 17	<u> </u>
			N. EXISTING CONDITION	S POWER ALLOWANCE (alterations only)			S5	Type S5 6.4W LED	🗌 Linear	6.4 Mfr. Spec	c 3	'
			This section does not apply	to this project.			* NOTES: Selections wit	th a * require a note in the s	pace below explain	ing how compliance is achiev	ved.	
			O. DECLARATION OF REQ	UIRED CERTIFICATES OF INSTALLATION			EX: Luminaire is lighting ¹ FOOTNOTES: Authority	g a statue; EXCEPTION 2 to 1 v Having Jurisdiction may ask	30.2(b) for Luminaire cut s	heets to confirm wattage us	ed for compliance pe	er 130.0
							² For linear luminaires, v ³ Select "New" for new l	wattage should be indicated luminaires in a new outdoor	as W/If instead of N	Natts/luminaire. Total linear for added luminaires in an al	feet should be indice	ated in tered" fo
				Form/Title			for existing luminoiree	within the project come that	are not heing alta-	ed and are remaining Colort	lteration. Select "Alte	1" for ~
			NRCI-LTO-E - Must be subm	Form/Title		eumentation Colling - Tool - T	for existing luminaires w the project scope.	vithin the project scope that	are not being altere	a and are remaining. Select	Iteration. Select "Alte "Existing Reinstalled	d" for ex
			NRCI-LTO-E - Must be subm Registration Number: CA Building Energy Efficiency :	Form/Title itted for all buildings Generated Date/Time Standards - 2022 Nonresidential Compliance Report Version: 2022	e: Do 2.0.000 Compliance	cumentation Software: EnergyPro	for existing luminaires w the project scope. Registration Number: CA Building Energy Eff	vithin the project scope that ficiency Standards - 2022 No	are not being altere	ed and are remaining. Select Gene	Iteration. Select "Alte "Existing Reinstalled erated Date/Time: ort Version: 2022.0.00	d" for ex
			NRCI-LTO-E - Must be subm Registration Number: CA Building Energy Efficiency	Form/Title itted for all buildings Generated Date/Time Standards - 2022 Nonresidential Compliance Report Version: 2022 Schema Version: rev	e: Do 2.0.000 Compliano 20220101 Repor	cumentation Software: EnergyPro e ID: EnergyPro-20644-0323-0032 t Generated: 2023-03-09 10:15:48	for existing luminaires w the project scope. Registration Number: CA Building Energy Eff	vithin the project scope that ficiency Standards - 2022 No	are not being altere	ance Repo	Iteration. Select "Alte "Existing Reinstalled erated Date/Time: ort Version: 2022.0.00 ma Version: rev 2022	100 20101

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Project Address:	
M. LIGHTING ALLOWA	NC
This table includes areas applicable. However, mu	usin Itiple
01	
Area Descript	tion
North Cano	ру
Central Canc	ру
¹ FOOTNOTES: See Table 144 ² For luminaires indicated in). 7-B Tabl
N. EXISTING CONDITIO	ONS
This section does not app	oly to

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					Permit/Seal	Consultant	
					ISSUE FOR BID		
					NOT FOR CONSTRUCTION		Stantec Archit 801 South Figu Los Angeles, C Tel: (213) 955-9
	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2			2023.10.02 2023.07.10			Copyright R
2023.07.10 2023.05.12 YYYY.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL Issued	Ву	Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall ver drawing - any errors or The Copyrights to all de or use for any purpose





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Project No. PROJ NC Revision 2

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5353 Overpass road, goleta, ca 93111

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_	04 Total Illum	ninated Hardsca	ape Area (ft ²)	33300			
g.	Jurisdiction (AH.): - Must be revi	ewed by CA Ene	rgy Commissio	n for Appro	val	
ti	on and are dem	onstrating com	pliance using th	e prescriptive p	ath outline	d in 140.7 /	
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10	ires.						
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еи	v luminaires beii	ng installed and	l any existing lui	minaires remai	ning or bein	g moved with	nin
gh leo Ilii	iting systems usi d (ie, existing lun ng unit are inclu	ng the Existing ninaires remain ded in Table H.	Power method ning or existing l and are not incl	per 141.0(b)2L uminaires bein luded here. All (only new lu g moved ar other multij	minaires bein e not includec family outdoo	ng 1). r
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	Total Number	Luminaire	Excluded per	08	Cutoff Re 6,200 init	q. > Fiel tial Inspec	d ctor
	Luminaires ²	Status ³	140.7(a) / 170.2(e)6A	Design Watts	lumen out 130.2(b) 160.5(c)	put / Pass	Fail
		New		54	NA: < 62 lumens	00 5 □	
	1			162	NA: < 62 lumens	00	
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_	1 3 14 6	New New New		372.4 150	NA: < 62 lumen: NA: < 62		
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Revision

ORIGINAL SHEET - ARCH E1

	CONDUIT SIZE		FEEDE	R SPE	CIFI	CATION		ESTIMATED CONDUCTOR LENGTH (LF)	CALCULATED	AMPS INTERRUPTING CAPACITY (AIC)	
#	SPECIFICATION	#	SPECIFICATION	+	#	GND. SPECIFICATION	Ea.	(SEE NOTE #1)	CALCULATED PER FEEDER	TOTAL FROM SOURCE	(SEE NOTES #1, 2)
1	2"C.			REM	10V	E		-	-	-	-
1	1-1/2"C			REN	107	E		-	-	-	-
						EXISTI	NG 1	OREMAIN			
1	4"C.	4	#500KCMILTHWN	+	1	#3CU GND		150' MAX	0.94	0.94	8,900
1	2"C.	3	#1 AWGTHWN	+	1	#8 CU GND		60' M A X	0.62	1.56	6,308
1	2"C.	4	#3 AWGTHWN	+	1	#8 CU GND		75' MAX	1.10	2.04	3,816
1	2"C.	4	#1 AWGTHWN	+	1	#8 CU GND		30' M A X	0.38	1.32	6,566
1	2"C.	4	#1 AWGTHWN	+	1	#8 CU GND		45' MAX	0.58	1.52	5,805

		 		Permit/Seal	Consultant	() Stant
		 		ISSUE FOR BID		
				NOT FOR CONSTRUCTION		Stantec Architecture Inc. 801 South Figueroa Street Suite 300 Los Angeles, CA 90017-3007 Tel: (213) 955-9775 • www.stantec.com
23.07.10 23.05.12 Y.MM.DD	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2 PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	 	2023.10.02 2023.07.10 2023.05.12 2023.03.10 YYYY.MM.DD			Copyright Reserved The Contractor shall verify and be responsible for all dimensions. DO NOT s drawing - any errors or omissions shall be reported to Stantec without delo The Copyrights to all designs and drawings are the property of Stantec. Re or use for any purpose other than that authorized by Stantec is forbidden.

REFERENCE NOTES EXISTING SCE APPROVED, UNDERGROUND PULL SECTIO.

- 2. EXISTING UTILITY METER. AMPACITY AS SPECIFIED. WITHOUT MAIN DEVICE. LABEL PANEL FOR 120/208V, SINGLE PHASE LOAD
- 7. ELECTRICAL CONTRACTOR SHALL INSTALL WIRING CONNECTIONS TO FUELING SYSTEM AS PER THE FOLLOWING: #12 CU GROUND.



3. EXISTING FACILITY MAIN ELECTRIC SERVICE AND DISTRIBUTION SWITCHGEAR. 4. PROVIDE NEW CIRCUIT BREAKER MOUNTING HARDWARE FOR NEW DEVICE.

5. SERVICE ATTENDANT BOOTH PANEL FURNISHED BY OTHERS. PANEL FURNISHED

6. SEE PANEL SCHEDULE ON SHEET E-102 FOR ADDITIONAL PANEL LOADS.

7.1. FUEL MANAGEMENT TERMINAL: INSTALL (1) ¾" CONDUIT WITH (2) #12 THWN CU + (1) 7.2. DIESEL DISPENSER: INSTALL (1) ¾" CONDUIT WITH (2) #12 THWN CU + (1) #12 CU MONITORING CONSOLE: INSTALL (1) 3/4" CONDUIT WITH (2) #12 THWN CU + (1) #12 CU 7.4. PUMP FEED: INSTALL (1) ¾" CONDUIT WITH (2) #12 THWN CU + (1) #12 CU GROUND. *3/4HP, 120/208V, 1-PHASE MOTOR REQUIREMENT*

1		2		3			4	4	
		LOCATIC	DN: CENTER CANOPY		LIGHTING CON	TROL PANEL "LCP1"			
		ENCLOSU RATING: # RELAYS	ure: nema 3r, surface 120/277Vac, 100kaic 5: 6						
		RELAY	DESCRIPTION	CONTROL	DIMMING TECHNOLOGY	BRANCH CIRCUIT	CONNECTED LOAD (VA)	LOAD TYPE	NOTES
		2	CENTER CANOPY	TC / PC TC / PC	0-10V	D-9	250	LED	2
		3	POLE LIGHTS	TC / PC / OS	0-10V	D-13	-	LED	1,2
		4	POLE LIGHTS	TC / PC OS	0-10V	D-15	-	LED	1,2
		5	SPACE	_	-	-	-	-	
		6	SPACE	-			-	-	
			DN: BUS WASH		LIGHTING CON	ITROL PANEL "LCP3"			
		RATING: # RELAYS	ure: nema 3r, surface 120/277VAC, 100KAIC S: 6						
		RELAY			DIMMING TECHNOLOGY	BRANCH CIRCUIT	CONNECTED LOAD (VA)	LOAD TYPE	NOTES
		2	FUEL CANOPY	TC / PC	0-10V	P1-12	50	LED	2
		3	SPACE	-		-	-	LED	
		4	SPACE	-			-	LED	
		56	SPACE SPACE	-	-	-	-	-	
							I		
			DN: MAINTENANCE BAY		LIGHTING CON	TROLPANEL LCP2			
		RATING: # RELAYS	120/277VAC, 100KAIC 5: 6						
		RELAY	MAINTENANCE RAVI AND C		DIMMING TECHNOLOGY	BRANCH CIRCUIT Δ_{-1}	CONNECTED LOAD (VA)		NOTES
		2	MAINTENANCE BAY 1 AND 2	OS / PC	0-10V	A-6	1000	LED	2
		3	MAINTENANCE BAY3	OS / PC	0-10V	A-1	1000	LED	2
		4			0-10V	B-1	225	LED	2
		6	SPACE	ic / PC / OS -	U-TUV	р-3 		-	۷
		LIGHTIN	NG CONTROL SCHEDULE NOTES		I		. I	I.	
		<u>GENER</u> LIGHIN	AL NG CONTROL PANEL SHALL BE NLI	IGHT RELAY PANEL ARP II	NTENC08 NLT 8FCR-MVOLT-HI	LK-SM-DTC. INSTALL AND CONN	IECT NLIGHT DEVICES AS PE	R FACTORY REQUIREMEN	is. program
		FOR OV	WINER TIME SETTINGS IN FIELD.						
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I	ZU/Z//VAC, TUUKAIC						
S:	6						
	DESCRIPTION	CONTROL	DIMMING TECHNOLOGY	BRANCH CIRCUIT	CONNECTED LOAD (VA)	LOAD TYPE	NOTES
	NORTH CANOPY	TC / PC	0-10V	D-9	250	LED	2
	CENTER CANOPY	TC / PC	0-10V	D-1	125	LED	2
	POLE LIGHTS	TC / PC / OS	0-10V	D-13	-	LED	1,2
	POLE LIGHTS	TC / PC OS	0-10V	D-15	_	LED	1,2
	SPACE	_	-	-	-	-	
	SPACE	-	-	-	-	-	

S:	6						
	DESCRIPTION	CONTROL	DIMMING TECHNOLOGY	BRANCH CIRCUIT	CONNECTED LOAD (VA)	LOAD TYPE	NOTES
	bus wash exterior	TC / PC	0-10V	P1-12	75	LED	2
	FUEL CANOPY	TC / PC	0-10V	P1-12	50	LED	2
	SPACE	_	_	-	-	LED	
	space	-	-	-	-	LED	
	SPACE	-	_	-	-	-	
	SPACE	_	_	-	_	_	

S:	6						
	DESCRIPTION	CONTROL	DIMMING TECHNOLOGY	BRANCH CIRCUIT	CONNECTED LOAD (VA)	LOAD TYPE	NOTES
	MAINTENANCE BAY 1 AND 2	OS/PC	0-10V	A-4	1000	LED	2
	MAINTENANCE BAY 1 AND 2	OS/PC	0-10V	A-6	1000	LED	2
	MAINTENANCE BAY3	OS / PC	0-10V	A-1	1000	LED	2
	EXTERIOR BUILDING	TC / PC	0-10V	B-1	225	LED	2
	POLE LIGHTS	TC / PC / OS	0-10V	В-З	54	LED	2
	SPACE	-	_	_	_	-	

NEV	NEW LUMINAIRE SCHEDULE - EXTERIOR											
TYPE	MANUFACTURER	Specification	LAMP	LUMENS	B.U.G. RATING	AC VOLTAGE	system Wattage	MOUNTING				
\$1A	LITHONIA OR ENGINEERING APPROVED EQUAL	DSX1 P1 30K T2M MVOLT RPA PIRH HS	LED (3000K), 80CRI MIN.	6,483 lm	B1 U0 G1	120/277V	54W	POLE +12 OAH	SINGLE HEAD L TYPE 2M DISTRI HOUSE SIDE SH			
S1B	LITHONIA OR ENGINEERING APPROVED EQUAL	DSX1 P1 30K LCCO MVOLT RPA PIRH HS	LED (3000K), 80CRI MIN.	3,943 lm	B1 U0 G2	120/277V	54W	POLE +12' OAH	SINGLE HEAD L "LECT CORNER OS AND HOUSI			
\$2	LITHONIA OR ENGINEERING APPROVED EQUAL	VCPG LED P1 30K T5E MVOLT SRM PIR	LED (3000K), 80CRI MIN.	3,581 lm	B1 U0 G1	120/277V	27W	SURFACE (UNDERSIDE OF CANOPY)	19" DIAM SURF OCCUPANCY S ARCHITECT.			
\$3	LITHONIA OR ENGINEERING APPROVED EQUAL	WST LED P2 30K VF MVOLT	LED (3000K), 80CRI MIN.	3,237 lm	B1 U0 G1	120/277V	25W	WALL (*VARIES* SEE SHEET E-202)	FULL CUT OFF V ARCHITECT.			
S4	LITHONIA OR ENGINEERING APPROVED EQUAL	WST LED P2 30K VW MVOLT	LED (3000K), 80CRI MIN.	3,201 lm	B1 U0 G0	120/277V	25W	WALL (*VARIES* SEE SHEET E-202)	FULL CUT OFF V ARCHITECT.			
\$5	LITHONIA OR ENGINEERING APPROVED EQUAL	WPX0 LED ALO-2 30K MVOLT	LED (3000K), 80CRI MIN.	974 lm	BO UO GO	120/277V	6.4W	WALL (*VARIES* SEE SHEET E-202)	FULL CUT OFF V ARCHITECT.			
		·										

NEV	NEW LUMINAIRE SCHEDULE - INTERIOR									
TYPE	MANUFACTURER	Specification	LAMP	LUMENS	AC VOLTAGE	SYSTEM WATTAGE	MOUNTING			
C6A	METALUX LIGHTING OR ENGINERING APPROVED EQUAL	VHB-9-W-UNV-L835-CD-U	LED (3500K)	9,025 lm	120/277V	56W	SUSPENDED	24" X 24" LED HIC PROVIDE W/ NLI EMERGENCY BA (E15WMCP)		
C6B	LITHONIA LIGHTING OR ENGINEERING APPROVED EQUAL	XIB L24 12000LM ACMD MVOLT GZ10 35K 80CRI NLTAIR2 RMSOD45	LED (3500K)	12,889 lm	120/277V	78W	SUSPENDED	24" X 24" LED HIC LOCATION LISTEI DAYLIGHT SENSC SHOWN ON PLA		

LUMINAIRE SCHEDULE GENERAL NOTES

ALL LUMINAIRES SHALL BE "BUY AMERICA ACT" COMPLIANT.

LUMINAIRES OPERATING IN THE EVENT OF AN EMERGENCY ARE DESIGNATED WITH SHADING ON THE LIGHTING PLANS AS PER THE SYMBOLS LEGEND, SHEET E-001. EMERGENCY POWER IS PROVIDED VIA UL924 UPS OR INTEGRAL EMERGENCY POWER PACK AND TEST SWITCH (AS APPLICABLE), REFER TO LUMINAIRE SCHEDULE AND LIGHTING PLANS. LUMINAIRES SHALL BE RATED BY UL FOR BRANCH CIRCUIT THROUGH-WIRING. IF LUMINAIRES ARE NOT RATED FOR THROUGH WIRING, THE CONTRACTOR SHALL MAKE APPROPRIATE ACCOMMODATIONS

WHEN WIRING.

VERIFY CEILING TYPES/FINISHES FOR ALL RECESSED FIXTURES PRIOR TO FORWARDING SUBMITTALS.

EXIT SIGNS NOTED ON PLANS WITH A "P" SHALL BE PENDANT MOUNTED.

CO	CONTROL DEVICE LEGEND											
TYPE	MANUFACTURER	Specification	TECHNOLOGY	AC VOLTAGE	MOUNTING	OP						
O\$1	NLIGHT OR ENGINEER APPROVED EQUAL	nCM PDT-6-RJB	DUAL TECHNOLOGY	LOW VOLAGE	SURFACE	HIGH BAY OCCUPAN "OFF" TIME DELAY: 3 SHALL DIM TO 20% LU DETECTED FOR 20 MI LUMEN OUTPUT						
PC	NLIGHT OR ENGINEER APPROVED EQUAL	nCM-ADCX-RJB	Daylight Harvesting, Dimming	LOW VOLAGE	SURFACE	Daylight harvestin Zones shall dim pur						
\bigotimes	PER LUMINAIRE MANUFACTURER OR ENGINEER & MANUFACTURER APPROVED EQUAL	PER LUMINAIRE MANUFACTURER OR ENGINEER & MANUFACTURER APPROVED EQUAL	DUAL TECHNOLOGY	120/277V	INTEGRATED	LUMINAIRE INTEGRATE OCCUPANCY SENSOI PURSUANT TO CONTR						
LV#	nLIGHT OR ENGINEER APPROVED EQUAL	nPODM-#P-DX		LOW VOLAGE	WALL	LOW-VOLTAGE SWITC WITH ON/OFF AND I OWNER. PROVIDE V						
PP1	nLIGHT OR ENGINEER APPROVED EQUAL	nPP16		120V	CONCEALED IN ACCESSIBLE LOCATION	16A POWER PACK RA						

LIGHTING CONTROL SCHEDULE GENERAL NOTES

- LIGHTING CONTROLS DEVICES AND SYSTEM COMPONENTS SHALL BE "BUY AMERICA ACT" COMPLIANT.
- ILLUMINATION LEVELS DURING HOURS OF DARKNESS SHALL BE ADJUSTED TO 20% OR MORE BELOW DAYTIME ILLUMINATION LEVELS. SENSOR AND DIMMING SETTINGS SHALL BE CALIBRATED AND FINALIZED PURSUANT TO FINAL INSTALLATION OF ALL LUMINAIRES, COMPLETIC INSTALLATION IS COMPLETE.
- TO ENSURE EVEN LIGHTING LEVELS AND ENERGY SAVINGS, LUMINAIRES WITHIN DAYLIGHT ZONES THAT INCLUDE MORE THAN ONE ROW OF FIXTURES CLOSER TO WINDOWS RECEIVE LOWER LIGHT COMMANDS THAN FIXTURES FARTHER FROM WINDOWS.
- PHOTOSENSORS SHALL NOT BE INSTALLED IN DIRECT SUNLIGHT OR DIRECT ILLUMINATION PATH OF LUMINAIRES.
- LUMINAIRES WITHIN PRIMARY OR SECONDARY DAYLIGHT ZONES SHALL REDUCE LUMEN OUTPUT BY A MINIMUM OF 65% WHEN DETECTED D. ILLUMINATION LEVELS. POWER / RELAY PACKS OPERATING EMERGENCY BACK-UP POWERED LUMINAIRES SHALL BE PROVIDED WITH A NORMAL POWER LEAD FOR TO MANUFACTURER REQUIREMENTS FOR ADDITIONAL INFORMATION.
- PROVIDE MANUFACTURER PRODUCED LIGHTING CONTROLS LAYOUT AND WIRING DIAGRAMS FOR ENGINEERING REVIEW AND APPROVAL







NOTES

IGH BAY, 3500K, PROVIDE W/0-10V DIMMING, LIGHT OCCUPANCY AND DAYLIGHT SENSOR AND ATTERY PACK WHERE SHOWN ON PLANS IIGH BAY, 3500K, PROVIDE W/0-10V DIMMING, WET ED, PROVIDE W/ NLIGHT OCCUPANCY AND SOR AND EMERGENCY BATTERY PACK WHERE ANS (E15WMCP)



ACK RATED FOR SWITCHING LED LIGHTING LOADS.

REQUIRED.

ION OF FINAL FINISHES AND FURNITURE	
F FIXTURES SHALL BE PROGRAMMED SUCH THAT	
DATLIGHTING MEETS OK EXCEEDS TOU% OF DESIGN	
PR DETECTION OF NORMAL POWER FAILURE. REFER	
AL PRIOR TO PRODUCT / SYSTEM PROCUREMENT.	
_	
COEFFICIENCE CONSULTING + ENGINEERING, CORP PROFESSIONAL PKWY ITE A - P.O. BOX #368 VTA MARIA, CA 93455 P. 805-361-0525 EINFO@GECECORP.COM WW.GECECORP.COM WW.GECECORP.COM DCUMENTS, INCLUDING THOSE IN ELECTRONIC FORM, PREPARED BY GRAY ELECTRICAL CONSULTING + ENGINEERING, CORP ARE THE INSTRUMENTS OF SERVICE FOR USE SOLELY WITH RESPECT TO THIS PROJECT INLESS OTHERWISE AUTHORIZED IN WRITING. GRAY ELECTRICAL CONSULTING + ENGINEERING, CORP SHALL BE DEEMED THE UTHOR AND OWNER OF THE INSTRUMENTS OF SERVICE AND SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING COPYRIGHTS.	
TING SCHEDULES	



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ype panelboa bus: 400A	4RD		(SEE E-	100) AIC PAI 42 FULL SIZ	iel & Bran ch C E Bolt On	IRCUITS			LOCATIO NEM,	DN: BUS WASH		TYPE BUS:	PANELBO. 225A	ARD				(SEE E-100) Ā 42 F	NIC PANEL 8 ULL SIZE BO	BRANCH CIRŌ .TON	UITS					LOCATION: NEMA:	: MAINTENANCE : 1	
120/208V, 3 400A MAIN CIRC	3-PHASE, 4W CUIT BREAKER			CIRCUI PROVIE	BREAKER SPACE E WITH EQUIPME	S INT GROUND BUS	5		MOUNTING FEED FROM	ig: surface M: existing "MSB"			120/208V, MAIN LUC	3-PHASE, 4W GS ONLY				C	CIRCUIT BRE. PROVIDE WI	aker spaces Thequipment	ground bu	S				MOUNTING: FEED FROM:	: SURFACE EXISTING "MSB"	
NOTES CIRCUIT	DESCRIPTION SYS-3000 Control Panel	BREAKER WIRE LF	VD(%) PI	TYPE	PHASE A PH	ASE B PHASE C	TYPE PF	VD(%) LF	F WIRE BREAKER	R DESCRIPTION	CIRCUIT	NOTES NC	TES CIRCUIT	DESCRIPTION	BREAKER	WIRE LF	VD(%)	PF	TYPE P	HASE A PHASE 624	B PHASE C	TYPE	PF	VD(%)	LF	WIRE BREAKER	DESCRIPTION	CIRCUIT N
	(BW02, BW17, BW30)			-	6720	508			-	FUEL CONTROLS CABINET	2		4 1	MAINIENANCE BAY 3	20/1	12 90	1.54	0.7			-						EXISIING	2
1 3		*/3		-	6	720			- */3	"	4		3	EXISTING						448	-	С	0.7	1.04	85	12 20/1	MAINTENANCE BAY 1 AND 2	4
1 5	" De claim Water Control Dans			-	0240	6720			- <u>-</u>		6	1	5	EXISTING							448	C	0.7	1.34	110	12 20/1	MAINTENANCE BAY 1 AND 2	6
1 7	(BW 15, BW 20)			-	8320				*/2	"P2"	8	1	7	EXISTING							_						existing	8
1 9		*/3		-	۲ ٤	320			-	п	10	1	9	EXISTING													existing	10
1 11	n			-		9240	C 0.7	0.3 100' N	MAX 12 20/1	EXTERIOR LIGHTING	12		11	existing													existing	12
13	BW 25 & BW 26	12 65' MAX	0.8 0.8	3 G	900					SPACE	14		13	EXISTING							_						existing	14
15	п	20/3 12 65' MAX	0.8 0.8	3 G		700				SPACE	16		15	EXISTING													existing	16
17	n	12 65' MAX	0.8 0.8	3 G		900				SPACE	18		17	EXISTING													existing	18
19	BW 27	12 65' MAX	1.1 0.4	3 G	1200					SPACE	20		19	Existing													existing	20
21	п	20/3 12 65' MAX	1.1 0.4	3 G		200				SPACE	22		21	EXISTING							_						existing	22
23	п	12 65' MAX	1.1 0.8	3 G		1200	-			SPACE	24		23	Existing								-					existing	24
25	SPACE									SPACE	26		25	Existing													existing	26
27	SPACE									SPACE	28		27	Existing													EXISTING	28
29	SPACE									SPACE	30		29	Existing													EXISTING	30
31	SPACE									SPACE	32		31	EXISTING													EXISTING	32
33	SPACE									SPACE	34		33	existing							\neg						existing	34
35	SPACE									SPACE	36		35									-						36
37	SPACE									SPACE	38		37															38
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41	SPACE									SPACE	42		41									- 1						42
I I				SUBTOTAL (V. CONTINUO	A) 34888 JS O	34888 26693 0 31.25	3				1					I		SU BTC CON	DTAL (VA) TINUOUS	624 4 156	148 448 12 112	3 2 N	NOTE: PAN	iel schedul	LE REPRESE	ENTS NEW CONNECTED	LOAD AS PER THE SCOPE OF TH	HIS PROJECT.
			AMF	S@ 120	291	291 223	3											AMPS @	120	7	5	5						
YPE PANELBOA	ARD		(SEE F		EXISTINC	G PANEL B						TYPE	PANFIBO					(SEE E-100) A	AIC PANEL &	EXISTING	PANEL D	I						
SUS: 225A 120/208V.	3-PHASE, 4W			42 FULL SIZ	E BOLT ON BREAKER SPACE	S			NEM. MOUNTING	IA: 1 IG: SURFACE		BUS:	100a 120/208V	, 3-PHASE, 4W				42 F	FULL SIZE BC	lton Aker spaces						NEMA MOUNTING	: 3R : SURFACE	
MAIN LUG NOTES CIRCUIT	GS ONLY DESCRIPTION	BREAKER WIRE LF	VD(%) P	PROVIE TYPE	e with equipme	ASE B PHASE C	S TYPE PF	VD(%) LF	FEED FROM F WIRE BREAKER	M: EXISTING "MSB" R DESCRIPTION	CIRCUIT	NOTES NO	MAIN LU	GS ONLY DESCRIPTION	BREAKER	WIRE LF	VD(%)	F PF	PROVIDE WI	TH EQUIPMENT HASE A PHASE	GROUND BU	S TYPE	PF	VD(%)	LF	FEED FROM: WIRE BREAKER	EXISTING "MSB" DESCRIPTION	
2 1	EXTERIOR BUILDING LIGHTING	20/1 12 100' MAX	0.63 0.	7 C	225					EXISTING	2		2 1	NORTH CANOPY	20/1	12 250' MA	X 0.1	0.7	С	250							existing	2
2 3	EXTERIOR BUILDING LIGHTING	20/1 12 100' MAX	0.15 0.	7 C		54				EXISTING	4		3	existing													existing	4
5	EXISTING				1 -		-			EXISTING	6		5	existing								-					existing	6
7	(D) HEAT PUM P				-4200					EXISTING	8		7	existing													existing	8
9	п	50/3				4200				Existing	10		2 9	CENTER CANOPY	20/1	12 250' MA	X 0.1	0.7	С	125							Existing	10
						-4200	1 1																				existing	10
11	п					1200	4			existing	12		11	existing							I		-	. I	I		-	
11	" Existing									EXISTING	12		11	existing existing													EXISTING	14
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11 13 15 4 17 4 19 4 21 4 23	" EXISTING EXISTING IT ROOM RECEPT. IT ROOM RECEPT. IT ROOM RECEPT.	20/1 20/1 30/2	- 0. - 0. - 0. - 0.	5 R 5 R 5 R		1200 1200 2500 2500				EXISTING EXISTING EXISTING EXISTING EXISTING	12 14 16 18 20 22 24		11 13 15 17 19 21 23	EXISTING EXISTING EXISTING													EXISTING EXISTING	12 14 16 18 20 22 24
11 13 15 4 17 4 19 4 21 4 23 4,5	" EXISTING EXISTING IT ROOM RECEPT. IT ROOM RECEPT. IT ROOM RECEPT. " SMOKE DETECTOR	20/1 - 20/1 - 20/1 - 30/2 - 20/1 -	- 0. - 0. - 0. - 0.	6 R 6 R 6 R 6 R 6 R		1200 1200 2500 2500				EXISTING EXISTING EXISTING EXISTING EXISTING	12 14 16 18 20 22 24 24 26		11 13 15 17 17 19 21 23 23 25	EXISTING EXISTING EXISTING													EXISTING EXISTING	12 14 16 18 20 22 24 26
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ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

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				NOT FOR CONSTRUCTION		Stantec Architect 801 South Figuero Los Angeles, CA 9 Tel: (213) 955-9775
SSUE FOR BID 2LAN CHECK RESUBMITTAL NO. 2 2LAN CHECK RESUBMITTAL NO. 1 2LAN CHECK SUBMITTAL			2023.10.02 2023.07.10 2023.05.12 2023.03.10			Copyright Rese The Contractor shall verify an drawing - any errors or omissic
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-	FOR CIRCU LIGHTING) BY THE FUR	JITS WITH M THE CIRCUI THEST DEVIC
-	WHERE BRA MAXIMUM CALCULATI CONNECTE	ANCH CIRC ALLOWABL IONS HAVE ED LOAD IN
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1.	REFER TO SI	NGLE LINE OR SIZE.
2.	NEW CONF BREAKER, E DEMOLITIO	NECTED LO. XISTING LO N.
3.	NEW CONN BREAKER.	NECTED LO.
4.	see <u>sheet e</u> specificat	<u>300</u> for b 110n and e
5.	INSTALL "RE	D" CIRCUIT
6.	CONDUCT	OR HAS BEE
	SPLICE CO	NDUCIOR

DUS V	vasn Contro	or Paner (BWU5J CU	nnecteu Loa	u Summary
Equipment ID	Voltage	Phase	Amps		KVA
BW02	208	3	37.5		13.5
BW17	208	3	16.7		6.0
BW30	208	3	16.7		6.0
			TOTAL		25.5
Wate	er Control P	anel (BW	/22) Conn	ected Load S	ummary
Equipment ID	Volta	age	Phase	Amps	KVA
BW15	20	8	3	46.2	16.6
BW20	20	8	3	30.8	11.1
				TOTAL	27.7





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TERMINAL 2 - RECOMMISSIONING

5353 OVERPASS ROAD, GOLETA, CA 93111 JHJHWT2023.07.10Dwn.Dsgn.Chkd.YYYY.MM.DD stn_Architecture_2270449601.rvt

Revision 2

Title

CHEDULE NOTES

<u>) TYPE INDEX:</u> AD. OPERABLE FOR 3 HOURS OR MORE. TED AT 125% OF TOTAL CONNECTED LOAD. ICE LOAD. SUBJECT TO 75% DEMAND C 220.53 IF GREATER THAN/EQUAL TO FOUR AD. NO DEMAND FACTOR APPLIED.

CALCULATIONS HAVE BEEN PREPARED IN TO 2016 CALIFORNIA ENERGY CODE E 24, ELECTRICAL POWER DISTRIBUTION). NGTH INDICATED SHALL NOT BE USED FOR ROCUREMENT PURPOSES. FIELD ONDUCTOR LENGTH REQUIRED AND NOTIFY CORD OF ANY DISCREPANCIES.

ITH MULTIPLE LOADS (I.E. RECEPTACLES, IRCUIT ESTIMATED LENGTH IS DETERMINED DEVICE LOCATION.

CIRCUITS HAVE NOT BEEN LOADED TO THE WABLE CIRCUIT CAPACITY, VOLTAGE DROP have been prepared based on AD INDICATED, UNLESS OTHERWISE NOTED. ULATION:

(2 x OHMS PER 1000 LF x CONDUCTOR / (1000 x QTY OF WIRES PER PHASE) DTES:

LINE DIAGRAM FOR CIRCUIT BREAKER AND

ED LOAD INSTALLED AT EXISTING CIRCUIT IG LOAD REMOVED AS PER SCOPE OF

D LOAD INSTALLED WITH NEW CIRCUIT

FOR BRANCH CIRCUIT CONDUCTOR

AND ELECTRICAL CALCULATIONS. RCUIT BREAKER, LOCKED HOT.

AS BEEN UPSIZED FOR VOLTAGE DROP. CTOR AND TRANSITION TO #10 THWN WITHIN IATION AT PANEL AND MOTOR.

Bus Wash Control Panel (BW05) Connected Load Summary

ELECTRICAL SCHEDULES





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					NOT FOR CONSTRUCTION		Stantec Architectu 801 South Figueroc Los Angeles, CA 9 Tel: (213) 955-9775
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23.07.10 23.05.12 7.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	Ву	Appd	<u>2023.05.12</u> 2023.03.10 YYYY.MM.DD			The Contractor shall verify and drawing - any errors or omissio The Copyrights to all designs o or use for any purpose other th

GENERAL NOTE: EXISTING BRANCH CIRCUIT CONDITIONS HAVE BEEN IDENTIFIED

AND CONFIRM. ALL EXTERIOR LIGHTING WHETHER INDICATED OR NOT SHALL BE REMOVED UNDER THE SCOPE OF THIS PROJECT. FIELD LOCATE, DISCONNECT, AND REMOVE EXISTING BRANCH CIRCUIT CONDUCTORS UNLESS OTHERWISE NOTED FOR RE-USE.

1. EXISTING CIRCUITS D-9,11. MAINTAIN CONDUIT ABD DEDUCTION.

CONDUIT IN PLACE. 2KVA LOAD DEDUCTION. 3. EXISTING CIRCUITS D-1,3,5,7. MAINTAIN CONDUIT ABD CONDUCTOR HOMERUN TO PANEL "D". FIELD LOCATE, INTERCEPT, AND EXTEND AS PE<u>R SHEET E-202</u>. 2.3KVA LOAD DEDUCTION.



E-200

2

A PER ELECTRICAL AS-BUILT RECORDS (HALL AND VISIONI AIA 02/10/1981). THE ELECTRICAL CONTRACTOR SHALL INVESTIGATE

CONDUCTOR HOMERUN TO PANEL "D". FIELD LOCATE, INTERCEPT, AND EXTEND AS PE<u>R SHEET E-202</u>. 2KVA LOAD

2. EXISTING CIRCUITS D-8,10.12. FIELD LOCATE DISCONNECT AND REMOVE EXISTING CONDUCTORS. ABANDON

4. EXISTING CIRCUITS D-2,4,6. FIELD LOCATE DISCONNECT AND REMOVE EXISTING CONDUCTORS. ABANDON CONDUIT IN PLACE. 1.5KVA LOAD DEDUCTION.



			·		Permit/Seal	Consultant	() Stanta
					ISSUE FOR BID		Julia
					NOT FOR CONSTRUCTION		Stantec Architecture Inc. 801 South Figueroa Street Suite 300 Los Angeles, CA 90017-3007 Tel: (213) 955-9775 • www.stantec.com
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23.07.10 23.05.12 (.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL Issued	Ву	Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

REFERENCE NOTES

- 2. NOT USED.

- <u>SHEET E-100</u>.
- AND RE-USE.

EXISTING ELECTRICAL UTILITIES AND STRUCTURES

- THE LOCATION OF EXISTING ABOVE GRADE AND UNDERGROUND ELECTRICAL FACILITIES WITHIN THE JOBSITE ARE APPROXIMATE AND HAVE BEEN BASED ON LIMITED FIELD OBSERVATIONS, VERBAL DESCRIPTIONS PROVIDED BY THE FACILITY OWNER AND/OR VARIOUS AGENCIES INVOLVED, AS WELL AS AS-BUILT ELECTRICAL RECORDS. NO SUBSURFACE EXPLORATION FOR EXISTING UNDERGROUND ELECTRICAL FACILITIES HAS BEEN CONDUCTED FOR THIS WORK. THE FACILITY OWNER AND ENGINEER DO NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, AND IT IS UNDERSTOOD THAT THERE MAY BE ABOVE GROUND OR UNDERGROUND ELECTRICAL FACILITIES THAT ARE NOT SHOWN ON THE PLANS AND MAY BE ENCOUNTERED DURING THE COURSE OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION AND DEPTH OF EXISTING UNDERGROUND ELECTRICAL FACILITIES WHICH MAY AFFECT OR BE EFFECTED BY THE CONTRACTOR'S WORK. POTHOLE ALL ELECTRICAL CONDUITS AS REQUIRED PER CIVIL ENGINEERING SPECIFICATIONS.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR SHALL POTHOLE THE EXISTING ELECTRICAL CONDUITS TO DETERMINE THE EXISTING HORIZONTAL AND VERTICAL LOCATIONS. POTHOLE RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD FOR EVALUATION. PROVIDE THREE (3) WORKING DAYS TO EVALUATE THIS INFORMATION AT NO COST TO THE OWNER.
- EXISTING UNDERGROUND ELECTRICAL, INCLUDING BUT NOT LIMITED TO ELECTRICAL SERVICE, DISTRIBUTION, TELEPHONE, AND CABLE TELEVISION SHALL BE MAINTAINED, RELOCATED, REROUTED, REMOVED, AND/OR RESTORED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE, WITH THE LEAST POSSIBLE INTERFERENCE WITH THESE SERVICES.



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TERMINAL 2 - RECOMMISSIONING

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 YYYY.MM.DD
 Revision

1. EXISTING SCE PAD MOUNTED TRANSFORMER, <u>#P5032869</u> SCHEDULED TO REMAIN.

3. EXTEND LINE VOLTAGE BRANCH CIRCUIT TO GATE MOTOR. FROM EXISTING PANEL "B". 2HP, 120/208V, 1-PHASE ELECTRIC REQUIREMENT. 4. EXTEND LINE VOLTAGE FEEDER TO SERVICE ATTENDANT BOOTH. SEE SINGLE LINE DIAGRAM,

5. NEW FLUSH IN GRADE PULL BOX AS PER SITE LIGHTING PLAN, SHEET E-202.

6. FIELD LOCATE EXISTING FLUSH IN GRADE PULL BOX



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3.07.10 PLAN CHECK RESUBMITTAL NO. 1 2023.05.12 3.05.12 PLAN CHECK SUBMITTAL 2023.03.10 MM.DD Issued By Appd YYYY.MM.DD		ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2			2023.10.02 2023.07.10			Copyright Rese
	3.07.10 3.05.12 7.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	By	Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify and drawing - any errors or omission The Copyrights to all designs a or use for any purpose other th



ELECTRICAL SYMBOLS LIGHTING

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Project No. Revision 2

Title

MAINTAIN EXISTING BRANCH CIRCUIT CONNECTION FROM EXISTING LUMINIARE POLE (DEMOLISHED). FIELD LOCATE, INTERCEPT, AND EXTEND TO NEW LUMINAIRE(S) AS SHOWN. MINIMUM (1) 3/4"C. W/ 2#10THWN + 1#10 CU GND. SEE SHEET <u>E-200.</u> 2. FIELD LOCATE, INTERCEPT, AND EXTEND EXISTING SITE LIGHTING BRANCH CIRCUIT IN PLANTER TO NEW FLUSH IN GRADE PULL BOX. SEE NOTE #1. SEE SHEET

CANOPY. PROTECT IN PLACE. FIELD LOCATE, INTERCEPT AND EXTEND TO NEW CANOPY

NOTE: THE INSTALLATION OF EXTERIOR LIGHTING SHALL 1. NO CHANGES SHALL BE MADE TO THE OUTDOOR LIGHTING FIXTURES WITHOUT PRIOR REVIEW AND

SITE LIGHTING PLAN

Scale PROJ NO. 2014240805



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(1	SITE LIGHTING PHOTOMETRIC PLAN
\int		/ SCALE: 1" = 16'

2 PLAN CHECK REVISIONS			2023.07.10
1 PLAN CHECK REVISIONS			2023.05.12
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ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

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ZONE	DESCRIPTION	Symbol	AVG	MAX	MIN	MAX/MIN	AVG/MIN
1	CIRCULATION DRIVE	+	1.1 FC	10.5 FC	0.0	N/A	N/A
2	NORTH CANOPY	+	2.4 FC	8.2 FC	0.4 FC	20.5:1	6.0:1
3	CENTRAL CANOPY	+	2.5 FC	6.5 FC	0.5 FC	13.0:1	5.0:1
4	WASH BUILDING	+	2.7 FC	5.9 FC	0.1 FC	N/A	N/A
5	5' PROPERTY LINE INSET	+	0.0 FC	0.0 FC	0.0 FC	N/A	N/A
6	PROPERTY LINE	+	0.0 FC	0.0 FC	0.0 FC	N/A	N/A
7	5' PROPERTY LINE OFFSET	+	0.0 FC	0.0 FC	0.0 FC	N/A	N/A

PHOTOMETRIC PLAN DISCLAIMER

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ERTY LINE	+	0.0 FC	0.0 FC	0.0 FC	N/A	
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Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

TERMINAL 2 - RECOMMISSIONING

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Title

Project No. Revision 2

REFERENCE NOTES

PHOTOMETRIC PLAN GENERAL NOTES: a. SEE SITE AND BUILDING LIGHTING PLANS FOR b. PHOTOMETRIC STATISTICS INCLUDED HAVE BEEN CALCULATED AT GRADE LEVEL U.O.N.



C6A C6A	C6A	C6A	(E) RESTROOM (E) SHOWER (E) ST
C6A	C6A EM	C6A 	
(E) MAINT BAY 2 002 C6A	(E) MAINT BAY 1 001 C6A	C6A 	(E) STORAGE ROOM 101
EM	C6A EM	C6A ©	(E) SHOP OFFICE 114 17 20A 19 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 20A 17 17 20A 17 20A 17 17 20A 17 17 20A 17 17 20A 17 20A 17 17 20A 17 5 5 17 17 5 5 17 17 17 17 17 20A 17 17 17 20A 17 1
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Β	VEHICLE WASH BUILDING ELECTRICAL PLAN
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/ (N) PANEL P1 mmmm BID ALTERNATE NO. 1: NEW ELECTRICAL PANEL IS NOT FINCLUDED IN THE ALTERNATE (..... BID ALTERNATE NO. 1:

INCLUDES ALL EQUIPMENT AND ELECTRICAL CONNECTIONS TO { THE EQUIPMENT amanan







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Revision 2

1. REFER TO BUS WASH EQUIPMENT PLAN SHEET Q-121 FOR EQUIPMENT SCHEDULE AND CONNECTIONS IN THIS AREA. ALL ELECTRICAL CONNECTIONS SHALL BE INSTALLED PER CALIFORNIA ELECTRICAL CODE REQUIREMENTS FOR WET LOCATIONS WHERE WITHIN

2. REFER TO BUS WASH EQUIPMENT PLAN <u>SHEET Q-121</u> FOR BUS WASH EQUIPMENT AND CONNECTIONS IN THIS AREA. ALL ELECTRICAL CONNECTIONS SHALL BE INSTALLED PER CALIFORNIA ELECTRICAL CODE REQUIREMENTS AS PER WET LOCATIONS. NEMA 4X RATED EQUIPMENT AND CONNECTIONS ARE REQUIRED. SEE GENERAL NOTES.

3. FIELD COORDINATE AND ROUTE ELECTRICAL CONDUIT EXPOSED ALONG EXTERIOR FACE OF BUILDING, SQUARE AND PLUMB. EQUIPMENT CONNECTIONS SHALL BE MADE VIA LIQUID TIGHT FLEXIBLE CONDUIT AS PER DIVISION 26

SPECIFICATIONS.



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De Lithonia Way • Conyers, Georgia 3002 • 2011-2021 Acuity Brands Lighting, Inc. All rights res TYPE STA & STB SCALE: NOT TO SCALE SCALE: NOT TO SCALE	Phone: 1.800-705-SERV (7378) • www.lithonia.com served. DSX1-LED Rev. 07/19/21 Page 1 of 8 Commercial OutDoor Commercial OutDoor Catalog Number Index Index Index Index Index Index Index Index Index Index Inde
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	17 DMG not a 18 Provides 5	available with PIRHN, PER5, PER 0/50fixture operation via (2) inde	7, PIR, PIRH, PIRH FC3V o pendent drivers. Not ava	r PIRH1FC3V, FAO. ilable with PER, PER5	i, PER7, PIR or PIRH. 1	Not available P1, P2, F	'3, P4 or P5.		
	19 Requires (2 20 Reference 21 Reference	2) separately switched circuits wi Controls Option Default setting: Matian Senara table on page 4	th isolated neutrol. s table on page 4. to soo functionality						
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1.53* RPA A5T25-190 A5T25-280 A5T25-290 A5T25-390 A5T25-320 A5T35-490 1.01***********************************			anting Shpi	ILLEI	a company	Contraction of the second	A	and the second second	AL 12 (MA)
4" RPA AST35-190 AST35-200 AST35-300 AST35-320 AST35-320 AST35-490 Munting Option Ditiling Template Single 2@180 2@90 3@90 3@120 4@90 Head Location Ditiling Template Single 2@180 2@90 3@90 3@120 M490 Head Location Ditiling Template Single 2@180 DM29AS DM39AS DM32AS DM49AS DM18 DM19AS DM28AS DM29AS DM39AS DM32AS DM49AS DM18 Tracudes luminatire and Integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data. Information Single DM19 2@100 M29 3@100 M29 3@120 DM22 4@90 M499 15.63" Mounting Type		Tenon 0.D. 2-3/8"	Mounting RPA	Single Unit	2 @ 180 AS3-5 280	2 @ 90 AS3-5 290	3 @ 90 AS3-5 390	3 @120 AS3-5 320	4 @ 90 AS3-5 490
According Uption Dilling Template Single 2 (e) 180 2 (e) 90 3 (e) 90 3 (e) 120 4 (e) 90 Itead location 181 Nonendature 182 DM19AS DM28AS DM29AS DM39AS DM39AS DM39AS DM39AS DM32AS DM39AS DM49AS M49AS M4		Tenon 0.D. 2-3/8" 2-7/8"	Mounting RPA RPA	Single Unit AS3-5 190 AST25-190	2 @ 180 AS3-5 280 AST25-280	2 @ 90 AS3-5 290 AST25-290	3 @ 90 AS3-5 390 AST25-390	3 @120 AS3-5 320 AST25-320	4 @ 90 AS3-5 490 AST25-490
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Head Location Dung on providence Side B Side B Side B & L Side B & L Side B & L Bound Pole Only Side A, B, C & D DITII Nomenclature #8 DM19AS DM29AS DM39AS DM39AS DM32AS DM39AS DM32AS DM49AS DSST Account Pole Only #8 DM19AS DM29AS DM39AS DM32AS DM39AS DM32AS DM49AS Account Pole Only #8 DM19A #8 2 #80 DM28 2 #90 DM29 3 #90 DM32 3 120 DM32 4 #90 DM49 #80CCS) DSX1 LED 1.013 2.025 1.945 3.038 2.850 3.749 DSX1 LED 1.013 2.025 1.945 3.038 2.850 3.749 DM19A #8 2.778" 2.778" 3.5" <td< td=""><td></td><td>Ten on O.D. 2-3/8" 2-7/8" 4"</td><td>Mounting RPA RPA RPA</td><td>Single Unit AS3-5 190 AST25-190 AST35-190</td><td>2 @ 180 AS3-5 280 AST25-280 AST35-280</td><td>2 @ 90 A53-5 290 A5T25-290 A5T35-290</td><td>3 @ 90 A53-5 390 A5T25-390 AST35-390</td><td>3 @120 A53-5 320 AST25-320 AST35-320</td><td>4 @ 90 A53-5 490 A5T25-490 A5T35-490</td></td<>		Ten on O.D. 2-3/8" 2-7/8" 4"	Mounting RPA RPA RPA	Single Unit AS3-5 190 AST25-190 AST35-190	2 @ 180 AS3-5 280 AST25-280 AST35-280	2 @ 90 A53-5 290 A5T25-290 A5T35-290	3 @ 90 A53-5 390 A5T25-390 AST35-390	3 @120 A53-5 320 AST25-320 AST35-320	4 @ 90 A53-5 490 A5T25-490 A5T35-490
Introduction No DM19/KS DM28/KS DM29/KS DM39/KS DM39/KS DM39/KS OSCI Area Luminaire - EPA *Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data. (A00°) Automiting Single DM19 Configuration Mounting Type L Orifiling Template Minimum Acceptable Outside Pole Dimension SIX1 ED Diriging Template Minimum Acceptable Outside Pole Dimension SPA SIX1 ED Diriging Template Minimum Acceptable Outside Pole Dimension SPA SIX1 ED SIX1 ED SIX1 ED Diriging Template Minimum Acceptable Outside Pole Dimension SIX1 ED SIX1 ED <td></td> <td>Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option</td> <td>Mounting RPA RPA RPA RPA</td> <td>Single Unit AS3-5 190 AST25-190 AST35-190</td> <td>2 @ 180 AS3-5 280 AST25-280 AST35-280</td> <td>2 @ 90 A53-5 290 A5T25-290 A5T35-290</td> <td>3 @ 90 AS3-5 390 AST25-390 AST35-390</td> <td>3 @120 A53-5 320 A5T25-320 A5T35-320</td> <td>4 @ 90 A53-5 490 A5T25-490 A5T35-490</td>		Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option	Mounting RPA RPA RPA RPA	Single Unit AS3-5 190 AST25-190 AST35-190	2 @ 180 AS3-5 280 AST25-280 AST35-280	2 @ 90 A53-5 290 A5T25-290 A5T35-290	3 @ 90 AS3-5 390 AST25-390 AST35-390	3 @120 A53-5 320 A5T25-320 A5T35-320	4 @ 90 A53-5 490 A5T25-490 A5T35-490
ACAT		Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location	Mounting RPA RPA RPA Drilling Template	Single Unit AS3-5 190 AST25-190 AST35-190 Single Side B	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM3245	2 @ 90 AS3-5 290 AST25-290 AST35-290 AST35-290 2 @ 90 Side B & C DM2047	3 (0.90 AS3-5 390 AS125-390 AS135-390 AS135-390 3 (0.90 Side B, C & D D (0.90)	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only	4 @ 90 AS3-5 490 AST25-490 AST35-490 AST35-490 AGT35-490 Side A, B, C & D Side A, B, C & D
1.563" .400" .400" .600		Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature	Mounting RPA RPA RPA Drilling Template #8	Single Unit AS3-5 190 AST25-190 AST35-190 Single Side B DM19AS	2 @ 180 AS3-5 280 AST25-280 AST35-280 Z @ 180 Side B & D DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 E 2 @ 90 Side B & C DM29AS	3 @ 90 AS3-5 390 AST25-390 AST35-390 AST35-390 Side B, C& D DM39AS	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS	4 @ 90 AS3-5 490 AST25-490 AST35-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS
S5.3" Fixture Quantity & Mounting Type Single DM19 2 @ 180 DM28 2 @ 90 DM29 3 @ 90 DM39 3 @ 120 DM32 4 @ 90 DM49 400" Mounting Type		Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Area	Mounting RPA RPA RPA Drilling Template #8 Luminaire	Single Unit AS3-5 190 AST25-190 AST35-190 Single Side B DM19AS	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS	3 (0.90 AS3-5 390 AST25-390 AST35-390 AST35-390 3 (0.90 Side B, C & D DM39AS	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS
Mounting Type - - La - La -		Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Area *Includes luminaire a	Mounting RPA RPA RPA Drilling Template #8 Luminaire	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor	2 @ 180 AS3-5 280 AST25-280 AST35-280 Z @ 180 Side B & D DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS	3 @ 90 AS3-5 390 AST25-390 AST35-390 AST35-390 3 @ 90 Side B, C & D DM39AS	3 @120 AS3-5 320 AST25-320 AST35-320 AST35-320 3 @ 120 Round Pole Only DM32AS	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS
DSX1 LED 1.013 2.025 1.945 3.038 2.850 3.749	5 E / 24	Tenon 0.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa "Includes luminaire a Fixture Quant Config	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting ity & Mounting wration	Single Unit AS3-5 190 AST25-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS DM29AS	3 @ 90 AS3-5 390 AST25-390 AST35-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS
Drilling Template Minimum Acceptable Qutside Pole Dimension SPA #8 2-7/8" 3.5" 3" 3.5" RPA #8 2-7/8" 2-7/8" 3.5" 3" 3.5" SPUMBA #5 2-7/8" 3" 4" 4" 3.5" 4" RPUMBA #5 2-7/8" 3.5" 5" 3" 5" 3" 4" RPUMBA #5 2-7/8" 3.5" 5" 3.5" 5" 4" RPUMBA #5 2-7/8" 3.5" 5" 5" 3.5" 5"	0.563"	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa "Includes luminaire a Fixture Quant Config Mountil	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting uration ity & Mounting uration	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS or other accessorie 2 @ 90 DM29	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included	3 @120 A53-5 320 A5T25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS
Drilling Template Minimum Acceptable Outside Pole Dimension SPA #8 2-7/8" 3.5" 3.5" 3" 3.5" RPA #8 2-7/8" 2.7/8" 3.5" 3.5" 3" 3.5" SPUMBA #5 2-7/8" 3" 4" 4" 3.5" 4" RPUMBA #5 2-7/8" 3.5" 5" 5" 5"	0.563" 1400" 2 PLCS)	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Area *Includes luminaire a Fixture Quant Config Mounti	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting ity & Mounting uration ing Type 1 LED	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19: 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS DM28AS	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS Dr other accessorie 2 @ 90 DM29 E a 1.945	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32	4 @ 90 AS3-5 490 AST25-490 AST35-490 • • • • • • • • • • • • • • • • • • •
SPA #8 2-7/8" 3.5" 3.5" 3" 3.5" RPA #8 2-7/8" 2-7/8" 3.5" 3.5" 3" 3.5" SPUMBA #5 2-7/8" 3" 4" 4" 3.5" 4" RPUMBA #5 2-7/8" 3.5" 5" 5" 5" 5"	0.563" .400" 2 PLCS)	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa *Includes luminaire a Fixture Quant Config Mounti DSX	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting uration ing Type 1 LED	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS 2 @ 180 DM28 2 @ 180 DM28	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS Dr other accessorie 2 @ 90 DM29 L 1.945	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS s are not included 3 @ 90 DM39 a 90 DM39 a 3.038	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850	4 ∞ 90 AS3-5 490 AST25-490 AST35-490 ••••••••••••••••••••••••••••••••••••
NPA #6 22/16 3.3 5.3 5 5.3 SPUMBA #5 27/18" 3" 4" 4" 3.5" 4" RPUMBA #5 2-7/18" 3.5" 5" 3.5" 4" RPUMBA #5 2-7/18" 3.5" 5" 3.5" 4"	0.563″ !400″ 2 PLCS)	Tenon 0.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa "Includes luminaire a Fixture Quant Config Mounti DSX	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting uration ity & Mounting uration 1 LED Drilling Template	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 .025	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS DM29AS Cor other accessorie 2 @ 90 DM29 L 1.945	3 @ 90 AS3-5 390 AS125-390 AS135-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39 e = = = = 3.038	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS 4 @ 90 DM49 4 @ 90 DM49 3.749
RPUMBA #5 2-7/8" 3.5" 5" 5" 3.5" 5"	0.563" 1400" 2 PLCS)	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Area *Includes luminaire a Fixture Quant Config Mounti DSX	Mounting RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting unation ity & Mounting unation ity E Mounting United the second seco	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19: 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 @ 180 DM28 2 .025	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS DM29AS Dr other accessorie 2 @ 90 DM29 E 1.945 1.945	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39 a.g. 90 DM39	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850	4 @ 90 AS3-5 490 AS125-490 AS135-490 • • • • • • • • • • • • • • • • • • •
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	0.563" .400" 2 PLCS)	Tenon 0.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa *Includes luminaire a Fixture Quant Config Mounti DSX SPA RPA SPUMBA RPUMBA	Mounting RPA RPA RPA RPA Drilling Template #8 Luminaire + and integral mounting uration ing Type 1 LED Drilling Template #8 #8 #8 #5 #5	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 .025 Mini 2-7/8" 2-7/8" 3" 3.5"	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS DM29AS Dr other accessorie 2 @ 90 DM29 C 1.945 mum Acceptable (3.5" 3.5" 3.5" 3.5"	3 (a) 90 AS3-5 390 AS125-390 AS135-390 3 (a) 90 Side B, C & D DM39AS es are not included 3 (a) 90 DM39 as are not included as are not included	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850 nsion 3" 3" 3.5"	4 @ 90 AS3-5 490 AST25-490 AST35-490 4 @ 90 Side A, B, C & D DM49AS 4 @ 90 DM49 4 @ 90 DM49 4 @ 90 DM49 3.749 3.749
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	0.563" 1.400" 2 PLCS)	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa "Includes luminaire a Fixture Quant Config Mounti DSX	Mounting RPA RPA RPA Drilling Template #8 Luminaire	Single Unit AS3-5 190 AST25-190 AST25-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 @ 180 DM28 2.025 Mini 2-7/8" 2-7/8" 3.5"	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS Dr other accessorie 2 @ 90 DM29 2 @ 90 DM29	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39 = = = = = 3.038 Dutside Pole Dime 3.5" 3.5" 4" 5"	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850 nsion 3" 3" 3.5" 3.5"	4 @ 90 AS3-5 490 AST25-490 AST35-490 • • • • • • • • • • • • • • • • • • •
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	0.563" 9.400" 2 PLCS)	Tenon 0.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa *Includes luminaire a Fixture Quant Config Mounti DSX SPA RPA SPUMBA RPUMBA	Mounting RPA RPA RPA RPA Drilling Template #8 Luminaire - and integral mounting unation ity & Mounting unation ity & Mounting Uniting Template #8 #8 #8 #5 #5	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19: 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 .025 Mini 2-7/8" 2.7/8" 3" 3.5"	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS Dr other accessorie 2 @ 90 DM29 C 0 0 DM29 C 0 DM29 DM29 C 0 DM29 C 0 DM29 C DM29 C DM29 C DM29 C DM29 C DM29 C DM20	3 @ 90 AS3-5 390 AS125-390 AS135-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39 3.038 2.3.038 2.1.5° 3.5° 3.5° 3.5° 3.5°	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850 nsion 3" 3.5" 3.5"	4 @ 90 AS3-5 490 AS125-490 AS135-490 4 @ 90 Side A, B, C & D DM49AS 4 @ 90 DM49 4 @ 90 DM49 4 @ 90 DM49 3.749 3.749
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DSX1-LE	0.563" 1.400" 2 PLCS)	Tenon O.D. 2-3/8" 2-7/8" 4" Mounting Option Head Location Drill Nomenclature DSX1 Areaa "Includes luminaire a Fixture Quant Config Mounti DSX SPA RPA SPUMBA RPUMBA	Mounting RPA RPA RPA Drilling Template #8 Luminaire #8 Ruminaire #8 Ruminaire #8 #8 #8 #8 #8	Single Unit AS3-5 190 AST25-190 AST35-190 AST35-190 Single Side B DM19AS - EPA g arm. Other tenor Single DM19 	2 @ 180 AS3-5 280 AST25-280 AST35-280 2 @ 180 Side B & D DM28AS 2 @ 180 DM28 2 @ 180 DM28 2 @ 180 DM28 2.025 Mini 2-7/8" 2-7/8" 3" 3.5"	2 @ 90 AS3-5 290 AST25-290 AST35-290 2 @ 90 Side B & C DM29AS Dr other accessorie 2 @ 90 DM29 L 1.945 mum Acceptable (3.5" 3.5" 4" 5"	3 @ 90 AS3-5 390 AST25-390 AST35-390 3 @ 90 Side B, C & D DM39AS es are not included 3 @ 90 DM39 =	3 @120 AS3-5 320 AST25-320 AST35-320 3 @ 120 Round Pole Only DM32AS d in this EPA data. 3 @ 120 DM32 3 @ 120 DM32 2.850 nsion 3" 3" 3.5" 3.5"	4 @ 90 AS3-5 490 AST25-490 AST35-490 • € € € € € € € € € € € € € € € € € €



TYPE S2

SCALE: NOT TO SCALE

EXAMPLE: WST LED P1 40K VF MVOLT DDBTXD VF Visual comfort forward throw MVOLT¹ 277² 27K 2700 K Shipped included 30K 3000 K VW Visual comfort wide 120² 347 ² (blank) Surface mounting bracket ackage **40K** 4000 K 208² 480² Shipped separately 50K 5000 K 240² BBW Surface-mounted back box³ PBBW Premium surface-mounted back box^{3,4} Finish (required) I motion/ambient sensor for 8'-15' mounting heights⁵⁶⁷ E7WC Emergency battery backup, CA Title 20 Noncompliant DDBXD Dark bronze (cold, 7W)^{7,12} motion/ambient sensor for 15'-30' mounting heights 5.67 DBLXD Black E7WHR Remote emergency battery backup, CA Title 20 DNAXD Natural aluminum Noncompliant (remote 7W) 7,13 (controls ordered separate) 9 DWHXD White E20WH Emergency battery pack 18W constant power, DSSXD Sandstone ls ordered separate) 9 Certified in CA Title 20 MAEDBS⁷ DDBTXD Textured dark bronze ntrols ordered separate) ? E20WC Emergency battery pack -20°C 18W constant power, DBLBXD Textured black or, 8–15' mounting height^{s,6} Certified in CA Title 20 MAEDBS 7,12 5' mounting height, ambient sensor enabled at 1fc^{5,6} E23WHR Remote emergency battery backup, CA Title 20 DNATXD Textured natural aluminum Noncompliant (remote 20W) 7,12,14 DWHGXD Textured white sensor, 15–30' mounting height^{5,6} 30' mounting height, ambient sensor enabled at 1fc^{5,6} LCE Left side conduit entry¹⁵ DSSTXD Textured sandstone RCE Right side conduit entry¹⁵ Shipped separately RBPW Retrofit back plate³ back of housing for external control (control ordered VG Vandal guard¹⁵ Non CEC compliant (7W) 7 WG Wire guard¹⁵
 1
 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
 10
 Not available with Emergency options, PE or PER options.

 1
 DMG option not available with standalone or networked
 11 DMG option not available with standalone or networked 2 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. sensors/controls. 12 Battery pack rated for -20° to 40°C. ck box 3 Also available as a separate accessory, see accessories 13 Comes with PBBW. 14 Warranty period is 3-years. 4 Top conduit entry standard. 15 Not available with BBW. 120-277V)¹⁷ 5 Not available with VG or WG. See PER Table. 16 Must order with fixture; not an accessory. 6 Reference Motion Sensor table. 17 Requires luminaire to be specified with PER, PER5 or PER7 option. See PER Table. 347V)17 7 Not available with 347/480V. 8 Need to specify 120, 208, 240 or 277 voltage. 9 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included. **Emergency Battery Operation** to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. ude an independent secondary driver with an integral relay to immediately detect AC power loss, meeting interpretations of NFPA 70/NEC 2008 - 700.16 ninaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per International Building Code Section 1006 .9, provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions. 1 fc average and 0.1 fc minimum of the P1 power package and VF distribution product in emergency mode. WST LED P1 27K VF MVOLT E7W WST LED P2 40K VF MVOLT E20WH DMMERCIAL OUTDOOR One Lithonia Way • Conyers, Georgia 30012 • Phone: 800-705-SERV (7378) • www.lithonia.com WST-LED © 2011-2021 Acuity Brands Lighting, Inc. All rights reserved. Rev. 08/31/21





				Infor	mation C	ont.														
					Accessori	es			7		NO 1	FES P1_P6 not avai	lable with V8 P	7 not available	with V/					
			VCPGBDS DWHXD	On I Bir	dered and shipped se rd shroud for PM (si	eparately: pecify finish)					2	Not available	with P7.	ment No and	le adjusta	oont llea F	PM and			for mount
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			VCPGUBDS DWHXL VCPGUBDS YK DWI	U Bir XDU Bir	rd shroud for PM w rd shroud for YK wit	th Up-Light (h Up-Light ((specify fini specify fini	ish) sh)			5 1	E8WC and E1 E8WC & E10V)WH only rated /H only available	up to 35°C ami with P1-P4 pa	oient. ckaqes.					
ver the page to s	ee all interactive elements.		VCPGSRM U	Su	rface mount kit, wi	th no Up-Lig	ht	-			7 8	DMG option r BDS not availa	ot available with ble with UPI 1 c	n standalone or r UPI 2.	networked	sensors/co	ontrols.			
on			VCPGUSKM U VCPGWG U	Su Wi	rrace mount kit, wi ire guard	th up-Light					9	Power interr on page 4 fc	uption delay > r more details	30 millisecon	ds require	d for oper	ration.	Refer s	equence of	operatio
CPG LE	ED (Visually Comforta	ble Parking	SLVSQ	Qu	lick mount pendan	t swivel kit, so t swivel kit, r	quare				10 1	Not available of operations	vith P6 & P7. Po on page 4 for m	wer interruptic ore details.	n delay >20	00 milliseco	nds req	uired foi	r operation. R	lefer seque
naire is rmance	designed to bring gla	are control, nto one package	VCPG YK DWHXD U	Yo	ke mount kit (speci	fy finish)	ouna													
lens de	esign of VCPG LED m	inimizes high	RSXWBA DWHXD U	RS	X WBA wall bracke	t (specify fini	sh)													
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erticals	and uniformity. The d	edicated	T CITOTIII	ince e																
ule opt	ion reduces the contr	ast between	Lumen Outp	ut Lum with	en values are from p in the tolerances all	ohotometric t owed by Ligh	tests perfor nting Facts.	med in accor Contact fact	dance with ory for perfo	ESNA LM- ormance da	-79-08. Data ata on any c	onfigurations	to be represent not shown here.	ative of the cor	ntigurations	shown,				
environ	ment.	ore visually	Performance	Watts	Distribution		IK 70 CRI)	35 (3500K,	(70 CRI)	40 (4000K)	0K , 70 CRI)	50I (5000K,	('0 CRI)				~			
D deliv	vers up to 87% in ener	gy savings	Package		lype	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	l	Jp-ligh	t Lume	en O	utpu	τ	
g 175V	N metal halide lumina	aires. With over			T5E T5M	3,581	135	3,670 3,710	138	3,815	144	3,876	146		Up-light (Option	Watt	s I	Lumens	
e VCPC	G LED luminaire provi	des significant	P1	27W	T5W	3,592	135	3,681	139	3,827	144	3,888	146	-	UPL"	,	0.5W 8 cm	·	715	
saving	s over traditional lumi	naires.			TSR	3,464	130	3,550	134	3,690	139	3,749	141	L	UrL	<u> </u>	0.31/	r	11	
					TSE	4,577	132	4,691	135	4,876	141	4,954	143	ı	umor	Multin	dior 4	for 9		
104					T5M	4,626	136	4,741	140	4,928	145	5,007	147		.umen	munup	oller		UCRI	
40K			P2	34W	T5W T5R	4,591	135	4,705	139 134	4,891	144	4,968	146		204		Multip	lier c		
					LANE	4,482	132	4,594	135	4,775	141	4,851	143	-	35K		0.92	5		
Ň					T5E TSM	5,808	134	5,952	137	6,187	143	6,286	145	ŀ	40K		0.96	7		
	Chinned included		P3	43W	TSW	5,825	134	5,970	138	6,205	143	6,304	145	ŀ	50K		0.96	5		
ise .	PM Pendant mount standard (2	4–inch length supply leads)			TSR	5,617	130	5,757	133	5,984	138	6,079	140	_						
	SRM Surface mount (24-inch len	gth supply leads)			TSE	5,688	131	5,829	134	6,059 7,874	140	6,155 7,999	142							
	ARM Arm mount (use RSXWBA a	ccessory to mount to a wall)			T5M	7,470	133	7,656	136	7,958	141	8,085	144							
	Shinned senarately		P4	56W	T5W T5R	7,414	132	7,597 7,326	135 130	7,898	140	8,023 7,737	143 137							
	YK Yoke/trunnion mount ³				LANE	7,238	129	7,418	132	7,711	137	7,834	139							
					T5E T5M	10,189	124	10,442	127	10,854	132	11,027	134							
			P5	82W	T5W	10,220	124	10,473	128	10,887	133	11,060	135							
		Finish (required)			TSR	9,855	120	10,099	123	10,498	128	10,665	130							
		DWHYD White			TSE	12,878	121	13,197	124	13,719	127	13,937	129							
		DNAXD Natural	D/	10010	T5M	13,015	121	13,338	124	13,865	129	14,086	131							
		aluminum	Po	198W	TSR	12,91/	120	12,764	123	13,268	128	13,480	125							
ight output	t ut	DBLXD Black			LANE	12,611	117	12,924	120	13,435	125	13,649	127							
, pre progra	ammed to 3fc and 35% light		P7	122W	T5M	15,503	125	15,887	128	16,515	133	16,778	135							
nre nrog	rammed to 3fc and 3504 light				T5W	15,549	125	15,935	129	16,564	134	16,828	136							
picpiog	rammed to Sic and SS winght		Lumon Amb	iont Ton	nnoraturo		Project		Lumor	Main	tonone	•		Floctrie		d				
			(LAT) Multip	liers	nperature	r D	Data referer	ices the extra	polated pe	formance	projections	ਢ for the platfor	ms	Liecting	ai Lua	u		1		
			Use these factors to average ambient ten	determine rel peratures fro	ative lumen output m 0-40℃ (32-104℉	for IE	oted in a 2 ESNA LM-8	5°C ambient, 0-08 and pro	based on 1 jected per l	0,000 hour ESNA TM-3	rs of LED te: 21-11).	sting (tested p	er	Power Package	System Watts	1200	208V	240V	2771 3	47V 48
ts for 8-1	5' mounting heights ¹⁰		Ambient	Luner	Multiplier	d	o calculate lesired num	LLF, use the ber of opera	umen main ting hours b	enance fac elow. For o	ctor that cor other lumen	responds to t maintenance	ie values,	P1	27W	0.22	0.13	0.12	0.10).08 0.
s for 15-	-30" mounting heights ¹⁰		0°C 32°F		1.03	c	ontact fact	or y. ating Hours) 7	25.000	50.000 1	0.000	P2	34W	0.28	0.16	0.14	0.13 (0.10 0
			10°C 50°F		1.02		Lumen Ma	intenance Fa	tor 1	0	0.97	0.94	0.89	P3	43W	0.37	0.21	0.18	0.16 0	0.13 0.
			20 C 68 F 25°C 77°F		1									P4	56W	0.48	0.28	0.24	0.21 (0.16 0.
			30°C 86°F		0.99									P5	82W	0.68	0.52	0.35	0.30 0	J.24 0.
			40°C 104°		0.98									P7	124W	1.03	0.52	0.45	0.44 0).32 0.).37 0
														L				51671	I .	
a.com		VCPG LED	/ 🔺 L/T	HONI		ne Lithonia	a Way 🔹	Conyers, C	ieorgia 30	012 • Pl	hone: 800	-705-SERV (7378) • www	/.lithonia.con	n					VCPG
		D 00/04/04		LITINI	C 0	2012-2021	Acuity Bra	nds Liahtin	a Inc. All	riahts rese	erved									D 00/7

Catalog Number

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HID wall pack replacement and new construction opportunities. Available in four sizes, the WPX family delivers 850 to 9,200 lumens with a wide, uniform distribution. The WPX0 full cut-off wall pack is an excellent above the door lighting solution. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Standard

features such as Adjustable Lumen Output (ALO), color switching and switchable photocell make WPX0 ideal for any application.

hotometric Diagrams EXAMPLE: WPX0 LED ALO SWW2 MVOLT PE DDBXD LEGEND WPX0 LED ALO4 0.1 fc 0.2 fc 0.5 fc 1.0 fc PE Photocell (On/Off) DDBXD Dark bronze Default out of the box settings: 1,650 Lumens, 4000K, Photocell enabled Switchable Features INSTALLATION WPX can be mounted directly over a standard electrical junction box. A port on the back surface allows poke-through conduit wiring on surfaces that don't have an electrical junction box. Wiring can be made in the integral wiring compartment in all cases. WPX is only recommended for CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. IP66 Rated. ON DE OFF DesignLights Consortium@ (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at <u>www.designlights.org/QPL</u> to confirm 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx. Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice. LITHONIA LIGHTING. One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com WPX0 LED Rev. 10/31/22 © 2020-2022 Acuity Brands Lighting, Inc. All rights reserved. COMMERCIAL OUTDOOR

Performance Data

ALO 4 13.0 0.11 0.06 0.05 0.05

ALO 1 6.4 0.05 0.03 0.03 0.02

Projected LED Lumen Maintenance

and projected per IESNA TM-21-11).

Data references the extrapolated performance projections in a 25°C

ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08

9.2 0.08 0.04 0.04 0.03

7.8 0.07 0.04 0.03 0.03

Electrical Load

ALO 3

ALO 2

values, contact factory.



Lumen Output

ALO 4

ALO 3

ALO 2

3000K 1,591

4000K 1,644

5000K 1,667

3000K 1,164

4000K 1,191

5000K 1,225

3000K 974

4000K 994

Lumen Ambient Temperature

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient Ambient Lumen Multipl

0°C 32°F 1.027 5°C 41°F 1.023

10°C 50°F 1.018

 20°C
 68°F
 1.006

 25°C
 77°F
 1.000

1.012

WPX0 LED

Rev. 10/31/22

15℃ 59°F

(LAT) Multipliers



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 Josephinis and equipred to the factor by an integrational device base bases of the set indexide devices the device of the set indexide of the set index and the set indexide of the set indexide of the set indexide	1.3 A.	REQUIREMENTS Materials and installation shall be in accordance with the latest published requirements of the following codes and standards:
 Lead Barbard, 1976. Excemption for head barbary high stylents. The excellulation of the stylent stylents. The excellulation of the stylent stylent stylent stylent stylents. Stylent stylents and stylents and stylents. Stylent stylents and stylents. Stylent stylents and stylents and stylents. Stylent stylents and stylents and stylents. Stylent stylents and stylents and stylents and stylents and stylents. Stylent stylents and stylents and stylents and stylents and stylents and stylents. Stylent stylents and stylents. Stylent stylents and stylents. Stylent stylents and sty		1. Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratoric equivalent).
 A month determined to determine and expertence of the term of balance of the intervent. A month determined to determine and the intervent of the inter		 IEEE Standard 510 - 1992, Recommended Practices for Safety in High Voltage and High Voltage Power Testing. IEEE Standard 400 - 2001, Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems.
 Product Andre Jones Market Product Andre Jones Market		 National Electrical Code, NEPA 70. National Fire Protection Code 70B, Recommended Practice for Electrical Equipment Maintenance. Eederal Specification A A 59514
 P. Landow M. H. 2017. Here the concentration of according to the concentration of the inter, Advanced using Weight Galaxies. <i>Note: Note: N</i>		 a. Tederal specification A-A-37344. 7. UL 83 - Thermoplastic-Insulated Wires and Cables ASTM B1 - Hard-Drawn Copper Wire
 Note: Instruction for exploring of production of explored in code acceleration of grant and up of explored in the code acceleration of grant and up of explored in code acceleration of grant and up of explored in the code acceleration of grant and up of explored in the code acceleration of grant and up of explored in the code acceleration of grant and up of explored in the code acceleration of grant and up of explored in the code acceleration of grant and up of expl		 ASTM BT - Hard-Drawn Copper wire UL 486 A and UL 486 B - Wire Connections for Copper and Aluminum NECA/AA-104-2012 - National Electrical Contractors Association Recommendation for Installing Aluminum Building Wire and Cable
 1. MMM ACULUE 1. Concretion, and and information of brack in any new of exact approach equat. 3. Start Rest Hings Interface and the information of the start and the one of properties of the start and the start approach equat. 4. The Rest Hings Interface and the start and the start approach is a start approach in the start approach is a start approach in the start approach is a start approach is a start approach in the start approach in the start approach is a start approach in the st	PART	
 When, only, P. Cache: Suffixing, Checks, and your electronic component and only constraints. Alter to end through the suffixing in the suffixing of the suffixing in th	2.1	MANUFACTURERS
 Antihold Course We and Double Skill and Jacksed Signs - Skills for greating of 20 this had had below specified in the follow of Bulk of Academy Course in the Skills of 20 the Skills and Skills a		 Wire, cable, SE Cable: Southwire, Okonite, or engineer of record approved equal. Connectors, Lugs, and Pads: Thomas & Betts or engineer of record approved equal. Splice Kits: 3M, Ideal. Strain Relief Fittings: Hubbell, or equal.
 A Cooperation on Cooperation State on the many state of the state of a state of the induction of a state of the induced and increase for used in a state of the state of the state of the induced and increase for used in a state of the state of	22	4. Strain Kellet Hittings: Hubbell, or equal.
 Bolico en 20% colle-changen of the means of page control format being point with the page colls with the page coll with the page colls wi	A.	Copper Wire and Cable, Solid and stranded type - Suitable for operation at 600 volts in all installations as specified in the National Electrical Code.
 E. Such and Submit American and a support of a support of		stranded for larger than size 8 AWG.
 Connection, Lag, and Fold. Connectors rate the Utilitation and advances of 20 with in the hardware and environment of 20 eng. Calobia metal. Advances of the connectors in the concentration of the control of the control of the theory and the variable of the theory and the control of the theory and the variable of the theory and the control of the control of the theory and the variable of the theory and the control of the control of the theory and the control of the con	В.	SO cord and SOW cable - Maximum of six annealed copper conductors and bare ground wire. 90 deg. Celsius rated polyvinyl chloride (PVC), r jacketed. Suitable for operation at 600 volts in all installations as specified in the National Electrical Code.
 Contraction: and the contractive interface with end placts: Dues, incent we contractions shall be used for sharded contracts. Some contracts were interesting of the some and the contracts of the some and the some and	C.	Connectors, Lugs, and Pads - Connectors shall be UL listed and suitable for 600 volts in all installations and a minimum of 75 deg. Celsius rated. adherence to manufacturer installation means and methods is required. Connections shall be suitable for use with conductors installed (i.e. Copp Aluminum). Connectors shall be appropriately sized pursuant to the conductors connected (i.e. stranded or solid). Exposed wires, clamps
 Spike Fit Cognol Conductors, size 410 AVG and another where spiked into a service for full spike connection. SN: "Social-fields", head "Wing was equivalent. Cognol Conductors, size 410 and tagge where private into Lifet on expressive into the spike of non-instabled connection instabled connection instable of spike 2210 and 22100 and 22100 and 2210 and 22100 and 2210 and 2210 and 2210 and 2210		connectors shall be completely insulated with vinyl plastic tape. Indenture-compression type connectors shall be used for stranded conductors shal
 egivalant. <	D.	Splice Kits 1. Copper Conductors, sizes #10 AWG and smaller where spliced shall use "spring-lock" connectors. 3M "Scotchlock", Ideal "Wing Nuts
 be thereaging producted with applied involves. Mer 2020 or #2210 with resp. Index With general endower with an #2200 or #2210 with in the ability genes. be the ideal Philips - Rifley shall be owner wear, designed to another to second y system ports and translations. FART 5 - Excerctions Collations Co		equivalent.Copper Conductors, sizes #8 and larger where spliced shall utilize an approved split bolt connector. These types of non-insulated connections
 Submit procession Submit Peter Thigs, while as a view meet, designed to adopt to a wide range of electrical coxt, adds, or flexible and discussion from being transmitted to the locavay system joint and termination. Childham Ale Thigs, and the adopted to prevent forsion from being transmitted to the locavay system joint and termination. Childham Ale Thigs, and the proper filling for the evidenment intellect (i.e. well beacher), flags they and the the beacked with and observed. Intellect the beacher proper filling for the evidenment intellect (i.e. well beacher), flags they antibient transportures. Cables intellect in code washer shall be handled with and observed. Intellect a data and the they are proper filling for the evidenment (i.e. wood reals, thereines, etc.) Constructures that have the proper filling for the previous and to real well beachers. Handled in code washer intellect (i.e. well beachers), flags they are the previous and the filling observed of the code of the shall be previous and the figure of against the previous and the filling observed of the previous and the filling observed of the code of the code of the shall be previous and the filling observed of the code of		 be thoroughly protected with applied insulation, 3M #2200 or #2210 vinyl mastic insulating pads. 3. Spliced conductors in exterior, damp and wet locations shall be insulated with an epoxy kit, or protected with 3M #2200 or #2210 vinyl masterial pade.
 takenay, Lings at late designed to prevent levion form being boundless to the accessory system joints and terminations. FART3 EXECUTION Conductors in the access with respect to induction in two antident temperatures. Cables haldled in code worther shall be handled with an accessory and an accessory and accessory accesory accessory accessory	E.	Strain Relief Fittings - Fittings shall be a wire mesh, designed to adapt to a wide range of electrical cord, cable, or flexible conduit as required pe
 A Conductor with the statement of the statement		arawings. Fittings shall be designed to prevent tension from being transmitted to the raceway system joints and terminations.
 A bold memory of the intervent instruction with respect to installation in low ambient temperatures. Cable introlled in call weather that be handled with and pulsed starter. B conductors such to be the proper listing for the environment installed (j.e., well location, perum celling, high/yew ambient temperature). Conductivation and cable and resisting of the environment installed (j.e., well location). Figure 3.200 (j.e., j.e., j.e.		
 Conscience of the three the proper billing for the environment initiated jile, well location, percent celling, high/yew antibent temperature). Conductated exertion, underground, or betwor facorists that the active location billing. PRTMARTION Instruction and these for domage prior to installation. Enurse cable end; are sealed to prevent enhance of masture. Consult cable manufacture for accorded of precer pulling aduptment (i.e. wood read, stretterion), etc.! Instruction is approved by the manufacture and compatible with the cable. Lubicant that is made of formnable product, way, or greace is not accorded. Instruction billing is approved by the manufacture and compatible with the cable. Lubicant that is made of formnable product, way, or greace is not accorded. Instruction billing is an anomalication of accorded accorded intervention of a stret for the pulling conductors intervention. Concurrent billing is an anomalication recommend billing transformed patient to the canded product value of the pulling conductors intervention. Do and exceed manufacture limitation for the anomal moment of pulling transformed patients patients provide to the canded patient candovalues where the individing according cable patients applied to the canded patient candovalues where the individing according cable and patients applied to the canded patient candovalue where the individing according cable and patient according to any patient according to any patient according to a strenge of patients applied to the strenge and patient according with the patient according to any patient accordinate and patient according to any patient according to an	A.	Follow manufacturer instructions with respect to installation in low ambient temperatures. Cables installed in cold weather shall be handled with and pulled slower
 Installed eletion, underground, or below floor slob shall require a well location failing. PREPARATION Inspect coble and reals for domage plot to installation. Ensure coble ands are sealed to prevent entrance of moliture. Consult cable menufacturer for approval of proper pulling equipment (i.e. wood reals, their real, etc.) Ensure pulling balaxini is approved by the manufacturer and consultate with the coble, tubicani that is made of Tammable product, wax, or a recease that approved. INSTALLATION Conductor shall be installed in a permanent incovery or cable into, Rodeway shall be installed prior to pulling conduction to note the through, whichever provide a target receives/consultate recommendation utang installation. Conductor shall be installed in a permanent incovery or cable into, Rodeway shall be installed prior to pulling conductions from any or to a note the diverget, whichever provide in target receives end during installation. Conductor shall be installed in a permanent incovery or cable into, Rodeway shall be installed prior to pulling conductors installing altification. Conductor shall be apported to the same time. Pull ension cable/oss shall be parformed prior to pulling conductors installing altification. De not exceed manufacture inhibitors with respect to maximum side wall pressure. De not exceed manufacture inhibitors with respect to maximum side wall pressure. Station relif illings and the target or a close op racificati, with hieraral supports por Hist conductors for each shall be exceed incover and the real statistication and conductors for a close op racificati, with hieraral supports por Hist conductor for each shall be conducted. Conductors shall be apported to the day (may a conductors main all parts) conducts in the statistication. Yai receivers shall be conducted in the day (may a conductors where the conductor shall be recolated in the statistication (Yai a clos	В.	Conductors shall have the proper listing for the environment installed (i.e. wet location, plenum ceiling, high/low ambient temperature). Condu
 Instrumentary Instrumentary Instrumentary Instrumentary Consult cobe monufacturer for opproval of proper pulling equipment (i.e. wood reas, steel reak, etc.) Cincult cobe monufacturer for opproval of proper pulling equipment (i.e. wood reas, steel reak, etc.) Statustical in a deproval. Instrumentary pulling duricant is opproved by the monufacturer and compatible with the cobe. Lubricant that is made of itemmatible product, wax, or groups in the behavior. Consult cobe monufacturer for opproval of proper pulling equipment (i.e. wood reak, steel reak, etc.) Consult cobe installed in a permanent indexway or cobie indy. Reakway shall be asked to meet minimum code reak/ements or as note the drawing, which ever provides a large cobie section area. Conduit coervey in oil be minimum code reak/ements or as note the drawing, which ever provides a large cobie section and statustical during installation. Do not exceed manufacturer limitations in the around to plang territor applied to the conductors. Avoid pulling different conductors sizes different territor indications with respect to maximum aide and pressure. Strong refer things shall not access a practical, with interval supports part KEC tools 300.19 (A). Deducation territor donations. The installation access and maximum entermation that a provide a large donation of the access and in accession for each enter donations. The installation and pressure and the provide a large donation and pressure and the provide at a common heads the low of the active data territor donations. The active data territor donations in the data territor is statustical territor. Yes there are a constant to voltage and phase configuration. White each care by active a large data territor accession and acce		Installed exterior, underground, or below floor slab shall require a wet location listing.
 Consult cable monulocture for approval of proper pulling equipment (i.e. wood reds, steet reds, etc.) Proce sulling labeled is approved by the monufacturer and comparitiels with the cable. Labeled in mode flammable product, wax, and greates is not approved. INSTALLATION Conductors that be installed in a permanent raceway or cable fray. Raceways shall be asked to meet minimum code requirements or as note threadyng, whicher provides a large crass-actional area. Consult raceway shall be installed prior to pulling conductors threadyn. Conductors that are installed with a permanent raceway or cable fray. Receivery shall be installed prior to pulling conductors threadyn. Conductors there are distance to the consult of pulling conductors. Avoid pulling different conductors threadyn. Do not exceed manufacture: Initiations with respect to maximum side woll pressure. Strin reliat lifting shall be used where the initiation exceed manufacture maximum sizes allowanced for cables under vertical tension. Vertices with the support per NEC table 30.019 (a). Dedicated neural conductors shall be provided for each aingle phase circuit [i.e. one neural conductors for cables under vertical tension. Vertices per Vision of multifying when hend is allower each aingle phase. Circuit [i.e. one neural conductors for a cable approach on the NEC 1016 30.019 (a). Dedicated neural conductors shall be provided for each aingle phase. Circuit 2009, 2009	3.2 A.	Inspect cable and reels for damage prior to installation. Ensure cable ends are sealed to prevent entrance of moisture.
 c. Later point package is of approved. 3.3 INSTALLATION A. Conductors hald be installed in a permonent raceway or cable real, Raceways shall be asized to meet minimum code requirements or as note the driving, whichever poorides a large cross sectional cares. Concult raceway shall be installed prior to pulling conductors through. b. Conductors hald be installed in a permonent raceway or cable real, Raceways shall be asized to meet minimum code requirements or as note the driving, whichever poorides a large cross sectional cares. Concult raceway shall be asized to meet moducture the annual for the manual to pulling conductors. Avoid pulling different conductors there, different nonin initiations, with respect to maximum side wall pressure. S. Stoin relief fittings shall be used where the installation exceed manufacture maximum thess allowanced for cables under vertical tension. Ver raceway shall be supported at the too rac class as proteined, with interval apports prior RC table 30.1 P (A). D. De not exceed manufacture limit actions there inflat a classical cable, while the supports prior RC table 30.1 P (A). Dedicated neutral conductors shall be provided for each single phase circuit (i.e. one neutral conductors for each phase conductor). With interval theorems table the state conductor with RC 2004. C. Conductors shall be appointed in the too race and the provide of the part of the prior disc and theorem interval. Here 2004, 2	B.	Consult cable manufacturer for approval of proper pulling equipment (i.e. wood reels, steel reels, etc.)
 NSIALARION Conductors shall be installed in a permanent raceway or coble tray, Roceways shall be as sized to meet minimum code requirements or as not the factoring, whichever provides a larger cross-actional area. Conduit noceway shall be installed prior to pulling conductors through. Conductor bener radii shall not exceed manufacturar incommendations during installation. Do not exceed manufacturar initiations for the amount of pulling tension capiled to the conductors. Avoid pulling different conductor sizes, attentions are then a maximum pulling allowed by the manufacturer initiations or calculations shall be postformed prior to pulling conductors to ensure maximum pulling allowed by the manufacturer initiations or calculation shall be postformed prior to pulling conductors for each phase construction with expected to the control of the conductors. Avoid pulling allowed by the maximum pulling of the access and phase conductor with the specification of multivite borneh dircuits where either a common handle to the post class or provide to the top (for a class a provide) then 12.4WG shall not be used. Conductors shall be as specified on the drwing. Conductors smaller than 12.4WG shall not be used. Conductors shall be as specified on the drwing. Conductors smaller than 12.4WG shall not be used. Conductors shall be used for portable tools, applicates, and equipment. SO cord and SOW coble shall not be used for temporary p connections. Where collect shall be associated in shall capacity. 2409, 240	C.	grease is not approved.
 A current statilitie to assisting an operament tockway or cable tray, kaceway shall be instead to meet public accurate the public accurates the instead of the approximate state of the instead of the public accurates the public accurates the public accurates to accurate the public accurates to accurate the accurate the accurate the accurate the public accurates to accurate the accurate the accurate the accurate the public accurates to accurate the accurate	3.3	
 b. Conductor bend radiishill not exceed manufacturer incommonatelians during installation. c. Do not exceed manufacturer limitations for the annumation applied to the conductors. Avoid pulling different conductor size, different tendson limitations, of the same time. Pull tension colculations shall be performed prior to pulling conductors to ensure maximum pulling diaved by the manufacturer initiations with respect to maximum side wall pressure. E. Strain relief Ittings shall be used where the installation exceed manufacturer maximum sites allowanced for cabies under variact tension. Ver receivery shall be supported of the top (or a clase a specified on the diaveling. Conductors sites provided in each single phase circuit (i.e. one neutral conductor for each phase conductor) with exception of multiwer branch diaulits where either a common handle file. Wo, or three pole circuit brackers is used in accordance with NEC 210.4 (a. Conductors shall be as specified on the diawling. Conductors smaller than 12 AWS shall not be used. H. Copper Wire and Cable. either solid, compact strandad or stranded type shall be aclor caded brave. Neuronal of part (280Y, 280Y, 280Y,	A.	conductors shall be installed in a permanent raceway or cable tray. Raceways shall be as sized to meet minimum code requirements or as note the drawings, whichever provides a larger cross-sectional area. Conduit raceway shall be installed prior to pulling conductors through.
 different tension limitations, at the same time. Pull tension calculations shall be performed prior to pulling canductors to ensure maximum pulling allowed by the manufacturer. D. Do not exceed manufacturer limitations with respect to maximum side wall pressure. E. Ström reliaf tiltings shall be used where the installation exceed manufacturer maximum stress allowanced for cables under vertical tension. Ver raceways shall be supported at the top (or acides as practical), with interval supports part NEC 1040 830.19 (A). F. Dedicated neutral conductors shall be provided for each single phase circuit (ise, one neutral conductor for each phase conductor) with exception of multiwice branch circuits where either a common handle ite, two, or three pole circuit breaker is used in accordance with NEC 210.4 (G. Conductors shall be as specified on the drawings. Conductors simple shalls be color coded pressuant to valoge and phase corrigorotion. Ptr Black (2089, 2409, 1800, 1800, 1970, 1970, 2409, 4800, 1800, 1800, 2409, 4804, Noulral - White (2089, 2402, 2409, 4804), Soulral - Whate (2089, 2407, 4807), Natow (4807), Natow (B. C.	Conductor bend radii shall not exceed manufacturer recommendations during installation. Do not exceed manufacturer limitations for the amount of pulling tension applied to the conductors. Avoid pulling different conductor sizes,
 E. Stroin relief fillings shall be used where the installation exceed manufacturer maximum stress allowanced for cables under vertical tension. Ye raceways shall be used where the installation exceed manufacturer maximum stress allowanced for cables under vertical tension. Ye raceways shall be used where the installation exceed manufacturer maximum stress allowanced for cables under vertical tension. Ye araceways shall be used where the drawings. Conductors smaller than 12 AWG shall not be used. G. Conductors shall be as specified on the drawings. Conductors smaller than 12 AWG shall not be used. H. Copper Wire and Cable, either solid, compact stranded, or stranded type shall be color coded pursuant to valtage and phase configuration. Phe - Black (28W, 240V), Brown (480V), Frouse B Red (28W), Orange (240V, 480V), Frouse C Blue (28W, 240V), Yeluw (480V), Neutral - White (28W). Car Gray (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Brown (480V), Neutral - White (28W). Car Gray (480V), Caula - Green (28V, 240V), Pathore - Step (28V, 240V), Veltral - White (28W). 240V, 480V), Step (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Step (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Step (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Step (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Step (480V), Grown (480V), Neutral - White (28W). 240V, 480V), Step (480V), S	D.	different tension limitations, at the same time. Pull tension calculations shall be performed prior to pulling conductors to ensure maximum pulling allowed by the manufacturer. Do not exceed manufacturer limitations with respect to maximum side wall pressure.
 F. Dedicated neutral conductors shall be provided for each single phase circuit (i.e. one neutral conductor for each phase conductor) with exception of multiwite branch circuits where either a common handle tie, two, or three pole circuit breaker is used in accordance with NEC 210.4 (G. Conductors shall be as specified on the drawings. Conductors smaller than 12 AWG shall not be used. H. Copper Wite and Cable, either solid, compact stranded, or stranded type shall be color coded pursuant to voltage and phase configuration. Phate-Black (2089, 240V), Brown (480V), Phase B - Red (208V), Orange (240V, 480V), Fhose C - Bile (260V, 240V), Vel/Vi (480V), Neutral - While (280V, 240V), Brown (480V), Phase B - Red (208V), Orange (240V, 480V), Fhose C - Bile (260V, 240V), Vel/Vi (480V), Neutral - While (280V, 240V), Brown (480V), Phase B - Red (208V), Orange (240V, 480V), Fhose C - Bile (260V, 240V), Vel/Vi (480V), Neutral - While (280V, 240V), Place C - Green v/ Colored strip (280V, 240V), Rown (480V), Neutral - While (280V, 240V), Ellow (480V), Neutral - While (280V, 240V), Place B - Red (208V), David C - Green v/ Colored strip (280V, 240V), Vel/Vi (480V), Neutral - While (280V, 240V), Place B - Red (280V), Place B	E.	Strain relief fittings shall be used where the installation exceed manufacturer maximum stress allowanced for cables under vertical tension. Ve raceways shall be supported at the top (or as close as practical), with interval supports per NEC Table 300.19 (A).
 G. Conductors shall be as specified on the drawings. Conductors smaller than 12 AWG shall not be used. H. Copper Wire and Cable, either solid, compact stranded, or stranded type shall be color coded pursuant to voltage and phase configuration. Phase I Black (2089), 24(9), Place V Black (2089), 24(9), 48(9), Place V Black (2089), 24(9), Plack (2089), 24(9), 24(9), Plack (2089), 24(9), 24(9), 24(9), 24(F.	Dedicated neutral conductors shall be provided for each single phase circuit (i.e. one neutral conductor for each phase conductor) with exception of multiwire branch circuits where either a common handle tie, two, or three pole circuit breaker is used in accordance with NEC 210.4 (
 H. Copper Wire and Cable, either solid, compact stranded, or standed type shall be color coded pursuant to voltage and phase configuration. Pho Biok (2089, 2004), Biown (4800), Phose b - Red (2084), Concept (2004, 4904), Phase C - Biue (2089, 2404, 4804). SO Cord and SOW cable shall be used for portable tools, appliances, and equipment. SO card and SOW cable shall be used for temporary p connections. SPLICES The contractor shall be responsible to assure that all splices are completed in a secure and permanent fashian, maintaining the integrity a connection without foults or shorts. Where applicable, and required per installed conditions, the contractor shall take extra care to tape spliced conductors. Splices sholl be minimized. Splices below grade shall be avoided, if required, the Engineer of Record will approve prior to installation. Feeders sp below grade shall be made be fully watertight and made with conductors encapsulated in epoxy. CONNECTORS Bectrical connections shall be inspected periodically in accordance to NFPA 708. Where set screw connectors are used, ensure screws are lightened via a forque wrench or forque screw driver. Connectors shall be lightened the value as required by the connector manufacturer. The use of pulling compounds is allowed. Pulling compounds shall be installed parallel or perpendicular to walls. Diagonal runs shall no permitted. Cables routed in cable tray shall be organized and lie wrapped. Coductors shall be installed in an eact and vortematike manor. Cable shall be labeled indicated branch circuit designation and sc of supply. Conductors in panels, cabinets, switchgear, motor control cabinets, pull boxes, etc. shall be labeled indicated branch circuit designation and sc of supply. Conductors shall be installed in an approved raceway. Each ra	G.	Conductors shall be as specified on the drawings. Conductors smaller than 12 AWG shall not be used.
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_____ _____ 2 PLAN CHECK REVISIONS 2023.07.10 By Appd YYYY.MM.DD Issued 1 PLAN CHECK REVISIONS Revision

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	SECTION 26 05 01 - SELECTIVE ELECTRICAL DEMOLITION	 2. Submittals shall include the following: a. Short circuit fault analysis and protective devices coordination study results and recommendations.
ies or	PART 1 - GENERAL	b. Manufacturer equipment specifications, including but not limited to the following: Metering Equipment, Main switchboards, motor control centers, distribution switchbear, distribution panels, panel boards, load centers, transformers, control disconnect switchbear, fues, and transient voltage surge suppression.
	1.1 SUMMARYA. This section includes: Basic, selective, electrical demolition.	 Controls, alsconnect switches, tuses, and transient voltage surge suppression. Grounding.
	B. Electrical plans identifying the scope of demolition have been prepared pursuant to limited, visual, field observation and facility as-builts/record drawings.	 Conduit raceway, innerauct, fiftings, and straps. Ducts and trench racks.
	C. Principal features of electrical demolition include, but are not limited to, the following: a. Demolition of select receptacles and equipment connections.	 Conductors and terminations. Junction boxes, pull boxes, gutters, and vaults.
	 b. Demolition of surface conduit. c. Demolition of select luminaires. 	 Electrical devices including, receptacles, switches and accessories. Luminaires, ballasts, and lamps.
	d. Demolition of lighting control system and components.	 Low voltage lighting control system, including but not limited to: control panel(s), cabling, terminations, switch banks, dimm and relays. Lighting control system, including but not limited to: control panel(s), cabling, terminations, switch banks, dimm and relays.
	1.2 RELATED SECTIONS A. Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL	 Lighting control system, including but not limited to the following: occupancy sensors, power packs, photocells, lumen ar Concenter and transfer witch writers and correspondents.
	 B. Related Sections Under Other Divisions: 1. The General provisions, including supplementary conditions, of this contract apply to this section. 	 Generator and transfer switch system and components. Uninterruptible Power Supply (UPS) system and components.
	2. Grading, patching, and repairing of existing surfaces damaged pursuant to the scope of demolition, including but not limited to: walls, floors, ceilings, asphalt, concrete, and vegetation, as required by the Architect/Civil Engineer.	 Inverter system and components. Fire Alarm/Fire Sprinkler Monitoring system components and vendor shop drawings.
Turce	1.3 REQUIREMENTS	 Fire Penetration materials and manufacturer installation details. Finish samples and color charts.
G and	 A. Electrical demolition work shall be performed in accordance of the latest published requirements of the following codes and standards: 1. National Fire Prevention Association Standard for Electrical Safety Requirements for Employee Workplaces (NFPA 70E). 	 Coordination with other trades to the fullest of ability is required to result in a complete, functioning, and professional installation The construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction documents are based on the most accurate information available when prepared. Minor adjustments are fullest of a construction document and the most accurate information available when prepared. Minor adjustments are fullest of a construction document and the most accurate information available when prepared. Minor adjustments are fullest of a construction document and the most accurate information available when prepared.
nylon	2. California Code of Regulations, Title 8, Section 290.1 (CAL OSHA).	construction. No change in contract price will be allowed for alternate work which requires approximately the same work result of construction coordination work. Adequate contingency in the bid price shall allow for such coordination and adjustn
Strict Ser or	2.1 MATERIALS	4. Record drawings shall be provided to the owner prior to final acceptance. Record drawings shall be maintained throug reflect and illustrate job changes as they occur. Record drawings shall:
, and ictors.	A. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein.	a. Be submitted to the owner as a set of reproducible drawings. Hand drafted notation is acceptable, provided it is le otherwise noted per Architectural specifications.
s" or	3.1 CONDITIONS	 b. Identify locations of concealed and underground conduit 1" size and larger scaled within 12" of actual field conditions. c. Identify type of luminaire product installed.
s , or s shall	A. Visit the site prior to bidding and observe the extent of demolition necessary pursuant to the contract documents. Should discrepancies be discovered between field conditions and the construction documents, notify the Architect/Engineer of record prior to bidding for instruction and/or	 a. Identity the location of vaults and boxes. A. QUALITY ASSURANCE
nastic	clarification. Allow for proper contingency when bidding in order to account for minor variances as stated in Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL.	 Manufacturers shall be regularly engaged in the manufacture of electrical construction products of types required for this p have been of satisfactory use in similar service for not less than five years.
er the	3.2 PREPARATIONA. Contact the serving utility companies to coordinate service outage(s) as necessary. Parties affected by scheduled outages shall be notified in writing	2. Installers shall have experience in the installation of products required for this project. Installers shall be experienced we techniques and manufacturer recommendations. In the acceptance or rejection of the finished installation, no allowance we of skill on behalf of the percennel.
	a minimum of 72 hours in advance. B. De-energize electrical distribution equipment, appliances, conductors, and circuit components prior to removal. Ensure equipment is electrically safe	 3. Installers shall be qualified by the State of California and provide documentation to the owner of the following:
	prior to beginning work by disconnecting equipment from its energized source and testing for the absence of voltage and grounding as applicable. Ensure electrical conductors scheduled for removal serve only abandoned equipment and devices.	 a. Valia Contractors License. b. Valid Business License.
o care	C. When work on energized equipment is required, perform work in accordance with applicable codes and standards. Proper personnel protective equipment ("PPE") and Flame Resistant ("FR") clothing shall be worn as required corresponding to the NFPA 70E Hazard Risk appropriate for working conditions. Use performance and signage to provent perform on the job site, pet qualified or protected with proper PPE/EP clothing, from entering and	 Apprenticeship Standards General Journeyman Electrician Certificate. 4. Electrical work shall be performed in accordance of the latest published requirements of the following codes and standards:
uctors	area where work is being performed on energized equipment.	 a. American National Standards Institute (ANSI) b. American Society for Testing Materials (ASTM)
	D. Provide temporary power, wiring, and connections as required to maintain power to existing loads scheduled to remain operable during construction. Temporary power to such loads shall be removed upon installation of permanent power. Coordinate power outages during cut over with owner 72 hours prior. Temporary power connection(s) may be subject to additional review and inspection by the authority having jurisdiction.	 c. Institute of Electrical and Electronic Engineers (IEEE) d. National Electrical Contractors Association (NECA)
	 E. Flexible power cords may be used for temporary power provided they meet the following criteria: Are rated not less than the capacity of the device(s) supplied by the cord 	 e. National Electrical Safety Code (NESC) f. National Electrical Manufacturers Association (NEMA)
nd/or	 Are free of insulation cracks, splices, damaged conductors, and damaged plug/receptacle. Inspected by the user once every 90 days. 	 national Electrical Manufacturers Association (NEMA) g. California Building Code (CBC) h. Matter and the state of the sta
	 Protected from damage and do not pose a trip hazard while in use on the job site. 3.3 DEMOLITION 	 h. National Electrical Code (NEC) with California State Adoptions and Amendments. i. National Fire Prevention Association (NFPA).
ed on	A. The removal of electrical infrastructure shall be done with care such to minimize damage of the existing structure or require excessive repair.	 j. California Code of Regulations, Title 8, Section 290.1 (CAL OSHA). 5. Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Under a griving laboratory).
	B. Field locate, disconnect, and remove existing electrical systems scheduled for removal. Equipment connections shall be removed to source of supply.C. Field locate, disconnect, and remove existing luminaires scheduled for removal. Remove associated branch circuit conductors, conduit system,	6. Prior to final acceptance, the electrical system shall be tested and determined to be free from grounds and short circuits.
s, with stress	mounting accessories, etc. D. Field locate, disconnect, and remove existing electrical distribution equipment, including feeder connections to source of supply, scheduled for	 B. DELIVERY, STORAGE AND HANDLING 1. Provide for delivery, uploading, transportation and storage of equipment until installation and final acceptance by the owner
	removal. E. Field locate, intercept, and relocate existing electrical systems to accommodate new construction. When electrical conduit and conductors are	2. Equipment and materials shall be stored in an environment consistent with what the equipment is listed for. Pay special of environmental conditions such as, but not limited to: temperature, moisture, water, dust, dirt, etc. Assume liability of storage for and materials stored therein.
ertical	required to be intercepted and extended, do so with compatible materials and methods consistent with the existing installation, unless specified otherwise in the construction documents.	 Bectrical equipment shall be free of damage upon installation. Equipment damaged in transport or while in storage on or rejected and shall be replaced free of charge to the owner.
h the (B).	F. Abandoned wiring shall be removed and de-terminated from source of supply. Wiring that has been removed shall not be re-installed or re-used onsite.	a. The Architect, Engineer, and Owner retain the right of continuous access and inspection of stored materials and equipment.
	G. Abandoned conduit shall be removed where exposed and in accessible locations (examples: surface mounted and or conduit mounted in accessible ceiling spaces). It shall be acceptable to abandon conduit in place provided conductors are removed, conduit ends are cut flush and	moisture, etc. until project completion and final acceptance by the owner.
ase A 240V),	sealed in a manner that will prevent moisture penetration. Where conduit has been cut flush with adjacent surfaces, patch and repair surfaces in a manor acceptable to the Architect/Owner.	A Damaged equipment shall be repaired or replaced as necessary at no cost to the owner prior to final acceptance
ower	H. Devices, including but not limited to: receptacles, communication devices, and switches shall be removed. Remove associated cover plate(s), junction box(s), wiring, and conduit to source of supply. Where indicated on the construction documents, it shall be acceptable to maintain the existing junction box(s) and conduit system. Provide a blank cover plate at wall surface as appropriate.	B. Guarantees shall be submitted to the owner, in writing, prior to final acceptance.
of the	I. The existing electrical installation not scheduled for demolition shall remain accessible.	C.The installation, including labor, shall be warranted free of defects for a minimum of one year from date of owner final acceptant to the contractor's work, during the warrantee period, shall be corrected at the contractor's expense.
wrap	3.4 COMPLETIONA. Existing and new materials and equipment installed shall be clean and free of dirt and debris prior to final owner acceptance.	D. Equipment shall be warranted free of defects for a minimum of one year or as stated in this specification, whichever is a longer due
plices	B. Existing materials and equipment scheduled to remain shall be free if damage. Make repair where necessary. Ensure electrical connections are tight, replace damaged or missing device cover plates, etc.	1.1 Materials
	C. Where new branch circuits and feeders are extended from existing load- centers, panelboards, service, and/or distribution panels update the circuit breaker directory. The circuit breaker directory shall be typewritten, identify circuit number and load served, and be installed on the inner face of the	A. Materials, components, and accessories shall be new unless otherwise noted in this specification.
ieu io	panel cover door in a plastic sleeve.D. Install existing materials and equipment in their new location as specified in the construction documents.	B. Manufacturer discontinued product shall not be acceptable. Materials, equipment, and parts comprising any unit or part the unused unless otherwise noted in this specification. Damaged materials, equipment, and parts are not considered to be new and
ot be	E. Allow the facility owner first right to salvaged equipment removed.	specification. Part 3 - Execution
sharp	END OF SECTION 26 05 01	3.1 Installation
ource		A. Work shall be performed by a skilled worker in a manner reflecting best, modern, construction practices and shall be consistent v and methods of the trade and code requirements
		B. Upon completion, work shall have a neat, orderly, and finished appearance. Evidence of debris associated with the work shall promise and dispersed of logally and appropriately.
		C.Clean equipment, both inside and out, upon final installation. If required, retouch equipment finishes in accordance with manufac
ards . Dulling	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS	D. Maintain a safe working environment, including but not limited to: a. Conform to all OSHA workplace requirements.
	AND CABLES	 Equipment dead front covers shall be in place while equipment is energized. Barriers, trench plates, flags, tape, etc. shall be used to keep persons away from unsafe conditions.
luctor		d. Conform with owner imposed safety requirements and site standards.
	SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES	Coordinate raceway systems, equipment, and materials with other trades and building construction, in order to: a. Avoid unnecessary project delays and conflicts.
	PART 1 - GENERAL	 D. Ensure penetrations made to exterior walls, toundations, fire rated assemblies, ceilings, and floors are approved an requirements and details. C. Ensure ceiling systems, i.e. lumingings and ceiling mounted devices, do not conflict with an limit for an intervention.
	A. This section includes: Basic wire and cable for feeder and branch circuit conductors.	 a. Ensure coming systems, not normalizes and coming mourned devices, do not connict with, or infinitine splinkler coverage. d. Schedule, sequence, move, and position large equipment into the building during construction. e. Coordinate sequence of work installed with other trades. Event offert shall be made to studied with a sequence of work installed with other trades. Event offert shall be made to studied with a sequence of work installed with other trades.
	B. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein in this specification.	been performed by other trades. Arrange for chases, slots, and openings in building components where needed construction to allow for electrical installations.
	C. Principal features of this section include, but are not limited to the following:1. Wire and cable	F. Install electrical equipment to facilitate future servicing, maintenance, repair, and replacement (either complete assembly or indi- much as practical, connect equipment for ease of disconnecting at a later date, with minimal interference with other installations
	a. Solid and stranded typeb. SO cord and SOW cable	G.Motors shall be checked for proper rotation once permanent power has been established. Should the motor rotate in the wro
	 Connectors, Lugs, and Pads Splice Kits 	H. Equipment Support and Installation
	4. Strain Relief Fittings	 Electrical equipment shall be anchored to building floors, foundations, concrete housekeeping pads, concrete bases bolts and anchor bolts with studs.
	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 26 05 33 RACEWAYS & BOYES FOR ELECTRICAL SYSTEMS 	b. After installation and before energizing electrical equipment, torque each bolted bus and cable connection in accord recommendations. Calibrated torque wrenches shall be used.
	 Section 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEM Related Sections Under Other Divisions: 	cabinets, panels, switchboards, switchgear, motor control centers, variable frequency dries, or other types of enclosure devices and/or conductors. Glue-on type conductor fasteners shall not be allowed.
	 a. The General provisions, including supplementary conditions, of this contract apply to this section. b. Control, Signal, and Communications conductors shall be as required per the manufacturer of the equipment or as specified by others. 	 d. Support channels shall be installed as required for the support of raceways, cable trays, devices, enclosures, and other el e. Iron and steel supports shall be separated from aluminum with a minimum 1/4" neoprene or other non-metallic asset
		f. When working with galvanized steel product (i.e. channel, conduit, equipment), paint any field cuts and or scratches spray paint. Ensure manufacturer requirements are met.
		 g. Seismic bracing shall be provided as required per the Uniform Building Code. h. Electrical equipment, materials, and/or luminaires shall be securely supported and mounted independently from build
		sagging or swaying. Other trade work (for example, mechanical ducting) shall not be used as a support means for electr i. Support devices shall be sized appropriate to withstand four times the weight of equipment it supports. Bracing shall
		engineering requirements and seismic design category "SDC" C, D, E.
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		() Stantec
		Stantec Architecture Inc.

 	CONSTRUCTION
 2023.10.02	

2023.07.10

2023.05.12

2023.03.10

By Appd YYYY.MM.DD

ISSUE FOR BID

PLAN CHECK RESUBMITTAL NO. 2

PLAN CHECK RESUBMITTAL NO.

PLAN CHECK SUBMITTAL

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and protective devices coordination study results and recommendations. specifications, including but not limited to the following: Metering Equipment, Main switchboards, multi-meter rol centers, distribution switchgear, distribution panels, panel boards, load centers, transformers, circuit breakers, motor hes, fuses, and transient voltage surge suppression. ittings, and straps. ters, and vaults. ceptacles, switches and accessories. rstem, including but not limited to: control panel(s), cabling, terminations, switch banks, dimmers, dimming modules, ng but not limited to: time clock, contactors, relays, and bypass switches. cluding but not limited to the following: occupancy sensors, power packs, photocells, lumen and sensors. tch system and components. bly (UPS) system and components. onents. nitoring system components and vendor shop drawings. and manufacturer installation details. to the fullest of ability is required to result in a complete, functioning, and professional installation. re based on the most accurate information available when prepared. Minor adjustments are frequently made due to itectural plans, construction, and equipment furnished by others. This shall be recognized when bidding and during ontract price will be allowed for alternate work which requires approximately the same work to adjust/relocate as a tion work. Adequate contingency in the bid price shall allow for such coordination and adjustments. vided to the owner prior to final acceptance. Record drawings shall be maintained throughout construction and ges as they occur. Record drawings shall: er as a set of reproducible drawings. Hand drafted notation is acceptable, provided it is legible and clear unless tectural specifications. ealed and underground conduit 1" size and larger scaled within 12" of actual field conditions. product installed. ults and boxes. y engaged in the manufacture of electrical construction products of types required for this project, whose products n similar service for not less than five years. ce in the installation of products required for this project. Installers shall be experienced with proper installation recommendations. In the acceptance or rejection of the finished installation, no allowance will be made for the lack ne State of California and provide documentation to the owner of the following: electricians on the project shall have a valid journeyman electrician pocket card or California State Division of General Journeyman Electrician Certificate.

all be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or electrical system shall be tested and determined to be free from grounds and short circuits.

, transportation and storage of equipment until installation and final acceptance by the owner. I be stored in an environment consistent with what the equipment is listed for. Pay special attention and mediate as, but not limited to: temperature, moisture, water, dust, dirt, etc. Assume liability of storage facilities and equipment

free of damage upon installation. Equipment damaged in transport or while in storage on or off the job site will be d free of charge to the owner. nd Owner retain the right of continuous access and inspection of stored materials and equipment. nt (including luminaires) shall be protected from, but not limited to: construction activities, dirt, debris, temperature, completion and final acceptance by the owner.

all be warranted free of defects for a minimum of one year from date of owner final acceptance. Any defect related warrantee period, shall be corrected at the contractor's expense. of defects for a minimum of one year or as stated in this specification, whichever is a longer duration.

ct shall not be acceptable. Materials, equipment, and parts comprising any unit or part thereof, shall be new and is specification. Damaged materials, equipment, and parts are not considered to be new and will be rejected per this

d worker in a manner reflecting best, modern, construction practices and shall be consistent with acceptable means e requirements.

a neat, orderly, and finished appearance. Evidence of debris associated with the work shall be removed from the d appropriately.

out, upon final installation. If required, retouch equipment finishes in accordance with manufacturer instructions. nt, including but not limited to:

t delays and conflicts. e to exterior walls, foundations, fire rated assemblies, ceilings, and floors are approved and made per structural

work installed with other trades. Every effort shall be made to avoid unnecessary modification to work that has already er trades. Arrange for chases, slots, and openings in building components where needed during the progress of lectrical installations.

tate future servicing, maintenance, repair, and replacement (either complete assembly or individual components). As nent for ease of disconnecting at a later date, with minimal interference with other installations. er rotation once permanent power has been established. Should the motor rotate in the wrong direction, it shall be

be anchored to building floors, foundations, concrete housekeeping pads, concrete bases where appropriate by h studs. pre energizing electrical equipment, torque each bolted bus and cable connection in accordance to manufacturer

ated torque wrenches shall be used. steners and other permanent (i.e. epoxy conductor adhesive) shall be used in junction boxes, pull boxes, terminal oards, switchgear, motor control centers, variable frequency dries, or other types of enclosures containing electrical s. Glue-on type conductor fasteners shall not be allowed.

installed as required for the support of raceways, cable trays, devices, enclosures, and other electrical equipment. all be separated from aluminum with a minimum 1/4" neoprene or other non-metallic gasket. nized steel product (i.e. channel, conduit, equipment), paint any field cuts and or scratches with a cold galvanizing

terials, and/or luminaires shall be securely supported and mounted independently from building structure to ensure r trade work (for example, mechanical ducting) shall not be used as a support means for electrical. sized appropriate to withstand four times the weight of equipment it supports. Bracing shall comply with structural and seismic design category "SDC" C, D, E.

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served and be responsible for all dimensions. DO NOT scale the ions shall be reported to Stantec without delay. and drawings are the property of Stantec. Reproduction



TERMINAL 2 - RECOMMISSIONING

5353 OVERPASS ROAD, GOLETA, CA 9311

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Project No. PROJ NO. 2014240805 Revision
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 2023.07.10

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 Chkd.
 YYYY.MM.DD

Client/Project

SANTA BARBARA METROPOLITAN TRANSIT

DISTRICT

Title

H. Two copies of an Operating and Installation Manual shall be provided to the owner prior to final acceptance. Manuals shall reflect the installed system 1. Submittal documentation reflecting installed materials, equipment, and systems. 4. Maintenance requirements and battery replacement recommendations per manufacturer requirements for exit signs, luminaire battery packs, emergency luminaires, UPS's etc. 5. Maintenance requirements for emergency generators.

6. Certificate of product and installation warranties

and include the following:

2. Device Settings

3. Testing Reports

B. Owner training shall be prearranged prior to final acceptance. Instruct owner on the operation of equipment and systems including, but not limited to the following: device settings, system programming, and equipment testing, maintenance, and equipment locations. Provide manufacturer support as indicated per this specification.

.4 REQUIREMENTS

A. PERFORMANCE 1. Final equipment feeder or branch circuit connections shall be coordinated with manufacturer nameplate data and specifications.

B. SUBMITTALS AND SHOP DRAWINGS

notation, etc. are acceptable.

their use only as to the design, workmanship, and quality, not manufacturer unless otherwise noted specifically. Alternate products will be reviewed and evaluated during the submittal review process, pursuant to conformance with the contract documents. The project team

alternate product is accepted, the following will be required:

contract documents, design intent, applicable codes, standards, and local ordinances.

- reserves the right to request product samples for evaluation at no cost. The final decision will be made by the Architect. In the event that an
- 1. Coordination with other trades. Costs incurred as a result of the substitution will be the responsibility of the Contractor. 2. Dimensions shall be field verified to ensure product will fit and maintain code required working clearances. 3. Approval of a substituted product does not alleviate the contractor from providing a complete, working installation compliant with the

- equipment shall be routed to the respective utility company representative (as identified on the drawings) for approval. contractor shall be responsible to compensate the engineering for time spent a at the engineer's standard hourly billing rate.
- d. Submittal documentation pertaining to Utility Company infrastructure, including but not limited to: man holes, vaults, pull boxes, and metering e. The Engineer will review two rounds of product submittals. Should subsequent review be required beyond this to obtain acceptance, the f. Equipment, materials, and components identified in the construction documents with specific manufacturer product numbers limit
- c. Identification shall be made on submittal documentation indicating compliance with contract documents and intended use. Highlighted text,

1. Shop drawings and product data (including manufacturer specification sheets) shall be submitted demonstrating compliance with the construction documents. Obtain approval from the Engineer prior to procurement. a. Electronic submittal packages will be accepted. b. Submittals shall be complete. Partial submittals will not be accepted.



k. Line voltage connection of mechanical and plumbing equipment. I. Emergency/Optional Standby distribution system, generator, and automatic/bypass isolation transfer switch. m. Central Lighting Inverter System, Central Battery Equipment n. Owner training.

o. Electrical Acceptance. p. Lighting Acceptance.

Section 26 0500 - Common Work Results For Electrical

1. Principal features of this installation include:

f. Interior lighting system and controls. g. Exterior lighting system and controls.

i. Underground system installation.

j. Connection of equipment.

A. This section includes: Basic electrical materials and methods.

a. Selective Demolition of existing electrical systems.

GENERA

this specification.

e. Grounding

1.1 SUMMARY

Architect/Civil Engineer.

3 SYSTEM DESCRIPTION

q. Electrical System Protective Device Study.

RELATED SECTIONS

1. 26 56 70 LIGHTING ACCEPTANCE TESTING

2. 26 08 10 ELECTRICAL ACCEPTANCE TESTING

3. 26 05 73 ELECTRICAL SYSTEM PROTECTIVE DEVICE STUDY

A. Related Sections Under Other Divisions:

1. The drawings and general provisions, including supplementary conditions, of this contract apply to this section.

3. Painting of exposed electrical equipment/raceways as required by the Architect.

system connection(s) shall be installed in accordance with this specification.

2. Electrical system acceptance, testing, and documentation.

. Electrical, Telephone, and Cable Television (CATV) Services:

and requirements pursuant to inspection(s) shall be adhered to.

b. Raceways, boxes, gutters, enclosures, power wire, cable, and conductors.

h. Utility company (electric, telephone, and cable television) provisions for service.

d. Fused disconnect switches, safety switches, fuses, and circuit breakers.





 1. Sub-Reserved and a specific of a		
 a initialization interpretation of the structure constrainty of t		Α
 a. In the construction of the construction of the section of the the construction of the section of the construction of the construction		
 A Purchastic Anterior value of the excellulate that do not service carding state consoliding strends with the service of the excellulate of the excellul		3
C Set Segment Adaptes shall be provided with either die dati duminum or coat ion, with galax construction galaxies, double for capated and shall be effective of provided galaxies (double of capated and shall be effective of each of the set of the set of each of the set of each of the set of the set of the set of the set of each of the set of the	le rocks, paving material, cinders, large sharp angular materials / substances, or corrosive materials and like. Jate to maintain required cover as indicated per NEC / CEC Table 300.5, "Minimum Cover Requirement ining different dry utilities in a common trench shall be utilized where practical, within utility company allowa nduit systems shall not share a common trench with wet utility systems (i.e. water, sewer, sanitary drains, pro separation clearance shall be maintained between wet and dry conduit systems defined by the civil eng- lied in conduit trenches as identified on the drawings. alled in trenches at not more than 12" above the underground installation, for direct buried conduit installed set forth by the AHJ and / or Utility Company. If applicable, ensure trenches are inspected prior to backfill. al field conditions. Every effort shall be made to reduce / eliminate the need for sharp turns / bends. ected / suitable for the environment in which they are installed. For example, traffic rated covers / accept r the manufacturer shall be utilized where pull boxes are installed in a location subject to vehicular than the overall height and 4-6" wider (all four sides) that the pull box enclosure. Pull boxes shall be installed soncrete / pavement where subject to occasional, non-deliberate vehicular traffic, an 8" wide section of cor- ne pull box, extending from grade to 8" below grade.	
B. Box Extension Adaptors shall be provided with either die cast aluminum or cast iron, with gastet conduction appropriate for use with intended. Elements and adaptors shall be of appropriate grant construction (i.e. Single, double) as required and shall be either to flarged as required and shall be either to flarged as required and shall be either to flarged as required and shall be either to appropriate use (i.e. retro or sound). Prior to application excess works, dirt, old. C. Putty irods shall be noticable and listed for the appropriate use (i.e. retro or sound). Prior to application excess works, dirt, old. C. Putty irods shall be available and its for the application of consult tittings. Conducts shall be socied with a smooth and exe excess putty pad material to allow for the application of consult tittings. Conduct shall be socied as they enter/layers the box. Felle application in accessing extension, ploater rings, studs, clamps, and straps as required. DI EXECTION 26.05.34.03.33 EXECTION 26.05.34.03.33 EXECTION 26.05.34.03.33 DI EXECTION 26.05.46.03.33 EXECTION 26.05.34.01.34.00.05.EXEVICE EXECTION 26.05.34.01.34.00.05.EXEVICE PART 1 - GENERAL I.I. SUMMARY A. This section includes: Complete underground electrical raceway system. E. Funish lobor, moterials, equipment, components, and necessary services to support design requirements as show on the drawing of in thris section. D. Philobases C. Conduil d. Ducts E. Function Section Sectio	ved. maintain minimum cover requirements as defined in the NEC / CEC Table 300.5, "Minimum Cover Requirema h the NEC / CEC cover shall be defined as the shortest distance measured between a point on the top surface raceway and the top surface of finished grade, concrete, asphalt, or other surface. Lower cover shall o ete encasement. conduit shall be rigid metal conduit or schedule 80 PVC.	0
D 8. Box Extension Adaptors shall be provided with either die cast aluminum or cast iron, with gasket construction appropriate for use with intended. Extensions and adaptors shall be of appropriate gang construction (i.e. Single, double) as required and shall be either rationary Prior backshall be moldable and listed for the appropriate use (i.e. Fire stop or sound). Prior to application excess water, dirt, oil, or removed. Ensure the pad size is selected appropriately to ensure the entire surface of the box is covered with a smooth and every excess purpy pad material to allow for the application of conduit fittings. Conduits shall be sealed as they enter/leave the box. Follor application instructions. D Provide outlet box mounting brackets, hangars, extension, plaster rings, studs, clamps, and straps as required. END OF SECTION 26 05 46.13 - UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE PART 1 - GENERAL 1.1 SUMMARY A. This section includes: Complete underground electrical raceway system. B. Furnish labor, materials, equipment, components, and necessary services to support design requirements as show on the drawings a in this specification. 1. Principal features of acceptance include: a. Tenching b. Pull boxes	K RESULTS FOR ELECTRICAL :LECTRICAL POWER CONDUCTORS AND CABLES. ID BONDING FOR ELECTRICAL SYSTEMS > BOXES FOR ELECTRICAL SYSTEMS FOR ELECTRICAL SYSTEMS FOR ELECTRICAL SYSTEMS rs: supplementary conditions, of this contract apply to this section. ing surfaces (asphalt, concrete, vegetation, etc.). limited to: equipment pads, luminaire bases, as required by the Architect / Civil / Structural Engineer. accordance of the latest published requirements of the following codes and standards: <i>i</i> th California State Adoptions and Amendments. munication utilities shall adhere to the respective utility company design drawings (i.e. "handout package"	
 B. Box Extension Adaptors shall be provided with either die cast aluminum or cast iron, with gasket construction appropriate for use wit intended. Extensions and adaptors shall be of appropriate gang construction (i.e. Single, double) as required and shall be either raflanged as required. C. Putty Pads shall be moldable and listed for the appropriate use (i.e. Fire stop or sound). Prior to application excess water, dirt, oil, or removed. Ensure the pad size is selected appropriately to ensure the entire surface of the box is covered with a smooth and ever excess putty pad material to allow for the application of conduit fittings. Conduits shall be sealed as they enter/leave the box. Follow application instructions. D. Provide outlet box mounting brackets, hangars, extension, plaster rings, studs, clamps, and straps as required. 	TRICAL CONSTRUCTION AND SERVICE rground electrical raceway system. components, and necessary services to support design requirements as show on the drawings and specified include:	D
3.7 ACCESSORIES	ided with either die cast aluminum or cast iron, with gasket construction appropriate for use with the outlet b hall be of appropriate gang construction (i.e. Single, double) as required and shall be either round, square, ted for the appropriate use (i.e. Fire stop or sound). Prior to application excess water, dirt, oil, or debris shall cted appropriately to ensure the entire surface of the box is covered with a smooth and even thickness. To or the application of conduit fittings. Conduits shall be sealed as they enter/leave the box. Follow manufactu 's, hangars, extension, plaster rings, studs, clamps, and straps as required.	

1

 J. J. M. S. S.			
 A. S. A. S.		B. Boxes 1. Manufacturers	A. Where circuit conductors are spliced within a pull box, junction box, or terminated on equipment within or supported by a pull box, junction box, or the associated equipment grounding conductor shall be terminated at the box via listed grounding means in accordance to NEC Article 250.
		 a. Outlet Boxes - Bowers, Steel City, Raco, or engineer approved equal. b. Weatherproof outlet boxes - Bell, Red Dot, or engineer approved equal. 	B. Metal raceways, cable trays, enclosures, frames, fittings, and other metal non- current-carrying parts that are to serve as grounding conductors sha bonded where necessary to ensure electrical continuity per NEC Article 250.96.
 A. A. A. S. A. S.		 c. Weatherproof outlet box "While-in-use" locking cover - Red Dot "CK" series or engineer approved equal. d. Masonry Boxes - Bowers, Steel City, Raco, or engineer approved equal. 	C. Ground non-current-carrying metallic parts of fixed, portable, and mobile equipment and associated fences, housings, enclosures, floors, supporting structures
 S. Marking and a second second		 e. Pull boxes, Junction Boxes, and Gutters - Hoffman, Circle AW, or engineer approved equal. f. Vaults (non-utility company use), Handhole enclosures - Christy, Oldcastle Enclosure Solutions, Brooks Products, or engineer approved equal. 	 D. Bond all conductive components of the conduit system, both interior and exterior, to the building grounding electrode system. Bonding connect
 Journal of the second se		C. Accessories	shall be made as close as practical to the equipment ground bus.E. Bond all conductive components of the communications raceways system, including but not limited to: conduit, cable trays, conduit sleep
		 a. Box Extension Adaptor - Bell, Red Dot, or engineer approved equal. b. Butty Bada 200 Hitti or engineer approved equal. 	anticipated for use with low voltage signaling or data cabling. Bonding connections shall be made via two (2) no. 10 AWG copper conduct Maintain a minimum of 4" separation. Where exposed to physical damage, install a no. 6 AWG copper conductor in lieu of the references no. 10 A
 Set Substrate Substrate	D	b. Fully Fads - SM, Hill, or engineer approved equal.	 copper conductor. F. Grounding Electrodes: Grounding electrodes present at each building or structure shall be bonded together to the grounding electrode system.
 Amount of the second sec	רי כ		exceptions as defined per the NEC. Grounding or bonding conductors shall be connected to the grounding electrode by exothermic welding, I lugs, listed pressure connectors, listed clamps, or other listed means. Electrodes permitted per NEC Article 250, part III for grounding include:
 J. J. S. S.	5	 A. Raceway systems shall be installed in accordance to uses permitted per code. 	 Metal underground water pipe in direct contact with the earth for 10 feet and electrically continuous. Metal building frame or structure.
 Junt M. (1999) And J. (1999) And J.		B. Raceways and boxes penetrating a listed fire rated assembles (i.e. walls, floors, and ceilings) shall be installed with use of an UL approved classified through-penetration fire stop systems. Fire Stop System installation must meet requirements of ASTM F 814, UL 1479 or UL 2079 tested assemblies that	 Concrete-encased electrodes. Ground Rings.
 See Series of Section 2 (Section 2) Section 2 (Section 2)<td></td><td>provide a fire rating equal to that of construction being penetrated.</td><td> Rod and Pipe Electrodes. Listed Electrodes. </td>		provide a fire rating equal to that of construction being penetrated.	 Rod and Pipe Electrodes. Listed Electrodes.
 J. S. S.		C. Trenching and backfilling for underground raceway systems is the responsibility of the contractor. Refer to trench requirements detailed on the drawings and Section 26 05 46.13 UNDERGROUND ELECTRICAL CONSTRUCION AND SERVICE requirements. The contractor is required to implement traffic control and provide barriers as required to protect excavated areas.	 Plate Electrodes. Other Local Metal Underground Systems or Structures.
 B. Scherenkersen er er		 D. Seismic Support shall consist of approved channel (either in combination or pierced), heavy/standard duty concrete inserts, hangers, nuts, hardware, 	G. Secondary Equipment:
		general support fittings (i.e. Angle supports, beam clamps, pivot fittings, retrofit fittings, brace-anchor fittings, and hinge fittings). Electrical equipment shall be anchored and braced to meet the horizontal and vertical forces identified in the California Building Code.	1. Switchgear, Motor Control Centers, Panelboards, and Loadcenters - Ground conductors of feeders and branch circuits shall terminate at equipment ground bar or bus. Provide ground bushings for metallic conduits connecting to the physical enclosure. Isolated ground conductors
 A. B. S. S.	3	2 CONDUIT SYSTEM	 Metallic structures, enclosures, piping, ductwork, raceways, pull boxes, junction boxes, outlet boxes, etc. associated with or in close proximity to be banded and grounded as part of the electrical system.
		 A. Minimum conduit size shall be ½", with the following exceptions: 1. When a larger size is required to meet Code or as identified on the contract documents. 	 Fixed Appliances fastened in place or connected by permanent, fixed, wiring methods shall be provided with a ground lug for connection or branch circuit/feeder equipment grounding conductor.
 Jan Bartana and Samphane and Sa		2. Underground and/or under slab conduit shall be a minimum ¾".	 Motors and Starters - Terminate grounding conductors at the ground lug integral to the enclosure, terminal box, etc. Dependence - Install an equipment banding import economic targets at the ground lug integral to the enclosure, terminal box, etc.
 J. S. J. S. S.		B. Systems (i.e. power, control, communications, etc.) shall be installed in dedicated raceways. Systems shall not be combined within a raceway unless specifically identified in the construction documents.	5. Receptacies - install an equipment bonding jumper connecting the grounding terminal of the receptacie to a grounded device box/junction. The box shall be metallic. The equipment bonding conductor shall be terminated at the box by either a listed grounding clip or grounding sc Size the equipment bonding conductor pursuant to the overcurrent device protecting the branch circuit conductors
 J. M. And S. S.		C. Install conduit runs in accordance to the schematic representation as indicated on the drawings and as specified. Modify conduit runs to suite field conditions as accepted by the engineer of record.	 6. Floor Boxes - Shall be designed and listed to provide ground continuity between the device and the box. 7. Lumingires - Shall be grounded through the associated conduit system. Where the lumingire manufacturer provides a group ground wire control.
 J. J. J. S. J. J.		D. Install conduit runs for branch circuits and or feeders where only circuit numbers are identified on the plans, without schematic conduit routing shown.	to the branch circuit grounding conductor
 J. Construction of the state of		E. Install conduit runs in straight lines, parallel to planes of walls and/or ceilings, with uniform and symmetric elbows, offsets, and bends. Conduit shall not be run diagonally.	3.3 TESTING
 J. C. S. Construction of a construc		F. Be conscious of the elevation by which underground conduits are installed. The open conduit end at the building and/or where it transitions into distribution or upment that has a bight of provent the infiltration of water through the conduit recovery.	A. Ground resistance testing shall be conducted per IEEE standards four-point fall -of-potential method to determine the resistance between the grossystem and earth.
 J. Control and the product of the prod		G. Conduit shall be installed such that it does not interfere or block equipment, ingress/egress, or access hatches.	B. Ground resistance shall not exceed 25 ohms.
 A product of the second second		H. Conduit shall be securely fastened by means of clamps and/or straps as required per the NEC. Type 316 stainless steel straps and/or clamps shall be used with exposed PVC-coated rigid steel conduit. Provide appropriate conduit bandars, supports, fasteners, and saismic rottraints	C. Ground resistance testing shall be performed in the presence of the authority having jurisdiction.
 a bischer ihrerender einer ei		 Liquid-tight, flexible conduit shall be used in short lengths as required for final motor connections and/or vibrating equipment. 	 E. GFI circuit breakers and GFI convenience receptacles shall be thoroughly tested during installation and at the completion of the project.
 Markamer and a basis basis basis and a subset of constraints and a subset		J. Conduit bends shall be made such that the conduit will not be damaged and the internal diameter of the conduit will not be effectively reduced. Form or field bend conduit with appropriate tools. Conduit shall be routed such that it does not exceed a cumulative angular sum of 360 degrees in bends	END OF SECTION 26 05 26
 Junction of a product of a prod		between junction boxes, pull boxes, conduit bodies, handholes, and vaults	
 Instruments and the standard standa		K. When re-using existing raceway(s) and/or installing new raceways, verify raceway(s) are free of internal debris and are not crushed or creased prior to installing conductors or cables. The use of a mandrel may be required. The contractor shall replace conduit sections that are determined to be demaged and/or obstructed.	
 Internal provide provide and provide and		 Conduit seals shall be installed as indicated on the drawings and in the following applications: 	PART 1 - CENERAL
 Solution of the state of the st		1. Exterior conduit upon installation of cables and/or conductors. Utilize pliable duct seal or waterproof expanding foam as necessary.	
 Instrument of the state is a state state is a state i		acceptable. Spare conduit identified on the drawings shall be retained as spare and shall not be used during construction unless prior authorization is aiven from the engineer of record	A. This section includes: Raceways and boxes for electrical systems.
 Mathematical and a statistic stat		N. Special attention shall be paid to atmospheric conditions (i.e. Corrosion, sunlight, chemicals, abrasion, moisture) and occupancies pursuant to the NEC.	B. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein this specification
 default for the default for the d		Raceway systems shall be suitable for the environment in which they are installed. O. Use of dissimilar metals shall not be allowed. Boxes, fittings, enclosures, and conduit supports shall be of the same metal, with or without cogatings, as the	 Principal features of this installation include: Conduit and associated fittings
 All control is a strategy of the strategy of the		conduit type.	 b. Cable sleeves c. Outlat, daviag, pull, and junction bayes
 Here is a set above provide stage and set above provide stage above provi		P. Galvanized Rigid Steel (GRS) risers shall be used where conduit runs are installed equal or in excess of 150 LF. GRS elbows shall be used where the top of the elbow is installed less than 18 in. below finished grade, with conduit rising up from below grade to terminate at an equipment enclosure, disconnect switch device, machinery, etc. above grade, GRS risers and elbows shall either be PVC coated, as identified in this specification, or tape wrapped to a	 d. Conduit bodies With Conduit and Junction Boxes
 G. Josephiles for the restrement of products of products of the restrement of the restrem		minimum of 3" above finished grade or the top of the equipment pad or slab, whichever is applicable to the installation condition.	e. Wire Gutters f. Handhole enclosures
 See Summarized Control (1) Sector (1) Sect		Q. Raceways installed under metal-corrugated sheet roof decking, either exposed or concealed, shall be installed and supported so the nearest outside surface of the raceway (or cable) is not less than 1-1/2" from the nearest surface of the roof decking.	 g. Concrete pull boxes and vaults h. Fiberglass/composite pull boxes and vaults
 Justimum Justimum<		R. Expansion fittings for Expansion Joints - Expansion fittings and telescoping sections of metallic raceways shall be made electrical continuous by equipment bonding conductors or other means.	1.2 RELATED SECTIONS
 A. Byscherolas Local A. Edit on various of the PLC is also boarded. Health back advances is an explored in advances is an explored in advances in a set in the process many of the process many o		3 RACEWAYS	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 26 05 46.13 UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE
 A characterized in the fact in the intervent servers of the interpret in the intervent servers of the interpret intervent servers of the interpret intervent servers of the intervent s	,	A. Rigid Non-Metallic Conduit - Rigid Polyvinyl Chloride (PVC) schedule 40 and/or 80. Utilize below grade, in/under slab or foundation, not where subject to physical damage or at operating temperatures outside of product listing. Cut ends shall be trimmed inside and outside to remove rough edges	 Section 26 05 53 IDENTIFICATION OF ELECTRICAL SYSTEMS Section 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
 Constant Loss, find a factor of a strategies of a method strate strate strate strate strate. Clarge in a factor of a strate strat		 B. Galvanized Rigid Steel (GRS) Conduit - Utilize where exposed between +18" below grade and +8' above finished grade where exposed to physical 	 Related Sections Under Other Divisions: a. The General provisions, including supplementary conditions, of this contract apply to this section.
 Access of the difference of the differe		damage. Cut ends shall be reamed or otherwise finished to remove rough edges. Tape wrap where located below grade. C. Metallic Tubing (EMT) - Utilize exposed or concealed, where not subject to physical damage, underground, and in/under slab. Couplings and	 b. Painting of exposed raceways and/or boxes as required by the architect. c. Grading, patching, and repairing of existing surfaces, including but not limited to: asphalt, concrete, and vegetation, as required by the architect.
 Becker Less Jay Less Less Less Less Less Less Less Les		connectors used with shall be made up tight and of die cast, insulated/non-insulated, set screw type. Stainless steel fittings shall be used in high corrosive areas. Compression type, weatherproof fittings shall be used in damp and wet locations.	Architect/Civil Engineer.
 be beneformed in the series where we want to be be able of the series of the series that the series of th		D. Electrical Non-Metallic Tubing (ENT) - Shall be used in concealed, dry locations within walls, floors, and ceilings. Special attention shall be paid to buildings exceeding three floors above grade. Do not use where subject to physical damage, in direct bury applications, in bazardous (classified)	1.3 REQUIREMENTS
 but a stranger of stars, there not a outful stores of the full presentation but for the full stores in the stranger of stars, there not a outful stores in the stores in the stranger of stars, there not a outful stores in the stranger of stars, there not a outful stores in the stranger of stars, there not a outful stores in the stranger of stars, there not a outful stores in the stranger of stars, there not a outful stores in the stranger of stars, there not a outful st		locations, in theaters, where exposed to direct sunlight, or at operating temperatures outside of product listing. Fittings, outlet boxes, and cement shall be designed and listed for use with ENT. ENT shall be color coated as follows: BLUE for branch circuiting. YELLOW for communications, and RED for fire	 Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories equivalent).
 Le behavior Long (A), have be used in here exceed concerded contents to one own own events to characterize or contents (A) or content (A) or contents (A) or contents (A) or contents (A) or cont		alarm and emergency systems. Where nails and/or screws are likely to penetrate installed ENT, a steel sleeve, plate or clip not less than 1.6mm in thickness shall be used to protect the tubing.	 National Electrical Code (NEC) with California State and local amendments. ULL - Elevible Metal Conduit
 Second procession in procession in procession in the procession in the		E. Flexible Metallic Tubing (FMT) - May be used in interior exposed/concealed locations. Do not use in wet locations, hoistways, hazardous (classified) locations, underground or embedded in concrete/aggregate, and where subject to physical damage. All out ondershall be trimmed or otherwise	 UL 5A - Nonmetallic Surface Raceway and Fittings UL 6 - Electrical Biold Mater Construit. Start
 A regression is not any sector and procession is beings such as displayed by the sector is being such as d		finished to remove rough edges, except where fittings that thread into the convolutions are used. Flexible metal conduit shall not be used in cumulative lengths exceeding 30 linear feet. Liauid Tiaht Flexible Conduit shall be installed in damp and wet locations. Fittings shall be set screw squeeze type use	 UL 6 - Electrical Rigid Metal Conduit - Steel UL 6A - Electrical Rigid Metal Conduit - Aluminum, Stainless Steel UL 50 - Electrical Rigid Metal Conduit - Aluminum, Stainless Steel
 Const Suppris, Provide consult imports stored in production constraining of const		for appropriate damp, wet, or dry location. Fittings shall be of grounding type.	 UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations. UL 360 - Liquid Tight Flexible Steel Conduit
 meter or cyclin at equipte for those despite, sould one shares a could be a dycen as a dyce	.'	4 Conduit Supports - Provide a conduit supports system consisting of; clamps, straps, brackets, clips, j-hooks trapeze hangers, "C" channel strut etc. The use of J-hook style supports shall be restricted to not exceeding 1" conduit and wood frame construction. Ensure support is provided with isolation	 9. UL 514A - Metallic Outlet Boxes 10. UL 514B - Conduit, Tubing, and Cable Fittings
 be be being work supported for the ALC construction required to be been approximation and to be the support of the ALC construction required to be been approximation and to be been approximation and the approxim		material or cushion as required for shock absorption, sound and vibration isolation, protection from corrosion and abrasion, and allowance for expansion and contraction. Conduit supports shall be selected for use given the conduit size and weight. Follow manufacturer recommendations for	 UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers UL 651 - Schedule 40, 80, Type EB, and A Rigid PVC Conduit and Fittings
 Constituting: Elitic granults converting true with the conduit system instales. Hitting shall be instaled in the depend style in used to granulting and the granults is dependent of the stale of a minimum per NEC Article 314. Adhere to volume and it accountions or benefities in the New Health Conduit. Conduit is dependent of the stale of minimum per NEC Article 314. Adhere to volume and it accountions or benefities in the New Health Conduit. Conduit is dependent of the stale of minimum per NEC Article 314. Adhere to volume and it accountions or benefities in the New Health Conduit. Conduit is dependent of the stale of minimum per NEC Article 314. Adhere to volume and it accountions or benefities in the New Health Conduit. L. Used A conduit and granulted in accountance to NEC Article 304. Adhere to volume and it accountance and it accountance to NEC Article 314. Adhere to volume and it accountance and the accountance of NEC Article 314. Adhere to volume and it accountance and the accountance of NEC Article 314. Adhere to volume and it accountance and the accountance of NEC Article 314. Adhere to volume and it accountance and the accountance of NEC Article 314. Adhere to volume and it accountance and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the accountance of NEC Article 314. Adhere to volume and the a		pipe spacing when supported, bolt torque. Conduit supports are subject to the approval of the AHJ. Corrections required to obtain approval shall be the sole responsibility of the contractor.	 UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit UL 797 - Electrical Metallic Tubing - Steel
 being: index things then preced strengs that be highlight by being shall be highlight when used when used when used with nacewary that contain 4 being: index that be highlight by being, by		5 Conduit Fittings - Fittings shall be appropriate for use with the conduit system installed. Fittings shall consist of connectors, rigid and flexible, adaptors, shings, liquid tight (as required), locknuts, etc. Connection devices and or fittings that depend solely on solder shall not be used for grounding and	15. UL 797A - Electrical Metallic Tubing - Aluminum 16. UL 886 - Outlet Boxes and Fittinas for Use in Hazardous (Classified) Locations
 Notes 	0	onaing. Protect tittings from physical damage. Fittings shall be tight using suitable tools. Fittings shall be insulated when used with raceways that contain 4 WG or larger conductors per NEC 300.4.	17. UL 1660 - Liquid-Tight Flexible Non-metallic Conduit 18. UL 1653 - Electrical Non-Metallic Tubina
 code. A Animula including and be bonded and grounded in accordance to NE Article 20. C. Bider worker for heapters include in accordance to NE Article 20. C. Bider worker for heapters include in accordance to NE Article 20. C. Bider worker for heapters include in accordance to NE Article 20. C. Bider worker of neapters include in accordance to NE Article 20. C. Bider worker of neapters include in accordance to NE Article 20. C. Bider worker of neapters include in accordance to NE Article 20. C. Bider worker of neapters include in accordance to the darge of the box, plotting and box on adverting, or atild darge more them of acting constructed in accordance or project therafters. In addition, there shall be neapters include in accordance or project therafters in a dordance in a thread surface or project therafters in a dordance in the darge of the box. E. Juncia in accordance or project therafters in the addition on advertice and project box of the adverted in any structure in accordance or project therafters in a dordance in adverte in a structure in any structure in accordance or a thread set adverted in a structure in any structure in adverted in a dordance in adverted in a structure in any structure in adverted in a structure in adverted i	•	6 BUXES A. Junction boxes, pull boxes, and conduit bodies shall be sized a minimum per NEC Article 314. Adhere to volume and fill calculations as identified in the	19. UL 2225 - Standard for Cables and Cable-Fittings for Use in Hazardous (Classified) Locations
 Metrics course statule outside ou		Code.	20. American National Standards Institute (ANSI) OST and OS2 21. National Electrical Manufacturers Association (NEMA) FB1 and 250
 D. Terminal blocks shall be installed in junction/terminal boxes as required. E. Pustant to NEC Article 314, boxes installed in wells or cellings with a surface of concrete, tile, uppsum, plaster, or other noncombuttible motion (in grading and the properties) and the properties of the requirement of edge of the box, the finithed surface or more than a V. In. In walls and cellings constructed of wood or other combustible surface motion (in grading constructed) is built with the limited surface or project hierbeits with the scale is non-restricted by obstructions such as built or the dege of the box. G. Junction and Jibox shall be installed such that the thor access in normaticit boxes plaster that as trace monor blast is the installed such that the restruction of the requirements of the installed such that the restruction of the requirements of the installed such that the restruction and individual to the restruction. Bell and feature, manufactured in accordance with ANSI CRR features with the access in the active cancel high strate installed such that the access cancel high strate installed such that the access cancel high strate installed such that the access cancel high strate installed such that as access cancel high strate installed such that success cancel high strate installed such that the access cancel high strate installed strate installed according to the requirements of the installed strate installed according to the requirements of the installed strate installed according to the requirements of the installed strate installed according to the requirements of the installed strate installed according to the requirements of the installed strate area of installed strate and individual the motion installed strate area of this dual to base strate area of this dual to base strate area	I	 Metallic boxes shall be bonaed and grounded in accordance to NEC Article 250. Listed weatherproof boxes, conduit bodies, and fittings are required for use in damp and wet locations. 	PART 2 - PRODUCTS
 E. Possant Io NEC Article 314, boxes installed in walk or ceilings with a surface of concrete, like, gypsum, plotter, or other noncombatible moterial, using a flush-type cover or face/plot is shall be installed is with the instaled surface or project therefrom. In addition, there shall be no gaps around a flush-type cover or face/plot is shall be installed such that concess is not restricted of wood or other combustible surface material, boxes, ploster rings, or listed extenders shall be installed such that access is not restriction shall be installed wells: and non-motellic boxes indirect in firsted accessing of the box. F. Junction and public boxes and junction boxes installed in fire roled constructions shall be installed wells: and non-motellic boxes into a function boxes installed in fire roled construction shall be installed wells: and non-motellic boxes into accessing between boxes control be less than 24 in. The spacing between boxes control be less than 24 in. The spacing between boxes control be less than 24 in. Alter completence with RNA Standard TC-1 (conduit) and TC-3 (liming). Galvanized Kigid Steel (KR) Conduit - Hol-dig galvanized, zinc coarding to the requirements of their classification. Netweer 1 accordance with ANSI CR0. Galvanized Kigid Steel (CRR) Conduit - Hol-dig galvanized, zinc coarding to the requirements of their classification. Netweer 1 accordance with ANSI CR0. H. Outlet Boxes I. Unnichine boxes shall be installed so that the surface area of the boxes one permitted for residencial conduit. Manufactured in accordance with ANSI CR0. I. Bechical North and Cr2. I. Unnichine boxes shall be used throughout unless of therwise noted in the specification well with the threeded on the down and the top specification well wells: conduit the specification wells wells wells: conduit figure 30 in the specification wells wells wells: conduit figure 30 in the specification wells wells wells wells wells wells wells wells wells		D. Terminal blocks shall be installed in junction/terminal boxes as required.	2.1 MATERIALS
 the finished surface more than a /kin. In walls and ceilings constructed of wood or other combustible basis, plaster rings, extension rings, or listed extendes shall be finished like finished surfaces more than 3/8 in. of the edge of the box. F. Junction and pull boxes shall be installed such that according the requirements. C. Outlet boxes and junction boxes installed in fire roted construction, shell construction, bell end feature, manufactured in accordance with ANSI CBU according to the requirements of their classified for fire residence. D. Utel Boxes H. Outlet Boxes shall be installed a plant the surface area of individuel boxes shall be granutate carea. H. Outlet Boxes in the boxes does not exceed 100 square feet of surface area. H. Outlet Boxes in the boxes adde in the surface area of individuel boxes shall be granutate carea. H. Outlet Boxes I. Mon-metallic Douing (BMI) - Liping aquivarized carea of individuel boxes and be installed to the surface area of individuel boxes and the during installed to the surface area of individuel boxes and be according to the surface area of individuel boxes and be according to the cost and the according and the surface area of individuel boxes and be according to the surface area of individuel boxes and be according to the cost and the according		E. Pursuant to NEC Article 314, boxes installed in walls or ceilings with a surface of concrete, tile, gypsum, plaster, or other noncombustible material, using a flush-type cover or faceplate shall be installed so that the front edge of the box, plaster ring, extension ring, or listed extender will not be set back of	 A. Raceways 1. Raceway product shall be rated for use with 90 degree Celsius power wiring conductors.
 Build out pull bases shall be installed such that access is not restituted to base shall be installed out that access is not restituted to restitute the response of the response of		the finished surface more than a ¼ in. In walls and ceilings constructed of wood or other combustible surface material, boxes, plaster rings, extension rings, or listed extenders shall be flush with the finished surface or project therefrom. In addition, there shall be no gaps around a flush-type cover or	 Rigid Non-Metallic Conduit Schedule 40, wall thickness of 0.113 inches. Polywinyl Chloride (PVC) construction. Bell and feature, manufactured in accordance with NEN
 G. Oullet boxes and junction boxes installed in fire rated construction shall be installed Metallic and nonmetallic boxes that are classified for fire resistance by Underwiters Laboratories (UL) Inc. The spacing between boxes cannot be tess than 24 inches, however closer spacing shall be permitted where wall aggregates under a classification. These materials shall be found under CLIV in the general protective materials and to the boxes does not exceed 16 square inches, environmetal for fire resistance. The lock of CMU in the surger state (CMU in the surger state) and CC3 (fittings). G. Calvanized Rijd Steel (GRS) Conduit - Hat-dip galvanized coarding manufactured in accordance with ANSI CR0. Resistance Directory published by UL, Boxes shall be installed a cording in surgice area of the boxes does not exceed 100 square inches per 100 square inches per		raceplate greater than 3/8 in. at the edge of the box. F. Junction and pull boxes shall be installed such that access is not restricted by obstructions such as but not limited to: piping, ladders, and equipment	standard TC-2 (conduit) and TC-3 (fittings). b. Schedule 80, wall thickness of 0.154 inches. Polyvinyl Chloride (PVC) construction. Bell and feature, manufactured in accordance with NEX
 b) oncomments conductores you much metages and zero of individual bases does not exceed 16 square inches, and the aggregate surface area of the bases does not exceed 10 square inches per 100 square inches and the dividual bases does not exceed 16 square inches, and the aggregate surface area of the bases does not exceed 10 square inches, and the aggregate surface area of the bases does not exceed 10 square inches and the general state inches and and the aggregate surface area of individual bases does not exceed 16 square inches, and the aggregate surface area of the bases does not exceed 10 square inches and the general state inches and and the aggregate surface area of individual bases does not exceed 16 square inches, and the aggregate surface area of the bases does not exceed 10 square inches, and the aggregate surface area of the bases does not exceed 10 square inches and the surface area of individual bases does not exceed 16 square inches, and the aggregate surface area of the bases does not exceed 10 square inches and the aggregate surface. The inches the i		G. Outlet boxes and junction boxes installed in fire rated construction shall be installed Metallic and nonmetallic boxes that are classified for fire resistance	standard TC-2 (conduit) and TC-3 (fittings). 3. Galvanized Rigid Steel (GRS) Conduit - Hot-dip aalvanized, zinc coated riaid steel conduit, manufactured in accordance with ANSI C80.1
 aggregate suface area of the boxes does not exceed 100 square increase per 100 square feet of suface area. H. Outlet Boxes Non-metallic outlet boxes are permitted for residential applications only where used with type NM-B "Romex" cable. Galvanized Steel outlet boxes and permitted for residential applications only where used with type NM-B "Romex" cable. Galvanized Steel outlet boxes are permitted for residential applications only where used with type NM-B "Romex" cable. Galvanized Steel outlet boxes are permitted for residential applications only where used with type NM-B "Romex" cable. Galvanized Steel outlet boxes are permitted for residential applications only where used with the sele occurs on REC requirements. Luminaire boxes and Impholders shall be used through out eless otherwise noted in this specification. Metallic boxes shall be grounded and bonded in the building structure. Luminaire boxes and low boxes and low physe metal applications only where used with the added entries or hubs. Outlet boxes supported from the outlet box and shall be supported independently from the building structure. Weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit etc. Conduit Supports - Unistrut, Caddy or engineer approved equal. Conduit supports shall consist of connectors, rigid and flexible, adaptors, busings, liquid tight (as required), locknuts, etc. Conduit Supports - Unistrut, Caddy or engineer approved equal. Fittings shall be appropriate grang construction (it.e. Single, double) as 		opening protective materials are installed according to the requirements of their classification. These materials shall be found under CLIV in the Fire Resistance Directory published by UL Boyes shall be installed so that the surface area of individual boyes does not exceed 14 source incluses and the	 Electrical Metallic Tubing (EMT) - Light gauge, steel raceway with zinc galvanized coating manufactured in compliance with ANSI C80.3. Electrical Non-Metallic Tubing (ENT) - Pliable corrugated raceway of circular cross section made of Polyvinyl chlorida (PVC) manufactured
 H. Outlet Boxes H. Outlet Boxes I. Non-metallic outlet boxes are permitted for residential applications only where used with type NM-B "Romex" cable. I. Galvanized Steel outlet boxes shall be used throughout unless otherwise noted in this specification. Metallic boxes shall be grounded and bonded in accordance to NEC requirements. I. Luminaire boxes and lampholders shall be listed for such purpose and shall have threaded entries or hubs. Outlet boxes supporting luminaires shall be supported independently from the building structure. I. Weatherproof outlet boxes and covers shall be discast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 8 rating. I. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the exeptacle that is weatherproof when the exeptacle that is weatherproof when the evice indicated on the drawings. I. Outlet boxes for the device indicated on the drawings. 		aggregate surface area of the boxes does not exceed 100 square inches per 100 square feet of surface area.	 compliance with NEMA Standard TC-13. 6. Flexible Metal Steel Conduit (FMC) - Galvanized corrosion resistant, high strength steel alloy. Metal strip is belically formed into continuous.
 2. Galvanized Steel outlet boxes shall be used throughout unless otherwise noted in this specification. Metallic boxes shall be grounded and bonded in accordance to NEC requirements. 3. Luminaire boxes and lampholders shall be listed for such purpose and shall have threaded entries or hubs. Outlet boxes supporting luminaires shall be supported independently from the building structure. 4. Weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 3R rating. J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall be metallic and the appropriate gang construction (i.e. Single, double) as required for the device indicated on the drawings. C. Galvanized Steel outlet boxes shall be used throughout unless otherwise noted in this specification. Metallic boxes shall be grounded and bonded in accordance to NEC requirements. 3. Luminaire boxes and lampholders shall be listed for such purpose and shall have threaded entries or hubs. Outlet boxes supported independently from the building structure. I. Weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 3R rating. J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall be metallic and the appropriate gang construction (i.e. Single, double) as required for the device indicated on the drawings. 		 H. Outlet Boxes 1. Non-metallic outlet boxes are permitted for residential applications only where used with type NM-B "Romex" cable. 	 interlocked flexible metal conduit. Manufactured in accordance with Federal Specification WW-C-566c. I jauid Tight Flexible Metallic Conduit (LEMC) - Manufactured with a spiral wound strip of boows agues, corrected resistant, bot eligened statemetal.
 3. Luminaire boxes and lampholders shall be listed for such purpose and shall have threaded entries or hubs. Outlet boxes supporting luminaires shall be retaided for 50 lbs. or less. Luminaires weighing over 50 lbs. shall not be supported from the outlet box and shall be supported independently from the building structure. I. Weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 3R rating. J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is in use (i.e. "While-in-use" over). "While-in-use" covers shall be metallic and the appropriate gang construction (i.e. Single, double) as required for the device indicated on the drawings. 		2. Galvanized Steel outlet boxes shall be used throughout unless otherwise noted in this specification. Metallic boxes shall be grounded and bonded in accordance to NEC requirements.	steel. For 3/8" through 1-1/4" trade sizes, a square locked steel strip with an integral copper-bonding strip enclosed within the steel convolution For 1-1/2" through 4" trade sizes, the core is constructed with a fully interlocked steel strip. Elevible, rugged, flame retardant, PVC include a systemet
 the building structure. Weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 3R rating. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is in use (i.e. "While-in-use" over). "While-in-use" covers shall be metallic and the appropriate gang construction (i.e. Single, double) as required for the device indicated on the drawings. 		3. Luminaire boxes and lampholders shall be listed for such purpose and shall have threaded entries or hubs. Outlet boxes supporting luminaires shall be rated for 50 lbs. or less. Luminaires weighing over 50 lbs. shall not be supported from the outlet box and shall be supported independently from	over the steel core. The jacket shall resist oils, mild acids and exposure to sunlight. Rated for temperature range of -30 to +80 degrees Celsius.
 And NEMA 3R rating. J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is in use (i.e. "While-in-use" over). "While-in-use"		the building structure.	 Equilating a result of metallic contains - manufactured with a spiral of rigid FVC reinforcement imbedded within a flexible PVC wall, resistant oils, mild acids and exposure to sunlight. Rated for a temperature range of -30 to +80 degrees Celsius. Conduit Supports - Unistruit, Caddy or engineer approved equal. Conduit supports shall consist of clamps, straps, brackets, clips, i hooks traps.
J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is in use (i.e. "While-in-use" over). "While-in-use" over). "While-in-use" over). "While-in-use" over). "While-in-use" overs shall be metallic and the appropriate gang construction (i.e. Single, double) as required for the device indicated on the drawings.		 weatherproof outlet boxes and covers shall be die-cast metal, powder-coated silver finish, corrosion resistant, provided with threaded conduit ends, and NEMA 3R rating. 	 Conduit supports - unisitut, Cuday or engineer approved equal. Conduit supports shall consist ot; clamps, straps, brackets, clips, j-hooks trape hangers, "C" channel strut etc. Conduit Eittings - Thomas & Betts: O-7 Gedney, or engineer approved equal. Eittings shall be appropriate for use with the conduit support.
required for the device indicated on the drawings.		J. Outlet boxes for receptacles installed outdoors in a damp and/or wet locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is in use (i.e. "While-in-use" over). "While-in-use" covers shall be metallic and the appropriate gang construction (i.e. Single, double) as	Fittings shall consist of connectors, rigid and flexible, adaptors, bushings, liquid tight (as required), locknuts, etc.
K Maranny Poyos shall be suitable for use imbedded in concrete or mercany, and the line or receiver			

						Permit/Seal	Consultant	
 						ISSUE FOR BID		
						NOT FOR CONSTRUCTION		Stantec Archite 801 South Figue Los Angeles, C. Tel: (213) 955-9
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 Appd	2023.07.10 2023.05.12 YYYY.MM.DD	PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL	By	Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall veri drawing - any errors or o The Copyrights to all des or use for any ourpose o

2 PLAN CHECK REVISIONS

1 PLAN CHECK REVISIONS

Revision

ORIGINAL SHEET - ARCH E1

e spliced within a pull box, junction box, or terminated on equipment within or supported by a pull box, junction box, or like, rounding conductor shall be terminated at the box via listed arounding means in accordance to NEC Article 250.	SECTION 26 05 26 - GROUNDING AND BONDING OF ELECTRICAL SYSTEMS
, enclosures, frames, fittings, and other metal non- current-carrying parts that are to serve as grounding conductors shall be ensure electrical continuity per NEC Article 250.96.	PART 1 - GENERAL
g metallic parts of fixed, portable, and mobile equipment and associated fences, housings, enclosures, floors, and	1.1 SUMMARYA. This section includes: Basic grounding and bonding of electrical systems.
nents of the conduit system, both interior and exterior, to the building grounding electrode system. Bonding connections actical to the equipment ground bus.	B. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein in this specification for a complete grounded and bonded system.
onents of the communications raceways system, including but not limited to: conduit, cable trays, conduit sleeves / voltage signaling or data cabling. Bonding connections shall be made via two (2) no. 10 AWG copper conductors. paration. Where exposed to physical damage, install a no. 6 AWG copper conductor in lieu of the references no. 10 AWG	 1.2 DEFINITIONS A. Definitions shall be consistent with Article 100 of the National Electrical Code, with California State Amendments. I. "Reading lumpse". A reliable conductor to convert the required clastical conductivity between metal parts required to be electrically connected.
nding electrodes present at each building or structure shall be bonded together to the grounding electrode system, with ne NEC. Grounding or bonding conductors shall be connected to the grounding electrode by exothermic welding, listed ors, listed clamps, or other listed means. Electrodes permitted per NEC Article 250, part III for grounding include: er pipe in direct contact with the earth for 10 feet and electrically continuous. tructure. rodes.	 "Bonding Jumper" - A reliable conductor to ensure the required electrical conductivity between metal parts required to be electrically connected. "Bonding Jumper, Equipment" - The connection between two or more portions of the equipment grounding conductor. "Bonding Jumper, Main" - The connection between the grounded circuit conductor and the equipment grounding conductor at the service. "Ground" - The earth. "Grounded" (grounding) - Connected (connecting) to ground or to a conductive body that extends the grounded connection. "Grounded, Solidly" - Connected to ground without inserting any resistive or impedance device. "Grounded Conductor" - A system or circuit conductor that is intentionally grounded.
	1.3 RELATED SECTIONS
ground Systems or Structures.	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES Section 26 05 46.13 UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE Section 27 10 00 STRUCTURED CABLING
rol Centers, Panelboards, and Loadcenters - Ground conductors of feeders and branch circuits shall terminate at the r bus. Provide ground bushings for metallic conduits connecting to the physical enclosure. Isolated ground conductors shall	 A. Related Sections Under Other Divisions: 1. The General provisions, including supplementary conditions, of this contract apply to this section.
sures, piping, ductwork, raceways, pull boxes, junction boxes, outlet boxes, etc. associated with or in close proximity to shall ad as part of the electrical system.	1.4 REQUIREMENTS
ed in place or connected by permanent, fixed, wiring methods shall be provided with a ground lug for connection of the uipment grounding conductor. ningte grounding conductors at the ground lug integral to the enclosure, terminal box, etc.	A. Grounding and bonding of the electrical system shall be performed in accordance to the latest published requirements of the following codes and standards. Note, grounding and bonding of electrical systems shall be specific to electrical equipment and conductive material, establishing an effective ground-fault current path and personal safety.
equipment bonding jumper connecting the grounding terminal of the receptacle to a grounded device box/junction box. The equipment bonding conductor shall be terminated at the box by either a listed grounding clip or grounding screw.	 National Electrical Code (NEC), with California State Amendments, Article 250 - Grounding IEEE Standard 81 - Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials for a Grounded System IEEE Standard 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems
igned and listed to provide ground continuity between the device and the box. Inded through the associated conduit system. Where the luminaire manufacturer provides a green ground wire, connect it Inding conductor	 ASTM B1 - Hard-Drawn Copper Wire ASTM B8 - Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft. UL 83 - Thermoplastic-Insulated Wires and Cables
	7. UL 467 - Grounding and Bonding Equipment
all be conducted per IEEE standards four-point fall -of-potential method to determine the resistance between the ground	 A. Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or equivalent).
exceed 25 ohms. All be performed in the presence of the authority having jurisdiction.	PART 2 - MATERIALS
port shall be included in O&M documentation and provided to the owner prior to final acceptance.	2.1 MATERIALS
convenience receptacies shall be moroughly tested during installation and at the completion of the project.	 B. Grounding Conductor - Insulated green stranded (No. 8 AWG and larger) and solid (No. 10 AWG and smaller) copper. Insulated green with yellow strips is appendix to NEC.
	stripe is acceptable pursuant to NEC.C. Bonding Conductors - Shall be bare stranded copper, with the exception of solid bare copper for No. 10 AWG and smaller sizes as required per NEC.
d Boxes for electrical systems	D. Connectors, Clamps, Splices, Termination Components, & Mechanical Lugs - Industry standard type for connection grounds, bonding, splicing, tapping and similar. Shall be appropriate for the conductor size as permitted by the manufacturer.
	E. Ground Bars - 10" L x ¼" thick copper ground bar with wall mounting kit. Ground bar shall include tapped holes for grounding conductor connections. Extend a #6 AWG copper ground wire from the main electrical service to the ground bar. Attach the ground wire to the ground bar via a cad weld connection.
ays and boxes for electrical systems.	PART 3 - EXECUTION
oment, components, and necessary services to support the electrical work show on the drawings and specified herein in	3.1 GENERAL CONDITIONS
nstallation include: ted fittings	A. Grounding shall be performed in accordance to the National Electric Code Article 250 requirements.
and junction boxes	 B. Drive ground rods and install grounding conductors prior to construction of concrete slabs, structural equipment pads, and general equipment housekeeping pads. C. Grounding conductors shall be sized per the drawings. When a ground conductor size is not identified, the size shall be installed to meet minimum NEC
and vaults	requirements. Refer to NEC Table 250.66 for grounding electrode conductors and NEC Table 250.122 for equipment grounding conductors for grounding raceway and equipment.
pull boxes and vaults	D. Switches for controlling lighting loads shall be grounded in accordance to NEC Article 404. Switches shall not disconnect the grounding conductor unless otherwise indicated specifically on the drawings. The grounding circuit conductor for the lighting circuit shall be provided at the location where switches control lighting loads that are supplied by a grounded general-purpose branch circuit. Note exceptions as outlined specifically in NEC 404.4(C)1-7.
DN WORK RESULTS FOR ELECTRICAL IRGROUND ELECTRICAL CONSTRUCION AND SERVICE	E. Snap switches, including dimmer and control switches, shall be connected to an equipment grounding conductor as outlined in NEC 404.9. Provide snap switches with an equipment bonding jumper connected to the equipment grounding termination of the snap switch.
LATION OF ELECTRICAL SYSTEMS DITAGE ELECTRICAL POWER CONDUCTORS AND CABLES	F. Equipment grounding conductors, grounding electrode conductors, and bonding jumpers shall be connected by one or more of the following means as outlined in CEC 250.8: Listed pressure connectors, terminal bars, exothermic welding process, machine screw type fasteners, thread -forming
other Divisions: ns, including supplementary conditions, of this contract apply to this section.	machine screws, and connections part of a listed assembly. Connections made solely of solder shall not be permitted.
aceways ana/or boxes as required by the architect. and repairing of existing surfaces, including but not limited to: asphalt, concrete, and vegetation, as required by the eer.	 Where ground clamps and imings are subject to physical damage, maintain protective covering by means of menal, wood, or equivalent. Coordinate in field. H. Contact surfaces shall be thoroughly cleaned of nonconductive coatings (i.e. paint, lacquer, and enamel) before connections are made to insure
	good metal contact. I. Grounding conductors shall be installed in every raceway, both metallic and non-metallic, unless specifically identified on the drawings or permitted
II be in accordance with the latest published requirements of the following codes and standards: It shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or	per this specification.J. Inaccessible Grounding Connections: Ground connections that are/will be inaccessible upon completion of construction shall be made via exothermic
(NEC) with California State and local amendments.	 welds or clamp suitable for direct bury. K. Ground Connections Requiring Periodic Testing, Not Subject to Physical Damage: Where periodic testing is required for ground connections, the
ce Raceway and Fittings al Conduit - Steel	grounding electrode, where the ground conductor connection is made, shall be exposed and stubbed up above grade (approx 3-4"), in an area not subject to physical damage.
etal Conduit - Aluminum, Stainless Steel strical Equipment, Non-Environmental Considerations.	L. Ground Connections Requiring Periodic Testing, Subject to Physical Damage: Where periodic testing is required for ground connections, the grounding electrode, where the ground conductor connection is made, shall be exposed (approx 3-4"), integral to a flush in grade pull box.
ble Steel Conduit Boxes	M. Grounding at serving electric utility company interface shall be made pursuant to utility company specifications and field inspection requirements.
i, and Cable Fiftings utlet Boxes, Flush-Device Boxes, and Covers Tupo FB, and A Rigid RVC Conduit and Fiftings	 O. Where occurring, above ground gas piping shall be electrically continuous and bonded to an effective ground fault current path. Piping shall be electrically continuous and bonded to an effective ground fault current path. Piping shall be
Type EB, and A Rigid PVC Conduit and Fiftings Id 80 High Density Polyethylene (HDPE) Conduit	considered to be bonded where it is connected to appliances that are connected to the appliance grounding conductor.
c Tubing - Steel Ilic Tubing - Aluminum I Fittings for Use in Hazardous (Classified) Locations	 A. Ground Rods: Shall be driven into the earth. The quantity of rods shall be determined per ground resistance testing. Adequate ground rods shall be provided to maintain a minimum ground resistance defined per Section 3.3 TESTING. Where auxiliary ground rods are required, the installed shall be in
ible Non-metallic Conduit Aetallic Tubing Thes and Cable-Fittings for Use in Hazardous (Classified) Locations	accordance to NEC 250.54. Electrodes shall be installed within, and not less than, 6 feet spacing between. Ground rods shall be bonded together, and considered a single grounding electrode system. Bonding connections shall be made by either clamps, suitable for direct burial, via an exothermic weld. The ground rod and connection shall remain accessible
dards Institute (ANSI) OS1 and OS2 facturers Association (NEMA) FB1 and 250	 B. Install bonding jumpers between sections of loosely jointed metallic raceways (i.e. expansion fittings and telescoping raceways) to ensure electrical continuity.
e rated for use with 90 degree Celsius power wiring conductors.	
un ckness of 0.113 inches, Polyvinyl Chloride (PVC) construction, Bell end feature, manufactured in accordance with NEMA uit) and TC-3 (fittinas).	
ckness of 0.154 inches, Polyvinyl Chloride (PVC) construction, Bell end feature, manufactured in accordance with NEMA uit) and TC-3 (fittings).	
RS) Conduit - Hot-dip galvanized, zinc coated rigid steel conduit, manufactured in accordance with ANSI C80.1. (EMT) - Light gauge, steel raceway with zinc galvanized coating manufactured in compliance with ANSI C80.3.	
ubing (ENT) - Pliable corrugated raceway of circular cross section made of Polyvinyl chloride (PVC) manufactured in Itandard TC-13.	
duit (FMC) - Galvanized, corrosion resistant, high strength steel alloy. Metal strip is helically formed into continuously I conduit. Manufactured in accordance with Federal Specification WW-C-566c.	
llic Conduit (LFMC) - Manufactured with a spiral wound strip of heavy gauge, corrosion-resistant, hot-dipped galvanized 1/4" trade sizes, a square locked steel strip with an integral copper-bonding strip enclosed within the steel convolutions.	
e sizes, me core is constructea with a tully interlockea steel strip. Hexible, rugged, tlame retardant, PVC jacket extruded acket shall resist oils, mild acids and exposure to sunlight. Rated for temperature range of -30 to +80 degrees Celsius.	GRAY ELECTRICAL CONSULTING + ENGINEERING, CORP



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Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

TERMINAL 2 - RECOMMISSIONING

Project No. Revision 2

Title

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ELECTRICAL SPECIFICATION



	 The following shall be included in the O&M manual and provided to the facility owner prior to final acceptance: a. Final as-built conditions documenting changes made during construction. b. Wiring Diagrams
	c. Certified production test reports Installation information, including equipment anchorage provisions.
	 1.4 GUARANTEES A. Independent testing laboratory listing is required. Note Underwriters Laboratories, "UL", is referenced throughout this specification. However, equival listing agencies will be accepted. B. Independent testing shall be conducted for all GFI circuit breakers installed in main panelboards. Results shall be included in O&M documentation of provided to the owner prior to final acceptance.
	 C. The manufacturer of the assembly shall be the manufacturer of the major components within the assembly. D. For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified. E. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.
	 REQUIREMENTS Panelboards, load centers, and associated components and circuit breakers shall be manufactured, tested, and installed in accordance to latest published requirements of the following codes and standards:
	 Federal Specification W-C 375 A and B - Circuit Breakers Federal Specification W-P-115c - Panel, Power Distribution NEMA Standard PB1 - Panelboards NEMA Standard AB3 - Molded Case Circuit Breakers
	PART 2 - PRODUCTS
-	 2.1 MATERIALS A. The listing of specific manufacturers below does not imply acceptance of their products that do not meet the specified ratings, features and function
	Manufacturers listed above are not relieved from meeting these specifications in their entirety. Products in compliance with the specification of manufactured by others not named will be considered only if pre-approved by the Engineer of record ten (10) days prior to bid date. 1. Eaton Cutler Hammer / Eaton Corporation 2. Square-D 3. Siemens
	2.2 PANELBOARDS A. RATINGS
	 Panelboards shall be rated for AC voltage and short-circuit as indicated on the drawings. The short-circuit rating shall not be less than 10,0 amperes rms symmetrical. Panelboards shall be labeled with the UL short-circuit rating from the manufacturer. Series Rating shall not be permitted. CONSTRUCTION
	 Dead-tront construction shall be utilized. Interiors, with the exception of the branch circuit breakers, shall be completely factory assembled with a main breaker, main lugs only, or dou lugs as specified on the drawings. Where double lugs are not permitted by the authority having jurisdiction, provide a pull box or gutter, sized per NEC code as required connections. The pull box or gutter shall be located adjacent to the panelboard enclosure. Interiors shall be designed so that circuit breakers can be replaced without disturbing adjacent units and without removing the main l connectors. In addition, interiors shall be designed so that circuits may be changed without machining, drilling or tapping. Physical means must be provided to prevent the installation of more over-current devices than that number for which the enclosure was design Full size breakers are required. Dust filters shall be installed for vented openings.
	 C. BUS Bus bars for the main and cross connectors shall be of copper construction in accordance with UL (or equivalent) standards. Busing shall be brack throughout to conform to industry standard practice governing short-circuit stresses in load centers. All connection points shall be tin-plated copper Bus bars shall be mounted to a rigid metal backpan. Neutral bus shall have a suitable lug for each outgoing feeder requiring a neutral connection that is the same of same ampacity as the brar circuit. WIRING/TERMINATION Wire, connectors, and terminals shall be of the anti-turn solderless type and suitable for copper or aluminum wire of the sizes indicated in construction documents. Connectors shall meet UL 486B. Load centers shall be suitable for use with 60/75 degrees Celsius rated wire.
-	 E. CIRCUIT BREAKERS 1. Molded case type circuit breakers shall be 3/4-inch wide per pole. Multi-pole circuit breakers shall be of a stack pole design to provide electric phase isolation and have an internal common trip.
	 Circuit breaker operating handles shall indicate "ON" and "OFF" breaker positions. Each pole of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse time delay overload and instantaneous short-circuit protection by means of both thermal comparison of the circuit breaker will have inverse tinthermal comparison of the circuit breaker will have inverse tin
	 magnetic sensors. 4. The circuit breaker calibration shall not be affected by environmental changes in relative humidity. Breakers shall be calibrated after assembly. 5. Circuit breakers shall be operated by a toggle-type handle and multi-pole circuit breakers shall have an internal common trip mechanism. circuit breakers shall incorporate trip mechanisms that are mechanically trip-free from the handle. The handle position shall provide good visual indication. 6. Contacts shall be of non-welding silver allow.
	 Contracts shall be of hole wolding silver alley. Each pole shall contain phase barriers and arc quenching. Circuit breakers shall be molded case thermal-magnetic quick-make/quick-break, over toggle type suitable for use in systems having a short-circuit present of the drawing and the drawing a short-circuit present of the drawing and the drawing a short-circuit present of the drawing and the drawing a short-circuit present of the drawing a short-circuit present present of the drawing a short-circuit present of the drawi
	 9. Instantaneous, thermal magnetic, long-time delay trip elements shall be provided per each pole. 10. Panelboard branch circuit breakers shall be full-size, with a minimum rating of 20 amperes.
	 Ground fault breakers for personnel (5 ma) and equipment (30 ma) protection shall be available through 60 amperes. All terminals shall be listed for use with copper or aluminum conductors. Terminals shall be of the box lug design. The terminals shall meet UL 4 requirements and shall be suitable for use with either 60 degree or 75 degree Celsius wire, unless otherwise specified. Where indicated on drawings, supply arc fault circuit interrupters (AFCI) or arc fault circuit interrupters with ground fault circuit interruption (A w/GFCI). The breaker shall provide parallel arc detection and protection in addition to overload and short-circuit protection.
	 F. ENCLOSURES 1. Enclosures shall be mounted, either surface or flush, and have the appropriate NEMA listing (1, 3R, or 4X) as indicated on the drawings.
	 Boxes shall be made from cold rolled code gauge sheet steel having multiple knockouts, except where noted. Rain tight boxes shall use galvants steel or an approved coating system which meets or exceeds NEMA standards for outdoor type 3R enclosures. Boxes shall be of sufficient size provide at least a minimum code gutter space on all sides. The cover shall have an easy adjustment feature for flush applications. Covers shall be provided with a lock, and keyed to operate from one key.
	 5. Boxes shall be factory assembled into a single rigid structure. G. FINISH Boxes and trims shall be finished with a high scratch resistant aesthetically pleasing finish. The finish paint shall be of a type to which field apple paint will adhere
	PART 3 - EXECUTION
-	3.1 CONDITIONS A Panelboards shall be installed in locations indicated on the drawings
	 B. Provisions shall be made for future conduit/branch circuit installations. In flush mount panels, install one ³/₄" conduit from the enclosure to an accessi ceiling space location for every four spare circuit breakers or spaces. C. Maximum circuit breaker height installation shall not exceed +6'7" above finished floor or platform pursuant to the requirements of NEC 404.8(A).
	 D. The depth of structure shall be adequate to accommodate flush mounted enclosures. 3.2 FINISHING
	 A. Protect panelboards/load centers pursuant to Section 26 05 00, COMMON WORK RESULTS FOR ELECTRICAL until final acceptance by owner. B. Provide circuit breaker marking labels and directories. Directories shall be typewritten and included in a plastic sleeve. Mount directories on the interface of the equipment cover. Marking labels and directories shall reflect as-built conditions and final room names. C. The key to the panelboard shall be left inside the plastic circuit breaker directory sleeve or provided to the owner upon final acceptance.
	3.3 COMPLETIONA. Demonstrate operation of equipment to owner prior to acceptance.
	END OF SECTION 26 24 16

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ORIGINAL SHEET - ARCH E1

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	1. Occupancy sensors shall be stylish and low profile with motion detection for a minimum area of 12' radially from sensor mounting location. Sensors	SECTION 26 09 43 - NETWORK LIGHTING CONTROLS	SECTION 26 05 53 - IDENTIFICATION OF ELECTRICAL SYSTEMS
	 For applications which require independent control of two loads (i.e. restroom lighting and restroom exhaust fans), the ceiling sensor shall be provided with dual relays and dual override switches. Each relay shall have independent programmable occupancy time delays. Where exhaust fans are interlocked with room lighting (i.e. restroom), the exhaust fan shall be time delay, controlled and turn off a minimum of 5 minutes after the 	PART 1 - GENERAL	PART 1 - GENERAL
	 in a consider and the ended with recent ignining (i.e. resident), the exhaust fait shall be finded and formed an	1.1 SUMMARYA. This section includes specification, installation and commissioning activities for a network lighting control system, including furnishing of all labor,	1.1 SUMMARYA. This section includes: Identification of electrical systems.
equivalent	 Sensor shall recess into a standard square junction box and be compatible with ceiling construction and tinisning. Sensor shall meet NEC grounding requirements by providing a dedicated ground connection and intrinsically grounding through its mounting strap. Line and load wire connections shall be interchangeable, such that installer cannot make an improper connection to a line/load in a manner that 	equipment, materials, and performing all operations in connection with the installation of the network lighting control system as identified on the contract documents and as directed by the Architect / Engineer of record.	 B. Furnish labor, materials, equipment, components, and necessary services to support the electrisis specification. 1. Bringing features of this installation include identification of electrical systems by magne of
tation and	 will cause malfunction or damage to the sensor. 7. Sensor shall have optional features for photocell/daylight override, vandal resistant lens, low temperature/high humidity operation as may be required per the application and as noted on the drawings. 	 work show on the drawings and specified herein. Principal features of this installation include: Control bardware, software, not working controls, and water monitoring. 	 a. Warning Signs b. Warning ribbon
	 Line voltage sensors shall have field programmable adjustments for selecting operational modes, occupancy time delays, minimum on time, and photocell set-point as applicable. All models shall be capable of both Auto-On and Manual On via wall switch operation. 	 b. Lighting control sensors shall be mounted, i.e. Wall mount, ceiling mount, corner mount, integral to luminaire, interior, exterior, etc. as indicated on the drawings or specified herein. 	c. Arc Flash Signage d. Name Plates e. Device Labels and tags
ted by the	2.4 WIRING CONFIGURATIONS	 c. Lighting control sensors shall be provided either passive infrared ("PIR"), Passive Dual Technology ("PDT"), Line voltage, low voltage, standard coverage, extended coverage, as indicated on the drawings or specified herein. d. Lighting control sensors shall provide control of receptacles and other equipment where required by the California Code of Regulations Title 24, 	1.2 RELATED SECTIONS
nce to the	A. Lighting control sensors shall be installed per manufacturer wringing diagrams. Should wiring diagrams be included on the drawings, they are for reference only.	AHJ, or ownership project criteria.	 Section 26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS Section 26 24 13 SWITCHBOARDS
	2.5 ACCESSORIESA. User interfaces shall be provided with appropriate buttons, sliders, interface screens, etc. to allow complete control of lighting and devices in space as	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 26 05 03 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS Section 26 05 18 LOW VOLTACE ELECTRICAL ROWER CONDUCTORS AND CARLES 	 Section 26 24 16 PANELBOARDS AND LOAD CENTERS Section 26 27 26 WIRING DEVICES Section 26 28 16 ENCLOSED SWITCHES AND CIRCUIT BREAKERS
	per owner requirements. B. Provide engravable user interfaces with engraving identifying function of each button per owner input and designation.	 Section 26 27 26 WIRING DEVICES Section 26 50 00 EXTERIOR LIGHTING 	 A. Related Sections Under Other Divisions: 1. The General provisions, including supplementary conditions, of this contract apply to t
	C. Where lighting control system integrates with building management systems or will be controlling accessory devices (i.e. electric shades, projection screens, mechanical systems, etc.) contractor shall ensure system is fully compatible with accessory device manufacturer control requirements.	 6. Section 26 56 70 LIGHTING ACCEPTANCE TESTING 1.3 RELATED SECTIONS UNDER OTHER DIVISIONS 	1.3 REQUIREMENTS
	2.6 FINISHESA. Wall mounted sensors and associated cover plates shall match wiring device specifications.	1. The General provisions, including supplementary conditions, of this contract apply to this section.	 A. Identification of electrical systems shall be performed and installed in accordance to the lates 1. National Electrical Code (NEC) with California State Amendments. 2. ANSI Z535.4 Guidelines - Product Safety Signs and Labels
	B. Ceiling and corner mount sensors shall be white.	1.4 SYSTEM DESCRIPTION A. SUBMITTALS AND SHOP DRAWINGS	3. National Fire Prevention Association Standard for Electrical Safety Requirements for Employ
	3.1 INSTALLATION	 The following information shall be submitted to the Engineer for approval. a. Provide manufacturer data sheets, settings, installation requirements, wiring diagrams, etc. for all product. Submittal documentation be reviewed for completeness, with inclusion of devices required for a fully functioning with methods. 	A. Labels shall be suitable for the environment where they are installed with consideration given t
l functions. cation and	 A. The contractor shall be responsible for system installation, start-up activation, and field quality control. Services shall include, although not be limited to the following: 	 b. System bill of materials, including device quantity. c. Vendor drawing identifying the following: 	PART 2 - PRODUCTS
	 Pre-installation visit to the job site to review equipment submittais and verify method by which the system should be wired. During job progress, make periodic job site visits to verify installation and wiring of system. Upon completion of wiring, final connections shall be made under the supervision of this technician, and final checkout and certification of the 	 Project specific lighting control drawing package included sensor layout with coverage zones indicated. The drawing package shall be prepared on to-scale architectural building floor plans. Sensor specification and quantity, corresponding to the project bill of materials. 	 A. Nameplates 1. Normal Power: Black lamicoid with white letters fastened with round head, stainless steel sc
	system. 4. At the time of final checkout, technician shall give operational instructions to the owner and/or his representative on the system.	 3) Lighting control schedule(s) 4) Switch assignment schedule(s) 5) Sequence of operations matrix 	B. Warning Ribbon - Min. 6" wide made of polyethylene film or detectable laminated aluminur made of materials that will biodegrade.
nan 10.000	 c. Sensors shall be installed with complete electrical connections. 	 6) Device wiring diagrams 7) System backbone schematic 	C. Warning Signs - Printed adhesive polyester protected by clear polyester laminate for general of concern or where adhesive signage is not appropriate.
. 2,000	D. verify with manufacturer's published sensing distribution. At no cost to the owner, provide additional sensors for complete coverage as may be required.	 8) Contirmation of lighting control compatibility with specified lighting type (i.e. lighting load type). 9) Manufacturer installation requirements 10) List of manufacturer assumptions 	PART 3 - EXECUTION
	 3.2 FIELD QUALITY AND CONTROL A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing. 	 Upon receipt of approval by the Engineer of record, the following shall be submitted to the building Owner for approval: a. Switch assignment schedule(s) b. Switching approving details 	 A. Warning Signs Rooms and other guarded locations that contain exposed live parts shall have consp.
or double	 B. Tests and Inspections: Tests shall be witnessed by Owner's Representative. 	 c. Sequence of operation matrix d. Scheduling date proposed for onsite manufacturer technical representative commissioning activities. 	 Rooms where the operating voltage exceeds 600V, nominal, shall be kept locked and sha the following: "DANGER - HIGH VOLTAGE - KEEP OUT"
main bus	 D. Verify connection of power wiring and load circuits. D. Verify connection and location of controls. 	 It is understood that the vendor prepared control system submittal is for informational purposes only. However, sufficient information shall be provided in the vendor submittal to demonstrate that the control system can achieve the basis of design as represented on the contract documents for engineer of record evaluation for completeness and California Energy Code compliance. 	 Are required where electric energy is provided to equipment from more than one source. Warning signs shall be provided on utilization equipment that has 120VAC control voltage
designed.	E. Verify lighting management hubs and system data program is installed.F. Verify proper connection of panel links (low voltage/data).	 Procurement of lighting control product shall not be pursued without approval from the Engineer of record and building owner. DELIVERY, STORAGE AND HANDLING 	 and conductor tag of the control voltage source disconnect shall be identified. B. Warning Ribbon Warning ribbon or tage shall be installed in conduit trenches as identified on the drawing.
he braced	G. Verify addresses have been assigned to exterior photo sensors and lighting control devices.H. Verify system operation control by control.	 Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment. Lighting control system panels and components shall be protected during construction, and before final acceptance from the owner, in a manor 	 Warning ribbon or tape shall be installed in trenches at not more than 12" above the under
ed copper.	I. Verify proper operation of manufacturer's interfacing equipment.J. Verify proper operation of servers, client station PC, and installed programs.	to prevent paint, dust, and construction debris from defacing the finish of the equipment. Prior to final acceptance the contractor shall clean lighting control components and remove construction debris and packaging material.	 C. Arc Flash Signage 1. Electrical equipment, such as switchboards, panelboards, industrial control panels, meter other than dwelling occupancies, and are likely to require examination, adjustment, s
	K. Network lighting controls will be considered defective if it does not pass tests and inspections.L. Correct wiring deficiencies and replace damaged or defective lighting control devices.	 OPERATION AND MAINTENANCE MANUALS Equipment operation and maintenance manuals shall be provided with each assembly shipped and shall include instruction leaflets, instruction bulleting and renewal parts lists where applicable, for the complete assembly and each major component. 	 marked to warn qualified persons of potential electric are flash hazards. The marking shall before examination, adjustment, servicing, or maintenance of the equipment pursuant to Arc Flash labels shall meet the requirements of NFPA 70E and contain the following information
ited in the	M. Retest and confirm proper operation. N. Provide a report in table format including each room or space that has occupancy sensors and/or light level sensors installed. Indicate the following for	1.7 GUARANTEES	 a. At least one of the following: 1) Calculated available incident energy and corresponding working distance 2) Minimum are rating of clothing.
	each space: Date of test or inspection. Pole Number and Fixture Address. 	 A. Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or equivalent). B. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the 	 a) Required PPE (Personal Protective Equipment) b) Highest Risk Category (HRC) for the equipment
e electrical	 Quantity and Type of each device installed Sequence of Operation for the control each zone controlled. Verification that the control of each space complies with the Sequence of Operation. 	PART 2 - PRODUCTS	 D. Nominal system voltage c. Arc flash boundary D. Name Plates
ermal and mbly.	 6. Test Reports for each device. 7. Photo control Sensors indicate the following: a. Ambient light level at which the lights turn on (level level). 	2.1 MANUFACTURERS A The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings features and functions	 Nameplates shall be provided for electrical equipment enclosures such as, but not limited transformers, panels, load centers, lighting control panels, fire alarm control panels, cab supplies (UPS), and transfer switches.
anism. The d visual trip	a. Ambient light level at which the lights turn off.c. Location of light level readings.	Manufacturers listed above are not relieved from meeting these specifications in their entirety. Products in compliance with the specification and manufactured by others not named will be considered only if pre-approved by the Engineer ten (10) days prior to bid date.	 Nameplates shall be provided for separately enclosed devices such as, but not limited t clocks, and relays. The following minimum information shall be included on equipment and enclosed devices
hort-circuit	 d. Time delay settings. 8. Manual Controls indicate the following: a. Light fixture output steps up to 100 percent upon manual activation. 	 Acony Brands, i.e. Acony Connois Lutron Lighting Controls Legrand Lighting Controls 	 a. Voltage Rating b. Source
	 b. Light fixture output steps down to low level upon manual activation. 9. Light fixture output resets to default low level photocontrol operation after lights are turned off (by methods, manual or automatic means). 10. Time delay settings. 	2.2 MANUFACTURER SERVICES	 c. Load Served d. Circuit/Feeder designation e. Primary and secondary voltages and load served (transformers only).
et UL 486B	3.3 DEMONSTRATION AND TRAINING	 B. Commissioning activities, including system programming and owner training shall be conducted by a trained service technician from the manufacturer of the lighting control equipment or manufacturer designated trained professional. The technician shall have a minimum of two (2) years' service 	E. Available Fault Current1. Service equipment, excluding dwelling units shall be marked with the available fault cu
otion (AFCI	 A. Before Substantial Completion, arrange and provide a one-day Owner instruction period to designated Owner personnel. Set-up, starting of the lighting control system and Owner instruction includes: 1. Confirmation of entire system operation and communication to each device. 	experience in the lighting control industry. The technician's name shall appear on the lighting control product submittals and a letter shall be sent to the project engineer.	 accordance to CEC 110.24(A). F. Device Labels Isolated ground receptacles in patient care great shall be identified with a permanent signature.
permitted.	 Confirmation of operation of individual relays, switches, and sensors. Confirmation of system Programming, photocell settings, override settings, etc. 	2.3 PRODUCT DESCRIPTIONA. Line Voltage, Wall Mounted Occupancy Sensors.	 Use" per NEC 517.16. Switches not within sight from the load controlled.
galvanized	 Frovide maining to cover installation, maintenance, troubleshooting, programming, and repair and operation of the lighting control system. 3.4 PRODUCT SUPPORT AND SERVICE 	 wai mounted occupancy sensors shall be stylish and low profile with soft-click buttons with motion detection up to 20 feet for small areas and up to 40 feet for larger areas. For applications which require independent control of two loads (i.e. restroom lighting and restroom exhaust fans), the wall mounted sensor shall be 	 G. Raceway Identification (Tags) G. Raceway Identification (Tags)
ient size to	A. Factory telephone support shall be available at no cost to the owner. Factory assistance shall consist of assistance in solving application issues pertaining to the control equipment.	provided with dual relays and dual override switches. Each relay shall have independent programmable occupancy time delays. Where exhaust fans are interlocked with room lighting (i.e. restroom), the exhaust fan shall be time delay controlled and turn off a minimum of 5 minutes after the room lighting.	 Identify conductors at each termination. Tag conductors with sleeve type labels. The following, minimum, information shall be included on wire and cable identification:
	END OF SECTION 26 09 43	 Sensors shall be capable of switching both 120 VAC / 277 VAC, 60 Hz. The sensor shall be appropriate for the associated load. Sensor shall recess into single gang switch box and fit a standard receptacle device opening. Sensor shall meet NEC grounding requirements by providing a dedicated ground connection and intrinsically aroundina through its mounting strap. 	b. Origin from source.c. Destination to load.
eld applied	SECTION 26 24 16 - PANELBOARDS	 6. Line and load wire connections shall be interchangeable, such that installer cannot make an improper connection to a line/load in a manner that will cause malfunction or damage to the sensor. 7. Sensor shall have optional features for photocell/davlight override, vandal resistant lens, low temperature/high humidity operation as may be 	 H. Grounding Conductors larger than 6 AWG 1. Grounding conductors larger than 6AWG shall have the insulation or covering marked wit pursuant to NFC 250.119
	PARI I - GENERAL 1.1 SUMMARY	 required per the application and as noted on the drawings. 8. Wall Switch sensors shall have field programmable adjustments for selecting operational modes, occupancy time delays, minimum on time, and photocell set-point as applicable. 	END OF SECTION 26 05 53
	 A. This section includes: Panelboards. B. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein in this 	9. All models shall be capable of both Auto-On and Manual On operation.B. Low Voltage Occupancy Sensors	
accessible	specification. Panelboards shall be furnished and installed with the quantity, rating, and type of circuit breakers as shown on the contract documents.	 The installing contractor shall install one or more sensors with PIR coverage areas that cover the entire space and all entrance points. Exact placement and quantity required shall be per manufacturer's best practice recommendations. In areas with periodic or permanent obstruction to a sensor's field of view sensors that utilize dual technology (PIR/Microphonics) detection shall be 	
A).	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEM 	 Sensors shall utilize a digital PIR detector (dual element pyro-electric detector) component, so as to provide a high degree of RF immunity. Sensors shall utilize a digital PIR detector (dual element pyro-electric detector) component, so as to provide a high degree of RF immunity. 	
	 Section 26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS Section 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES Section 26 05 26 GROUNDING FOR ELECTRICAL SYSTEMS 	 Sensors shall merconnect with other sensors and power/ready packs with class 2, mee-conductor wite. Upon initial power up, sensors must immediately turn on. Power packs may be wired on the line or load side of local switching and must not exhibit any delays when switch is energized. 	
the interior	6. Section 26 08 10 ELECTRICAL ACCEPTANCE TESTING	 sensors snall nave test mode that temporarily shortens/disable all time delays (e.g., minimum on, occupancy, photocell transition, dimming rates) such that an installer can quickly test operation of sensor. Test mode shall time out and return sensor to normal operation should the installer forget to disable test mode after installation. 	
	 A. Related Sections Under Other Divisions: 1. The General provisions, including supplementary conditions, of this contract apply to this section. 2. Painting of panelboards as required. 	 7. Sensors shall have optional features for on/off photocell control, automatic dimming control photocell, high/low occupancy based as indicated on the drawings. C. Power Packs 	
	1.3 SYSTEM DESCRIPTION	1. The installing contractor shall install one or more power packs to provide power to all devices controlled by lighting control system where required by lighting controls system. Quantity shall be per manufacturer's best practice recommendations and electrical construction document requirements for circuiting, etc.	GRAY FLE
	 A. SUDMITTALS AND SITUP DRAWINGS In addition to Section 26 05 00 COMMON RESULTS FOR ELECTRICAL requirements, the following shall be submitted to the Engineer of Record prior to procurement: 	 Power packs shall be capable of providing operating at voltage appropriate to circuit (i.e. 120 VAC, 277 VAC or other, 60 Hz power). The power packs shall be appropriate for the associated load type (i.e. lighting, power, mechanical loads). Bower packs shall be rated to serve branch circuit over ourgest protection. A minimum 14 and serve branch circuit is a serve branch circuit over ourgest protection. 	2529 PRO SUITE A
	 a. Dimensioned outline drawing. b. Component list. c. Knockout configurations. 	 To wer packs shall be rated to serve branch circuit over-current protection. A minimum 16-amp rating where serving lighting loads, 20-amp rating where serving receptacle loads, and 20-amp rating where serving mechanical system or other loads will be required. Refer to construction documents for confirmation of circuit loading and amperage requirements. Bower packs the line provide the structure line of the stru	SANTA N
	 d. Cable terminal sizes, including maximum conductor rating that can be terminated. e. Enclosure and door assembly. f. Panelboard and/or load center ratings, including: 	 4. Power packs snall be provided that automatically override emergency lights to on upon loss of normal power, where emergency system lighting is served by lighting controls system. D. Line Voltage Occupancy Sensors. 	
	 1) Continuous Current (i.e. "Ampacity") 2) Voltage and phase 		CORP USE S
	 3) Short Circuit Rating in "kAIC". g. Circuit Breaker ratings, including: 1) Breaker type (i.e. plua-in. bolt on) 		ENGI
	 2) Continuous Current (i.e. "Ampacity") 3) Voltage and phase 4) Intermeting Pating in "ILALC" 		AUTHC SERV LAV

				Permit/Seal	Consultant	
				ISSUE FOR BID		
				NOT FOR CONSTRUCTION		Stantec Archite 801 South Figue Los Angeles, CA Tel: (213) 955-97
ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2			2023.10.02 2023.07.10			Copyright Re
PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL Issued		Appd	2023.05.12 2023.03.10 YYYY.MM.DD			The Contractor shall verify drawing - any errors or on The Copyrights to all desig
	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2 PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUED	ISSUE FOR BID PLAN CHECK RESUBMITTAL NO. 2 PLAN CHECK RESUBMITTAL NO. 1 PLAN CHECK SUBMITTAL ISSUEd By	ISSUE FOR BID INSUE FOR BID IN	Image: Subset of the subset	Image: Second system Permit/Second Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system Image: Second system <	Permit/Seal Consultant Image: Consultant ISSUE FOR BID ISSUE FOR BID Image: Consultant Image: Consultant Image: Consultant Image: Consultant Image: Consultant Image: Consultant



Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT	Title ELECTRI
TERMINAL 2 - RECOMMISSIONING	
	Project No.

5353 OVERPASS ROAD, GOLETA, CA 93111

JHJHWT2023.07.10Dwn.Dsgn.Chkd.YYYY.MM.DD

Revision 2

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Client/Project Logo

Client/Project

stn_Architecture_2270449601.rvt

ectrical work show on the drawings and specified herein in

o this section.

est publication of the following codes and standards:

oyee Workplaces (NFPA 70E).

n to exposure to chemicals, sunlight, and abrasion.

screws.

num designed for direct burial. Warning ribbon shall not be al use. Provide rigid polyethylene signage where abrasion is

spicuous warning signs posted at the entrance forbidding hall be provided with a conspicuous warning sign that reads

age source used for interlocking. The panel, circuit number,

gs. Pursuant to the NEC, warning tape shall be required for erground installation.

er socket enclosures, and motor control centers, that are in servicing, or maintenance while energized shall be field all be located so as to be clearly visible to qualified persons o NEC 110.16. ation:

ed to: service and/or distribution switchgear, motor controls, binets, motors, generators, inverters, uninterruptible power d to: circuit breakers, disconnect switches, contactors, time e identification:

current and date of calculation / equipment installation in sign or label that reads: "Caution-Not for Patient Equipment ssing through the box. Hand-written labeling via permanent

with green tape or green adhesive labels at the termination

TRICAL SPECIFICATION

	F. Luminaire Poles - Poles shall be as specified on the project drawings and provided as required to accommodate the overall mounting here.
	 The pole assembly shall have an anchor bolt type designation which allows for the supply the luminaire via underground conduits. A patterns, specifications, and requirements shall be as determined by the luminaire manufacturer.
	2. Provide each pole with a hand hole with a minimum clear opening of 2-1/2" x 5". Hand holes shall be provided with a cover secured housing with steel captive screws. A grounding stud shall be provided opposite the hand hole opening.
	 Pole base covers shall be provided, either standard or decorative as specified, and shall match the finish specification of the pole an assembly. Pole base covers shall conceal mounting hardware, pole base welds, and anchor bolts. Base covers for steel poles shall b auality hot-rolled carbon steel plate having a minimum yield of 36,000 psi.
	 4. Pole material type (i.e. Aluminum or Steel) shall be as specified on the drawings. a. Aluminum Poles - Manufactured of corrosion resistant AA AAH35.1 aluminum alloys conforming to AASHTO LTS-4 for Alloy 6063-T6 or A
	for wrought alloys, and Alloy 356-T4 (3,5) for ASTM B108-01 cast alloys. Poles shall be seamless extruded or spun seamless type. b. Steel Poles - Minimum 11-gauge steel, minimum strength of 48,000 psi, and iron-oxide primed factory finish.
	G. Hardware shall be tamper proof, stainless steel.H. Concrete Foundations shall be cast in place concrete and designed to support the specified luminaire assembly and effective projected
D	including the pole, arm / yoke attachment, and luminaire head for wind loading as appropriate for the project site. When wind loading is assume as 100 miles / hour with additional 30% gust factor. The concrete foundation shall be as designed by the project civil or structural eng
	I. Pole base grounding shall include a min. 5/8" diameter x 10' long copperclad, steel ground rod installed below each concrete lum
	toundation. The rod shall be driven vertically with not less than 6' of the rod in contact with the earth (remainder of the rod may be encapsu the concrete. The ground rod shall be bonded to the pole with not less than a #6 AWG CU bare copper wire. The method of bonding shall b approved for the installation.
	PART 3 - EXECUTION
	3.1 EXAMINATION AND PREPARATION
	 Remove existing conduit, branch circuit conductors, poles, mounting attachments, and concrete bases for luminaires scheduled for remo branch circuit conduit and branch circuit conductors in place where scheduled for re-connection.
	3.2 EXCAVATION AND BACKFILL
	 A. Excavate and maintain trenches in accordance to applicable satety code requirements. Protect existing teatures in place. B. Trench and backfill requirements shall be in accordance to the project documents, including details on plans. Refer to project earthwork sp
	as appropriate. Mechanically compact trenches after backfill to 98% compaction. C. Backfill and mechanically compact holes left by demolished luminaire pole bases with to a depth of 6" below grade and fill in the remaining
	soil. Re-seed holes in lawn areas where appropriate.
	3.3 SLEEVE INSTALLATIONA. Conduit sleeves or spare "conduits" shall be installed in accordance to the project documents, including details on the plans. At a minimum
	sleeves shall be buried 24" below finished grade or 18" below pavement.
	stake, pipe, or conduit a minimum of 3' in length and driven into the ground approx. 6" below grade.
	 3.4 INSTALLATION A. Install luminaire assemblies in accordance to the construction documents as well as the California Electrical Code and manufacturer recommendations.
	Adhere to any project site standards that may be required.
	 Erect pole and install "plumb" via level and leveling nuts and washers. Install anchor holt assemblies to secure the pole to the concrete foundation as part the manufacturer and while (structure) and install anchor holt assemblies to secure the pole to the concrete foundation.
	supplementary instructions. Upon installation of a level pole torque wrench tighten the anchor bolts to the torque values as listed instruction sheets.
C	 Where a base plate is not used, ensure the void space between the base mounting plate and leveled concrete pole base is groun non-shrink cement grout product to minimize the effect of vibration at the pole assembly.
	4. Inspect the pole one week, one month, and 6 months after installation. Advise the owner on inspection requirements on a yearly basis. shall address the following:
	a. Visual inspection for any cracks in the pole, base weld, or any other area.b. Recheck the torque of the anchor bolt assembly to manufacturer installation requirements.
	 C. Visual inspection for missing base covers, pole caps, etc. Replacement specifications for such shall be included in owner O&M me completion of the project.
	e. Pole corrosion and finish deterioration.
	END OF SECTION 26 56 00
	SECTION 26.56.70 - LIGHTING ACCEPTANCE TESTING
	PART 1 - GENERAL
	1.1 SUMMARY
	 A. This section includes: Non-residential, interior and exterior, lighting acceptance testing. B. Eurnish labor, materials, equipment, components, and necessary services to support acceptance testing of the lighting system as show on the
	and specified herein in this specification. Acceptance requirements ensure the equipment, controls, and systems operate as required by the California, Title 24, Non-residential standards.
	 Principal features of acceptance include: Visual Inspection of the Equipment and Installation.
	c. Functional Testing of the system and controls.
	C. Acceptance testing shall not take the place of commissioning.D. Individual acceptance testing shall be performed by field technicians under the responsible charge of a licensed contractor or design pr
	("Responsible Person") eligible under Division 3 of the Business Professions Code. E. Pre-arrange testing with owner a minimum of 72 hours prior.
в	 F. The acceptance requirement process shall include: 1. Review of the construction documents to ensure sensor locations, devices, and control sequences are properly documented.
	 Review the installation and complete the acceptance testing. Complete the Acceptance testing documentation.
	 Certify the acceptance test results on the Certificate of Acceptance and submit the certificate to the enforcement agency prior to rece final occupancy permit.
	5. Implement final settings and adjust control equipment as required to complete the system as designed.
	 Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL Section 25 56 00 EXTERIOR LIGHTING
	 A. Related Sections Under Other Divisions: 1. The General provisions, including supplementary conditions, of this contract apply to this section.
	1.3 GUARANTEES
	A. Acceptance testing shall be conducted and documented in accordance to the California State Energy Code Title 24 2016 Non R Compliance Manual, Acceptance Requirements.
	PART 2 - EXECUTION
	2.1 INTERIOR LIGHTING TEST ACCEPTANCE PROCEDURES
	 A. Interior lighting acceptance testing procedures apply to new equipment and controls installed on new or existing lighting systems: 1. NRCA-LTI-02A: Lighting Control Acceptance Document a. New construction and retrofit projects. Applicable to accuracy sensors, manual day, lighting controls are the time with the sensors.
	 Functional testing and verification is required. 2. NRCA-LTI-03A: Automatic Daylight Control Acceptance Document
	a. New construction and retrofit projects. Applicable to properly located controls, field calibrated and set appropriate lighting levels.
	2.2 OUTDOOR LIGHTING ACCEPTANCE TEST PROCEDURESA. NRCA-OLT-02-A: Outdoor Lighting Acceptance Tests
	 New construction and retrofit projects. Applicable to functional testing and verification of motion sensor location and ensure the sensor construction. Verify the sensor signal sensitivity is adequate. Applies to verification of the outdoor lighting shut-off control are off during douting hours. Verify the astronomical and standard shuteff controls are presented for a shut-off control are sensor with the astronomical and standard shuteff controls are presented for a shut-off control are sensored.
	2.3 COMPLETION
	A. Lighting acceptance forms shall be completed and submitted to the authority having jurisdiction pursuant to the requirements of this section.
A	END OF SECTION 26 56 70
	ISSUE FOR BID SUBMITTAL

ght of the	F.	DISCONNECT SWITCH MECHANISM 1. Switch operating mechanism shall be auick-make, auick-break such that, during normal operation of the switch, the operation of the contacts shall	A.	Install cast iron plates on surface
nchor bolt		 not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started. The operating handle shall be an integral part of the box, not the cover. 	В. С.	Wiring devices shall be installed of Coordinate device mounting hei
o the pole		 Provisions for padlocking the switch in the OFF position with at least three padlocks shall be provided. The handle position shall travel at least 90° between OFF and ON positions to clearly distinguish and indicate handle position. 	D.	wainscot is installed along the wa Switches shall be installed on the
e structural		5. Switches shall have a dual cover interlock mechanism to prevent unintentional opening of the switch cover when the switch is ON and prevent turning the switch ON when the cover is open. The cover interlock mechanism shall have an externally operated override but the override shall not permanently disable the interlock mechanism. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure	E.	A bonding jumper shall be installe
oy 6005-T5	DADT	in order to override the interlock.	F.	Feed-thru wiring is not acceptable
	3.1	INSTALLATION	G.	Receptacles shall be tested to er party.
irea (EPA), not known.	Α.	Preparation and installation shall be in accordance with reviewed product data, final shop drawings, manufacturer's written recommendations, and as indicated on the Drawings.	3.3	FINISHING
neer. Refer	Β.	Disconnect switches shall be installed where identified on the drawings. Switches shall be secured to building structure or supported via "C" channel strut as required. Field coordinate and adhere to manufacturer requirements.	А. В.	Clean exposed surfaces and rem
naire base ated within	END (DF SECTION 26 28 16	END	OF SECTION 26 27 26
	SECTI	ON 26 56 00 - EXTERIOR LIGHTING	SECT	ION 26 28 16 - ENCLOSED SWITCHE
	PART	1 - GENERAL	PART	1 - GENERAL
al. Protect	1.1	SUMMARY	1.1 A.	SUMMARY This section includes: Enclosed sw
	А. В.	Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein in this specification	В.	Furnish labor, materials, equipme this specification.
oifications		 Principal features of this installation include: a. Exterior luminaire product. 		 Principal features of this instal a. Molded case circuit brec b. Caperal duty disconnect
		 b. Exterior lighting poles. c. Exterior lighting mounting attachments and supports. d. Exterior lighting controls 	1.2	RELATED SECTIONS
s will top		 e. Exterior lighting lamps, ballasts, and / or LED drivers. 		 Section 26 05 00 COMMON V Section 26 05 53 IDENTIFICATI
m conduit	1.2	RELATED SECTIONS 1. Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL	A.	3. Section 26 24 16 PANELBOAR Related Sections Under Other Div
ner a steel		 Section 26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS Section 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES (600V AND BELOW) Section 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 	1.3	I. The General provisions, ind REQUIREMENTS
		 Section 26 05 46.13 UNDERGROUND ELECTRICAL CONSTRUCTION AND SERVICE Section 26 56 70 LIGHTING ACCEPTANCE TESTING 	A.	Materials and installation shall be 1. Materials and equipment sh
endations.	A.	Related Sections Under Other Divisions:		equivalent). 2. National Electrical Code (NEC
	1.0	1. The General provisions, including supplementary conditions, of this contract apply to this section.		 ASTM E 329 - Standard Specifi Federal Specification FS W_C NEMA KS 1 - Enclosed Switcher
of record	Т.3 А.	Materials and installation shall be in accordance with the latest published requirements of the following codes and standards:		 NEMA 250 - Enclosed switch NEMA 250 - Enclosures for Ele UL 98 - Enclosed and Dead Fr
the pole		 Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or equivalent). American Society for Testing and Materials (ASTM). 		 UL 489 - Standard for Molded UL 508 - Standard for Industric
nspections		 American Concrete Institute (ACI). American National Standards Institute (ANSI). 		10. UL 1053 - Standard for Ground
		 Aluminum Association Inc. (AA). Illuminating Engineering Society of North America (IESNA). National Electrical Manufacturers Association (NEMA) 	PART	2 - PRODUCTS
nual upon		 National Fire Protection Association (NFPA). UL 1598, "Luminaires", Non-hazardous locations intended for installation on branch circuits 600V and below. 	2.1	MANUFACTURERS
	1.4	DEFINITIONS	A. 2.2	MOLDED CASE CIRCUIT BREAKERS
	Α.	Lighting terminology used herein is defined in IES, except for the term "driver", as this term shall apply herein and include both drivers and power supplies, where applicable.	A.	Where circuit breakers are installe compatible with the distribution e
	В. 1.5	Clarification: The ferm "LED light source(s)" is used herein per LES to cover LED package(s), module(s), and array(s).	В.	Circuit breakers shall be constru handle, and the accessory mour
	A.	SUBMITTALS AND SHOP DRAWINGS 1. Luminaire product submittal shall be inclusive of the following information and shall be clearly presented and identified on submittal documentation.	C.	Circuit breakers shall have an ov circuit breaker shall have commo
		 a. Manufacturer specification sheets, installation instructions, and any other pertinent manufacturer requirements. b. Luminaire electrical rating specifications, including: lamp data, lamp color temperature, lamp color rendering index (CRI), voltage, ballast / driver 	D.	The circuit breaker handle shall clearly marked on and off in add
		type, overall system wattage, and luminaire overall efficiency etc. c. Luminaire aesthetic, dimensions, loads (i.e. EPA data), termination requirements, wiring and connection diagrams. d. Luminaire mounting requirements, including: poles, grms, brackets, voke mounting assemblies, etc.	E.	The maximum ampere rating an clearly marked on face of circuit
drawings		e. Luminaire photometric data including, optic configuration, lumen output, isofootcandle plots in accordance to project specified mounting height, and lumen maintenance. In the event a product substitution is being proposed, the electrical engineer of record may request a	F.	Each circuit breaker shall be each breaker tripping mechanism for r
State of		 Photometric calculation plane at grade level, minimum 10' x 10' calculation plot spacing. Calculation planes shall be designated per the scope of the project and may include the general parking area and pedestrian walkways. All photometric plans shall be prepared to scale. 	G. H.	Circuit breakers shall be factory_ Series rated combinations shall n
		 Maintained light level calculation results considering luminaire product lumen maintenance. Calculation statistics for minimum, maximum, and average photometric values in footcandles (fc). In addition uniformity ratios for maximum and average minimum. 	١.	Lugs shall be suitable for 167 °F (; Refer to the copper feeder scher
		 4) Photometric values in a parking application, exterior uncovered, shall be a minimum of 0.2fc. and 20:1 maximum:minimum uniformity. f. Finish color charts. Actual finish samples (i.e. color charts) demonstrating actual color and texture shall be required upon request of the electrical 	Ј. К.	Circuit breakers shall be capable Circuit breakers with ratings up t
fessional	В.	engineer of record or project architect. DELIVERY, STORAGE AND HANDLING		sealed. Circuit breakers shall be Circuit breaker frame sizes above
		1. Luminaire product shall be stored in a cool dry place, above grade and protected from the elements. Luminaire poles shall be stored in a horizontal placement, above grade. Maintain all factory packaging and wrapping until luminaire product is ready for installation.	L. M.	Circuit breakers with ratings over Circuit breakers with permanen
	PART	2 - PRODUCTS	N.	The trip units shall not augment o
iving the	2.1 A.	COMPONENTS Luminaires	2.3	DISCONNECT SWITCHES
		 Shall be in accordance to the drawings and as specified. Luminaires shall have been certified to the California Energy Commission by its manufacturer to comply with the efficiency standards as per California Code of Regulations Title 24, Part 6, and Section 111 referencing the Appliance Efficiency Regulations in Title 20 post certification with building permit. 	7.	 Switches identified for use as Disconnect switches shall be
		 Luminaires shall be listed by the Design Lights Consortium. Luminaires shall be listed for the application where installed (i.e. weather proof, damp location, heavy duty). Luminaires shall be designed adequate divination of heat and sofe and simple adequate divination. 		 NEMA type 1 enclosures shall Lugs shall be listed for a minin
		 Luminaire drivers and ballasts shall be fully incorporated into the luminaire housing unless otherwise specified on the drawings. Material shall be constructed of a non-ferrous metal or powder coated to eliminate the potential of rust. 	D	5. Verity tuse sizes with the man
		 6. Luminaires shall be provided with a means for grounding metallic wireways and housings to an equipment grounding conductor. 7. Lighting Fixtures in Hazardous Areas: Fixtures shall be suitable for installation in flammable atmospheres (Class and Group) as defined in NFPA 70 and shall comply with UL 844. 	D.	 Enclosure shall be finished wi 3R. For NEMA Type 4 and 4X 1
esidential	В.	Lamps / LED Arrays		 Enclosures shall have ON and Operating handles shall be p Switches shall have provision
		 LED Light Sources Minimum Color Rendering Index (CRI): 60. 		 Switches shall have provision Tangential knockouts shall be NEMA Type 4 and 4X shall ha
		 b. Correlated Color Temperature (CCT) 1) CCT shall be as listed in Table 1 below: 		 NEMA Type 4X polyester encl Enclosures for Type 3R switch
controls.	Table Chroi	a 1. Allowable CCT Manufacturer-Rated Nominal CCT (K)Allowable LM-79 maticity ValuesMeasured CCT (K)27002580 to 287030002870 to 322035003220 to 371040003710 to 426045004260 to 474650004745 to 531157005310 to		 Iype 4 and 4X stainless steel a Cover viewing window shall b
	60206 C.	35006020 to 7040 Ballasts	C.	 Switch RATINGS Switches shall be horsepower The UL Listed short circuit curr
		1. Ballasts shall be serviceable while the fixture is in its normally installed position, and shall not be mounted to removable reflectors or wireway covers unless so specified.		a. 10,000 rms symmetrical a b. 200,000 rms symmetrical
verage is	D.	LED Drivers 1. Drivers shall be serviceable while the fixture is in its normally installed position, and shall not be mounted to removable reflectors or wireway covers		c. 200,000 rms symmetrical
edules.		unless so specified. 2. Rated case temperature shall be suitable for operation in the luminaire operating in the ambient temperatures as indicated.	D.	Applicable to disconnect switch
		 Shall accept the voltage or voltage range indicated, and shall operate normally for input voltage fluctuations of plus or minus 10 percent. Consistent with NEMA SSL 1. Shall have a minimum Power Factor (PF) of 0.90 at full input power and across specified voltage range. 	L.	 Switches shall have switch block Lugs shall be front removable
		 Shall have a maximum Total Harmonic Distortion (THD) of 20% at full input power and across specified voltage range. Shall comply with FCC 47 CFR part 15 non-consumer RFI/EMI standards. 		 Switches required for Type 4c All current carrying parts shall Switches also all them.
		 The following shall be in accordance with corresponding sections of ANSI C136.37 a. Wiring and grounding 		 switches shall have removab Switches shall have provision:
		 All internal components shall be assembled and pre-wired using modular electrical connections. Mounting provisions 		
		d. Terminal blocks for incoming AC linese. Latching and hinging		
	E.	f. Ingress protection LED Luminaires		
		 Luminaire shall have an external label per ANSI C136.15 Luminaire shall have an internal label per ANSI C136.22. 		

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Ву	Appd	2023.05.12 YYYY.MM.DD	PLAN CHECK SUBMITTAL	By	Appd	2023.03.12 2023.03.10 YYYY.MM.DD			The Contractor shall verif drawing - any errors or or The Copyrights to all desi or use for any purpose of

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2 PLAN CHECK REVISIONS

1 PLAN CHECK REVISIONS

Revision

ORIGINAL SHEET - ARCH E1

mounted outlet boxes and junction boxes in unfinished areas. at as defined per the drawings and in compliance with ADA standards. PART 1 eights prior to rough in. In no instance shall a device be roughed in mid-span between finish types. For example, if valls, switches shall be installed completely in or completely above wainscot material. e "strike" side of door frames unless specifically noted otherwise on the drawing due to architectural conflicts (i.e. full ings with architectural plans prior to rough in. Iled between the receptacle ground terminal and outlet box, in addition connected to the equipment grounding r shall be sized per NEC requirements. ensure proper polarity. If polarity is reversed, corrections shall be made at no cost to the building owner or appropriate d level with surface. Devices and plates shall be installed square and plumb with building lines. move construction debris. es and circuit breakers witches and circuit breakers. nent, components, and necessary services to support the electrical work show on the drawings and specified herein in allation include: switches WORK RESULTS FOR ELECTRICAL ION OF ELECTRICAL SYSTEMS visions: ncluding supplementary conditions, of this contract apply to this section. e in accordance with the latest published requirements of the following codes and standards: shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or EC) with California State and local amendments. ification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction. 1. General C_375 - Circuit Breakers, Molded Case, Branch Circuit and Service. ectrical Equipment Front Switches d_Case Circuit Breakers and Circuit_Breaker Enclosures. al Control Equipment. nd Fault Sensing and Relaying Equipment. r, Siemens or engineer approved equal. Illed in existing panelboards, load centers, service, and/or distribution switchgear they shall match existing devices or be equipment. Adhere to manufacturer requirements. icted using glass reinforced insulating material. Current carrying components shall be completely isolated from the nting area. B. Switches over center, trip free, toggle operating mechanism which shall provide quick_make, quick_break contact action. The non tripping of all poles. Il reside in a tripped position between on and off to provide local trip indication. Circuit breaker escutcheon shall be Idition to providing international I/O markings. and UL, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be it breaker. equipped with a push_to_trip button, located on the face of the circuit breaker to mechanically operate the circuit maintenance and testing purposes. _sealed with a hologram quality mark and shall have date code on face of circuit breaker. not be allowed. (75 °C) rated wire and/or 194 °F (90 °C) rated wire, sized according to the 167 °F (75 °C) temperature rating in the NEC. edule on the drawings. le of accepting bus connections. to 400 amperes shall be equipped with thermal magnetic trip units. Thermal trip elements shall be factory preset and be true RMS sensing and thermally responsive to protect circuit conductor(s) in a 104 °F (40 °C) ambient temperature. e 150 amperes shall have a single magnetic trip adjustment located on the front of the circuit breaker er 400 amperes shall be equipped with electronic trip units. nt trip units shall be UL_listed for reverse connection without restrictive line and load markings and be suitable for 2.3 FINISHES overall circuit breaker volume. B. Wall Plates s service equipment shall be labeled for this application pursuant to NEC requirements. e fused or non-fused as indicated on the drawings. Il be utilized indoors and NEMA Type 3R utilized outdoor unless otherwise noted on the drawings. imum of 75 degrees Celsius. nufacturer of the equipment served. vith gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated steel for NEMA Type 1 and (the enclosure shall have a brush finish on type 304 stainless steel finish. 3.2 INSTALLATION nd OFF markings stamped into the cover. provided with a dual colored, red/black position indication. ns to accept up to three 3/8 in hasp padlocks to lock the operating handle in the OFF position. e provided to facilitate ease of conduit entry (NEMA Types 1 and 3R) for switches rated 30-200A. ave a stainless steel enclosure and shall contain no knockouts. Supply watertight hubs as required for conduit entry/exit. closures shall be provided with polyester conduit hubs for field installation. hes through 200 ampere shall have provisions for interchangeable bolt-on hubs in the top endwall. I enclosures shall be dual rated as Type 3R to facilitate their use in outdoor applications. I be incorporated on 30-200A NEMA 4 and 4X, stainless steel, two or three pole switches. er rated for the AC voltage as indicated on the plans. rrent rating of the switches shall be: amperes when used with or protected by Class H or K fuses (30-600 ampere). I amperes when used with or protected by Class R or Class J fuses (30-600 ampere switches employing appropriate fuse I amperes when used with or protected by Class L fuses (800-1200 ampere). VITCHES witches 240 volt and below. plades which are visible when the switch is OFF and the cover is open. and 4X stainless steel applications shall have all copper current carrying parts.

Il be plated to resist corrosion.

SECTION 26 27 26 - WIRING DEVICES

GENERAI

- .1 SUMMARY A. This section includes: Basic wiring devices
- B. Furnish labor, materials, equipment, components, and necessary services to support the electrical work show on the drawings and specified herein in this specification.
- 1. Principal features of this installation include: a. Receptacles
- b. Switches
- c. Dimmers
- **RELATED SECTIONS** 1. Section 26 05 00 COMMON WORK RESULTS FOR ELECTRICAL
- 2. Section 26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
- 3. Section 26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS 4. Section 26 05 33 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
- 5. Section 26 05 53 IDENTIFICATION OF ELECTRICAL SYSTEMS 6. Section 26 24 16 PANELBOARDS

A. Related Sections Under Other Divisions:

- 1. The General provisions, including supplementary conditions, of this contract apply to this section. .3 GUARANTEES
- A. Materials and equipment shall be listed by an independent testing laboratory for the class of service intended (Underwriters Laboratories or equivalent).
- REQUIREMENTS
- following codes and standards: 1. National Electrical Code (NEC) with California State and local amendments.
- 2. Department of Justice ADA Standards for Accessible Design 3. UL 20 - General-Use Snap Switches
- 4. UL 231 Power Outlets 5. UL 498 - Attachment Plug and Receptacles
- 6. UL 514D Cover Plates for Flush-Mounted Wiring Devices
- 7. UL 943 Ground Fault Circuit-Interrupters 8. UL VO - Flame Rating for Flat Panel Connection Enclosure Trim Ring
- 9. National Electrical Contractors Association NECA 130 Standard for Installing and Maintaining Wiring Devices 10. NEMA WD1 - General Color Requirements for Wiring Devices
- PART 2 PRODUCTS
- I MATERIALS
- A. Receptacles
- a. 120V volts, 20 ampere minimum. Refer to plans for specific ratings of higher ampacity. b. 240V receptacles, ampacity as indicated per plans, shall be provided with appropriate cord and plug.
- c. Interlocking "make before break" d. Receptacles installed in commercial areas shall be specification, heavy duty, or Style Line/Decora grade.
- 1) Specification Grade Straight blade, sturdy construction, galvanized steel straps, easy access split circuit tab, screw terminal type, nylon face and base, with self-grounding staple. 2) Heavy Duty Grade - Straight blade, sturdy construction, one-piece brass integral ground strap, ground retention clips, bypass contact design, back wired ground terminal, screw terminal type, external bundling terminals, and deep body design.
- 2. Single, Duplex, and/or Double Duplex as indicated per the drawings. 3. Full or half switched as shown on the drawings. Half switched double duplex receptacles shall have the top receptacle switched and the bottom receptacle un-switched.
- 4. Ground Fault Circuit Interrupter (GFCI) Shall be used for the protection of personnel, in accordance to UL 943 and located as defined in NEC Article 210.8.
- 5. Isolated Ground shall be provided per the drawings. Receptacles shall feature full size ground contacts with a minimum 3/16" thick minimum nylon isolation insulator.
- 6. Damp Locations Receptacles shall have an enclosure for the receptacle that is weatherproof when the receptacle is covered (attachment plug cap not inserted and receptacle covers closed). Receptacles 15 and 20 ampere, 120 and 240V non-locking receptacles shall be listed weather-resistant type.
- 7. Wet locations Receptacles 15 and 20 ampere, 120 and 240V, installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. Receptacles 15 and 20 ampere, 120 and 240V, non-locking, shall be listed weather-resistant type. All other receptacles installed in a wet location shall be in accordance to the NEC
- 1. 120V volts, 20 ampere minimum rating. Refer to plans for specific ratings of higher ampacity. 2. Shall be Decora Rocker/Toggle, Pilot, and/or key locking type. 3. Commercial specification grade, self-grounding, 30-degree max. temperature rise, 1HP max rating, steel strap, thermoplastic actuator and body, and side wired.
- . Dimmers 1. As specified on the drawings. Dimmers shall precisely adjust lighting levels, with a "one-touch" ON or OFF at a preset level, touch and hold for
- bright to dim lighting control. 2. Dimmers shall be compatible for the lamp source served. 3. Dimmers shall be provided with memory during temporary power failures to ensure lighting level retain the last setting prior to power outage.
- 4. Provide dimmers in the capacity (wattage) needed, corresponding to the luminaires served. Power extenders shall be provided as required to serve additional load. ACCESSORIES
- A. Wall plates Shall be approx. 1/8" larger than the rough-in box opening and have curved corners. Captive screws shall be utilized. Finish shall be smooth and easy to clean. Wall plates shall match existing installed on site in finished spaces. Field verify prior to procurement. 1. Standard or ganged together where appropriate or as shown per plans.
- 2. Material Type: a. Non-conductive, high-impact nylon. 3. Waterproof faceplate assemblies shall provide a watertight connection between the plate and finished surface.
- A. Devices
- 1. Other Receptacles a. Device finish shall be as specified by the Architect. Verify with architect prior to procurement.
- 1. Wall plate finish shall match device color.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prior to installation, outlet boxes shall be free of debris.
- B. Extension rings shall be sued to bring outlet boxes flush with the finished surface as required.
- A. Wiring devices shall be installed per the NECA "Standard for Installing and Maintaining Wiring Devices". B. Outlet boxes shall be installed flush in building construction unless specifically identified as surface mounted per the plans.
- C. Switches shall be installed with the "OFF" position orientated down.
- D. When ganging dimmers together, consult manufacturer requirements and allow for proper derating.
- E. Junction boxes less a wiring device (i.e. provision made for future) shall have a blank wall plate installed. In finished areas, blank plates shall match material and finish type of adjacent receptacles and switches.

Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

TERMINAL 2 - RECOMMISSIONING

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ecture Inc. eroa Street Suite 300 9775 • www.stantec.com

eserved

- ns for a field installable electrical interlock.

ble arc suppressors to facilitate easy access to line side lugs.

A 90017-3007

A. Wiring devices and associated components shall be manufactured, tested, and installed in accordance to the latest published requirements of the

— — — RACEWAY BELOW SLAB OR UNDERGROUND OR UNDER RAISED ACCESS FLOOR ---- RACEWAY DOWN → RACEWAY CONTINUATION RACEWAY STUB-OUT WITH BUSHING ____ JUNCTION BOX, CEILING OR ABOVE CEILING MOUNTED JUNCTION BOX, WALL MOUNTED JUNCTION BOX, IN-GROUND PULL BOX HANDHOLE

ELECTRONIC SECURITY

- CCTV CAMERA, CEILING MOUNTED, FIXED AIM, WEDGE INDICATES AIMING
- Ø CCTV CAMERA, CEILING MOUNTED,

 (\mathbf{J})

J

J

PB

Q

нS

- 360° FIELD OF VIEW CCTV CAMERA, POLE MOUNTED,
- 360° FIELD OF VIEW
- Q CCTV CAMERA, WALL MOUNTED, 360° FIELD OF VIEW
- Ϋ́ CCTV CAMERA, WALL MOUNTED, FIXED AIM
- r (St CCTV CAMERA, WALL MOUNTED, 180° FIELD OF VIEW

AUDIO VISUAL

SPEAKER, SURFACE AND WALL MOUNTED

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Revision	 Appd	 ISSUE FOR BID PLAN CHECK SUBMITTAL ISSUED	 JH RT Appd	2023.10.04 2023.03.10 YYYY.MM.DD			Copyright Rese The Contractor shall verify ar drawing - any errors or omiss The Copyrights to all designs or use for any purpose other

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ORIGINAL SHEET - ARCH E1

		GENERAL SYMBOLS	ABBR	EVIATIONS
		DEMOLITION	(D)	DEMOLISH
7/77777	77/77	DEMOLITION	(E)	EXISTING
		EXISTING	(N)	NEW
		NEW WORK	(R) ABV	EXISTING TO BE RELOCATED ABOVE
	`		AC	ACCESS CONTROL
	CTE	SYSTEM	ACH ACT	ABOVE COUNTER HEIGHT ACOUSTICAL CEILING TILE
⊢		POINT OF DISCONNECTION OF DEMOLITION FROM	ADA	AMERICANS WITH DISABILITIES A
		EXISTING	ADJ AFC	ADJUSTABLE ABOVE FINISHED CEILING
		CAP OFF EXISTING	AFF	ABOVE FINISHED FLOOR
	_	— DETAIL NUMBER	AHJ	AUTHORITY HAVING JURISDICTIO
? `	~?	DETAIL CALLOUTS	ALD ALT	ASSISTED LISTENING DEVICE ALTERNATE
?		— SHEET ON WHICH	ANT	ANTENNA
		DETAIL IS SHOWN	AUTO	AUTOMATIC
	\checkmark	- ELEVATION NUMBER	AV AVG	AUDIO VISUAL
$\frac{?}{2}$	\rightarrow	EXTERIOR ELEVATIONS	AWG	AMERICAN WIRE GAUGE
		- SHEET ON WHICH	BAS BBC	BUILDING AUTOMATION SYSTEM BACKBONE BONDING CONDUCTO
		ELEVATION IS SHOWN	BBU	BATTERY BACKUP UNIT
¥		- ELEVATION NUMBER	BCT	TELECOMMUNICATIONS
?? ??	•		BDA BFC	BI-DIRECTIONAL AMPLIFIER BELOW FINISHED CEILING
? ? ??	?	INTERIOR ELEVATIONS	BFG	BELOW FINISHED GRADE
??)		BLDG BTM	BOILDING BOTTOM
L 4		- SHEET ON WHICH	C C/W	CONDUIT
		ELEVATION IS SHOWN	CAP	CAPACITY
	2	- SECTION NUMBER	CATV CBN	COMMUNITY ANTENNA TELEVISIC COMMON BONDING NETWORK
?		BUILDING SECTIONS	CCTV	CLOSED CIRCUIT TELEVISION
$\langle \cdot \rangle$	*	- SHEET ON WHICH	CFOI	CONTRACTOR FURNISHED, OWNI INSTALLED
		SECTION IS SHOWN	CL CL G	CENTERLINE
	_	- SECTION NUMBER	CM	CEILING MOUNTED
?	?		CMP CMR	COMMUNICATIONS MEDIA PLENU COMMUNICATIONS MEDIA RISER
?	\checkmark	WALL SECTIONS	CMU	CONCRETE MASONRY UNIT
		- SHEET ON WHICH SECTION IS SHOWN	COMM	COMMUNICATIONS
			CONC CONN	CONCRETE CONNECTION
O'-0"	<u>R</u> — 	— FLOOR OR ROOF LEVEL NAME — VERTICAL ELEVATION	CONST	CONSTRUCTION
Ν			CONT	CONTRACTOR
			CTR	CENTER
(NORTH ARROW	D	DATA
			DAS DET	DISTRIBUTED ANTENNA SYSTEM DETAIL
			DIA	
		DRAWING REVISION	DIM	DIVISION
		MATCH LINE	DL	DAMP LOCATION
			DWG	DRAWING
		GRAPHIC SCALES - ENGINEERING	EA EC	EACH ELECTRICAL CONTRACTOR
FL 1000	0	ELEVATION	EF	ENTRANCE FACILITY
	•		ELEC	ELEVATOR
+ 0000		ELEVATION - CEILING	EM	EMERGENCY
ELEVATION		DATUM ELEVATION	ENCL	ENCLOSURE
TOP OF			EQUIP ER	EQUIPMENT EQUIPMENT ROOM/EMERGENCY
0000		ROOM TAG	FRRCS	ROOM EMERGENCY RESPONDER RADIC
(M01)				COMMUNICATIONS SYSTEM
\sim		KET NOTE TAG	EXTER F&I	EXTERIOR FURNISHED AND INSTALLED
SLOPI	Έ	SLOPE ARROW	FA	FIRE ALARM
\sim		CIRCULAR BREAK SYMBOL	FDU	FIBER (FIBRE) OPTIC DISTRIBUTIC
\checkmark		CIRCLE BREAK SYMBOL	FLR FQ	FLOOR FIBER (FIBRE) OPTIC(AL)
		REFERENCE SYMBOL - DIAMOND	FTP G_GND	FOIL TWISTED PAIR GROUND
			GC GF	GENERAL CONTRACTOR GROUNDING EOUAI IZER
		REFERENCE SYMBOL - HEXAGON	HCM	
∠x ∖		REFERENCE SYMBOL - TRIANGLE	НК	HOUSE KEEPING PAD
\triangleright		REFERENCE SYMBOL - CIRCLE	HOR	HORIZONTAL
0		REFERENCE SYMBOL - ROTATED HEXAGON	HT ID	HEIGHT INSIDE DIAMETER
			IDF	INTERMEDIATE DISTRIBUTION FRAME
ų L		GENTER LINE	IDP	INTRUSION DETECTION PANEL
(×)		GRID BUBBLE AND LINE	ik ISP	INSIDE PLANT
\checkmark			JB	JUNCTION BOX

4

ABBREVIATIONS

MAGNETIC

MAXIMUM

MECHANICAL

mesh-BN MESH BONDING NETWORK mesh-IBN MESH ISOLATED BONDING

NETWORK

MANHOLE

MINIMUM

STRAND

MOUNTED

MOUNTING

ON CENTER

INSTALLED

NOT IN CONTRACT NOT TO SCALE

OUTSIDE DIAMETER

MANUFACTURER

MISCELLANEOUS

MAIN POINT OF ENTRY

MULTIMODE FIBER (FIBRE) OPTIC

OWNER FURNISHED, CONTRACTOR

MAIN DISTRIBUTION FRAME

MAG

MAX

MDF

MFR

MH

MIN

MISC

MM

MPOE

MTD

MTG

NIC

NTS

OC

OD OFCI

MECH

JCTOR FOR ATIONS	
AMPLIFIER	
) CEILING	
) GRADE	
ENNA TELEVISION	

TELEVISION JRNISHED, OWNER IS MEDIA PLENUM

IS MEDIA RISER ONRY UNIT

TENNA SYSTEM

M/EMERGENCY SPONDER RADIO NS SYSTEM

TIC DISTRIBUTION PTIC(AL)

UBC

UG UNO

UPS

V

VC VDT

VEL

VERT

VIF

VOL

VP VPP

VSS

W

WAP

WP

WT

USB

UTP

UNIT BONDING CONDUCTOR

UNLESS NOTED OTHERWISE

UNIVERSAL SERIAL BUS

VOLUME CONTROL

VERIFY IN FIELD

VIDEO PROJECTOR

VOICE PATCH PANEL

WALL TELEPHONE

WEATHERPROOF

WATERTIGHT

VIDEO SURVEILLANCE SYSTEM

WIRELESS ACCESS POINT

UNSHIELDED TWISTED PAIR

VISUAL DISPLAY TERMINAL

VERIFY EXACT LOCATION

UNINTERRUPTIBLE POWER SUPPLY

UNDERGROUND

VOICE

VERTICAL

VOLUME

LIGHT EMITTING DIODE LEGALLY REQUIRED

LED

LR

LTG

LV

LIGHTING

LOW VOLTAGE

OFE OWNER FURNISHED EQUIPMENT OFOI OWNER FURNISHED, OWNER INSTALLED OH OVERHEAD OPER OPERABLE/OPERATOR OUTSIDE PLANT OSP POLE Ρ PUBLIC ADDRESS PA PB PULL BOX PRIMARY BONDING BUSBAR PBB POWER DISTRIBUTION UNIT PDU POE POINT OF ENTRANCE POS POINT OF SERVICE PP PATCH PANEL PAIR PR PTS PNEUMATIC TUBE STATION PTZ PAN/TILT/ZOOM PVC POLYVINYL CHLORIDE PWR POWER R RACEWAY RACK BONDING BUSBAR RBB RBC RACK BONDING CONDUCTOR REC RECESSED REQD REQUIRED REX REQUEST TO EXIT RADIO FREQUENCY RF ROOM RM RO RACEWAY ONLY RECEIVE RX SECONDARY BONDING BUSBAR SBB SBG SUPPLEMENTARY BONDING GRID SCTP SCREENED TWISTED PAIR SEC SECURITY SECT SECTION SIMILAR SIM SLV SLEEVE SINGLE MODE FIBER OPTIC STRAND SM SMR SURFACE MOUNTED RACEWAY SPECS SPECIFICATIONS SPFPP SERVICE PROVIDER FIBER PATCH PANEL SPT SPLITTER STD STANDARD STP SHIELDED TWISTED PAIR TBB TELECOMMUNICATIONS BONDING BACKBONE TBC TELECOMMUNICATIONS BONDING CONDUCTOR TC TELECOMMUNICATIONS CONTRACTOR TE TELECOMMUNICATIONS ENCLOSURE TEBC TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR TELE TELEPHONE TELECOM TELECOMMUNICATIONS TGB TELECOMMUNICATIONS GROUNDING BUSBAR TMGB TELECOMMUNICATIONS MAIN GROUNDING BUSBAR TAMPER RESISTANT TP TR TELECOMMUNICATIONS ROOM TTB TELECOM TERMINAL BOARD ΤV TELEVISION ТΧ TRANSMIT TYP TYPICAL

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	DRAWING INDEX									
NO.	DRAWING NAME									
T-001	SYMBOLS AND ABBREVIATIONS, TELECOM SHEET INDEX									
T-002	TELECOM CABLING ROUGH-IN SCHEDULES									
T-100	TELECOM SITE PLAN									
TY100	SECURITY SITE PLAN									
T-101	TELECOM OFFICE/MAIN.BLDG PLAN									
T-400	TELECOM ENLARGED PLAN									
T-501	TELECOM DETAILS									
T-600	TELECOM SINGLE LINE DIAGRAM									

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Client/Project

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Title SYMBOLS AND ABBREVIATIONS, OM SHEET INDEX

PROJ NO. 2014240805

	TECHNOLOGY CABLING SCHEDULE											
DEVICE	DESIGNATION	ТҮРЕ	CABLE CAT6A VOICE / CAT6A	E QUANTITY A FIBER I	RG-6 SPEAKER	CABLE COLOR	FACEPLATE PORT COUNT	FACEPLATE REFERENCE DETAIL	NOTES			
NIP	2	STANDARD OUTLET	2		BL	JE	2-PORT	1 / T502				
v	W	WALL PHONE	1		BL	ACK	1-PORT	4 / T502				
WAP	-	WIRELESS ACCESS POINT, CLG	2		OR	ANGE	2-PORT SURF. MT. BOX	2 / T502				
0		FIXED CAMERA, CLG	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
Q		360 CAMERA, CLG	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
Q		360 CAMERA, POLE	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
Q		360 CAMERA, WALL	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
Ŷ		FIXED CAMERA, WALL	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
Ŷ		180 CAMERA, WALL	1		YE	LLOW	1-PORT SURF. MT. BOX	3 / T502				
- S		SPEAKER, SURFACE & WALL			1							
r ↓ E		FIBER ENCLOSURE, CLG		1-PAIR OM4 MM								
		FIBER ENCLOSURE, POLE		1-PAIR OM4 MM								
NOTES:												

DEVICE	DESIGNATION	TYPE	FLOOR	WALL	CEILING	FURNITURE	POLE	CONDUIT REQUIREM
NID.	2	STANDARD OUTLET		Х				SURFACE MOUNTED RACE
¥	W	WALL PHONE		Х				SURFACE MOUNTED RACE
WAP	-	WIRELESS ACCESS POINT, CLG			Х			SURFACE MOUNTED RACE
Ø		FIXED CAMERA, CLG			Х			SURFACE MOUNTED RACE
Q		360 CAMERA, CLG			Х			SURFACE MOUNTED RACE
Q		360 CAMERA, POLE					Х	SURFACE MOUNTED RACE
Q		360 CAMERA, WALL		Х				SURFACE MOUNTED RACE
ę		FIXED CAMERA, WALL		Х				SURFACE MOUNTED RACE
ē.		180 CAMERA, WALL		Х				SURFACE MOUNTED RACE
- S-		SPEAKER, SURFACE & WALL		Х				SURFACE MOUNTED RACE
F ✓ EE		FIBER ENCLOSURE, CLG			х			SURFACE MOUNTED RACE
		FIBER ENCLOSURE, POLE					Х	SURFACE MOUNTED RACE
NOTES:								

_____ _____ _____ _ ____ _ ___ ____ ____ ____ ____ _____ ____ _____ ____ ____ _____ ____ ____ _ ____ ___ _____ _____ _____ ____ _____ ____ By Appd YYYY.MM.I Revision

ISSUE FOR BID SUBMITTAL

ORIGINAL SHEET - ARCH E1

TECHNOLOGY ROUGH-IN SCHEDULE COMBINATION DEVICE BACKBOX REQUIREMENTS REFERENCE DETAIL IENTS MOUNTING HEIGHT NOTES SURFACE MOUNTED SINGLE-GANG BOX 18"AFF, SURFACE MOUNT, UON EWAY SURFACE MOUNTED SINGLE-GANG BOX 43"AFF, SURFACE MOUNT, UON EWAY CEWAY SURFACE MOUNTED SINGLE-GANG BOX CEILING, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX CEILING, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX CEILING, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT ACEWAY SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT CEWAY SURFACE MOUNTED SINGLE-GANG BOX CEILING, SURFACE MOUNT CEWAY ACEWAY SURFACE MOUNTED SINGLE-GANG BOX 96" OR TAMPER RESISTANT HEIGHT, SURFACE MOUNT

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A. ROUTE ALL CAT6A DATA DROPS TO TELECOMMUNICATIONS RACK IN THE COUNTING ROOM 113. B. SEE SECURITY DRAWINGS FOR CAMERA AND CAMERA MOUNTING INFORMATION.

1. CONTRACTOR TO COORDINATE CONDUIT ROUTES WITH CIVIL DRAWINGS PRIOR TO COMMENCEMENT OF WORK TO MINIMIZE TRENCHING THROUGH EXISTING CONCRETE

2. PROVIDE (1) CAT6A DATA DROPS TO NEMA 4X PANEL FOR FARE BOX PROBE MOUNTED ON THE CANOPY COLUMN. PROBE IS OF/OI. ROUTE 1-1/4" CONDUIT UP CANOPY COLUMN AND TERMINATE IN J-BOX AT APPROX. 6' AFF. FINAL LOCATION TO BE COORDINATE WITH OWNER. 3. PROVIDE SURFACE MOUNTED RACEWAY ON CEILING FOR CABLING.

5. WALL MOUNTED PULLBOX WITH SURFACE MOUNTED CONDUIT FOR THE ABOVE CEILING

8. PAGING SYSTEM SPEAKERS WITH SPEAKER CABLING ROUTED TO COUNTING ROOM 113.

9. SURFACE MOUNT SPEAKERS TO THE CANOPY COLUMNS. TYPICAL FOR ALL CANOPY AREAS. 10. 2" CONDUIT FOR FUTURE SECURITY DEVICES. CAP AND SEAL AND SLOPE FOR FUTURE USE.

11. ROUTE CONDUIT UP COLUMN TO CEILING MOUNTED JUNCTION BOX.

TELECOM SITE PLAN

PROJ NO. 2014240805

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A. ROUTE ALL CAT6A DATA DROPS TO TELECOMMUNICATIONS RACK IN THE COUNTING ROOM 113.

1. IP CAMERA WITH CAT 6A CABLE ROUTED TO TELECOM RACK LOCATED IN COUNTING ROOM 113. 2. IP CAMERA WITH FIBER TO CAT 6A MEDIA CONVERTER. MULTIMODE OM4 FIBER OPTIC CABLE ROUTED TO TELECOM RACK LOCATED IN COUNTING ROOM 113. 3. SURFACE MOUNTED CAMERA MOUNTED TO UNDERSIDE OF CANOPY STRUCTURE. TYPICAL FOR

SECURITY SITE PLAN

Revision

A. ROUTE ALL CAT6A DATA DROPS TO TELECOMMUNICATIONS RACK IN THE COUNTING ROOM 113. B. SEE SECURITY DRAWINGS FOR CAMERA AND CAMERA MOUNTING INFORMATION.

TELECOM OFFICE/MAIN.BLDG PLAN

2 TELECOM RACK ELEVATION T-400 1" = 1'-0"

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			GENERAL NOTES
			KEY NOTES
			 PROVIDE WALL MOUNTED RACK. PROVIDE 8'-0"H X 0'-3/4"D A/C GRADE PLYWO(
			FLOOR. PAINT WITH 2-COATS OF WHITE FIRE CONTRACTOR SHALL NOT PAINT OVER LISTIN PLYWOOD BACKING WITH GENERAL CONTRA 3. PROVIDE SURFACE MOUNTED RACEWAY ON
			 A. SPACE FOR FUTURE SECURITY EQUIPMENT. 5. DRIMADY/0500NDADY DONDING DUGDAD TO
			 PRIMART/SECONDART BONDING BOSBAR TO WITH ELECTRICAL CONTRACTOR. ELECTRICA THE COMMENCEMENT OF WORK. 6. SPACE FOR SERVICE PROVIDER.
Stantor	Client/Project Logo	Client/Project SANTA BARBARA METROPOLITAN TH	RANSIT TELECOM I
ng Services Inc.	SANTA BARBARA	TERMINAL 2 - RECOMMISSIONING	
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			I

WOOD SHEETS. MOUNT PLYWOOD AT 6" ABOVE FINISHED FIRE RETARDANT PAINT PRIOR TO INSTALLATION. STING COORDINATE PROCUREMENT AND INSTALLATION OF TRACTOR.

DN CEILING FOR CABLING. SEE SHEET T-100 AND T-600 FOR

TO BE MOUNTED AT 7'-6" AFF, COORDINATE REQUIREMENTS ICAL DRAWINGS. AND DIVISION 26 SPECIFICATIONS PRIOR TO

1 ENLARGED PLAN









TERMINAL 2 - RECOMMISSIONING 5353 OVERPASS ROAD, GOLETA, CA 93111

Project No. PROJ NO. 2014240805 Revision

Client/Project Logo

Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

Title

1 ROUTE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. ROUTE CABLE ABOVE 10' OR PROVIDE CONTINOUS CONDUIT BACK TO MDF/IDF. SEE PLAN DRAWINGS FOR SECURITY HEADEND LOCATION.

DEATIL FLAG NOTES:

T-501 NONE



DETAIL FLAG NOTES:

T-501 NONE



















TYPICAL WALL PHONE STATION OUTLET 4 \ T-501 NOT TO SCALE

1 ROUTE 1" CONDUIT TO NEAREST SECURITY HEADEND LOCATION.

B LIGHT POLE OR CAMERA POLE BY OTHERS.

ENCLOSURE FOR TIE INTO CAMERA

BOLE MOUNT CAMERA

5 1" WEATHERPROOF FLEXIBLE CONDUIT WITHIN POLE.

CAMERA, ENCLOSURE, MOUNT AND MOUNTING SUPPORT HARDWARE.

2 CAMERA, ENCLOSURE, MOUNT AND MOUNTING SUPPORT HARDWARE.

 $--\rightarrow <1$







SYMBOL: 🔽



TELECOM DETAILS



4 LOCKABLE, CONTINUOUS HINGE 6" x 12" x12" NEMA 4 ENCLOSURE LOCATED AT BASE OF POLE. PROVIDE MEDIA CONVERTER WITHIN



		_		CEILING		
ACE MOUNTED ED ON CEILING		+]				
FFICE B	CORRIDOR	(E) COUNTING ROOM		LEVEL 01		
IOR WALL						
SER DIA	GRAM				4 T-600	NONE
	WAP	GENER 1. REFEI ABBRI QUAN	AL NOTES R TO FLOOR PLANS A EVIATIONS DRAWING TITIES PER DEVICE.	AND SYMBOLS & FOR CABLING		
					_	



TELECOMMUNICATIONS FIBER OPTIC CABLING RISER DIAGRAM

GENERAL NOTES

- 1. SEE DETAILS ON SHEET T-501 FOR GROUNDING CONNECTION REQUIREMENTS INSIDE THE TELECOMMUNICATION ROOMS.
- 2. BOND AND GROUND BACKBONE PATHWAYS IN COMPLIANCE WITH NEC-250 AND ANSI/TIA-607-C.PROVIDE BONDING JUMPERS WHERE BACKBONE PATHWAYS ARE INTERRUPTED AT FIRE-RATED



• 16-20 METERS (53-66 FT.) = 2/0 AWG • GREATER THAN 20 METÉRS (66 FT.) = 3/0 AWG

COORDINATE CONNECTION OF TELECOMMUNICATION BONDING CONDUCTOR TO ELECTRICAL SERVICE GROUNDING BUSBAR WITH ELECTRICAL. THE SERVICE GROUNDING BUSBAR MAY RESIDE INSIDE THE ELECTRICAL SERVICE EQUIPMENT.

LEVEL 01

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ICATIONS PAGING SYSTEM FIBER OPTIC CABLING RISER DIAGRAM





LEVEL 01

LEVEL 01

TELECOM SINGLE LINE DIAGRAM

Scale

PROJ NO. 2014240805



AFF / AFG AHJ	ABOVE FINISHED FLOOR / GRADE AUTHORITY HAVING JURISDICTION	(N) NC	NEW NORMALLY CLOSED
A/C A/G	ASPHALT CONCRETE ABOVE GROUND	NEC NFPA	NATIONAL ELECTRICAL CODE NATIONAL FIRE PROTECTION ASS
ASS Y AST BLDG	ABOVE GROUND STORAGE TANK BUILDING	NGV NPS NPT	NATIONAL GAS VEHICLE NATIONAL PIPE STANDARD NATIONAL PIPE THREAD
BTWN CA	BETWEEN COMPRESSED AIR	N/A NIC	NOT APPLICABLE NOT IN CONTRACT
CAC CL	CALIFORNIA ADMINISTRATIVE CODE CENTER LINE OR CHAIN LINK (FENCE)	NTS NO	NOT TO SCALE NUMBER, NORMALLY OPEN
CLR CMU	CLEARANCE CONCRETE MASONRY UNIT	OC O/H	ON CENTER OVERHEAD
CNG COMP CONC	COMPRESSED NATURAL GAS COMPRESSOR CONCRETE	P/N P/L PB	PART NUMBER PROPERTY LINE PUSH BUTTON
CONC CONN CONT	CONNECTION CONTINUOUS OR CONTINUATION	PBE PE	PLAIN BOTH ENDS POLYETHYLENE OR PROFESSION
CPLG CU	COUPLING COPPER	PLC POC	PROGRAMMABLE LOGIC CONTRO POINT OF CONNECTION
CU FT DIA OR Ø	CUBIC FEET DIAMETER	POE #	POINT OF ENTRY, MINIMUM POUND, CLASS OR NUMBER
DISCH DISP	DISCHARGE DISPENSER DIESEI	PRV PSI PSIG	PRESSURE RELIEF VALVE POUNDS PER SQUARE INCH
DEPT DWG	DEPARTMENT DRAWING	PVC RED	POL YVINYLCHLORIDE REDUCING
EA ELEV	EACH ELEVATION	REF RF, RFF	REFERENCE RAISED FACE, RAISED FACE FLAN
EO ESD	EDGE OF EMERGENCY SHUTDOWN DECISE	RTJ RCP	RING TYPE JOINT REINFORCED CONCRETE PIPE
ESDPB ENCL	EMERGENCY SHUIDOWN DECISE PUSH BUITON ENCLOSURE	SCH	REINFORCEMENT SCHEDULE
(E) FH FIG	FIRE HYDRANT FIGURE	SIM	SIMILAR SOCKET WELD
FMT FNPT	FUEL MANAGEMENT TERMINAL FEMALE NATIONAL PIPE THREAD	SPR SQ	SPRINKLER SQUARE
FT FX	FOOT FIRE EXTINGUISHER (PORTABLE)	SQ FT SCFH	SQUARE FEET / FOOT STANDARD CUBIC FEET PER HOU
FOM GALV	FACE OF MASONRY GALVANIZED	SS SCF	STAINLESS STEEL STANDARD CUBIC FEET
GND H HC	HEIGHT HANDICAP	SCG SO STD	SU CAL GAS SEWER DRAIN STANDARD
HEX	HEAT EXCHANGER HIGH PRESSURE	THK	THICK THREADED
HORIZ IP	HORIZONTAL INTERNET PROTOCOL	THRU TGT	THROUGH TULSA GAS TECHNOLOGY
ICBO IBC	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS	S TYP U/G	TYPICAL UNDERGROUND
	INTERNATIONAL FIRE CODE INTERNATIONAL PLUMBING CODE INSIDE DIAMETER	ULR UNO	UNLEADED REGULAR UNLESS NOTED OTHERWISE
KVA LIS	KILOVOLT AMPS LANDSCAPING	VERT VTA	VERTICAL VENT TO ATMOSPHERE
LAV LB	LAVATORY POUND	W	WIDE WITH
LC LG	LOCKED CLOSED LONG	XFMR XXS	TRANSFORMER EXTRA EXTRA STRONG OR DOUB
	LOOKING LOCKED OPEN MAXIMUM ALLOWABLE WORKING PRESSURE		
MB	MACHINE BOLT MAKE-UP		
MO MAX	MASONRY OPENING MAXIMUM		
MILS MIN	MILITARY STANDARD MINIMUM		
MGMT MSA MTP	MANAGEMENT METER SET ASSEMBLY MOTOR		
MIR	MOTOR		

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ORIGINAL SHEET - ARCH E1

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	<u>SCO</u>	<u>PE OF W</u>	<u>/ORK</u>
AL CODE ECTION ASSOCIATION .E DARD AD	1.	THE SO INCLUE ALL AS A. 1 A. 1 C	COPE OF WORK FOR THE PETROLEUM FUELING SYSTEM DES PROVISION AND INSTALLATION THE OF BELOW ITEMS AND SOCIATED APPURTENANCES: 2,000-GAL. DOUBLE-WALL DIESEL-FUEL AST LISTED PER UL-142 AND UL-2085 WITH (1) REMOTE-FILL STATION. TANK SHALL BE CONFIGURED FOR DIESEL FUEL AND SHALL INCLUDE FIXED ADDER, CATWALK AND HANDRAIL.
OPEN		В. С Т	0.75 HP SUBMERGED TURBINE PUMP WITH MATCHING REMOTE- TYPE FIXED-SPEED PUMP CONTROLLER.
		C. F \ E M	PROVIDE WITH ALL TANK-TOP APPURTENANCES, INCLUDING FIRE /ALVE WITH FUSIBLE LINK, DROP TUBE WITH CONNECTION BUNG, VENT BUNG, PRIMARY AND SECONDARY VENTS, //ECHANICAL/CLOCK GAUGE AND VENT RISER WITH BREATHER CAP.
ROFESSIONAL ENGINEER GIC CONTROLLER ON IIMUM		D. C C H	ONE-HOSE SINGLE-PRODUCT ENHANCED CAPACITY DIESEL DISPENSER CONFIGURED FOR DIESEL FUEL AND INCLUDING HANGING HARDWARE AS SPECIFIED.
		E. I	NCLUDE HARDWARE TO MOUNT DISPENSER TO AST.
		F. L L L	EAK MONITORING CONSOLE TO MONITOR TANK-PRODUCT EVEL, LEAK SENSORS IN DISPENSER SUMP AND IN FUEL TANK NTERSTICE, AND OVERFILL ALARM THAT ANNUNCIATES AT TANK EVELS ABOVE 90% OF THE LISTED CAPACITY OF THE TANK.
ETE PIPE		G. F N T A	FUEL-MANAGEMENT SYSTEM, INCLUDING (1) TERMINAL. WIRE NEW TERMINAL TO ONE-PRODUCT DISPENSER TO CONTROL TRANSACTIONS UPON AUTHORIZATION AND TO RECORD AMOUNTS DISPENSED. WIRE TERMINAL TO LOCAL IP DATA SWITCH.
ET PER HOUR ET		H. S L M A C F A	SHOP-FABRICATED ELECTRICAL POWER-DISTRIBUTION PANEL, JL LISTED, FOR POWERING AND CONTROLLING FUEL PUMP AND DISPENSER, WITH HOOK-SWITCH ISOLATION, SWITCHED NEUTRAL, ESD CIRCUIT, TVSS, INTEGRATED PUMP CONTROLLER, AND CIRCUIT ISOLATION FOR ALL LINE- AND LOW-VOLTAGE CIRCUITS ON DISPENSING ISLAND. CONFIGURE FOR 208V 3- PHASE POWER SUPPLY TO PANEL WITH ALL LOADS BEING 208V AND 120V SINGLE-PHASE PER DRAWINGS.
OGY		I. F A C A	FIRE EXTINGUISHERS, SAFETY AND INSTRUCTIONAL SIGNAGE AND OTHER SAFETY EQUIPMENT AT THE TANK AREA AND AT THE DISPENSING AREA AS REQUIRED BY NFPA 30A, IFC AND OTHER AHJ REQUIREMENTS.
RWISE	2.	COORI TO CO ELSEW	DINATE WITH OTHER TRADES AND CONTRACTORS AS NEEDED NSTRUCT THE FUELING SYSTEM AND THAT ARE WORKING /HERE ON THE PROJECT SITE.
RAGE TANK RE	3.	OTHEF EQUIPI AND C	RWISE PROVIDE ALL ASSOCIATED APPURTENANCES, MATERIALS, MENT AND LABOR NEEDED TO COMPLETE A FUNCTIONAL, SAFE ODE-COMPLIANT FUELING FACILITY.
G OR DOUBLE EXTRA STRONG	4.	PREPA CONTF REGUL	RE AND PROVIDE DOCUMENTATION FOR SPILL PROTECTION ROL AND COUNTER-MEASURE (SPCC) PLAN PER FEDERAL EPA ATIONS.
	5.	REGIS	TER THE TANK WITH THE STATE OF CALIFORNIA.

START UP AND COMMISSION INTEGRATED FUELING SYSTEM, PER INSTRUCTIONS FROM RESPECTIVE EQUIPMENT AND COMPONENT MANUFACTURERS, INCLUDING DOCUMENTING ALL COMMISSIONING STEPS AND STATUS.

GENERAL NOTES AND CODES FOR PETROLEUM FUELING SYSTEM:

CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO PROVIDE A COMPLETE, FULLY FUNCTIONAL, CODE-COMPLIANT AND SAFE DIESEL FUELING SYSTEM AT SB MTD. 2. STRUCTURAL REQUIREMENTS:

- A. EQUIPMENT SHALL BE ANCHORED ACCORDING TO THE WRITTEN INSTRUCTIONS AND RECOMMENDATIONS OF THE RESPECTIVE EQUIPMENT MANUFACTURERS AND PER PROJECT-STRUCTURAL DRAWINGS.
- REFER TO STRUCTURAL SHEETS FOR PETROLEUM TANK-B. ANCHORING DETAIL.
- CONTRACTOR SHALL PROVIDE PIPE SUPPORTS AT MAX SPACING OF 12' O.C. FOR 3" CS PIPES. COORDINATE LOCATION AND QUANTITY OF PIPE SUPPORTS AS REQUIRED TO MEET THIS SPACING. SUPPORTS AND CLAMPS SHALL BE SUITABLE FOR THEIR LOADS AND SHALL BE LISTED OR INTENDED FOR USE WITH STEEL PIPING, AND SHALL BE FABRICATED FROM GALVANIZED STEEL AND HARDWARE.

THE FUELING SYSTEM SHALL BE CONSTRUCTED AND TESTED IN CONFORMANCE WITH THE CURRENTLY ADOPTED EDITION OF THE FOLLOWING CODES AND STANDARDS AS SUPPLEMENTED, AMENDED, OR MODIFIED BY THE STATE OF CALIFORNIA:

- A. STATE OF CALIFORNIA ADMINISTRATIVE CODE.
- B. NFPA 30 FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE.
- C. NFPA 30A CODE FOR MOTOR FUEL DISPENSING FACILITIES AND REPAIR GARAGES.
- D. INTERNATIONAL ELECTRICAL CODE (IEC).
- E. INTERNATIONAL FIRE CODE (IFC).

3

4

6

F. OTHER APPLICABLE CODES AND REGULATIONS AS ADOPTED BY THE CITY OF SANTA BARBARA.

EXCEPT AS NOTED HEREIN. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, AND PERFORM ALL INSTALLATION, TESTING, AND STARTUP NEEDED TO PROVIDE COMPLETE AND FUNCTIONAL FUELING AND FLUID DISPENSING FACILITY PER THIS SET OF DRAWINGS AND PROVIDED SPECIFICATIONS.

PROVIDE EQUIPMENT AS DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS. OTHER, EQUAL PRODUCTS MAY BE SUBSTITUTED ONLY WITH THE OWNER'S PRIOR APPROVAL, IN WRITING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ASSOCIATED MODIFICATIONS TO THE CONSTRUCTION DRAWINGS THAT MAY **RESULT FROM SUBSTITUTIONS.**

DELIVER A FULLY FUNCTIONAL, SAFE AND CODE COMPLIANT FUELING SYSTEM: AND SHALL VERIFY CONSTRUCTABILITY PRIOR TO COMMENCING ANY WORK OR ORDERING EQUIPMENT.

VERIFY EXISTING EQUIPMENT AND SITE CONDITIONS, DIMENSIONS, PIPING AND POINTS OF CONNECTION FOR CONSISTENCY WITH THE EQUIPMENT PRIOR TO COMMENCING ANY WORK AND ORDERING EQUIPMENT. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF ANY DISCREPANCY OR LACK OF CONSTRUCTABILITY.

THE FUELING SYSTEM SHALL PASS THE FOLLOWING INSPECTIONS BY THE FIRE DEPARTMENT AND OTHER PERTINENT AHJ'S. CONTRACTOR SHALL SCHEDULE EACH INSPECTION AT LEAST 72 HOURS AHEAD OF TIME. ALL TESTING SHALL BE WITNESSED BY A THIRD PARTY AND DOCUMENTED.

- A. FIRST INSPECTION WITNESS PRESSURE TESTING OF AST CONTAINMENT INTEGRITY BEFORE ANCHORING TANK.
- SECOND INSPECTION WITNESS PRESSURE TESTING OF B. INSTALLED PRIMARY PRODUCT AND PIPING WHILE THE PIPING AND SUMPS ARE EXPOSED (HOLD 55 PSIG FOR 20 MINUTES).
- C. THIRD INSPECTION IF APPLICABLE, WITNESS PRESSURE TESTING OF SECONDARY PRODUCT AND PIPING, IF APPLICABLE, WHILE THE PIPING AND SUMPS ARE EXPOSED (HOLD 5 PSIG FOR 20 MINUTES).
- D. FORTH INSPECTION PERFORMANCE TESTING:
 - LEVEL AND LEAK SENSORS SHALL BE TESTED AND CONFIRMED AS BEING OPERATIONAL BEFORE INTRODUCING FUEL TO ANY STORAGE TANK. FUEL TANKER TRUCK SHALL BE ON SITE FOR FUNCTIONAL TESTING OF 90% OVERFILL ALARM, AND TESTING TO VERIFY THAT THE **OVERFILL PREVENTION VALVE PROPERLY CLOSES BY 95%** FULL.
 - TEST ESD BUTTONS TO VERIFY PRODUCT PUMP AND • DISPENSER ARE DE-ENERGIZED.
 - FINAL INSPECTION SHALL INCLUDE FIRE DEPARTMENT WITNESSING ALL FUNCTIONS OF THE INSTALLED SYSTEM.

- OBTAIN THE FOLLOWING PERMITS NEEDED TO CONSTRUCT AND 9. OPERATE THE FUELING FACILITY, INCLUDING MATERIALS:
 - ABOVEGROUND DIVISION STORAGE TANK (CUPA) PERMIT FROM Α. THE FIRE DEPARTMENT, HAZARDOUS MATERIALS.
 - AIR QUALITY PERMIT FROM STATE OF CALIFORNIA AS NEEDED. Β.
 - C. OWNER SHALL COMPLETE HAZ-MAT DISCLOSURE FORM WITHIN 10 DAYS OF FINAL FIELD INSPECTION BY FIRE DEPARTMENT.
- WORKERS INSTALLING THE FOLLOWING EQUIPMENT SHALL BE 10. TRAINED AND CERTIFIED BY THE EQUIPMENT MANUFACTURER OR MANUFACTURER'S AUTHORIZED DISTRIBUTOR, BEFORE PERFORMING ANY APPLICABLE WORK FOR THIS PROJECT. EVIDENCE OF CERTIFICATION SHALL BE PROVIDED TO THE OWNER. UPON REQUEST. WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION MANUAL(S):
 - A. PRODUCT-STORAGE TANK
 - PRODUCT PUMP Β.
 - C. FUEL DISPENSER
 - D. FUEL-MANAGEMENT SYSTEM
 - E. LEAK-MONITORING CONSOLE / SYSTEM
- 11. INSTALLATION AND START-UP OF ALL EQUIPMENT AND COMPONENTS SHALL BE IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURERS WRITTEN RECOMMENDATIONS AND SPECIFICATIONS.
- 12. IN THE EVENT OF AN INCONSISTENCY BETWEEN DRAWINGS, WRITTEN SPECIFICATIONS, AND/OR REFERENCED STANDARDS, THE MOST STRINGENT ONE SHALL GOVERN.
- 13. WELDING ON FUELING PIPING SHALL BE PERFORMED IN ACCORDANCE WITH ASME/ANSI B31.3. WELDING PROCEDURES SHALL BE QUALIFIED IN ACCORDANCE WITH ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX. QUALIFIED WELD PROCEDURES & WELDERS' CERTIFICATIONS SHALL BE KEPT ON FILE AND AVAILABLE FOR INSPECTION BY OWNER'S REPRESENTATIVE. NO WELDING SHALL BE PERFORMED BY ANY WELDER FOR WHOM A CURRENT CERTIFICATION IS NOT ON FILE.
- CONTRACTOR SHALL UTILIZE A QUALIFIED INSPECTOR TO INSPECT 14 WELDS IN ACCORDANCE WITH CHAPTER VI OF ASME B31.1. EVERY WELD SHALL BE EXAMINED VISUALLY. 10% OF ALL SOCKET WELDS SHALL BE RANDOMLY INSPECTED BY LIQUID PENETRANT, AND A WRITTEN REPORT OF INSPECTION AND TESTING FURNISHED TO THE ENGINEER FOR REVIEW AND APPROVAL, BEFORE PRESSURIZING THE PIPE.
- 15. ALL BALL VALVES SHALL BE LISTED UNDER UL 842 (VALVES FOR FLAMMABLE FLUIDS) AS BEING SUITABLE FOR FLAMMABLE LIQUID SHUT OFF. BALLS AND STEMS SHALL BE STAINLESS STEEL. VALVE BODIES SHALL BE STAINLESS STEEL.
- 16. INSTALLATION AND START-UP OF ALL EQUIPMENT AND COMPONENTS SHALL BE IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURERS WRITTEN RECOMMENDATIONS AND SPECIFICATIONS.
- 17. CONTRACTOR SHALL FURNISH AND INSTALL ALL SAFETY SIGNAGE FOR FUELING EQUIPMENT AS REQUIRED BY NFPA 30A AND LOCAL AND STATE FIRE CODES. SIGNAGE SHALL BE CONSTRUCTED OF DURABLE ALL-WEATHER MATERIAL, EVEN WHERE INSTALLED INDOORS, AND SHALL USE WHITE LETTERING ON DARK BACKGROUNDS EXCEPT WHERE CODE SPECIFIES OTHERWISE.
- 18. CONTRACTOR SHALL TRACK ALL CHANGES TO THE PLANS BY MAKING CLEAR RED MARKS ON AN APPROVED SET OF DRAWINGS THAT SHALL BE MAINTAINED AT THE PROJECT SITE AND PROVIDE TO THE OWNER PRIOR TO PROJECT CLOSE OUT.
- PROVIDE (3) COPIES OF A BOUND MAINTENANCE MANUAL FOR ALL 19. EQUIPMENT INSTALLED UNDER THE FD-SERIES DRAWINGS, ALONG WITH A MATCHING ELECTRONIC COPY OF MANUAL IN SEARCHABLE PDF FORMAT LOADED ON USB FLASH DRIVE WITH LABEL FOR PROJECT NAME AND SUBMITTAL DATE.
- 20. WARRANT THAT ALL EQUIPMENT, MATERIALS AND WORKMANSHIP THAT ARE PROVIDED AS PART OF THE FUELING SYSTEM ARE FREE OF DEFECTS FOR 12 MONTHS, FOLLOWING ACCEPTANCE OF THE WORK BY THE OWNER.

SYSTEM GENERAL NOTES

Scale



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				1 FUI D-100 1" = 20
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ORIGINAL SHEET - ARCH E1



JEL SITE PLAN

					Permit/Seal	Consultant	
					ISSUE FOR BID NOT FOR CONSTRUCTION		
YY.MM.DD	ISSUE FOR BID PLAN CHECK SUBMITTAL ISSUED	RK RK By	JV JV Appd	2023.10.04 2023.03.10 YYYY.MM.DD			Copyright Rese The Contractor shall verify and drawing - any errors or omissio The Copyrights to all designs of or use for any purpose other t



SHEE
D-001
D-100
D-201
D-601
D-611

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SANTA BARBARA

Client/Project SANTA BARBARA METROPOLITAN TRANSIT DISTRICT

TERMINAL 2 - RECOMMISSIONING

5353 OVERPASS ROAD, GOLITA, CA 93111

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FUEL SITE PLAN Project No.

20142408 Revision

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SHEET LIST						
SHEET	TITLE					
D-001	FUEL SYSTEM GENERAL NOTES					
D-100	FUEL SITE PLAN					
D-201	FUEL EQUIPMENT DETAILS					
D-601	FUEL EQUIPMENT SCHEDULES					
D-611	FUEL PROCESS FLOW DIAGRAM					
Title						

Scale

1" = 20'-0"

Drawing No. **D-100**



					Permit/Seal	Consultant	
					ISSUE FOR BID NOT FOR CONSTRUCTION		
Y.MM.DD	ISSUE FOR BID PLAN CHECK SUBMITTAL ISSUED	RK RK By	JV JV Appd	2023.10.04 2023.03.10 YYYY.MM.DD			Copyright Rese The Contractor shall verify and drawing - any errors or omissio The Copyrights to all designs a or use for any purpose other th

UIPMENT SCHEDULE		
DESCRIPTION		QTY
ELAST		1
BOX		1
R		1
ON VALVE FOR DIESEL		1
CY VENT		1
ENCY VENT		1
EVEL GAUGE		1
EL AST		1
		1
PUMP		1
TERMINAL		1
		1
IN CABINET		1
		1
NSER, 1-HOSE		1
		1
R DISTRIBUTION AND CONTROL PA	NEL	1
NE PUMP CONTROLLER		1
CONSOLE		1
PIPE SCHEDULE		
DESCRIPTION	Q	TY
	4'	- 2"
	19'	- 7"

SAFETY SIGN SCHEDULE	
SIGN TEXT	QTY
SHUT OFF	1
	1
	4
CILITY REPRESENTATIVE TO BE IN IG ALL FUEL DELIVERY OPERATIONS	1
S IN TANK	2
OKING	2
OKING	2
EL FUEL 12,000 GALLONS	2
	1

10' - 2"

1. SEE SHEET D-601 FOR COMPLETE ITEM SCHEDULES. 2. ALL ITEMS LISTED MAY NOT APPEAR ON THIS SHEET.

1. SEE STRUCTURAL DRAWINGS FOR DETAILS FOR TANK AND

2. SEE ARCHITECTURAL DRAWINGS FOR DETAILS FOR BOLLARDS

SEE ARCHITECTURAL DRAWINGS FOR DETAILS FOR CANOPY

5. PAINT, COATINGS AND SIGNAGE SHALL BE EXTERIOR GRADE

SEE DRAWING NOTE 4 CANOPY COLUMN SEE DRAWING NOTE 3 RELOCATED (E) SERVICE ATTENDANT BOOTH

FUEL EQUIPMENT DETAILS



ITEM	SIGN TEX
D2	EMERGENCY FUEL SHUT C
D3	OVERFILL ALARM
D4	DIESEL NFPA 704
D9	NOTICE - DRIVER/FACILITY TO BE IN ATTENDANCE DU DELIVERY OPERATIONS
D12	DO NOT DRILL HOLES IN TA
D131	DIESEL FUEL NO SMOKING
D136	DIESEL FUEL NO SMOKING
D712	COMBUSTIBLE DIESEL FUE
F1	FIRE EXTINGUISHER
SIGN	SCHEDULE NOTES

- FIBERGLASS CABINET AT ALL LOCATIONS MARKED 'FX'.
- PROVIDE ESD BUTTON AT ALL LOCATIONS MARKED 'ESD'. 5.
- SUITABLE FOR OUTDOOR INSTALLATION.

		.EQUIPMENT SCHEDULE		
	DESCRIPTION	QTY SPECIFICATIONS	MFR / VENDOR	MODEL NU
1	12,000 GALLON DIESEL AST	1 12,000 GALLON DOUBLE WALL ABOVE GROUND VAULT TANK, UL-2085 PROTECTED, RECTANGULAR OR CYLINDRICAL, WITH STEEL PRIMARY TANK AND SECONDARY CONTAINMENT, FURNISHED WITH LADDER AND AST MAINTENANCE PLATFORM.	CONTAINMENT SOLUTIONS (MODERN WELDING	OR HOOVER OR FIREG
2	AST MOUNTED SPILLBOX	1 10 GALLON REMOTE FILL BOX CONSTRUCTED FROM 14 GA STEEL. FURNISH WITH PIPE BOOT AND BALL VALVE ON DRAIN LINE.	MORRISON BROTHERS	715
3	DIESEL FILL ADAPTER	1 4" ADAPTOR WITH FLAT BOTTOM, POPPET SEAL AND ALUMINUM HANDLE, WITH MATCHING CAP. PROVIDE WITH 4" X 3" GRAVITY COUPLER.	OPW/CIVACON	6211SSR-15 1 B4 LD
4	OVERFILL PREVENTION VALVE FOR DIESEL	1 4" DIA SUITABLE FOR 8FT DIA AST. INSTALLS WITHOUT USE OF EPOXY SEALANTS.	FRANKLIN FUELING	708-492-32
5	PRIMARY EMERGENCY VENT	1 10" FNPT MUSHROOM STYLE, ALUMINUM BODY, CAST IRON LID, 8 OZ PRESSURE SETTING AND VITON RING	OPW	301F-1085
6	SECONDARY EMERGENCY VENT	1 10" FNPT MUSHROOM STYLE, ALUMINUM BODY, CAST IRON LID, 8 OZ PRESSURE SETTING AND VITON RING	OPW	301F-1085
7	MECHANICAL TANK LEVEL GAUGE	1 PROVIDE MECHANICAL DISPLAY OF PRODUCT LEVEL IN THE AST, USING A FLOAT AND DIAL. DISPLAY SHALL BE IN FEET AND INCHES. FLOAT SHALL BE INSTALLED IN A DROP TUBE. DISPLAY SHALL BE ANGLED DOWNWARD AND SHALL BE VISIBLE TO PERSONNEL AT THE REMOTE FILL STATION.	OPW	GAUGE: 200TG-ENG DROP TUBE: 61T-02
8	VENT CAP FOR DIESEL AST	1 ATMOSPHERIC BREATHER CAP W/ INTERNAL SCREEN, 2" FNPT.	OPW	23-0033
9	SOLENOID VALVE	1 2", NORMALLY CLOSED, 120V, FULL PORT, SUITABLE FOR SOLVENTS, BRONZE BODY, EQUIPPED WITH POSITION INDICATOR.	MAGNATROL	36A27
10	DIESEL DISPENSING PUMP	1 SUBMERGED TURBINE PUMP, 2HP HIGH PRESSURE, 208V, 1 PHASE LINE FREQUENCY MOTOR, 2" DISCHARGE LINE, 4" PACKER MANIFOLD WITH PUMP INLET SCREEN, AND INTEGRAL CHECK VALVE SUITABLE FOR VEEDER-ROOT PRESSURIZED LINE LEAK DETECTOR. SUITABLE FOR BIODIESEL BLEND	FE PETRO	AGHMKR200-VL2
11	FUEL MANAGEMENT TERMINAL	AUTHORIZE AND RECORD FUELING TRANSACTIONS FOR DISPENSER. PROVIDE AUTOMATIC AUTHORIZATION BY FUELER AUTHENTICATION VIA PROXIMITY CARD AND MAG CARD. WIRE FOR PULSE AND AUTHORIZE CONDUCTORS TO DISPENSER, FURNISH WITH CELLULAR MEANS OF COMMUNICATION. FINAL TERMINATIONS AND STARTUP BY FACTORY-AUTHORIZED TECHNICIAN.	GASBOY ISLANDER PLUS	MDE-4811F
12	OVERFILL ALARM	1 VISUAL & AUDIBLE ANNUNCIATORS W/ LOCAL ACKNOWLEDGEMENT SWITCH. NEMA 3R-RATED HOUSING. WIRE TO MONITORING CONSOLE.	VEEDER-ROOT	790091-001 & 79009
13	FIRE EXTINGUISHER IN CABINET	2-A:20-B:C DRY CHEMICAL FIRE EXTINGUISHER. 10 LB CAPACITY IN STEEL CONTAINER WITH 195 PSI CHARGE, MIN 11 SECOND DISCHARGE CAPACITY, DIRECTIONAL NOZZLE, AND PRESSURE GAUGE. PROVIDE IN FIBERGLASS OR ALUMINUM HOUSING W/ CLEAR FRONT PANEL, RATED FOR OUTDOOR INSTALLATION.	KIDDIE PRO PLUS 20 MP	468003
14	ESD BUTTON	1 MUSHROOM TYPE ESD BUTTON WITH PE COVER AND MAINTAINED CONTACT PUSHBUTTON SWITCH COUPLED WITH THE NOTIFIER FMM-101, 1-CIRCUIT, IN NEMA 3 ENCLOSURE. FOR HEAVY DUTY USE, WITH INTERNAL GROUND SCREW.	APPLETON OR EQUAL	EFDCB175-UM1
15	DIESEL FLEET DISPENSER, 1-HOSE	REMOTE 1-HOSE DISPENSER ULTRA HIGH CAPACITY WITH SINGLE MANIFOLDED 2" INLET, 30 GPM PER NOZZLE, ONE METER, HIGH-HOSE MAST AT ONE SIDE, AND TRAMWAY CONNECTION AT OTHER SIDE, ELECTRICAL REGISTRATION, ILLUMINATED DISPLAY, ISLAND ORIENTED, FUEL MANAGEMENT SYSTEM INTERFACE CARD, PULSE OUTPUT TO FUEL MANAGEMENT SYSTEM. WARRANTED FOR B20. FOR NOZZLE SEE PROCESS FLOW DIAGRAM ON D-701.	WAYNE	SELECT 3/G721D/G
16	NEMA 4 CABINET	1 NEMA 4 CABINET TO HOUSE PPS1 PANEL, FUEL PUMP CONTROLLER, AND VEEDER-ROOT CONSOLE. PROVIDE W/ ANCHORING FEET AND LOCKABLE DOOR LATCHES.	HOFFMAN OR EQUAL	VARIES
17	PETROLEUM POWER DISTRIBUTION AND CONTROL PANEL	UL LISTED ASSEMBLY EQUIPPED WITH STP ITEM #9 MAIN CIRCUIT BREAKER AND BRANCH CIRCUIT BREAKERS; PUMP MOTOR STARTERS, SWITCHED NEUTRAL, CONTACTORS FOR PUMP AND DISPENSER POWER 1 CIRCUITS TO AUTOMATICALLY DISCONNECT POWER EMERGENCY SHUTDOWN; AND 100KA/PHASE TVSS PROTECTING ALL POWER FEEDER CIRCUITS. PROVIDE (2) SPARE 20A 1-PHASE CIRCUITS. LABEL ALL CIRCUIT WITH FUNCTIONAL NAMES.	CAROLINA PRODUCTS OR EQUAL POWER INTEGRITY	PETRO POWER PAN
18	SUBMERGED TURBINE PUMP CONTROLLER	1 MATCHED TO STP'S, WITH PROTECTION AGAINST OVER CURRENT, EXCESSIVE RUN TIME, AND RUN-DRY. HOUSED AND INTEGRATED IN POWER DISTRIBUTION PANEL (PPS1 PANEL) OR IN NEMA-4 CABINET.	FE PETRO	STP-CSI
19	FUEL MONITORING CONSOLE	PIPING, AST, AND DISPENSING MONITORING SYSTEM USING PRESSURIZED LINE LEAK DETECTORS, NON-DISCRIMINATING TANK SUMP SENSORS, DISPENSER SUMP SENSORS, AND SUPERVISION OF MONITORING FLUID LEVELS, AND TANK LEVEL PROBE. MONITORING PANEL SHALL PERFORM 0.05 GAL/H PRECISION LINE LEAK TEST ON PRODUCT PIPE, AS WELL AS VACUUM MONITORING OF PRODUCT PIPE CONTAINMENT. SYSTEM SHALL AUTOMATICALLY RECONCILE TANK LEVEL VERSUS VOLUME DISPENSED, AND GENERATE RECONCILIATION REPORTS MONTHLY. SYSTEM SHALL INCLUDE IP AND POTS PORTS OF COMMUNICATION AND AUTOMATICALLY NOTIFY THE RESPONSIBLE TECHNICIAN BY EMAIL VIA IP UPON DETECTION OF OVERFILL, LEAK, OR LOSS OF CONTAINMENT. FURNISH WITH PRINTER.	, VEEDER-ROOT	TLS 350-PLU
		.PIPE SCHEDULE		
ITEM	DESCRIPTION	QTY SPECIFICATIONS	MFR	MODE
31	1.5" SCH 40 CS	4' - 2" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 1.5. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS, OR NPT, AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B
32	2" SCH 40 CS	19' - 7" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 2. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS. OR NPT. AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B
33	3" SCH 40 CS	10' - 2" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 3. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS, OR NPT, AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B

_		.PIPE SCHEDULE		
	DESCRIPTION	QTY SPECIFICATIONS	MFR	MODE
	SCH 40 CS	4' - 2" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 1.5. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS, OR NPT, AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B
32 2" S	CH 40 CS	19' - 7" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 2. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS, OR NPT, AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B
33 3" S	CH 40 CS	10' - 2" ASTM A106 GRADE B SEAMLESS SCHEDULE 40 CARBON STEEL PIPE, NPS 3. JOIN PIPE USING CLASS 2000 ASME B16.11 FORGED SOCKET WELD FITTINGS, OR NPT, AS SHOWN IN THE DRAWINGS.	VARIES	ASTM TYPE B
			·	

EQUIPMENT & PIPE SCHEDULE NOTES

1.	SEE SHEET D-201 FOR HE
2.	THE LIST OF EQUIPMENT (WIRE, PIPING, MATERIAL A

- REFERENCE MODEL AND IF APPROVED BY THE OWNER.

	ISSUE FOR BID SUBMITTAL		 			 	Permit/Seal	Consultant	
							ISSUE FOR BID NOT FOR CONSTRUCTION		
9/28/2023 4:42:06 PM		Revision	 Appd YYYY	Y.MM.DD	ISSUE FOR BID PLAN CHECK SUBMITTAL ISSUED	 JV 2023.10.04 JV 2023.03.10 Appd YYYY.MM.DD			Copyright Rest The Contractor shall verify ar drawing - any errors or omiss The Copyrights to all designs or use for any purpose other

		.FUELING SAFETY SIGN SCHEDULE
TEXT	QTY	Type Comments
UT OFF	1	MATERIAL: 2" WHITE LETTERING ON 15" x 8" RED BACKGROUND. LOCATION: MOUNTED ABOVE ESD BUTTON.
	1	MATERIAL: 5/8" RED/WHITE LETTERING 12" x 9" WHITE/RED BACKGROUND. LOCATION: MOUNTED ABOVE OVERFILL ALARM.
	4	MATERIAL: 15" X 15" X .08" THK ALUMINUM SHEET WITH 3-COLOR BACKGROUND AND 3" NUMERALS: BLU-1, RED-2, YEL-0. FASTENED ONTO SIGN HOLDER OR EQUIPMENT SURFACE. LOCATION: ON MOST VISIBLE SIDE OF VESSEL / EQUIPMENT. NOTE: DO NOT PENETRATE VESSEL WITH SCREW FASTENERS.
LITY REPRESENTATIVE E DURING ALL FUEL IS	1	MATERIAL: 26" x 12" x .08" THK ALUMINUM, ROUNDED CORNERS W/ 3" AND 2" BLACK LETTERING ON YELLOW BACKGROUND. LOCATION: MOUNTED NEAR SPILLBOX OR HIGHLY VISIBLE AT FUELING OFFLOAD AREA.
IN TANK	2	MATERIAL: 28" x 3" .08" THICK ALUMINUM, ROUNDED CORNERS WITH 1-1/4" RED/WHITE LETTERING ON WHITE/RED BACKGROUND. LOCATION: ON BOTH SIDES OF TANK.
KING	2	12" LETTERING
KING	2	6" LETTERING
FUEL 12,000 GALLONS	2	MATERIAL: 24" x 12" .08" THICK ALUMINUM, ROUNDED CORNERS WITH 2" RED/WHITE LETTERING ON WHITE/RED BACKGROUND. LOCATION: ON BOTH SIDES OF AST.
	1	MATERIAL: 20" x 3" x .08" THK ALUMINUM SHEET, ROUNDED CORNERS WITH1-5/8" RED/WHITE LETTERING ON WHITE/RED BACKGROUND. NOTE: USE DIRECTIONAL ARROW IF FIRE EXTINGUISHER IS NOT IMMEDIATELY VISIBLE. LOCATION: MOUNTED NEXT TO FIRE EXTINGUISHER.

1. SEE SHEET D-201 FOR LOCATIONS OF SAFETY SIGNS.

2. SIGNS SHALL BE INSTALLED SO THAT THEY ARE VISIBLE AND CONSPICUOUS AND IMMEDIATELY COME INTO VIEW TO PERSONNEL APPROACHING THE EQUIPMENT. FIELD ADJUST SIGN LOCATIONS AND MOUNTS AS NECESSARY.

3. SIGNS SHALL BE SECURELY ANCHORED TO MOUNTS.

4. INSTALL FIRE EXTINGUISHERS AT MINIMUM RATING OF 20-B:C MOUNTED 4' ABOVE GRADE IN AN ALUMINUM OR

6. ALL SIGNS SHALL BE FABRICATED FROM ALUMINIUM OR OTHER APPROVED MATERIAL AND SHALL BE RATED AND

EX-KEYED EQUIPMENT LOCATIONS.

T GIVEN HERE IS PARTIAL. CONTRACTOR SHALL FURNISH ALL EQUIPMENT. LABOR, CONDUIT, AND TESTING SERVICES TO DELIVER A COMPLETE FUNCTIONAL PETROLEUM FUELING SYSTEM REQUIRED BY PLANS, DRAWINGS, AND SPECIFICATIONS, AND AS APPROVED BY THE OWNER.

3. SEE ADDITIONAL SYSTEM REQUIREMENTS ON DRAWINGS.

4. SUBSTITUTIONS MAY BE REQUESTED, IF THEY MEET THE FUNCTION AND PERFORMANCE PROVIDED BY THE

PIPE QUANTITIES ARE ESTIMATES. PROVIDE ACTUAL PIPE QUANTITIES AS REQUIRED BY FIELD CONDITIONS AND AS REQUIRED TO MEET THE PROJECT DESIGN.



JMBER UARD 208 5-001 J/J NEL I

FUEL EQUIPMENT SCHEDULES

Scale





ORIGINAL SHEET - ARCH E1

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 issue for bid plan check submittal Issued	RK RK By	JV JV Appd	2023.10.04 2023.03.10 YYYY.MM.DD			Copyright Rese The Contractor shall verify an drawing - any errors or omissi The Copyrights to all designs of or use for any purpose other t

		EO
		EQ
$\langle \rangle$	ITEM	
	1	12,000 GALLON DIES
	2	AST MOUNTED SPILL
	3	DIESEL FILL ADAPTE
	4	OVERFILL PREVENTI
	5	PRIMARY EMERGEN
	6	SECONDARY EMERG
	7	MECHANICAL TANK L
	8	VENT CAP FOR DIES
	9	SOLENOID VALVE
	10	DIESEL DISPENSING
	11	FUEL MANAGEMENT
	12	OVERFILL ALARM
	13	FIRE EXTINGUISHER
	14	ESD BUTTON
	15	DIESEL FLEET DISPE
	16	NEMA 4 CABINET
	17	PETROLEUM POWER
	18	SUBMERGED TURBIN
	19	FUEL MONITORING C
$\langle \rangle$	ITEM	
	31	1.5" SCH 40 CS
	32	2" SCH 40 CS
	33	3" SCH 40 CS

SCHEDULE NOTES

1. SEE SHEET D-601 FOR 2. ALL ITEMS LISTED MA

DRAWING NOTES

- 1. CONNECT REQUIRED ADJACENT FUEL MAN THE SPECIFICATIONS
- 2. PRODUCT PIPE LOCA DISPENSER SUMP SH IDENTIFY THE MATER DIRECTION. LABELS S DIRECTION ARROWS 1.5 IN. HIGH. LABEL PI 10 LINEAL FEET AND I
- 3. EVERY VALVE SHALL STEEL LABEL HAVING DESCRIPTION OF THE
- 4. OVERFILL PREVENTION 90% FULL.
- 5. EQUIPMENT SHOWN MAY HAVE DIFFEREN SPECIFIED EQUIPMEN
- 6. PROVIDE 1-PHASE LI / DATA WIRING AS RE INSTALLATION REQUI PANEL, PUMP CONTR FUEL-MANAGEMENT

SYMBOLS LEGEND

[]	BALL V
\sum	CHECK
S	SOLEN
	PRESS
<u> </u>	_//_
L	SOLID S
-(<u>)</u>	FLEX C
FV D	FIRE SA W/ FUS
MLD	MECHA
////	INSTRU
—E——E—	120V Al
—D——D—	DATA/C
—P——P—	PULSE

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e responsible for all dimensions. DO NOT scale the shall be reported to Stantec without delay, drawings are the property of Stantec. Reproduction that authorized by Stantec is forbidden		stn_Architecture_2270449601.rvt	RK Dwn.	RG Dsgn.	FF Chkd.	2022.04.08 YYYY.MM.DD	

1	
UIPMENT SCHEDULE	
DESCRIPTION	QTY
_BOX	1
R ION VALVE FOR DIESEL	1
CY VENT GENCY VENT	1
LEVEL GAUGE EL AST	1
	1
TERMINAL	1
IN CABINET	1
ENSER, 1-HOSE	1
R DISTRIBUTION AND CONTROL PANEL	1
NE PUMP CONTROLLER CONSOLE	1
DESCRIPTION Q	TY
4' · 19'	- 2" - 7"
10'	- 2"
OR COMPLETE ITEM SCHEDULES.	
AY NOT APPEAR ON THIS SHEET.	
D WIRING FROM THE DISPENSER TO TH NAGEMENT TERMINAL AS INDICATED IN	E
S AND DRAWINGS.	
HALL BE PERMANENTLY LABELED TO	
SHALL DESCRIBE "DIESEL". FLOW	AN
PIPES AT INTERVALS OF NOT LESS THAT NEXT TO ALL VALVES AND ELBOWS.	N
_ BE TAGGED WITH BRASS OR STAINLE	SS
G A UNIQUE ID NUMBER AND IE VALVE'S FUNCTION.	
ON VALVE SHALL CLOSE WHEN TANK IS	S
ON THIS DRAWING IS SCHEMATIC AND	
NT APPEARANCE THAN THE ACTUAL	
INE-VOLTAGE WIRING AND LOW-VOLTA	GE
JIREMENTS FOR EACH OF THE POST	
TERMINAL.	
K VALVE	
NOID VALVE	
SURE RELIEF VALVE	
STATE LEAK / LEVEL SENSOR	
CONNECTOR	
SAFETY VALVE SIBLE LINK	
ANICAL LEAK DETECTOR	

