FREEDOM HIGH SCHOOL NEW MAINTANENCE FACILITIES

1050 Neroly Rd, Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

DSA FILE NO: 7-H4 DSA APPLICATION NO: 01-117846 **PTN**: 61721-0069

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PLUMBING FLOOR PLANS PLUMBING ENLARGEMENT PLUMBING DETAILS

PROJECT TEAM

Liberty Union School District 20 Oak Street Brentwood, CA 94513 Phone: 925-634-2166 ex 2036 Fax: 925-634-1687 Email:evolta@libertyuhsd.k12.ca.us

STRUCTURAL ENGINEER

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CONSTRUCTION MANAGER

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Fax: 415-479-6962

4001 Park Road Benicia, CA 94510 Phone: 707-746-8000 Direct: 707-746-4450 Email:anthony.damante@lathropconstruction.com

CIVIL ENGINEER

CBG Carlson Barbee & Gibson, Inc. 2633 Camino Ramon, Suite 350 San Ramon, CA 94583 Phone: 925-866-0322 Email: jvogan@cbandg.com

FIRE PROTECTION

Axiom Engineers 22 Lower Ragsdale Dr., Suite A Monterery, CA 93940 Phone: 831-649-8000 Email: stever@axiomengineers.com

LANDSCAPE ARCHITECT

GSM Landscape Architects Inc. 1700 Soscol Ave., Suite 23 Napa, CA 94559 Phone: 707-255-4630 Email: gretchen@gsmlainc.com

CATHODIC PROTECTION

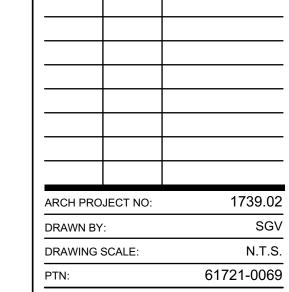
V&A Consulting Engineers 1000 Broadway, Suite 320 Oakland, CA 94607 Phone: 510-903-6600 Email: cteall@vaengineering.com

FREEDOM HIGH SCHOOL

NEW MAINTANENCE **FACILITIES**

1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT



BID SET JANUARY 4, 2019

COVER SHEET

ABBREVIATIONS

FACE

FIRE ALARM

FLOOR DRAIN

FOUNDATION

FINISH FLOOR

FINISH GRADE

FIRE HYDRANT

FIRE HOSE STATION

FIBERGLAS

FINISH

FIXTURE

FLOOR LINE

FLUORESCENT

FACE OF MASONRY

FACE OF CONCRETE

FACE OF FINISH

FIRE-RESISTANT

FIBERGLASS REINFORCED

GENERAL CONTRACTOR

GLUE LAMINATED BEAM

GALVANIZED IRON

GLASS/ GLAZING

GYPSUM BOARD

HOSE BIBB

HARDWOOD

HARDWARE

HORIZONTAL

HIGH POINT

HEIGHT

HEATING

HOLLOW METAL

HOLLOW STEEL SECTION

HEATING, VENTILATING,

AIR-CONDITIONING

INSIDE DIAMETER

INSULATION

INTERIOR

INTEGRAL

INVERT

JOIST

JOINT

KITCHEN

KICK PLATE

LABORATORY

LAMINATE

LAVATORY

LIVE LOAD

LOW POINT

MATERIAL

MAXIMUM

MACHINE BOLT

MECHANICAL

MEMBRANE

MANHOLE

MINIMUM

MODULAR

MOUNTED

METAL

NORTH

NATURAL

NUMBER

NOMINAL

OVER

OVERALL

OBSCURE

ON CENTER

OVERFLOW

OFFICE

OVHD

OPENING

OPPOSITE

OVERHEAD

OUTSIDE DIAMETER

OWNER FURNISHED/

CONTRACTOR INSTALLED

OCCUPANT LOAD FACTOR

NOT TO SCALE

NOT IN CONTRACT

NFW

MULLION

MIRROR

MEDIUM

MEDICINE CABINET

MANUFACTURER

MISCELLANEOUS

MASONRY OPENING

MOISTURE RESISTANT

LIGHT

INTERMEDIATE

JOIST HANGER

HEADER

HOLLOW CORE

FACE OF STUD

FLASHING

FACE NAIL

FRAMING

PANEL

FOOTING

FURRING

GAUGE

GALVANIZED

GRAB BAR

GROUND

GRADE

FEET

FLOOR

FLOOR CLEAN OUT

FIRE EXTINGUISHER

FIRE EXTINGUISHER CABINET

FLAT HEAD MACHINE SCREW

FLAT HEAD WOOD SCREW

AND ANGLE FΑ FCO AΤ FD CENTERLINE FDN FEET INCHES FE FEC PENNY POUND/ NUMBER FG ANCHOR BOLT FGL ABBRE\ ABBREVIATION FΗ ASPHALT CONCRETE **FHMS** A/C AIR CONDITIONING FHS ACC **ACCESSIBLE FHWS** ACOUS **ACOUSTICAL** FIN AC T ACOUSTICAL TILE FIXT ΑD AREA DRAIN ADJ **ADJUSTABLE FLASH** A.F.F. ABOVE FINISH FLOOR **FLUOR** AGG **AGGREGATE** FLR ALUM **ALUMINUM** FM / FOM ANOD ANODIZED APPROX **APPROXIMATE** FOC FOF ARCH **ARCHITECTURAL** FOS ASPH **ASPHALT** FRMG BOARD FR BITUM **BITUMINOUS** FRP BLDG BUILDING BLK BLOCK BLKG BLOCKING FTG BM BEAM **FURR** BOT BOTTOM GΑ ВО BY OWNER BRK **GALV BREAK** BRG **BEARING** GB BTWN BETWEEN GC **BUILT-UP** BUR **BUILT-UP ROOFING** GL GLB CAB CABINET GND CB CATCH BASIN CBU **CEMENTITIOUS BACKER UNIT** GYP BD CEM CEMENT CER CERAMIC CI CAST IRON HC CIR CIRCLE HDR CJ **CONTROL JOINT** CORR CORRIDOR CLOSET/ CENTER LINE CL CLG CEILING CLR CLEAR CLS CLOSURE CMU HSS CONCRETE MASONRY UNIT CO **CLEANOUT** COL HTG COLUMN COMB COMBINATION COMP COMPOSITION CONC CONCRETE CONN CONNECTION CONST INSUL CONSTRUCTION CONT CONTINUOUS INT CONTRACTOR INTEG CONTR **CERAMIC TILE** INTERMED CT CTR CENTER COUNTERSINK CUST CUSTODIAN CW COLD WATER JST DBL DOUBLE KIT DEPT DEPARTMENT ΚP DET DETAIL DF DRINKING FOUNTAIN LAB DG DECOMPOSED LAM GRANITE LAV DRAIN INLET DIA DIAMETER DIAG DIAGONAL LT DIM DIMENSION DISP DISPOSAL MAT DIV DIVISION MAX DN DOWN DO DOOR OPENING DIR DIRECTLY MECH DR DOOR MED DS DOWN SPOUT MEMB DSP DRY STAND PIPE DT **DRAIN TILE** DW **DISHWASHER** DWG DRAWING DWR DRAWER MISC MO EAST MOD **EXISTING** EΑ EACH MTD EΒ **EXPANSION BOLT** MTL EE EACH END FF EXHAUST FAN EJ **EXPANSION JOINT ELEVATION GRADE** EL ELEC ELECTRICAL **ELEV ELEVATION** N.I.C. **EMER EMERGENCY** EMT **ELECTRIC METALLIC TUBING ENCL ENCLOSURE** N.T.S. ΕP ELECTRIC PANEL EQ EQUAL EQUIP **EQUIPMENT** OA **EQUIV EQUIVALENT** OBS ES EACH SIDE OC EW **EACH WAY** OD EXH **EXHAUST** OF **EXIST** EXISTING OFCI EXP **EXPANSION** EXT **EXTERIOR** O.L.F. OFF **OPNG** OPP

PORTLAND CEMENT POUNDS PER CUBIC FOOT POWER DRIVEN ANCHOR PERFORATED PLATE HEIGHT PLATE PROPERTY LINE PLASTIC LAMINATE PLASTER/ PLASTIC PLYWOOD POINT OF CONTACT PAIR PROPERTY

P.C.F.

PDA

PERF

PLAS

P.O.C.

PROP

PTDF

PTN

PTR

PVC

PVMT

R / RAD

RD

REF

REFR

REG

REQD

REINF

RHMS

RHWS

RO

SD

SM

SOV

S.P.D.

SPEC

SPKR

S.S.D.

STA

STD

STL

STOR

SUSP

SYM

TER

T&G

THRU

T.O.D.

T.O.P.

T.O.R.

T.O.W.

T.P.

TS

TUB

TV

TYP

UNF

U.O.N.

UR

UTIL

VCT

VERT

VEST

V.I.F.

VTR

TRN

TRANS

TJ

STRUCT

PR

PLF

POUNDS PER LINEAL FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH POINT PRESSURE TREATED DOUGLAS FIR PARTITION

PAPER TOWEL RECEPTACLE POLYVINYL CHLORIDE PAVEMENT RISER RADIUS **ROOF DRAIN** REFERENCE REFRIGERATOR REGULAR REQUIRED REINFORCED ROOF HATCH ROUND HEAD MACHINE SCREW ROUND HEAD WOOD SCREW

RWD REDWOOD S.A.D. SEE ARCHITECTURAL DRAWINGS S.AV.D. SEE AUDIOVIDEO DRAWINGS SOLID CORE S.C.D. SEE CIVIL DRAWINGS SCHED SCHEDULE STORM DRAIN SECT SECTION S.E.D. SEE ELECTRICAL DRAWINGS SEP SEPARATION S.F.P.D. SEE FIRE PROTECTION DRAWING SHR SHOWER SHTG SHEATHING SIM SIMILAR SLIDING SEE LANDSCAPE DRAWINGS S.L.D. SHEET METAL S.M.D. SEE MECHANICAL DRAWING

ROUGH OPENING

RAIN WATER LEADER

SHUT OFF VALVE SEE PLUMBING DRAWINGS SPECIFICATION SPEAKER SQUARE STAINLESS STEEL SEE STRUCTURAL DRAWINGS SEE THEATER DRAWINGS STATION STANDARD STEEL

STRUCTURAL SUSPENDED SYMMETRICAL TREAD **TOP & BOTTOM** TOP OF CURB TELEPHONE **TERRAZZO** TONGUE & GROOVE THICK THROUGH

STORAGE

TOOL JOINT TOE NAIL TOP OF DECK TOP OF PLATE TOP OF ROOF TOP OF WALL TOP OF PAVEMENT TRANSOM TRANSPARENT **TUBE STEEL** TUBULAR **TELEVISION**

TACKWALL

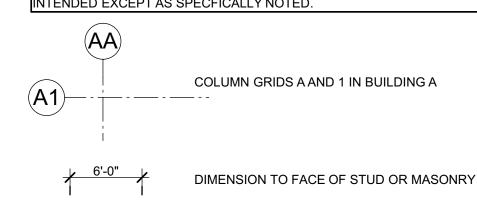
TYPICAL UNFINISHED **UNLESS OTHERWISE NOTED** URINAL UTILITY

VAPOR BARRIER VINYL COMPOSITION TILE VERTICAL **VESTIBULE VERIFY IN FIELD** VENT THROUGH ROOF VINYL WALL COVERING WITH

WATER CLOSET WOOD WDW WINDOW WH WATER HEATER W/O WITHOUT W.O. WHERE OCCURS WATER PROOF W.P. **WORK POINT** WATER RESISTANT **WSCT** WAINSCOT WEIGHT YARD

LEGEND

ALL NOTES AND SYMBOLS ARE INTENDED TO APPLY AT ALL OTHER LOCATIONS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY. NO LIMITATION OF APPLICATION IS INTENDED EXCEPT AS SPECFICALLY NOTED.

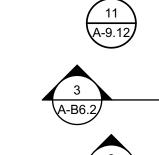


6'-0" DIMENSION TO FACE OF FINISH 6'-0" DIMENSION TO CENTER LINE OR COLUMN LINE

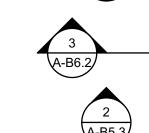
DOOR A IN ROOM NUMBER 101 IN BUILDING E ACCESSIBLE CLEARANCES SHOWN DASHED

RELATIVE ELEVATION DIMENSION

WINDOW NUMBER 009



DETAIL NUMBER 11 ON SHEET NUMBER A-9.12



ELEVATION NUMBER 2 ON SHEET NUMBER A-B5.3

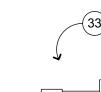
SECTION NUMBER 3 ON SHEET NUMBER A-B6.2

A-B5.3 CLASSROOM **FLOOR** A-A7.6

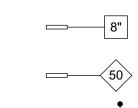
ROOM NAME ROOM NUMBER 204 IN BUILDING A FLOOR FINISH CODE F-4 INTERIOR ELEVATION SHOWN ON SHEET A-A7.6

CLASSROOM

ROOM NAME ROOM NUMBER 204 IN BUILDING A CEILING FINISH CODE CL-6 FINISH CEILING HEIGHT 10'-0'



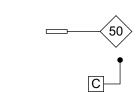
KEYNOTE NUMBER 33



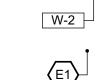
METAL WALL FRAMING SIZE 8"

WALL ACOUSTIC RATING OF STC 50

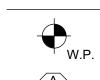
FINISH CODE, WALL FINISH 2 SHOWN



TOILET ACCESSORY C ARCHITECTURAL WOODWORK STANDARDS (AWS) CABINET DESIGN SERIES IDENTIFIER



ROOM / BUILDING ACCESSIBLE SIGNAGE TYPE E1. SEE ARCHITECTURAL GRAPHICS PLAN AND ACCESSIBLE SIGNAGE DETAIL



EQUIPMENT TAG REFER TO EQUIPMENT SCHEDULE

RELATIVE ORIGIN OR WORK POINT

1739.02

GENERAL NOTES

- ALL WORK IS SHOWN, DESCRIBED OR SPECIFIED IN THE DRAWINGS INDEXED ON THIS PAGE OR IN THE SPECIFICATIONS. ALL WORK NOT INDICATED AS EXISTING (E) IS NEW.
- ALL FRAMING DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE
- DO NOT SCALE DRAWINGS.
- VERIFY ALL DIMENSIONS WHERE WORK INVOLVES FRAMING FOR WINDOWS, DOORS, OR CABINETS
- ONLY WORK SO NOTED IS NOT IN CONTRACT (N.I.C.) ALL N.I.C. ITEMS ARE NOT PART OF DSA APPROVAL
- **GOVERNING CODES:**
 - CALIFORNIA CODE OF REGULATIONS TITLE 24 BUILDING STANDARDS CODE: PART 1 2016 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
 - PART 2 2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR (2015 INTERNATIONAL BUILDING CODE, VOL. 1 & 2, AND 2016 CALIFORNIA AMENDMENTS)
 - PART 3 2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 CCR (2014 NATIONAL ELECTRICAL CODE AND 2016 CALIFORNIA AMENDMENTS) PART 4 2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 CCR
 - (2015 IAPMO UNIFORM MECHANICAL CODE AND 2016 CALIFORNIA AMENDMENTS) PART 5 2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 CCR
 - (2015 IAPMO UNIFORM PLUMBING CODE AND 2016 CALIFORNIA AMENDMENTS)
 - PART 6 2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24 CCR PART 9 2016 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24 CCR
 - (2015 INTERNATIONAL FIRE CODE AND 2016 CALIFORNIA AMENDMENTS) PART 10 2016 CALIFORNIA EXISTING BUILDING CODE (CEBC), PART 10, TITLE 24 CCR
 - (2015 INTERNATIONAL EXISTING BUILDING CODE AND 2016 CALIFORNIA AMENDMENTS) PART 11 2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL-GREEN), PART 11, TITLE 24 CCR
 - PART 12 2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
- TITLE 19 CCR, PUBLIC SAFETY CODE, STATE FIRE MARSHAL REGULATIONS 2010 ADA STANDARDS FOR ACCESSIBILITY DESIGN

2013 ASME A17.1/CSA B44-13 SAFETY CODE FOR ELEVATORS AND ESCALATORS STANDARD AND GUIDES: INSTALLATION OF FIRE SPRINKLER SYSTEMS (CA AMENDED) 2016 EDITION NFPA 13 INSTALLATION OF STANDPIPE AND HOSE SYSTEMS NFPA 14 2013 EDITION NFPA 17 DRY CHEMICAL EXTINGUISHING SYSTEMS 2013 EDITION NFPA 17A WET CHEMICAL FIRE EXTINGUISHING SYSTEMS 2013 EDITION NFPA 20 INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION 2016 EDITION NFPA 22 STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION

2013 EDITION STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE NFPA 24 MAINS AND THEIR APPURTENANCES 2016 EDITION NFPA 25 CALIFORNIA EDITION - TESTING, MAINTENANCE OF WATER-BASED 2013 EDITION FIRE PROTECTION SYSTEMS NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (CA AMENDED) 2016 EDITION NFPA 80 STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES 2016 EDITION NFPA 110 **EMERGENCY AND STANDBY POWER SYSTEMS** 2016 EDITION STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS NFPA 170 2015 EDITION

NFPA 2001 STANDARD ON CLEAN AGENT FIRE EXTINGUISHING SYSTEMS 2015 EDITION UL 300 STANDARD FOR FIRE TESTING OF FIRE EXTINGUISHING SYSTEMS FOR PROTECTION OF COMMERCIAL COOKING EQUIPMENT 2005 (R2010) UL 464 AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES 2003 EDITION UL 521 STANDARD FOR HEAT DETECTORS FOR FIRE PROTECTIVE 1999 EDITION SIGNALING SYSTEMS 2002 EDITION

UL 1971 STANDARD FOR SIGNALING DEVICES FOR THE HEARING IMPAIRED STANDARD FOR BLEACHERS, FOLDING AND TELESCOPIC SEATING, ICC 300 AND GRANDSTANDS

A COPY OF TITLE 24 PARTS 1-5 SHALL BE KEPT ON THE JOB AT ALL TIMES.

IN ACCORDANCE WITH TITLE 24 PART 1 CHAPTER 4: THE ADMINISTRATIVE REGULATIONS FOR THE DIVISION OF THE STATE ARCHITECT STRUCTURAL SAFETY (DSA/SS) • ALL CONSTRUCTION CHANGE DOCUMENTS AND ADDENDA SHALL BE SIGNED BY THE ARCHITECT AND THE OWNER AND

APPROVED BY DSA.CONSTRUCTION CHANGE DOCUMENTS NOT VALID UNTIL APPROVED BY DSA (4-338). • ALL TESTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 4-335 AND APPROVED T & I SHEET (DSA-10) • TESTS OF MATERIALS AND TESTING LAB SHALL BE IN ACCORDANCE WITH SECTION 4-335 AND THE DISTRICT SHALL EMPLOY AND PAYTHE LAB. COSTS OF RE-TEST MAY BE BACKCHARGED TO THE CONTRACTOF

2012 EDITION

• DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO THE PLACEMENT OF CONCRETE IN ACCORDANCE

• INSPECTOR SHALL BE APPROVED BY DSA. INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 4-333(b). THE DUTY OF THE INSPECTOR SHALL BE IN ACCORDANCE WITH SECTION 4-342.

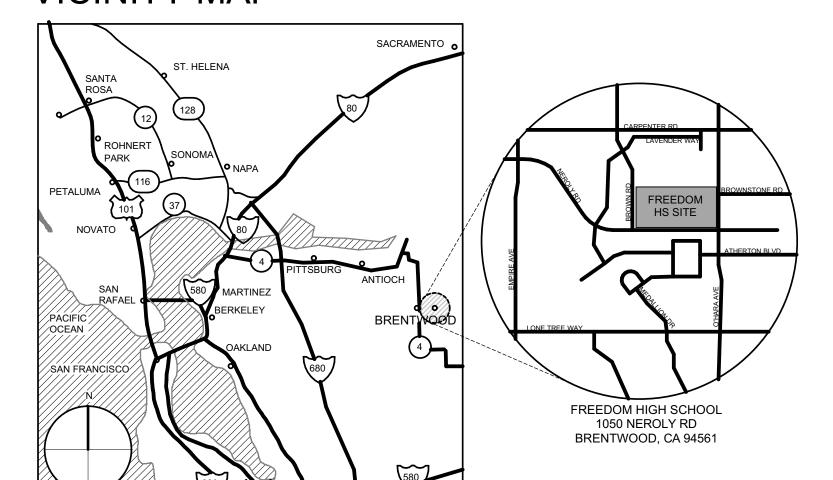
• SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334. • VERIFIED REPORTS SHALL BE SUBMITTED BY CONTRACTORS, INSPECTORS (DSA - 6), ARCHITECTS AND ENGINEERS (DSA 6AE) IN ACCORDANCE WITH SECTIONS 4-336 AND 4-343.

• THE ARCHITECT AND THE STRUCTURAL ENGINEER SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTIONS 4-333(a) • THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH SECTION 4-343.

FOOD HANDLING FACILITIES SHALL COMPLY WITH ALL LOCAL HEALTH REQUIREMENTS AND CALIFORNIA UNIFORM RETAIL FOOD

- THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHERE IN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24 C.C.R. A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK. (TITLE 24 PART 1, SECTION 4-338(c))
- COMPLIANCE WITH CFC CHAPTER 33, FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION AND CBC CHAPTER 33, SAFETY DURING CONSTRUCTION SHALL BE ENFORCED.
- EMERGENCY VEHICLE ACCESS ROADS AND ON-SITE FIRE HYDRANTS SHALL BE IN SERVICE AND OPERABLE PRIOR TO LOADING THE SITE WITH COMBUSTIBLE MATERIALS.
- GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD AND ACCESS REQUIREMENTS, AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.

VICINITY MAP



PROJECT DESCRIPTON

THE PROJECT IS A NEW MAINTENANCE BUILDING AND A PARKING LOT.

THE TRANSPORTATION, M & O BUILDING IS APPROXIMATELY 4000 SQUARE FEET (INCLUDING MEZZANINE) AND WILL BE A PRE-ENGINEERED METAL BUILDING. THE BUILDING INCLUDES AN OFFICE/BREAK ROOM, A RESTROOM, A SHOP, A STORAGE MEZZANINE AND A PARKING GARAGE. THE BUILDING WILL BE PROVIDED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM.

PRE-ENGINEERED METAL BUILDING STRUCTURES AND EXTERIOR WALL AND ROOF PANELS WILL BE PROVIDED AND SET BY SEPARATE CONTRACTOR RETAINED BY OWNER. GENERAL CONTRACTOR RETAINED FOR THIS PROJECT SHALL BE RESPONSIBLE TO COORDINATE WITH ALL OTHER CONTRACTORS RETAINED BY OWNER.

THE FREEDOM HIGH SCHOOL MAINTENANCE BUILDING PROJECT WILL BE REVIEWED BY DSA FOR ACCESSIBILITY COMPLIANCE ONLY. THE DISTRICT HAS ELECTED NOT TO HAVE DSA PROVIDE STRUCTURAL OR FIRE AND LIFE SAFETY REVIEW, IN ACCORDANCE WITH ALLOWANCED SUMMARIZED BY 2016 CALIFORNIA ADMINISTRATIVE CODE, ARTICLE 4-310, FOR THIS PROJECT. THE DISTRICT'S MAINTENANCE FACILITY WILL NOT BE USED BY STUDENTS OR TEACHERS, FOR SCHOOL PURPOSES.

Statement of General Conformance

SHOP DRAWINGS) PREPARED BY OTHER LICENSED DESIGN

PROFESSIONALS AND/OR CONSULTANTS

DSA Application No <u>01-117611</u> File No <u>1-H1</u>

These drawings (marked Civil, Landscape, Structural, Mechanical,

specifications and/or calculations for the items listed, have been

licensed and/or authorized to prepare such drawings in this state.

1) design intent and appears to meet the appropriate requirements of

Title 24, California Code of Regulations and the project specifications

2) coordination with my plans and specifications and is acceptable for

The Statement of General Conformance "shall not be construed as

relieving me of my rights, duties, and responsibilities under Sections

4-344" of Title 24, Part I. (Title 24, Part 1, Section 4-317 (b))

Architect or Engineer designated to be in general responsible charge

17302 and 81138 of the Education Code and Sections 4-336, 4-341, and

C15438

License Number

July 31, 2019

Expiration Date

incorporation into the construction of this project.

prepared by other design professionals or consultants who are

It has been examined by me for:

Mark Quattrocchi

Plumbing, Fire Protection, Electrical, and Fire Alarm) and/or

QUATTROCCHI KWOK **ARCHITECTS**

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FREEDOM HIGH **SCHOOL**

MAINTANENCE FACILITIES

1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO:

DRAWING SCALE: N.T.S. 61721-0069 BID SET

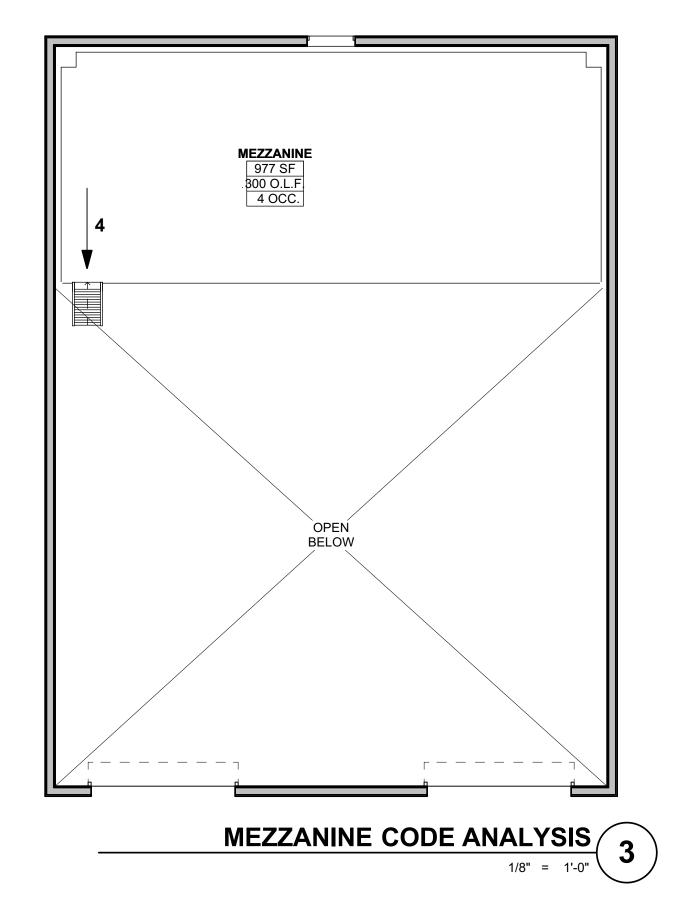
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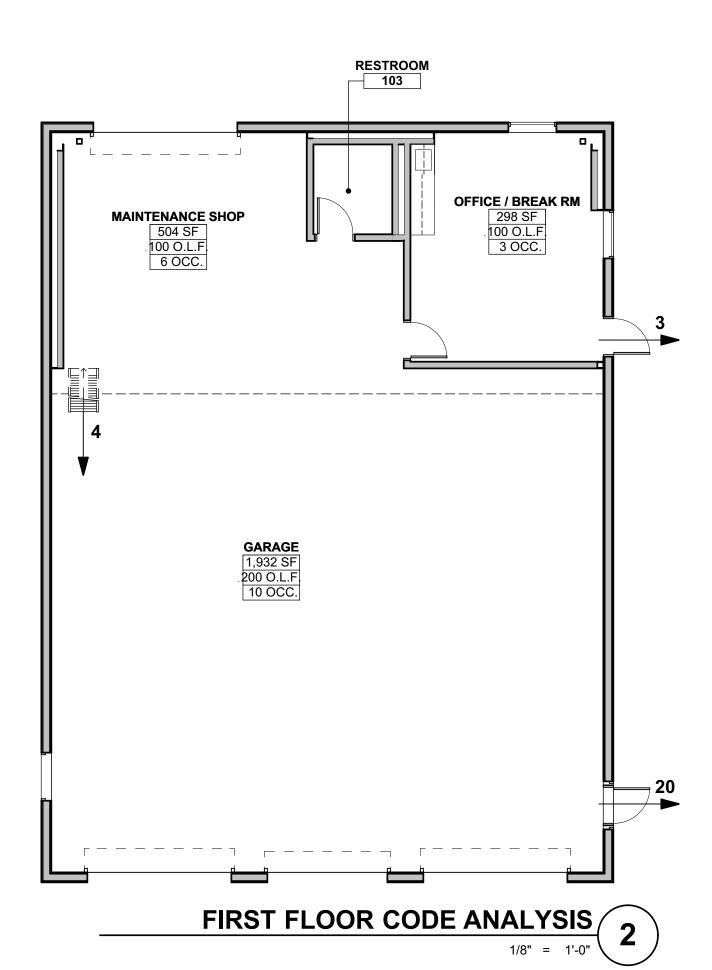
1739.02

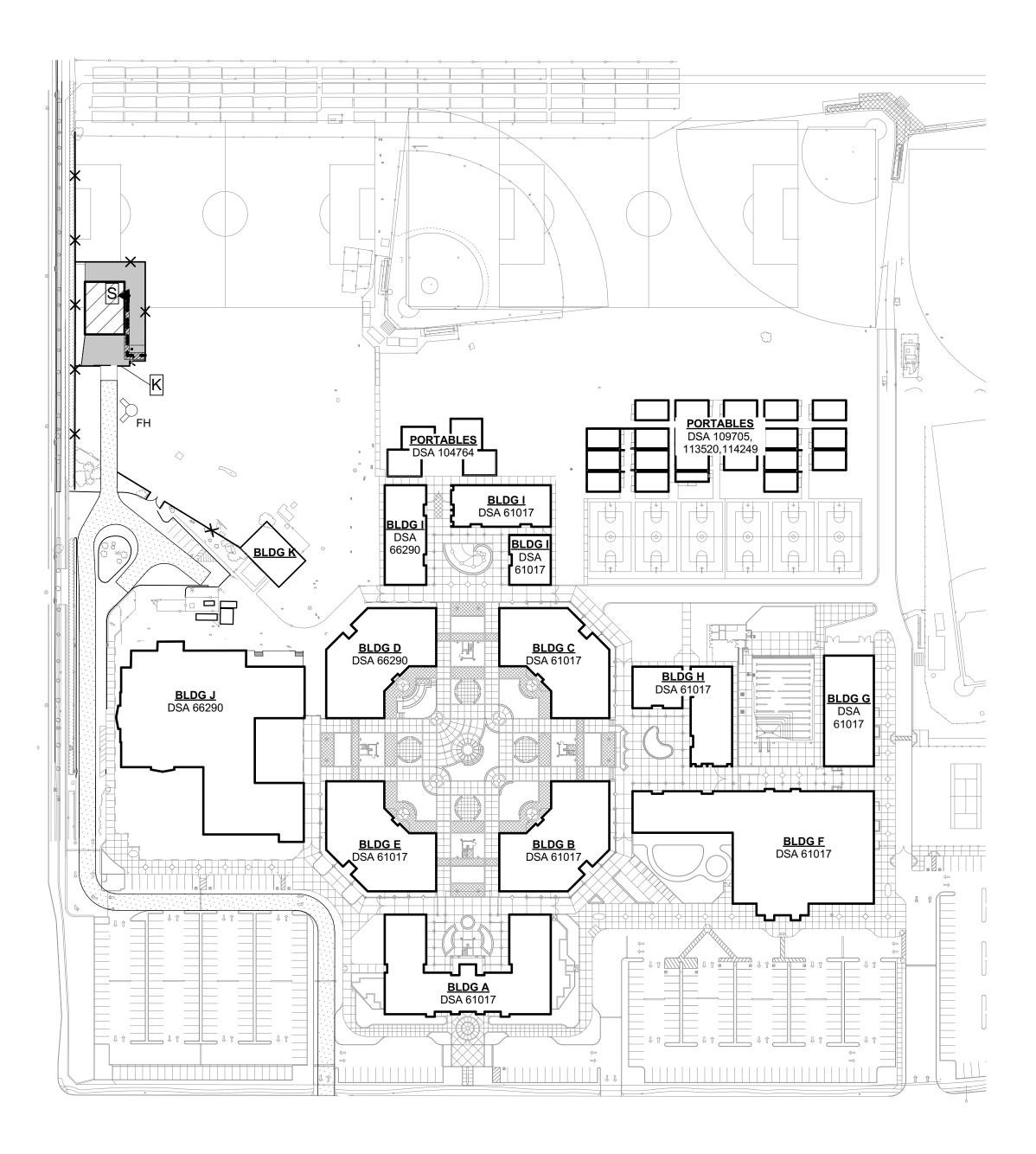
JANUARY 4, 2019

ABBREVIATIONS

AND NOTES









BUILDING CODE ANALYSIS MAX. STORIES & TYPE OF BASIC ALLOWABLE | ACTUAL AREA ACTUAL STORIES AREA (square feet) ** BUILDING OCCUPANCY CONSTRUCTION HEIGHT ** & HEIGHT (square feet) SHOP, STORAGE & B & S-1 V-B - SPRINKLED MAIN AREA 3,020 SF | 2 STORIES, 60'-0" | 1 STORY, 23'-0" ENCLOSED PUBLIC 970 SF MEZZANINE PARKING GARAGE 1ST FLOOR TOTAL 3,990 SF

* NO SEPERATION IS REQUIRED PER TABLE 508.4

** PER MORE RESTRICTIVE OCCUPANCY

GENERAL NOTES

FOR BUILDING CODE ANALYSIS SEE G-0.3.

2. ALL NEW WORK SHALL BE ACCESSIBLE. ALL NEW WALKWAYS SHALL CONFORM TO CBC 1133B.7 PAVING MATERIALS NOT OTHERWISE NOTED SHALL BE CONCRETE PER DETAIL

• CONCRETE SHALL SLOPE MIN. 1/8" PER FOOT AWAY FROM

BUILDINGS, S.C.D.

• EXTERIOR DOOR LANDINGS SHALL SLOPE 1/4" PER FOOT MAX. AWAY FROM BUILDING FOR DRAINAGE.

3. REFER TO CIVIL ENGINEERING DWGS FOR SIDEWALK GRADES.

REFER TO CIVIL ENGINEERING DRAWINGS FOR SITE FEATURES NOT OTHERWISE INDICATED.

PARKING AND PEDESTRIAN SITE SIGNAGE SHALL COMPLY WITH CBC SECTIONS 11B-502.6 & 11B-703.7.2.1

. BUILDING SIGNAGE SHALL COMPLY WITH CBC 11B-703

. PEDESTRIAN GATES SHALL COMPLY WITH CBC 1008.2 & 11B-206.5

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT: THE P.O.T. IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT THE P.O.T. WAS EXAMINED AND ANY ELEMENT, COMPONENTS OR PORTIONS OF THE P.O.T. THAT WERE DETERMINED TO BE NONCOMPLIANT

1) HAVE BEEN IDENTIFIED AND

2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS.

ANY NONCOMPLIANT ELEMENT, COMPONENT, OR PORTION OF THE P.O.T. THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION IF P.O.T. ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE-COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOUCMENT.

THE BARRIER FREE PATH OF TRAVEL INDICATED HAS BEEN PROVIDED IN ACCORDANCE WITH IR 11B-10 AND SHALL COMPLY WITH THE FOLLOWING:

• 1:20 MAXIMUM SLOPE WITHOUT A RAMP

1:20 MAXIMUM SLOPE WITHOUT A RAMP
1:48 MAXIMUM CROSS SLOPE
NO ABRUPT VERTICAL CHANGES EXCEEDING 1/4".
CHANGES BETWEEN 1/4" TO 1/2" VERTICAL CAN BE AT 1:2

MAX SLOPE. CHANGES LESS THAN 1/4" CAN BE VERTICAL

• 48" MIN. CLEAR IN WIDTH (60" MIN PASSING SPACE)

•NON-SLIP SURFACE -HEAVY BROOM FINISH AT EXTERIOR
CONCRETE PAVING WHERE SLOPED >6%, MEDIUM BROOM
FINISH AT SLOPES <6%

 MAINTAIN FREE OF OVERHANGING OBSTRUCTIONS TO 80" MIN

PROTRUDING OBJECTS NOT GREATER THAN 4" SHALL BE MOUNTED BETWEEN 27" AND 80" A.F.F.
WHERE A DRAIN INLET IS IN THE PATH OF TRAVEL, THE GRATE SHALL BE ORIENTED SO THAT MAX OPENING IS 1/2" & LONG DIM IS PERPENDICULAR TO THE PREDOMINANT DIRECTION OF PEDESTRIAN TRAVEL

• CONTRACTOR TO VERIFY THAT NO BELOW-GRADE PULL BOXES OCCUR WITHIN THE AREA OF TRUNCATED DOMES

LEGEND

EXISTING BUILDING

20' WIDE EMERGENCY VEHICLE ACCESS

NEW BUILDING

NON-RATED WALL

ACCESSIBLE PATH OF TRAVEL PER GENERAL NOTES ABOVE

ACCESSIBLE ENTRY/ EXTERIOR DOOR AT P.O.T.

FH FIRE HYDRANT

K KNOX BOX

ACCESSIBLE GENDER-NEUTRAL STAFF

RESTROOM

PARKING ANALYSIS

TOTAL ACC SPACES SPACES PROVIDED REQUIRED * PROVIDED

SOUTH PARKING LOT 1 1 (1 VAN) 1 (1 VAN)

* CBC SECTION 11B-208.2 & TABLE 11B-208.2 26-50 PARKING SPACES: 2 ACCESSIBLE SPACES REQUIRED PER 11B-208.2.4: 1 VAN ACC SPACE REQUIRED PER 6 ACC SPACES

DSA FORM 810

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FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02

 ARCH PROJECT NO:
 1739.02

 DRAWN BY:
 fill out manualy ea sheet!

 DRAWING SCALE:
 N.T.S.

 PTN:
 61721-0069

BID SET

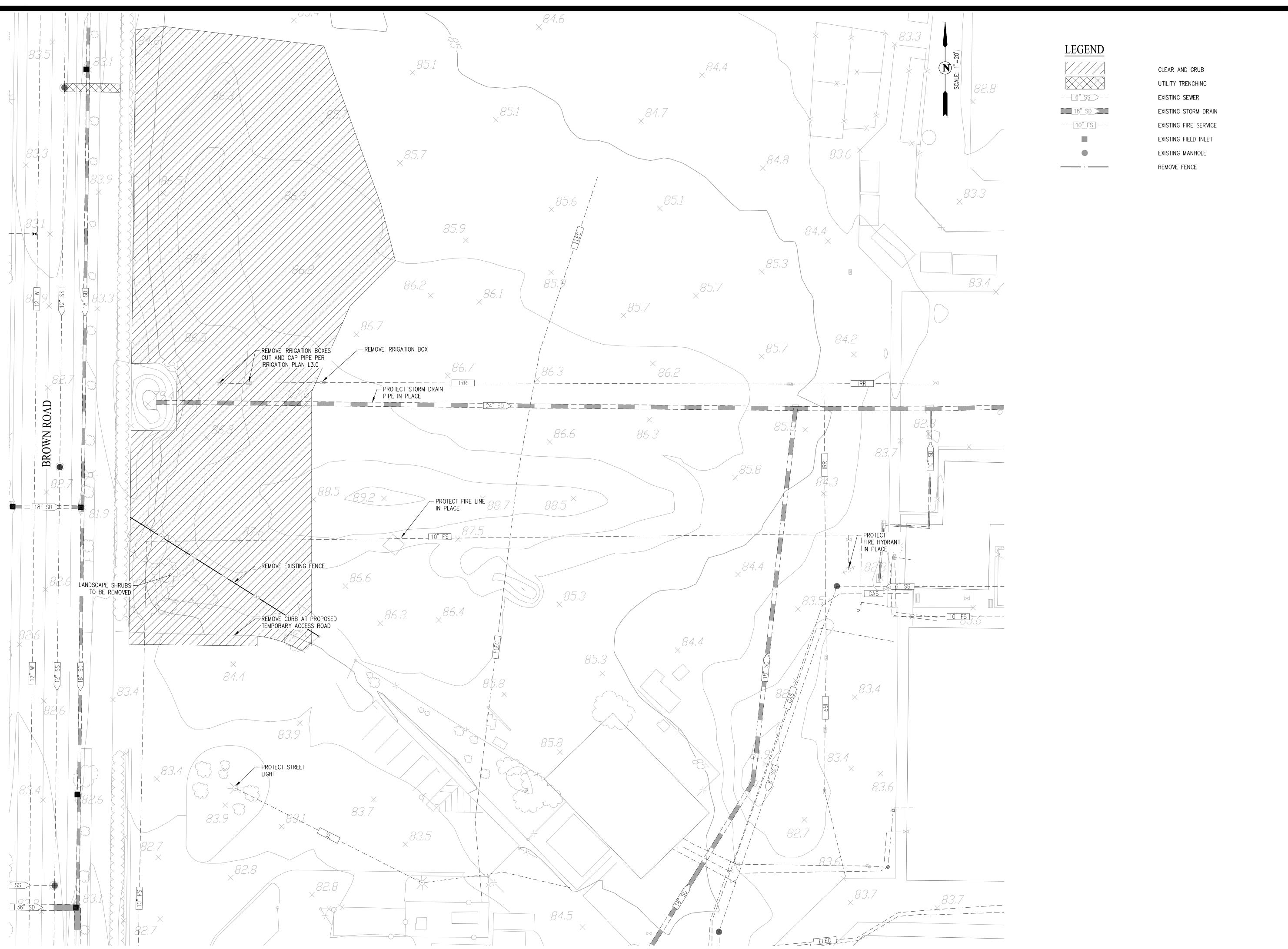
JANUARY 4, 2019

SHEET TITLE

CAMPUS PLAN &
BUILDNG CODE
ANALYSIS

SHEET NUMBER

G-0.3



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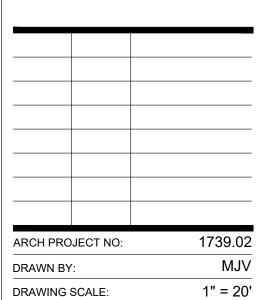
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FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

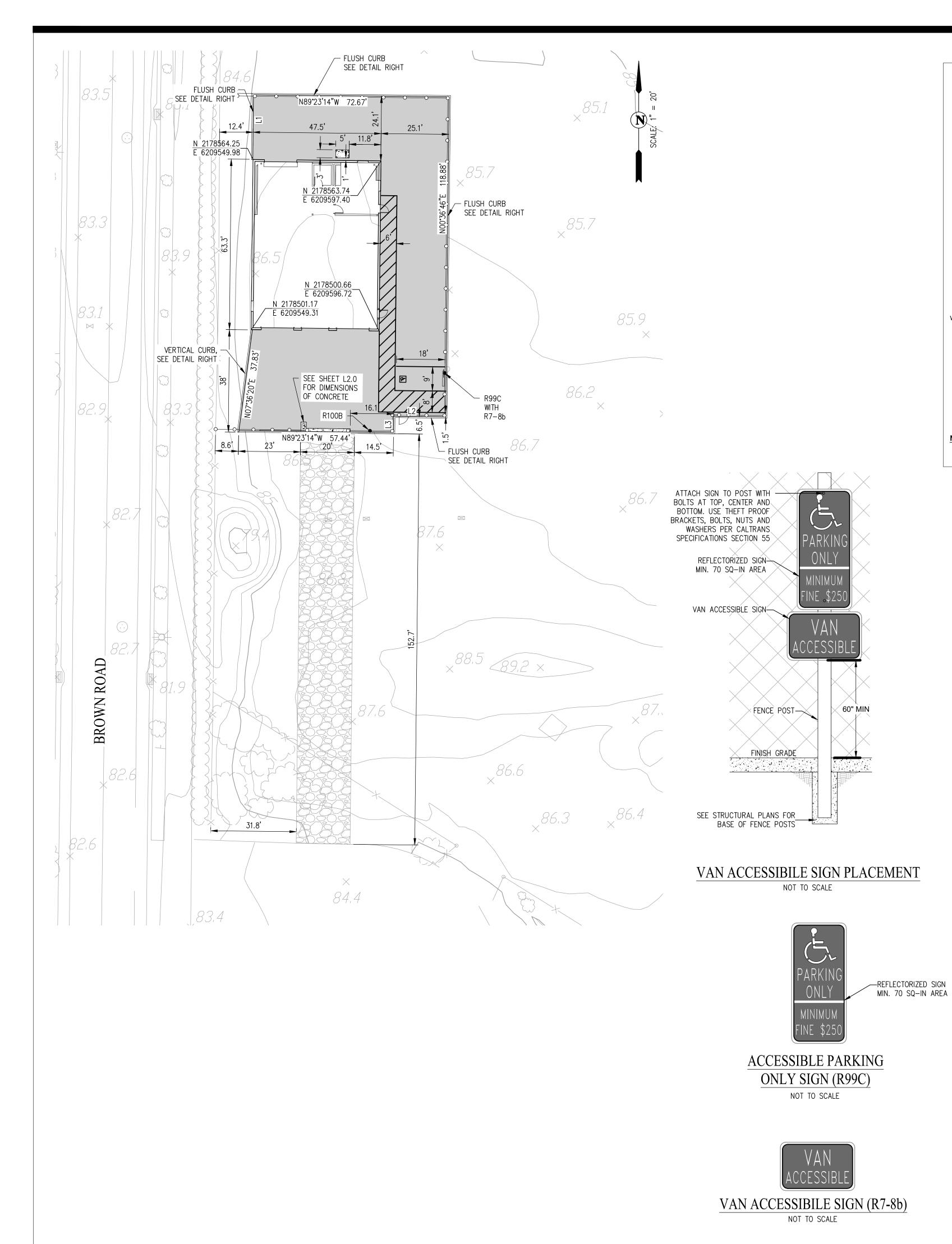


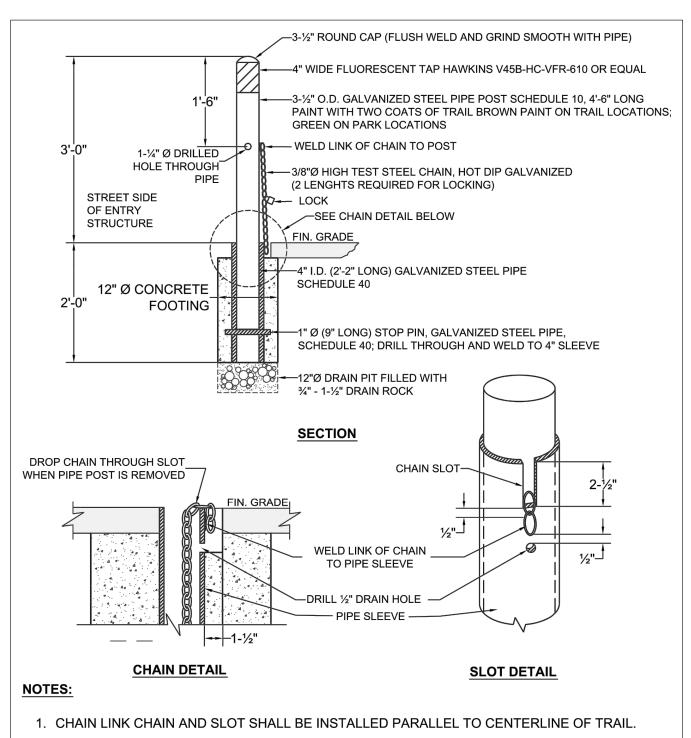
61721-0069 **BID SET**

JANUARY 4, 2019

DEMOLITION PLAN

C-1.0





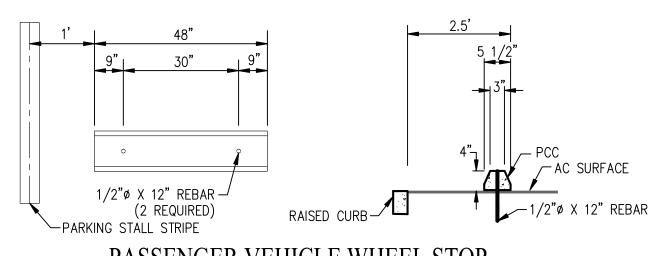
REMOVABLE BOLLARD NOT TO SCALE

UNAUTHORIZED VEHICLES PARKED IN
DESIGNATED ACCESSIBLE SPACES
NOT DISPLAYING DISTINGUISHABLE
PLACARDS OR SPECIAL LICENSE
PLATES ISSUED FOR PERSONS WITH
DISABILITIES WILL BE TOWED AWAY
AT THE OWNER'S EXPENSE

TOWED VEHICLES MAY BE
RECLAIMED AT

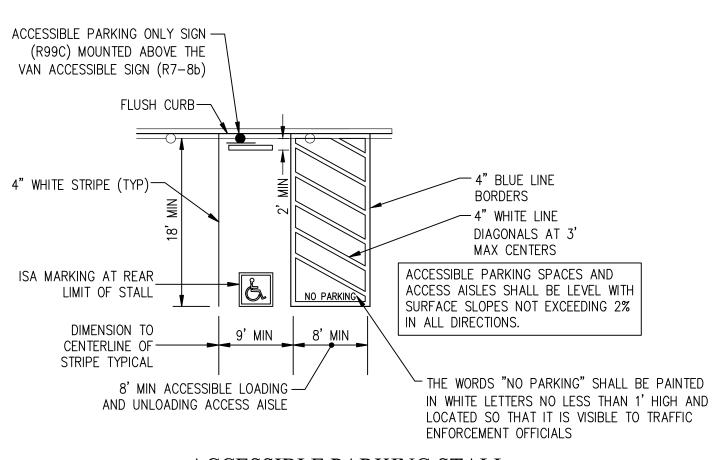
OR BY TELEPHONING

TOW AWAY SIGN (R100B) NOT TO SCALE



PASSENGER VEHICLE WHEEL STOP
(OR APPROVED EQUAL)

(NOT TO SCALE)



ACCESSIBLE PARKING STALL

NOT TO SCALE

LEGEND

AC PAVING (3.5" AC/12" CLASS II AB)

TEMPORARY CLASS II AB ACCESS ROAD

₩HEEL STOP

SIGN

REMOVABLE BOLLARD (SEE DETAIL LEFT)

ABBREVIATIONS

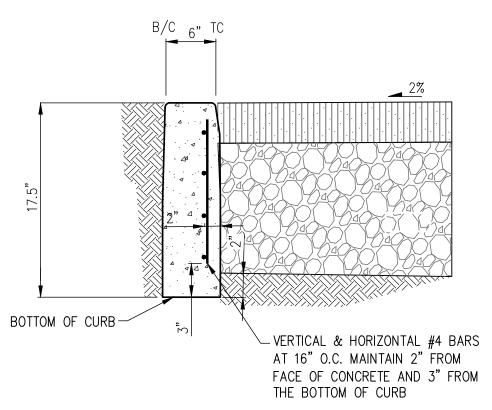
ISA INTERNATIONAL SYMBOL OF ACCESSIBILITY

99C (CA) ACCESSIBLE PARKING ONLY SIGN

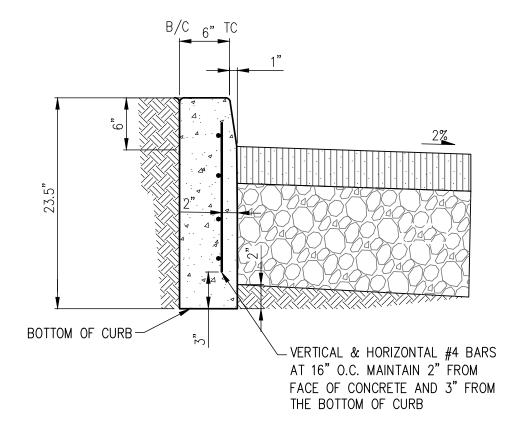
R7-8b (CA) VAN ACCESSIBLE SIGN
R100B TOW AWAY SIGN

NOTES:

1. ALL DISTANCES MEASURED ALONG OR TO TC/TFC.



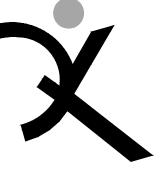
FLUSH CURB DETAIL NOT TO SCALE



6" VERTICAL CURB DETAIL

NOT TO SCALE

LINE TABLE		
NO	BEARING	LENGTH
L1	24.000	N00° 36′ 46.03″E
L2	19.333	N89° 23′ 13.97″W
L3	6.000	N00° 36′ 46.03″E



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SAN RAMON • (925) 866-0322
SACRAMENTO • (916) 375-1877

WWW.CBANDG.COM

L ENGINEERS • PLANNERS

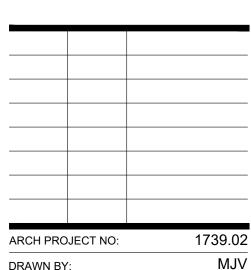


FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT



ARCH PROJECT NO: 1739.02

DRAWN BY: MJV

DRAWING SCALE: 1" = 20'

PTN: 61721-0069

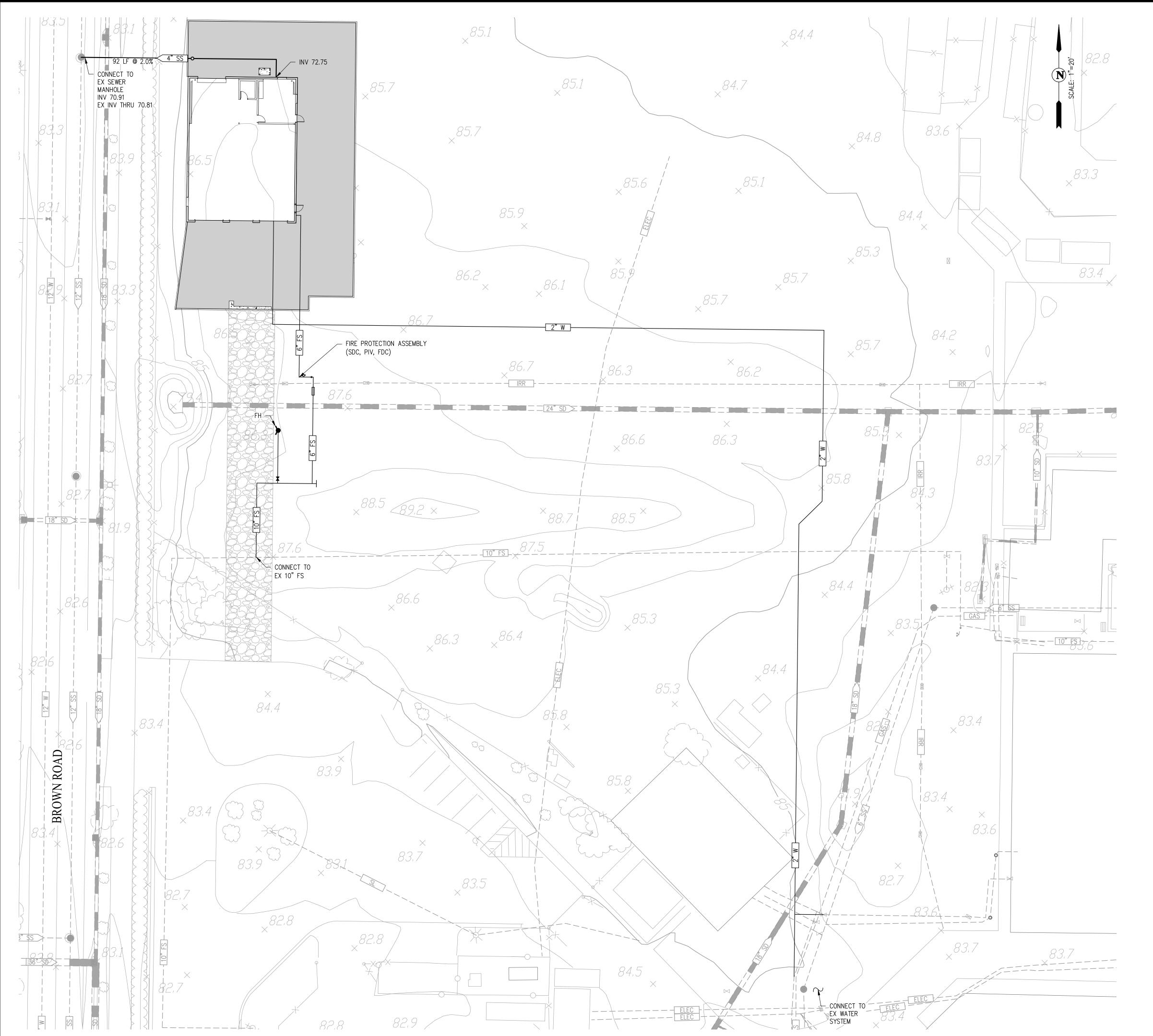
BID SET

JANUARY 4, 2019

HORIZONTAL CONTROL PLAN

SHEET NUME

C-2.0



LEGEND

TEMPORARY GRAVEL ACCESS ROAD

AC PAVING

— 4" SS PROPOSED SEWER LATERAL

— 2" W PROPOSED WATER LATERAL

— 10" FS — PROPOSED FIRE SERVICE PROPOSED SANITARY SEWER CLEANOUT

PROPOSED FIRE HYDRANT

SINGLE-DETECTOR CHECK VALVE

PROPOSED WATER VALVE

18" SD EXISTING STORM DRAIN

-- 10"FS -- EXISTING FIRE SERVICE

EXISTING FIELD INLET

-- 8"FS -- EXISTING FIRE SERVICE EXISTING MANHOLE

NOTES

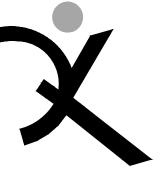
- FOR CATHODIC PROTECTION ALONG THE FIRE SERVICE LINE, SEE DETAILS 1 AND 2 ON SHEET CP1.2.
- 2. FOR CATHODIC PROTECTION ALONG THE WATER LINE, SEE DETAILS 3 AND 4 ON SHEET CP1.2.

SANITARY SEWE	R PIPE SCHEDULE
STRUCTURE	DESCRIPTION
4" PIPE	92 LF, PVC SDR 35

SANITARY SEWER ST	RUCTURE SCHEDULE
STRUCTURE	DESCRIPTION
SSCO (1 TOTAL)	PER CITY OF BRENTWOOD STANDARD SS-1

WATER PIPE SCHEDULE		
STRUCTURE	DESCRIPTION	
2" PIPE	570 LF PE	
6" PIPE	130 LF PVC	
10" PIPE	75 LF PVC	

WATER STRUCTURE SCHEDULE			
STRUCTURE	DESCRIPTION		
SINGLE—DETECTOR CHECK VALVE (1 TOTAL)	NIBCO F-908-W 175 PSI WWP IRON BODY CHECK VALVE		
PIV (1 TOTAL)	MUELLER A-20801 PER CITY OF BRENTWOOD STANDARD W-4		
FIRE DEPT. CONNECTION (1 TOTAL)	CROKER 6545 4-WAY FDC		
FIRE HYDRANT (1 TOTAL)	CITY OF BRENTWOOD STANDARD W-2		



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cbg

FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

> 1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: DRAWN BY: 1" = 20' DRAWING SCALE: 61721-0069

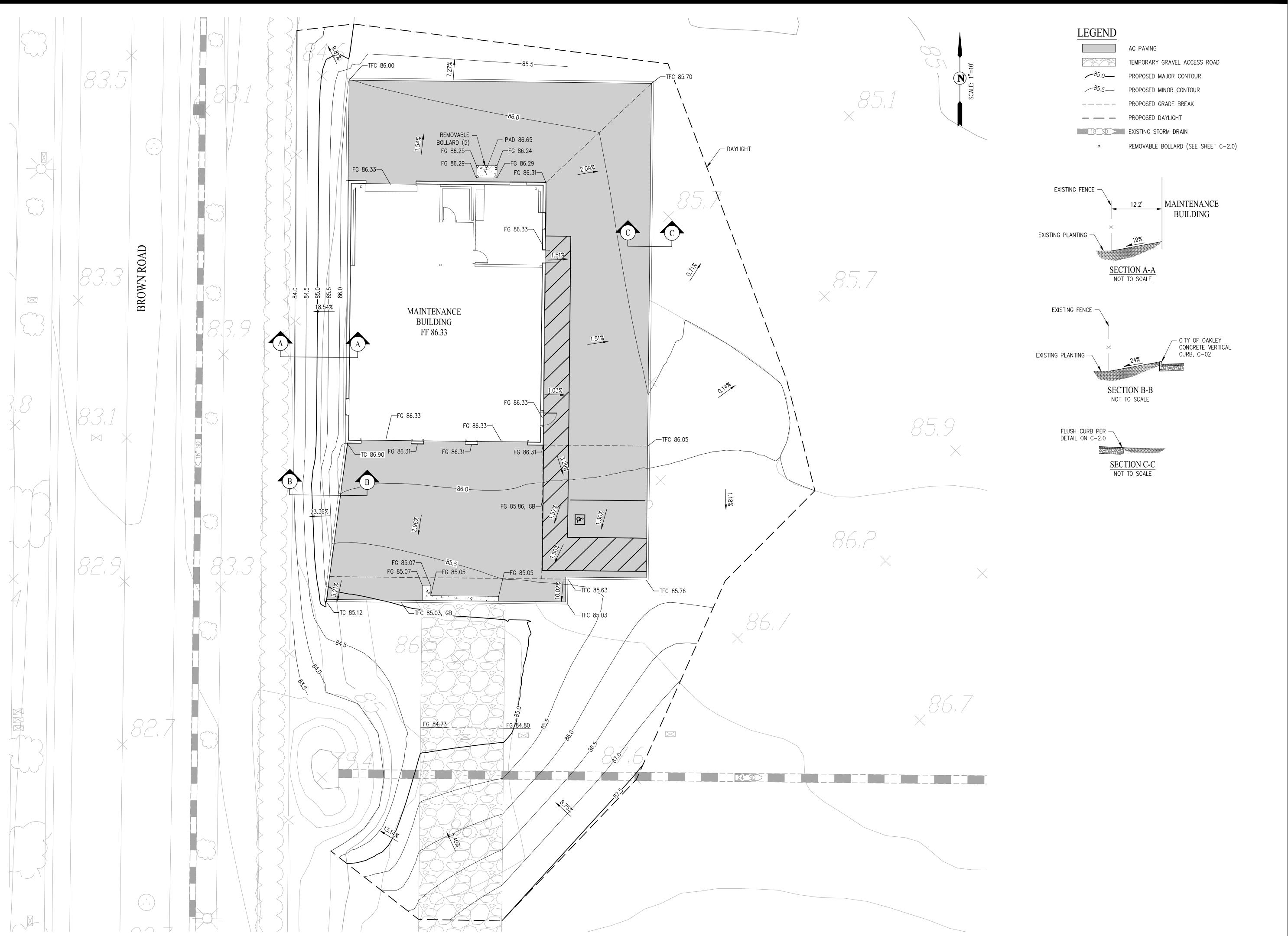
UTILITIES

PLAN

BID SET

JANUARY 4, 2019

C-3.0





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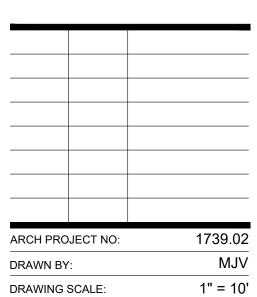


FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

> 1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

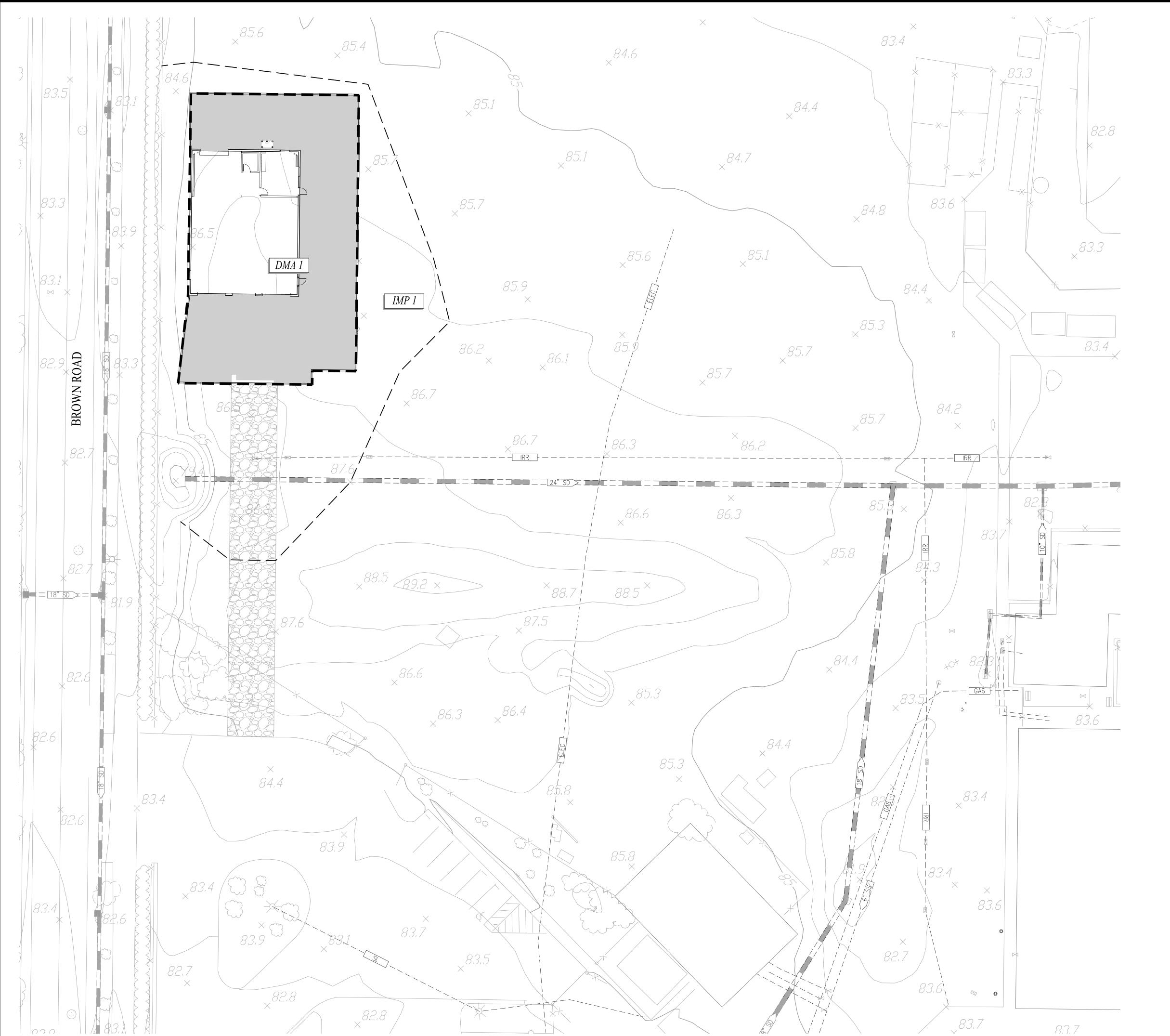


61721-0069 **BID SET**

JANUARY 4, 2019

GRADING PLAN

C-4.0



LEGEND

INTEGRATED MANAGEMENT PRACTICE - BIORETENTION AREA

DRAINAGE MANAGEMENT AREA BOUNDARY

DRAINAGE MANAGEMENT AREA DRAINING TO IMPERVIOUS AREA

NOTE: ALL IMPERVIOUS AREA WILL DRAIN TO IMPERVIOUS AREA.



(707) 576-0829

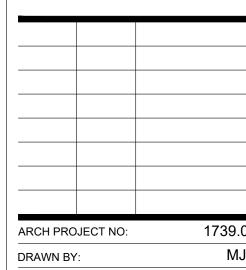
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FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

> 1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT



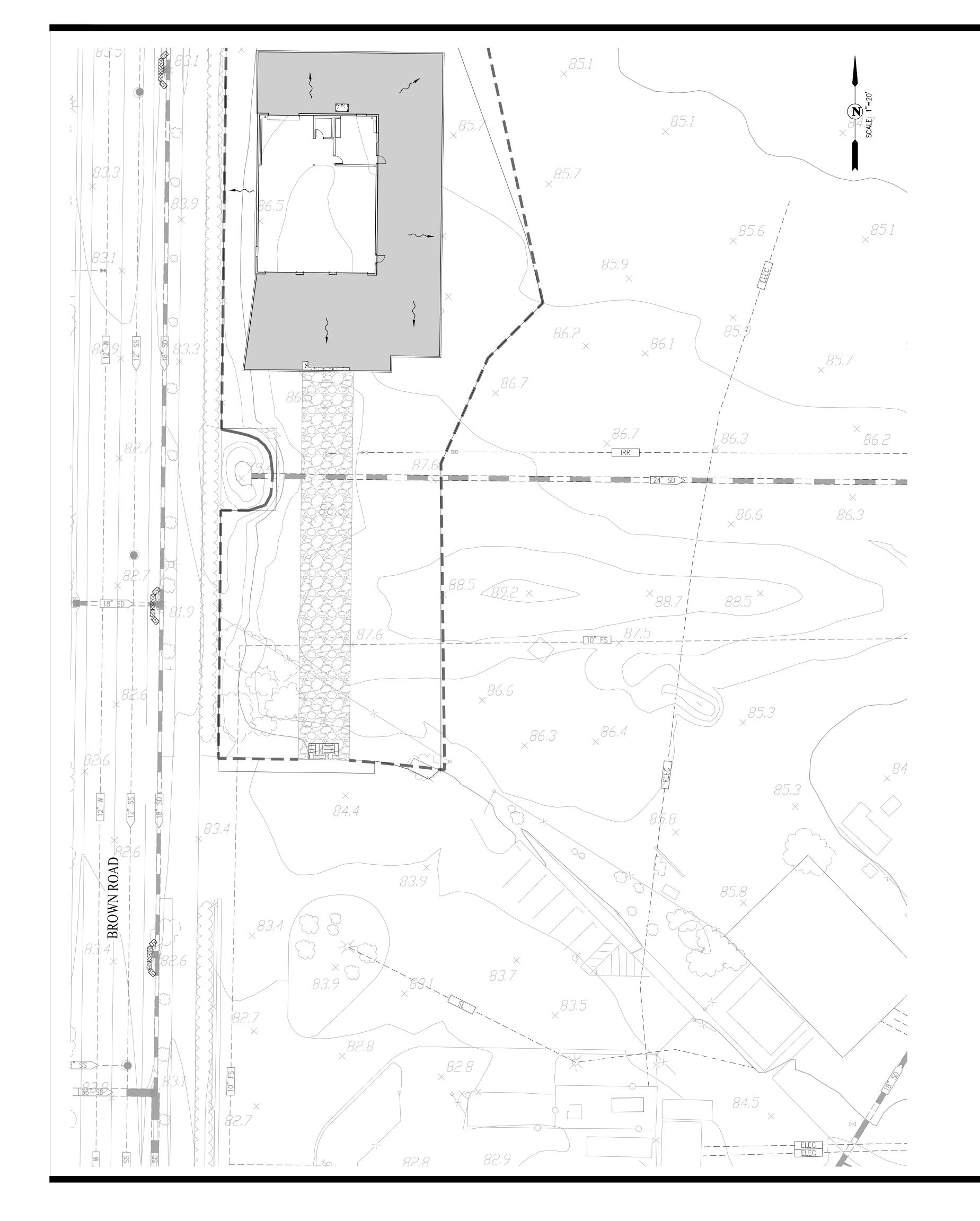
1" = 20' DRAWING SCALE: 61721-0069

BID SET

JANUARY 4, 2019

STORMWATER CONTROL **PLAN**

C-5.0





GENERAL NOTES:

1. LEGALLY RESPONSIBLE PARTY/PERSON LIBERTY UNION HIGH SCHOOL DISTRICT 850 2ND STREET (LRP) OWNER/SUBDIVIDER: BRENTWOOD, CA 94513

2. CIVIL ENGINEER:

CARLSON, BARBEE & GIBSON, INC. 2633 CAMINO RAMON, SUITE 350 SAN RAMON, CA 94583

(925) 866-0322 JASÓN VOGAN, RCE 59299

3. GEOTECHNICAL ENGINEER:

BSK ASSOCIATES 399 LINDBERGH AVENUE LIVERMORE, CA 94551 (925) 315-3151 CARRIE FOULK

LEGEND

DIRECTION OF FLOW WITH STORM DRAIN INSTALLED

CURB INLET PROTECTION - (SE-10)

FIBER ROLL – (SE–5)

STABILIZED CONSTRUCTION ENTRANCE/EXIT - (TC-1)

EXISTING STORM DRAIN

* STORMWATER DISCHARGE SAMPLING LOCATIONS ARE SUBJECT TO CHANGE AND WILL BE REMOVED, RELOCATED OR ADDED AT THE QSP'S DISCRETION.



QUATTROCCHI KWOK

ARCHITECTS

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95404
Pleasanton Office:

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FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 Neroly Rd. Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

APPLICABLE (BUT NOT LIMITED TO) CURRENT CASQA STORMWATER BMP CONSTRUCTION HANDBOOK

EC-1 EC-3 EC-4 NS-1

SCHEDULING
HYDROMULCH
HYDROSEED
WATER CONSERVATION PRACTICES
DEWATERING OPERATIONS
PAVING & GRINDING OPERATIONS
VEHICLE & EQUIPMENT CLEANING
VEHICLE & EQUIPMENT FUELING

VEHICLE & EQUIPMENT MAINTENANCE CONCRETE CURING
CONCRETE FINISHING
SILT FENCE
CHECK DAMS
FIBER ROLLS

NS-12 NS-13 SE-1 SE-4

SE-5

SE-10

DI PROTECTION TYPE 1
DI PROTECTION TYPE 2
DI PROTECTION TYPE 3 STABILIZED CONSTRUCTION ENTRANCE/EXIT

STABILIZED CONSTRUCTION ROADWAY

ENTRANCE & OUTLET TIRE WASH

WIND EROSION CONTROL MATERIAL DELIVERY & STORAGE

MATERIAL USE STOCKPILE MANAGEMENT

CONCRETE WASTE MANAGEMENT

SANITARY/SEPTIC WASTE MANAGEMENT

ARCH PROJECT NO: DRAWN BY: 1" = 20'

BID SET

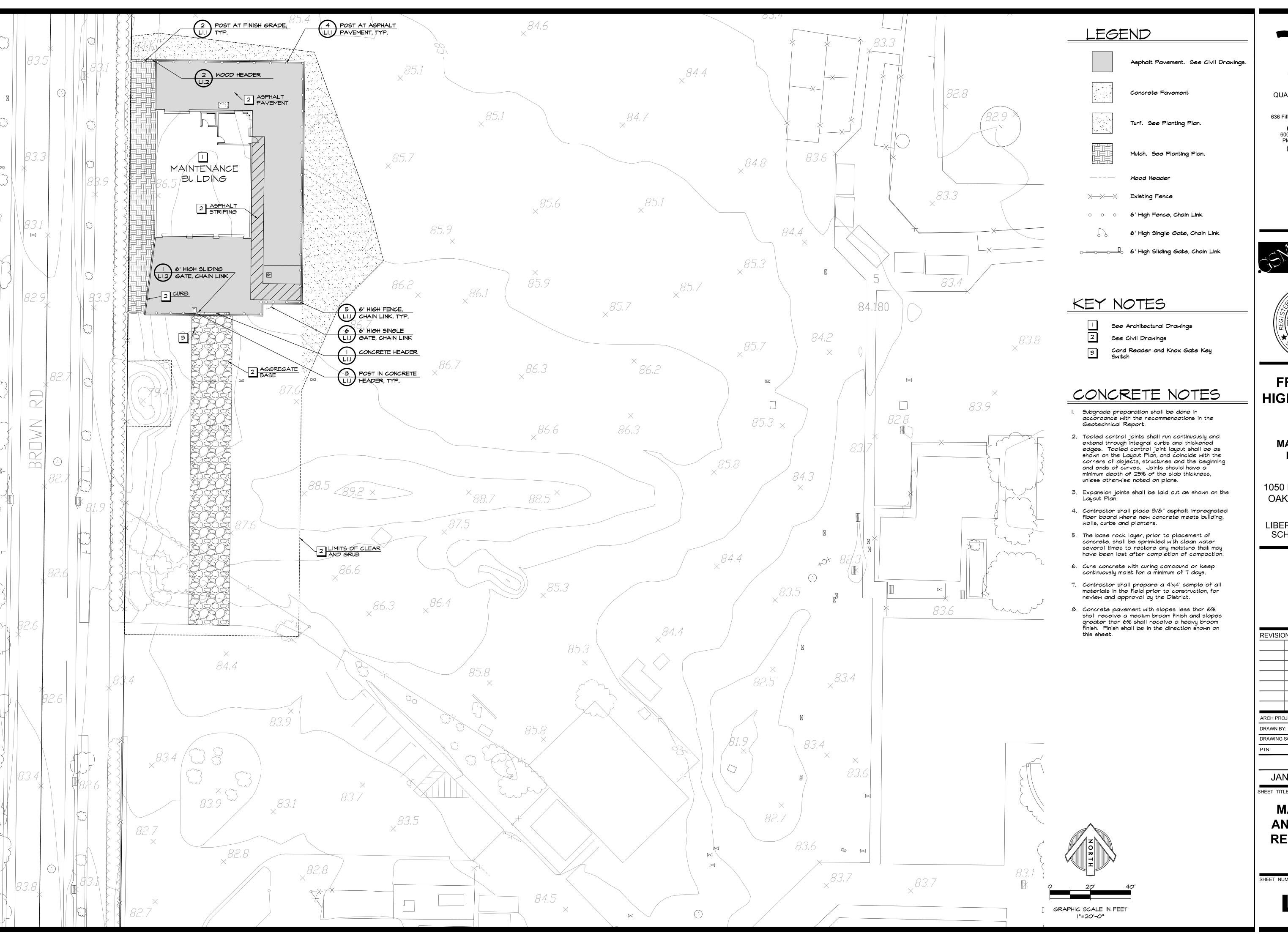
61721-0069

JANUARY 4, 2019

DRAWING SCALE:

EROSION CONTROL SHEET

C-6.0



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GSM landscape architects, inc. 1700 Soscol Ave. Suite 23 Napa, CA 94559 707-255-4630 www.gsmlainc.com



FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS 1739.02 ARCH PROJECT NO:

AS SHOWN DRAWING SCALE: 61721-0069 **BID SET**

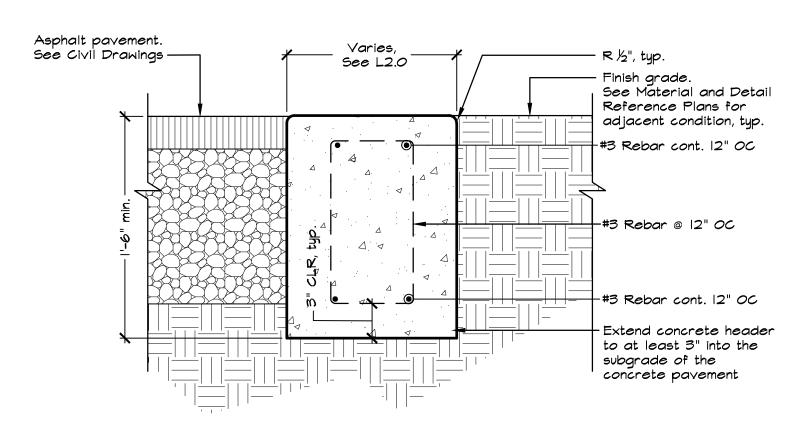
JANUARY 4, 2019

SHEET TITLE

MATERIAL AND DETAIL REFERENCE **PLAN**

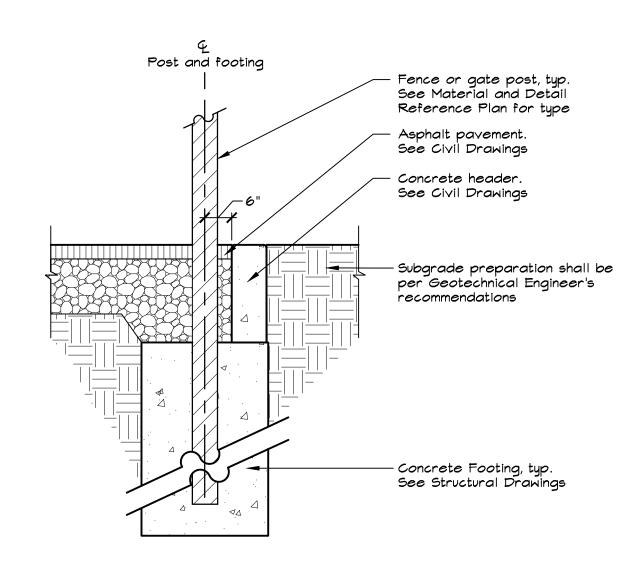
SHEET NUMBER

L1.0



NOTES:

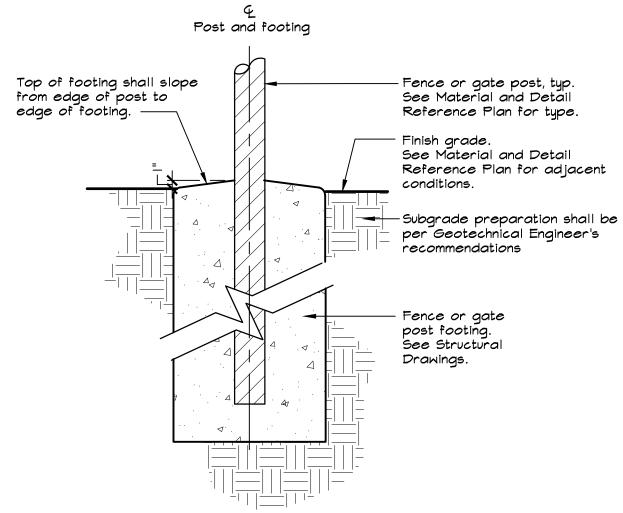
See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications. 2. Finish shall be applied on all exposed sides, broomed parallel with curb.



NOTES:

- See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications. 2. See Material and Detail Reference Plan and Layout Plan for post locations.
- 3. See Structural Drawings for post and footing information.

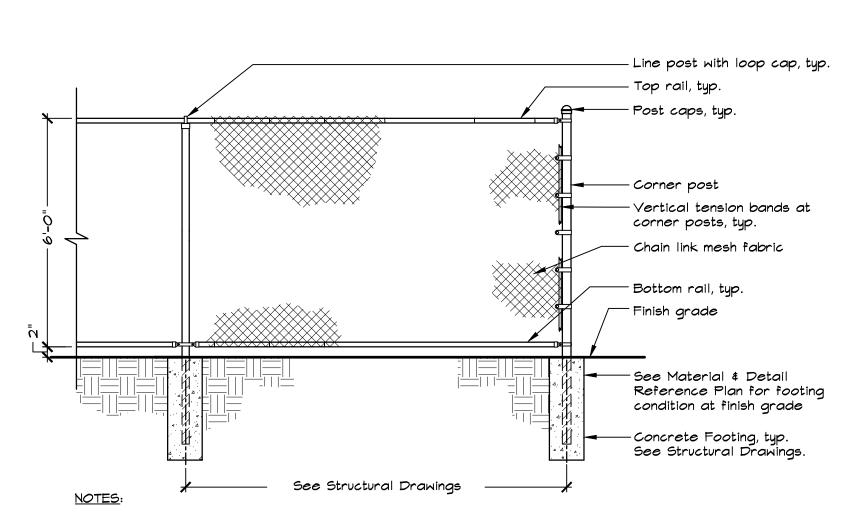
(4) POST AT ASPHALT PAVEMENT NOT TO SCALE



NOTES:

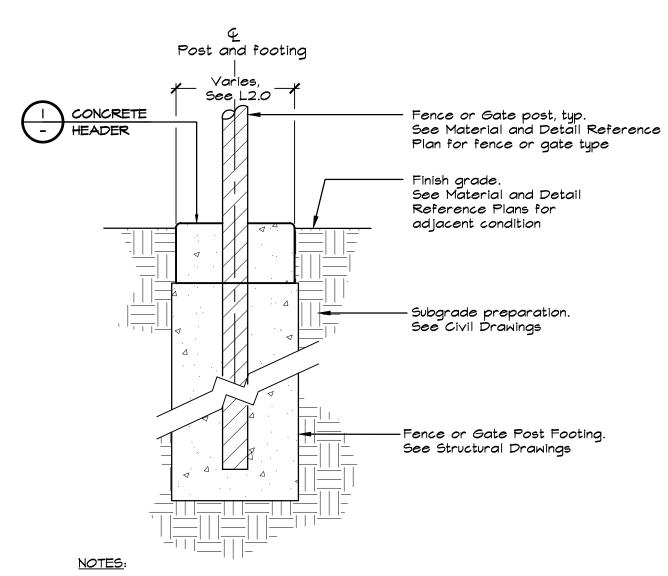
- See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
 See Material and Detail Reference Plan and Layout Plan for post locations.
- 3. See Structural Drawings for post and footing information.



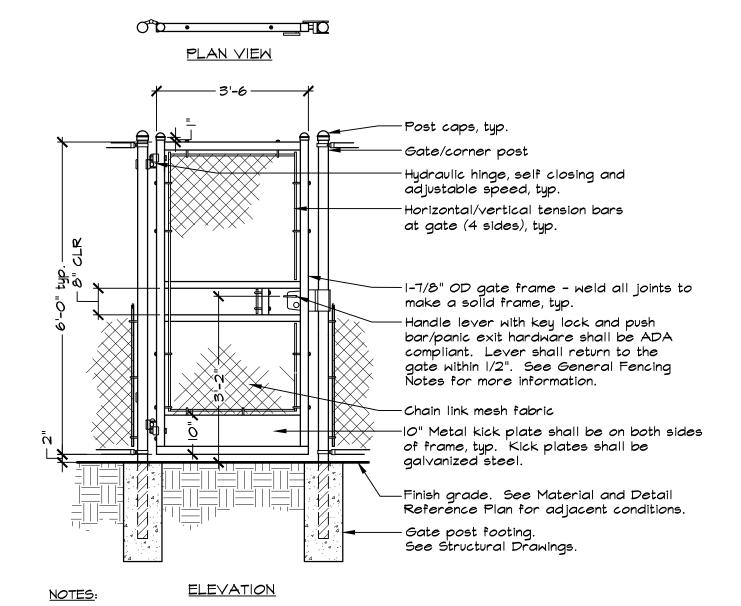


- See General Fencing and Gate Notes and Schedules on Sheet Ll.2. See Material and Détail Reference Plan and Layout Plan for post locations. 3. See Structural Drawings for post and footing information.
- 5 6' HIGH FENCE, CHAIN LINK

 NOT TO SCALE



- See Concrete Notes on the Material and Detail Reference Plan in addition to requirements in the Specifications.
- Tooled control joint and expansion joints shall align with center of fence and gate posts.
 See Material and Detail Reference Plan and Layout Plan for post locations.
 See Structural Drawings for post and footing information.
- POST IN CONCRETE HEADER



- See General Fencing and Gate Notes and Schedules on Sheet Ll.2.
 See Material and Detail Reference Plan and Layout Plan for post locations.
- See Structural Drawings for post and footing information.
 Door opening shall provide clear width of 32 inches minimum, CBC IIB-404.2.3

6' HIGH SINGLE GATE, CHAIN LINK



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FREEDOM HIGH SCHOOL

MAINTENANCE FACILITIES

NEW

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS	
ARCH PRO	DJECT NO:	1739.02
DRAWN BY	/ :	JMH
DRAWING	SCALE:	AS SHOWN
PTN:		61721-0069
	BID	SET

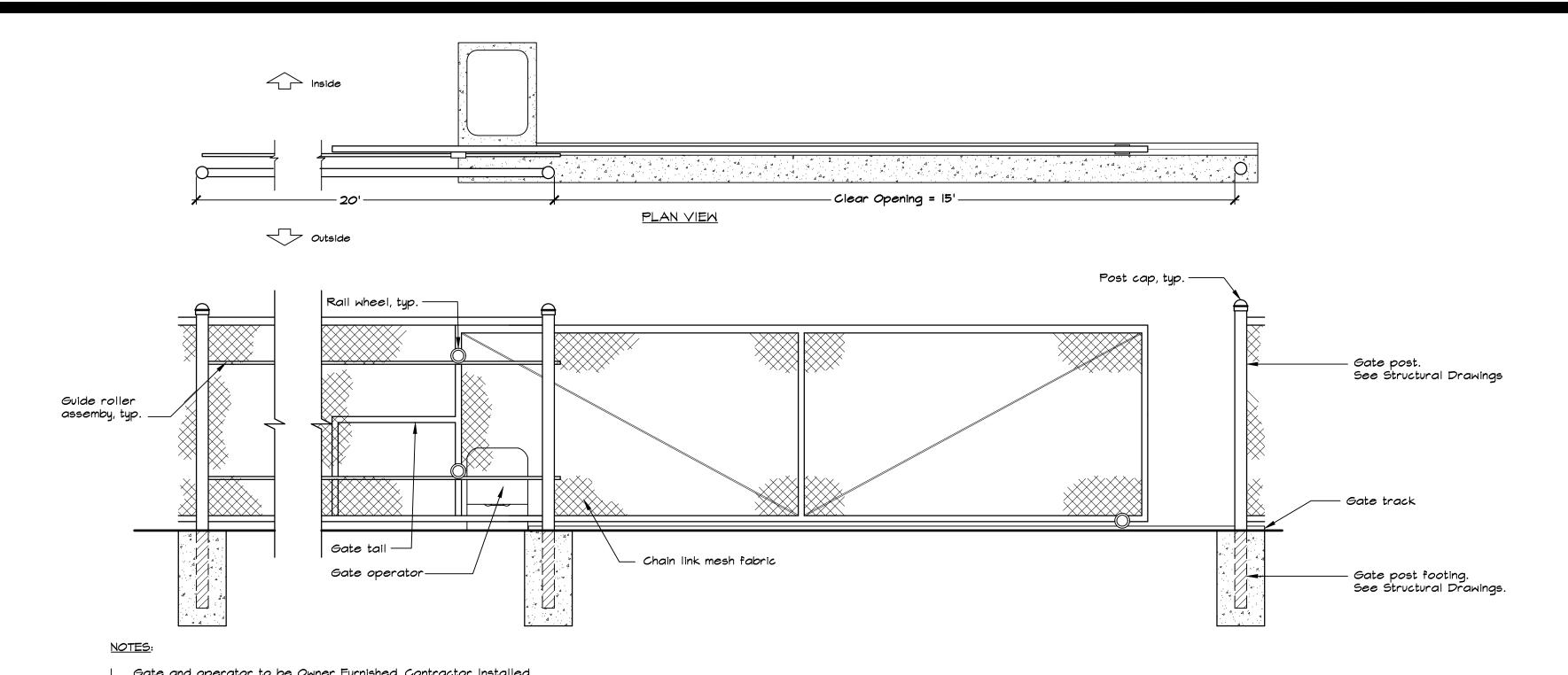
CONSTRUCTION

DETAILS

JANUARY 4, 2019

SHEET NUMBER

SHEET TITLE



DIMENSION CHART FOR SLIDING GATES

LABEL DESCRIPTION DIMENSION <u>CHAIN LINK</u>

15' Clear Opening ろ'± ±'8ا Overall Gate Length

Gate Automation Schedule			
Manufacturer	Product	Model No.	
DKS Doorking	Gate Operator	Owner furnished, Contractor installed.	
DKS Doorking	Entrapment Protection	Owner furnished, Contractor installed.	
DKS Doorking	Vehicle Loop Detector	6' Single Channel Loop Model 9410-010	
Knox	Fire Gate and Key Switch	Owner furnished, Contractor installed.	

Gate and operator to be Owner Furnished, Contractor Installed.
 See General Fencing and Gate Notes and Schedules on this Sheet.
 See Material and Detail Reference Plan and Layout Plan for post locations.
 See Structural Drawings for post and footing information.

5. Provide and install gate components as listed on the Gate Automation Schedule, or approved equal. Doorking contact is Lamar Jackson, (916) 240-7201; LJackson@doorking.com. 6. See Electrical Drawings for power and control raceways. Contractor shall provide shop drawings for sliding gate and gate automation.

O HIGH SLIDING GATE, CHAIN LINK

GENERAL FENCING AND GATE NOTES AND SCHEDULES

I. Details are for general reference. Contractor shall provide shop drawings prior to construction for approval by the District.

Details are for general reference. Contractor shall provide shop drawings prior to construction for approval by the District. Contractor shall include all hardware types and manufacturers' information within shop drawings.
 ADA compliant gates shall be accessible, have push bar and lockable lever with cylinder dogging, push pad armor, push bar with trim, weep holes and keyed lever all in stainless steel finish. Von Duprin, or equal, product number; CD x AX x PA x 98L x WH x 996L-NL x 63O. Lock shall have an interchangeable large format lock, cylinder dogging and night latch feature. Schlage Lock product number: 20-057 IC rim cylinder (996L) and 20-061 x XQII-948 63O (CD). Contact Debbie White at Allegion for ordering information. (925) 463-7702, Debbie.White@allegion.com.
 Chain link fabric shall be galvanized steel, 9 gauge, 2" mesh. See Material and Detail Reference Plan for locations. All posts, hardware, and rails finish shall match fabric.
 All gate hinge hardware shall be commercial/industrial quality.
 All overlapping fence fabric shall be cut and knuckled together.
 See Concrete Notes on Sheet LI.O.
 See Structural Drawings for post and footing information.
 Subarade preparation shall be per Geotechnical Engineer's recommendations.

8. Subgrade preparation shall be per Geotechnical Engineer's recommendations.

	- Redwood header	
Finish grade. See Material and Detail Reference Plan for adjacent conditions, typ.	-Finish grade. See Material and Detail Reference Plan for adjacent conditions, typ.	
2½" Long galvanized screw. 3 per stake	3" overlap, min.	
2"x4"x 8" Stake. Contractor	Redwood header - 2"x4" at straight sections, 3-ply benderboard at curved sections with joints staggered by a minimum of 12"	
	2"x4"xl8" Redwood stake	
SECTION	2½" Long galvanized screw. Install 3 per stake	9

NOTE:

I. Wood header and stakes shall be Redwood Construction Heart or better, or approved equal.



Fence Schedule		
Description	6' High Fence	
Detail Reference	5 LIJ	
Line Post	See Structural Drawings	
Corner/ End Post	See Structural Drawings	
Bottom Rail (STD SCH 40 Pipe)	5/8" <i>O</i> D	
Top Rail (STD SCH 40 Pipe)	5/8" <i>O</i> D	
Footing Size	See Structural Drawings	

Gate Schedule						
Description	6' High × 3'-6" Wide	6' High × 15' Wide				
Detail Reference	(6) LI.I	<u>-</u>				
Gate Post	See Structural Drawings	See Structural Drawings				
Gate Frame (STD. SCH 40 Pipe)	17/8" OD	Existing Frame				
Footing Size	See Structural Drawings	See Structural Drawings				







FREEDOM HIGH SCHOOL

MAINTENANCE FACILITIES

NEW

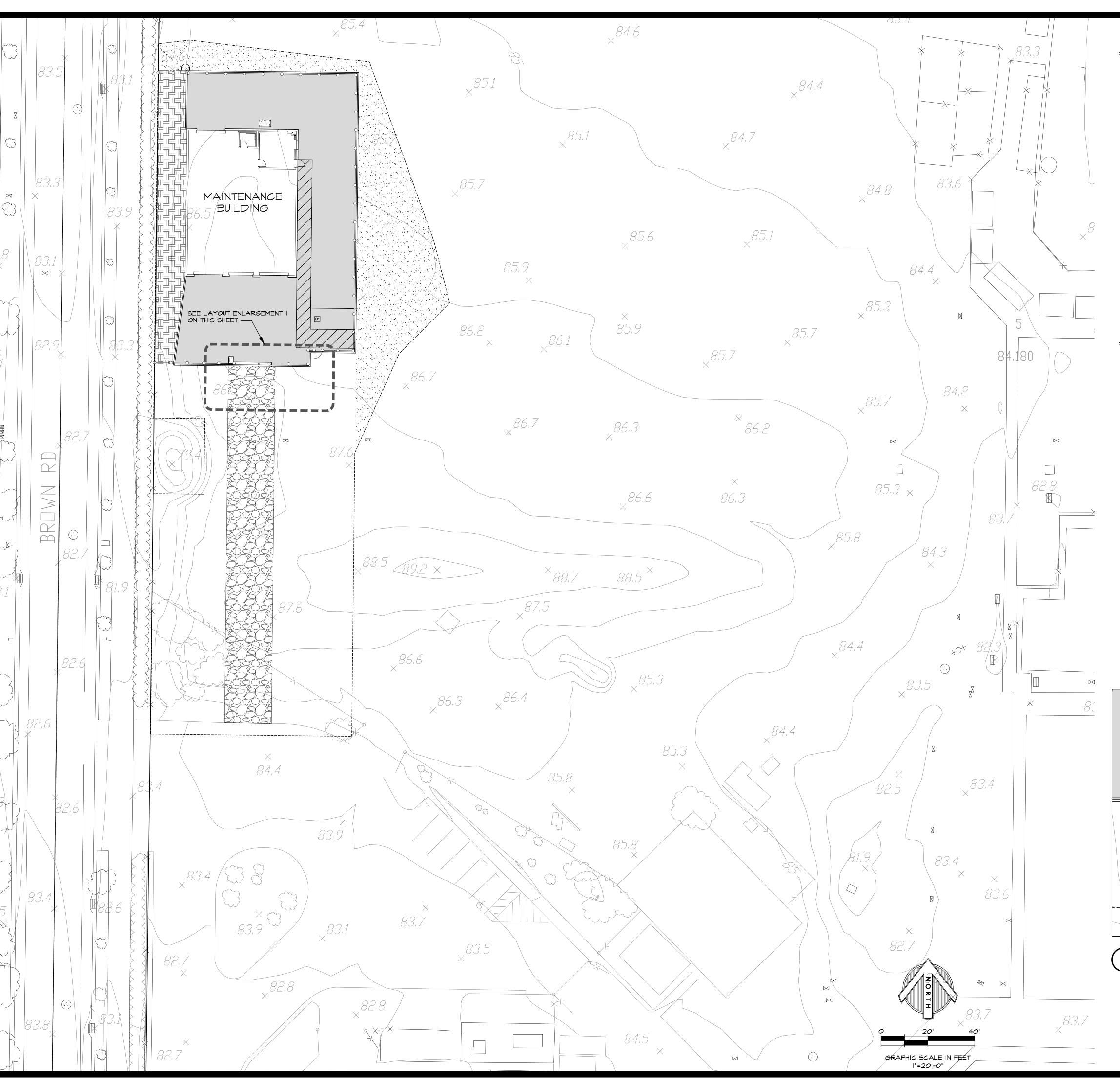
1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS				
ARCH PRO	DJECT NO:	1739.02			
DRAWN BY	/ :	JMH			
DRAWING	SCALE:	AS SHOWN			
PTN:		61721-0069			
BID SET					
JANUARY 4, 2019					

CONSTRUCTION **DETAILS**

SHEET NUMBER



LAYOUT LEGEND

-RX'-Y" → Radial Dimension

Arc Dimension

Linear Dimension

---- Guideline to show alignment

Midpoint of Arc

EQ

£--- Centerline

Point of Tangency

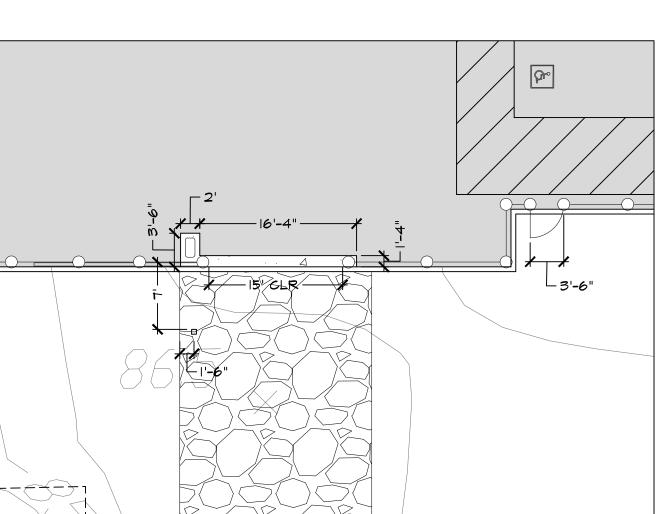
Clear Opening

90 Degree Angle

Control Points:

LAYOUT NOTES

- Contractor shall notify all public or private utility companies two (2) working days prior to commencement of work on this project to verify the locations of existing utility lines. Call Underground Service Alert (U.S.A.) toll free at 1-800-227-2600 or 811, 7:00am to 5:00pm, Monday through Friday.
- 2. All coordinates and dimensions shown are in a horizontal plane.
- Written dimensions always take precedence over scaled dimensions. If there is a conflict, notify the Architect and obtain a clarification. No deviation or substitution shall be allowed without obtaining written approval from the Architect.
- 4. See Civil Drawings for additional layout information.
- 5. This Plan does not represent a Property Line Survey. Property lines shown hereon may not represent the true position of the line.
- The Contractor shall coordinate all construction elements including utility locations and required sleeving prior to installation of any underground utilities.
- The Contractor shall verify critical dimensions, reference and control point locations and construction conditions prior to construction.
- 8. All dimensions shall be verified in the field, chalked painted, and/or string lined. Any minor adjustments required to achieve overall design layout shall be reviewed and approved by the Architect prior to construction.
- 9. All materials shall be furnished and installed by the Contractor per Manufacturer's specifications, unless otherwise noted in these Plans or Specifications.
- 10. Existing features and topographic information have been taken from Survey performed by Carlson, Barbee & Gibson, Inc. on June 14, 2018 provided by Quattrocchi Kwok Architects. GSM landscape architects, inc. assumes no liability, real or alleged, regarding the accuracy of the existing features or topographic information shown.

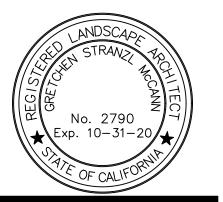


LAYOUT ENLARGEMENT
SCALE: 1" = 10"



ARCHITECTS Main Office: 636 Fifth Street, Santa Rosa, CA 95404 Pleasanton Office: 600 Main Street, Suite E Pleasanton, CA 94566 (707) 576-0829





FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS					
RCH PRO	JECT NO:	1739.02				
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TN:		61721-0069				
	BID SET					

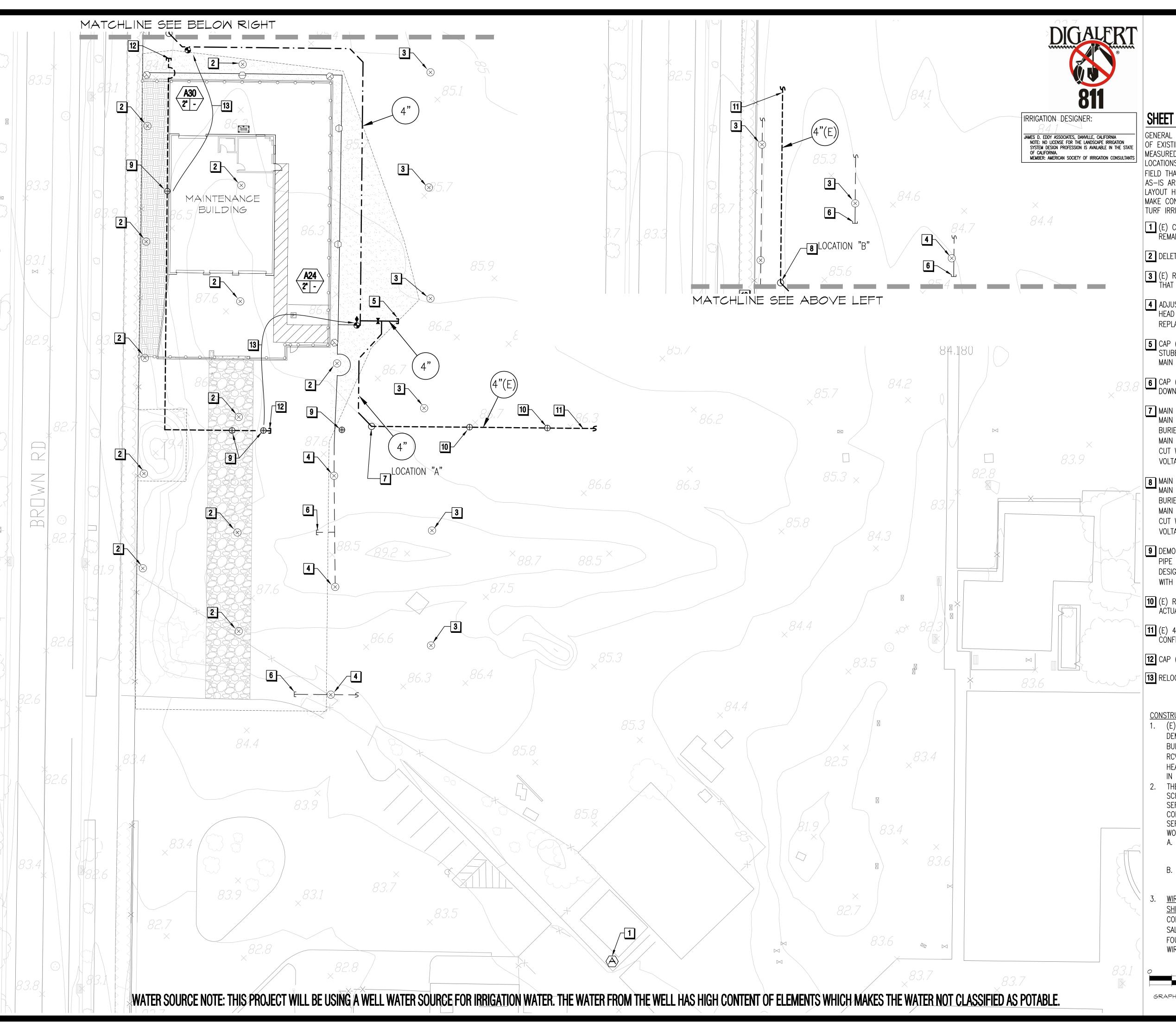
SHEET TITLE

JANUARY 4, 2019

LAYOUT PLAN

SHEET NUMBER

L2.0





JAMES D. EDDY ASSOCIATES LANDSCAPE IRRIGATION ENGINEERS P.O. BOX 2291 DANVILLE, CALIFORNIA 94526 P:(925) 867-3339 EMAIL: JDE@EDDYASSOCIATES.COM PLANNING~DESIGN~MANAGEMENT JDE PROJECT NO: 18027

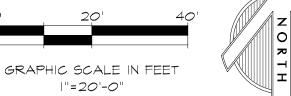
SHEET NOTES

GENERAL NOTE: THE DRAWINGS ARE DIAGRAMMATIC AND LOCATION OF EXISTING IRRIGATION EQUIPMENT HAS NOT BEEN FIELD MEASURED. LOCATE ACTUAL EXISTING PIPE, VALVE, AND HEAD LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION. CONFIRM IN THE FIELD THAT AFTER CONSTRUCTION ALL (E) ROTOR HEADS TO REMAIN AS-IS ARE CONNECTED TO AN RCV TO CONTROL THAT HEAD. LAYOUT HEADS TO PROVIDE TRIANGULAR HEAD-TO-HEAD COVERAGE MAKE CONSTRUCTION CORRECTIONS AS REQUIRED TO OBTAIN FULL TURF IRRIGATION COVERAGE.

- (E) CONTROLLER "A" TO FIELD RCV'S: CONTROLLER SHALL RÉMAIN IN SERVICE, AS-IS, AT ALL TIMES.
- DELETE (E) ROTOR HEAD AND LATERAL LINE PIPE.
- (E) ROTOR HEAD TO REMAIN IN SERVICE. CONFIRM IN THE FIELD THAT HEAD HAS AN RCV TO OPERATE IT.
- 4 ADJUST (E) ROTOR HEAD TO A PART CIRCLE OPERATION. IF HEAD CANNOT BE ADJUSTED TO A PART CIRCLE OPERATION, REPLACE HEAD WITH THE SPECIFIED (N) HEAD AS NEEDED.
- **5** CAP (N) MAIN LINE PIPE BELOW GRADE AND THRUST BLOCK. STUBBED FOR LATER CONNECTION TO PERFORMING ARTS CENTER MAIN LINE.
- 6 CAP (E) LATERAL LINE PIPE BELOW GRADE. ALL PIPING DOWNSTREAM OF THE CAP SHALL BE DEMOLISHED.
- **7** MAIN LINE LOCATION "A": CONNECT (N) MAIN LINE PIPE TO (E) 'MAIN LINE PIPE AND REROUTE MAIN LINE AS SHOWN. LOCATE BURIED EXISTING LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM CONTROLLER "A". INSTALL A PULL BOX, CUT WIRES, SPLICE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONG (N) MAIN LINE TO LOCATION "A".
- MAIN LINE LOCATION "B": CONNECT (N) MAIN LINE PIPE TO (E) MAIN LINE PIPE AND REROUTE MAIN LINE AS SHOWN. LOCATE BURIED EXISTING LOW VOLTAGE WIRE BUNDLE ADJACENT TO (E) MAIN LINE AND FROM CONTROLLER "A". INSTALL A PULL BOX, CUT WIRES, SPLICE TO (N) WIRES AND REROUTE (N) LOW VOLTAGE WIRE ALONG (N) MAIN LINE TO LOCATION "B".
- 9 DEMOLISH (E) REMOTE CONTROL VALVE: THE (E) LATERAL LINE PIPE TO (E) ROTOR HEADS SHALL BE RECONSTRUCTED TO THE DESIGNATED (N) REMOTE CONTROL VALVE LOCATION (AS SHOWN) WITH (N) PVC LATERAL PIPE.
- (E) REMOTE CONTROL VALVE TO REMAIN IN SERVICE. CONFIRM 'ACTUAL LOCATION IN THE FIELD.
- 111 (E) 4" WELL WATER IRR MAIN LINE TO REMAIN IN SERVICE. CÓNFIRM ACTUAL LOCATION IN THE FIELD.
- 12 CAP (E) ABANDONED MAIN LINE PIPE BELOW GRADE.
- **13** RELOCATE VALVE STATION CONTROL WIRES TO HERE.

CONSTRUCTION NOTES:

- 1. (E) IRRIGATION INSIDE THE (N) WORK AREA SHALL BE DEMOLISHED AS REQUIRED TO MAKE WAY FOR THE (N) BUILDING AND HARDSCAPE CONSTRUCTION. THIS INCLUDES (E) RCV'S, LATERAL LINE PIPE WITH RECONNECTION TO (E) ROTOR HEAD ZONES AS SHOWN AND NOTED, AND (E) QCV'S. WHEN IN DOUBT, CONFER WITH ARCHITECT FOR DIRECTION.
- 2. THE (E) IRRIGATION MAIN LINE SERVING FREEDOM HIGH SCHOOL CAMPUS LANDSCAPE AND FIELDS SHALL REMAIN IN SERVICE AND IN GOOD WORKING ORDER AT ALL TIMES. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING RESEARCH AND SERVICES PRIOR TO ACTUAL CONSTRUCTION OF THE NEW
- A. DISCUSS THE ACTUAL IRRIGATION MAIN LINE PIPE LOCATIONS WITH THE ARCHITECT. STAKE LOCATIONS AS
- B. POT HOLE TO ESTABLISH WHAT BURIED PIPES ARE IRRIGATION MAIN LINES SERVING THE FIELDS AND THE SCHOOL CAMPUS.
- WIRING NOTE FOR (E) RCV SOLENOIDS SHOWN ON THIS SHEET: RCV'S AS SHOWN ON THIS SHEET SHALL BE CONTROLLED FROM AND WIRED TO (E) CONTROLLER "A". SALVAGE AND PROTECT (E) CONVENTIONAL CONTROL WIRING FOUND NEXT TO THE (E) PVC MAIN LINE. REROUTE WITH (N) WIRE AS DIRECTED AND SHOWN ON THE IRRIGATION PLAN.





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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS	
		_
		_
ARCH PRO	DJECT NO:	1739.02
DRAWN B	/:	JDE
DRAWING	SCALE:	AS SHOWN

BID SET

61721-0069

JANUARY 4, 2019

SHEET TITLE

IRRIGATION PLAN

SHEET NUMBER

L3.0

IRRIGATION INSTALLATION NOTES

REFER TO IRRIGATION SPECIFICATIONS FOR DETAILED INFORMATION.

LUHSD = LIBERTY UNION HIGH SCHOOL DISTRICT

- THE (E) IRRIGATION MAIN LINE ROUTING, RCVS, AND HEAD LOCATIONS HAVE BEEN TAKEN FROM AN ARCHIVED DISTRICT IRRIGATION DESIGN PLAN (CIRCA 1994) AND UNDERGROUND SURVEY PROVIDED BY SUBTRONIC. NO FIELD OR AERIAL SURVEY FOR IRRIGATION CONDITIONS WAS COMPLETED FOR OR PRIOR TO THIS DESIGN WORK. CONTRACTOR SHALL FLAG EACH EXISTING TURF ROTOR HEAD AND CONFIRM THE ACTUAL MAIN LINE, RCV, AND ROTOR HEAD LOCATIONS IN THE FIELD. THE INTENTION OF THE (N) ROTOR HEAD LAYOUT IS TO PROVIDE FULL TURF COVERAGE AROUND THE EDGE OF THE (N) BUILDING AND HARDSCAPE CONTRACT WORK AREA. IT IS ALSO THE INTENTION OF THIS DESIGN TO PROVIDE AN EVEN PRECIPITATION RATE BETWEEN THE (N) TURF AND (E) TURF CONDITIONS. HOWEVER, THE IRRIGATION PLAN WORK SHOWN HERE IS DIAGRAMMATIC AND MAY NOT SHOW THE (E) TURF ROTOR HEADS IN THEIR TRUE POSITION. PART OF THIS CONTRACT WORK SHALL BE TO FIELD EXAMINE AND SURVEY THE EXISTING IRRIGATION CONDITIONS, FIELD MEASURE AND STAKE THE ROTOR HEADS, (E) AND (N), FOR GOOD EVEN HEAD—TO—HEAD COVERAGE WITH TRIANGULAR HEAD SPACING. IT MAY BE NECESSARY TO INSTALL ADDITIONAL TURF ROTOR HEADS BEYOND THOSE SHOWN ON THE PLANS, WHERE REQUIRED, TO PROVIDE HEAD—TO—HEAD COVERAGE WITH GOOD EVEN PRECIPITATION TO THE EDGE OF THE (E) TURF AREA.
- 2. PROVIDE INSTALLATION BY PERSONS FAMILIAR WITH IRRIGATION WORK AND UNDER THE SUPERVISION OF A QUALIFIED SUPERVISOR.
- 3. OBTAIN THE PERMITS REQUIRED AND PROVIDE LABOR AND MATERIALS NECESSARY TO FULLY COMPLETE THE WORK IN ACCORDANCE WITH THE DRAWINGS AND THE SPECIFICATIONS.
- 4. REMOVE DEBRIS AND ACCUMULATION OF DEBRIS AS A RESULT OF IRRIGATION CONSTRUCTION FROM THE SITE AND LEAVE AREA IN A CLEAN CONDITION ACCEPTABLE TO LUHSD. MAINTAIN SITE FOR THE SPECIFIED CALENDAR DAYS FOLLOWING ACCEPTANCE OF THE WORK BY LUHSD AND MAKE CORRECTIONS OR REPAIRS TO THE IRRIGATION AS DIRECTED BY LUHSD AT THE COMPLETION OF THE MAINTENANCE PERIOD.
- 5. THE DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR SHALL BE AWARE OF THE FOLLOWING CONDITIONS WHILE REFERRING TO AND USING THESE PLANS FOR BIDDING AND DURING ACTUAL CONSTRUCTION:
 - (E) UTILITIES SUCH AS WATER LINES TO BUILDINGS AND DRINKING FOUNTAINS, SEWER LINES, DRAINAGE LINES, HIGH VOLTAGE ELECTRICAL LINES AND BOXES, TELEPHONE LINES, CABLE TV CABLE, FIBER OPTIC CABLING, AND OTHER (E) UTILITIES. NOTIFY USA (811), REFER TO ARCHIVE UTILITY PLANS, AND CONFER WITH THE DISTRICT.
 - LOCATE AND PROTECT (N) AND (E) UTILITIES PRIOR TO EXCAVATION AND TRENCHING. DO NOT DAMAGE (E) UTILITIES, PAVING OR STRUCTURES. DAMAGE REPAIR SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT OR LUHSD.
 - (E) ROTOR HEAD LOCATIONS MAY VARY IN THE FIELD FROM THOSE LOCATIONS SHOWN ON THE PLAN. FIELD STAKE (E) ROTOR HEAD LOCATIONS. MEASURE AND STAKE (N) HEAD LOCATIONS IN THE FIELD TO PROVIDE EVEN PRECIPITATION BETWEEN (N) HEADS AND (E) HEADS. THESE PLANS ARE FOR REFERENCE ONLY.
 - PIPE AND EQUIPMENT MAY BE SHOWN IN PAVING FOR CLARITY OF DRAWING THE PLAN ONLY. INSTALL PIPING AND EQUIPMENT IN PLANTING AREAS. INSTALL RCV'S AND VALVES IN LOCATIONS THAT ARE OUT OF THE BALL FIELD PLAY AREA, AWAY FROM GATES, AND OUT OF PEDESTRIAN OR VEHICLE LINE OF TRAFFIC.
 - DUE TO THE SCALE OF THE DRAWINGS, ALL OFFSETS, FITTINGS, SLEEVES, ETC. WHICH MAY BE REQUIRED MAY NOT BE INDICATED. COORDINATE AND INSTALL THESE ITEMS DURING CONSTRUCTION AS REQUIRED.
- PRIOR TO BID AND START OF CONSTRUCTION, INVESTIGATE THE STRUCTURAL AND ACTUAL CONDITIONS IN THE FIELD WHICH MAY AFFECT THE CONTRACT WORK INCLUDING OBSTRUCTIONS, GRADE DIFFERENCES, OR AREA DIFFERENCES WHICH MAY HAVE NOT BEEN CONSIDERED IN THE ENGINEERING OR MAY BE CONSTRUCTION RELATED. WHERE (E) FIELD CONDITIONS MAY AFFECT THE CONTRACT WORK, COORDINATE ACCORDINGLY BY NOTIFICATION AND APPROVAL OF LUHSD. PROVIDE A SHOP DIAGRAM CREATED BY THE CONTRACTOR'S DRAFTER TO SHOW THE INTENDED CONSTRUCTION WHICH VARIES FROM THE PLANS.
- 6. CONTRACTOR SHALL COORDINATE IRRIGATION CONTRACT WORK WITH ALL APPLICABLE CONTRACTORS AS FOLLOWS:
- LOCATION AND INSTALLATION OF PIPE AND LOW VOLTAGE WIRE WHICH MAY AFFECT ANOTHER CONTRACTOR'S WORK (WHEN NECESSARY TO COORDINATE).
- LOCATION AND INSTALLATION OF CONDUIT AND/OR SLEEVES THROUGH OR UNDER WALLS, ROADWAYS, PAVING, STRUCTURE, ETC. BEFORE CONSTRUCTION.
- ASSUME FULL RESPONSIBILITY AT NO ADDITIONAL EXPENSE TO THE PROJECT OR LUHSD FOR REQUIRED REVISIONS TO CONSTRUCTION IF THESE NOTIFICATIONS ARE NOT COORDINATED AND COMPLETED.
- 7. AT THE END OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE RECORD DRAWINGS AS PER THE IRRIGATION SPECIFICATIONS SHOWING THE FINAL LOCATIONS AND MEASUREMENTS OF IRRIGATION EQUIPMENT FOR APPROVAL BY LUHSD AND THE ARCHITECT.
- 8. THE INTENT OF THIS IRRIGATION SYSTEM DESIGN IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH.
- 9. PROGRAM THE CONTROLLER FOR NEWLY CONSTRUCTED IRRIGATION ZONES TO PROVIDE THE MINIMUM AMOUNT OF WATER NEEDED TO SUSTAIN GOOD PLANT HEALTH. MAKE ADJUSTMENTS
 TO THE PROGRAM FOR SEASONAL WEATHER CHANGES. PLANT MATERIAL. WATER REQUIREMENTS. MOUNDS AND SLOPES. SUN. SHADE AND WIND EXPOSURES.
- 10. THE IRRIGATION SYSTEM FOR THE FIELD AREA ONLY IS DESIGNED FOR VALVE(S) TO OPERATE AS PREVIOUSLY DESIGNED IN 1994. NO FLOW CHANGES HAVE BEEN CREATED BY THIS PLAN.
- 11. CONTROLLER "A" IRRIGATION CONTROL WIRE: SOLID STRAND COPPER WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND, SIZE AWG-UF #14-1. COMMON GROUND WIRE: WHITE INSULATING JACKET. CONTROL WIRE: INSULATING JACKET OF COLOR OTHER THAN WHITE. SPLICES: MADE WITH 3M-DBY SEAL PACKS.
- 12. SPLICES: MADE WITH 3M-DBY, OR SPEARS MODEL #400, OR APPROVED EQUAL SEAL PACKS.
- 13. PLASTIC VALVE BOXES AND LIDS SHALL BE <u>PURPLE</u> IN COLOR WITH BOLT DOWN, NON-HINGED COVER MARKED "IRRIGATION". BOX BODY SHALL HAVE KNOCK OUTS. MANUFACTURER: RAIN BIRD, NDS, CARSON/BROOKS, OR APPROVED EQUAL.
- 14. INSTALL REMOTE CONTROL VALVE BOXES 12" FROM WALK, CURB, BUILDING OR LANDSCAPE FEATURE. AT MULTIPLE VALVE BOX GROUPS, EACH BOX SHALL BE AN EQUAL DISTANCE FROM THE WALK, CURB, ETC. AND EACH BOX SHALL BE 12" APART. SHORT SIDE OF RECTANGULAR VALVE BOXES SHALL BE PARALLEL TO WALK, CURB, ETC. REFER TO BOX INSTALLATION DETAIL.
- 15. FLUSH AND ADJUST IRRIGATION HEADS FOR EFFICIENT PERFORMANCE. PREVENT OVERSPRAY ON THE WALKS, PLAYGROUNDS, ROADWAYS, SIGNS, LIGHTS, AND/OR BUILDINGS. SELECT THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND THROTTLE THE FLOW CONTROL OR PRESSURE REGULATION DEVICE AT EACH VALVE TO OBTAIN THE BEST OPERATING PRESSURE FOR EACH SYSTEM.
- 16. SET POP-UP ROTOR HEADS PERPENDICULAR TO FINISH GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 17. IRRIGATION HEAD LAYOUT AND PIPING AS SHOWN ON THE DRAWINGS IS INDICATIVE OF THE WORK TO BE INSTALLED. IRRIGATION HEADS, ARC OF SPRAY, RADIUS OF SPRAY AND PIPING AT CERTAIN LOCATIONS MAY REQUIRE FIELD ADJUSTMENT TO PREVENT HARM TO TREE ROOTS AND INTERFERENCE OF TREES TO IRRIGATION SPRAY.
- 18. THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE SHOWN ON THE 1994 IRRIGATION DRAWINGS. VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE 1994 DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO LUHSD.
- 19. PIPE SIZING SHOWN ON THE DRAWINGS IS TYPICAL. AS CHANGES IN LAYOUT OCCUR DURING STAKING AND CONSTRUCTION ADJUST THE SIZE ACCORDINGLY.
- 20. PIPE THREAD SEALANT COMPOUND SHALL BE PERMATEX 51 OR RECTORSEAL T+2.
- 21. BEFORE COMMENCING WITH WORK UNDER THIS CONTRACT, NOTIFY UNDERGROUND SERVICE ALERT AT <u>811</u> OR <u>1-800-227-2600</u>. DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES, PIPES, AND STRUCTURES BEFORE COMMENCING WORK. COSTS OF DAMAGES WHICH OCCUR FROM FAILURE TO ACCURATELY LOCATE AND PRESERVE THESE UTILITIES SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR.
- 22. NOTE: NO PLASTIC PIPE OR SOLVENT WELDED JOINTS ARE PERMITTED ABOVE GRADE.
- 23. <u>CONTROLLER NOTE:</u> CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE AND FULLY OPERABLE SYSTEM AND SHALL COORDINATE WORK AFFECTING EXISTING, TEMPORARY AND PROPOSED IMPROVEMENTS TO PROVIDE CONTINUOUS IRRIGATION SYSTEM OPERATION.
- 24. THE EXISTING IRRIGATION SYSTEM SHALL NOT BE OUT OF SERVICE FOR LONGER THAT 72 HOURS.
- 25. CATHODIC PROTECTION REQUIRED SEE CATHODIC PROTECTION PLANS AND SPECIFICATIONS.

IRRIGATION LEGEND

SYMBOL	NUMBER	DESCRIPTION	PSI	GPM OR GPH	CATALOG RADIUS (MIN./MAX.)	DESIGN RADIUS (MIN./MAX.)
<u>4" POP-UP ROTOR HI</u>	EADS AT TURF					
\ominus	F4-PC-SS-18	RAIN BIRD FALCON 6504 SERIES, PART CIRCLE	50	15.4	48-59	48-59
\bigoplus	F4-PC-SS-14	RAIN BIRD FALCON 6504 SERIES, QTR. CIRCLE	50	12.7	48-59	48-59

NOTE: ANY (E) <u>FULL-CIRCLE</u> ROTOR HEADS LOCATED IN THE CONSTRUCTION ZONE ONLY AND REQUIRING FULL REPLACEMENT DUE TO CONSTRUCTION DAMAGE, POOR PERFORMANCE, OR BAD CONDITION SHALL BE REPLACED WITH A RAIN BIRD FALCON 6504 SERIES ROTOR HEAD, MODEL # F4-FC-18. (E) <u>PART-CIRCLE</u> ROTOR HEADS SHALL BE REPLACED WITH MODEL # F4-PC-14.

<u>VAL VES</u>

		BALL VALVE
•	44NP (1")	RAIN BIRD QUICK COUPLING VALVE WITH NON-POTABLE PURPLE LOCKING COVER
H	LMV-44BB (4")	LEEMCO RESILIENT WEDGE GATE VALVE WITH SLIP-ON CONNECTIONS AND 2" SQ. WRENCH NUT. IPS

SERIES (BELL X BELL) (USED ON 4" MAIN LINE PIPE).

SI FEVES AND PIPE	

2000RL.IB (2")

CONTROLLER STATION NUMBER
APPROXIMATE FLOW (GPM)
REMOTE CONTROL VALVE SIZE

4-INCH MAIN LINE: 1120-CLASS 200 PVC <u>PURPLE</u> PLASTIC PIPE FOR RECYCLED WATER USE WITH GASKETED CONNECTIONS. USE LEEMCO DUCTILE IRON GASKETED FITTINGS AND JOINT RESTRAINTS AT ALL CHANGES IN DIRECTION. PROVIDE T. CHRISTY <u>PURPLE</u> POLYETHYLENE FITTING WRAP AROUND ALL DI FITTINGS. USE AN EPOXY COATED DUCTILE IRON SADDLE FOR RCV CONNECTIONS AND CONTINUATION OF 2.5-INCH OR SMALLER MAIN LINE TO RCV. SOIL COVER: 24-INCH IN SOIL, 24-INCH UNDER PEDESTRIAN PAVEMENT, 24-INCH UNDER VEHICULAR PAVEMENT. SIZE AS NOTED. PROVIDE T.CHRISTY BURIED DETECTABLE WARNING TAPE PER THE SPECIFICATIONS.

GRISWOLD REMOTE CONTROL VALVE WITH NON-POTABLE HANDLE. INTEGRAL UNION, AND INTEGRAL

2.5-INCH & SMALLER MAIN LINE: 1120-SCHEDULE 40 PVC <u>PURPLE</u> PLASTIC PIPE FOR RECYCLED WATER USE WITH SOLVENT WELDED CONNECTIONS, SCHEDULE 40 PVC PLASTIC SOLVENT WELDED FITTINGS. SOIL COVER: 18-INCH IN SOIL, 18-INCH UNDER PEDESTRIAN PAVEMENT, 24-INCH UNDER VEHICULAR PAVEMENT. SIZE AS NOTED. PROVIDE T.CHRISTY BURIED DETECTABLE WARNING TAPE PER THE SPECIFICATIONS.

LATERAL LINE: 1120—SCHEDULE 40 PVC PLASTIC PIPE WITH SCHEDULE 40 PVC PLASTIC SOLVENT WELDED FITTINGS. 12—INCH SOIL COVER. SIZE 1—INCH UNLESS OTHERWISE NOTED.

SI FEVE: 1120—CLASS 200 OR 1120—SCHEDULE 40 PVC PLASTIC PIPE WHICHEVER HAS THE

SLEEVE: 1120-CLASS 200 OR 1120-SCHEDULE 40 PVC PLASTIC PIPE, WHICHEVER HAS THE LARGEST WALL THICKNESS, WITH SCHEDULE 40 PVC PLASTIC SOLVENT WELDED FITTINGS. SOIL COVER TO BE EQUAL TO COVER REQUIRED FOR PIPE CONTAINED WITHIN SLEEVE 18-INCH MINIMUM COVER. 2-INCH DIA. UNLESS OTHERWISE NOTED.

---- (E) PVC MAIN LINE. CONFIRM LOCATION AND SIZE IN THE FIELD.

IRRIGATION SCHEDULE

ADJUSTABLE ARC, LONG RANGE ROTOR IRRIGATION @ TURF AREAS (SLA)

,														
MANUFACTURER:	MANUFACTURER: RAIN BIRD						Pr RATE	(INCHES,	/HOUR):	1.2				
MODEL:	6504	1	NOZZLE:	18(PC)	& 14(P	C)					PLANT	FACTOR:	1	
PSI:	50									IRRIGAT	ION EFF	ICIENCY:	0.75	
SPACING(FEET):	53							Ç	SOIL INF	LTRATION	n rate(i	NCHES):	0.2	
GPM:	15.4							Y	EAR 2 F	REDUCTIO	N AMOL	INT (%):	10	
	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
ADJUSTED ETO/MONTH	H(INCHES)	1.0	1.5	2.9	4.5	6.1	7.1	7.9	6.7	5.2	3.2	1.4	0.7	48.3
ADJUSTED ETO/WEE	K(INCHES)	0.2	0.3	0.7	1.0	1.4	1.6	1.8	1.5	1.2	0.7	0.3	0.2	\setminus
MINUTES PER WEEK	YEAR 1	_15	23	44	67	91	106	118	100	78	48	21	11]\ /
MINOTES FER WEEK	YEAR 2	14	21	40	61	82	96	107	90	71	44	19	10] \
DAYS PER WEEK	YEAR 1	_1	1 _	2	3	5	5	_ 5 _	. 5	5	_3	_ 2 _	. 1	$\rfloor \setminus / \vert$
DATS FER WEEK	YEAR 2	1	1	2	3	5	5	5	5	5	3	2	1] \/
MINUTES OF WATER PER DAY	YEAR 1	_15	23	22	23	19	22	_ 24 _	20	16	_16	_ 11 _	. 11]
MINOTES OF WATER FER DAT	YEAR 2	14	21	20	21	18	20	22	18	15	15	10	10] /\
CYCLES PER DAY TO MEET SOIL	YEAR 1	_2	2	2	2	_ 2	2	_ 2 _	2	2	_2	1	1] / \
INFILTRATION RATE	YEAR 2	2	2	2	2	2	2	2	2	2	2	1	1] / \
MAX. RUN TIME (MINUTES) PER	YEAR 1	_8	12	11_	12	10	11	_ 12 _	. 10	8	_8	11_	11]/ \
CYCLE	YEAR 2	7	11	10	11	9	10	11	9	8	8	10	10	\backslash



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PLANNING~DESIGN~MANAGEMENT

JDE PROJECT NO: 18027

IRRIGATION DESIGNER:

JAMES D. EDDY ASSOCIATES, DANVILLE, CALIFORNIA
NOTE: NO LICENSE FOR THE LANDSCAPE IRRIGATION
SYSTEM DESIGN PROFESSION IS AVAILABLE IN THE STATE
OF CALIFORNIA.
MEMBER: AMERICAN SOCIETY OF IRRIGATION CONSULTANTS

AIR VALVE

CAST IRON COPPER

DEGREES

DIAMETER

EFFICIENCY

WATER USE

ETO(ET) EVAPOTRANSPIRATION

FULL CIRCLE (360°)

FEET PER SECOND

GALVANIZED IRON

GALLONS PER HOUR

GALLONS PER MINUTE

INTERNAL DIAMETER

MAXIMUM APPLIED

MASTER VALVE

MIPT MALE IRON PIPE THREAD

MWELO MODEL WATER EFFICIENT

NOT IN CONTRACT

NPW NON POTABLE WATER

NOT TO SCALE
OUTSIDE DIAMETER

POC POINT OF CONNECTION

PRV PRESSURE REDUCING VALVE

POLYVINYLCHLORIDE POTABLE WATER

QUICK COUPLING VALVE

REMOTE CONTROL VALVE

SQUARE FOOT OR FEET

REDUCED PRESSURE BACKFLOW

PVBA PRESSURE VACUUM BREAKER

POUNDS PER SQUARE INCH

PE POLYETHYLENE

PRECIP PRECIPITATION

ASSEMBLY

QUANTITY

ASSEMBLY

RIGID STEEL

SCHEDULE

SQUARE

STANDARD

TYPICAL

UV ULTRAVIOLET UVR ULTRAVIOLET RESISTANT

VALVE BOX

WATER METER

RECYCLED WATER

STAINLESS STEEL

TO BE DETERMINED

THREADED BOTH ENDS

UNLESS OTHERWISE NOTED UNIFORM PLUMBING CODE

VOLTS-ALTERNATING CURRENT

THREADED ONE END

RCV

SQ

STD

TBD

TOE

TYP

WATER ALLOWANCE

MASTER CONTROL VALVE

MPR MATCHED PRECIPITATION RATE

LANDSCAPE ORDINANCE

PART CIRCLE (20°-360°)

FLOW SENSOR

FLUSH VALVE

GATE VALVE

GAUGE

INCHES

IRRIGATION

MAXIMUM

MIN MINIMUM

FEMALE IRON PIPE THREAD

ETWU ESTIMATED TOTAL

EXISTING

FUTURE

FEET

EFF

FC

DUCTILE IRON

EMITTER CONTROL VALVE







FREEDOM HIGH SCHOOL

NEW
MAINTENANCE
FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02

DRAWN BY: JDE

DRAWING SCALE: AS SHOWN
PTN: 61721-0069

BID SET

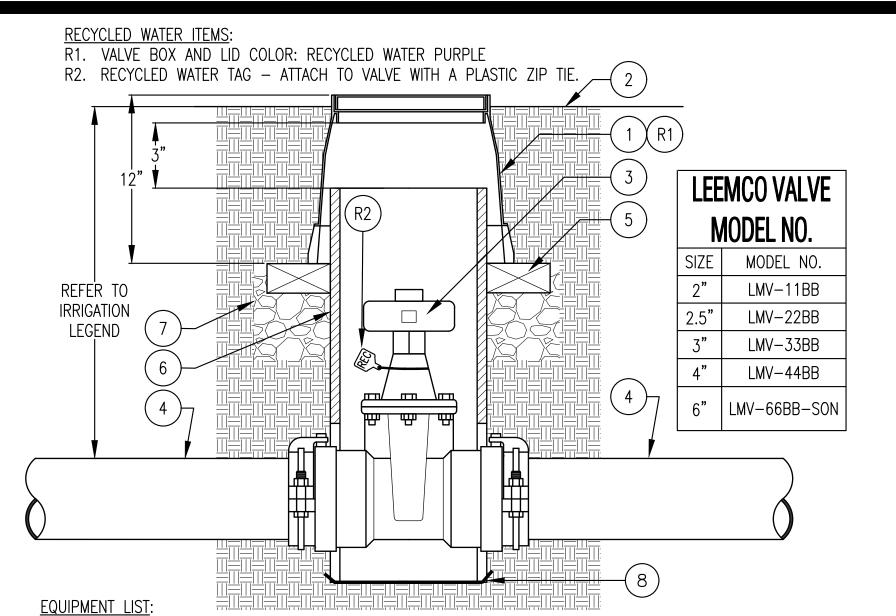
REVISIONS

JANUARY 4, 2019
SHEET TITLE

IRRIGATION LEGEND & NOTES

SHEET NUMBER

L3.1



(REFER TO BUBBLED NUMBERS)

- 1. 10" ROUND PLASTIC VALVE BOX WITH PLASTIC BOLT-DOWN LID.
- FINISH GRADE
- 3. LEEMCO GATE VALVE, BELL CONNECTIONS WITH INTEGRAL RESTRAINTS. UNLESS OTHERWISE NOTED, PLACE VALVE IN THE OPEN POSITION. BOLT TORQUE: 3" = 20 FT-LBS; 4", 6" & 8" = 50 FT-LBS.
- 4. MAIN LINE PIPE (ACCORDING TO LEGEND AND SPECIFICATIONS)
- 5. BRICK BASE (2 TOTAL, 180 DEGREES APART)
- 10" SCH. 40 OR CLASS 200 PVC RISER-NOTCH RISER TO FIT OVER PIPE
- CRUSHED GRAVEL BASE, 6" DEEP, ALL AROUND
- 8. METAL WIRE MESH TO PREVENT GOPHER INTRUSION, 1/2" MESH, 19 GA, GALVANIZED
- INSTALLATION NOTES
- 1. INSTALL VALVE BOX FLUSH WITH FINISH GRADE IN TURF AND 1" ABOVE FINISH GRADE IN SHRUB AREAS.

GATE VALVE, LEEMCO WITH BELL CONNECTIONS & RESTRAINTS (2", 2.5", 3", 4', & 6")

2. KEEP BRICKS AWAY FROM PIPE.

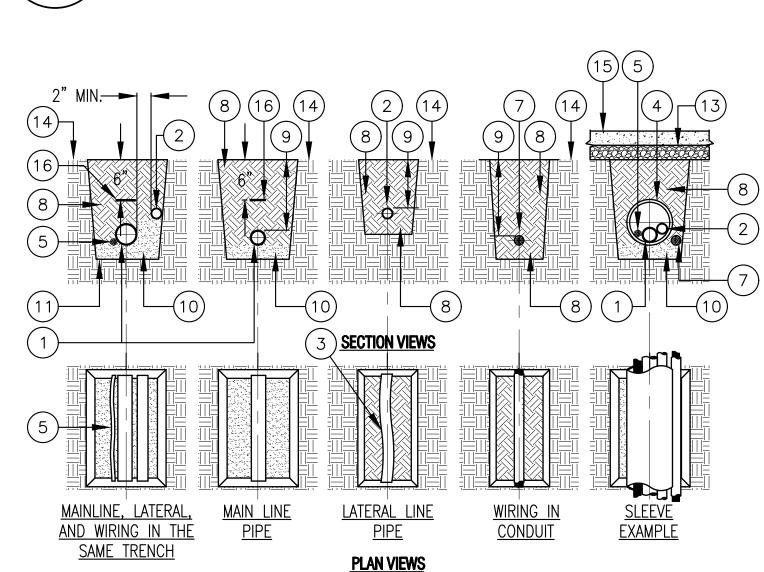
NOT TO SCALE

WIRE AT TRENCH

TRENCH

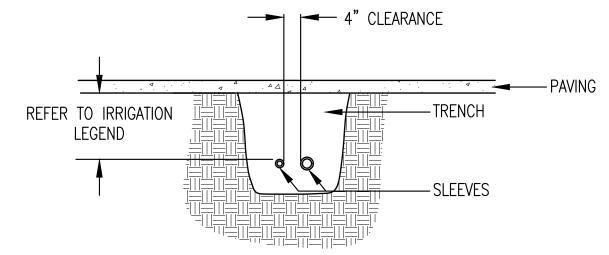
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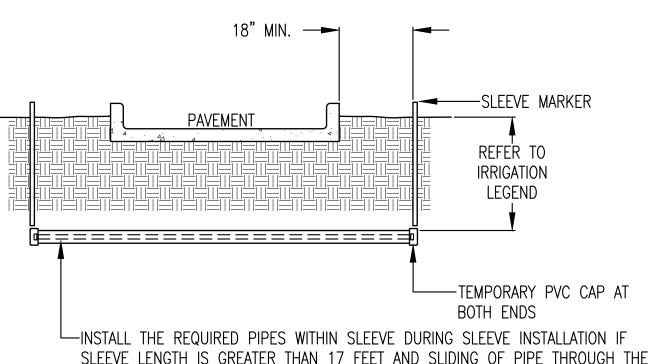
CORNER



ITEM LIST AND INSTALLATION NOTES:

- MAIN LINE PIPE; PROVIDE A MINIMUM OF 2" BETWEEN ALL PIPES.
- LATERAL LINE PIPE: PROVIDE A MINIMUM OF 2" BETWEEN ALL PIPES. SNAKE SOLVENT WELD PLASTIC PIPING IN TRENCH AS SHOWN.
- SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SLEEVING TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
- WIRE BUNDLE: INSTALL WIRING BENEATH AND BESIDE MAIN LINE. TAPE
- AND BUNDLE AT 10-FOOT INTERVALS.
- TIE A 24-INCH LOOP IN WIRING AT CHANGES OF DIRECTION OF 30° OR GREATER. UNTIL AFTER ALL CONNECTIONS HAVE BEEN MADE.
- LOW VOLTAGE WIRE CONDUIT (WHERE SPECIFIED).
- 8. CLEAN BACKFILL PER THE SPECIFICATIONS, TYPICAL.
- 9. FOR PIPE, SLEEVE AND WIRE BURIAL DEPTHS, REFER TO IRRIGATION
- LEGEND AND SPECIFICATIONS.
- 10. PROVIDE A SAND BED FOR PIPE. 11. TRENCH BOTTOM OF UNDISTURBED SOIL, TYPICAL.
- 12. WHERE BORING UNDER EXISTING PAVEMENT IS REQUIRED REFER TO
- DRAWINGS FOR SPECIFIC INFORMATION. 13. PAVEMENT AND SUBGRADE
- 14. FINISH GRADE
- 15. PAVED OR CONCRETE SURFACE
- 16. DETECTABLE WARNING TAPE PER SPECIFICATIONS





SLEEVE WILL BE HINDERED BY PIPE COUPLINGS. INSTALL PULL CORD FROM END

1. IRRIGATION SLEEVES TO BE PVC CLASS 200 OR SCH 40 PIPE. USE THE PIPE WITH THE THICKEST

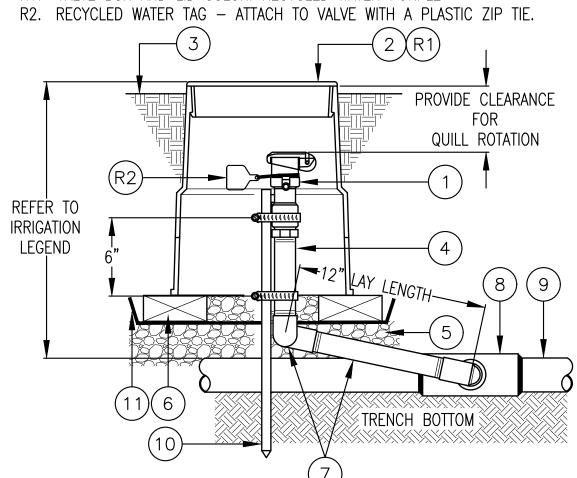
TO END FOR LOW VOLTAGE WIRE PULL

- 2. JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
- 3. IF PIPING IS TO BE INSTALLED AFTER SLEEVING IS BACKFILLED, MARK SLEEVE LOCATION WITH A T. CHRISTY ENTERPRISES FIBERGLASS COMPOSITE MARKING POST, LABELED "IRRIGATION", EXPOSED AT
- GRADE, MODEL #ID-SF66-IRR. 4. MECHANICALLY TAMP BACKFILL TO 95% COMPACTION.
- 5. INSTALL SLEEVES LEVEL AND AFTER PIPE INSTALLATION, SEAL ENDS OF PIPE WITH GROUT TO PREVENT ROOT INTRUSION INTO THE SLEEVE.

SLEEVE INSTALLATION NOT TO SCALE

RECYCLED WATER ITEMS:

R1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE



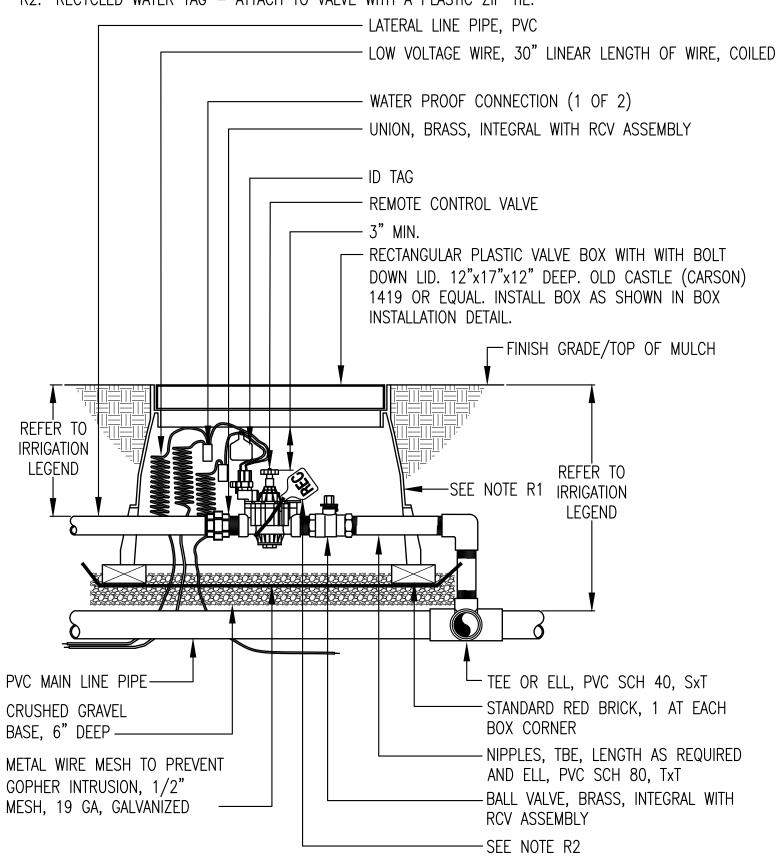
ITEM LIST AND INSTALLATION NOTES:

- QUICK COUPLING VALVE INSTALL VALVE PERPENDICULAR TO FINISHED GRADE UNLESS FIELD CONDITIONS REQUIRE ADJUSTMENT. INSTALL IN OUT-OF-PLAY OR PEDESTRIAN ACCESS AREAS. UNLESS OTHERWISE NOTED, FITTINGS ARE THE SAME IPT SIZE AS THE VALVE IPT INLET THREAD SIZE.
- 2. PLASTIC VALVE BOX AND LID, 10" ROUND, BOLT-DOWN LID INSTALL VALVE BOX FLUSH WITH FINISH GRADE IN TURF AND 1" ABOVE FINISH GRADE IN SHRUB AREAS
- FINISH GRADE OR TOP OF MULCH
- 4. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- CRUSHED GRAVEL BASE. 6" DEEP COMMON BRICK, 2 TOTAL, 180 DEGREES APART
- SWING JOINT ASSEMBLY:
 - FINGER TIGHTEN O-RING JOINTS AND BACK-OFF ONE FULL TURN TO ALLOW FOR SWING ACTION.
 - PROVIDE 12" BETWEEN CENTER LINES OF ELBOWS ON SWING ARM.
 - C. INSTALL THE SWING JOINT LAY ARM AT AN ANGLE BETWEEN 30° AND 45° OF THE LATERAL IN ORDER TO ABSORB DOWNWARD IMPACT.
 - D. SWING JOINT MANUFACTURER: RAIN BIRD SWJ SERIES, 1" DURA STANDARD UNI-BODY MODEL 1-A2-2-1-12, OR APPROVED EQUAL.
- TEE, ELBOW OR SADDLE CONNECTION (PER MAIN LINE FITTING SPECIFICATIONS)
- 9. PVC MAIN LINE PIPE, (MATERIAL AND TYPE PER LEGEND AND SPECIFICATIONS)
- 10. #4 X 24" REBAR STAKE W/STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM
- 11. METAL WIRE MESH TO PREVENT GOPHER INTRUSION, 1/2" MESH, 19 GA, GALVANIZED



RECYCLED WATER ITEMS:

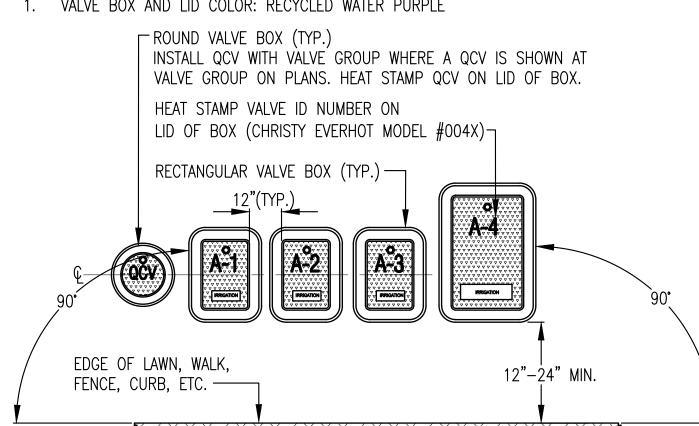
R1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE R2. RECYCLED WATER TAG - ATTACH TO VALVE WITH A PLASTIC ZIP TIE.



NOT TO SCALE

1. VALVE BOX AND LID COLOR: RECYCLED WATER PURPLE

REMOTE CONTROL VALVE (SPRAY AND BUBBLER ZONES)



INSTALLATION NOTES:

- INSTALL VALVE BOXES AS SHOWN IN THE DETAIL ABOVE.
- INSTALL VALVE BOX ASSEMBLIES IN SHRUB OR GROUND COVER ZONES. VALVE ASSEMBLIES INSTALLED IN A TURF ZONE IS PERMITTED ONLY IF A SHRUB OR GROUND COVER AREA DOES NOT EXIST IN THE PROXIMITY OF THE IRRIGATION ZONE.
- 3. PLACE THE CENTER OF THE VALVE BOX OVER THE CENTER OF THE REMOTE CONTROL VALVE. INSTALL VALVE BOX IN A WAY TO ENABLE EASY SERVICING OR REMOVAL OF VALVE.
- 4. INSTALL TOP OF BOX 1" ABOVE FINISHED GRADE IN SHRUB OR GROUND COVER AREAS OR EQUAL TO THE DEPTH OF THE MULCH AND FLUSH WITH GRADE IN TURF ZONES. INSTALL THE TOP OF BOX AT THE SAME ANGLE AS THE FINISHED GRADE.
- PREVENT THE COLLAPSE AND DEFORMATION OF VALVE BOX SIDES. DO NOT HEAVILY COMPACT SOIL AGAINST THE SIDES OF THE VALVE BOX.
- 6. INSTALL EXTENSION RISERS TO VALVE BOX AS REQUIRED TO COMPLETELY ENCLOSE VALVE ASSEMBLY. PROVIDE EXTENSION RISER MANUFACTURED BY THE SAME MANUFACTURER OF THE VALVE BOX.
- 7. PREVENT SOIL INTRUSION INTO THE BOX. USE 20 MIL POLYETHYLENE TAPE AROUND PIPE CUTOUTS AS NEEDED.
- 8. SAWCUTTING OR MODIFYING THE VALVE BOXES BEYOND WHAT THE MANUFACTURER ALLOWS IS NOT PERMITTED. SAWCUT BOXES FOUND DURING REVIEW WILL REQUIRE REPLACEMENT AT NO ADDITIONAL COST TO THE ORIGINAL BID.
- 11. WHEN ASSEMBLY IS COMPLETE INSTALL THE GRAVEL BELOW THE VALVE. FINISHED GRAVEL SHALL BE CLEAN WITHOUT DEBRIS IN THE VALVE BOX.
- 12. WHEN WORK IS COMPLETE AND ACCEPTED BY THE DISTRICT OR TO PREVENT VANDALISM, BOLT DOWN THE LIDS.





P.O. BOX 2291 DANVILLE, CALIFORNIA 94526 P:(925) 867-3339 EMAIL: JDE@EDDYASSOCIATES.COM PLANNING~DESIGN~MANAGEMENT JDE PROJECT NO: 18027

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James D. Eddy Associates, Danville, California Note: No License for the Landscape Irrigation System Design Profession is available in the State MEMBER: AMERICAN SOCIETY OF IRRIGATION CONSULTANTS

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FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

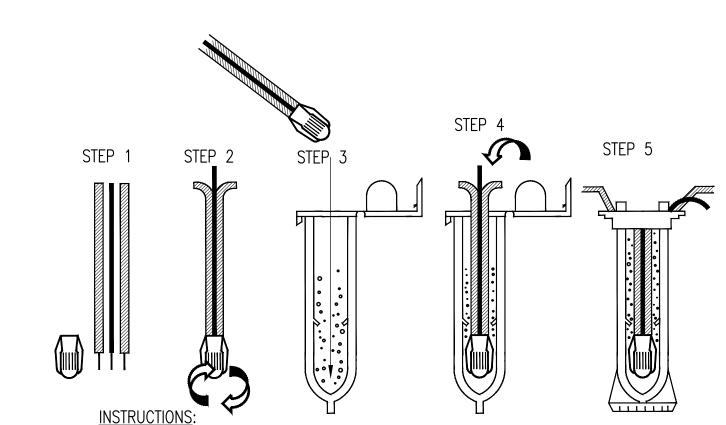
REVISIONS ARCH PROJECT NO: 1739.02 DRAWN BY: JDE AS SHOWN DRAWING SCALE: 61721-0069

BID SET JANUARY 4, 2019

SHEET TITLE

IRRIGATION DETAILS

SHEET NUMBER



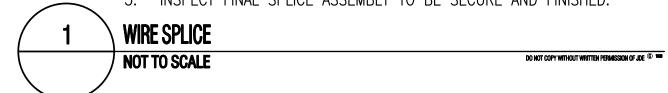
1. STRIP WIRES APPROXIMATELY 1/2" TO EXPOSE WIRE. 2. TWIST CONNECTOR AROUND WIRES CLOCKWISE UNTIL HAND TIGHT, DO

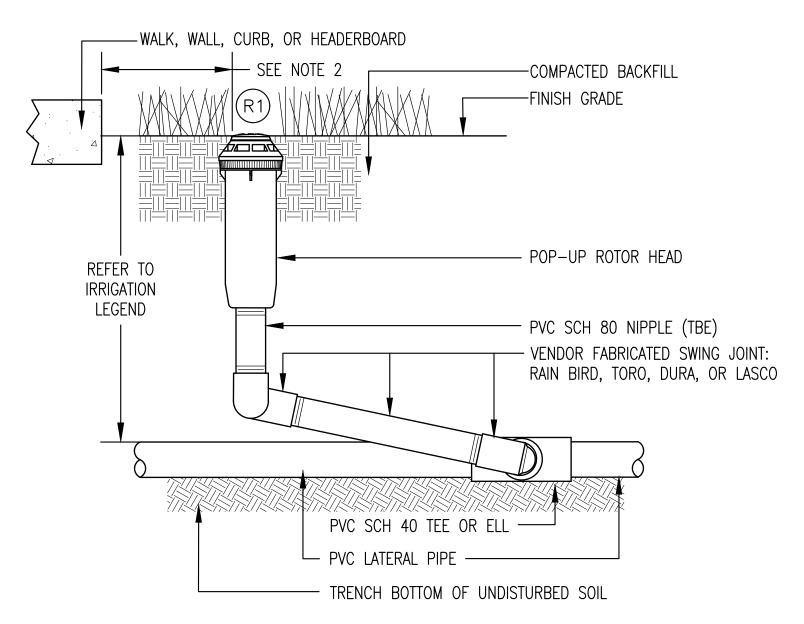
NOT OVERTIGHTEN.

3. INSERT WIRE ASSEMBLY INTO PLASTIC TUBE UNTIL WIRE CONNECTOR SNAPS PAST LIP IN BOTTOM OF TUBE.

4. PLACE WIRES WHICH EXIT TUBE IN WIRE EXIT HOLES AND CLOSE CAP

5. INSPECT FINAL SPLICE ASSEMBLY TO BE SECURE AND FINISHED.



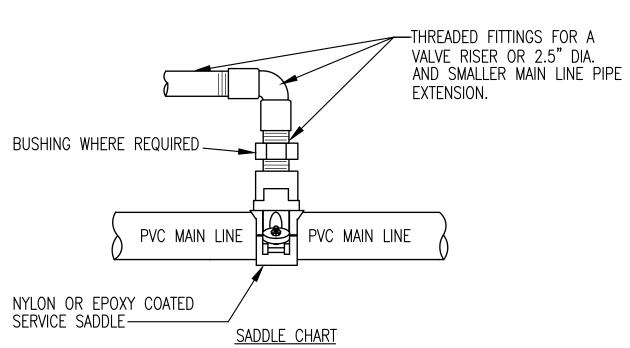


RECYCLED WATER ITEMS:

R1. TOP OF HEADS MUST CLEARLY INDICATE THE USE OF RECYCLED WATER. **INSTALLATION NOTES:**

- 1. SET TOP OF HEAD 1" ABOVE FINISH GRADE AT TIME OF INSTALLATION. LOWER TO FINAL GRADE WHEN GRADE IS WELL ESTABLISHED.
- 2. <u>DIMENSION "A"</u>: INSTALL HEAD 4" FROM HEADERBOARD OR FENCE AND 24" FROM BUILDINGS AND ALL NON-PERMEABLE PAVED SURFACES.
- 3. INSTALL HEAD PERPENDICULAR TO FINISHED GRADE.
- 4. PRIOR TO NOZZLE INSTALLATION, FLUSH HEAD WITH WATER USING MANUFACTURER'S FLUSH NOZZLE TO ELIMINATE DEBRIS FROM WITHIN HEAD AND RISER.
- 5. INSTALL NOZZLE AND ADJUST ROTOR HEAD'S VARIABLE ARC ADJUSTMENT (PART CIRCLE HEAD) AND NOZZLE STREAM SCREW SO COVERAGE IS WITHIN PLANTED AREA. NO OVERSPRAY ON WINDOWS, BUILDINGS, STREETS OR PAVEMENT.
- 6. ROTOR HEAD SHALL PROVIDE HEAD-TO-HEAD COVERAGE OR GREATER.



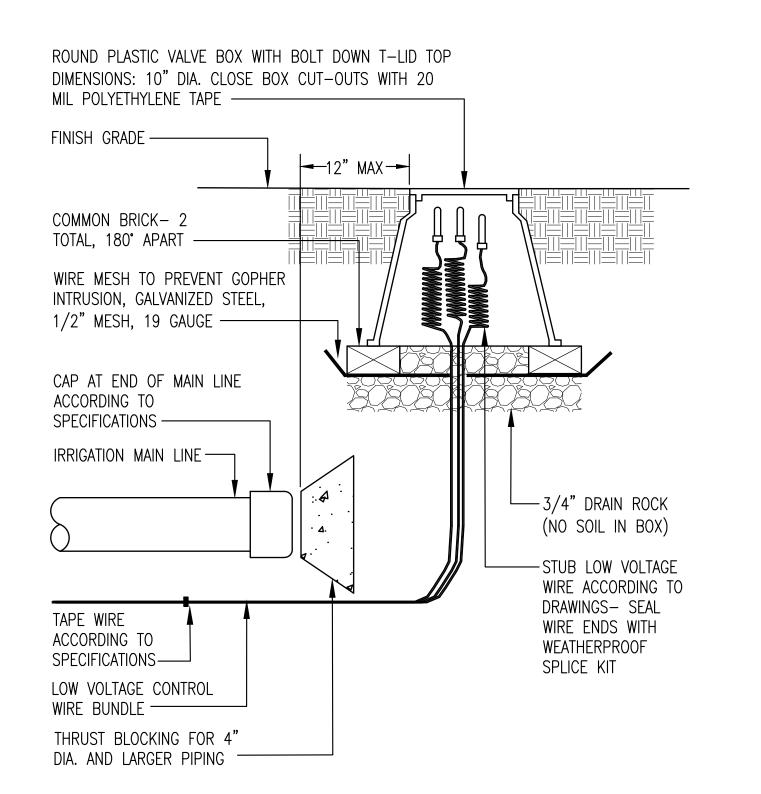


Έ	SADDLE——		CHART			
	NOMINAL PIPE DIA. (INCHES)	MAIN LINE AVERAGE O.D. (INCHES)	SADDLE	MANUFACTURER		
	4	4.50		LTS SERIES; ROMAC 202N;		
	6	6.63	SMITH-BLAIR 317; TAP SIZE AS REQUIRED TO MATCH TAP SIZE OF VALVE OR PIPE.			
	8	8.63				
RECOMMENDED NUT TORQUE						
	NUT SIZE	PVC PIPE		CI, DI, OR OTHER PIPE		
	1/2"	20 FT-LBS.		40-50 FT-LBS.		
	5/8"	30-40 FT-LBS.		60-70 FT-LBS.		
	3/4"			80-90 FT-LBS.		

- TIGHTEN NUTS EVENLY UNTIL SADDLE BODY CONFORMS SNUGLY TO PIPE. LOOSEN NUTS AND TORQUE AS INDICATED ABOVE OR BY MANUFACTURER.
- FOR VALVE CONNECTION, USE TAP SIZE EQUAL TO THE VALVE.
- FOR QUICK COUPLING VALVE CONNECTION, USE 1" FIPT TAP SIZE.
- FOR AIR/VACUUM RELIEF VALVE CONNECTION, USE 1" FIPT TAP SIZE. 5. FOR 2.5" OR SMALLER MAIN LINE EXTENSION, USE TAP SIZE EQUAL TO
- MAIN LINE SIZE. PROTECT THREADS FROM DISTORTING, SCREW THE CORPORATION STOP OR OTHER FITTING INTO THE SADDLE BODY PRIOR TO FINAL TIGHTENING.











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IRRIGATION DESIGNER: JAMES D. EDDY ASSOCIATES, DANVILLE, CALIFORNIA
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FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS					
		_			
ARCH PRO	JECT NO:	1739.02			
DRAWN BY	′ :	JDE			
DRAWING	SCALE:	AS SHOWN			
PTN:		61721-0069			
	BID SET				

JANUARY 4, 2019

SHEET TITLE

IRRIGATION DETAILS

SHEET NUMBER

L3.3

LEEMCO FITTING & JOINT RESTRAINT CONSTRUCTION DETAILS (also refer to the Leemco's current guidelines and recommendations)

THE ARRANGEMENT ON THE LEFT IS THE METHOD OF RESTRAINING A GATE VALVE.

THE SB-LK7 LINK SHOWN BELOW BOLTS

FIG. 2. SB-LK7 LINK BOLTS ONTO THE

FIG. 3. THE LS-MJ LINK SHOWN HERE

IS BE USED TO RESTRAIN ANY FLANGED

PRODUCT SUCH AS A FLANGED GLOBE

VALVE.

LUG OF DUCTILE IRON FITTING.

ONTO THE LUG OF THE FITTING.

LEEMCO JOINT RESTRAINTS DISTANCE TABLES:

SIZE REDUCTION, REDUCERS

TABLES BELOW SHOW "L" DISTANCES IN FEET. WHEN AN ADJACENT JOINT TO A REDUCER OR A REDUCING TEE IS WITHIN THIS DISTANCE, OTHER JOINTS ON THE LARGER DIAMETER END MUST BE RESTRAINED.

TABLE VALUES ARE LISTED FOR 125 PSI LINE PRESSURE.

TABLE VALUES ARE BASED ON TYPE 3 TRENCHING AND COMPACTNESS METHOD, 30" COVER AND A SAFETY FACTOR OF 2. DESIGN COVER IS 36".

BENDS, DEAD ENDS

TABLES BELOW SHOW "L" DISTANCES. WHEN AN ADJACENT JOINT TO A BEND IS WITHIN THIS DISTANCE, THE JOINT MUST BE RESTRAINED. FOR BENDS ADJACENT BEND VALUES FOR THE SIDE (BRANCH) OUTLET OF TEE'S.

TABLE VALUES ARE BASED ON TYPE 3 TRENCHING AND COMPACTNESS METHOD, 30"

SANDY-CLAY SOIL MIXTURE

TABLE A-125 PSI LINE PRESSURE						
PIPE	DEGREE	DEAD				
SIZE	11° 22° 45° 90° END DISTANCE IN FEET					
SIZL						
3"	2	3	5	11	30	
4"	2	4	9	20	45	
6"	3	6	13	29	63	

SANDY-CLAY SOIL MIXTURE

SIZE	TABLE A-125 PSI LINE PRESSURE
REDUCTION	DISTANCE IN FEET
3 x 2	10
3 x 2.5	8
4 x 2	31
4 x 2.5	20
4 x 3	14

A BRANCH OF A TEE IS TREATED AS A 90-DEGREE BEND. DIRECTION OF FLOW IS NOT RELATIVE TO RESTRAINING A JOINT.

A BRANCH OF A TEE IS TREATED AS A 90-DEGREE BEND. DIRECTION OF FLOW IS

NOT RELATIVE TO RESTRAINING A JOINT.

A TEE WITH NO SIZE REDUCTION ALONG THE

RUN REQUIRES JOINT RESTRAINTS ONLY ON

ITS BRANCH AS IN FIG. 1. JOINT RESTRAINTS

WILL BE REQUIRED ALONG THE RUN ONLY

WHEN THE TEE IS WITHIN THE "L" DISTANCE

USE THE DISTANCE TABLES FOR 90-DEGREE

A TEE WITH A SIZE REDUCTION ALONG THE

RUN REQUIRES JOINT RESTRAINTS ON THE

TEE ITSELF AND ON OTHER JOINTS ALONG

USE DISTANCE TABLES FOR REDUCERS TO

THE RUN REQUIRE RESTRAINTS.

DETERMINE HOW MANY OTHER JOINTS ALONG

THE LARGER DIAMETER RUN AS ILLUSTRATED

BENDS TO DETERMINE HOW MANY OTHER JOINTS ALONG THE BRANCH REQUIRE

OF ANOTHER BEND OR A REDUCER.

RESTRAINTS.

IN FIG. 2.

NOTE: ALL DI FITTINGS SHALL BE WRAPPED COMPLETELY WITH T. CHRISTY POLYETHYLENE FITTING WRAP SECURED WITH CHRISTY'S PIPE WRAP TAPE.

P.O. BOX 2291

JAMES D. EDDY ASSOCIATES LANDSCAPE IRRIGATION ENGINEERS DANVILLE, CALIFORNIA 94526 P:(925) 867-3339 EMAIL: JDE@EDDYASSOCIATES.COM PLANNING~DESIGN~MANAGEMENT JDE PROJECT NO: 18027

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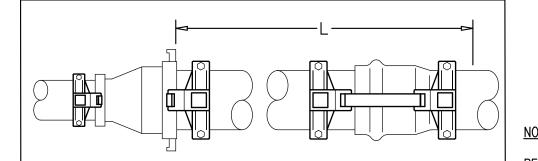


FIG. 1. THE REDUCER IS RESTRAINED ON BOTH ENDS. ADDITIONALLY THE PIPE-TO-PIPE JOINT ON THE LARGER DIAMETER SIDE IS ALSO RESTRAINED (AS SHOWN).

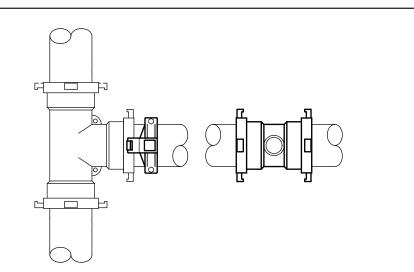


FIG. 2. SERVICE TEES INSTALLED OUTSIDE THE "L"DISTANCE OF A TEE REQUIRES NO JOINT RESTRAINTS.

REDUCERS & TAPPED TEE'S

NOT TO SCALE

RESTRAIN IN-LINE REDUCERS AND REDUCING TEE'S (ALONG THE RUN). ADDITIONALLY, THE NEXT JOINTS UPSTREAM (ON THE LARGER DIAMETER SIDE) MAY REQUIRE JOINT RESTRAINTS WHEN THESE JOINTS ARE WITHIN THE "L" DISTANCE OF THE REDUCER. REFER TO AND USE THE DISTANCE TABLE SERVICE TEES INSTALLED ON LONG MAIN

LINES, AWAY FROM A BEND OR A REDUCER, DO NOT REQUIRE JOINT RESTRAINTS.

SERVICE TEES REQUIRE JOINT RESTRAINTS ONLY WHEN INSTALLED WITHIN THE "L" DISTANCE OF A BEND OR A REDUCER.

TAPPED (SERVICE) TEE'S DO NOT REQUIRE JOINT RESTRAINTS UNLESS THEY ARE WITHIN THE "L" DISTANCE FROM A RESTRAINED FITTING SUCH AS A BEND OR A REDUCER.



1050 NEROLY ROAD

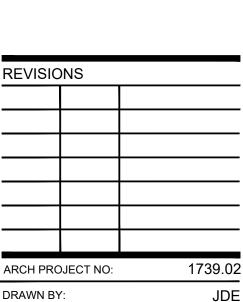
OAKLEY, CA 94561

MAINTENANCE

FACILITIES

LIBERTY UNION HIGH

SCHOOL DISTRICT



ARCH PROJECT NO:	1739.02
DRAWN BY:	JDE
PRAWING SCALE:	AS SHOWN
PTN:	61721-0069

BID SET

JANUARY 4, 2019

SHEET TITLE

IRRIGATION **DETAILS**

SHEET NUMBER



JOINTS ON BOTH SIDES OF THE BEND REQUIRE RESTRAINTS. USE THE 90-DEGREE

TABLE VALUES ARE LISTED FOR 125 PSI LINE PRESSURES.

COVER AND A SAFETY FACTOR OF 2. DESIGN COVER IS 36".

ALTHOUGH A GATE VALVE ACTS AS A DEAD-END WHEN SHUT-OFF, THE CONNECTING PIPES ON BOTH SIDES OFFER RESISTANCE, ACT AS THRUST BLOCKS AND ELIMINATE THE NEED FOR RESTRAINING ADJACENT JOINTS.

2. THE ADJACENT JOINT TO A GATE VALVE WILL REQUIRE RESTRAINTS, WHEN IT IS WITHIN THE "L" DISTANCE OF A BEND, A REDUCER OR A DEAD END.

3. GATE VALVES LOCATED NEXT TO A TEE: USE LEEMCO LGK SERIES JOINT

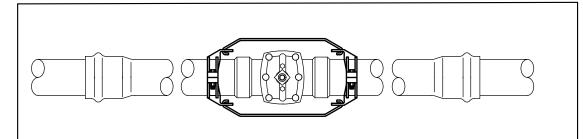


FIG. 1. A GATE VALVE ON A LONG MAIN LINES WITH NO BENDS OR REDUCERS IN CLOSE PROXIMITY DOES NOT REQUIRE THE ADJACENT JOINTS TO BE RESTRAINED.

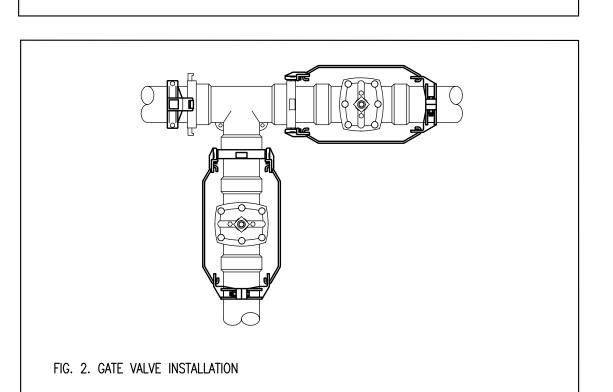


FIG. 1. TEE WITH NO SIZE REDUCTION ALONG THE RUN.

TEE RESTRAINTS

NOT TO SCALE

REQUIRE A JOINT RESTRAINT ON THE LARGER DIAMETER PIPE.

FIG. 2. REDUCING TEE WITH SIZE REDUCTION ALONG THE RUN WILL

FIG. 4. THE LS-MJ LINKS ATTACH TO THE FLANGE OF AN MJ GATE VALVE OR A FLANGED DEVICE.

FIG. 1. TOP AND SIDE VIEW OF THE RESTRAINED GATE VALVE. THE SB-LK7 LINKS

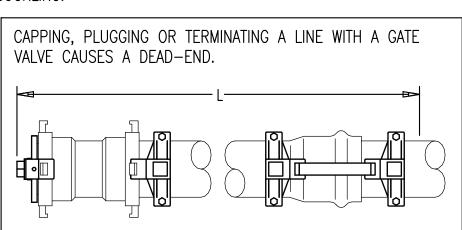
BOLT ONTO THE LUGS OF THE FITTING. THE RESTRAINT BARS SPAN ACROSS THE

VALVE AND ATTACH TO THE JOINT RESTRAINT SECURED TO THE PIPE.

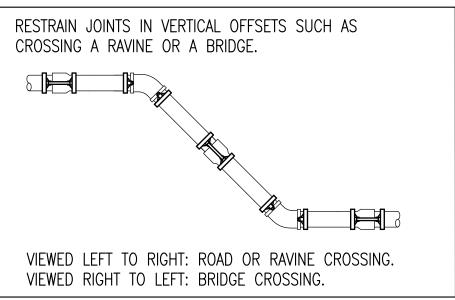
GATE VALVES, MJ & FLANGED CONNECTIONS NOT TO SCALE

1. A DEAD-END WILL REQUIRE SEVERAL UPSTREAM JOINTS TO BE RESTRAINED. REFER TO DISTANCE CHART FOR NUMBER OF UPSTREAM JOINTS TO BE RESTRAINED.

WHEN CROSSING A RAVINE, ROADWAY, OR A STREAM BED, USE JOINT RESTRAINTS ON ALL JOINTS TO PREVENT BUCKLING.



DEADEND RESTRAINT



BRIDGE, RAVINE, ROAD WAY CROSSING RESTRAINT

LEEMCO-DEADEND OR CROSSINGS NOT TO SCALE

BESIDES THE FITTING ITSELF, OTHER JOINTS ON BOTH SIDES OF A BEND MAY REQUIRE JOINT RESTRAINTS.

THE LARGER THE PIPE LINE SIZE, THE MORE JOINTS (ON BOTH SIDES) THAT HAVE TO BE RESTRAINED. EXAMPLE: FOR A 90-BEND (FIG. 1) USING 125 PSI AND SANDY-CLAY SOIL, THÉ TABLE

3 INCH (90): "L"= 11 FEET, 6 INCH (90): "L"= 29 FEET, 8 INCH (90): "L"= 38 FEET. WHEN USING 20-FOOT LENGTH PIPE, BECAUSE 20 FEET IS WITHIN THE "L" LENGTHS, ADJACENT JOINTS OF THE 6 INCH AND 8" MUST BE RESTRAINED AS SHOWN IN FIG. 1.

DISTANCE OF 20 FEET IS OUTSIDE THE "L" DIMENSION OF 11 FEET. AS THE BEND ANGLE GETS SMALLER (FIG. 2 & 3) THE NEED TO RESTRAIN ADJACENT JOINTS

USING THE DISTANCE TABLES, ONLY THE 10 FOOT AND 12 FOOT 45-DEGREE BENDS REQUIRE THE ADJACENT JOINTS TO BE RESTRAINED. OTHER SIZES DO NOT REQUIRE THEM (BASED ON THE SAME PARAMETERS AS

DISTANCE TABLES ARE GIVEN IN FEET FROM A BEND OR A REDUCER BECAUSE AT TIMES PIPE MAY BE SPLICED SHORTER THAN 20 FEET.

EXAMPLE 1: 8" PIPING SYSTEM CRITERIA: SANDY-CLAY SOIL, 125 PSI

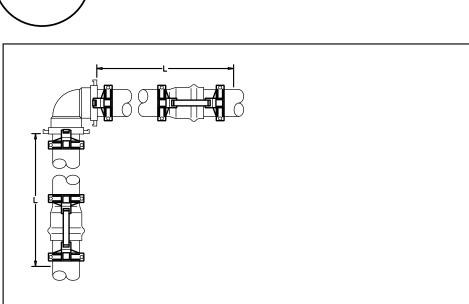
DISTANCE OF 15 FEET AWAY FROM JOINT "C" (45 BEND) IS LESS THAN THE "L =15 FEET" (FROM TABLE VALUE). JOINT "D" IS NOT RESTRAINED BECAUSE IT'S DISTANCE OF 20 FEET FROM "C" IS FARTHER THAN TABLE VALUE OF 15 FEET.

JOINTS "J" (15 FEET), "K" (35 FEET), AND "G" (20 FEET) AWAY FROM 90-BEND "H" ARE ALL WITHIN THE 38 FEET ALLOWED DISTANCE "L" TABLE VALUE.

EXAMPLE 2: 12 INCH PIPING SYSTEM: WITH THE "L" TABLE VALUES OF 21 FEET FOR A 45 BEND AND 53 FEET FOR A 90-BEND, RESTRAIN JOINTS AS FOLLOWS:

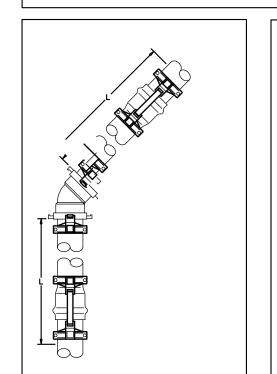
JOINT A: WON'T REQUIRE A RESTRAINT BECAUSE ITS 35 FEET DISTANCE AWAY IS FURTHER OUT THAN 21-FOOT REQUIREMENT. JOINTS B & D: BOTH WITHIN 21

WORKING WITH THE DISTANCE TABLES NOT TO SCALE



PUSH-ON GATE VALVES

NOT TO SCALE



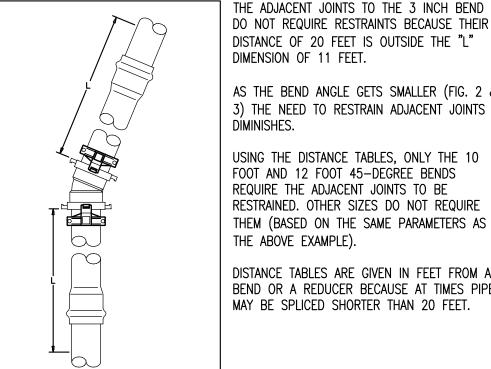
SOME CASES THE ADJACENT JOINTS

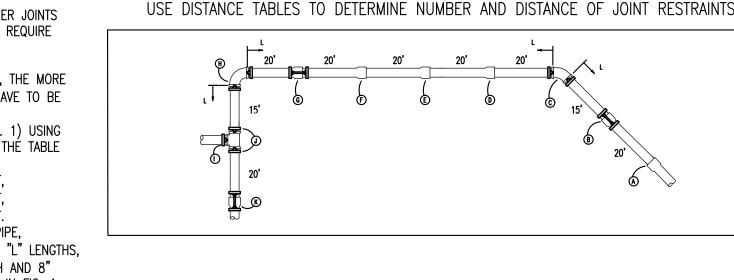
LEBOW RESTRAINTS

NOT TO SCALE

NEED RESTRAINTS.

FIG. 3. 22-1/2 DEGREE BEND -NO NEED FOR ADJACENT RESTRAINTS.





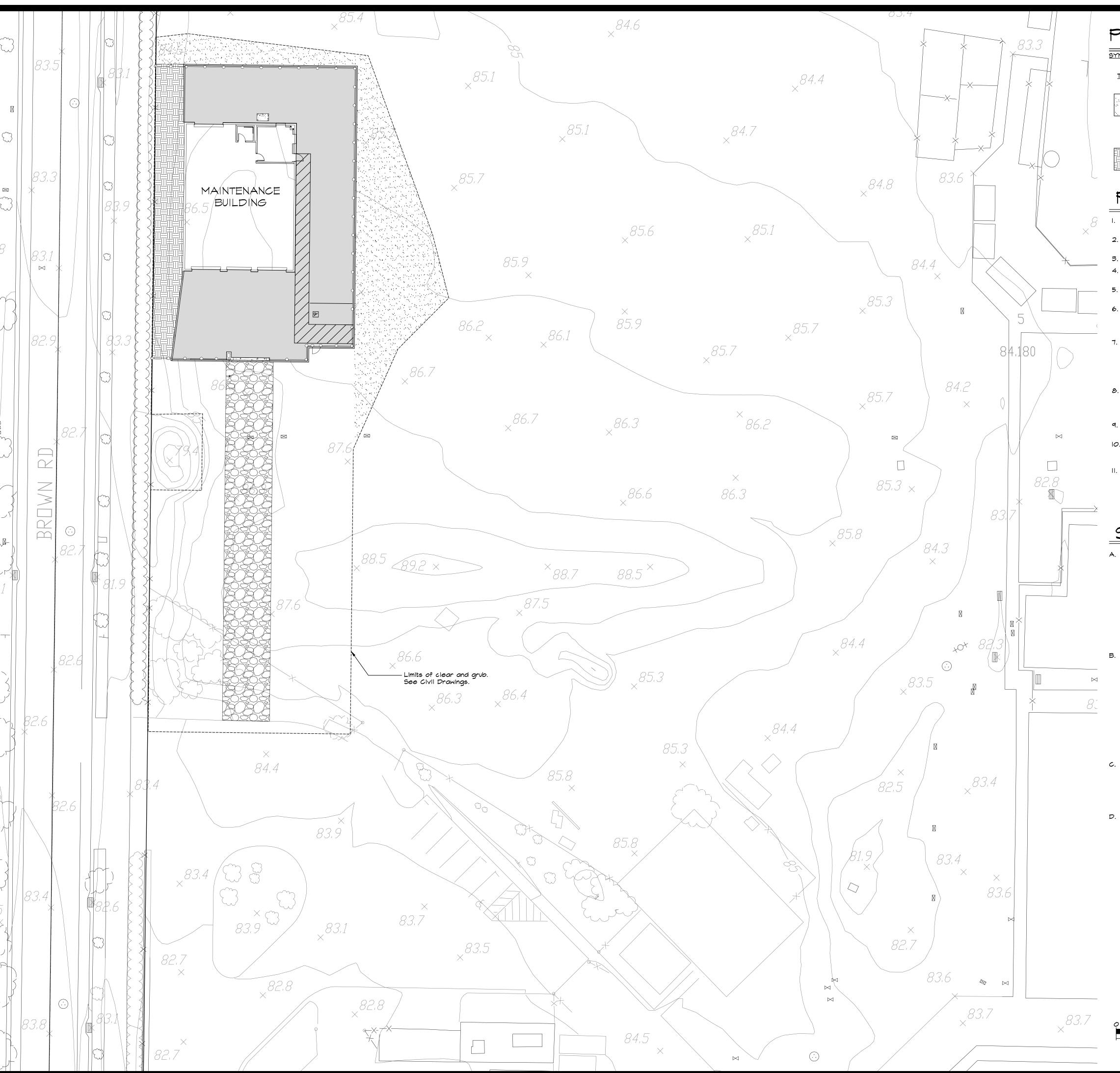
NOTE: ALL BENDS ARE RESTRAINED; JOINT "B" IS RESTRAINED BECAUSE IT'S

FEET OF "C" WILL NEED TO BE RESTRAINED.

JOINTS G,J.K ARE ALL WITHIN THE 53 FEET OF THE "H" (90-BEND).

FIG. 1. 90 DEGREE BEND

FIG. 2. 45 DEGREE ELBOW - IN



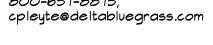
PLANT LEGEND

SYMBOL TYPE QUANTITY WATER USE



Delta 90/10 Tall Fescue, non-netted sod as available through Delta Bluegrass Company. Contact Clayton Pleyte 800-637-8873,

4,215± SF SLA Project Total





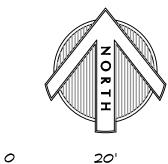
Landscape Mulch: Weed fabric and 3" thick mulch. See Planting Notes on this Sheet for mulch type.

PLANTING NOTES

- Prior to commencement of planting, the Contractor shall verify locations of all underground utilities.
- 2. Contractor shall adjust all plant material around electrical utilities, valve boxes, etc., as required in the field.
- 3. All landscape grades shall be smooth and feathered in appearance.
- 4. Irrigation system shall be fully operational prior to planting. Contractor shall thoroughly water all plants immediately after planting.
- 5. All trees shall be double staked and installed per planting details. All trees shall be of adequate trunk caliper to stand without support.
- 6. Installing Contractor shall verify existing grade in the field prior to planting. Finished surfaces shall be uniform and smooth. Finished
- grade of planting and bark mulch areas shall be flush with top of edging, pavement and walks. 7. Soil for all exposed soil and planting areas except sod and bioretention areas shall receive weed fabric and a 3" minimum depth of bark mulch. Bark mulch shall be Eco-Mini Natural Mulch, as available through EcoMulch, 5010 Pacheco Blvd., Martinez, (925) 228-1673. Bioretention areas shall receive 3" minimum depth of the compost
- used in the biotreatment soil mix. 8. All trees planted within 8' of adjacent paving, curbing, hardscape, water meters, joint trenches, etc. shall receive Deep Root Barrier UB 24-2 (24" depth x 10' min. length) as manufactured by Deep Root Partners (800) 458-7668, or approved equal.
- 9. No plant material shall be substituted without prior written consent from the Landscape Architect.
- 10. Contractor shall be responsible for the pre-ordering of all plant material after the Notice to Proceed. Photographs for all plants shall be submitted to the Landscape Architect prior to placing order.
- II. All plant material shall be certified by the Agricultural Commissioner inspection program for freedom from the glassy winged sharpshooter or other pests identified by the Agricultural Commissioner. The Agricultural Commissioner's office shall be notified of all impending deliveries of live plants with points of origin outside of the County so that inspection can be arranged.

SOILS MANAGEMENT NOTES

- A. The following organic amendments, soil amendments and fertilizer rates and quantities shall be used for bid basis only. Contractor shall arrange and pay for a soil fertility test by an accredited soils laboratory of existing site soil after rough grading operations are complete, and shall amend the soils, according to said laboratory's recommendations. The soils recommendations shall be considered a part of these contract documents. The soils report must provide the following
 - Soil permeability rate in inches per hour.
- 2. Soil texture test.
- 3. Cation exchange capacity. 4. Soil fertility, including test for nitrogen, potassium, phosphorous, pH, organic
- matter and specific conductance (electrical conductivity). 5. Recommendation for amendments to the planting area soil.
- B. Topsoil: All landscape areas shall have a minimum 8" depth of topsoil with greater depths as required for planting work. Contractor shall provide topsoil which is fertile and friable, possessing characteristics of representative productive soils on the site. It shall not contain toxic substances which may be harmful to plant growth. When herbicide contamination is suspected then a radish/rye grass growth trial must be performed. Consult with the District prior to decision to test. It shall be uniformly textured and free of all objectionable foreign materials, oil or chemicals which may be injurious to plant growth. Natural topsoil shall possess a pH factor between 5.5 and 7.5, a sodium absorption ratio (SAR) of less than 8, a boron concentration of the saturation extract of less than I ppm, and salinity of the saturation extract at 25 degrees C. of less than 4.0 millimhos per centimeter. If required to import topsoil, Contractor shall obtain topsoil from naturally well-drained sites where topsoil occurs in a depth of not less than four inches (4"); do not obtain from bogs or marshes.
- C. Organic Amendment: Nitrified fir bark having a minimum organic content of 94% and a nitrogen content of 0.8% minimum to 1.2% maximum on a dry weight basis. Fir bark shall be shredded to pass a one quarter inch $(\frac{1}{4}")$ mesh screen. Incorporate organic amendment and fertilizer into the soil to a minimum depth of six inches (6") at a minimum rate of six cubic yards (6 cy) per one thousand square feet (1,000 sf) or per specific amendment recommendations from the soils report.
- D. Fertilizer:
- I. Fertilizer shall be a commercial inorganic fertilizer in the granular or pelleted form. Fertilizer shall be delivered to the site in containers labeled in accordance with the applicable State of California regulations, bearing the warranty of the producer or the grade furnished, and shall be uniform in composition, dry and free-flowing.
- 2. Turf, Shrubs and Vines: a. 6N-20P-20K, and 16-6-8, pelleted type.
- b. Sulphate sulphur
- c. Lime for pH adjustment of moderately acid soil
 d. Starting one (I) month after planting, on a monthly basis,
 2IN-OP-OK Ammonium sulfate. 5 lbs. per 1,000 square feet.
- a. 21 gram 20N-10P-5K slow release fertilizer tablets as manufactured by Agriform. Apply according to manufacturer's instructions.
 b. After planting: 2IN-0P-0K Ammonium sulfate 5lbs. per 1,000 square feet.



GRAPHIC SCALE IN FEET |"=20'-0"



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FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS	
ARCH PRO	JECT NO:	1739.02
DRAWN BY	′ :	JMH
DRAWING	SCALE:	AS SHOWN
PTN:		61721-0069

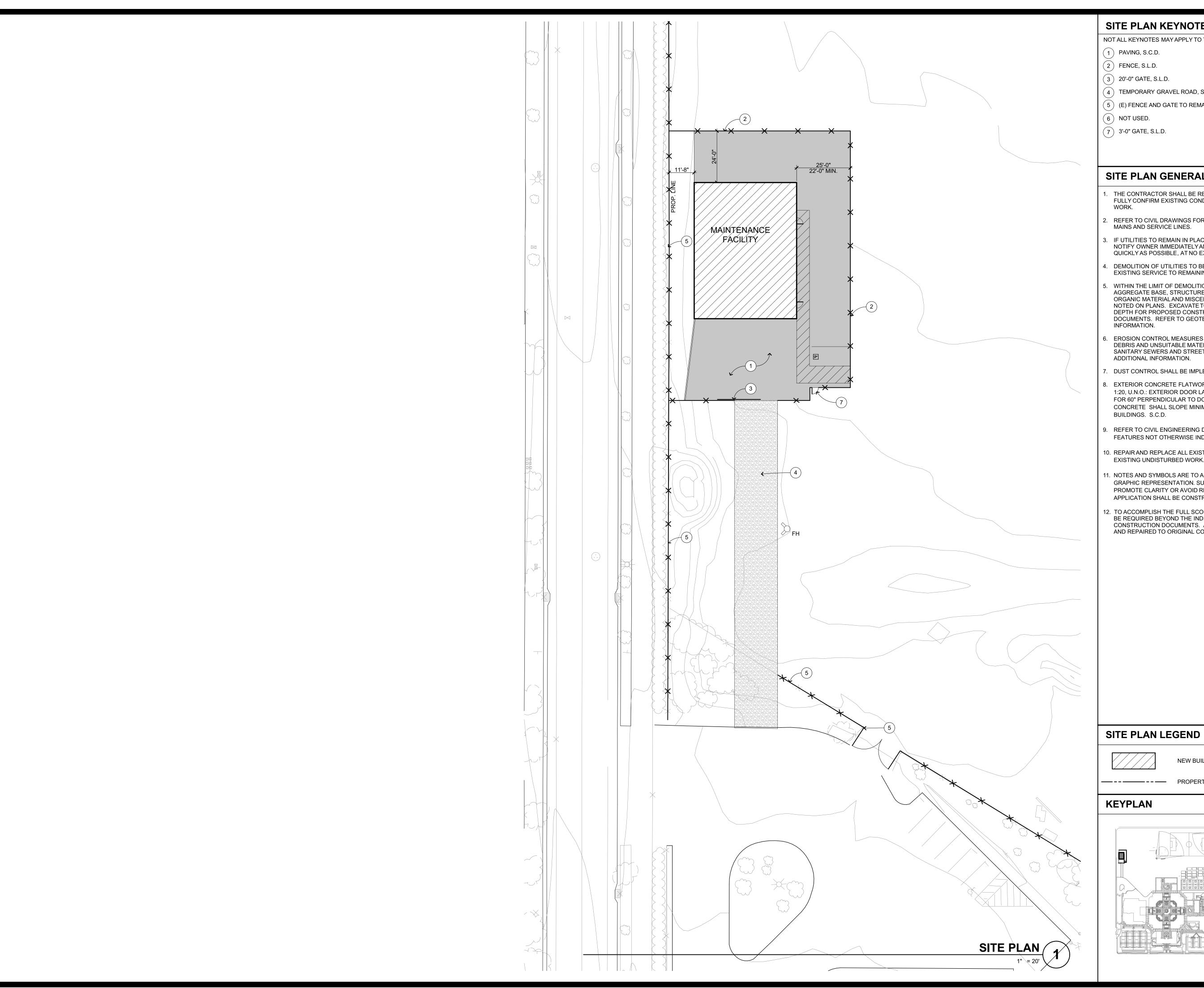
PLANTING PLAN

BID SET

JANUARY 4, 2019

SHEET NUMBER

SHEET TITLE



SITE PLAN KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

(4) TEMPORARY GRAVEL ROAD, S.C.D.

(5) (E) FENCE AND GATE TO REMAIN, PROTECT IN PLACE

6 NOT USED.

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SITE PLAN GENERAL NOTES

- . THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY CONFIRM EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF
- 2. REFER TO CIVIL DRAWINGS FOR EXISTING UNDERGROUND UTILITY MAINS AND SERVICE LINES.
- 3. IF UTILITIES TO REMAIN IN PLACE ARE DAMAGED, CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY AND MAKE REPAIRS TO SAID LINES AS QUICKLY AS POSSIBLE, AT NO EXPENSE TO THE OWNER.
- DEMOLITION OF UTILITIES TO BE STAGED AS REQUIRED SO THAT EXISTING SERVICE TO REMAINING BUILDINGS ARE NOT INTERRUPTED.
- . WITHIN THE LIMIT OF DEMOLITION, REMOVE ALL PAVING AND AGGREGATE BASE, STRUCTURES, TREES AND PLANTS, TOPSOILS, ORGANIC MATERIAL AND MISCELLANEOUS ITEMS UNLESS OTHERWISE NOTED ON PLANS. EXCAVATE TO PAD ELEVATION OR SUBGRADE DEPTH FOR PROPOSED CONSTRUCTION AS INDICATED ON PROJECT DOCUMENTS. REFER TO GEOTECH REPORT FOR ADDITIONAL
- EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 7. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
- 8. EXTERIOR CONCRETE FLATWORK SHALL HAVE A MAXIMUM SLOPE OF 1:20, U.N.O.: EXTERIOR DOOR LANDINGS SHALL SLOPE 1/4" PER FOOT FOR 60" PERPENDICULAR TO DOOR FACE, MAXIMUM FOR DRAINAGE. CONCRETE SHALL SLOPE MINIMUM 1/8" PER FOOT AWAY FROM BUILDINGS. S.C.D.
- 9. REFER TO CIVIL ENGINEERING DRAWINGS AND SITE PLAN FOR SITE FEATURES NOT OTHERWISE INDICATED.
- 10. REPAIR AND REPLACE ALL EXISTING SURFACES AND FINISHES TO EXISTING UNDISTURBED WORK.
- 11. NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATIONS OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
- 12. TO ACCOMPLISH THE FULL SCOPE OF WORK, ADDITIONAL WORK MAY CONSTRUCTION DOCUMENTS. ALL SUCH WORK SHALL BE PATCHED AND REPAIRED TO ORIGINAL CONDITION.

FREEDOM HIGH **SCHOOL**

NEW MAINTANENCE **FACILITIES**

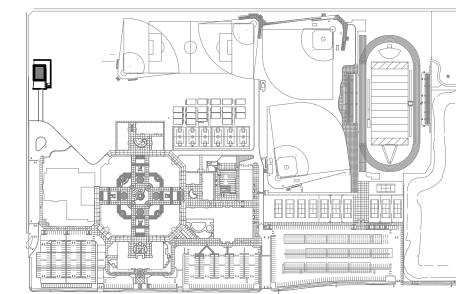
1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT



NEW BUILDING

— -- — PROPERTY LINE



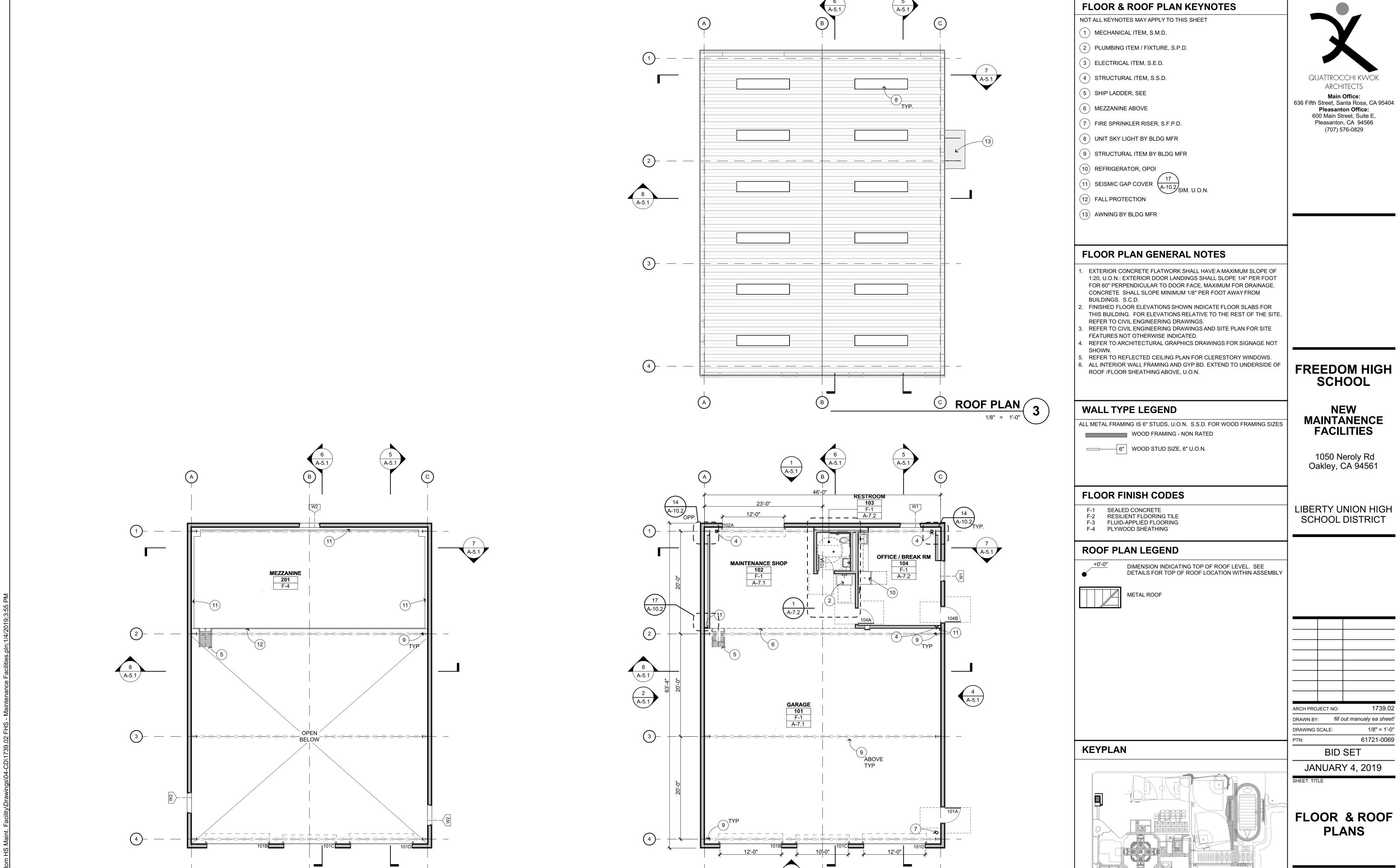
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ARCH PROJECT NO:

JANUARY 4, 2019

SITE PLAN

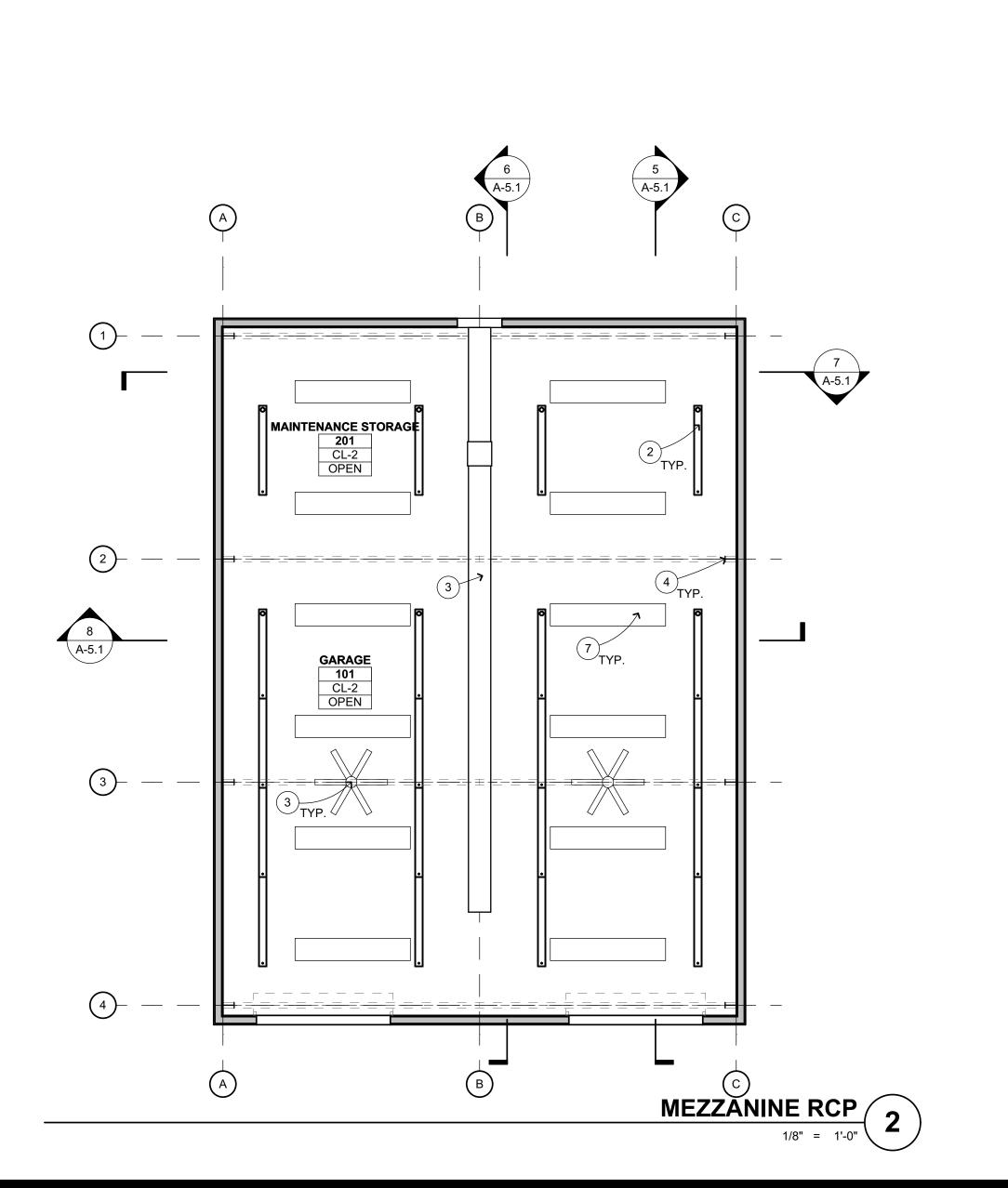


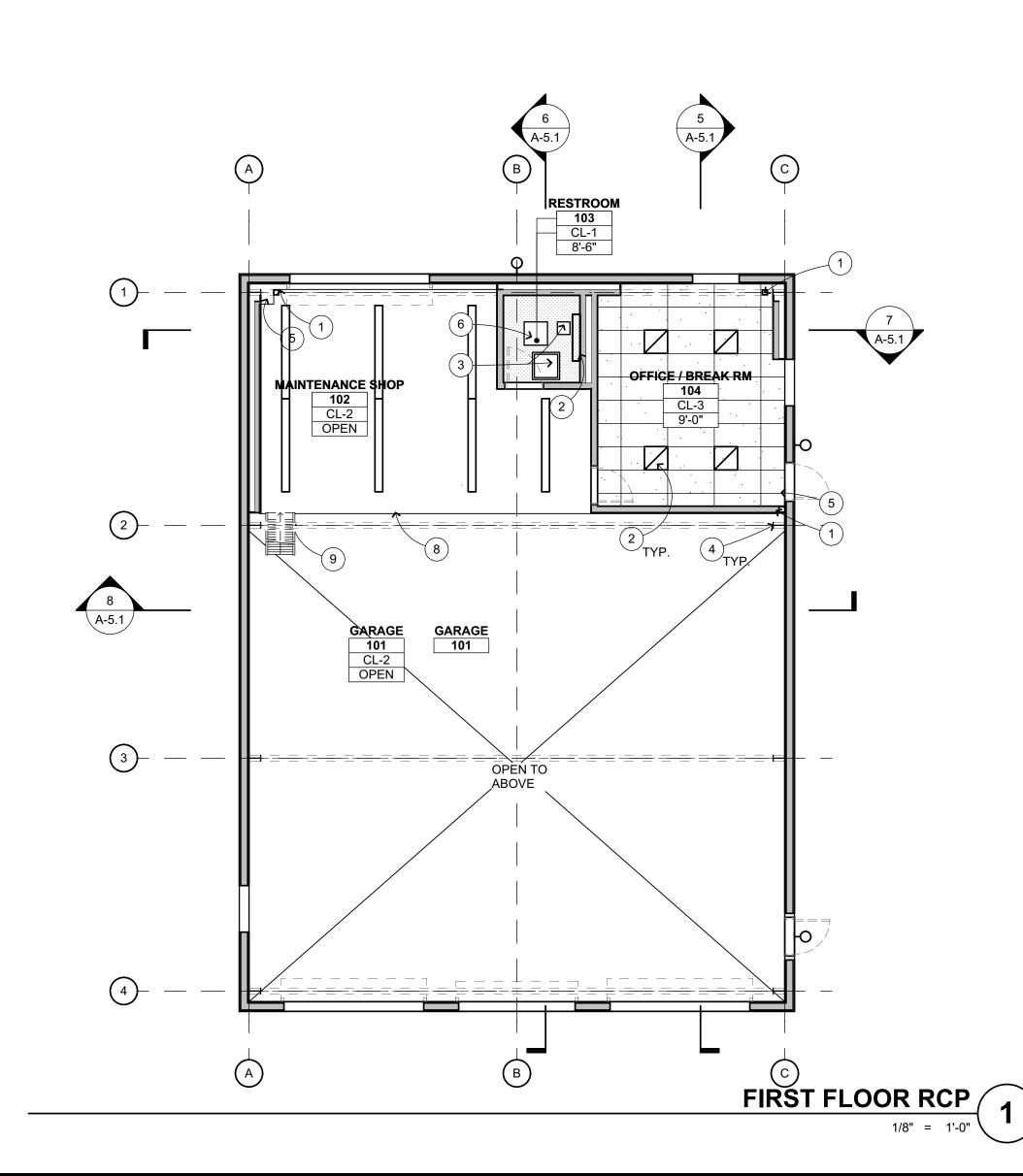
MEZZANINE FLÖOR PLAN

SHEET NUMBER

FIRST FLOOR PLAN

A-2.1







NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- (1) STRUCTURAL ITEM, S.S.D.
- 2 ELECTRICAL ITEM, S.E.D.
- (3) MECHANICAL ITEM, S.M.D.
- (4) STRUCTURE BY BLDG MFR
- (5) SEISMIC GAP COVER
- (6) ACCESS PANEL, SEE -
- (7) UNIT SKY LIGHT BY BLDG. MFR.
- 8 MEZZANINE ABOVE
- 9 SHIP LADDER



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| REFLECTED CEILING PLAN GENERAL NOTES

- 1. NOTES & SYMBOLS ARE TO APPLY TO ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDACY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
- 2. PENDANT LIGHT FIXTURE LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN 45° SWING CLEARANCES TO FIXED
- 3. S.E.D. FOR HORNS, SPEAKERS, PULL STATIONS, LIGHT FIXTURES AND OTHER FEATURES NOT OTHERWISE SHOWN.
- 4. S.E.D. FOR EXIT SIGNS & EMERGENCY LIGHTING CONDITIONS. 5. S.M.D. FOR PIPING, REGISTERS & VENTS NOT OTHERWISE SHOWN. MECHANICAL DUCT LOCATION DIMENSIONS ARE NOMINAL. VERIFY IN FIELD TO MAINTAIN CLEARANCES TO FIXED ELEMENTS.
- 6. CBC TABLE 601- ROOFS AND THEIR MEMBERS OTHER THAN THE STRUCTURAL FRAME MAY BE OF UNPROTECTED NON-COMBUSTIBLE MATERIALS WHEN EVERY PART OF ROOF FRAMING INCLUDING THE STRUCTURAL FRAME IS 20 FEET OR MORE ABOVE THE FLOOR IMMEDIATELY BELOW

REFLECTED CEILING PLAN LEGEND

ROOM NAME
"-", ROOM IS OPEN TO STRUCTURE ABOVE. FOR

GYPSUM BOARD, SEE FINISH CODE

2'x4 SUSPENDED CEILING SYSTEM W/ ACOUSTIC TILE, SEE FINISH CODES

FREEDOM HIGH SCHOOL

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LIBERTY UNION HIGH SCHOOL DISTRICT

DOORS SHOWN DASHED INDICATE DOOR BELOW. FOR DEMO, (E), AND (N) DOOR/FRAME INFORMATION SEE FLOOR PLANS & DOOR SCHEDULE

ROOM #

ELECTRICAL ITEMS, S.E.D.

 $\boxtimes \boxtimes \Box$

CL-XX REFERS TO CEILING FINISH CODE SEE BELOW.

WHERE CEILING HEIGHT IS INDICATED AS "OPEN" OR

CEILING CONFIGURATION & HEIGHT WHERE CEILING HEIGHT IS INDICATED AS CURVED, SLOPING, OR VARIES, REFER TO SECTION DRAWINGS.

X'-X" REFERS TO FINISHED CEILING HEIGHT AFF.

MECHANICAL ITEMS, S.M.D. FIRE SPRINKLERS, S.F.P.D.

CEILING FINSH CODES FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR).

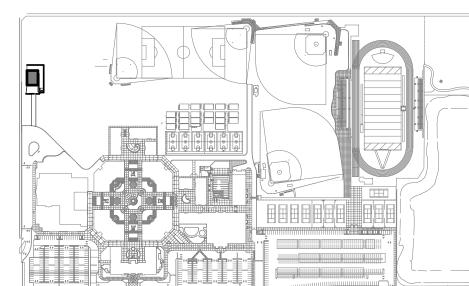
- CL-1 WOOD FRAMED MOISTURE RESISTANT GYP BD, S.S.D. FOR CEILING JOIST SCHEDULE
- CL-2 EXPOSED ROOF STRUCTURE
- CL-3 ACOUSTICAL CEILING TILE

UKE		
E, SEE	$\begin{pmatrix} 7 \end{pmatrix}$	
,	A-10.1	

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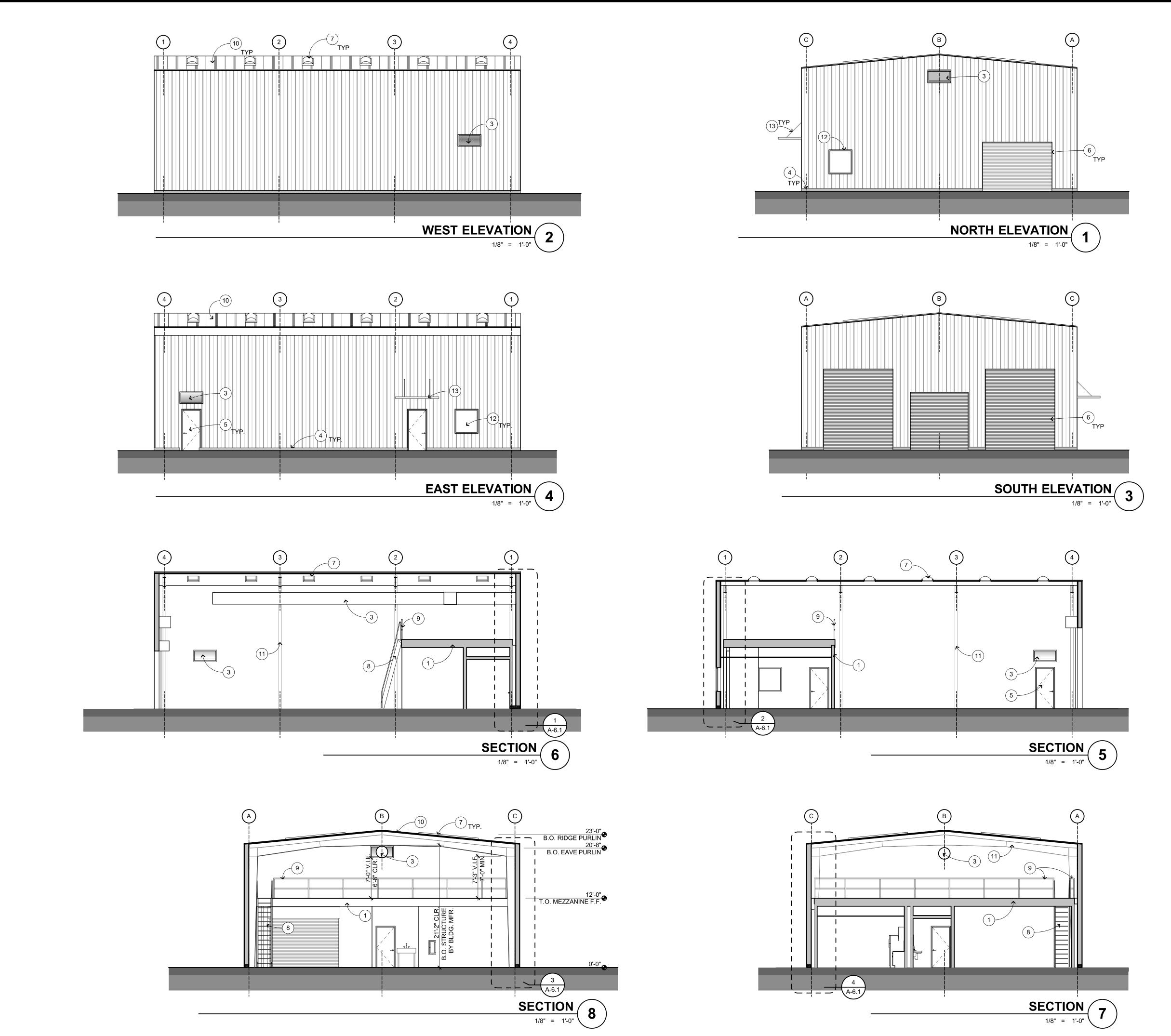
61721-0069

KEYPLAN



BID SET JANUARY 4, 2019

REFLECTED **CEILING PLANS**



EXT. ELEVATION & SECTION KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- 1) STRUCTURAL ITEM, S.S.D.
- 2 ELECTRICAL ITEM, S.E.D.
- (3) MECHANICAL ITEM, S.M.D.
- (4) 6" CONCRETE CURB, S.S.D.
- (5) HM DOOR AND FRAME, SEE DOOR SCHEDULE
- (6) OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE
- (7) UNIT SKY LIGHT BY BLDG. MFR.
- 8 SHIP LADDER, SEE $\frac{9}{(A-10.2)}$
- 9 FALL PROTECTION RAIL, SEE (A-10.2) (10) STANDING SEAM MTL ROOF BY BLDG MFR
- (11) STRUCTURE BY BLDG MFR
- (12) WINDOW, SEE WINDOW SCHEDULE
- (13) AWNING BY BLDG MFR

EXT. ELEV. & SECTION GENERAL NOTES

- NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION. ALL PENETRATIONS THROUGH EXTERIOR ROOF AND WALLS, AND FLOORS SHALL BE FLASHED AND SEALED WEATHER TIGHT. ALL PENETRATIONS THROUGH THE BUILDING INSULATION ENVELOPE
- SHALL BE PACKED WITH INSULATION. PROVIDE OPENING FLASHINGS AT ALL WINDOWS, DOORS
- LOUVERS AND SIMILAR WALL OPENINGS PER DETAIL (A-9.1) PROVIDE FIRESTOPPING AT CONCEALED SPACES, INCLUDING BETWEEN STAIR STRINGERS & BETWEEN STUDS WITH STAIR RUN, FURRED SPACES, CEILING/FLOOR LEVELS AND 10'-0" INTERVALS ALONG LENGTHS OF WALL, SOFFITS, DROP CEILINGS, AND COVE CEILINGS PER CBC 718.
- REFER TO INTERIOR ELEVATIONS FOR WALL FINISHES AND
- INFORMATION NOT SHOWN, TYPICAL. REFER TO FLOOR PLAN FOR FLOOR FINISHES, TYPICAL.
- REFER TO REFLECTED CEILING PLAN FOR CEILING FINISHES, TYPICAL. 8. REFER TO MECHANICAL DRAWINGS FOR REGISTERS AND VENTS NOT
- 9. REFER TO ELECTRICAL DRAWINGS FOR HORNS, SPEAKERS, PULL STATIONS AND OTHER FEATURES NOT OTHERWISE SHOWN.

1739.02

EXTERIOR ELEVATION LEGEND

OTHERWISE SHOWN.

PREFORMED METAL ROOF BY MTL BLDG MFR

KEYPLAN

METAL PANEL, BY MTL BLDG MFR

ARCH PROJECT NO: DRAWING SCALE:

QUATTROCCHI KWOK

ARCHITECTS

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FREEDOM HIGH SCHOOL

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1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH

SCHOOL DISTRICT

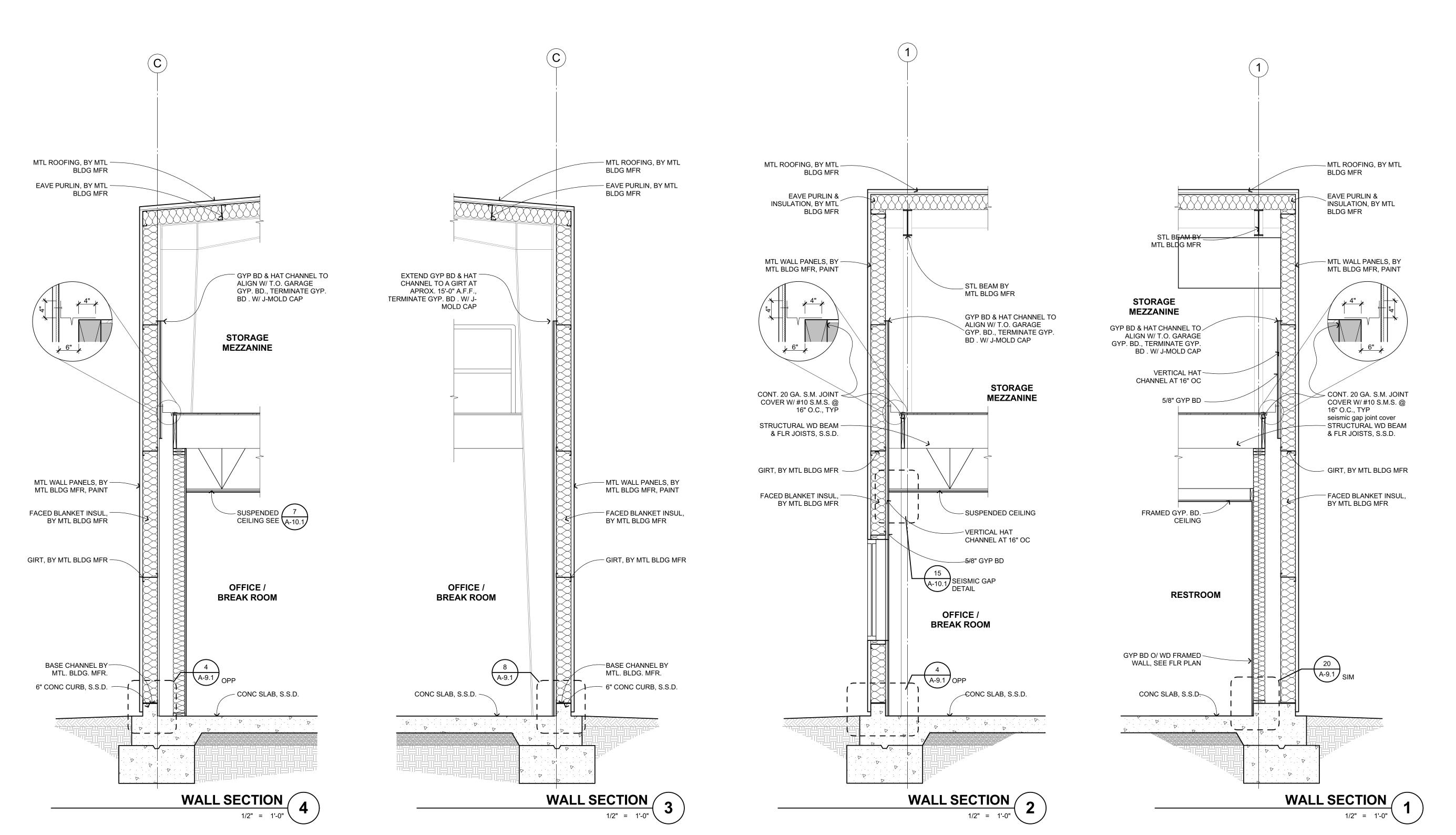
61721-0069 **BID SET**

JANUARY 4, 2019



A-5.1



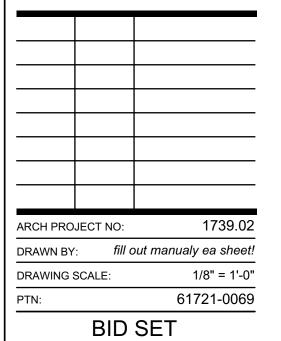


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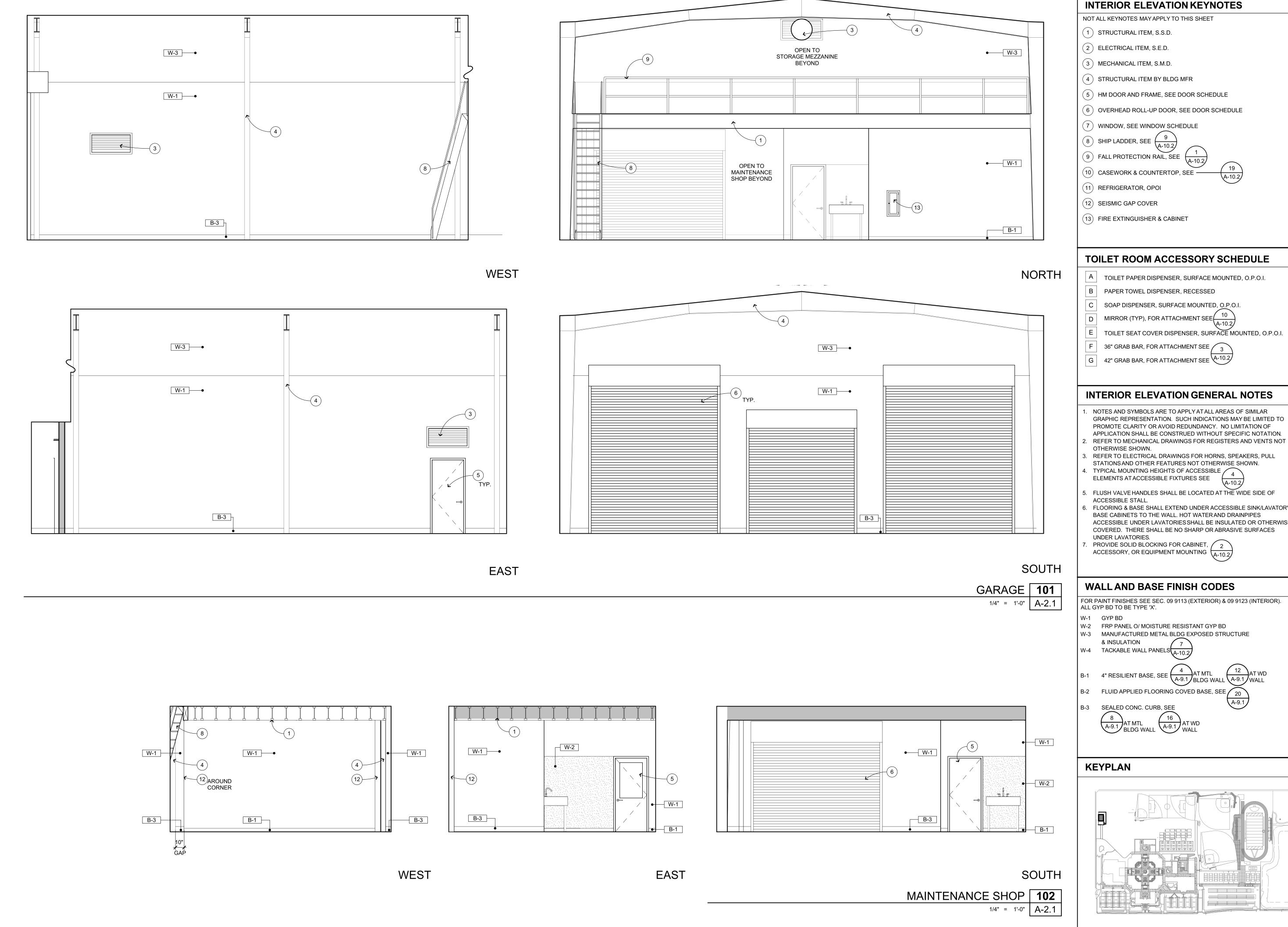


JANUARY 4, 2019

WALL SECTIONS

SHEET NUMB

A-6.1



INTERIOR ELEVATION KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

(1) STRUCTURAL ITEM, S.S.D.

(2) ELECTRICAL ITEM, S.E.D.

(3) MECHANICAL ITEM, S.M.D.

(5) HM DOOR AND FRAME, SEE DOOR SCHEDULE

(6) OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE

(7) WINDOW, SEE WINDOW SCHEDULE

8 SHIP LADDER, SEE $\frac{9}{A-10.2}$

FALL PROTECTION RAIL, SEE (A-10.2)

(10) CASEWORK & COUNTERTOP, SEE —

(11) REFRIGERATOR, OPOI

TOILET ROOM ACCESSORY SCHEDULE

A TOILET PAPER DISPENSER, SURFACE MOUNTED, O.P.O.I.

B PAPER TOWEL DISPENSER, RECESSED

C SOAP DISPENSER, SURFACE MOUNTED, O.P.O.I.

D MIRROR (TYP), FOR ATTACHMENT SEE

E TOILET SEAT COVER DISPENSER, SURFACE MOUNTED, O.P.O.I.

|F| 36" GRAB BAR, FOR ATTACHMENT SEE $\sqrt{3}$

G 42" GRAB BAR, FOR ATTACHMENT SEE (A-10.2)

INTERIOR ELEVATION GENERAL NOTES

NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.

OTHERWISE SHOWN. B. REFER TO ELECTRICAL DRAWINGS FOR HORNS, SPEAKERS, PULL

STATIONS AND OTHER FEATURES NOT OTHERWISE SHOWN. 4. TYPICAL MOUNTING HEIGHTS OF ACCESSIBLE 4

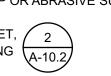
ELEMENTS AT ACCESSIBLE FIXTURES SEE

5. FLUSH VALVE HANDLES SHALL BE LOCATED AT THE WIDE SIDE OF

6. FLOORING & BASE SHALL EXTEND UNDER ACCESSIBLE SINK/LAVATORY BASE CABINETS TO THE WALL. HOT WATER AND DRAINPIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES

UNDER LAVATORIES. '. PROVIDE SOLID BLOCKING FOR CABINET, ACCESSORY, OR EQUIPMENT MOUNTING

A-10.2



WALL AND BASE FINISH CODES

FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR). ALL GYP BD TO BE TYPE 'X'.

W-2 FRP PANEL O/ MOISTURE RESISTANT GYP BD

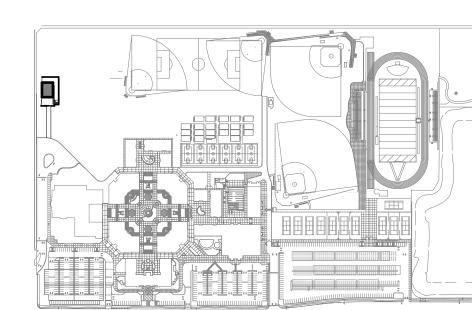
MANUFACTURED METAL BLDG EXPOSED STRUCTURE

& INSULATION W-4 TACKABLE WALL PANELS

B-1 4" RESILIENT BASE, SEE

FLUID APPLIED FLOORING COVED BASE, SEE

SEALED CONC. CURB, SEE AT MTL BLDG WALL A-9.1 AT WD WALL



ARCH PROJECT NO: DRAWN BY: fill out manualy ea sheet! 1/4" = 1'-0" DRAWING SCALE: 61721-0069

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FACILITIES

1050 Neroly Rd

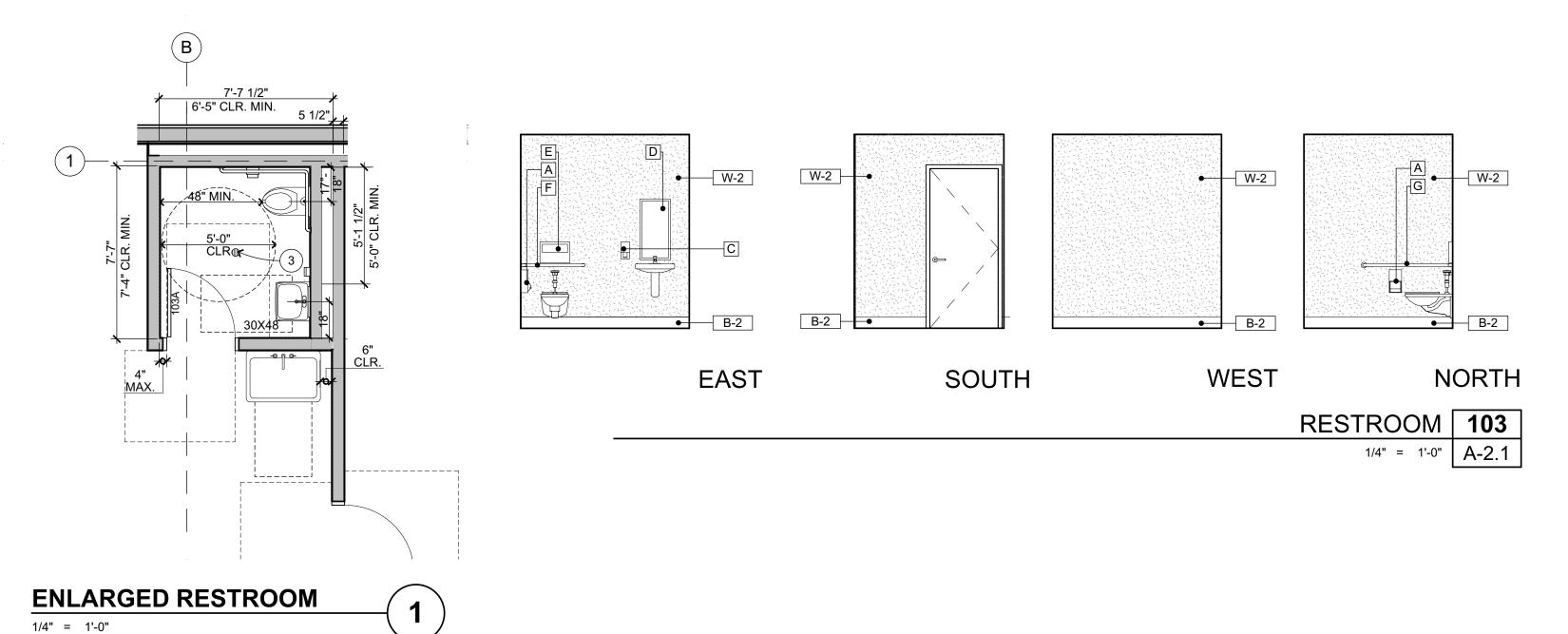
Oakley, CA 94561

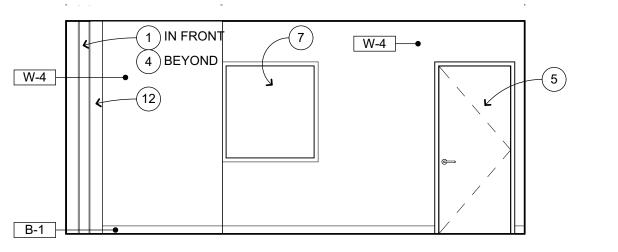
LIBERTY UNION HIGH

SCHOOL DISTRICT

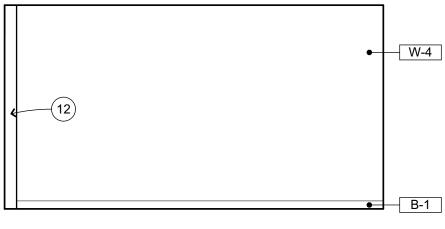
BID SET JANUARY 4, 2019

INTERIOR ELEVATIONS

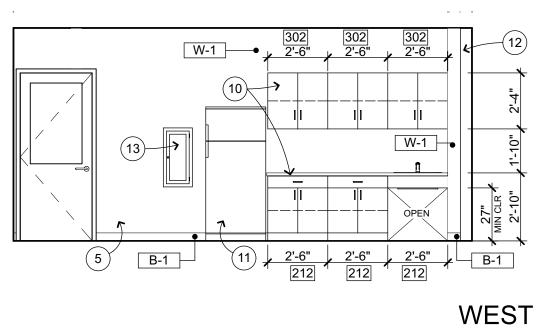


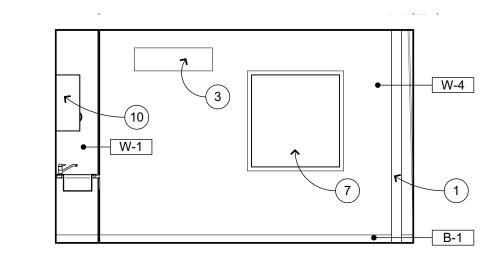


EAST



SOUTH





NORTH OFFICE BREAK RM 104 1/4" = 1'-0" A-2.1

INTERIOR ELEVATION KEYNOTES

NOT ALL KEYNOTES MAY APPLY TO THIS SHEET

- 1 STRUCTURAL ITEM, S.S.D.
- 2 ELECTRICAL ITEM, S.E.D.
- (3) MECHANICAL ITEM, S.M.D.
- (4) STRUCTURAL ITEM BY BLDG MFR
- (5) HM DOOR AND FRAME, SEE DOOR SCHEDULE
- (6) OVERHEAD ROLL-UP DOOR, SEE DOOR SCHEDULE
- (7) WINDOW, SEE WINDOW SCHEDULE
- 8 SHIP LADDER, SEE $\frac{9}{(A-10.2)}$
- 9 FALL PROTECTION RAIL, SEE
- (10) CASEWORK & COUNTERTOP, SEE —
- (11) REFRIGERATOR, OPOI
- (12) SEISMIC GAP COVER
- (13) FIRE EXTINGUISHER & CABINET

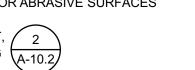
TOILET ROOM ACCESSORY SCHEDULE

- A TOILET PAPER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- B PAPER TOWEL DISPENSER, RECESSED
- C SOAP DISPENSER, SURFACE MOUNTED, O.P.O.I.
- D MIRROR (TYP), FOR ATTACHMENT SEE
- E TOILET SEAT COVER DISPENSER, SURFACE MOUNTED, O.P.O.I.
- F 36" GRAB BAR, FOR ATTACHMENT SEE
- G 42" GRAB BAR, FOR ATTACHMENT SEE (A-10.2)

INTERIOR ELEVATION GENERAL NOTES

- NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
- REFER TO MECHANICAL DRAWINGS FOR REGISTERS AND VENTS NOT OTHERWISE SHOWN.
- REFER TO ELECTRICAL DRAWINGS FOR HORNS, SPEAKERS, PULL
- STATIONS AND OTHER FEATURES NOT OTHERWISE SHOWN.
- . TYPICAL MOUNTING HEIGHTS OF ACCESSIBLE / ELEMENTS AT ACCESSIBLE FIXTURES SEE
- 5. FLUSH VALVE HANDLES SHALL BE LOCATED AT THE WIDE SIDE OF ACCESSIBLE STALL.
- . FLOORING & BASE SHALL EXTEND UNDER ACCESSIBLE SINK/LAVATORY BASE CABINETS TO THE WALL. HOT WATER AND DRAINPIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES
- '. PROVIDE SOLID BLOCKING FOR CABINET, ACCESSORY, OR EQUIPMENT MOUNTING

 A-10.2



WALL AND BASE FINISH CODES

FOR PAINT FINISHES SEE SEC. 09 9113 (EXTERIOR) & 09 9123 (INTERIOR). ALL GYP BD TO BE TYPE 'X'.

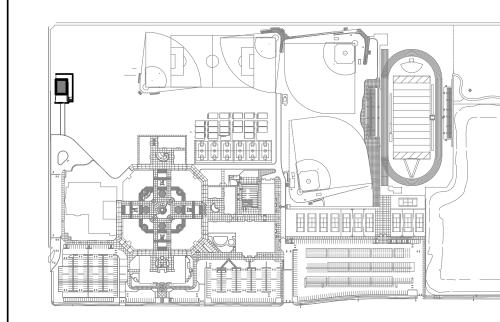
- W-2 FRP PANEL O/ MOISTURE RESISTANT GYP BD W-3 MANUFACTURED METAL BLDG EXPOSED STRUCTURE
- & INSULATION

B-1 4" RESILIENT BASE, SEE

UNDER LAVATORIES.

- W-4 TACKABLE WALL PANELS (A-10.2
- B-2 FLUID APPLIED FLOORING COVED BASE, SEE
- SEALED CONC. CURB, SEE A-9.1 AT MTL BLDG WALL A-9.1 AT WD WALL

KEYPLAN



ARCH PROJECT NO: DRAWN BY:

QUATTROCCHI KWOK

ARCHITECTS

Main Office: 636 Fifth Street, Santa Rosa, CA 95404

Pleasanton Office: 600 Main Street, Suite E Pleasanton, CA 94566

(707) 576-0829

FREEDOM HIGH SCHOOL

NEW

MAINTANENCE

FACILITIES

1050 Neroly Rd Oakley, CA 94561

LIBERTY UNION HIGH

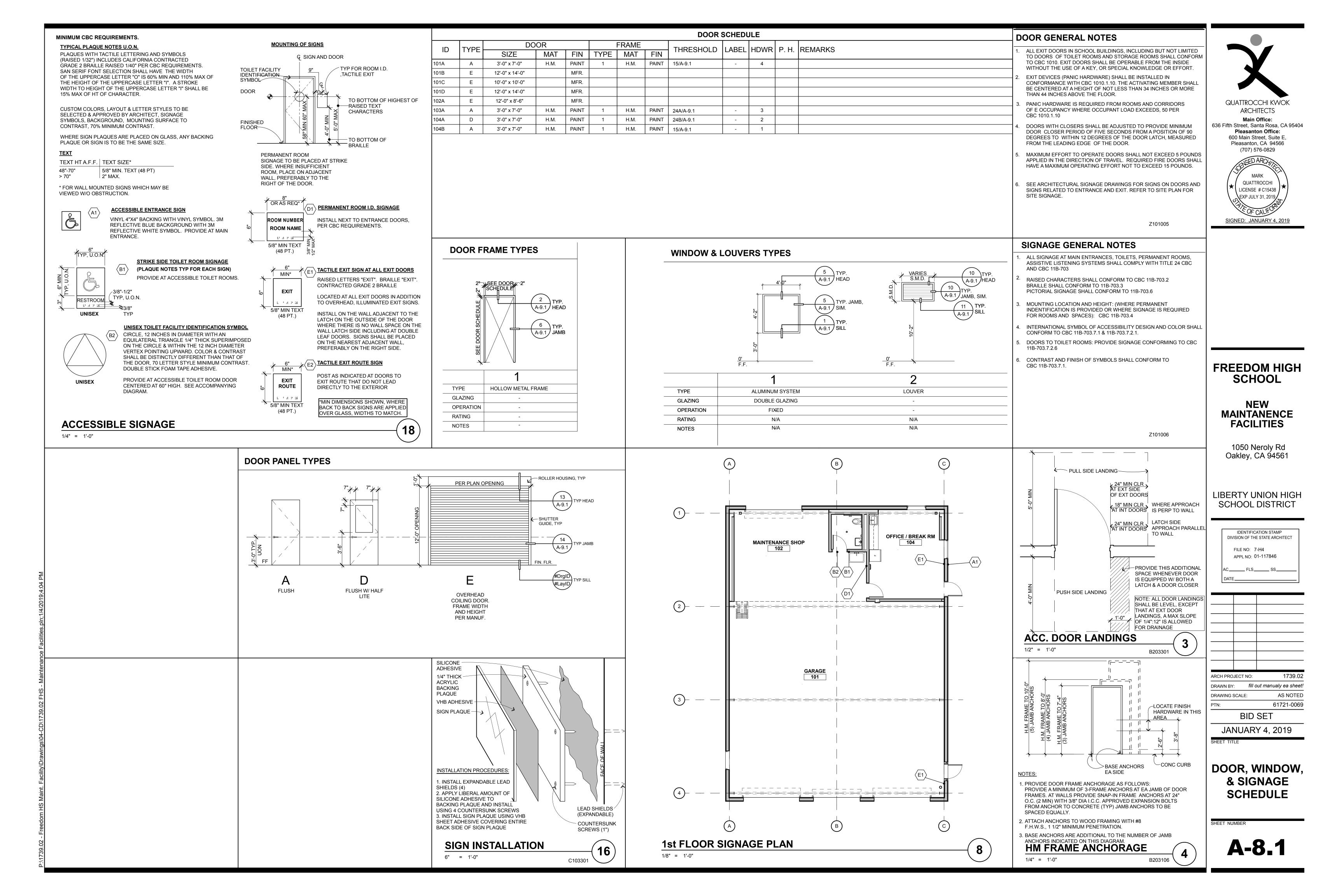
SCHOOL DISTRICT

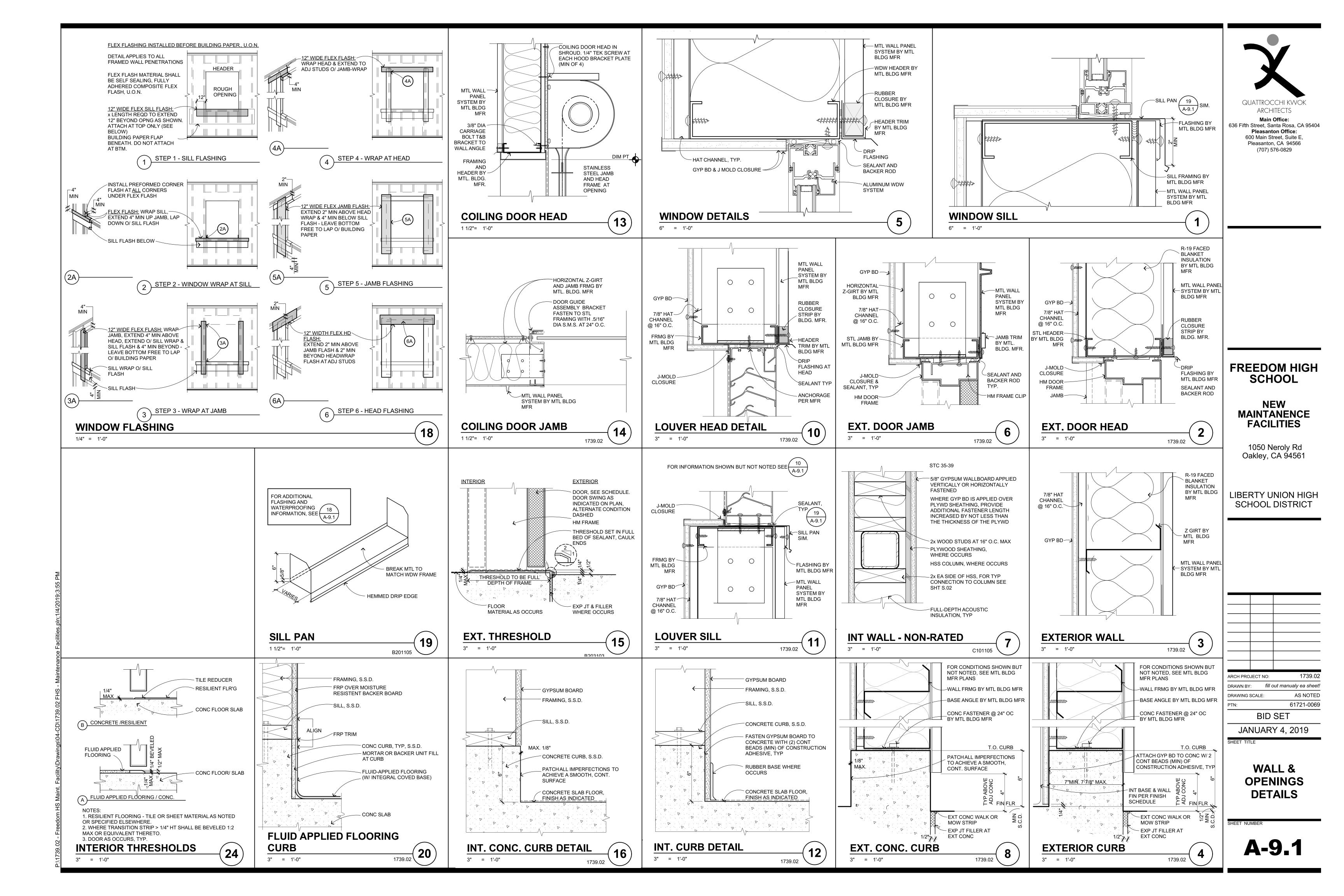
DRAWING SCALE: 61721-0069

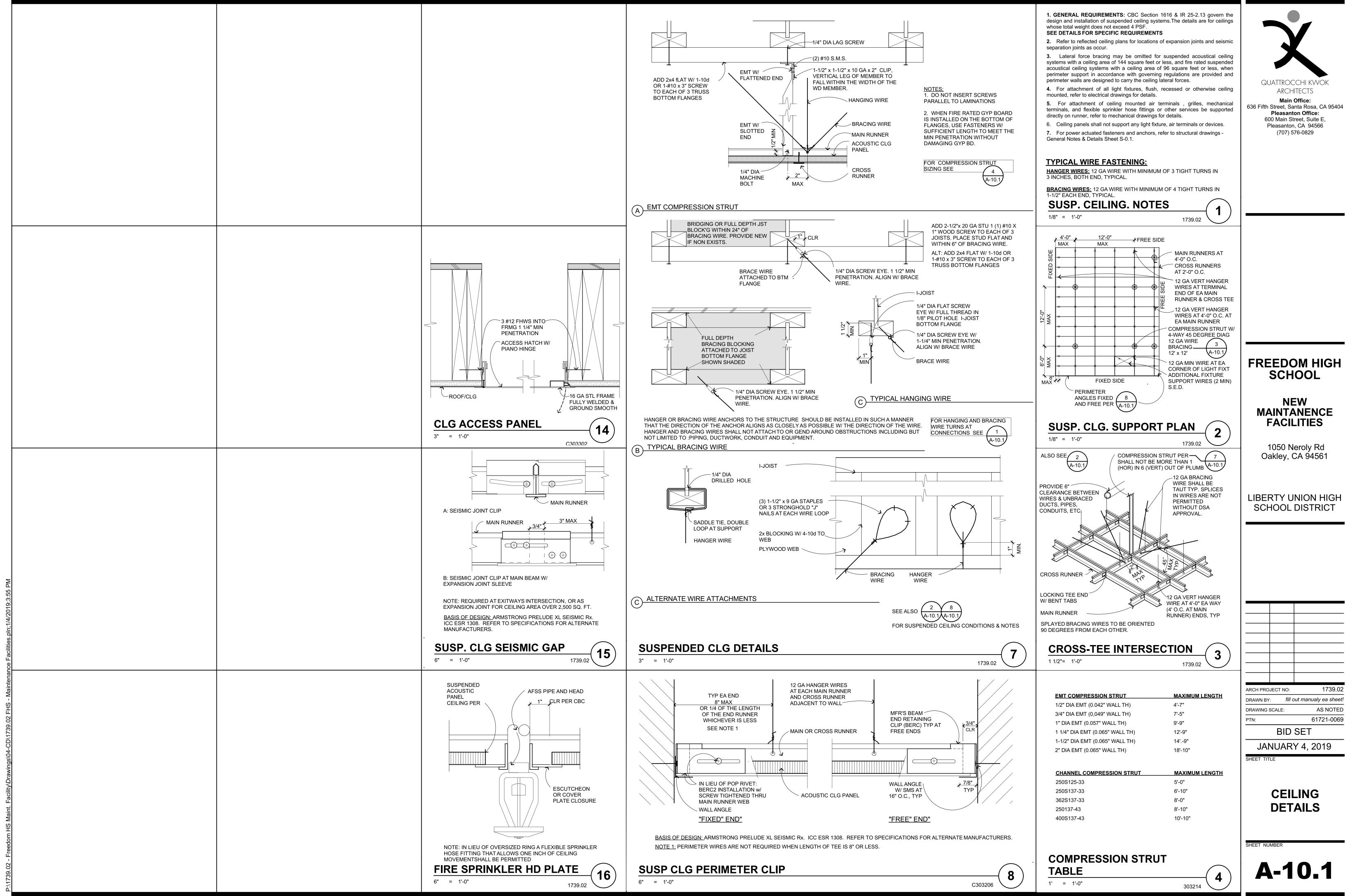
BID SET

JANUARY 4, 2019

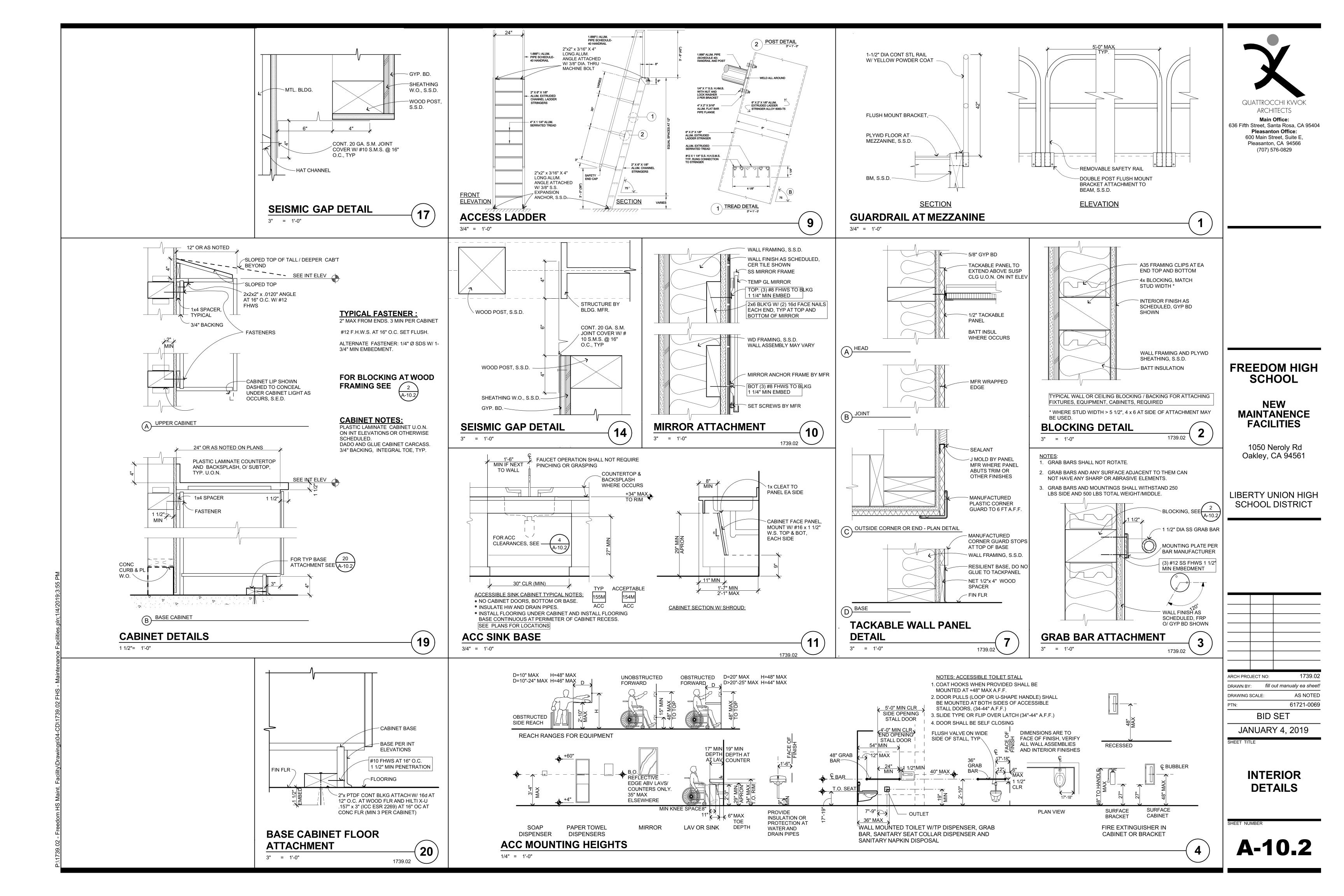
INTERIOR ELEVATIONS







DRAWN BY: fill out manualy ea sheet! AS NOTED 61721-0069



- 2. FIELD NAILING TO BE 12"oc UNO.
- 3. ALL SHEATHING NAILS TO BE COMMON WIRE. SEE **E/S-0.1** AND SPECIFICATIONS FOR OTHER NAIL REQUIREMENTS.
- 4. SHEAR WALL LENGTHS, WHERE NOTED, ARE MINIMUM. DO NOT LOCATE HOLDOWNS FROM THESE DIMENSIONS. SAD FOR ACTUAL WALL LENGTHS.
- 5. HOLDOWN REFERS TO SIMPSON STRONG TIE CO. HOLDOWNS. INSTALL HOLDOWNS AND REQUIRED POSTS PER <u>9/S-1.2</u> AND <u>10/S-1.2</u>. SEE PLANS FOR OTHER REQUIREMENTS.
- 6. EDGE NAIL WALL SHEATHING TO STUDS OR POSTS WITH HOLDOWNS.
- 7. PORTIONS OF INTERIOR WALL SURFACES ADJACENT TO SPECIFIED SHEAR WALLS SHALL BE SHEATHED FOR THE FULL, UNINTERRUPTED LENGTH TO MATCH EXTERIOR WALLS OR WITH GYPSUM BOARD OF THE SAME THICKNESS TO PROVIDE AN EVEN WALL SURFACE FOR FINISH MATERIALS.
- 8. SHEAR WALLS MORE THAN ONE VERTICAL PANEL IN HEIGHT SHALL HAVE STAGGERED HORIZONTAL OR VERTICAL SPLICE JOINTS.
- 9. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6"oc ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS OR FRAMING SHALL BE 3x OR THICKER AND NAILS ON EACH SIDE SHALL BE STAGGERED.
- 10. ANCHOR BOLTS (AB) FOR SHEAR WALLS SHALL INCLUDE STEEL PLATE WASHERS, A MINIMUM OF 0.229 INCH BY 3 INCHES SQUARE IN SIZE, BETWEEN THE SILL PLATE AND NUT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO $\frac{3}{16}$ " LARGER THAN THE AB DIAMETER AND A SLOT LENGTH NOT TO EXCEED 13/4". PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. PLATE WASHER TO EXTEND WITHIN 1/2" OF SHEAR WALL SHEATHING UNO. PROVIDE OVERSIZED PLATE WASHER OR OFFSET AB AS REQUIRED. AT DOUBLE-SIDED SHEAR WALLS, STAGGER AB AS REQUIRED. AB TO BE PLACED A MINIMUM OF 4½" AND A MAXIMUM OF 12" FROM ENDS OF ALL SILL PLATES AND AT NOTCHES IN SILL PLATES.
- 11. NO OPENINGS ARE ALLOWED IN SHEAR WALLS UNLESS SHOWN ON THE STRUCTURAL PLANS. OPENINGS NOTED ARE PER 7/S-1.2. COORDINATE ANY OPENINGS NOT SHOWN WITH THE STRUCTURAL ENGINEER.

NATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY ULTIMATE COMPRESSIVE STRENGTH:

- F'_c = 3,000 PSI FOUNDATIONS F'_c = 3,000 PSI INTERIOR SLAB ON GRADE
- REINFORCING STEEL YIELD STRENGTH: $F_y = 40,000 \text{ PSI AT } #3 \text{ AND SMALLER}$
- $F_v = 60,000 \text{ PSI AT } #4 \text{ AND LARGER}$
- STEEL YIELD STRENGTH (UNO):
- F_v = 36,000 PSI ANGLES, CHANNELS, AND PLATES
- F_v = 46,000 PSI RECTANGULAR HSS $F_v = 35,000 \text{ PSI PIPES}$

FASTENERS: MACHINE BOLTS SHALL BE ASTM A307 ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO ARC-WELDING ELECTRODES SHALL BE E70

WOOD BASE DESIGN STRESSES (UNO):

 TO BE BRIEF BEGINS IN LEGELS (GIVE).					
SAWN LUMBER MEMBER	SPECIES AND MINIMUM GRADE, UNO	F _b (PSI)	F _v (PSI)	E (PSI)	
6x POSTS	DOUGLAS FIR - #1	1200	170	1.6x10 ⁶	
6x BEAMS	DOUGLAS FIR - #1	1350	170	1.6x10 ⁶	
4x POSTS & BEAMS	DOUGLAS FIR - #1	1000	180	1.7x10 ⁶	
2x JOISTS, RAFTERS	DOUGLAS FIR - #1	1000	180	1.7x10 ⁶	
P MATERIAL	DOUGLAS FIR - #2	900	180	1.6x10 ⁶	
2x STUDS	DOUGLAS FIR - #2	900	180	1 6x10 ⁶	

MANUFACTURED WOOD PRODUCTS:

 $F_b = 2,900 \text{ PSI}$ $E = 2.0 \times 10^6 \text{ PSI}$ LVL (BEAMS & JOISTS)

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER

WOOD FRAMING NOTES

- 1. HEADERS, BEAMS, POSTS, TOP PLATE SPLICES, AND ETC., ARE PER 1/S-1.2 AND 3/S-1.2 WHERE NOT NOTED ON PLAN AND DETAILS.
- 2. ALL BEAMS AND JOISTS (EXCLUDING I JOISTS) SHALL BE SEAT CUT FOR FULL UNIFORM BEARING AT SUPPORTS, INCLUDING BEAM SEATS AND COLUMN CAPS.
- 3. SEE 12/S-1.2 FOR SHEATHING NAILING REQUIREMENTS. ALL NAILING NOT NOTED OR DETAILED OTHERWISE SHALL BE PER 11/S-1.2. NAIL LENGTH TO BE SUFFICIENT TO MEET CBC PENETRATION REQUIREMENTS.
- 4. INTERIOR BEARING WALLS AND SHEAR WALLS SHALL BE 2x6 @ 16"oc UNLESS NOTED OTHERWISE. SEE ARCHITECTURAL DRAWINGS FOR OTHER INTERIOR WALL FRAMING SIZES. COORDINATE STUD AND PLATE SIZES WITH THE REQUIREMENTS OF THE SHEAR WALL SCHEDULE. STUDS ADJACENT TO SEISMIC SEPARATIONS ARE TO BE 2x6 @ 16"oc UNLESS NOTED OTHERWISE.
- 5. WOOD POST SIZES ARE TO MATCH BEAM AND STUD WIDTH, UNO. WHERE POST OCCURS ABOVE RAISED FLOOR, PROVIDE SOLID BLOCKING AT FLOOR FRAMING TO MATCH WIDTH OF POST. PEN PER G/S-0.1 TO POSTS AT ALL EXTERIOR WALLS AND INTERIOR SHEAR WALLS. POSTS AT HOLDOWNS TO BE FULL HEIGHT AND PER 9/S-1.2
- 6. FOR ROOF DRAINAGE, TOP OF FRAMING BETWEEN NOTED POINTS IS A STRAIGHT
- 7. ALL MECHANICAL SUPPLY AND RETURN OPENINGS TO BE BETWEEN FRAMING UNO.
- 8. HANGERS FOR LVL BEAMS TO BE HGUS, UNO.
- 9. ROUND HOLES IN STEEL PLATES TO BE 1/16" OVERSIZE. SLOTTED HOLES IN STEEL PLATES SHALL BE 1/16" WIDER THAN THE BOLT DIAMETER AND HAVE A LENGTH OF 2 TIMES THE BOLT DIAMETER. THE DIRECTION OF THE SLOTTED LENGTH IS INDICATED ON THE DETAILS (VSH OR HSH). INSTALL BOLT AT THE CENTER LINE OF THE HOLE. BOLT HOLES IN WOOD SHALL BE ROUND AND 1/32 OVERSIZE. CUT OFF BOLT THREADED END FLUSH WITH NUT WHEN REQUIRED BY FINISHES AND 1" MAXIMUM FROM NUT OTHERWISE. PROVIDE STANDARD CUT WASHERS UNDER HEAD AND NUT WHERE BOLT BEARS ON WOOD. USE PLATE OR MALLEABLE IRON WASHERS AT EXPOSED CONDITIONS OR AS INDICATED.
- 10. ALL BOLTED OR NAILED STRAP CONNECTIONS SHALL HAVE AN EQUAL NUMBER OF BOLTS OR NAILS EACH SIDE OF THE SPLICE JOINT. THE FIRST BOLT OR NAIL FROM EACH SIDE OF THE SPLICED OR STRAPPED MEMBER SHALL BE EQUIDISTANT FROM THE SPLICE. STRAPS USING 16d NAILS ON 2x MATERIAL TO BE INSTALLED ON THE 1½" EDGE OF THE MEMBER.
- 11. THE CONTRACTOR SHALL VERIFY THAT THE MOISTURE CONTENT OF ALL FRAMING LUMBER AND SHEATHING MEET THE REQUIREMENTS OF THE SPECIFICATIONS AT THE TIME OF INSTALLATION AND AT CLOSE-IN. THE CONTRACTOR SHALL PROVIDE ALLOWANCE FOR DIFFERENTIAL SHRINKAGE BETWEEN FLOORS, ETC.
- 12. VENTING IS REQUIRED IN ENCLOSED FRAMING AREAS, SAD. DRILL BLOCKING AND LEDGERS AND PROVIDE SKIP BLOCKING AS DETAILED.
- 13. SAD FOR CEILING INFO. WHERE REQUIRED PROVIDE CEILING JOISTS PER 10/S-6.1
- 14. ALL SHEATHING SHALL HAVE 1/8" GAP AT ALL EDGES AND JOINTS. TYPICAL SHEATHING:
- A. FLOOR SHEATHING: 23/2 " T&G APA RATED SHEATHING (48/24) EXP 1 WITH 10d @ 6"oc EDGES (PEN) AND 12"oc FIELD UNO ON PLANS. LAY PERPENDICULAR TO & GLUE TO FRAMING MEMBERS IMMEDIATELY PRIOR TO FULL NAILING (DO NOT SPOT NAIL). BLOCK EDGES WITH 2x4 LAID FLAT AS NOTED ON THE PLANS AND DETAILS. NO PANELS LESS THAN 24" WIDE SHALL BE USED. STAGGER SHEETS.

\ MANUFACTURED I-JOIST NOTES

- 1. IJ = BUILT-UP "I" SHAPED WOOD JOIST WITH PLYWOOD OR OSB WEB. SEE PROJECT SPECIFICATIONS FOR MINIMUM LUMBER AND SHEATHING GRADES AND OTHER
- 2. BEARING WALLS ARE AS SHOWN ON THE PLANS. SEE ARCHITECTURAL DRAWINGS
- 3. JOISTS ARE PER PLAN, UNLESS NOTED OTHERWISE, PROVIDE "BA" HANGERS AT FLOOR FRAMING. HANGER SIZE TO BE CORRECT FULL SIZE FOR JOIST SIZE.
- 4. FRAMING FOR SPECIAL LOADING CONDITIONS HAS BEEN DESIGNED BY ZFA. ALTERNATE FRAMING CAN BE SUBMITTED FOR SUBSTITUTION REVIEW AS AN EXTRA SERVICES ITEM. CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF INVESTIGATING AND REVIEWING THE ADEQUACY AND/OR ACCEPTABILITY OF SUCH SUBSTITUTION, INCLUDING ANY REQUIRED REVISIONS TO DRAWINGS AND
- 5. IJ SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. WEB STIFFENERS SHALL BE INSTALLED PER IJ AND JOIST HANGER MANUFACTURER'S REQUIREMENTS.
- 6. PROVIDE FULL DEPTH BLOCKING PER 5/S-1.2 @ 8'-0"oc MAX FOR SPANS GREATER

	SHEET INDEX
S-0.1	GENERAL NOTES
S-1.1	TYPICAL CONCRETE DETAILS
S-1.2	TYPICAL WOOD DETAILS
S-2.1	FOUNDATION AND MEZZANINE PLANS
S-4.1	FOUNDATION DETAILS
S-6.1	FRAMING DETAILS

FOUNDATION NOTES

1. FOUNDATION DESIGN PRESSURES ARE:

SHALLOW FOOTINGS: DEAD LOAD + LIVE LOAD = 3,000 PSF DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS, THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW AND CHAPTER 18A OF THE CBC, TITLE 24, PART 2. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS OR ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH CONCRETE, AND IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. ALL UNFORMED FOUNDATIONS SHALL BE EXCAVATED AND FORMED PER 14/S-1.1 GEOTECHNICAL REPORT BY:

> GEOSPHERE CONSULTANTS, INC. REPORT NO. 91-04390-A DATED: 10-12-2018

- 3. WHERE BOTTOM OF ADJACENT FOOTINGS ARE DIFFERENT PROVIDE STEPPED FOOTING PER <u>5/\$-1.1</u>.
- 4. USE 5/8" DIAMETER x 12" (18" AT CURBS) ANCHOR BOLTS (AB) AT 48"oc WHERE NOT OTHERWISE NOTED. MINIMUM EMBEDMENT INTO CONCRETE IS 7" (EXCLUDING CURB) UNLESS DETAILED OTHERWISE. ANCHOR BOLTS ARE TO BE TIED IN PLACE PRIOR TO PLACEMENT OF CONCRETE. SEE SHEAR WALL SCHEDULE FOR ADDITIONAL REQUIREMENTS. MINIMUM TWO ANCHOR BOLTS PER SILL PIECE.
- 5. TYPICAL SLAB: 5" CONCRETE REINFORCED WITH #4 @ 16"oc EACH WAY LOCATED 11/2" CLEAR FROM TOP OF SLAB OVER VAPOR RETARDER (PER SPECIFICATIONS) AND 6" MINIMUM FREE DRAINING COMPACTED ROCK PER SPECIFICATIONS ON SUBGRADE PER THE GEOTECHNICAL RECOMMENDATIONS, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR BARRIER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.
- 6. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR ARCHITECTURAL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE 8/S-1.1 AT DEPRESSED SLAB & 7/S-1.1 FOR PIPES AND CONDUITS.
- 7. PROVIDE CONTROL JOINTS PER 6/S-1.1 (OR CONSTRUCTION/DOWEL JOINTS AT CONTRACTOR'S OPTION) AS SHOWN ON PLAN AND AS REQUIRED TO MEET A MAXIMUM SPACING IN FEET OF 3 TIMES THE SLAB DEPTH IN INCHES (FOR EXAMPLE 3x4" = 12'-0"oc MAX). PROVIDE CONSTRUCTION/DOWEL JOINTS PER 12/S-1.1 AS SHOWN ON PLAN, BUT NOT GREATER THAN 60'-0"oc EACH WAY. INSTALL JOINTS TO DIVIDE SLAB INTO RECTANGULAR AREAS WITH LONG DIMENSION LESS THAN 1.5 x SHORT DIMENSION. INSTALL JOINTS AT FACE OF STUDS OF WALL WHERE POSSIBLE. SUBMIT JOINT LAYOUT PLAN FOR REVIEW PRIOR TO PLACEMENT.
- 8. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, METAL BUILDING MANUFACTURER, ETC.
- 9. EXTERIOR WALLS TO HAVE MINIMUM 6" TALL CURB. SAD FOR CURB CONFIGURATION. INTERIOR WALLS AT TOILET ROOM TO HAVE MINIMUM 6" TALL CURB, UNO.

ABBREVIATIONS ANCHOR BOLT ABOVE PRESSURE TREATED DOUGLAS FIR GRADE BEAM GLUE LAMINATED BEAM ADJACENT ADDITIONAL ALTERNATE HOLD DOWN HOT-DIP GALVANIZED REDUCED BEAM SECTION HEADER HANGER REFERENCE REINFORCING REQUIRED RETAINING HORIZONTA BLK/BL BLOCK/BLOCKING HIGH STRENGTH BOLT REVISION ROOF BEAM BOUNDARY NAIL FRICTION BOLT HIGH STRENGTH GROUT HORIZONTAL SLOTTED AMERICAN STANDARD BEAM SEE ARCHITECTURAL HOLE HOLLOW STRUCTURAL SOLID BLOCK BETWEEN SPECIAL CONCENTRIC BEYOND AMERICAN STANDARD HEIGHT INSIDE DIAMETER SEE CIVIL DRAWINGS SCHEDULE SEE ELECTRICAL DRAWINGS STRUCTURAL ENGINEER OF I SHAPED WOOD BUILT UP TRUSS SCD SCHED CHANNEL CARRIAGE BOLT CAST IN PLACE CERTIFIED GLUED LUMBER CONTROL JOINT SEISMIC FORCE RESISTING CENTERLINE COMPLETE JOINT STEEL ANGLE LIGHT GAGE METAL PENETRATION SKYLIGHT SPECIAL MOMENT FRAME SHEET METAL SCREW LIGHT GAGE METAL CLEAR COLUMN COLLECTOR LGMFC EE MECHANICAL DRAWI LONG LEG HORIZONTAL CONCRETE SLAB ON GRADE ONG LEG VERTICAL SPACING SEE PLUMBING DRAWINGS LOCATION OORDINATE/ COORDINATION LAG SCREW LAMINATED STRAND LUMBER | SQ SPECIFICATION SQUARE SELECT STRUCTURAL ONCRETE MASONRY UNI LAMINATED VENEER LUMBER | SS COUNTERSINK or STAINLESS STEEL STAGGERED MACHINE BOLT UT WASHER DEFORMED BAR ANCHOR MBM METAL BUILDING MANUFACTURER STIFFENER MISCELLANEOUS CHANNEL STRUCT STRUCTURAL DOUGLAS FIR MECHANICAL MEZZANINE MOMENT FRAME SW SYM T&B T&G SYMMETRICAL TOP AND BOTTOM TONGUE AND GROOVE MANUFACTURER DOWEL JOIN DEAD LOAD DOWN DITTO DRAWING DOWEL EACH EACH END EACH FACE MISCELLANEOUS MALLEABLE IRON WASHER METAL NEW NOT IN CONTRACT TOP OF CONCRETE TOP OF FRAMING TOP OF MASONRY **NEAR SIDE** NON-SHRINK GROUT EF EACH FACE ELEC ELECTRICAL ELEV ELEVATOR/E EMBED EMBEDMENT EQ EQUAL EQUIP EQUIPMENT ES EACH SIDE EW EACH WAY EXIST OF (E) EXISTING ELECTRICAL ELEVATOR/ELEVATION TOP OF PLYWOOD TOP OF STEEL NOT TO SCALE ON CENTER OUTSIDE DIAMETER TYPICAL UNLESS NOTED OTHERWIS VERTICAL SLOTTED HOLE WIDE FLANGE STEEL BEAM OTHERWISE OPEN WEB TRUSS FOUNDATION PLATE or PROPERTY LINE POST ABOVE POWDER DRIVEN PINS WITHOUT FINISH GRADE WOOD WELDED HEADED STUD PANEL EDGE NAIL PERPENDICULAR FERRULE LOOP INSERT PANEL EDGE SCREWS PARTIAL JOINT PENETRATION POUNDS PER LINEAR FOOT WT WORK POINT/WATERPROO FACE NAII FACE OF CONCRETE FACE OF MASONRY FACE OF STUD WOOD SCREW WELDED THREADED STUD WELDED WIRE POUNDS PER SQUARE FOOT WWR POUNDS PER SQUARE INCH FAR SIDE PARALLEL STRAND LUMBER PANEL TIE BAR FOOTING GAGE or GAUGE

DESIGN CRITERIA

DESIGN CRITERIA: FLOOR LIVE LOAD: MEZZ LIVE LOAD: **ROOF LIVE LOAD RISK CATEGORY:**

2016 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC) 60 PSF (REDUCIBLE) + 15 PSF PARTITION 125 PSF (NONREDUCIBLE) 20 PSF (REDUCIBLE)

EXEMPT FROM DSA SS REVIEW PER IR A-22

WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 110

WIND EXPOSURE: C INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18 COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7"

DESIGN STANDARD EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I .: 1.0 MAPPED SPECTRAL RESPONSE ACCELERATIONS: $S_S = 1.50$; $S_1 = 0.51$

SITE CLASS: D SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.00; S_{D1} = 0.51 SEISMIC DESIGN CATEGORY: D

MEZZANINE SEISMIC FORCE RESISTING SYSTEM: WOOD FRAMED SHEAR WALLS RESPONSE MODIFICATION FACTOR: R = 6.5 DESIGN BASE SHEAR: 4.7k (ASD)

SEISMIC RESPONSE COEFFICIENT, C_s = 0.107 (ASD) ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE SEISMIC FORCE RESISTING SYSTEM: PER MBM

GENERAL NOTES

- 1. REFER TO SHEETS **S-1.1** AND **S-1.2** FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.
- 2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING
- 3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING
- 4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.
- 5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.
- 6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS <u>2/S-1.1</u> <u>3/S-1.1</u> <u>7/S-1.1</u> <u>2/S-1.2</u> <u>6/S-1.2</u> . AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
- 7. VERIFY WEIGHTS AND LOCATIONS OF MECHANICAL UNITS WITH MECHANICAL ENGINEER PRIOR TO PLACEMENT. UNITS VARYING OVER 10% IN WEIGHT SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION (MECHANICAL WEIGHTS SHOWN ARE MAXIMUM). CONTRACTOR TO VERIFY MECHANICAL UNIT SIZES AND WEIGHTS AS INSTALLED PRIOR TO INSTALLATION OF SPECIAL FRAMING TO ENSURE CORRECT PLACEMENT UNDER CURBS, ETC.
- 8. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS, LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.
- 9. SPECIAL INSPECTIONS ARE REQUIRED PER THE TESTING AND INSPECTION FORM, SEE SPECIFICATIONS.
- 10. VEHICULAR TRAFFIC, HEAVY EQUIPMENT AND MATERIAL STAGING SHALL NOT BE ALLOWED ADJACENT TO ANY RETAINING/BASEMENT WALL, NEW OR EXISTING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT MEASURED FROM THE BOTTOM OF FOOTING OR 5'-0" WHICHEVER IS GREATER, UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR NOTED OTHERWISE. WITHIN THIS ZONE, ONLY HAND-OPERATED EQUIPMENT ("WHACKERS", VIBRATORY PLATES, OR PNEUMATIC COMPACTORS) SHALL BE USED TO COMPACT THE BACKFILL SOILS.

SITE REVIEWS BY ZFA ARE REQUIRED FOR THE FOLLOWING UNLESS DIRECTED OTHERWISE:

* REINFORCING STEEL

* STRUCTURAL WOOD FRAMING INCLUDING FLOOR & WALL SHEATHING

NOTIFY ZFA AT LEAST 2 WORKING DAYS PRIOR TO COMPLETION OF WORK

MBM NOTES

- 1. ALL WORK SHALL BE IN CONFORMANCE WITH THE CBC AND AS NOTED HEREIN. PLANS SHOW STRUCTURAL ITEMS ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR REVIEW.
- 2. DRAWINGS SHALL NOT BE SCALED. WRITTEN DIMENSIONS SHALL GOVERN CONSTRUCTION. THE CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. FOR ALL BUILDING DIMENSIONS, SEE APPROVED DRAWINGS PROVIDED BY THE METAL BUILDING MANUFACTURER.
- 3. THIS FOUNDATION APPLIES ONLY TO THE SPECIFIC BUILDING AS NOTED ABOVE, AND TO THIS SPECIFIC SITE.
- 4. METAL BUILDING MANUFACTURER TO VERIFY DESIGN LOADS, DIMENSIONS, AND DETAILS WITH ZFA PRIOR TO FABRICATION.

QUATTROCCHI KWOK **ARCHITECTS** Main Office: 636 Fifth Street, Santa Rosa, CA 95404 Pleasanton Office: 600 Main Street, Suite E Pleasanton, CA 94566 (707) 576-0829

ZFA STRUCTURAL ENGINEERS 1212 fourth street | suite z santa rosa ca 95404 707.526.0992 zfa job no. 18253 copyright © 2018



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FREEDOM HIGH SCHOOL

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

18253 ZFA NO: ENGR / PM: KPB / AIZ DRAWING SCALE: As indicated

REVISIONS

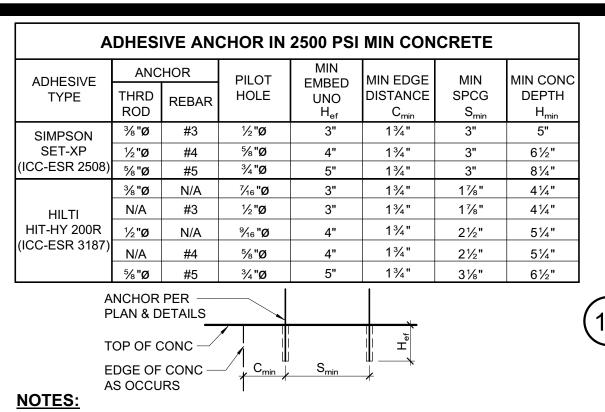
PTN:

BID SET JANUARY 4, 2019

61721-0069

SHEET TITLE **GENERAL**

NOTES



- INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
- 2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
- 3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
- 4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705A AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910A.5. SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

DHESIVE ANCHOR IN CONCRETE 3/4" = 1'-0'

SIMPSON	ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MIN NOMINAL EMBED H _{nom}	MIN EDGE DISTANCE C _{min}	MIN SPCG S _{min}	MIN CONC THICKNESS H _{min}	INSTALL TORQUE (FT-LB)
(ICC-ESR 3037)	SIMPSON	3/8"		6"			30
HILTI 3/8		1/2"	2¾"	7"	7"	41/2"	60
HILTI KWIK BOLT TZ (ICC-ESR 1917) 5/8" 23/4" 53/4" 4" 40 10CC-ESR 1917) 5/8" 35/8" 61/8" 5" 60 ANCHOR PER PLAN & DETAILS PILOT HOLE DEPTH PER MFR	(ICC-ESR 3037)	5/8"	3%"	6½"	5"	5½"	90
KWIK BOLT TZ (ICC-ESR 1917) ½" 2¾" 5¾" 4" 40 5%" 3½" 6½" 5" 60 TOP OF CONC BASE PL ANCHOR PER PLAN & DETAILS PILOT HOLE DEPTH PER MFR PILOT HOLE DEPTH PER MFR	ніі ті	3/8"	25/16"	2½"	5"	4"	25
TOP OF BASE P ANCHOR PER PLAN & DETAILS FILOT HOLE DEPTH PER MFR		1/2"	2¾"	2¾"	5¾"	4"	40
CONC PLAN & DETAILS PLAN & DETAILS PILOT HOLE DEPTH PER MFR	(ICC-ESR 1917)	5/8"	3 1/16"	3%"	61/8"	5"	60
FROE OF THE PER MFR	PLAN & DETAILS						
EDGE OF CONC AS		OF			PILOT H	OLE DEPTH P	ER MFR

OCCURS 1. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705A AND THE REQUIREMENTS OF THE ICC REPORTS

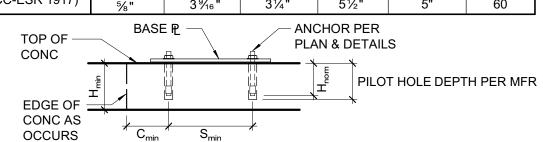
- 2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR
- 3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
- 4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.

5. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910A.5.

EXPANSION ANCHOR IN CONCRETE

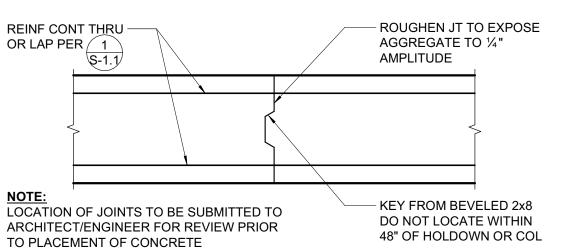
3/4" = 1'-0"

STAINLESS STL EXPANSION ANCHORS IN 2500 PSI MIN CONC						
ANCHOR TYPE	ANCHOR & PILOT HOLE DIA	MIN NOMINAL EMBED H _{nom}	MIN EDGE DISTANCE C _{min}	MIN SPACING S _{min}	MIN CONC THICKNESS H _{min}	INSTALL TORQUE (FT-LB)
SIMPSON	3/8"	1%"	6"	10"	31/4"	30
STRONG-BOLT 2	1/2"	2¾"	6½"	8"	4½"	65
(ICC-ESR 3037)	5/8"	3%"	4"	8"	5½"	80
HILTI	3/8"	25/16"	2½"	5"	4"	25
KWIK BOLT TZ	1/2"	2%"	21/8"	5¾"	4"	40
(ICC-ESR 1917)	5/8"	3%6"	31/4"	5½"	5"	60
TOD OF	BASE	<u> </u>	ANO	CHOR PER		

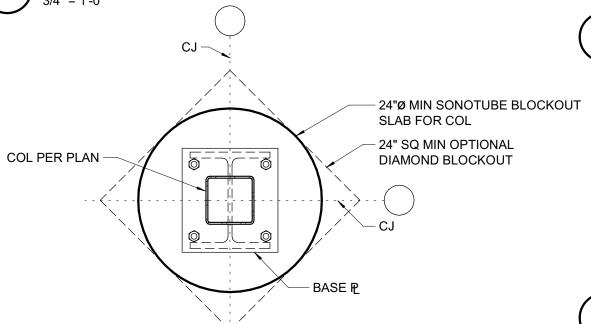


- 1. INSTALL EXPANSION ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705A AND THE REQUIREMENTS OF THE ICC REPORTS.
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- 3. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
- 4. THE SPECIAL INSPECTOR MUST BE ON THE JOB SITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.
- TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910A.5.
- **EXPANSION ANCHOR IN CONCRETI**

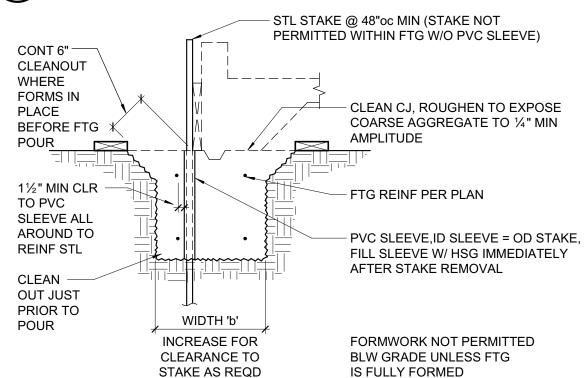
3/4" = 1'-0"



FOOTING CONSTRUCTION JOINT



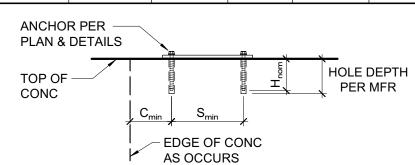
SLAB BLOCKOUT



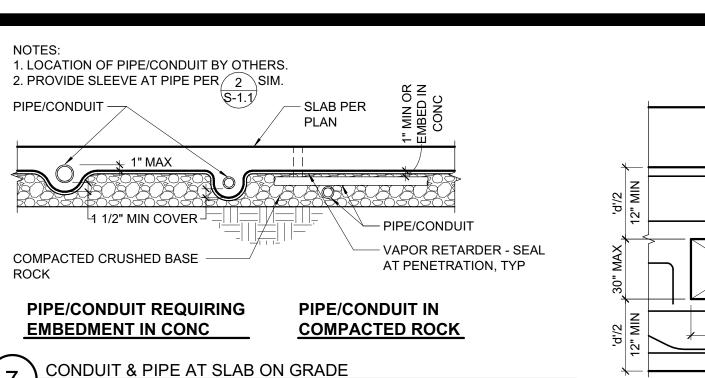
FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE FOUNDATION TRENCH WALLS ARE STABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING

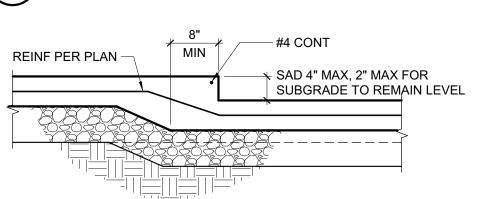
FORMWORK STAKES AT FOOTING

SCREW ANCHOR IN 2500 PSI MIN CONCRETE							
ANCHOR TYPE	ANCHOR AND PILOT HOLE DIA	MINIMUM EMBEDMENT H _{nom}	MINIMUM EDGE DIST C _{min}	MINIMUM SPCG S _{min}	MINIMUM CONCRETE DEPTH H _{min}	INSTALL TORQUE (FT-LB)	MAX INSTALL TORQUE (FT-LB)
SIMPSON	3/8"	2½"	13/4"	3"	4"	10	50
TITEN HD	1/2"	31/4"	1¾"	3"	5"	10	65
(ICC-ESR	5/8"	4"	1¾"	3"	6"	10	100
2713)	3/4"	5½"	13/4"	3"	8¾"	20	150
HILTI	3/8"	2½"	1½"	3"	4"	10	40
KH-EZ	1/2"	3"	1¾"	3"	4¾"	10	45
(ICC-ESR	5/8"	31/4"	13/4"	4"	5"	10	85
3027)	3/4"	4"	13/4"	4"	6"	20	115

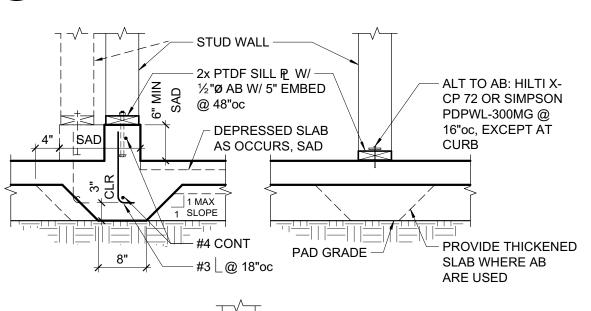


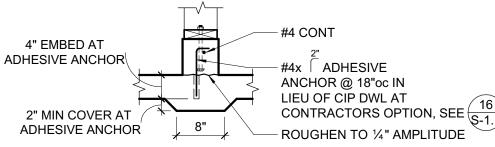
- INSTALL SCREW ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT INSTRUCTIONS. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705A OF THE CBC AND THE REQUIREMENTS OF THE ICC REPORTS. INSTALLED ANCHORS SHALL BRING CONNECTED PLIES INTO FIRM CONTACT, MEETING THE INSTALL TORQUE BUT NOT EXCEEDING THE MAXIMUM INSTALL TORQUE.
- 2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
- 3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
- 4. THE SPECIAL INSPECTOR MUST BE ON THE JOBSITE PERIODICALLY DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH. CONCRETE TYPE. CONCRETE COMPRESSIVE STRENGTH. DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND TIGHTENING TORQUE.
- . TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910A.5.
- SCREW ANCHOR IN CONCRETE 3/4" = 1'-0"





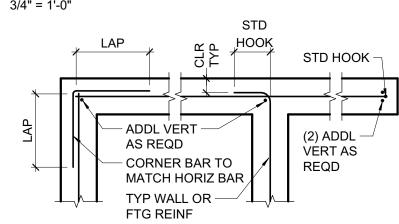
EPRESSED SLAB - 4" MAX



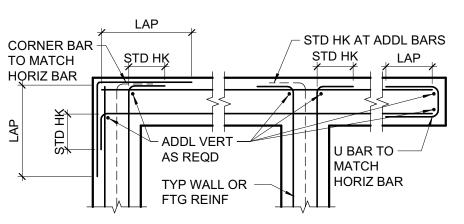


ALT CURB OPTION

DN-BEARING STUD WALL AT SLAB



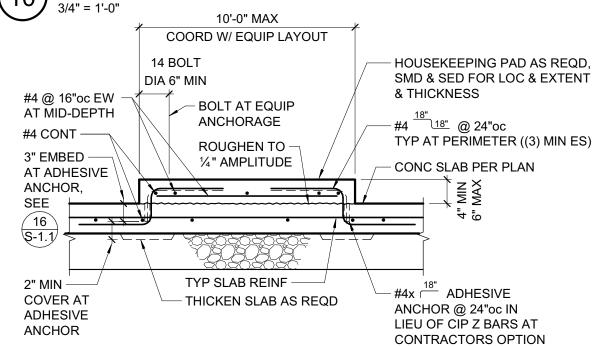
PLAN VIEW - SINGLE LAYER



PLAN VIEW - 2 OR MORE LAYERS

FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

TYPICAL CORNER, INTERSECTION AND END REINFORCING



TYPICAL HOUSEKEEPING PAD AT SLAB ON GRADE

TYP SLAB ON GR TYP SLAB ON GR - TYP REINF CONT THRU TYP REINF CONT THRU

- ½ "ø x 18" SMOOTH

KEY FROM -

BEVELED 2x4

ROD @ 18"oc

SLAB ON GRADE JOINTS

EXEMPT FROM DSA SS REVIEW PER IR A-22 MINIMUM BAR LAPS FOR REINFORCING STEEL **CONCRETE STRENGTH: 3000 PSI OR GREATER - (STAGGER SPLICES)**

LAP LENGTH | SIZE | LAP LENGTH SIZE LAP LENGTH #5 28" 34"

(CLASS B TOP BAR) BAR SPCG SHALL NOT BE LESS THAN 4x BAR DIA OR 4".

SIZE

#3

180° HOOK

135° STIRRUP

TIES #3, #4, #5

- PROVIDE REINF TO

MATCH FTG REINF

TIES AS OCCUR

STEP W/ BOT OF

- 'PIPE' IN BACKFILLED

ABV SLOPED LINE

FOR INFORMATION

NOT NOTED SEE 2

- WHERE TOP OF FTG

STEPS

REINF TO END AND HK

— ½" SQ FLEXIBLE

SAWCUT WITHIN 8 HOURS

OF CONC PLACEMENT.

COMPOUND TO FILL CUT

3/4" = 1'-0"

USE JT SEALANT

SEALANT

FORMED JOINT

TRENCH - LOCATE ONLY

TYP REINF

/ /3" CLR TYP

1. DO NOT LOCATE BLOCKOUT WITHIN 48" OF SHEAR WALL HOLD DOWN, IN FRAME

2. MINIMUM DISTANCE BETWEEN BLOCKOUTS OR OTHER PIPES TO BE 48".

18" MIN

NO 'PIPES'

PARALLEL TO

FTG THIS AREA

2x 'S'

NO DEPTH RESTRICTIONS ON

TRENCHES OR DEEPENING OF FTGS

OUTSIDE THIS ZONE

18"

FOUNDATIONS OR COLUMN PAD FOOTINGS.

FOUNDATION BLOCKOUT

CONC FTG -

OR PAD FTG

DEEPEN FTG W/

TRENCH IS REQD

WHERE DEEPER L_____

SLAB, CURB OR STEMWALL

STD HK, TYP

REINF BARS TO

BE SAME SIZE

& NUMBER

AS TYP FTG

REINF

TRENCHING ADJACENT TO FOOTING

2H MIN

REMOVE ALL EARTH LOOSENED DURING

CAP

CONSTRUCTION/DOWEL JOINT

- PLASTIC CJ OR

1/8" MASONITE OR

½" TOOLED JT FILLED

W/ FLEXIBLE SEALANT

8" MIN 8" MIN

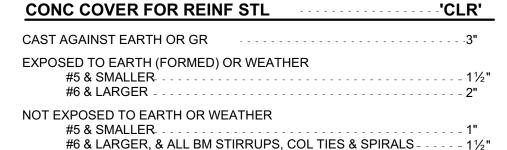
METAL JOINT

EXCAVATION AND FILL W/ CONCRETE.

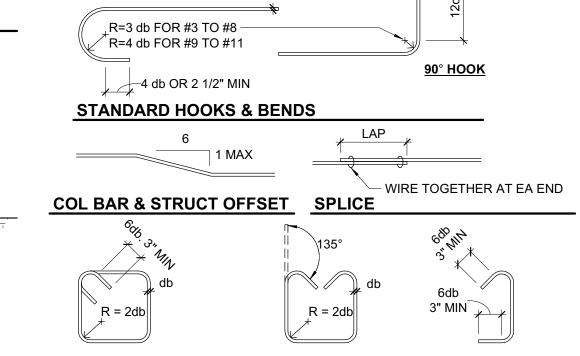
MIN

LEAN CONC

ABOUT



ALL REINF BARS SHALL EXTEND AS FAR AS POSSIBLE & END IN A STD 90° OR 180° HK UNLESS DETAILED OTHERWISE



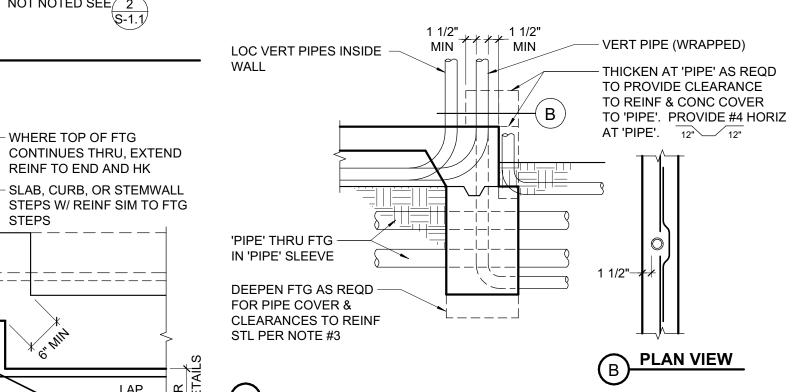
STIRRUP

#3, #4, #5

CROSSTIE

#3, #4, #5

TYPICAL REINFORCING DETAILS (f'c = 3000psi MIN)



48" MIN TO NEXT BUNDLE TYP REINF -DIA 'PIPE' THRU FTG ₹ PER NOTE #3 OPTIONAL BUNDLED 'PIPE' SLEEVE PER NOTE #3 "U" BARS, SIZE TO MATCH TYP FTG REINF (#6 MAX), - SEE NOTE #8 18"oc, (2) MIN EXCEPT WHERE FTG HAS ONLY (1) BAR T&B CONT FTG PAD FTG SIMILAR -

1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION. 2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS: a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO.

- SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT. b. WRAPPED VERTICAL PIPES: PROVIDE 1/8" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
- c. WRAPPED HORIZONTAL PIPES: PROVIDE 1/8" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO. d. UNDERGROUND FIRE LINES 4" AND LARGER:

1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE. 2. WRAPPED: PROVIDE 1/8" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.

3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3". CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48" GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS. . NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.

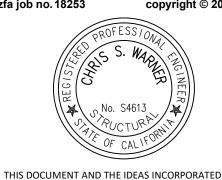
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL 7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF HOLDOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT

BRACED FRAMES. 8. PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"Ø, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" OF FOR EACH 6" INCREASE IN PIPE

DIAMETER, OTHERWISE DEEPEN FOOTING AS SHOWN PIPES THRU FOOTING



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FREEDOM HIGH SCHOOL

NEW **MAINTANENCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS ZFA NO: ENGR / PM: KPB / AIZ

DRAWING SCALE: As indicated 61721-0069

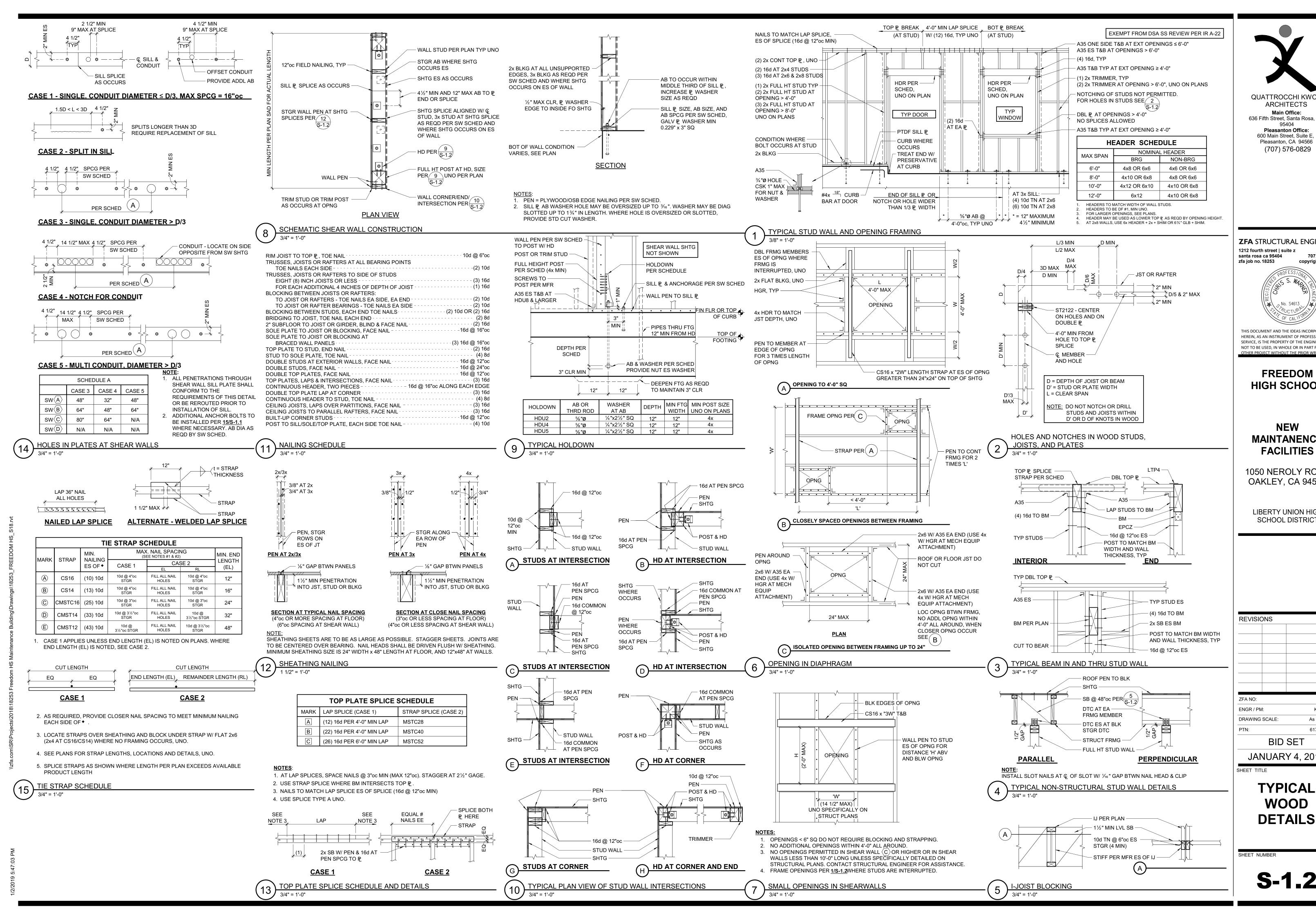
BID SET

JANUARY 4, 2019 SHEET TITLE

TYPICAL

CONCRETE **DETAILS**

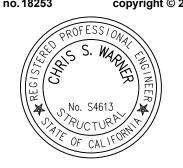
SHEET NUMBER



QUATTROCCHI KWOK **ARCHITECTS** Main Office: 636 Fifth Street, Santa Rosa, CA

95404

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FREEDOM HIGH SCHOOL

NEW MAINTANENCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

18253 KPB / AIZ DRAWING SCALE: As indicated

> 61721-0069 BID SET

JANUARY 4, 2019

TYPICAL WOOD

SHEET NUMBER

TIE STRAP SCHEDULE						
MADIC	CTDAD	MIN.		(. NAIL SPACI EE NOTES #1 & #2)		MIN. END
MARK	STRAP	NAILING ES OF ◆	CASE 1	CAS	SE 2	LENGTH
		ES OF *	CAGLI	EL	RL	(EL)
A	CS16	(10) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	12"
B	CS14	(13) 10d	10d @ 4"oc STGR	FILL ALL NAIL HOLES	10d @ 4"oc STGR	16"
©	CMSTC16	(25) 10d	10d @ 3"oc STGR	FILL ALL NAIL HOLES	10d @ 3"oc STGR	24"
(D)	CMST14	(33) 10d	10d @ 3½"oc STGR	FILL ALL NAIL HOLES	10d @ 3½"oc STGR	32"
E	CMST12	(43) 10d	10d @ 3½"oc STGR	FILL ALL NAIL HOLES	10d @ 3½"oc STGR	48"

1. CASE 1 APPLIES UNLESS END LENGTH (EL) IS NOTED ON PLANS. WHERE END LENGTH (EL) IS NOTED, SEE CASE 2.

	SHEAR WALL SCHEDULE					
sw	APA RATED	NAILING		ORAGE OLT FDN	REMARKS	
	SHEATHING	(PEN)	2x SILL	3x SILL		
$\langle A \rangle$	¹⁵ ⁄ ₃₂ " (32/16) EXP 1	10d @ 6"oc	32"oc	48"oc		
$\langle B \rangle$	¹⁵ / ₃₂ " (32/16) EXP 1	10d @ 4"oc	24"oc	32"oc	3x MIN AT ALL ADJOINING	
$\langle c \rangle$	¹⁵ / ₃₂ " (32/16) EXP 1	10d @ 3"oc	16"oc	24"oc	PANEL EDGES	

CONTINUOUS FOOTING SCHEDULE				
MARK	'b'	'd'	REINF 'a'	NOTES
CF18	18"	18"	(2) #5 T&B	PROVIDE #3 TIES @ 24"oc
CF36	36"	18"	(5) #5 T&B	PROVIDE #3 TIES @ 24"oc

	PAD FOOTING SCHEDULE				
I	MARK	SIZE	REINFORCING		
	F2.0	2'-0" SQ x 18" DEEP	(3) #5		
	F3.0	3'-0" SQ x 18" DEEP	(4) #5		
	F5.0	5'-0" SQ x 18" DEEP	(6) #5 T&B		

PAD FOOTING SCHEDULE					
MARK	SIZE	REINFORCING			
F2.0	2'-0" SQ x 18" DEEP	(3) #5			
F3.0	3'-0" SQ x 18" DEEP	(4) #5			
EE 0	EL 011 00 4011 DEED	(O) UE TOD			

FOUNDATION ANCHORAGE AND FOOTINGS ARE SIZED FROM APPROXIMATE METAL BUILDING REACTIONS DETERMINED BY ZFA. ADJUSTMENTS TO THIS PLAN MAY BE MADE ONCE THE METAL BUILDING DESIGN IS FINALIZED AND FINAL DESIGN LOADS ARE PROVIDED TO ZFA. THE FOUNDATION AND ANCHORAGE DESIGN DBL WIDE CURB AT S-4.1 BATHROOM, SAD SHOWN IS NOT INTENDED FOR CONSTRUCTION. CBSQ POST BASE TYP SEE 7 SIM 6" SEISMIC GAP -TYP ALL SIDES AT MEZZ 2 HDU2 EE A 16'-0" 3 TYP AT MBM WALL FTG UNO — CONC SLAB PER S-0.1 F5.0 TYP UNO 3 TYP AT MBM COL FTG UNO - CONTROL JT PER S-0.1

FOUNDATION

PAD FOOTING SCHEDULE						
MARK	SIZE	REINFORCING				
F2.0	2'-0" SQ x 18" DEEP	(3) #5				
F3.0	3'-0" SQ x 18" DEEP	(4) #5				
F5.0	5'-0" SQ x 18" DEEP	(6) #5 T&B				

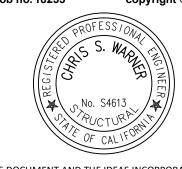
PLAN NOTES:

- 1. REFER TO SHEETS <u>S-0.1</u>, <u>S-1.1</u>, AND <u>S-1.2</u>, FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
- 2. DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- 3. SEE D/S-0.1 AND DETAILS FOR CURB LOCATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
- 4. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. MECHANICAL, ELECTRICAL AND PLUMBING PENETRATIONS THROUGH WALLS, ROOFS OR FLOORS SHALL BE PER REFERENCES BELOW UNLESS SHOWN AND DETAILED OTHERWISE ON THE STRUCTURAL PLANS. NOTIFY ARCHITECT/ENGINEER PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.
 - PIPES THROUGH FOOTINGS SHALL BE PER 2/S-1.1 AND 3/S-1.1.
 - PIPES PARALLEL TO FOOTINGS SHALL BE PER 4/S-1.1.
 - PIPES AT SLAB ON GRADE SHALL BE PER 7/S-1.1.
 - PENETRATIONS THROUGH SHEAR WALLS SHALL BE PER 7/S-1.2.
 - PENETRATIONS THROUGH FLOORS/ROOFS SHALL BE PER 6/S-1.2.
- 5. SEISMIC GAPS WHERE NOTED ARE DIMENSIONED CLEAR BETWEEN WALL FINISHES. THIS GAP TO BE MAINTAINED ENTIRELY CLEAR TO ALLOW FOR DIFFERENTIAL BUILDING MOVEMENT. NO PIPES, CONDUITS, ETCETERA SHALL BE LOCATED WITHIN THE GAP. PROVIDE FLEXIBLE COUPLINGS AT ALL UTILITIES CROSSING SEISMIC

GAPS.							
PLAN LEGEND							
SYMBOL	REFERENCE DETAIL	DESCRIPTION					
88)—		INDICATES GRIDLINE					
		INDICATES FOUNDATION.					
CF24		INDICATES CONTINUOUS FOOTING SIZE AND REINFORCING PER SCHEDULE.					
F2.0		INDICATES PAD FOOTING SIZE AND REINFORCING PER SCHEDULE.					
	<u>1/S-1.2</u>	INDICATES STRUCTURAL WALL.					
A 10'-0"	8/S-1.2 G/S-0.1	INDICATES SHEAR WALL TYPE AND MINIMUM WALL LENGTH. SYMBOL LOCATION INDICATES SHEATHED FACE OF WALL UNLESS NOTED OTHERWISE.					
	<u>E/S-0.1</u>	INDICATES WOOD POST.					
⊠•	<u>9/S-1.2</u>	INDICATES POST WITH HOLDOWN. POSTS WITH HOLDOWN ARE FULL HEIGHT FROM SILL TO TOP PLATE.					
0, 🗆 , 📘		INDICATES STEEL COLUMN.					
<u></u>	<u>12/S-1.2</u>	INDICATES PANEL EDGE NAILING ALONG FULL LENGTH OF MEMBER.					
E	<u>E/S-0.1</u>	INDICATES HANGER.					
A	<u>13/S-1.2</u>	INDICATES TOP PLATE SPLICE. SPLICE TYPE SHALL OCCUR ALONG THE ENTIRE LENGTH OF THE WALL, UNO. PROVIDE SPLICE TYPE 'A' IF NOT NOTED ON PLANS.					
A 4'-0"	<u>15/S-1.2</u>	INDICATES TIE STRAP. SEE SCHEDULE FOR STRAP, NAILING AND LENGTH.					
Â	<u>1/S-4.1</u>	INDICATES THRUST ANGLE CONFIGURATION AT MBM COLUMN FOOTING					

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LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS 18253 ZFA NO:

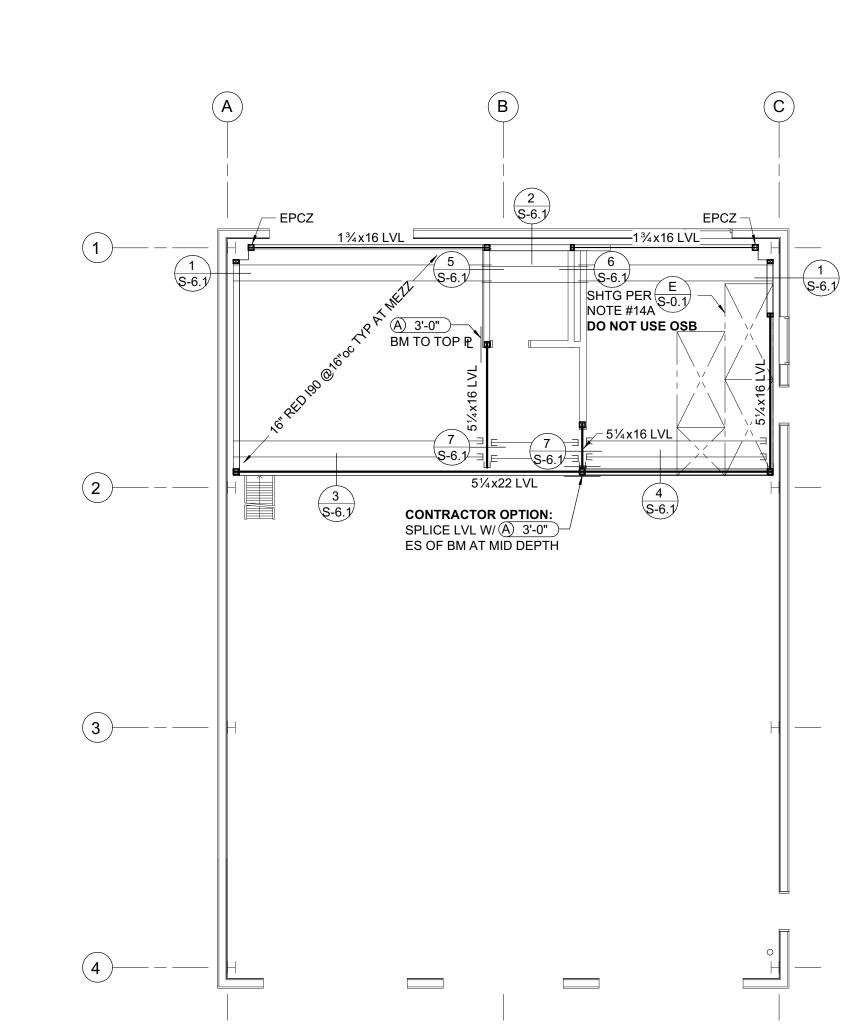
ENGR / PM: KPB / AIZ DRAWING SCALE: 61721-0069

BID SET

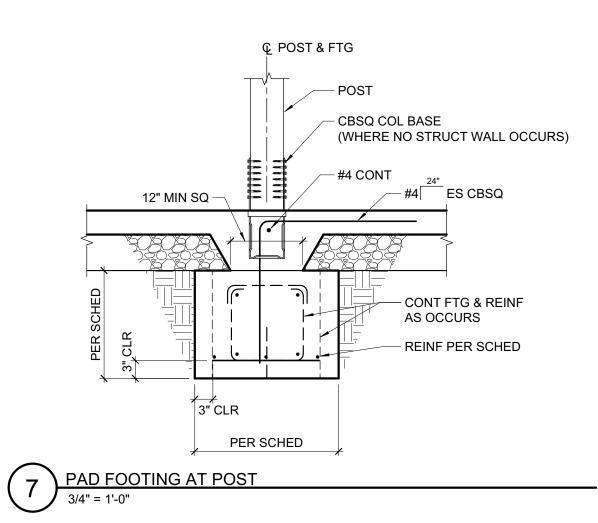
JANUARY 4, 2019 SHEET TITLE

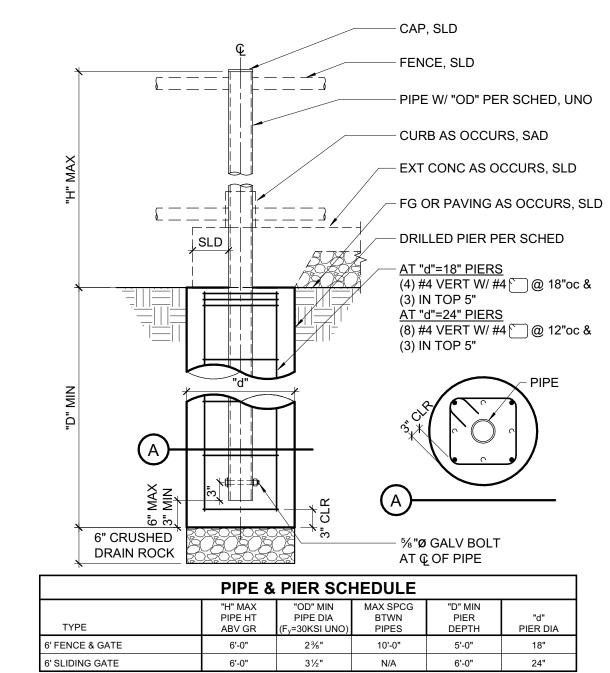
FOUNDATION AND MEZZANINE **PLANS**

S-2.1



MEZZANINE FRAMING

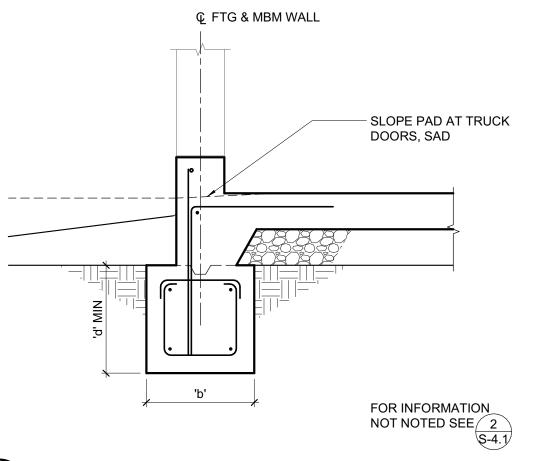




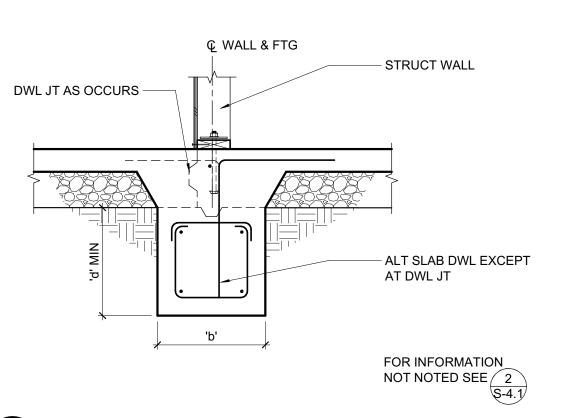
- NOTES:

 1. IF GROUND WATER IS ENCOUNTERED AT PIERS CONSULT GEOTECHNICAL
- ENGINEER FOR PEIR CASTING REQUIREMENTS.WINDSCREENS, PRIVACY NETTINGS, AND SLATS ARE ONLY ALLOWED WHERE SPECIFICALLY NOTED.

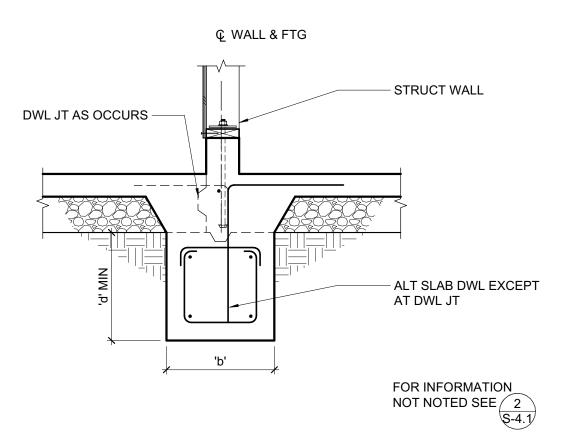




3) TYPICAL PERIMETER FOOTING

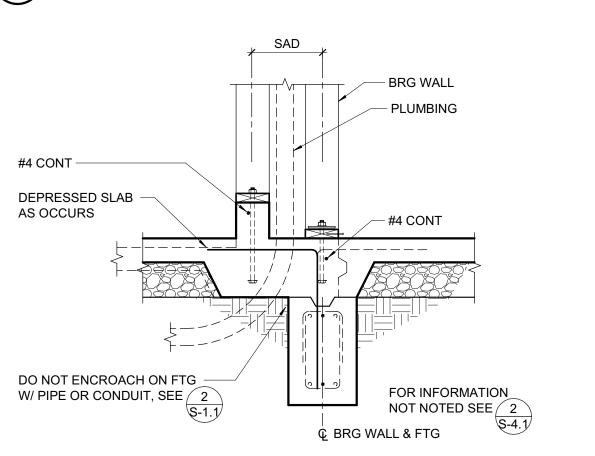


4 INTERIOR FOOTING AT SHEAR WALL WITHOUT CURB
3/4" = 1'-0"

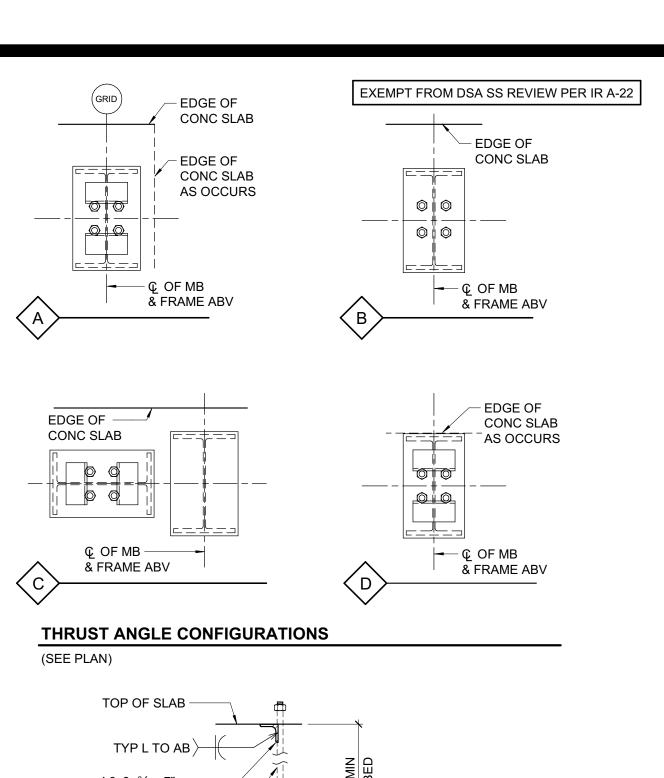


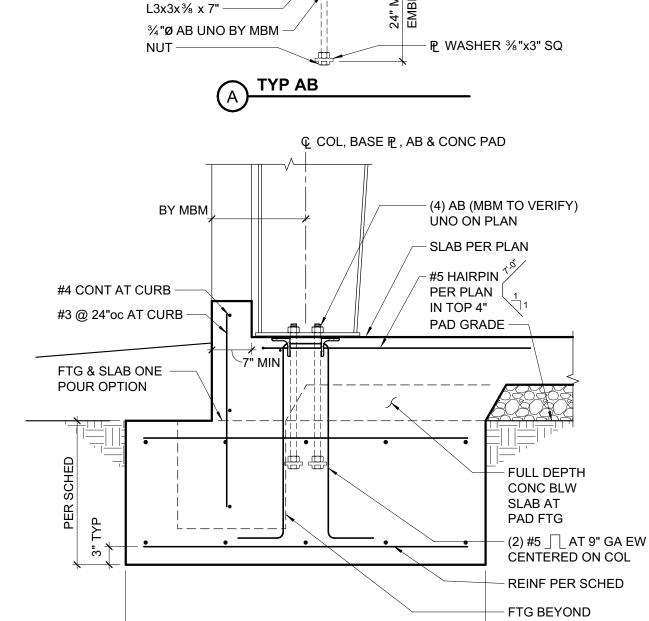
5 INTERIOR FOOTING AT SHEAR WALL WITH CURB

3/4" = 1'-0"

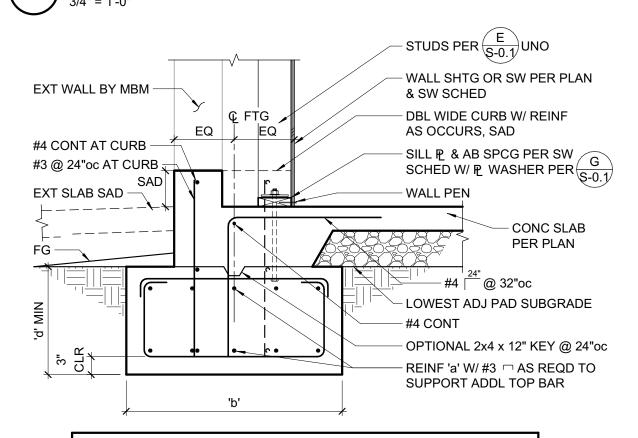


 $6) \frac{\text{FOOTING AT PLUMBING WALL}}{3/4" = 1'-0"}$





PER SCHED W/ CONT REINF PER 2 S-4.1 PAD FOOTING SCHEDULE REINFORCING MARK SIZE 2'-0" SQ x 18" DEEP F2.0 (3) #5F3.0 3'-0" SQ x 18" DEEP (4) #5F5.0 5'-0" SQ x 18" DEEP (6) #5 T&B METAL BUILDING EXTERIOR PAD FOOTING



CONTINUOUS FOOTING SCHEDULE					
MARK	'b'	'd'	REINF 'a'	NOTES	
CF18	18"	18"	(2) #5 T&B	PROVIDE #3 TIES @ 24"oc	
CF36	36"	18"	(5) #5 T&B	PROVIDE #3 TIES @ 24"oc	

2 EXTERIOR FOOTING AT MEZZANINE
3/4" = 1'-0"





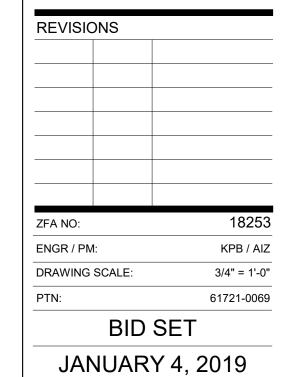
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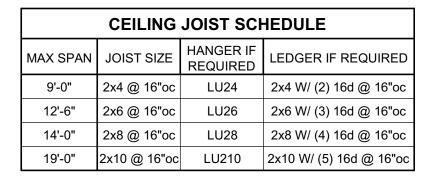


FOUNDATION DETAILS

SHEET NUMBER

SHEET TITLE

S-4.1

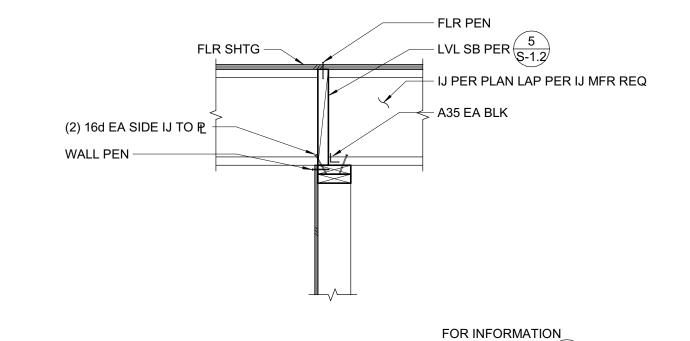


1. CEILING JOIST SCHEDULE IS BASED ON LL = 10 psf.

- 2. WHERE LEDGERS ARE NAILED THROUGH WALL SHTG, USE 20d NAILS IN LIEU OF 16d NAILS.
- 3. PROVIDE MIDSPAN BLOCKING AT 2x10 JOISTS.

CEILING JOIST SCHEDULE

NOT TO SCALE



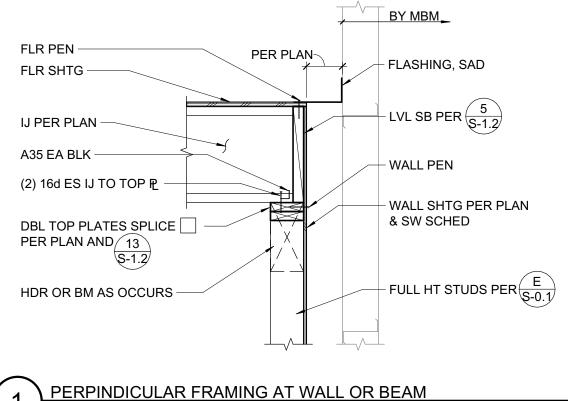
NOT NOTED SEE 1 PERPINDICULAR FRAMING AT INTERIOR WALL

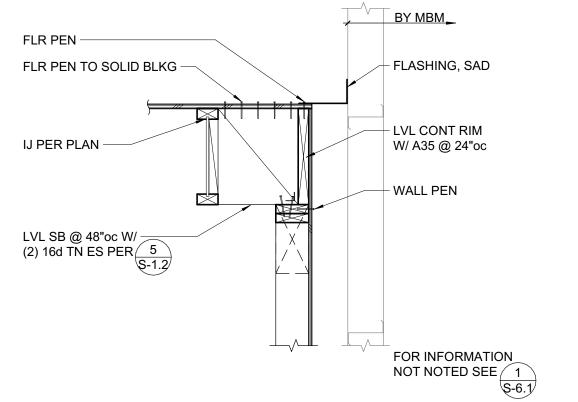
LAP IJ PER MFR REQ -

CONTRACTORS OPTION:

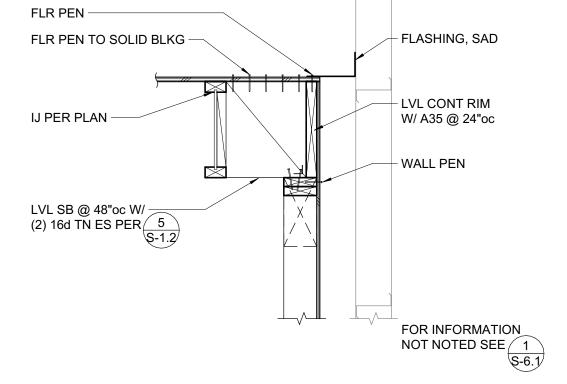
NON-BRG WALL PER 4 S-1.2

CONT IJ AT PLUMBING WALL

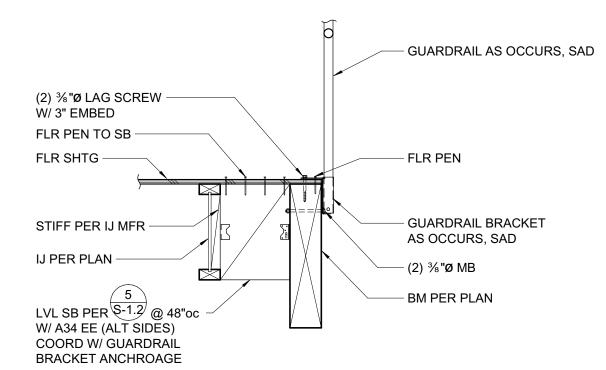




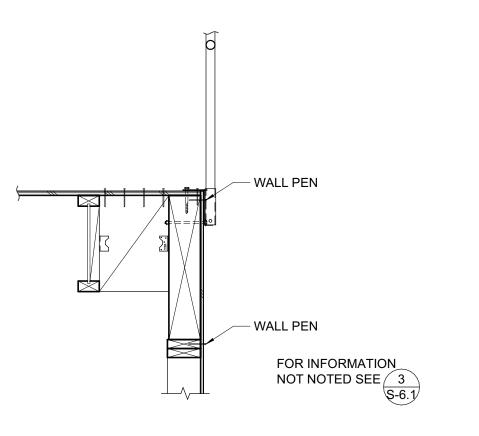
PARALLEL FRAMING AT WALL



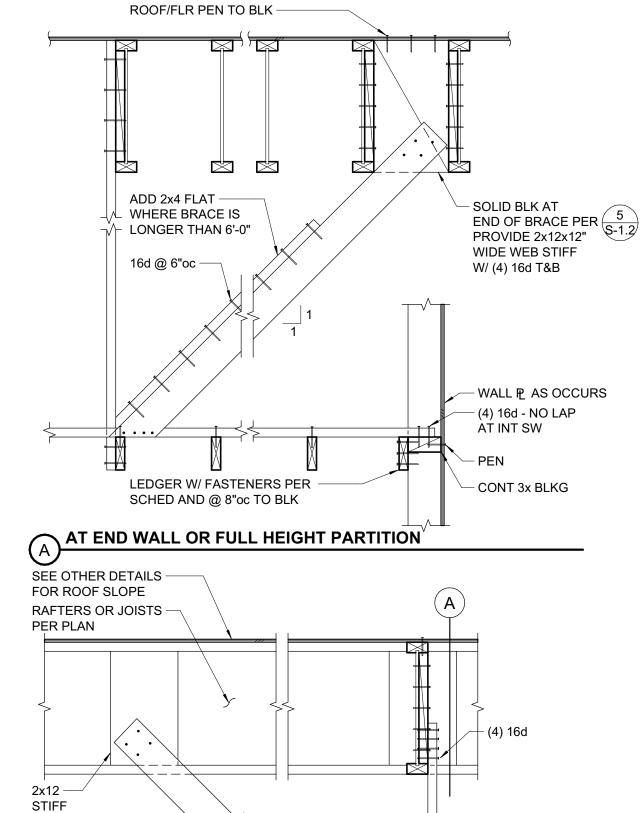
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PARALLEL FRAMING AT BEAM (GUARDRAIL)



PARALLEL FRAMING AT INTERIOR WAL



– SW AS OCCURS TO RUN THRU

HGR PER SCHED

LEDGER W/ FASTENERS

PER SCHED AND @ 8"oc

- H2.5A AT ALT JOISTS

CONT 3x BLKG

PEN -

WALL

SHTG AS

OCCURS

- ADD 2x4 FLAT W/ 16d @

— 2x6 STRONGBACK AT EA BRACE LINE W/ (2) 16d

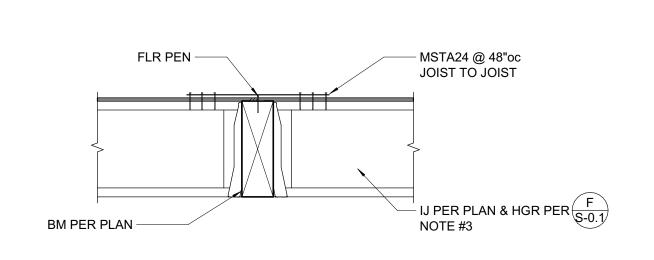
- 2x6 BRACE @ 12'-0"oc EA WAY & @ 6'-0"oc MAX FROM WALLS W/ (4) 16d AT EA JOIST

FOR CLG JST SCHED SEE (9) \$-6.1

CLG JST PER SCHED

AT EA JOIST

6"oc WHERE BRACE IS LONGER THAN 6'-0"



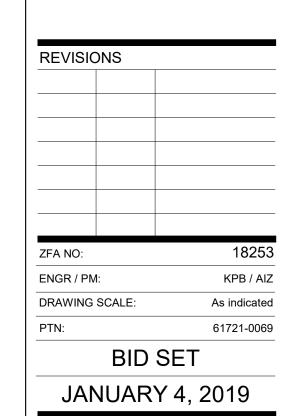
PERPINDICULAR FRAMING AT INTERIOR PLUMBING WALL

- BRG WALL

FOR INFORMATION

NOT NOTED SEE 5

PERPENDICULAR FRAMING AT BEAM



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FRAMING DETAILS

SHEET NUMBER

SHEET TITLE

S-6.1

SPLIT SYSTEM OUTDOOR UNIT											
			UNIT CAPACITIES (MBH) ELECTRICAL DATA								
MARK	MFR.	MODEL NO.	HEATING	COOLING	EER	V-Ø-HZ	MCA	MOCP	WEIGHT	SERVICE	REMARKS
HP 1	DAIKIN	RX24NMVJU	24.0	21.2	12.5	208-1-60	18.3	20	108	OFFICE/BREAK	
REMARKS: 1. PROVIDE WITH ALL NECESSARY REFRIGERATION PIPING & APPURTENANCES; R410A REFRIGERANT											

SPLIT SYSTEM INDOOR UNIT								
MARK	MFR	MODEL	AIRFLOW	FILTER	WEIGHT	SERVICE	REMARKS	
FC 1	DAIKIN	FTX24NMVJU	745 CFM	WASHABLE	27 lb	OFFICE /BREAK		
REMARKS: 1. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT 2. PROVIDE WITH WIRED T-STAT.								

	EXHAUST FAN SCHEDULE											
				FAN	INLET ELECTRICAL DATA							
MARK	MFR	MODEL NO	AIRFLOW	RPM	SONES	MOTOR HP	OPER. HP	WATTS	V-Ø-Hz	WEIGHT	SERVICE	REMARKS
EF-1	PANASONIC	FV-05-11VK1	110 CFM		0.3			6 W	120-1-60	11.00 lb	RESTROOM	1
EF-2	GREENHECK	SQ-160-VG	3000 CFM	1206		1	0.63		115-1-60	149.00 lb	GENERAL EXHAUST	2
REMARKS:												

CEILING FAN SCHEDULE										
				ELECTRICAL DATA						
MARK	MFR	MODEL NO	FAN RPM	MOTOR HP	WATTS	V-Ø-HZ	MCA	MOCP	WEIGHT	REMARKS
CF-1	BIG ASS FAN	BASIC 6	191	1	0.75 W	115-1-60		15	124.00 lb	1, 2
CF-2	BIG ASS FAN	BASIC 6	191 1 0.75 W 115-1-60 15 124.00 lb 1, 2							
REMARKS: 1. PROVIDE WITH VFD AND WALL CONTROL PANEL 2. PROVIDE WITH FIRE PANEL CONTROL INTEGRATION										

A

ELECTRIC RADIANT HEATING PANEL								
MARK	MODEL NRK MFR NUMBER V-Ø-HZ WATTS WEIGHT REMARK							
ERP-1	QMARK	CP371 120-1-60 375 15.00 lb 1, 2						
REMARKS: 1. PROVIDE WITH LINE VOLTAGE THERMOSTAT 2. PROVIDE WITH SURFACE MOUNTING KIT BY MANUFACTURE								

LIST OF APPLICABLE CODES AND STANDARDS:

TITLE 24, PART 2: 2016 CALIFORNIA BUILDING CODE (VOLUMES 1 & 2) TITLE 24, PART 3: 2016 CALIFORNIA ELECTRICAL CODE TITLE 24, PART 4: 2016 CALIFORNIA MECHANICAL CODE TITLE 24, PART 5: 2016 CALIFORNIA PLUMBING CODE

TITLE 24, PART 6: 2016 CALIFORNIA ENERGY CODE TITLE 24, PART 9: 2016 CALIFORNIA FIRE CODE

TITLE 24, PART 12: 2016 CALIFORNIA REFERENCED STANDARDS CODE

MEP COMPONENT ANCHORAGE NOTE:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26, AND 30.

- 1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
- 2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
- 3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- R COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25, AND 1616A.1.26.

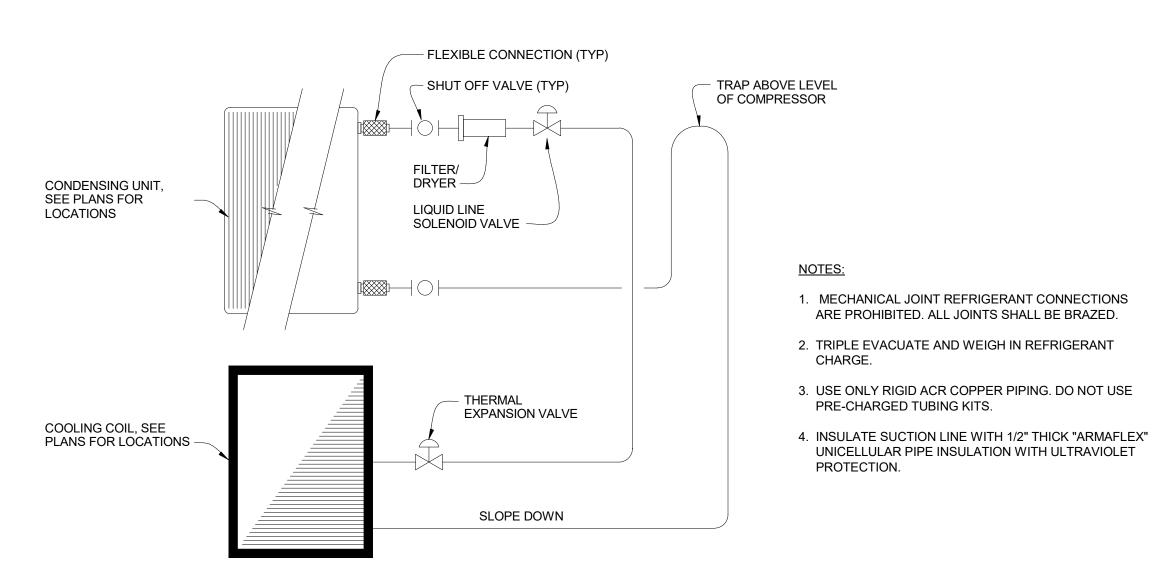
THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON PRE APPROVED INSTALLATION GUIDE (e.g. SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEM. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL/PLUMBING/DUCTS

PP	D	-OPTION 1:	DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
DD	abla		SHALL COMPLY WITH THE OSHPD PRE-APPROVAL

M PP D OPTION 2: SHALL COMPLY WI (OPM #) # 0043-13 M PP D -OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT

MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA, FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT APPLICABLE SEISMIC HAZARD LEVEL ____ AND CONNECTIONS LEVEL ____ FOR THE PROJECT AND



REFRIGERANT PIPING DIAGRAM

VD 1 **\Phi** POC

POD

SAD

SYMBOL

 $\overline{X-X}$

DN

AIR TERMINAL SCHEDULE MANUFACTURER: TITUS (EXCEPT AS NOTED) SPIRAL DUCT |) ←/-SDG

MECHANICAL LEGEND

EQUIPMENT TYPE

SHEET NUMBER

EQUIPMENT NUMBER

DETAIL / DRAWING NUMBER

SECTION THRU SUPPLY AIR

SECTION THRU RETURN AIR

SLOPE DUCT DOWN OR UP

FLEXIBLE DUCT CONNECTION

IN DIRECTION OF FLOW

ACOUSTICAL LINING

VOLUME DAMPER

FIRE DAMPER

TURNING VANES

FLEXIBLE DUCT

45° RECTANGULAR DUCT TAKE-OFF

90° TURN - ROUND DUCT

90° RADIUS TURN - ROUND

OR RECTANGULAR DUCT

SQUARE TO ROUND DUCT TRANSITION

DUCT TRANSITION

RECTANGULAR DUCT 90° SPLIT

ACCESS PANEL

HORSEPOWER

THERMOSTAT @ 46" AFF MAX TO CENTER LINE

POINT OF CONNECTION

POINT OF DEMOLITION

BRAKE HORSEPOWER

SEE CIVIL DRAWINGS

ABOVE FINISH CEILING

PRICE SDGER

SEE ARCHITECTURAL DRAWINGS

SEE STRUCTURAL DRAWINGS

45° ROUND DUCT TAKE-OFF

OR OUTSIDE AIR DUCT

OR EXHAUST AIR DUCT

ROUND DUCT DOWN

DESCRIPTION

ABBREVIATION

SA OR OA

RA OR EA

DN OR UP

NOTES: 1. ADAPTER NEEDED FOR TRANSITION FROM SQUARE NECK TO ROUND DUCT. 2. SIZE (NECK/FACE) TYPE CFM (NO. OF THROW) FACE SIZE FOR T-BAR CEILING ONLY

RETURN/EXHAUST

BLDG 'MECHANICAL' SHEET LIST

	BEBS MESHAMOAL SHEET EIST
M1.1	MECHANICAL SCHEDULES & LEGENDS
M2.1	MECHANICAL PLANS
M4.1	MECHANICAL DETAILS
M4.2	MECHANICAL DETAILS



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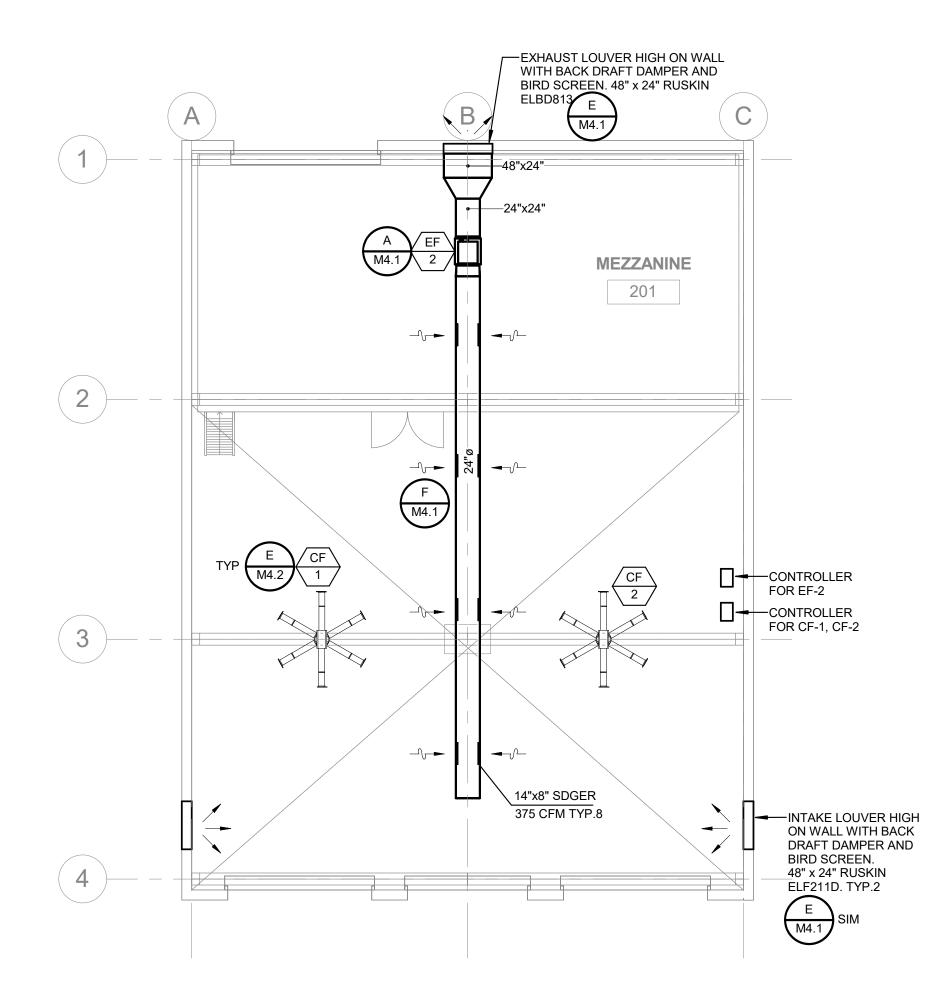
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> LIBERTY UNION HIGH SCHOOL DISTRICT

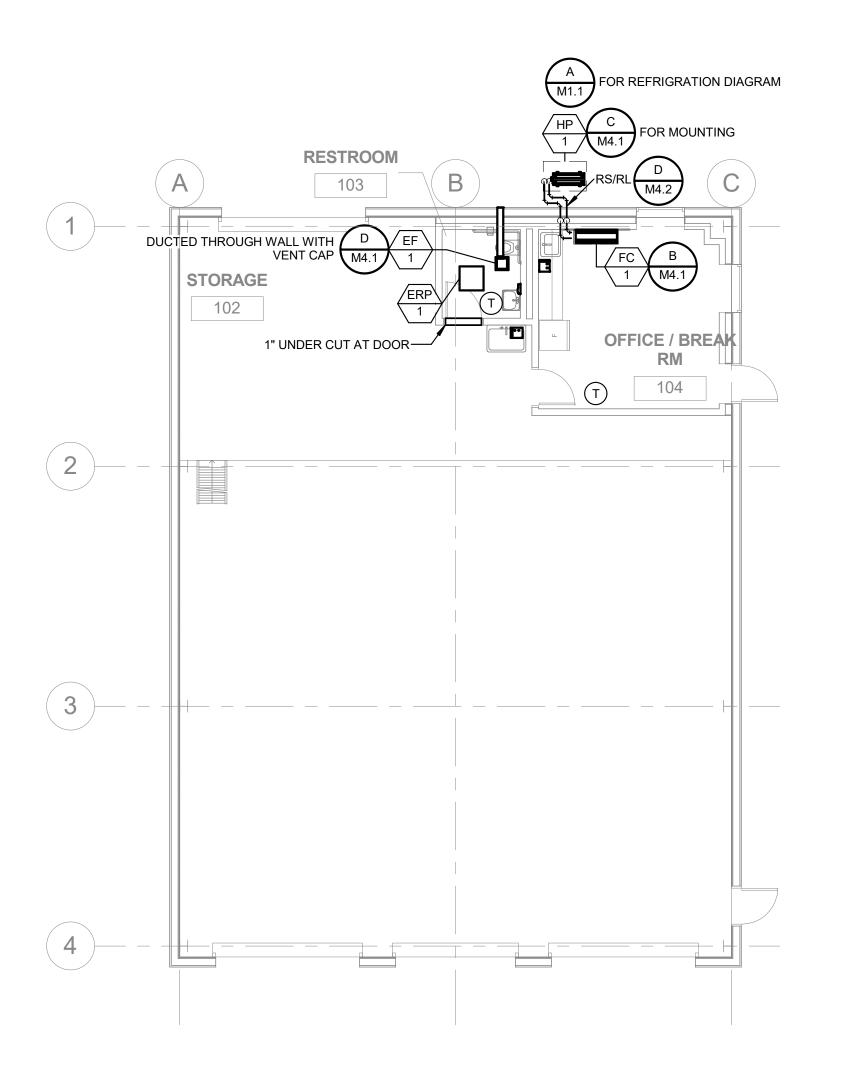
ARCH PROJECT NO: 1739.02 Author DRAWN BY: DRAWING SCALE: 12" = 1'-0" 61721-0069

DSA SUBMITTAL NOVEMBER 2, 2018

MECHANICAL SCHEDULES & LEGENDS







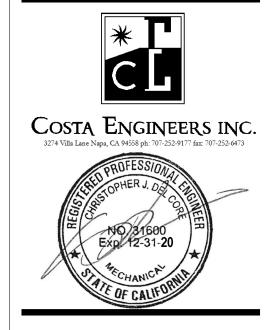
1 MECHANICAL FIRST FLOOR LEVEL
1/8" = 1'-0"

GENERAL NOTES

- 1. FOR MECHANICAL GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET M1.1
- 2. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL WORK WITH OTHER TRADES.
- 3. PATCH ALL WALLS, CEILINGS, ROOF AND OTHER SURFACES TO MATCH EXISTING CONDITIONS.



(707) 576-0829



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WALL LEGENDS

	ARCH PROJECT NO:	1739.02				
_	DRAWN BY:	Author				
	DRAWING SCALE:	1/8" = 1'-0"				
	PTN:	61721-0069				
	DSA SUBMITTAL					

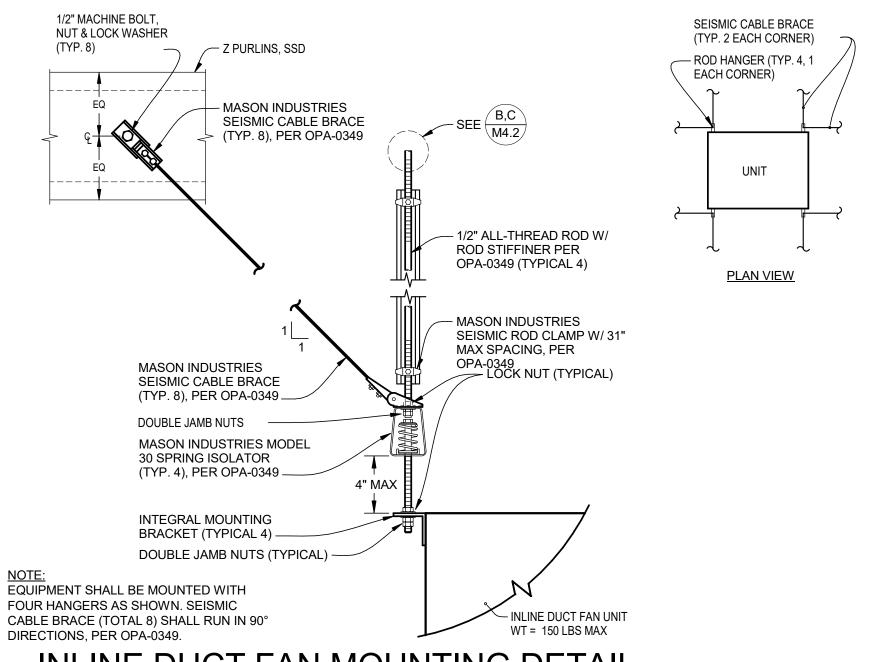
NOVEMBER 2, 2018

SHEET TITLE

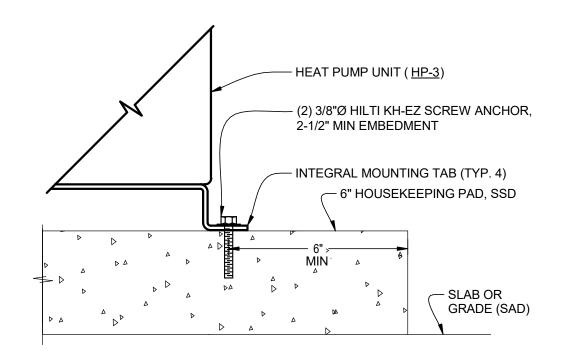
MECHANICAL PLANS

SHEET NUMBER

M2.1



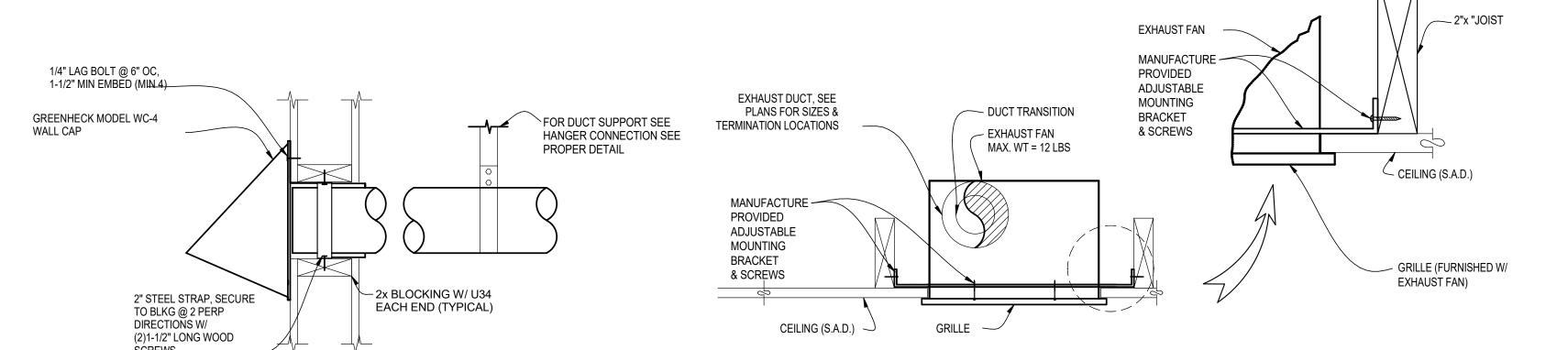
3/8" LAG BOLT & LOCK WASHER WITH 3" MINIMUM EMBEDMENT THRU INTEGRAL MOUNTING PLATE (TYP. 3). PRE-DRILL BLOCKING TO 75% OF SHANK DIAMETER & LUBRICATE WITH SOAP. — STUD WALL, SAD 4x4 BLOCKING (AS REQUIRED) WITH A34 EACH - REFRIGERANT & CONDENSATE PIPING ALONG WALL & UP THRU ROOF END, EACH SIDE (TYPICAL) - 18 GAUGE WELDED STAINLESS STEEL COVER FOR SIDE UTILITY CONNECTIONS AIR FLOW FAN COIL UNIT - MOUNT WITH 4" MINIMUM CLEAR BELOW CEILING PLAN VIEW



INLINE DUCT FAN MOUNTING DETAIL

WALL-MOUNTED FAN COIL MOUNTING DETAIL

HEAT PUMP MOUNTING DETAILS



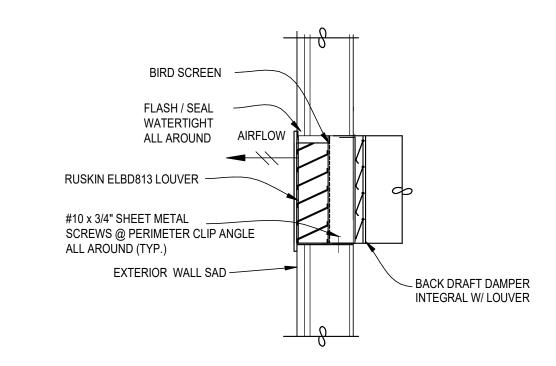
RECTANGULAR GSM DUCT

- 3/8" ALL-THREAD ROD (TYPICAL)

SCREW

ROD STIFFENER WHERE ANGLE

SCALE: NONE



CEILING EXHAUST FAN MOUNTING DETAIL

SEE B,C M4.2

RECTANGULAR GALVANIZED

SHEETMETAL DUCT

3/8" ALL-THREAD ROD

(TYPICAL)

- 3/8" ALL-THREAD ROD LATERAL BRACE, SEE APPROPRIATE BRACE 12" MAX TO BOTTOM OF - NUTS & WASHERS CONN ROOF STRUCT DETAIL — DOUBLE JAM NUTS & WASHERS - 22 GA x 2" WIDE GALVANIZED SHEETMETAL STRAP DUCT WITH 2" WIDE GALV GSM STRAP

TRAPEZE LOAD & SUPPORT CONDITIONS:

HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2"□ ALL-THREAD TO ROOF STRUCTURE NOT HEAVY: LESS THAN 645 LBS PER TRAPEZE: 3/8"□ ALL-THREAD TO ROOF STRUCTURE

BACKDRAFT DAMPER LOUVER

TABLE-1					
ANGLE (INCHES)	MAX LENGTH (INCHES)				
1-1/2 x 1-1/2 x 1/8	3'-0"				
2 x 2 x 3/16	6'-0"				
3 x 3 x 1/4	8'-0"				

	MINIMUM ROD SIZES	PIPE DIAMETER
MAX LENGTH	(INCHES)	(INCHES)
(INCHES)	2 / 2 !!	
	3/8"	2" & SMALLER PIPE
3'-0"	1/2"	2-1/2" & 3" PIPE
6'-0"	E /O!!	4" DIDE
8'-0"	5/8"	4" PIPE

BRACE OCCURS (TYP.) 12" MAX TO BOTTOM OF RECTANGULAR GALV. **NUTS & WASHERS** ROOF STRUCT LATERAL & LONGITUDINAL BRACING SHTMTL DUCT -(TYPICAL) @ 20'-0" OC OR WHERE REQUIRED, SEE APPROPRIATE SEISMIC CONNECTION 2" x 2" x 1/4" ANGLE - NUTS & WASHERS (TYP.) DOUBLE JAM NUTS & ✓ "B-LINE" ANGLE CLIP (TYP.) WASHERS (TYPICAL) ____ 2" x 2" x 1/4" ANGLE RECTANGULAR DUCT (EXPOSED/CONCEALED) - DOUBLE JAM NUTS & WASHERS (TYPICAL) (WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQFT)



22 GAx2" WIDE GALV SHEETMETAL STRAP SPIRAL SHTMTL DUCT

> ROUND DUCT (EXPOSED/CONCEALED) (WITH CROSS-SECTIONAL AREA SMALLER THAN 6 SQFT)

ROUND DUCT (EXPOSED/CONCEALED)

(WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQFT)

DUCT SUPPORT NOTES:

AREA, OR WEIGH 10 LB/FT OR LESS.

A. ALL STRAPS, RODS, TRAPEZE ANGLES AND TRAPEZE CHANNELS SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA REQUIREMENTS.

B. ALL BOLTS, NUTS, SCREWS AND OTHER FASTENING DEVICES SHALL BE LOAD-RATED AND SHALL MEET ALL CODE REQUIREMENTS AND SAFETY FACTORS WHICH APPLY.

C. WIRE, USED IN LIEU OF STRAPS AND RODS, IS NOT ALLOWED

E

WHERE APPLICABLE, INSTALL INSULATION AFTER INSTALLING DUCT HANGERS.

E. SUPPORTS SHALL BE PLACED AT 8'-0" ON CENTER (MAX) AND AT ALL CHANGES IN DIRECTION.

F. LATERAL BRACING REQUIRED ON DUCTS WITH CROSS-SECTIONAL AREA LARGER THAN 6 SQ FT

G. SEISMIC BRACING IS NOT REQUIRED AT HVAC DUCTS THAT ARE 6 FT SQ OR LESS IN CROSS-SECTIONAL

H. SUPPORTS SHALL BE PLACED AT 8'-0" ON CENTER (MAX) AND AT ALL CHANGES IN DIRECTION.

I. SEISMIC BRACING IS NOT REQUIRED AT HVAC DUCTS SUPPORTED BY HANGERS THAT ARE 12" OR LESS IN LENGTH FROM THE DUCT SUPPORT POINT TO THE SUPPORTING STRUCTURE. HVAC DUCTS SUPPORTED WITH ROD HANGERS WITH DIAMETER GREATER THAN 3/8 INCH SHALL BE EQUIPPED WITH SWIVELS TO PREVENT INELASTIC BENDING IN THE ROD.

J. HVAC DUCTS ARE FREE TO SWING AT 45° IN ANY HORIZONTAL DIRECTION WITHOUT COLLIDING WITH THE STRUCTURE, ARCHITECTURAL ITEMS OR OTHER MECHANICAL, PLUMBING OR ELECTRICAL ITEMS.

TYPICAL DUCT HANGER DETAILS

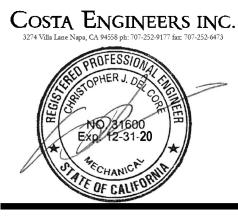
RECTANGULAR DUCT (EXPOSED/CONCEALED)

(WITH CROSS-SECTIONAL AREA SMALLER THAN 6 SQFT)

RECTANGULAR GALV. SHTMTL DUCT

QUATTROCCHI KWOK **ARCHITECTS** Main Office: 636 Fifth Street, Santa Rosa, CA 95404 **Pleasanton Office:** 600 Main Street, Suite E, Pleasanton, CA 94566 (707) 576-0829





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1050 NEROLY ROAD OAKLEY, CA 94561

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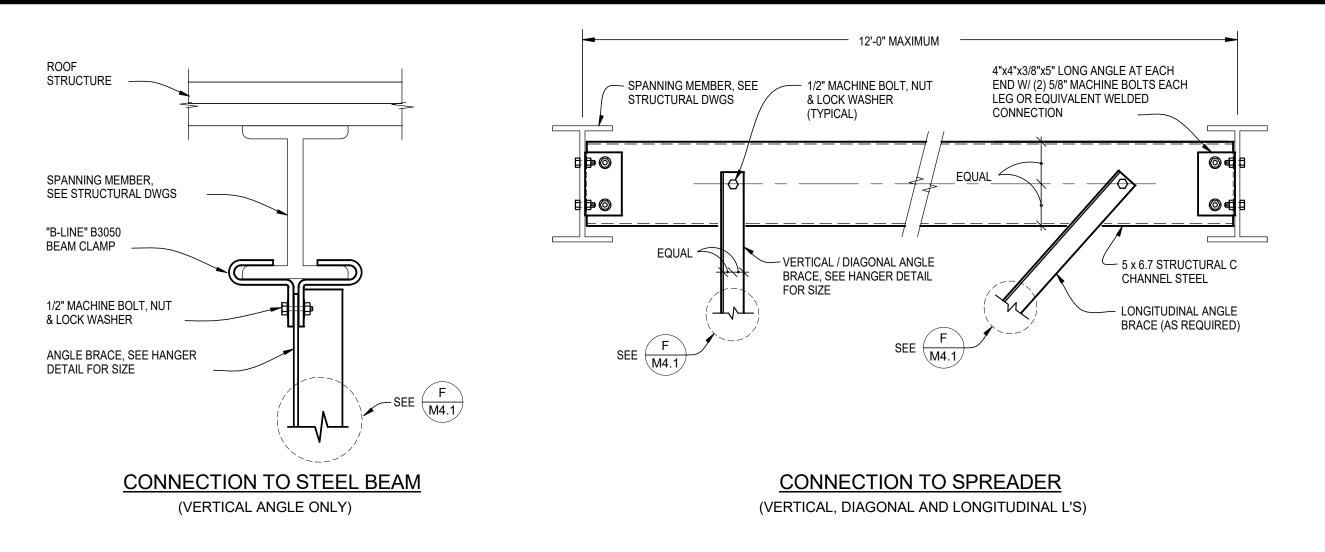
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DRAWN BY:	Author
DRAWING SCALE:	
PTN:	61721-0069

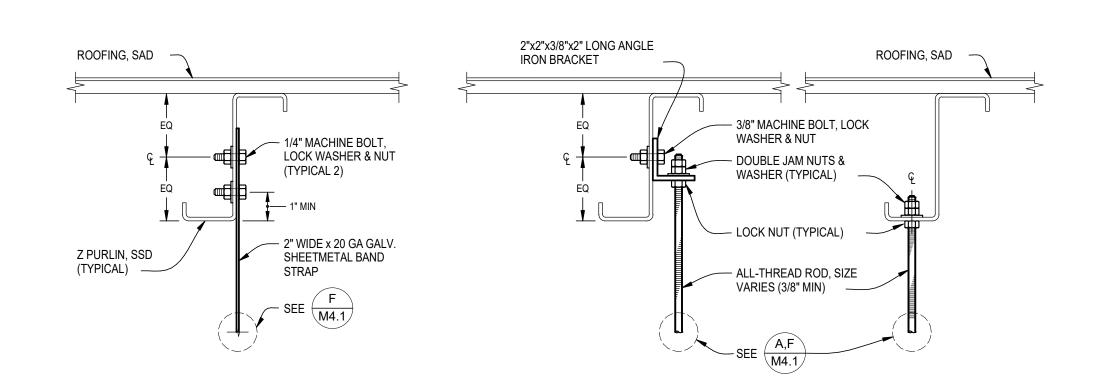
DSA SUBMITTAL

NOVEMBER 2, 2018

SHEET TITLE

MECHANICAL DETAILS





B TYPICAL HANGER CONNECTIONS @ Z PURLIN

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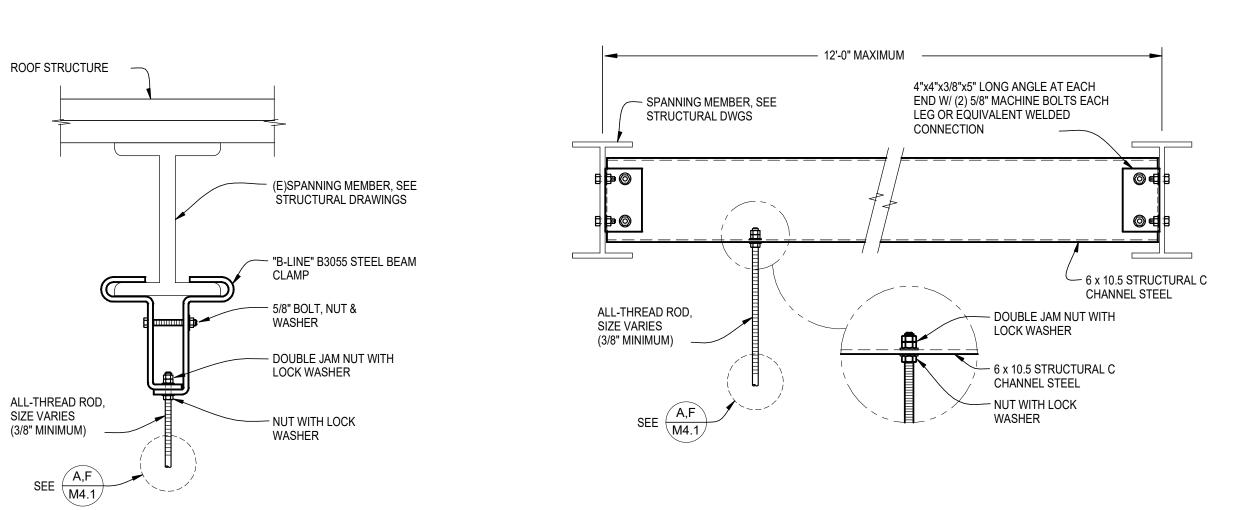
FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

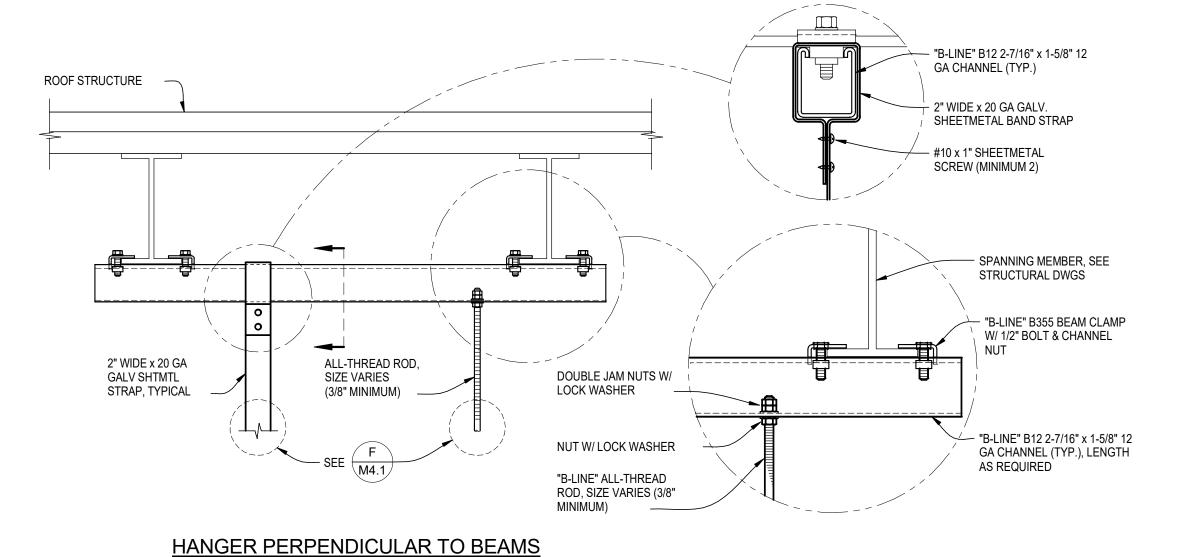
1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

TYPICAL SEISMIC BRACE CONNECTION DETAILS @ BEAMS SCALE: NONE



HANGER PERPENDICULAR TO BEAMS



TYPICAL HANGER CONNECTIONS @ BEAMS

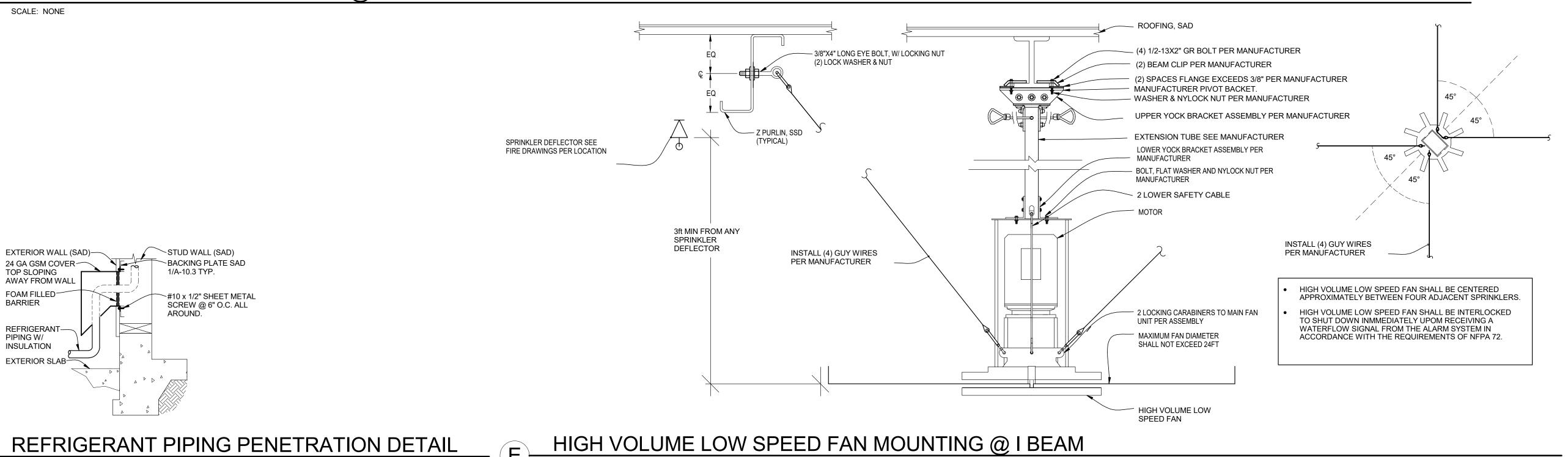
ALL-THREAD ROD,

BARRIER

INSULATION

HANGER PARALLEL TO BEAMS

SIZE VARIES



Author DRAWN BY: DRAWING SCALE: 61721-0069 DSA SUBMITTAL

1739.02

NOVEMBER 2, 2018

ARCH PROJECT NO:

MECHANICAL DETAILS

MARK	W	V	CW	HW	REMARKS
P-1	4"	2"	1 1/4"		WALL MOUNTED WATER CLOSET MANUAL LEVER HANDLE, ADA COMPLIANT
P-2	2"	1 1/2"	3/4"	3/4"	WALL MOUNTED; VITREOUS CHINA; METER PUSH BUTTON, 105°F MAX. TEMP., ADA COMPLIANT
P5-A	2"	1 1/2"	3/4"	3/4"	COUNTER MTD. SELF RIMMING; STAINLESS STEEL; GOOSENECK FAUCET, ADA COMPLIANT
P-5B	2"	2"	3/4"	3/4"	FREE STAND SINK W/ FAUCET
FD	3"	1 1/2"			FLOOR DRAIN; PROVIDE WITH TRAP PRIMER & ACCESS PANEL
HB-2			3/4"		EXTERIOR HOSE BIBB; BRONZE, NARROW WALL WITH VACUUM BREAKER

	ELECTRIC WATER HEATER SCHEDULE									
					RECOVER	E	LECTRICA	L		
				STORAGE	Y @ 60F°		No.		OPER.	
MARK	MANUF.	MODEL	TYPE	CAPACITY	RISE	V-Ø-HZ	Elements	WATTS	WEIGHT	LOCATION
EWH 1	CHRONOMITE	CM-12L/208	INSTANTANEOUS	0 gal		208-1-60	1	2,500 W	5.00 lb	
EWH 2	CHRONOMITE	CMT-2.5	TANK	2.5 gal		110/120-1-60	1	1,440 W	38.75 lb	
EWH 2	CHRONOMITE	CMT-2.5	TANK	2.5 gal		110/120-1-60	1	1,440 W	38.75 lb	

	<u>APPLICABL</u>						
	ART 2: 2016 CAI ART 3: 2016 CAI				& 2)		
TITLE 24, PA	ART 4: 2016 CAI ART 5: 2016 CAI	LIFORNIA MECI	HANICAL CO				
TITLE 24, PA	ART 6: 2016 CAI	LIFORNIA ENER	RGY CODE				
	ART 9: 2016 CAI ART 12: 2016 CA			TANDARDS (CODE		
MEP CON	<u>IPONENT A</u>	NCHORAG	E NOTE:				
INSTALLED I DETAIL IS IN THE FORCE	NICAL, PLUMBII PER THE DETA DICATED, THE AND DISPLACE HROUGH 1616	ILS ON THE DS FOLLOWING C EMENT REQUIF	SA APPROVEI COMPONENTS REMENTS PR	D CONSTRUC S SHALL BE / ESCRIBED IN	CTION DOCUM ANCHORED C I THE 2016 C	MENTS. WHE OR BRACED T	TO MEET
1.	ALL PERMANE	NT EQUIPMEN	T AND COMF	ONENTS.			
2.	TEMPORARY (WIRED) TO TH						
3.	MOVABLE EQU AND HEAVIER ATTACHMENT	THAN 400 POL	_	_		-	
STRUCTURE	VING MECHANI E, BUT THE ATT BLE CONNECTI O CONDUIT.	ACHMENT NE	ED NOT BE D	ETAILED ON	THE PLANS.	THESE COM	PONENT:
A.	COMPONENTS FEET OR LESS COMPONENT.	WEIGHING LE ABOVE THE A	ESS THAN 400 ADJACENT FL) POUNDS A OOR OR RO	ND HAVE A C OF LEVEL TH	ENTER OF M AT DIRECTL	IASS LOC Y SUPPO
B.	COMPONENTS SYSTEMS, LES FLOOR OR HU	SS THAN 5 POL	INDS PER FO				
INSTALLATION RESPONSIB DISTRICT ST	ELEMENTS TH ON SHALL BE S LE CHARGE OF RUCTURAL EN MENT HAVE BE	UBJECT TO TH R STRUCTURAL IGINEER. THE I	IE APPROVA _ ENGINEER PROJECT INS	L OF THE DE DELEGATED SPECTOR WI	SIGN PROFE RESPONSIBI LL VERIFY TH	SSIONAL IN (LITY AND TH IAT ALL COM	GENERAI IE DSA
PIPING, D	UCTWORK	, AND ELEC	CTRICAL E)ISTRIBU	TION SYST	EM BRAC	CING N
THE FORCE	TWORK, AND E S AND DISPLAC .6.8, 13.6.7, 13.6	EMENTS PRE	SCRIBED IN A	ASCE 7-10 SE	CTION 13.3 A	S DEFINED	IN ASCE
DISTRIBUTION PRE APPROSYSTEM INS	D OF SHOWING ON SYSTEMS A VED INSTALLA TALLATION GU ND DURING TH OF RECORD SH LOADS.	RE AS NOTED TION GUIDE (e. IIDE OR MANU E HANGING AN	BELOW. WHI g. SMACNA (AL SHALL BE ID BRACING	EN BRACING OR OSHPD O AVAILABLE OF THE DIST	AND ATTACH PM), COPIES ON THE JOBS RIBUTION SY	IMENTS ARE OF THE BRA SITE PRIOR T 'STEM. THE	BASED (CING O THE STRUCT(
X MECHAN	IICAL/PLUMBIN	G/DUCTS					
M PP	DO	PTION 1:		ON THE APP	ROVED DRA	WINGS WITH	PROJEC
MX PP	 	PTION 2:	SHALL CO	MPLY WITH	THE OSHPD F	RE-APPROV	'AL
M PP	= =	PTION 3:	(OPM #) # SHALL CO		THE SMACNA	SEISMIC RE	STRAINT
SPECIFICAL	GHPD EDITION (LY IN THE SMA DRAWINGS WI	CNA SEISMIC F	RESTRAINT N	MANUAL, OSH	IPD EDITION	ARE DETAIL	ED ON T

SYMBOL	ABBREVIATION	DESCRIPTION
$\langle x \rangle$		EQUIPMENT TYPE FOLUDMENT NUMBER
\ <u>x</u> /		EQUIPMENT NUMBER
X		DETAIL / DRAWING NUMBER
X-X		SHEET NUMBER
<u>x-xx</u>		FIXTURE TYPE/NUMBER
	(N)	NEW PLUMBING AND PIPING SHOWN HEAVY
	(E)	EXISTING PLUMBING AND PIPING SHOWN LIGHT
	SS	SANITARY WASTE ABOVE GROUND
I	SS	SANITARY WASTE BELOW GROUND
·	V	VENT PIPE
	CW	DOMESTIC COLD WATER PIPE
	HW HWR	DOMESTIC HOT WATER PIPE HOT WATER RETURN PIPE
-110°——	110°	TEMPERED HOT WATER PIPE
CA	CA	COMPRESSED AIR
D	CD	CONDENSATE DRAIN
V——	FW	FILTERED WATER
§——	G	NATURAL GAS PIPE
ID —— PG —	ID LPG	INDIRECT WASTE LIQUID PROPANE GAS
2—	N2	NITROGEN
20 —	N20	NITROUS OXIDE
OA	OA	OIL FREE AREA
02	O2	OXYGEN
w—	PW	PROCESS WASTE PIPE
VD —	RVD	RELIEF VALVE DISCHARGE
VL	RWL	RAIN WATER LEADER
SD —— 'AC ——	SD VAC	STORM DRAIN PIPE VACUUM LINE
/AC —	GV GV	GATE VALVE
~ ~	O V	GLOBE VALVE
o	BV	BALL VALVE
<u> </u>	BFV	BUTTERFLY VALVE
> ——	CV	CHECK VALVE
→		BALANCING VALVE
└	DDV/	GAS COCK OR STOP
\$ \$	PRV TV	PRESSURE REDUCING VALVE TEMPERING VALVE
<u> </u>	I V	STRAINER
<u>`</u>		UNION
<i>></i> — │		PRESSURE GAUGE AND COCK
<u> </u>	Р	PUMP
		THERMOMETER
	CO	CLEANOUT
<u> </u>	WCO FCO	WALL CLEANOUT FLOOR CLEANOUT
	COTG	CLEANOUT TO GRADE
	0010	PRESSURE GUAGE WELL ONLY (PETE'S PLUG)
<u> </u>	НВ	HOSE BIBB
		PIPE UP
—		PIPE DOWN
		BRANCH TOP CONNECTION
		BRANCH BOTTOM CONNECTION BRANCH SIDE CONNECTION
<u> </u>		CAP ON END OF PIPE
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
8		VALVE IN RISER
<u>, </u>		POINT OF CONNECTION
<u> </u>		
Y		POINT OF DEMOLITION
Ę		CENTER LINE
	AFF	ABOVE FINISHED FLOOR
	AFG AP	ABOVE FINISHED GRADE ACCESS PANEL
	BFF	BELOW FINISHED FLOOR
	CI COTG	CAST IRON CLEANOUT TO GRADE
	DMV	DRAIN, WASTE, AND VENT
	DN	DOWN
	DW DWG	DISHWASHER DRAWING
	(E)	EXISTING
	FCO	FLOOR CLEANOUT
	IE IW	INVERT ELEVATION INDIRECT WASTE
	(N)	NEW
	NIC NTS	NOT IN CONTRACT
•	NTS SA	NOT TO SCALE SHOCK ABSORBER
	SAD	SEE ARCHITECTURAL DRAWINGS
	~ ~ ~ -	SEE CIVIL DRAWINGS SEE ELECTRICAL DRAWINGS
	SCD SED	
	SCD SED SMD	SEE MECHANICAL DRAWINGS
	SED SMD SSD	SEE STRUCTURAL DRAWINGS
	SED SMD SSD TYP	SEE STRUCTURAL DRAWINGS TYPICAL
	SED SMD SSD	SEE STRUCTURAL DRAWINGS
	SED SMD SSD TYP UMC UPC UNO	SEE STRUCTURAL DRAWINGS TYPICAL UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE UNLESS NOTED OTHERWISE
	SED SMD SSD TYP UMC UPC	SEE STRUCTURAL DRAWINGS TYPICAL UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE

BLDG 'PLUMBING' SHEET LIST

P1.1 PLUMBING SCHEDULES & LEGENDS
P2.1 PLUMBING FLOOR PLANS
P2.2 PLUMBING ENLARGEMENT
P4.1 PLUMBING DETAILS

PLUMBING LEGEND







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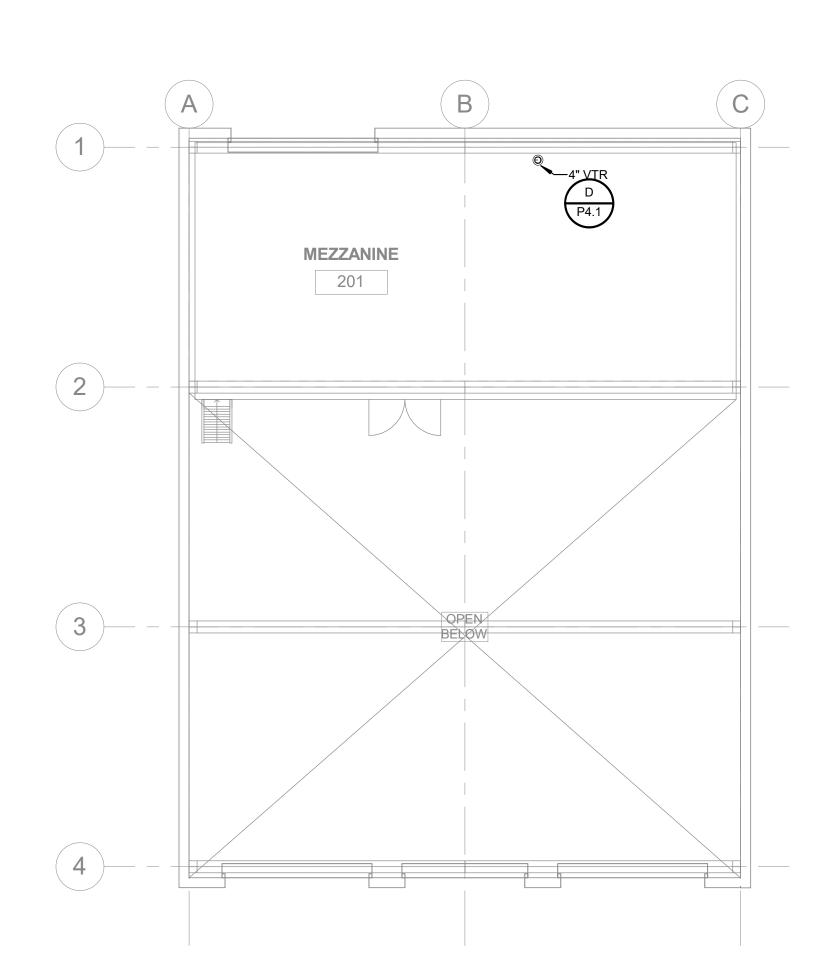
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DSA SUBMITTAL		

NOVEMBER 2, 2018

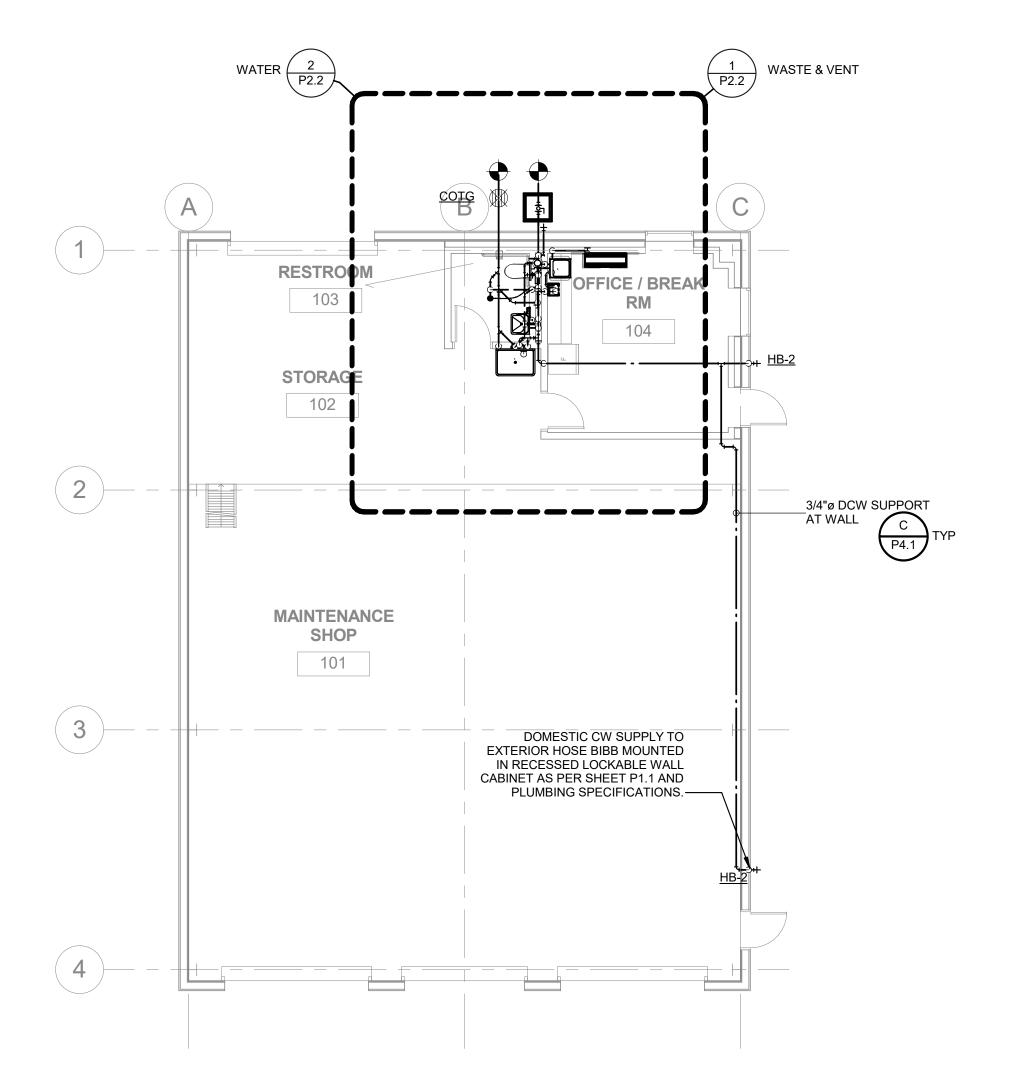
PLUMBING SCHEDULES & LEGENDS

SHEET NUMBER

P1.1





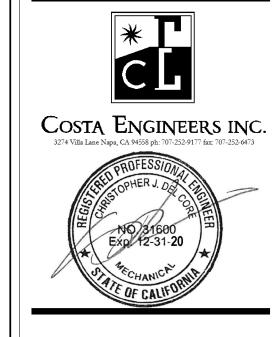


PLUMBING FIRST FLOOR LEVEL
1/8" = 1'-0"

GENERAL NOTES

- FOR PLUMBING GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET P1.1
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE PLUMBING WORK WITH OTHER
- 3 SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF PLUMBING FIXTURES.
- PROVIDE WALL CLEANOUTS FOR SINKS AND URINALS AS REQUIRED.
- 5. FOR ACCESSIBLE WATER CLOSETS, LOCATE VALVE HANDLE ON THE ACCESSIBLE SIDE PER ACCESSIBLE REQUIREMENTS.
- 6. ALL UNDERGROUND AND BELOW SLAB PIPINGSHALL BE INSTALLED NO LESS THAN MINIMUM BURY PER CODE. ALL PIPING THROUGH SLAB, BURIED OR UNDERNEATH FOUNDATION SSD





FREEDOM HIGH SCHOOL

NEW MAINTENANCE FACILITIES

1050 NEROLY ROAD **OAKLEY**, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

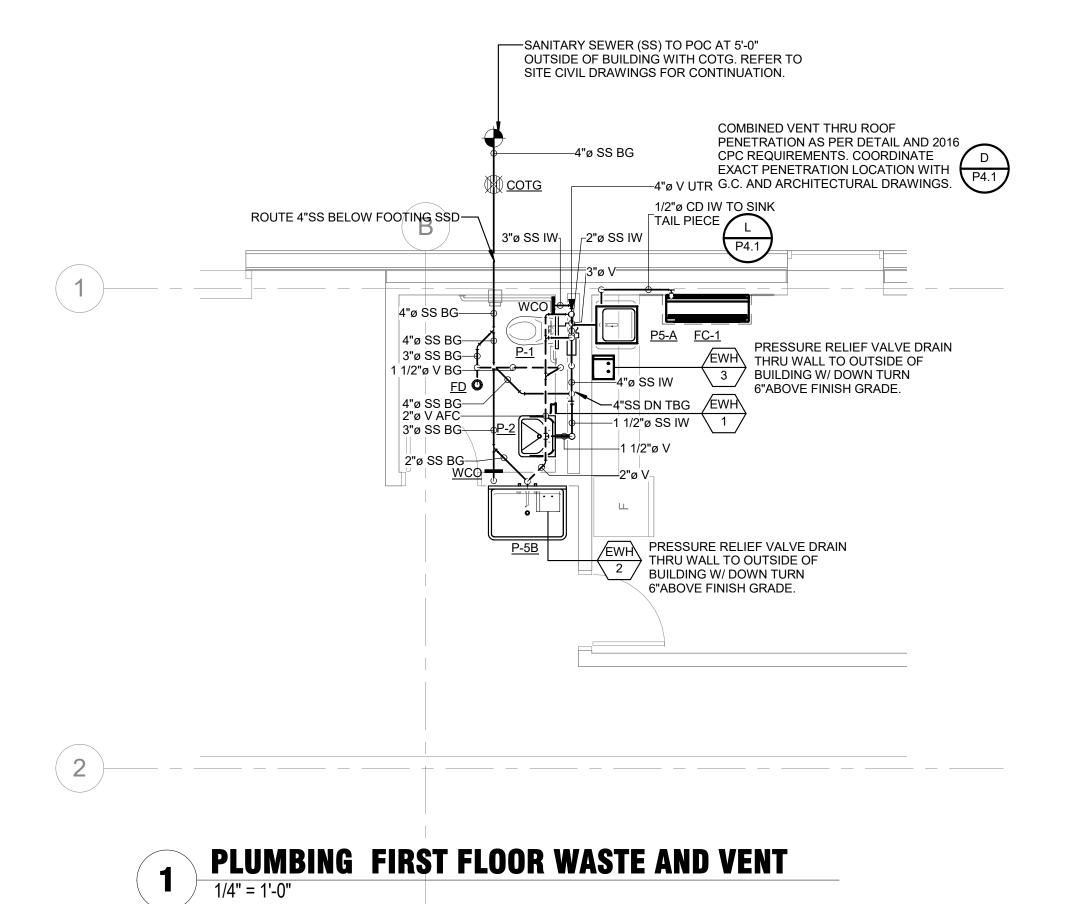
WALL LEGENDS

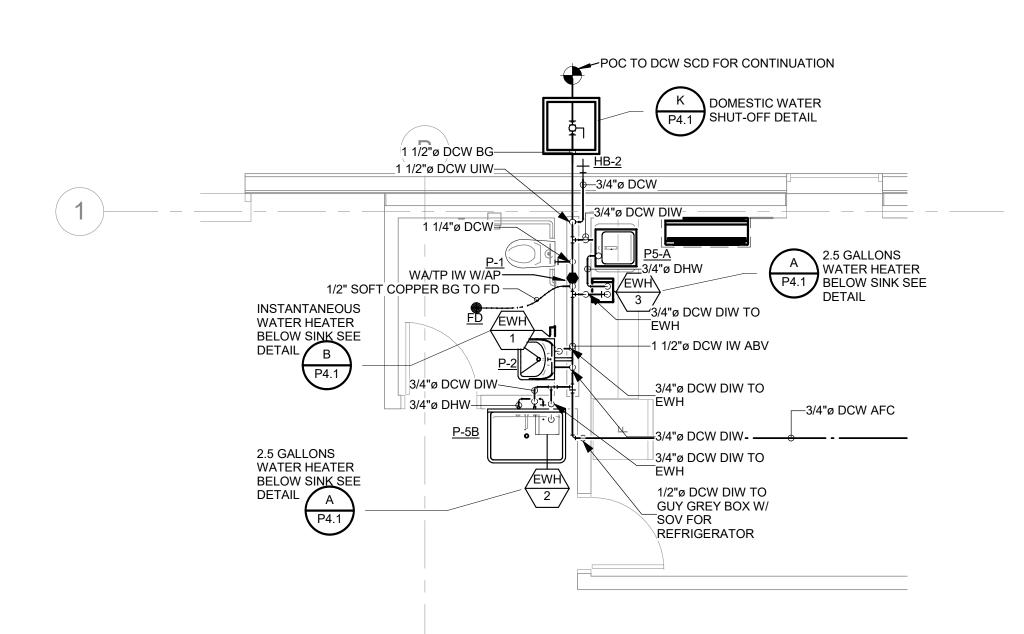
	ARCH PROJECT NO:	1739.02
	DRAWN BY:	Author
	DRAWING SCALE:	1/8" = 1'-0"
	PTN:	61721-0069
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NOVEMBER 2, 2018

PLUMBING FLOOR PLANS

P2.1





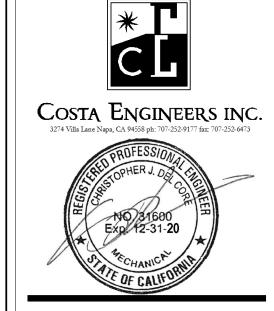
PLUMBING FIRST FLOOR WATER

1/4" = 1'-0"

GENERAL NOTES

- FOR PLUMBING GENERAL NOTES, LEGENDS, AND SYMBOLS, REFER TO SHEET P1.1
- PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE PLUMBING WORK WITH OTHER
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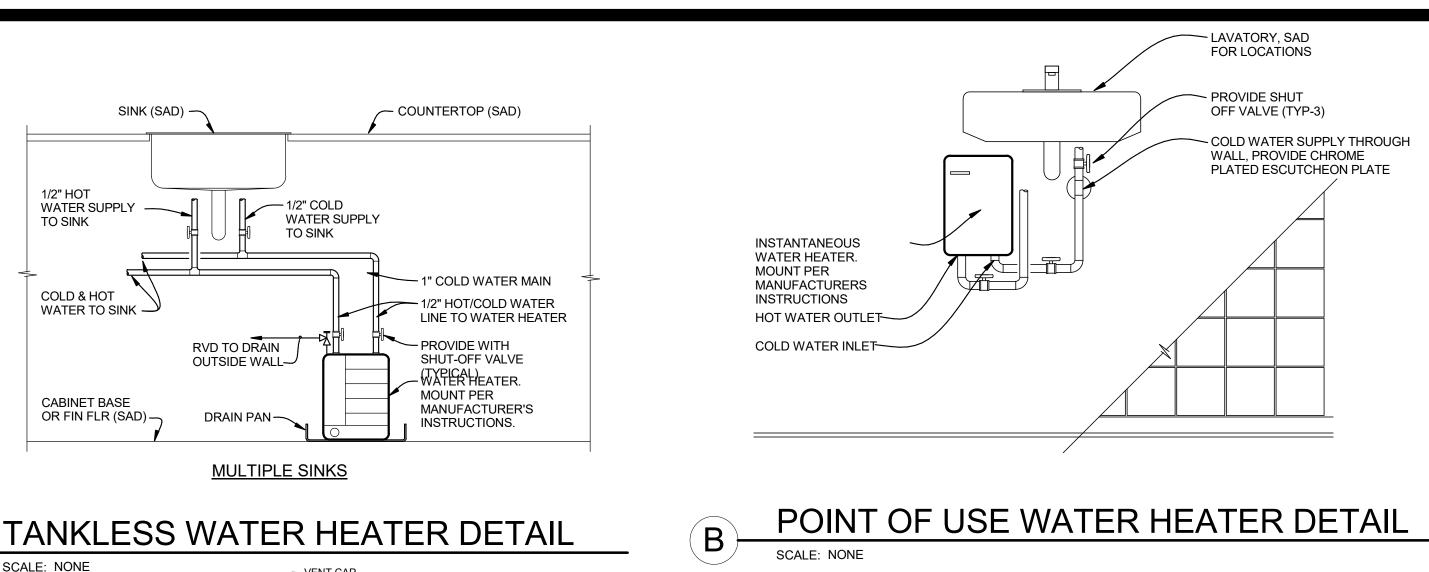
WALL LEGENDS

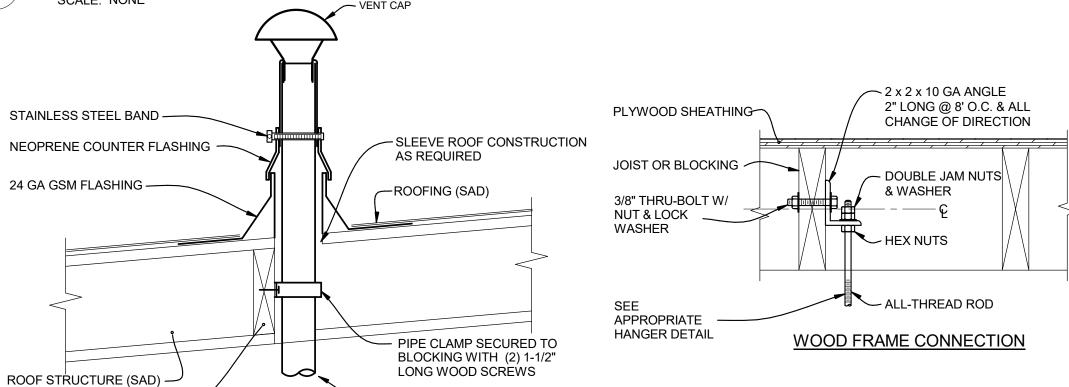
	ARCH PROJECT NO:	1739.02
	DRAWN BY:	Author
	DRAWING SCALE:	1/4" = 1'-0"
	PTN:	61721-0069
	DSA SUBM	1ITTAL

NOVEMBER 2, 2018

PLUMBING ENLARGEMENT

P2.2





- VENT STACK

VENT THRU ROOF DETAIL

TRAPEZE LOAD & SUPPORT CONDITIONS:
HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2"□ ALL-THREAD TO STEEL
NOT HEAVY: LESS THAN 645 LBS PER TRAPEZE: 3/8"□ ALL-THREAD TO CONC DECK

1. RUN PIPING TRAPEZE AS CLOSE AS POSSIBLE TO STRUCTURE.

4. CHANNEL DEFLECTION SHALL NOT EXCEED 1/360 OF THE SPAN BETWEEN RODS. DOUBLE-UP

5. NO BRACING IS REQUIRED ON PIPES LESS THAN 2-1/2" IN DIAMETER, AND WHEN SUPPORTED LESS

2. SUPPORT PIPING AT A MAXIMUM OF 8'-0" INTERVALS.

3. SEE PLANS FOR PIPE SIZES.

CHANNELS AS REQUIRED.

		TABI	_E-1		
	ANGLE (INCHES)		MAX LENGTH (INCHES)		
	1-1/2 x 1-1/2 x	1/8	3'-0"		
	2 x 2 x 3/16		6'-0"		
	3 x 3 x 1/4		8'-0"		
•					
	MINIMUM ROD SIZES (INCHES)		IPE DIAMETER (INCHES)		
	3/8"	2" 8	SMALLER PIPE		

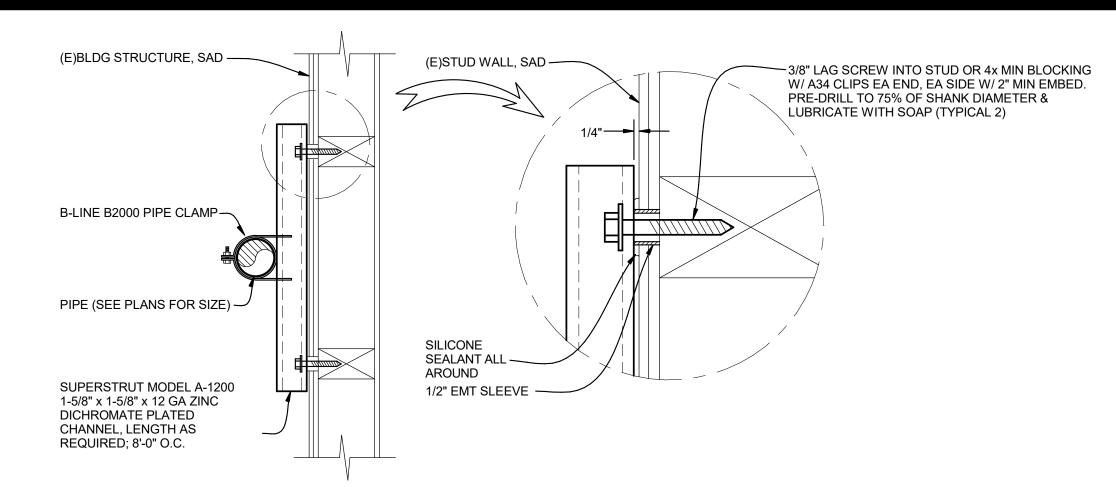
2-1/2" & 3" PIPE

4" PIPE

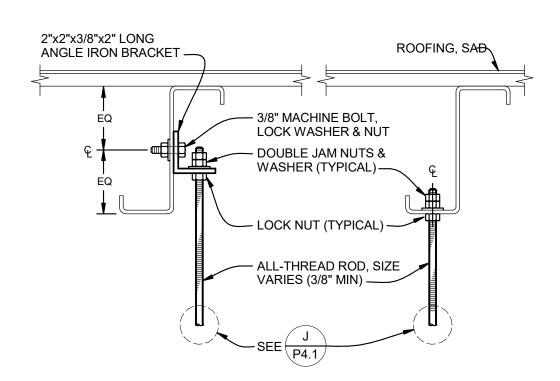
1/2"

5/8"

HANGER WOOD CONNECTION DETAIL



CHANNEL SUPPORT DETAIL



MAX. THREADED ROD SUPPORT WT. =

TYPICAL HANGER CONNECTIONS @ Z PURLIN

12" MAX. (TO BOTTOM OF BLDG STRUCTURE)

W/O SEISMIC BRACING

CLEAR OF

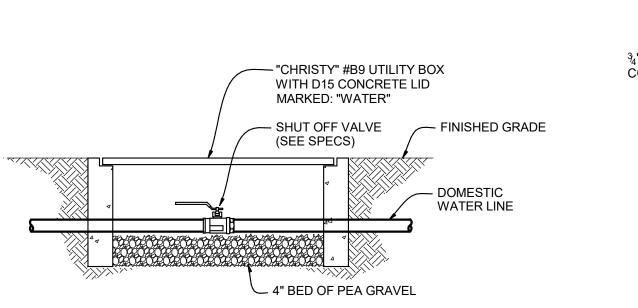
OBJECTS EACH SIDE

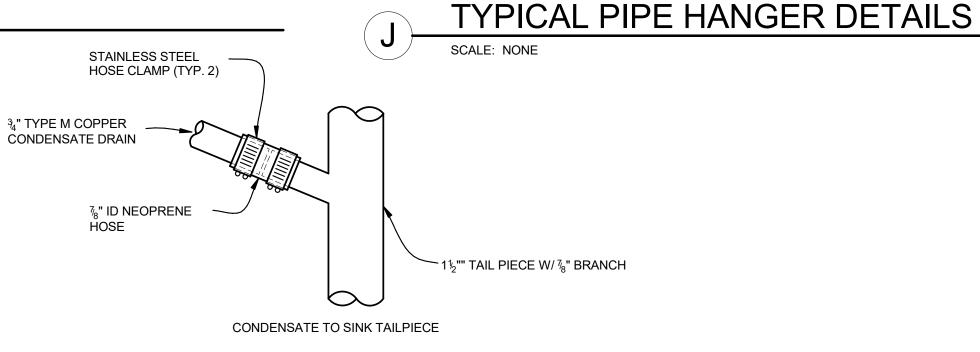
MINIMUM (INCHES) (INCHES) 3/8" 2" & SMALLER PIPE 1/2" 2-1/2" & LARGER PIPE

	THAN 12" FROM BOTTOM OF BLDG STRUCTURE.		
_	THAN 12 THOM BOTTOM OF BEBOOTHOUTONE.		
	TRAPEZE LOAD & SUPPORT CONDITIONS:	SEE F	
	LIEAVIV. CAELDO DED TDADEZE, OD MODE, 4/0" - ALL TUDEAD TO MOOD DI OCKINIC	P4.1	$lue{}$
	HEAVY: 645 LBS PER TRAPEZE, OR MORE: 1/2" ALL-THREAD TO WOOD BLOCKING.		1
	NOT HEAVY: LESS THAN 645 LBS PER TRAPEZE: 3/8"□ ALL-THREAD TO WOOD BLOCKING.		
		"B-LINE" ALL-THREAD	
	SEE P4.1	ROD, 3/8" MINIMUM —	\
	INSULATION WHERE REQ'D (SEE SPECIFICATIONS)		
	INSULATION WHERE REQ'D (SEE SPECIFICATIONS)		
	PIPE (SEE PLANS FOR SIZE) 12" MAX. (TO	BOTTOM HEYNUTS	
	"B-LINE" ALL-THREAD \ \ \ PIPE CLAMP OF BLDG ST	RUCTURE)	<u></u>
	ROD, 3/8" MINIMUM / W/O SEISMIC		T
		"B-LINE" B-3690 PIPE HANGER ——	#
	1-5/8" CHANNEL,	1 11 2 1 11 11 15 2 11	
	LENGTH AS REQ'D - I	PIPE (SEE PLANS	ر
	8'-0" O.C.	- FOR SIZE)	
	DOUBLE JAM NUTS & WASHERS	\	
	NUTS & WASHERS T		
		N. CLEAR OF	
	ALL C SIDE	OBJECTS EACH	

NOT USED

2x BLOCKING, PER STRUCT





DOMESTIC WATER SHUT-OFF DETAIL

SCALE: NONE

CONDENSATE TERMINATION DETAIL

ARCH PROJECT NO:	1739.02
DRAWN BY:	Author
DRAWING SCALE:	
PTN·	61721-0069

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NEW

MAINTENANCE

FACILITIES

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LIBERTY UNION

HIGH SCHOOL

DISTRICT

600 Main Street, Suite E,

DSA SUBMITTAL NOVEMBER 2, 2018

SHEET TITLE

PLUMBING DETAILS

ELECTRICAL EQUIPMENT ANCHORAGE

ELECTRICAL ANCHORAGE NOTES:

ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10, CHAPTER 13, 26, AND 30.

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. 3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING ELECTRICAL SHALL BE BE POSITIVELY ATTACHED TO THE STRUCTURE BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED CONDUIT.

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT
- B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.24, 1616A.1.25, AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (eg., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE

ELECTRICAL DISTRIBUTION SYSTEMS ARE: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

LIGHT FIXTURES:

ALL LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED TO THE CEILING SUSPENSION SYSTEMS BY MECHANICAL MEANS TO RESIST A HORIZONTAL FORCE EQUAL TO THE WEIGHT OF THE FIXTURE. A MINIMUM OF TWO SCREWS OR APPROVED FASTENERS ARE REQUIRED AT EACH LIGHT FIXTURE, PER ASTM E580, SECTION 5.3.1.

SURFACE-MOUNTED LIGHT FIXTURES SHALL BE ATTACHED TO THE MAIN RUNNER WITH AT LEAST TWO POSITIVE CLAMPING DEVICES. THE CLAMPING DEVICE SHALL COMPLETELY SURROUND THE SUPPORTING CEILING RUNNER AND BE MADE OF STEEL WITH A MINIMUM THICKNESS OF #14 GAGE. ROTATIONAL SPRING CATCHES DO NOT COMPLY. A #12 GAGE SLACK SAFETY WIRE SHALL BE CONNECTED FROM EACH CLAMPING DEVICE TO THE STRUCTURE ABOVE. PROVIDE ADDITIONAL SUPPORTS WHEN LIGHT FIXTURES ARE EIGHT (8) FEET OR LONGER OR EXCEED 56 LB. MAXIMUM SPACING BETWEEN SUPPORTS SHALL NOT EXCEED EIGHT (8) FEET.

LIGHT FIXTURES WEIGHING LESS THAN OR EQUAL TO 10 LB. SHALL HAVE A MINIMUM OF ONE (1) #12 GAGE SLACK SAFETY WIRE CONNECTED FROM THE FIXTURE HOUSING TO THE STRUCTURE ABOVE. LIGHT FIXTURES WEIGHING GREATER THAN 10 LB. BUT LESS THAN OR EQUAL TO 56 LBS. MAY BE SUPPORTED DIRECTLY ON THE CEILING RUNNERS, BUT THEY SHALL HAVE A MINIMUM OF TWO (2) #12 GAGE SLACK SAFETY WIRES CONNECTED FROM THE FIXTURE HOUSING AT DIAGONAL CORNERS TO THE STRUCTURE ABOVE. EXCEPTION: ALL LIGHT FIXTURES GREATER THAN TWO BY FOUR FEET

ALL LIGHT FIXTURES WEIGHING GREATER THAN 56 LB. SHALL BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN FOUR (4) TAUT #12 GAGE HANGER WIRES (ONE AT EACH CORNER) ATTACHED FROM THE FIXTURE HOUSING TO THE STRUCTURE ABOVE OR OTHER APPROVED HANGERS. THE FOUR (4) TAUT #12 GAGE WIRES OR OTHER APPROVED HANGERS, INCLUDING THEIR ATTACHMENT TO THE STRUCTURE ABOVE, SHALL BE CAPABLE OF SUPPORTING FOUR (4) TIMES THE WEIGHT OF THE

WEIGHING LESS THAN 56 LBS. SHALL HAVE A #12 GAGE SLACK SAFETY WIRE AT EACH CORNER.

SYMBOLS LIST

MAIN SWITCHBOARD, DISTRIBUTION PANEL OR MOTOR CONTROL CENTER FLUSH MOUNTED PANELBOARD, 6'-6" TO TOP SURFACE MOUNTED PANELBOARD, 6'-6" TO TOP

FUSED EQUIPMENT DISCONNECT SWITCH WITH FUSE SIZE AS RECOMMENDED BY EQUIPMENT MANUFACTURER MOTOR DISCONNECT SWITCH; HORSEPOWER RATED, NON FUSE

COMBINATION MOTOR STARTER & DISCONNECT MAGNETIC MOTOR STARTER

MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION MOTOR WITH FLEXIBLE CONDUIT CONNECTION AND DISCONNECT

CONCRETE PULLBOX, SIZE AS REQUIRED OR SHOWN - CHRISTY OR EQUAL WITH LABELED LID PER USE

COPPER GROUND ROD

FLUSH CEILING MOUNTED JUNCTION BOX, U.O.N.

FLUSH WALL MOUNTED JUNCTION BOX, UP 18" U.O.N.

JUNCTION BOX FLUSH FLOOR MOUNTED

20A 3PG 125V DUPLEX RECEPTACLE, UP 18" U.O.N. 20A 3PG 125V DUPLEX RECEPTACLE, WEATHERPROOF, UP 18" U.O.N. 20A 3PG 125V DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER

H 20A 3PG 125V DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, UP 18" U.O.N.

20A 3PG 125V DUPLEX RECEPTACLE, TAMPER RESISTANT, UP 18" U.O.N. 20A 3PG 125V DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, U.O.N.

20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, UP 18" U.O.N. 20A 3PG 125V DOUBLE DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER, U.O.N. 20A 3PG 125V SINGLE RECEPTACLE, UP 18" U.O.N.

20A 3PG 125V SINGLE TWISTLOCK RECEPTACLE, NEMA L5-20R, UP 18" U.O.N. SPECIAL RECEPTACLE AS INDICATED ON PLANS

CONTROLLED AND IDENTIFIED (SPLIT-WIRED) DUPLEX RECEPTACLE, WITH ONE HAL OF RECEPTACLE WIRED THROUGH LOCAL PLUG-LOAD CONTROLLER, UP 18" U.O.N. LINE VOLTAGE THERMOSTAT, PROVIDED & INSTALLED BY ELECTRICAL, CONNECTED COMPLETE BY MECHANICAL

TERMINAL MOUNTING BACKBOARD, 3/4" PLYWOOD, DIMENSIONS AS NOTED ON PLANS, PAINT TO MATCH ADJACENT WALL SURFACE, MAINTAINING UL FIRE

TELEPHONE OUTLET, UP 48" U.O.N.

TELEPHONE OUTLET, UP 18" U.O.N.

COMBINED TELEPHONE/DATA OUTLET, UP 18" U.O.N.

NUMBER INDICATES QUANTITY OF DATA OUTLET JACKS COMBINED VOICE/DATA OUTLET, MOUNTED ABOVE COUNTER U.O.N.

INTERCOM HANDSET, UP 48" U.O.N.

WALL MOUNTED SIGNAL SYSTEM CLOCK, UP 96" U.O.N. FLUSH WALL MOUNTED INDOOR PUBLIC ADDRESS SPEAKER, UP 96" U.O.N.

FLUSH WALL MOUNTED OUTDOOR WEATHERPROOF PUBLIC ADDRESS SPEAKER FLUSH CEILING MOUNTED INDOOR PUBLIC ADDRESS SPEAKER

FLUSH WALL MOUNTED INDOOR PUBLIC ADDRESS SPEAKER & SIGNAL SYSTEM CLOCK, UP 96" U.O.N.

CONDUIT AND WIRE CONCEALED IN CEILING OR WALL — — CONDUIT AND WIRE CONCEALED IN OR UNDER SLAB OR UNDERGROUND

WEATHERPROOF ENCLOSURE

— — — CONDUIT AND WIRE RUN EXPOSED

CROSSMARKS INDICATE QUANTITY OF #12 CONDUCTORS PLUS PARITY SIZED GROUND CONDUCTOR (INCLUDED BUT NOT INDICATED), NO HASHMARKS INDICATES (2) #12 CONDUCTORS PLUS PARITY SIZED GROUND CONDUCTOR,

- GROUND WIRE

CONDUIT TURNED UP

WIRE SIZE 10 AWG FOR ALL CONDUCTORS, INCLUDING GROUND WIRE,

FLEXIBLE METALLIC CONDUIT HOMERUN TO PANELBOARD OR TERMINAL BOARD, AS NOTED ON PLANS

COMPLETE CONNECTION OF EQUIPMENT CONDUIT STUBBED OUT, CAPPED AND MARKED

CONDUIT TURNED DOWN

TELEPHONE SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N. COMPUTER/DATA SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N. TELEPHONE/DATA SYSTEM CONDUIT AND PULLWIRE; 3/4" U.O.N.

—— G —— #4/0 COPPER GROUNDING ELECTRODE CONDUCTOR, U.O.N. MECHANICAL EQUIPMENT DESIGNATION - SEE MECHANICAL PLANS

DETAIL DESIGNATION - <u>SEE</u> DETAIL 3, SHEET E-6

(AC-1)

CURRENT TRANSFORMERS

UTILITY METER

NUMBERED SHEET NOTE



CIRCUIT BREAKER. NUMBER INDICATES 30A 3-POLE

FEEDER SIZE - <u>SEE</u> POWER SINGLE LINE DIAGRAMS & FEEDER SCHEDULE

SYMBOLS LIST

ALL SWITCH AND CONTROL MOUNTING HEIGHTS OF 48" SHALL BE TO TOP OF THE DEVICE BOX. ALL RECEPTACLES WITH MOUNTING HEIGHT OF UP TO 18" SHALL BE NO LOWER THAN 15" TO BOTTOM OF THE DEVICE BOX, TYPICAL, U.O.N.

— INDICATES LUMINAIRE TYPE, <u>SEE</u> LUMINAIRE SCHEDULE o • SUSPENDED LINEAR LUMINAIRE

SURFACE CEILING, WALL OR COVE MOUNTED LUMINAIRE WALL MOUNTED LUMINAIRE

POLE ARM-MOUNTED AREA LUMINAIRE WALL MOUNTED EMERGENCY BATTERY EGRESS LUMINAIRE WITH NUMBER OF

ADJUSTABLE LAMP HEADS INDICATED LINE VOLTAGE SINGLE POLE TOGGLE SWITCH, LETTER ADJACENT INDICATES RESPECTIVE ZONE CONTROLLED, UP 48" U.O.N.

LINE VOLTAGE TWO POLE TOGGLE SWITCH, UP 48" U.O.N.

LINE VOLTAGE THREE-WAY TOGGLE SWITCH, UP 48" U.O.N. LINE VOLTAGE KEY OPERATED TOGGLE SWITCH

TIME DELAY AND MAX SENSITIVITY

LINE VOLTAGE MOTOR RATED TOGGLE SWITCH INSTALLED AT EQPT SHOWN LINE VOLTAGE TOGGLE SWITCH WITH PILOT LIGHT, LIGHT IS ON WHEN

CIRCUIT IS CLOSED, UP 48" U.O.N. LOW VOLTAGE MOMENTARY CONTACT SWITCH - SEE LOW VOLTAGE RELAY SCHEDULE, LOWER CASE LETTER ADJACENT INDICATES RESPECTIVE ZONE CONTROLLED, UP 48" U.O.N. <u>SEE</u> SPECS FOR TYPE OF SWITCH

LOW VOLTAGE KEYED MOMENTARY CONTACT SWITCH - SEE LOW VOLTAGE RELAY SCHEDULE, LOWER CASE LETTER ADJACENT INDICATES RESPECTIVE ZONE CONTROLLED, UP 48" U.O.N. SEE SPECS FOR TYPE OF SWITCH WALL MOUNTED SWITCH TYPE INFRARED OCCUPANCY SENSOR; UP 48" U.O.N.; SINGLE OR DUAL AS NOTED BY LETTERS ADJACENT. SET TO FIXED 20 MINUTE

WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR; UP 48" U.O.N.; SINGLE OR DUAL AS NOTED BY LETTERS ADJACENT. SET TO FIXED 20 MINUTE TIME DELAY AND MAX SENSITIVITY

WALL MOUNTED DIGITAL SWITCH, UP 48" U.O.N.; LOWER CASE LETTER ADJACENT INDICATES RESPECTIVE ZONE CONTROLLED; <u>SEE</u> DETAILS FOR TYPE WALL MOUNTED SINGLE OR MULTI-ZONE DIGITAL DIMMER SWITCH, UP 48" U.O.N.; LOWER CASE LETTERS ADJACENT INDICATE RESPECTIVE ZONES TO BE SIMULTANEOUSLY MANUALLY CONTROLLED; NUMERAL DESIGNATES NUMBER OF

CEILING MOUNTED DUAL TECHNOLOGY DIGITAL OCCUPANCY SENSOR; SEE DETAILS FOR TYPF

WALL MOUNTED DUAL TECHNOLOGY DIGITAL OCCUPANCY SENSOR; SEE DETAILS

ZONES ASSIGNED TO THE DEVICE; SEE DETAILS FOR TYPE.

CEILING MOUNTED LINE VOLTAGE DUAL TECHNOLOGY OCCUPANCY SENSOR

SINGLE OR MULTI-ZONE SWITCHING OR DIMMING OPEN LOOP DIGITAL DAYLIGHTING SENSOR; NOTATIONS ADJACENT IDENTIFY DAYLIGHT ZONES

ASSIGNED TO THE DEVICE; <u>SEE</u> DETAILS FOR TYPE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN SINGLE ZONE SWITCHING OR DIMMING CLOSED LOOP DIGITAL DAYLIGHTING SENSOR; NOTATIONS ADJACENT IDENTIFY DAYLIGHT ZONES ASSIGNED TO THE

DEVICE; SEE DETAILS FOR TYPE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN DAYLIGHT CONTROL PHOTOCELL - BRACKET MOUNTED; NOTATIONS ADJACENT IDENTIFY DAYLIGHT ZONES ASSIGNED TO THE DEVICE; <u>SEE</u> DETAILS FOR TYPE. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN

INDICATES DAYLIGHT ZONE CONTROLLED VIA PHOTOCELL - ROOM CONTROLLER; <u>SEE</u> DETAILS FOR TYPE - ADJACENT NUMERAL REFERS TO THE NUMBER OF ZONES TO BE CONTROLLED. VENDOR OR CONTRACTOR TO PROVIDE QUANTITY OF ROOM CONTROLLERS

REQUIRED FOR THE NUMBER OF CONTROLLED ZONES. PLUG LOAD ROOM CONTROLLER; <u>SEE</u> DETAILS FOR TYPE

EMERGENCY LIGHTING CONTROL MODULE

OCCUPANCY SENSOR POWER PACK MOUNTED IN CONCEALED ACCESSIBLE

GENERAL NOTES

- PRIOR TO BID THE CONTRACTOR SHALL VISIT THE SITE TO ADEQUATELY DETERMINE ALL PRE-EXISTING CONDITIONS. BY THE ACT OF SUBMITTING A BID, THE CONTRACTOR WILL BE DEEMED TO HAVE COMPLIED WITH THE FOREGOING, TO HAVE ACCEPTED SUCH CONDITIONS, AND TO HAVE MADE ALLOWANCES THEREFORE IN PREPARING THE BID.
- PROVIDE PARITY SIZED GREEN GROUND WIRE IN ALL POWER CONDUITS, BRANCH CIRCUITS (LIGHTING & POWER) AND HOMERUNS. PROVIDE ADDITIONAL ISOLATED GROUND, GREEN WITH YELLOW STRIPE, TO ALL ISOLATED GROUND RECEPTACLES
- PROVIDE PULLROPE IN ALL EMPTY CONDUITS THROUGHOUT THE PROJECT.
- REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION & CONNECTION REQUIREMENTS OF ALL LUMINAIRE(S) AND ALL OUTLET, SWITCH, AND ELECTRICAL RELATED DEVICE MOUNTING HEIGHTS AND LOCATIONS. COORDINATE LOCATIONS OF ALL LUMINAIRE(S) AND JUNCTION BOXES WITH MECHANICAL DIVISION PRIOR TO ROUGH-IN. COORDINATE LOCATIONS OF ELECTRICAL DEVICES WITH FURNITURE PLANS PRIOR TO ROUGH-IN.
- REFER TO MECHANICAL PLANS FOR EXACT LOCATION(S) OF ALL MECHANICAL EQUIPMENT, AND CONFIRM FXACT CONNECTION REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL DIVISION, PRIOR TO ROUGH-IN. VERIFY EXACT REQUIREMENTS FOR VOLTAGE, PHASE, HORSE-POWER, OR KVA RATINGS, OF ALL MECHANICAL DIVISION EQUIPMENT REQUIRING ELECTRICAL CONNECTION.
- VERIFY EXACT CONNECTION REQUIREMENTS, OUTLET TYPE(S), MOUNTING HEIGHT(S) AND LOCATION(S) OF ALL OWNER-SUPPLIED EQUIPMENT, AND ALL EQUIPMENT PROVIDED UNDER OTHER SECTIONS OF THE SPECIFICATIONS, PRIOR TO ROUGH-IN. REFER TO ARCHITECTURAL DRAWINGS FOR EQUIPMENT LOCATIONS.
- COORDINATE TRENCHING WITH OWNER AND OTHER TRADES BEFORE BEGINNING WORK.
- 8. ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED WALLS AND FLOORS SHALL BE SEALED AND EQUIPPED WITH U.L. LISTED FIRE PENETRATION ASSEMBLIES TO MAINTAIN FIRE SEPARATION
- 9. DO NOT INSTALL ANY OUTLETS BACK TO BACK IN STUD WALLS OR DE-MOUNTABLE PARTITIONS. LO. THE CONTRACTOR SHALL VERIFY ALL CEILING TYPES BEFORE ORDERING OF LUMINAIRE(S). ALSO VERIFY THAT ALL FEATURES CALLED FOR IN LUMINAIRE DESCRIPTIONS ON THE LUMINAIRE SCHEDULE ARE INCLUDED WITH CATALOG NUMBERS LISTED ON THE LUMINAIRE SCHEDULE WHEN LUMINAIRE ORDERS ARE PLACED, AND ARE INCLUDED AS PART OF THE LIGHTING SUBMITTALS FOR THIS PROJECT. IF A DISCREPANCY EXISTS, CONTACT THE ARCHITECT AND ELECTRICAL ENGINEER
- FOR CLARIFICATION PRIOR TO BID. . CIRCUITRY AND CONDUIT ROUTING SHOWN ON THE PLANS IS DIAGRAMMATIC ONLY. THIS CONTRACTOR IS RESPONSIBLE FOR BECOMING COMPLETELY FAMILIAR WITH THE ARCHITECTURAL AND STRUCTURAL CONDITIONS AND LIMITATIONS IN THE BUILDING AND TO PROVIDE ALL LABOR, TOOLS AND MATERIALS REQUIRED TO PRODUCE A COMPLETELY CONCEALED INSTALLATION WHEREVER INDICATED ON THE PLANS.
- 2. MAINTAIN "AS-BUILT" RECORDS AT ALL TIMES, SHOWING EXACT LOCATION OF ALL UNDERGROUND AND/OR CONCEALED CONDUITS AND SERVICES INSTALLED UNDER THIS CONTRACT, INCLUDING CIRCUIT IDENTIFICATION WHERE APPLICABLE. PROVIDE OWNER WITH "AS-BUILT" DOCUMENTS AS INDICATED IN THE SPECIFICATIONS, AND/OR CALLED FOR IN THE SPECIFICATIONS.
- . DRAWINGS INDICATE THE LOCATION(S) OF DEVICES, LUMINAIRE(S) AND EQUIPMENT, AND THE CIRCUIT NUMBER AND PANEL DESIGNATED TO SUPPLY THEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETELY CONNECTING ALL ELECTRICAL DEVICES TO CIRCUITS INDICATED ON
- 14. UNLESS OTHERWISE NOTED, ALL WORK SHOWN ON DRAWINGS IS NEW AND TO BE PROVIDED AND INSTALLED COMPLETE UNDER THIS CONTRACT.
- l5. ALL EQUIPMENT GROUNDING SHALL CONFORM TO ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE,
- L6. ALL EXTERIOR CONDUIT ABOVE GRADE, INCLUDING ALL ROOF MOUNTED CONDUIT, SHALL BE GALVANIZED RIGID STEEL. COAT ALL EXPOSED THREADS WITH GALVANIZING PAINT. PAINT ALL SURFACE MOUNTED RACEWAYS AND PULLBOXES TO MATCH SURROUNDING CONDITIONS, AS DIRECTED BY THE ARCHITECT.
- 17. ALL ELECTRICAL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE N.E.C., AS WELL AS STATE, AND LOCAL CODES AND REQUIREMENTS.
- 18. ALL CONDUIT SHALL BE CONCEALED, UNLESS OTHERWISE NOTED.
- L9. EQUIPMENT OVERLOADS AND FUSES SHALL BE PROVIDED AND INSTALLED AS PER NAME PLATE ON THE EQUIPMENT ACTUALLY PROVIDED.
- 20. THE CONTRACTOR SHALL PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES.
- 21. THE CONTRACTOR SHALL VERIFY ALL CRITICAL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
- 22. ALL MECHANICAL DIVISION EOUIPMENT LOW VOLTAGE CONTROL WIRING AND RACEWAY SHALL BE PROVIDED AND INSTALLED AS SPECIFIED IN MECHANICAL DIVISION U.O.N.
- 23. COORDINATE INSTALLATION OF ALL RECESSED LUMINAIRE(S) WITH MECHANICAL DIVISION PRIOR LUMINAIRE(S) THAT THERE IS NO CONTACT BETWEEN DUCTS AND LUMINAIRE(S) TO AVOID
- VIBRATION IN LUMINAIRE(S). 24. USE FLEXIBLE CONDUIT FOR ALL MOTOR, TRANSFORMER, RECESSED LUMINAIRE CONNECTIONS, AND CONNECTIONS BETWEEN TWO SEPARATE STRUCTURES AND FOR ALL FINAL CONNECTIONS TO "CRITICAL EQUIPMENT" AS DEFINED IN SPECIFICATIONS. MINIMUM 1/2" DIAMETER, LIQUID TIGHT TYPE USED OUTDOORS AND IN ALL WET LOCATIONS; PROVIDE WITH CODE-SIZE (MINIMUM #12)
- BARE GROUND WIRE IN ALL FLEXIBLE CONDUIT. 25. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR ALL BRANCH CIRCUITS FEEDING OUTLETS AS
- 26. FOR FLUSH MOUNTED PANELBOARDS THE CONTRACTOR SHALL STUB A MINIMUM OF FOUR (4) 3/4" CONDUITS FROM THE PANEL UP INTO THE ACCESSIBLE CEILING ABOVE FOR FUTURE CIRCUITS.
- 27. ALL CONDUIT CONNECTORS TO OUTLET OR JUNCTION BOXES SHALL HAVE INSULATED THROATS (MANUFACTURED AS AN INTEGRAL PART OF THE CONNECTOR). <u>AFTER-MARKET</u> <u>INSERTABLE</u> THROATS ARE NOT ACCEPTABLE.
- 28. ALL CIRCUITS IN ALL JUNCTION BOXES AND DEVICES SHALL BE CLEARLY IDENTIFIED BY MEANS OF "EZ" NUMBERING TAGS OR EQUIVALENT, TO IDENTIFY THE CIRCUIT NUMBER OR RELAY SUPPLYING THE CONDUCTOR. ALL JUNCTION BOXES SHALL BE LABELED PER SPECIFICATIONS.
- 29. ALL SURFACE MOUNTED POWER AND SIGNAL BOXES IN FINISHED AREAS SHALL BE "WIREMOLD" TYPE, WITH MATCHING RACEWAYS. SURFACE MOUNTED STEEL JUNCTION BOXES AND/OR EMT ARE
- 30. ALL LOCATIONS OF BARE METAL SURFACE MOUNTED CONDUIT, BOXES, PANEL COVERS, AND RELATED FITTINGS OR ACCESSORIES INSTALLED IN FINISHED AREAS (BOTH INTERIOR AND EXTERIOR) SHALL BE FINISH PAINTED TO MATCH THE SURFACE TO WHICH THEY ARE MOUNTED TO (AFTER INSTALLATION). PAINTING SHALL INCLUDE DIFFERENT COLORS AS REQUIRED TO MATCH EXISTING STRIPING OR OTHER BUILDING FEATURES TO WHICH THE EQUIPMENT IS ATTACHED AND VISIBLE. VERIFY EXACT JUNCTION BOX LOCATION(S) AND ROUTING OF EXPOSED RACEWAYS WITH THE ARCHITECT PRIOR TO ROUGH-IN.
- 1. PROVIDE A BLANK COVER PLATE (COLOR TO MATCH ADJACENT DEVICES OR AS SPECIFICALLY CALLED FOR IN SPECIFICATIONS) FOR ALL JUNCTION BOXES (NEW AND EXISTING) ON THE PROJECT WHEN
- 32. FOR OUTDOOR 15 AND 20-AMPERE, 125 AND 250-VOLT RECEPTACLES: RECEPTACLES LOCATED IN "WET" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES PROVIDED AND INSTALLED; RECEPTACLES LOCATED IN "DAMP" LOCATIONS SHALL HAVE "IN-USE" TYPE WEATHERPROOF COVER PLATES IN LOCATIONS DEEMED TO BE "IN-USE" WITH CORD AND PLUG
- 33. TWO OR THREE DIFFERENT PHASES SUPPLIED BY A 3-PHASE PANEL MAY SHARE A SINGLE NEUTRAL ONLY IF CIRCUIT POSITIONS ARE ADJACENT IN THE PANEL. PROVIDE COMMON HANDLE-TIE ON BREAKERS FOR MULTI-WIRE BRANCH CIRCUITS, WITH COMMON NEUTRAL, PER NEC REQUIREMENTS.

LIST OF DRAWINGS

- E-0.1 SYMBOLS LIST, GENERAL NOTES & LIST OF DRAWINGS
- E-1.1 SITE PLAN ELECTRICAL
- E-2.1 FIRST & MEZZANINE LIGHTING PLANS AND LUMINAIRE SCHEDULE
- E-3.1 FIRST & MEZZANINE FLOOR PLANS POWER & SIGNAL
- E-5.1 DIAGRAMS & SCHEDULES
- E-7.1 DETAILS

FE-1.1 SITE PLAN - FIRE ALARM

- FE-0.1 FIRE ALARM EQUIPMENT LIST, GENERAL NOTES & DETAILS
- FE-3.1 FIRST & MEZZANINE FLOOR PLANS FIRE ALARM FE-5.1 DIAGRAMS & CALCULATIONS - FIRE ALARM

CALIFORNIA GREEN BUILDING STANDARDS COMPLIANCE ALL EXTERIOR LUMINAIRES SPECIFIED IN THESE CONTRACT DOCUMENTS COMPLY WITH THE REQUIREMENTS OF THE CALIFORNIA ENERGY CODE AND THE CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION A5.106.8 LIGHT POLLUTION REDUCTION. EXTERIOR LUMINAIRES COMPLY WITH BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS AS DEFINED IN IESNA TM-15-11 AND BUG RATINGS DO NOT EXCEED THE MAXIMUM ALLOWABLE RATINGS FOR THIS PROJECT.



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QUATTROCCHI KWOK



FREEDOM

MAINTENANCE FACILITIES

1050 NEROLY ROAD OAKLEY, CA 9456²

LIBERTY UNION HIGH SCHOOL DISTRICT

REVIS	SIONS	
ARCH F	PROJECT NO:	1739.02
DRAWN	I BY:	TV
DRAWII	NG SCALE:	AS NOTED
PTN:		61721-0069

JANUARY 4, 2019

SHEET TITLE

BID SET

SYMBOLS LIST, GENERAL NOTES & LIST OF DRAWINGS

NUMBERED SHEET NOTES

- PROVIDE FLUSH, IN GRADE PULLBOX CHRISTY (OR EQUAL), SIZED AS NOTED ON PLANS. PULLBOX COVER SHALL BE LABELED AS IDENTIFIED ON PLANS. WHERE LOCATED IN TRAFFIC AREAS, BOXES SHALL BE 'TRAFFIC RATED' REINFORCED CONCRETE WITH STEEL FRAME AND STEEL COVER. WHERE LOCATED ELSEWHERE, BOXES SHALL BE REINFORCED CONCRETE AND COMPOSITE COVER. ALL PULLBOX LOCATION SHALL BE COORDINATED WITH THE ARCHITECT.
- 2 INTERCEPT EXISTING SIGNAL CONDUIT AT EXISTING PULLBOX LOCATION. THE PULLBOX SHALL BE REPLACED WITH A NEW #N30 (PER SIMILAR REQUIREMENTS OF NUMBERED NOTE 1). THE NEW SIGNAL SYSTEM SHALL BE EXTENDED TO EXISTING CAMPUS SYSTEMS VIA THIS LOCATION - SEE E-1.0.
- PROVIDE AND INSTALL UNDERGROUND FEEDERS TO BRANCH PANEL AS NOTED WITH ADJACENT TAG DESCRIPTION. <u>SEE</u> 1/E-5.1 FOR FEEDER SIZING.
- (4) PROVIDE AND INSTALL UNDERGROUND SIGNAL SYSTEMS TO SYSTEMS AS FOLLOWS:

(1) 3" C. - FIBER OPTIC (1) 2" C. - FIRE ALARM (2) 2" C. - SPARES

- (5) ALL CONDUITS ALONG THIS LINE SHALL BE ROUTED IN COMMON SITE "UTILITY CORRIDOR". MAINTAIN A 3' LATERAL SEPARATION FROM ALL OTHER SITE UTILITIES. DO NOT RUN OVER, OR UNDER ANY OTHER SITE UTILITIES. COORDINATE ALL TRENCHING ROUTES AND SEPARATIONS WITH CIVIL, LANDSCAPE AND ARCHITECT PRIOR TO COMMENCING WORK.
- (6) SEE DETAIL 6/E-7.1.
- EXISTING SIGNAL SYSTEM RACEWAY TO BE INTERCEPTED AT THIS LOCATION, AT EXISTING SIGNAL
- (8) UTILIZE SPARE RACEWAY INTO BUILDING H ELECTRICAL ROOM FOR FIBER AND FIRE ALARM HOMERUNS.
- $\left(egin{array}{c} 9 \end{array}
 ight)$ INTERCEPT EXISTING FIBER STRANDS AT EXISTING IDF AND EXTEND NEW FIBER TO MAINTENANCE
- CONNECT COMPLETE TO EXISTING FIRE ALARM 2-WIRE IDNET COMMUNICATIONS CABLING AT EXISTING FIRE ALARM EQUIPMENT. <u>SEE</u> FE SERIES.
- (11) PROVIDE POWER AND LOW VOLTAGE RACEWAY CONNECTIONS TO GATE CONTROLLER AS SHOWN. 120V POWER IN 1" SCHEDULE 40 PVC. BACK TO MAINTENANCE FACILITY PANEL 'M1' AND 1"SCHEDULE 40 PVC WITH CAT 6A. ROUTE BACK TO MAINTENANCE BUILDING IDF.

PRIOR TO COMMENCING WORK, CONTRACTOR SHALL HIRE THE SERVICES OF AN INDEPENDENT SURVEY COMPANY, WHICH SHALL MARK THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES WITHIN THE AREA OF WORK. THIS CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT IN PLACE ALL EXISTING UNDERGROUND UTILITIES AND ROUTE NEW TRENCHES AND CONDUIT SUCH TO AVOID CONFLICT WITH EXISTING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OCCURRING TO EXISTING UNDERGROUND INFRASTRUCTURE. IN THE EVENT DAMAGES OCCUR, CONTRACTOR SHALL INCUR ALL COSTS AND REPAIR ALL CONDITIONS TO THE SATISFACTION OF THE DISTRICT.



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FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS	
		_
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DRAWING	SCALE:	AS NOTED
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JANUARY 4, 2019

BID SET

SITE PLAN -**ELECTRICAL**

E-1.1

		LUMINAIRE	SCHEDULE			
TYPE	MOUNTING	DESCRIPTION	MANUFACTURER CATALOG #	LIGHT SOURCE	POWER SUPPLY	VO
CA1	CEILING SURFACE	LENSED STRIPLIGHT, 96"L X 3"W X 4" H, STEEL HOUSING PAINTED POST-FABRICATION, SEMI-FROSTED SQUARE LENS FOR NARROW LIGHT DISTRIBUTION, CONSTANT CURRENT REDUCTION LED DRIVER, WHITE FINISH.	METALUX PDR85351-8SNLED-LD5-60SL-SLN -UNV-L835-CD1-U CONSTANT CURRENT	LED 3500K 80+ CRI 6063 LM	CCR 0-10V DIMMING TO 10%	120V
CA2	CEILING SURFACE	SIMILAR TO TYPE CB1, EXCEPT 48" LENGTH, FULL FROST LENS FOR WIDE LIGHT DISTRIBUTION.	METALUX 4SNLED-LD5-30SL-LW-UNV-L835- CD-1	LED 3500K 80+ CRI 3186 LM	CCR 0-10V DIMMING TO 10%	120V
EM1	WALL SURFACE	EMERGENCY-ONLY (AC FAIL) LIGHT, NICKEL METAL HYDRIDE BATTERY, POLYCARBONATE HOUSING.	BEGHELLI TA-LED-SE-UNV-AT	LED	NON-DIM	120V
PA1	PENDANT	CABLE-SUSPENDED LENSED STRIPLIGHT, 96"L X 3"W X 4" H, STEEL HOUSING PAINTED POST-FABRICATION, SEMI-FROSTED SQUARE LENS FOR NARROW LIGHT DISTRIBUTION, CONSTANT CURRENT REDUCTION LED DRIVER, WHITE FINISH. PROVIDE ACCESSORIES REQUIRED FOR SUSPENSION FROM PURLINS. WEIGHT = 15 LB.	METALUX PDR85351-8SNLED-LD5-60SL-SLN -UNV-L835-CD1-U CONSTANT CURRENT-SCA-48-B-(CABLE)	LED 3500K 80+ CRI 6080 LM	CCR 0-10V DIMMING TO 10%	120V
PA2	PENDANT	SIMILAR TO TYPE PA1 EXCEPT MOUNTED END-TO-END FOR 32 FT ROW LENGTH AND HIGHER LUMENS. PROVIDE ACCESSORIES REQUIRED FOR ALIGNMENT AND SUSPENSION FROM CEILING PURLINS AND BEAMS. WEIGHT = 15 LB PER 8 FT.	METALUX PDR85351-8SNLED-LD5-108SL-SL N-UNV-L835-CD1-U CONSTANT CURRENT-SCA-48-B-(CABLE)	LED 3500K 80+ CRI 10794 LM/8'	CCR 0-10V DIMMING TO 10%	120V
RA1	RECESSED CEILING	2' x 2' x 1-3/4" HIGH EDGE-LIT FLAT PANEL. LIGHT GUIDE ACRYLIC OPTICAL SHIELDING WITH SMOOTH PATTERN WHITE FROST LENS. RETENTION CLIPS.	METALUX 22FP4235C-FPEQ	LED 3500K 80+ CRI 4641 LUMENS	0-10V DIMMING (10-100%)	120V
SB2	SITE POLE	POLE LUMINAIRE, 15" x 27.5" DIE-CAST ALUMINUM, 32 LEDS, IES TYPE 3 LIGHT DISTRIBUTION, INTERNAL HOUSE-SIDE SHIELD. STEEL POLE 20' H X 4" DIAMETER, FULL BASE COVER. STANDARD FINISH AS SELECTED BY ARCHITECT.	PHILIPS LIGHTING ECF-S-32L-530-WW-G2-3- HIS-120V-FINISH AND SRS-20-4.0-D1-FINISH	3000K 70CRI LED 5348 LM	NON-DIMMING 530mA	120V
SB4	SITE POLE	SIMILAR TO TYPE SB2 EXCEPT IES TYPE 4 LIGHT DISTRIBUTION, NO INTERNAL HOUSE-SIDE SHIELD.	PHILIPS LIGHTING ECF-S-32L-530-WW-G2-4-120V-FI NISH AND SRS-16-4.0-D2-FINISH	3000K 70CRI LED 5348 LM	NON-DIMMING 530mA	120V
WB1	WALL	SCONCE AREA-LIGHT, DIE-CAST ALUMINUM, 15.6"W X 6.2"H X 15.7" PROJECTION, IES TYPE 3 LIGHT DISTRIBUTION, BI-LEVEL MOTION SENSOR, STANDARD FINISH AS SELECTED BY ARCHITECT.	PHILIPS GARDCO PWS-140L-1150-WW-G2-3-UNV-FI NISH	LED 3000K 70+ CRI 6064 LM	NON-DIMMING, INTEGRAL BI-LEVEL MOTION SENSOR	120V

NUMBERED SHEET NOTES

- SUSPEND FROM PURLINS AND BEAMS, 24" FROM BOTTOM OF PURLIN TO BOTTOM OF LUMINAIRE. COORDINATE CONNECTIONS TO PURLINS AND BEAMS WITH METAL BUILDING MANUFACTURER TO PROVIDE ADEQUATE SUPPORT FOR LUMINAIRES. LUMINAIRES SHALL BE FREE TO SWING 45 DEGREES FROM VERTICAL IN ANY DIRECTION WITHOUT CONTACTING AN OBSTRUCTION. RESTRAIN LUMINAIRES WITH SEISMIC BRACING CABLES WHERE NECESSARY.
- (2) SURFACE MOUNT ON JOISTS. PROVIDE BLOCKING WHERE NECESSARY.
- 3 SURFACE MOUNT TO FRONT OF MEZZANINE FLOOR, APPROXIMATELY 11'-2" A.F.F.
- 4 WALL MOUNTED 16 FT A.F.G., PROVIDE STRUCTURE/BLOCKING IN METAL WALL TO SUPPORT LUMINAIRE.
- (5) MAINTAIN A MINIMUM DISTANCE OF 20" FROM WALL TO CENTERLINE OF THIS LUMINAIRE ROW.



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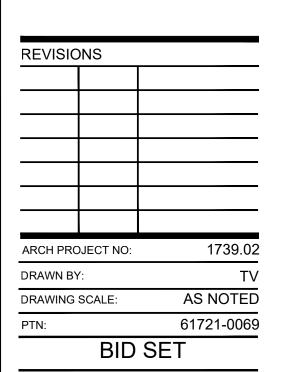


FREEDOM HIGH SCHOOL

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LIBERTY UNION HIGH SCHOOL DISTRICT



FIRST &
MEZZANINE
LIGHTING PLANS &

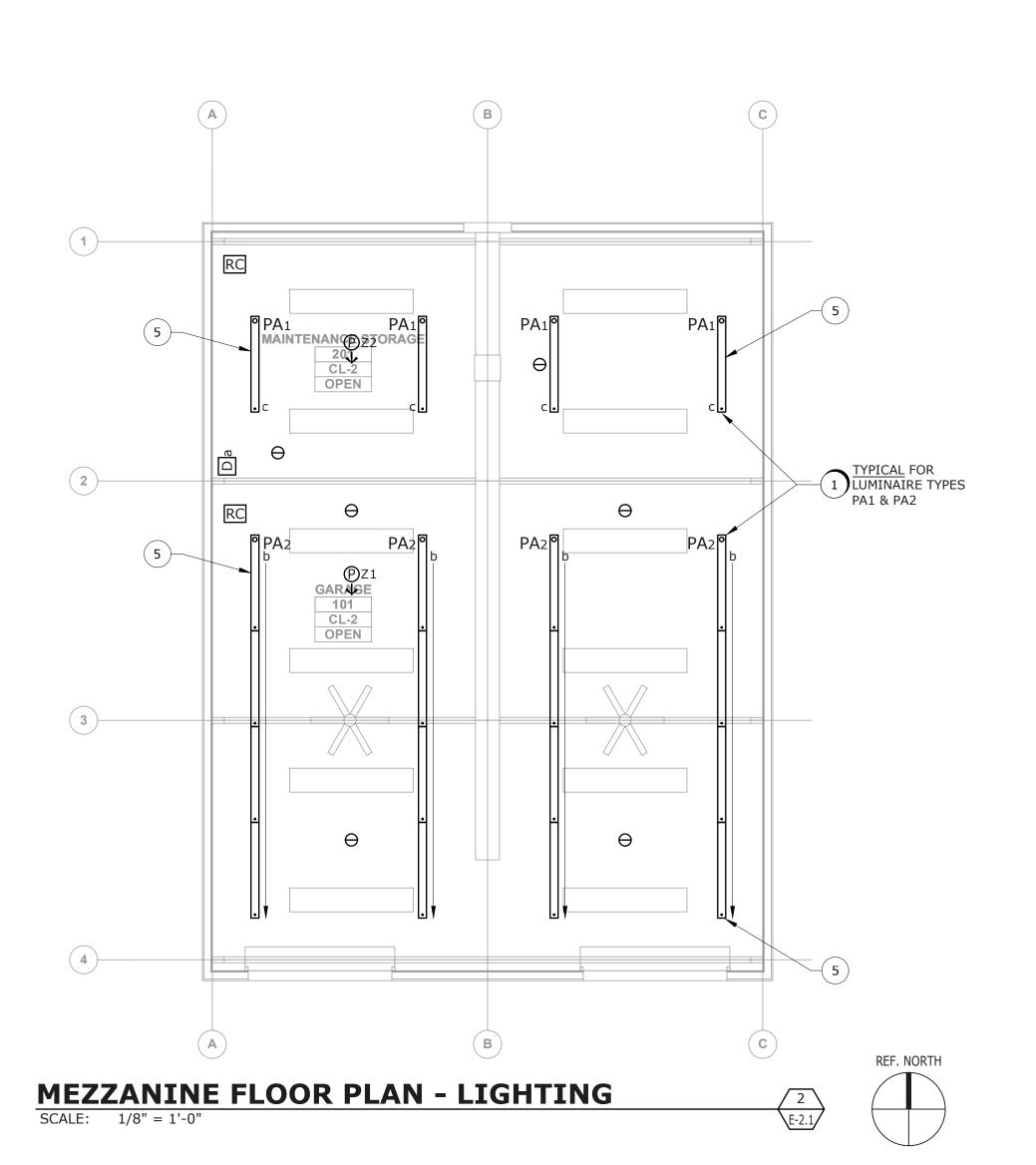
LUMINAIRE

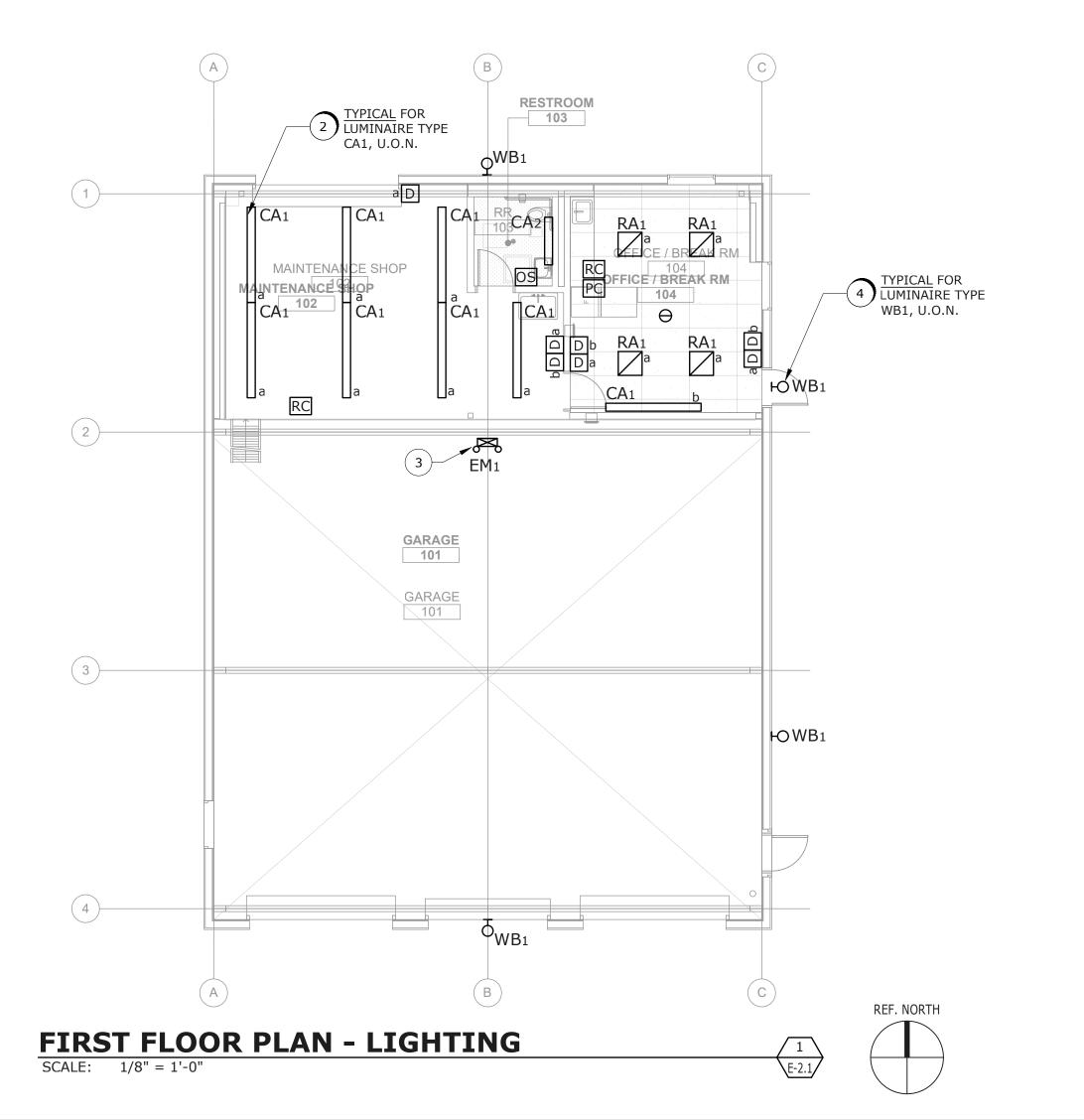
JANUARY 4, 2019

SCHEDULE SHEET NUMBER

SHEET TITLE

E-2.1





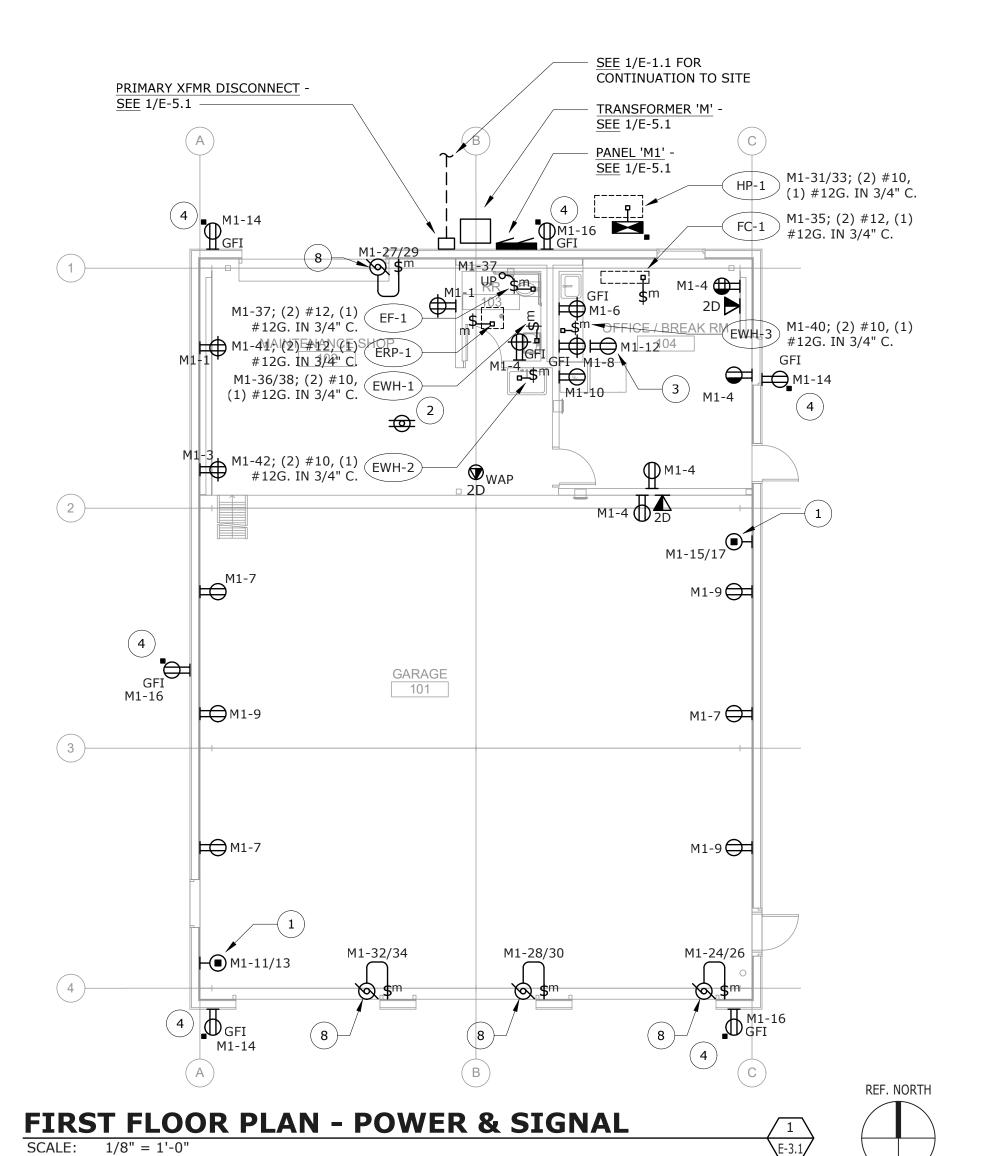
MI-20 MI-37 (2) #12, (1) EF 2 US MI-18 MI-18 MI-20 OPEN MI-20 OPEN

NUMBERED SHEET NOTES

- 1 COORDINATE EXACT RECEPTACLE TYPE WITH DISTRICT PRIOR TO ROUGH-IN. PROVIDE AND INSTALL (2) #8 + (1) #10G. IN 3/4" C. HOMERUN.
- $\left(\begin{array}{c}2\end{array}
 ight)$ CORD REEL RECEPTACLE. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN. <u>SEE</u> DETAIL 7/E-7.1.
- (3) LOCATE RECEPTACLE ABOVE SHELF HEIGHT, FOR MICROWAVE. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN.
- (4) RECEPTACLE SHALL BE LOCATED WITHIN LOCKABLE, WEATHERPROOF, METALLIC IN-USE COVER.
- (5) PROVIDE AND INSTALL 24"H X 30"D DATA CABINET. CHATSWORTH OR EQUAL, WITH 12 RACK UNIT MIN.
- PROVIDE DEDICATED QUAD RECEPTACLE AND J-BOX WITH #2AWG G. TO NEAREST BUILDING ELECTRODE. LOCATE EQUIPMENT WITHIN IDF CABINET (OR RACK).
- 7 ROUTE CEILING FAN BRANCH CIRCUIT VIA FIRE ALARM RELAY MODULE, TO FACILITATE FAN SHUT DOWN UPON ACTIVATION OF SPRINKLER SYSTEM.
- 8 ELECTRIC ROLL UP DOOR (208, 1PH, 30A). PROVIDE AND INSTALL PUSH BUTTON CONTROLS WITH 'UP', 'DOWN' AND 'STOP' FUNCTIONS. WIRING/CONDUIT: (2) #8 + (1) #10G. IN 3/4" C.

GENERAL SHEET NOTES

- 1. REFER TO THE MECHANICAL PLANS FOR THE EXACT LOCATION, CONNECTION REQUIREMENTS, AND SYSTEMS INTERLOCK/INTERFACE OF ALL EQUIPMENT. VERIFY REQUIREMENTS PRIOR TO ROUGH-IN.
- 2. WHERE DISCREPANCIES OCCUR BETWEEN THE ELECTRICAL SET, AND THE MECHANICAL PLANS / MECHANICAL EQUIPMENT SUBMITTALS, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE ARCHITECT PRIOR TO ROUGH-IN.
- ALL PROTECTIVE ELECTRICAL EQUIPMENT PROVIDED AT THE MECHANICAL EQUIPMENT, SHALL MATCH
 THE MANUFACTURER NAMEPLATES OF THE MECHANICAL UNIT PROVIDED ON SITE. VERIFY ALL
 REQUIREMENTS PRIOR TO ROUGH-IN.





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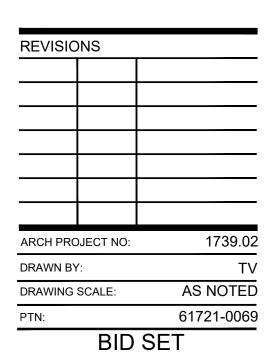


FREEDOM HIGH SCHOOL

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LIBERTY UNION HIGH SCHOOL DISTRICT



JANUARY 4, 2019
SHEET TITLE

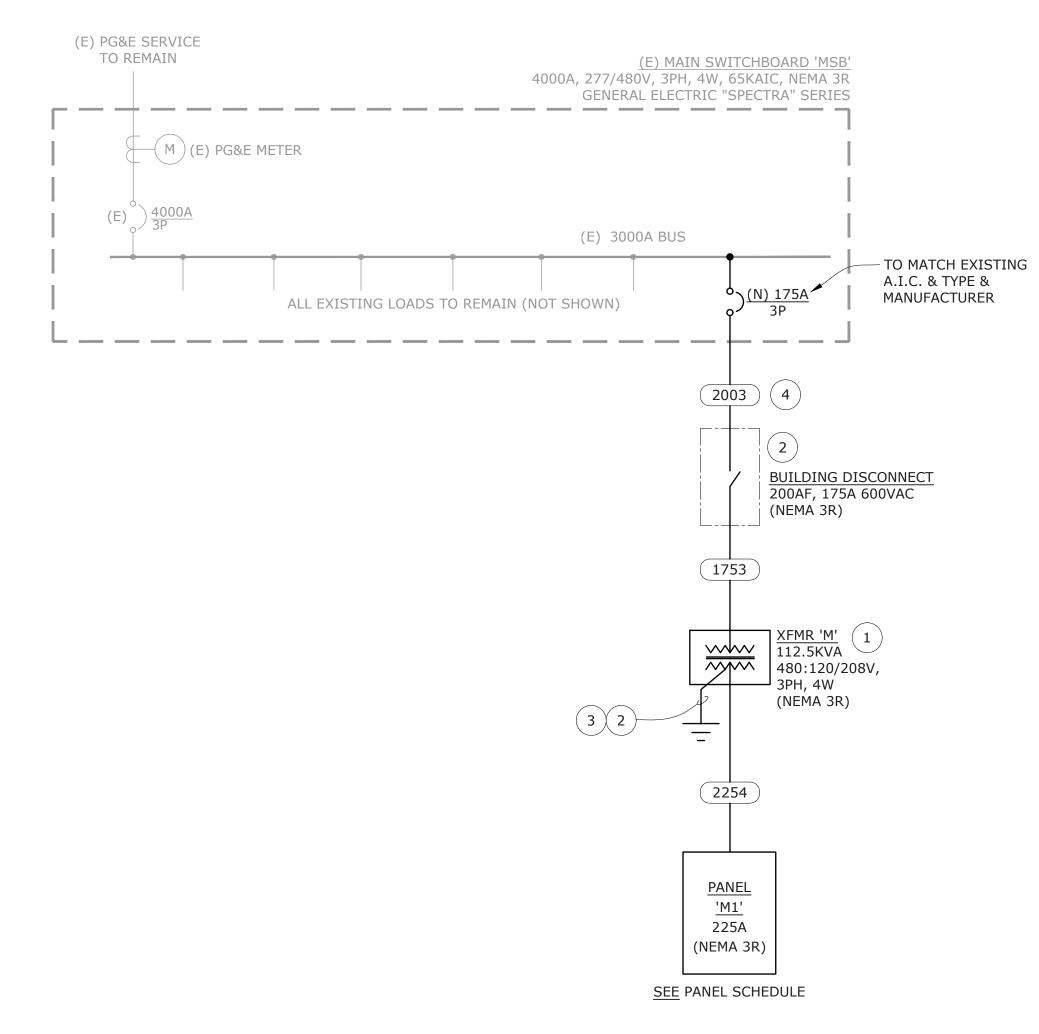
FIRST &
MEZZANINE
FLOOR PLANS POWER & SIGNAL

SHEET NUMBER

E-3.1

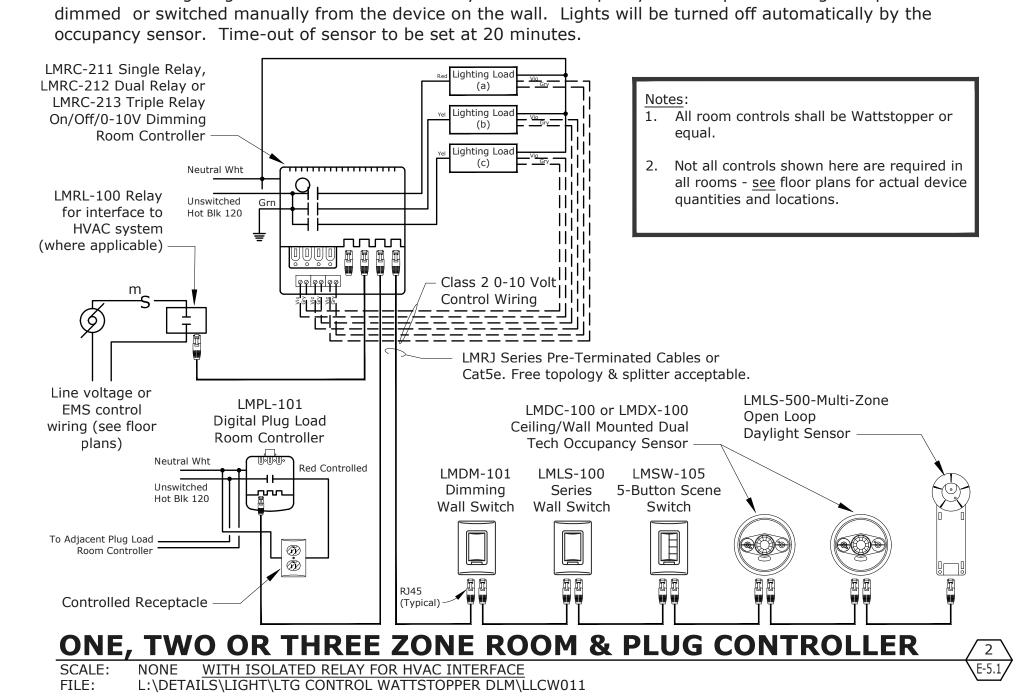
					PA	ANE	ELN	11							
VOLTS : 120 / 2	208											MAIN B	RKR:	225A MCB	
PHASE: 3 PH	4											FEEDE	R: SE	EE SINGLE LINE	
WIRE: 4 W	1				*PROVI	DE 'RED', AN	D LOCKABLE	ТҮРЕ СВ				CONDU	IIT: SE	EE SINGLE LINE	
BUSSING: 225	A					,,,,,,						MOUNT	ED: SUF	RFACE (NEMA 3R)	
POLES: 42F												AIC RA	TING:	65 KAIC	
LOAD DESCRIPTION	TYPE	Α	В	С	BRKR.	CKT.	CKT.	BRKR.	Α	В	С	TYPE	LO	AD DESCRIPTION	
REC - SHOP AREA COUNTER	R	0.36			20/1	1	2	20/1	0.20			М	FIRE ALARM	EXPANDER PANEL*	
REC - SHOP AREA COUNTER	R		0.18		20/1	3	4	20/1		1.08		R	REC - OFFICE	& RR AREA	
SPARE					20/1	5	6	20/1			0.75	R	REC - OFFICE	COUNTER	
REC - GARAGE WALLS	R	0.54			20/1	7	8	20/1	0.75			R	REC - OFFICE	COUNTER	
REC - GARAGE WALLS	R		0.54		20/1	9	10	20/1		0.90		М	OFFICE FRID	GE	
	R			2.50	40/2	11	12	20/1			1.10	М	OFFICE MICR	OWAVE	
REC - 30A EQUIPMENT	R	2.50			40/2	13	14	20/1	0.54			R	REC - EXTER	OR	
DEC. COA EQUIDATAT	R		2.50		40/2	15	16	20/1		0.54		R	REC - EXTER	OR	
REC - 30A EQUIPMENT				2.50	40/2	17	18	20/1			0.25	М	REC - DATA C	ABINET	
MOTORIZED GATE	М	0.72			20/1	19	20	20/1				R	REC - MEZZANINE		
SPARE					20/1	21	22	20/1					SPARE		
SPARE					20/1	23	24				0.75				
SPARE					20/1	25	26	30/2	0.75				SOUTHROLL	UP DOOR	
	М		0.75				28	20/2		0.75				LID DOOD	
NORTH ROLL UP DOOR	М			0.75	30/2	27 29	30	30/2			0.75		SOUTH ROLL UP DOOR		
	Н	1.90]				32	20.40	0.75]			COLITUDOLL LID DOOD		
HVAC - OUTDOOR HEAT PUMP	Н		1.90		30/2	31 33	34	30/2		0.75			SOUTH ROLL UP DOOR		
HVAC - INDOOR FAN COIL	Н			0.72	15/1	35	36	20/2			1.25	Н			
HVAC - EXHAUST FANS	Н	0.90]		15/1	37	38	20/2	1.25]		Н	EWH - RESTR	OOM	
HVAC - CEILING FANS	Н		0.01		15/1	39	40	20/1		1.44		Н	EWH - OFFICI		
HVAC - RADIANT HEATING PANEL	Н			0.01	15/1	41	42	20/1			1.44	Н	EWH - SHOP		
		6.92	5.88	6.48	,			,	4.24	5.46	6.29				
					_				THIS	SECTIO	N PHAS	SE A:	11.16	KVA	
			CONN.	DEN	//AND	Ī		1		SECTIO			11.34	KVA	
DEMAND LOAD	SUMMARY		KVA		TOR	DEMAI	ND KVA			SECTIO			12.77	KVA	
TYPE "M": NON-CONTINUO	DUS / MISC. LO	ADS	4.67		00%	4.	67				S SECT		106.42	MAX AMPS / PHASE	
TYPE "L": LIGHTING / CO			0.00		25%		00						130.42		
TYPE "R": RECEPTACLES		10.00		00%		.00		ΡΔΝΙ	EL TOTA	ΔΙ ΡΗΔ	SF A:	11.16	KVA		
TYPE "R": RECEPTACLES	•	•	5.28		0%		64			EL TOTA			11.34	KVA	
TYPE "H": HVAC / MECHA	•	-/	10.82		00%		.82			EL TOTA			12.77	KVA KVA	
111 2 111 110/10/10/2017		OTALS:			- , -		.13	1	i AN	01/		TOTAL:		MAX AMPS / PHASE	

							PA	ANE	EL N	11							
	VOLTS:	120 / 208 V				(SI	ECTION 2	2 - LEFT	HAND SI	DE)				MAIN B	RKR:	SUB FE	D, FEED THRU LUGS
	PHASE:	3 PH												FEEDE	R:		
	WIRE:	4 W												CONDU	IT:		
	BUSSING:	225A												MOUNT	ED:		
	POLES:	42P												AIC RAT	ΓING:		
	LOAD DESCR	RIPTION	TYPE	Α	В	С	BRKR.	CKT.	CKT.	BRKR.	Α	В	С	TYPE		LOAD	DESCRIPTION
PARE							20/1	43	44	20/1					SPARE		
PARE							20/1	45	46	20/1					SPARE		
PARE							20/1	47	48	20/1	_				SPARE		
PARE							20/1	49	50	20/1					SPARE		
PARE							20/1	51	52	20/1					SPARE		
PARE							20/1	53	54	20/1					SPARE		
PARE							20/1	55	56			·			SPACE		
PARE							20/1	57	58						SPACE		
PARE							20/1	59	60						SPACE		
PARE							20/1	61	62						SPACE		
PAC	E							63	64						SPACE		
PAC	E							65	66						SPACE		
PAC	E							67	68						SPACE		
PAC	E							69	70						SPACE		
PAC	E							71	72						SPACE		
PAC	E							73	74						SPACE		
PAC	E							75	76						SPACE		
PAC	E				_			77	78						SPACE		
PAC	E							79	80						SPACE		
PAC	E							81	82						SPACE		
PAC	E							83	84						SPACE		
				0.00	0.00	0.00					0.00	0.00	0.00				
										_	THIS	SECTIO	N PHA	SE A:	0.0	0	_KVA
	DEN	MAND LOAD SUM	MADV		CONN.	DEN	1AND	DEMAN	ND KVA	1	THIS	SECTIO	N PHA	SE B:	0.0	0	KVA
	DEN	MAND LOAD SOM	IVIAIX I		KVA	FAC	TOR	DEIVIAI	ND KVA		THIS	SECTIO	N PHA	SE C:	0.0	0	KVA
	TYPE "M": NON-CONTINUOUS / MISC. LOADS			ADS	0.00	100%		0.	00]		THIS	S SECT	ION:	0.0	0	MAX AMPS / PHAS
	TYPE "L": LIGH	ITING / CONTINU	OUS LOA	DS	0.00	12	5%	0.	00								
	TYPE "R": REC	EPTACLES (FIR	ST 10KV	A)	0.00	10	0%	0.	00								
	TYPE "R": REC	EPTACLES (OVE	R 10KVA	()	0.00	50	0%	0.	00								
		.C / MECHANÌCAL			0.00	10	0%	0	00								





NOTE:
One, two or three zone 0-10v dimmed application with wall or ceiling mounted occupancy sensor(s) for shut off and manual dimming. Lights will turn on automatically from the occupancy sensor upon entering the space and can be



FEEDER CONDUITED (1) 3" (1) 2"	CONDUCTORS (4)#4/0 & (1)#4 G.
	(4)#4/0 & (1)#4 G.
(2003) (1) 2"	
	(3)#3/0 & (1)#4 G.
1753 (1) 2"	(3)#2/0 & (1)#6 G.
•	FEEDER TAG KEY
	TEDER INGRET
4 <u>00 4 N</u>	
学	

GENERAL ELECTRICAL NOTES

CONTRACTOR TO RETAIN INDEPENDENT TESTING COMPANY (EMERSON OR EQUAL)
TO PREPARE A SHORT-CIRCUIT AND COORDINATION STUDY (INCLUDING GROUND
FAULT), AND ARC-FLASH STUDY FOR DISTRIBUTION SYSTEM, INCLUDING ALL
ADJUSTABLE TRIP BREAKERS - SET BREAKER TRIP SETTING AS PER STUDY
RECOMMENDATIONS AND IDENTIFY ALL ARC FLASH HAZARD LEVELS ON NEW AND
EXISTING EQUIPMENT.

NUMBERED SHEET NOTES

- 1 PROVIDE AND INSTALL TRANSFORMER (480V PRIMARY ~208/120V, 3PH, 4W SEC)
- 2 LABEL AS 'MAIN BUILDING DISCONNECT'.

- WIRE QUANTITY

USED ON THIS PROJECT.

FEEDER AMPACITY

NOTE: NOT ALL FEEDERS ON THIS SCHEDULE ARE NECESSARILY

- 3 IN ADDITION TO GROUNDING INDICATED, BOND ALL COLD WATER PIPING SYSTEM, GAS PIPING SYSTEMS, AND SPRINKLER PIPING SYSTEMS TO THE BUILDING GROUNDING ELECTRODE SYSTEM WITH CODE SIZED BONDING CONDUCTOR IN (1) 3/4 INCH CONDUIT. BOND WHEREVER THERE IS A BREAK IN THE CONTINUITY OF THESE SYSTEMS THROUGHOUT THE PROJECT.
- 4 OVER-SIZED FOR VOLTAGE DROP.



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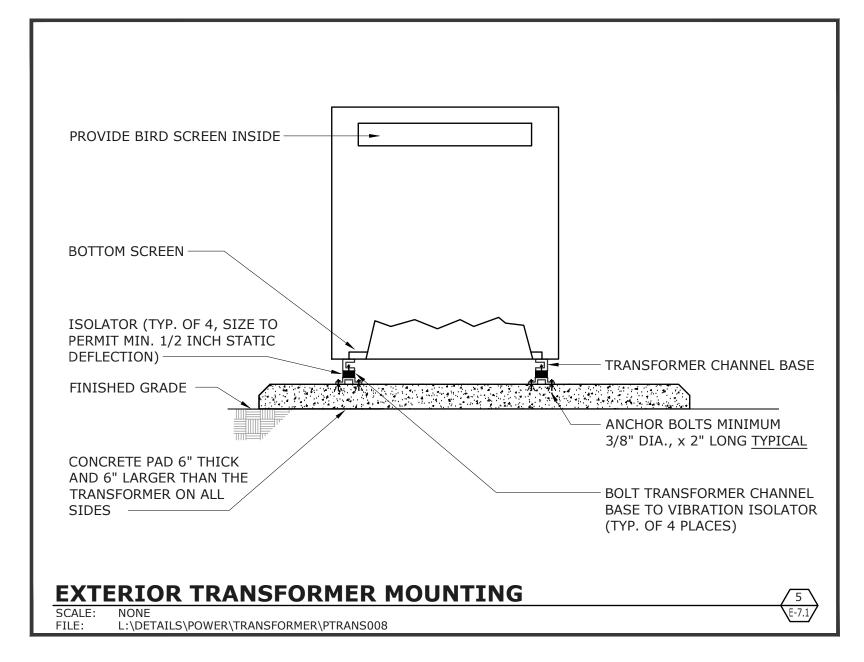
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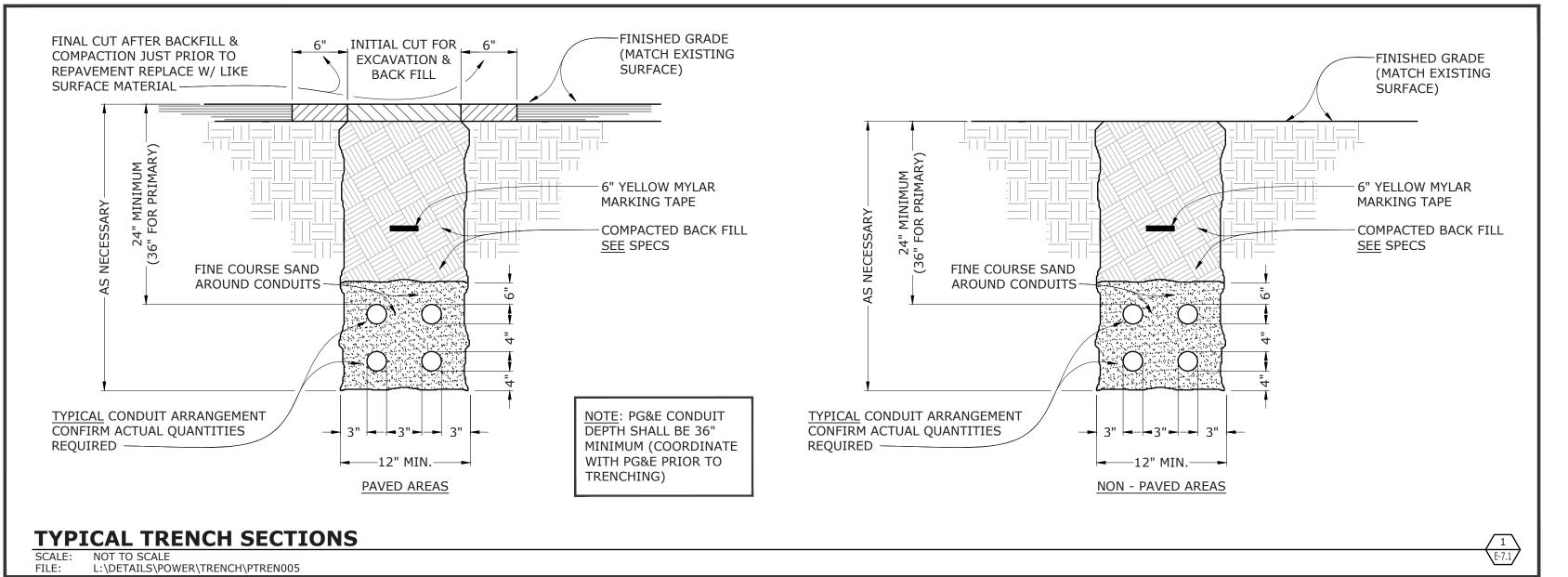
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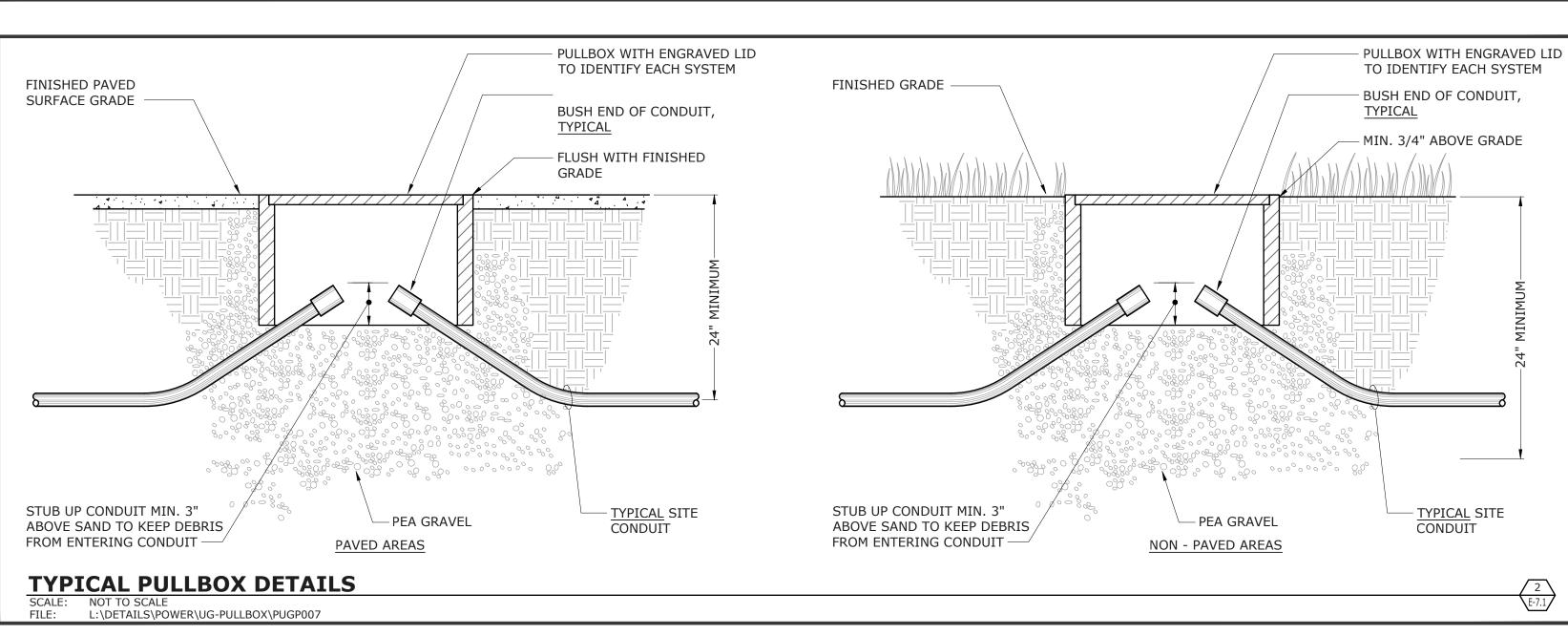
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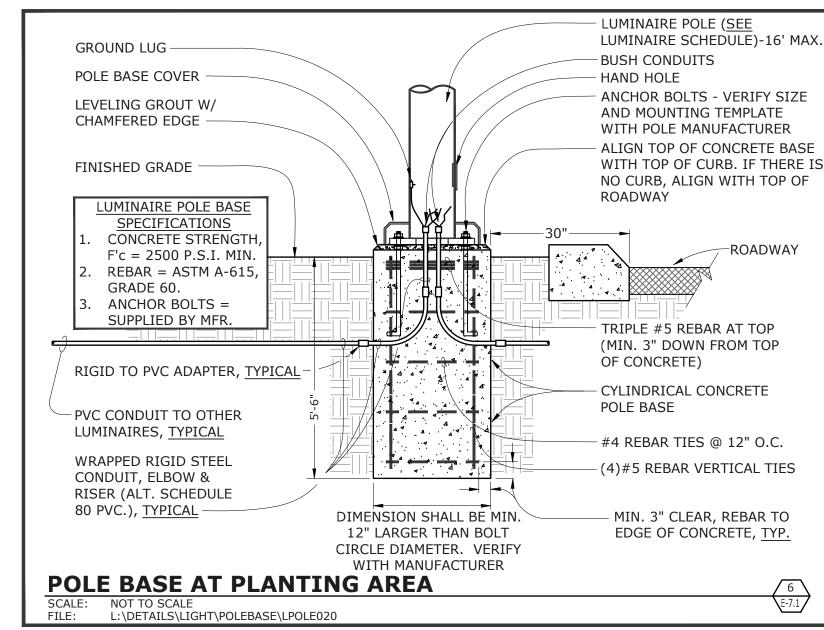
DIAGRAMS & SCHEDULES

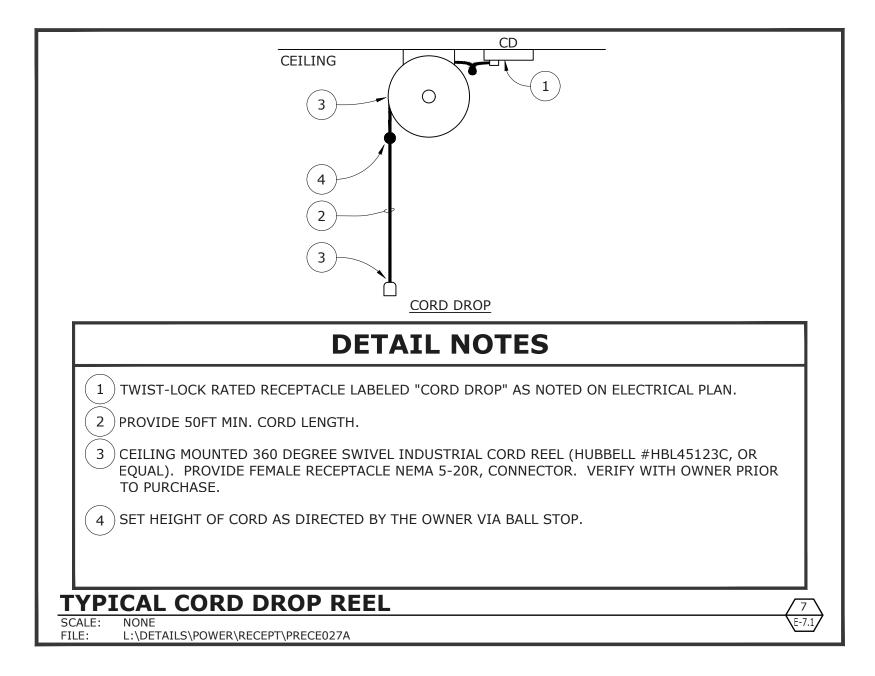
E-5.1

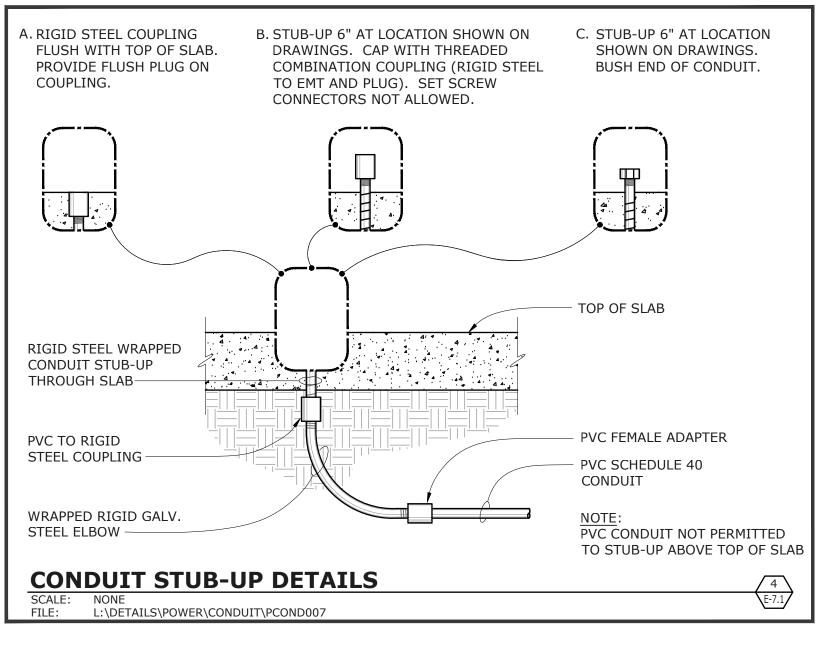


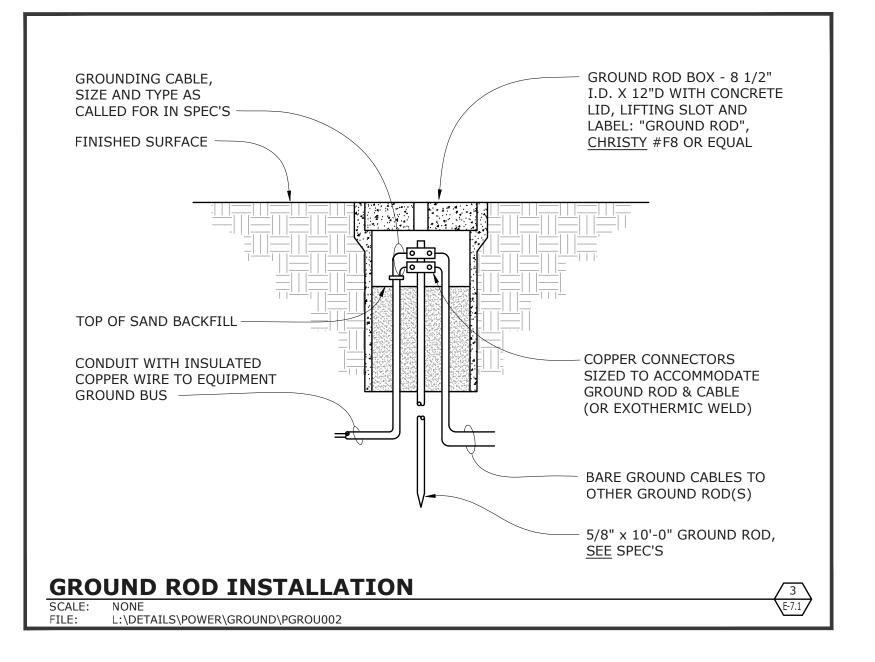














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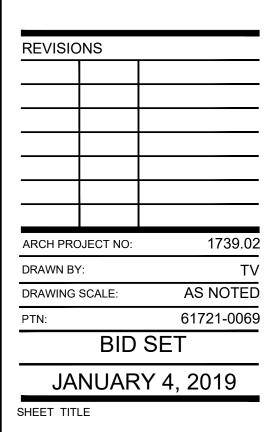


FREEDOM HIGH SCHOOL

NEW
MAINTENANCE
FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

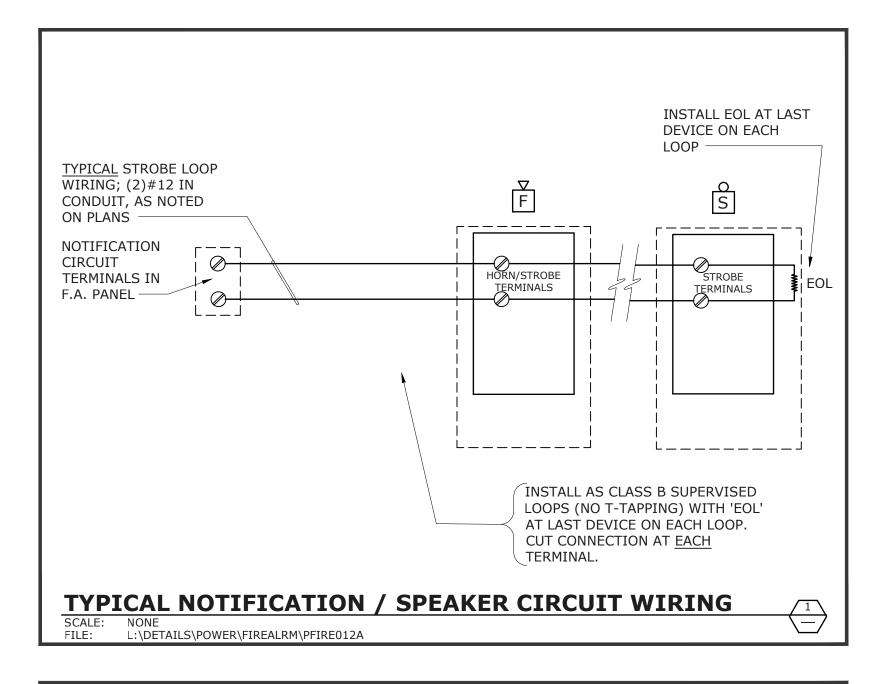
LIBERTY UNION HIGH SCHOOL DISTRICT

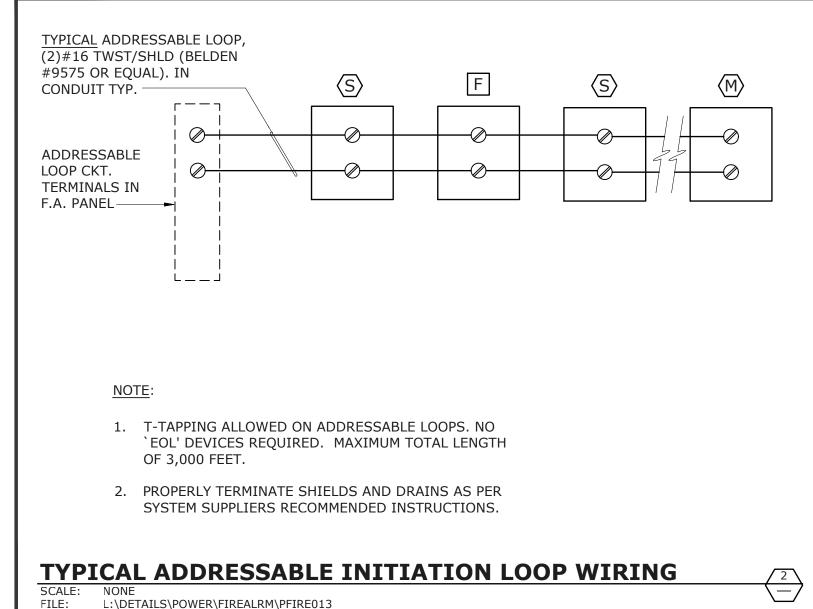


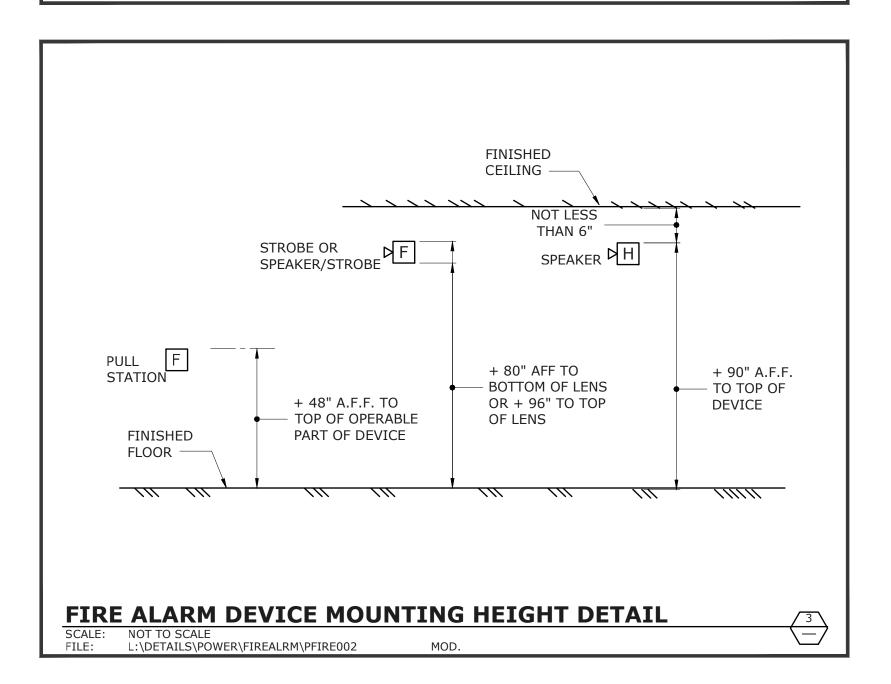
DETAILS

SHEET NUMBER

E-7.1







GENERAL FIRE ALARM NOTES CONTD.

- PER CEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE ALARM DEVICE. DO NOT SPLICE WIRE. THERE MUST BE AT LEAST 6" OF WIRE LEAD FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC FOR PROPER VOLUME WITH INSTALLED WIRING AND DEVICES.
- SUPERVISING STATION: AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72, AS AMENDED BY CFC CHAPTER 80. THE SUPERVISION STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITERS LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.
- A DOCUMENTATION CABINET SHALL BE INSTALLED ADJACENT TO THE FACP IN THE FRONT OFFICE (NFPA 72, 7.7.2.1).
- ALL RECORD DOCUMENTATION SHALL BE STORED IN THE DOCUMENTATION CABINET (NFPA 72, 7.7.2.2): PROVIDE NAMEPLATE "FIRE ALARM SYSTEM RECORD DOCUMENTS" (NFPA 72, 7.7.2.4).

FIRE ALARM WIRING LEGEND

TAG	DESCRIPTION	CABLING
А	INITIATION CIRCUIT	(2) #16 TWISTED/UNSHIELDED
В	NOTIFICATION CIRCUIT	(2) #12 THWN
С	IDNET COMMUNICATIONS CABLING	(2) #16 TWISTED/SHIELDED
D	CONTROL (NON RESETABLE POWER)	(2) #14 THHN/THWN

CONTRACTOR SHALL VERIFY EXACT CABLE/WIRE TYPES WITH SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. INSTALL CABLES IN WIREMOLD RACEWAY IN FINISH AREAS LIKE OFFICES, ADMIN & CLASSROOMS.

FIRE ALARM SYSTEM DESCRIPTION

- THE FIRE ALARM SYSTEM SHALL BE AN AUTOMATIC ADDRESSABLE SYSTEM WITH VOICE EVACUATION, CLASS B WIRING FOR NAC'S AND SLC'S TO MATCH EXISTING.
- CIRCUIT PATHWAY SURVIVABILITY SHALL BE LEVEL 1.
- PROVIDE AND INSTALL NEW EQUIPMENT, DEVICES AND REQUIRED MODULES FULLY COMPATIBLE WITH (E) FACP AND PROVIDE CONNECTIONS COMPLETE FOR A FULLY FUNCTIONING NETWORKED
- . THE NEW FIRE ALARM SYSTEM INCLUDES CARBON MONOXIDE DETECTORS WHERE REQUIRED.
- THE NAME OF THE SPECIFIC PERSON RESPONSIBLE FOR THE SYSTEM DESIGN IS CHRIS LIPPINCOTT (O'MAHONY & MYER).
- SYSTEM INSTALLATION SHALL BE BY A LICENSED ELECTRICAL OR FIRE ALARM CONTRACTOR WITH A CALIFORNIA C-10 LICENSE, FACTORY-AUTHORIZED, REGULARLY ENGAGED IN THE INSTALLATION AND COMMISSIONING OF FIRE ALARM SYSTEMS TO NFPA 72 STANDARDS. INSTALLING CONTRACTOR'S NAME AND CONTACT INFORMATION SHALL BE LISTED IN THE NFPA CLOSE OUT DOCUMENTATION AT COMPLETION OF PROJECT.

FIRE ALARM SCOPE OF WORK

- TERMINATE EACH NOTIFICATION LOOP TO THE FAEP, VOICE EVAC SYSTEM AS SHOWN ON PLANS AND RISER DIAGRAMS. PROVIDE NECESSARY MODULES IN THE (E) FACP TO ACCOMMODATE THE NEW DEVICES & VOICE EVAC SYSTEM.
- TERMINATE EACH INITIATION LOOP AT THE MAIN FIRE ALARM CONTROL PANEL AS SHOWN.
- PROVIDE A COMPLETE NETWORK FIRE ALARM SYSTEM, INCLUDING REMOTE POWER SUPPLY TERMINAL CABINETS, EXPANDER PANELS, OUTLETS, DEVICES AND WIRING FOR THE FACILITY AS

SEQUENCE OF OPERATION

- MANUAL PULL STATION WHEN A PULL STATION IS PULLED, IT SHALL ANNUNCIATE AN ALARM AT THE FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS.
- SMOKE AND HEAT DETECTORS WHEN A SMOKE OR HEAT DETECTOR IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS.
- CARBON MONOXIDE DETECTORS WHEN TRIGGERED, CARBON MONOXIDE DETECTORS SHALL BE PROGRAMMED TO PROVIDE LOCAL NOTIFICATION THROUGH DEVICE BASE AS WELL AS ADMINISTRATION AREA NOTIFICATION THROUGH DEDICATED HORN/STROBE EMITTING A TEMPORAL 4 TONE. A CARBON MONOXIDE ALARM SHALL NOT ACTIVATE CAMPUS FIRE ALARM SYSTEM AND SHALL NOT DIAL OUT TO OFF-SITE MONITORING.
- ANY BUILDING POWER FAILURE- IF THE BUILDING LOSES POWER, THE FAILURE SHALL SHOW UP AS A TROUBLE SIGNAL ON THE FACP. THE SYSTEM SHALL STAY ACTIVE ON BATTERY BACK-UP POWER IN ACCORDANCE WITH THE STATE FIRE CODE.
- SYSTEM SHALL INDICATE TROUBLE ALARMS FOR ALL SYSTEM FAULTS (i.e. GROUND FAULTS, SHORTS, OPEN CIRCUITS, BATTERY DISCONNECT, ETC.).
- FIRE/SMOKE DAMPERS WHEN A FIRE/SMOKE DAMPER SMOKE DETECTOR IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE MAIN FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS AND SHALL SHUT DOWN THE ASSOCIATED HVAC UNIT.
- FIRE SPRINKLER SYSTEM WHEN A FLOW SWITCH IS ACTIVATED, IT SHALL ANNUNCIATE AN ALARM AT THE MAIN FACP. ALARM SHALL ACTIVATE ALL AUDIO AND VISUAL DEVICES THROUGHOUT THE CAMPUS. WHEN TAMPER SWITCH IS ACTIVATED, IT SHALL ANNUNCIATE A SUPERVISORY ALARM AT
- 8. UPON ALARM CONDITION, AUTO DIALER TO NOTIFY THE SUPERVISING STATION, AND AUTHORIZED SCHOOL PERSONNEL TO NOTIFY THE FIRE DEPARTMENT AND INITIATE EVACUATION OF STUDENTS AND FACULTY AS PER THE SCHOOL'S EVACUATION PLAN.
- UPON TROUBLE CONDITION, AUTO DIALER TO NOTIFY THE SUPERVISING STATION, AND AUTHORIZED SCHOOL PERSONNEL TO NOTIFY AUTHORIZED TECHNICIAN TO CORRECT THE TROUBLE CONDITION.

SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NUMBER	CSFM LISTING NUMBER	STANDBY CURRENT	ALARM CURREN
FACP	EXISTING FIRE ALARM ALARM CONTROL PANEL	SIMPLEX 4100ES	7165-0026:0251	373mA	470mA
FAEP	FIRE ALARM NAC EXTENDER	SIMPLEX 4009	7300-0026-0214	87mA	185mA
M	ADDRESSABLE MONITOR MODULE	SIMPLEX 4090-9001	7300-0026:0223	-	5.10mA
R	ADDRESSABLE RELAY MODULE	SIMPLEX 4090-9002	7300-0026:0223	-	5.10mA
<u>(S)</u>	ADDRESSABLE PHOTOELECTRIC SMOKE DETECTOR	SIMPLEX 4098-9714	7272-0026:0218	0.40mA	1mA
-	ADDRESSABLE DETECTOR BASE	SIMPLEX 4098-9792	7300-0026:0217	-	-
\forall	ADDRESSABLE HEAT DETECTOR	SIMPLEX 4098-9733	7270-0026:0216	0.40mA	1mA
-	ADDRESSABLE DETECTOR BASE	SIMPLEX 4098-9792	7300-0026:0217	-	-
F	ADDRESSABLE MANUAL PULLSTATION	SIMPLEX 4099-9006	7150-0026:0224	0.038mA	5.10mA
	VISUAL STROBE (WALL MOUNT)	SIMPLEX 4906-9101 (WALL)	7125-0026:0316	-	-
	WALL MOUNT, SELECTABLE CANDELA		15cd	0mA	60mA
Sp	UL 1971 PUBLIC MODE NOTIFICATION		30cd	0mA	94mA
			75cd	0mA	186mA
			110cd	0mA	252mA
	COMBINATION VISUAL STROBE AND AUDIBLE HORN,	SIMPLEX 4906-9127 (WALL)	7125-0026:0317	-	-
	WALL MOUNT, SELECTABLE CANDELA		15cd	0mA	75mA
F⊲	UL 1971 PUBLIC MODE NOTIFICATION		30cd	0mA	116mA
			75cd	0mA	221mA
			110cd	0mA	285mA
	VISUAL STROBE (CEILING MOUNT)	SIMPLEX 4906-9102 (CLG)	7125-0026:0316	-	-
	CEILING MOUNT, SELECTABLE CANDELA		15cd	0mA	75mA
ဇန္ဒြာ	UL 1971 PUBLIC MODE NOTIFICATION		30cd	0mA	125mA
O			75cd	0mA	233mA
			110cd	0mA	316mA
	COMBINATION VISUAL STROBE AND AUDIBLE HORN,	SIMPLEX 4906-9128 (CLG)	7125-0026:0317	-	-
-	CEILING MOUNT MOUNT, SELECTABLE CANDELA		15cd	0mA	86mA
۸∰۵	UL 1971 PUBLIC MODE NOTIFICATION		30cd	0mA	132mA
Δ			75cd	0mA	250mA
			110cd	0mA	320mA
[]]	EXTERIOR AUDIBLE HORN WITH	SIMPLEX 4901-0820	7320-0785:0105	0mA	23mA
H	WEATHER-PROOF BACKBOX	#49WPBB			
	DOCUMENTATION CABINET	SPACE AGE ELECT.			
		SSU00685			

GENERAL FIRE ALARM NOTES

- FINAL FIRE ALARM TEST SHALL BE MADE WITH THE DSA INSPECTOR OF RECORD (IOR). LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL ALARM TESTING AND SHALL ASSIST/WITNESS SUCH TESTING WHEN ABLE, DSA/ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF (48) HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
- FIRE ALARM CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2. MONITORING SHALL BE TESTED AND VERIFIED AS SENDING THE CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACT AND/OR PROVISIONS
- UNDERGROUND AND EXTERIOR CONDUITS SHALL HAVE WATERTIGHT FITTINGS.
- FIRE ALARM DEVICE MOUNTING HEIGHTS:
 - PULL STATION: 48" TO TOP OF OPERATOR ABOVE FINISHED FLOOR.
 - HORN INTERIOR: 90" MIN. TO TOP OF DEVICE ABOVE FINISHED FLOOR, OR 100" MAX TO TOP OF DEVICE, BUT NOT LESS THAN 6" FROM CEILING.
 - WALL MOUNTED STROBE OR HORN/STROBE: BETWEEN 80" TO BOTTOM OF DEVICE LENS TO +96" TO TOP OF DEVICE LENS ABOVE FINISH FLOOR, BUT NOT LESS THAN 6" FROM CEILING.
 - CONTROL PANELS / ANNUNCIATORS: 48" TO BOTTOM OF EQUIPMENT.
- AUDIBLE FIRE ALARM SYSTEM LEVEL SHALL BE AT LEAST 15dBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIABLE AREAS, OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, MEASURED AT 5 FEET ABOVE THE FLOOR. AUDIBLE SIGNALS SHALL NOT BE LESS THAN 75dBA AT 10 FEET, OR MORE THAN 110dBA AT THE MINIMUM HEARING DISTANCE.
- AUDIBLE DEVICES SHALL BE SYNCHRONIZED TEMPORAL THREE DISTINCTIVE FIRE ALARM SOUND PER
- . APPLICABLE CODES:
 - a. CBC 2016; CEC 2016; CMC 2016; CFC 2016.
 - b. STATE FIRE MARSHAL TITLE 19, PUBLIC SAFETY.
 - c. NFPA 72, 2016 EDITION W/CA AMENDMENTS, FIRE ALARM CODE.
 - d. NFPA 720, STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE (CO) DETECTION AND WARNING EQUIPMENT, 2015.
- STROBES SHALL FLASH AT A RATE NOT EXCEEDING TWO FLASHES PER SECOND, AND NOT LESS THAN ONE FLASH EVERY SECOND. THE DEVICE SHALL HAVE A PULSING LIGHT SOURCE NOT LESS THAN 15 CANDELA. VISUAL DEVICES WITHIN 55 FEET OF EACH OTHER SHALL BE SYNCHRONIZED.
- FIRE ALARM CONTRACTOR SHALL PROVIDE A "RECORD OF COMPLETION" TO THE INSPECTOR OF RECORD IOR/DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TESTS, PER NFPA 72.
- .0. POWER SERVICE TO THE FACP, REMOTE POWER SUPPLIES, AND CENTRAL STATION AUTO DIALER SHALL BE ON A DEDICATED BRANCH CIRCUIT WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM
- . INSTALL ALL WIRING IN CONDUIT, MIN. 3/4" CONDUIT. ALL FIRE ALARM SYSTEM WIRING SHALL BE FLP (FIRE POWER LIMITED) OR FPLP (FIRE POWER LIMITED PLENUM RATED) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
- 12. CONDUIT AND WIRING SHALL BE PER MANUFACTURERS REQUIREMENTS.
- 13. ALL FIRE ALARM COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATIONS. NO SINGLE DEVICES/EQPT. SHALL EXCEED 20LBS. WITHOUT SPECIAL MOUNTING DETAILS.
- 14. INSTALLATION OF SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE SET OF CONSTRUCTION DOCUMENTS (WITH DEVICE TYPES AND LISTINGS) HAVE BEEN REVIEWED AND APPROVED BY DSA.
- 15. A STAMPED SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES AND SHALL BE USED FOR INSTALLATION.
- 16. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND ARCHITECT/ENGINEER OF RECORD.
- 17. THE CONTRACTOR SHALL INSTALL AND ADJUST ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
- 18. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1 FOOT FROM FIRE SPRINKLER HEADS OR 3 FEET FROM ANY SUPPLY DIFFUSER. IN AREAS OF CONSTRUCTION OR POSSIBLE DAMAGE /CONTAMINATION, INSTALLED DEVICES SHALL BE COVERED UNTIL AREA IS READY TO BE TURNED OVER TO THE OWNER.





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FREEDOM HIGH SCHOOL

NEW **MAINTENANCE FACILITIES**

1050 NEROLY ROAD OAKLEY, CA 9456

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	
ARCH PROJECT NO:	1739.02
DRAWN BY:	TV
DRAWING SCALE:	AS NOTED
PTN:	61721-0069

JANUARY 4, 2019 SHEET TITLE

BID SET

FIRE ALARM **EQUIPMENT LIST GENERAL NOTES DETAILS**

FE-0. 1

SITE PLAN - FIRE ALARM

SCALE: 1" = 30'-0"

NUMBERED SHEET NOTES

- 1 SIGNAL PULLBOX <u>SEE</u> SITE PLAN E-1.1 FOR REQUIREMENTS AND ROUTING.
- 2 FIRE ALARM CONDUIT <u>SEE</u> SITE PLAN E-1.1 FOR REQUIREMENTS AND ROUTING. PROVIDE AND INSTALL FIRE ALARM WIRING INDICATED ADJACENT NOTE TAG.
- 3 CONNECT COMPLETE TO EXISTING FIRE ALARM 2-WIRE IDNET COMMUNICATIONS CABLING AT EXISTING FIRE ALARM EQUIPMENT. <u>SEE</u> FE-0.1 RISER DIAGRAM.
- (4) RE-USE EXISTING RACEWAY FROM EXISTING SIGNAL PULLBOX.
- 5 PROVIDE AND INSTALL (1) 1"C. WITH FIRE ALARM WIRING INDICATED, CONNECT COMPLETE TO POST INDICATING VALVE LOCATION. <u>SEE</u> 1/FE-3.1 FOR MODULE LOCATION.



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LIBERTY UNION HIGH SCHOOL DISTRICT

ARCH PROJECT NO: 1739.02

DRAWN BY: LN

DRAWING SCALE: AS NOTED

BID SET

JANUARY 4, 2019
SHEET TITLE

SITE PLAN -FIRE ALARM

SHEET NUMBER

FE-1.1

REF. NORTH



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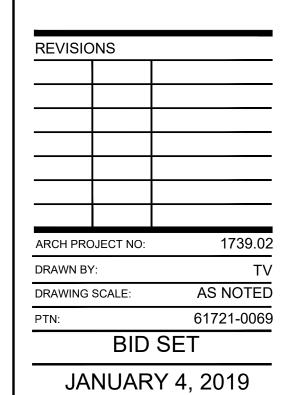


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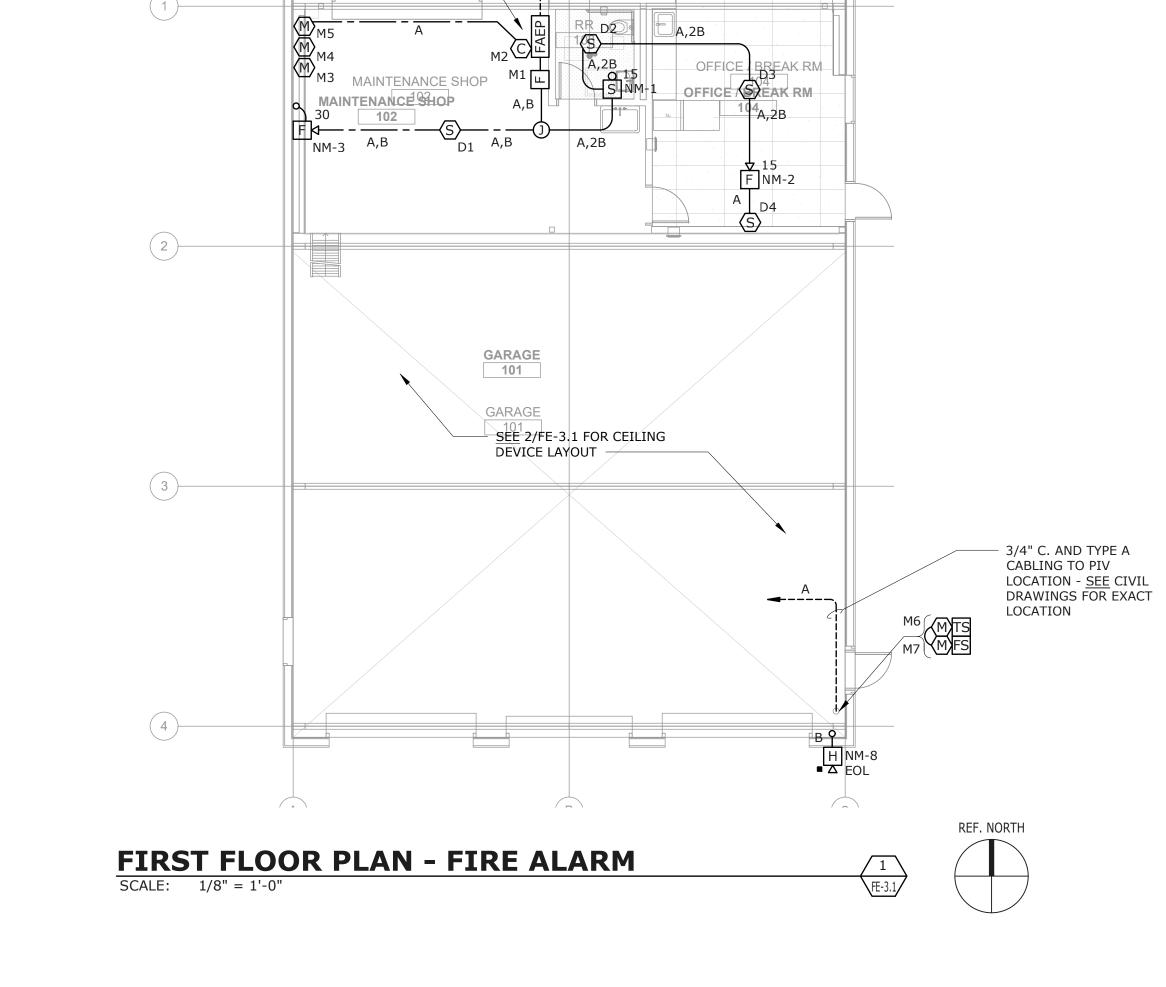
FIRST &
MEZZANINE
FLOOR PLANS -

FIRE ALARM

SHEET NUMBER

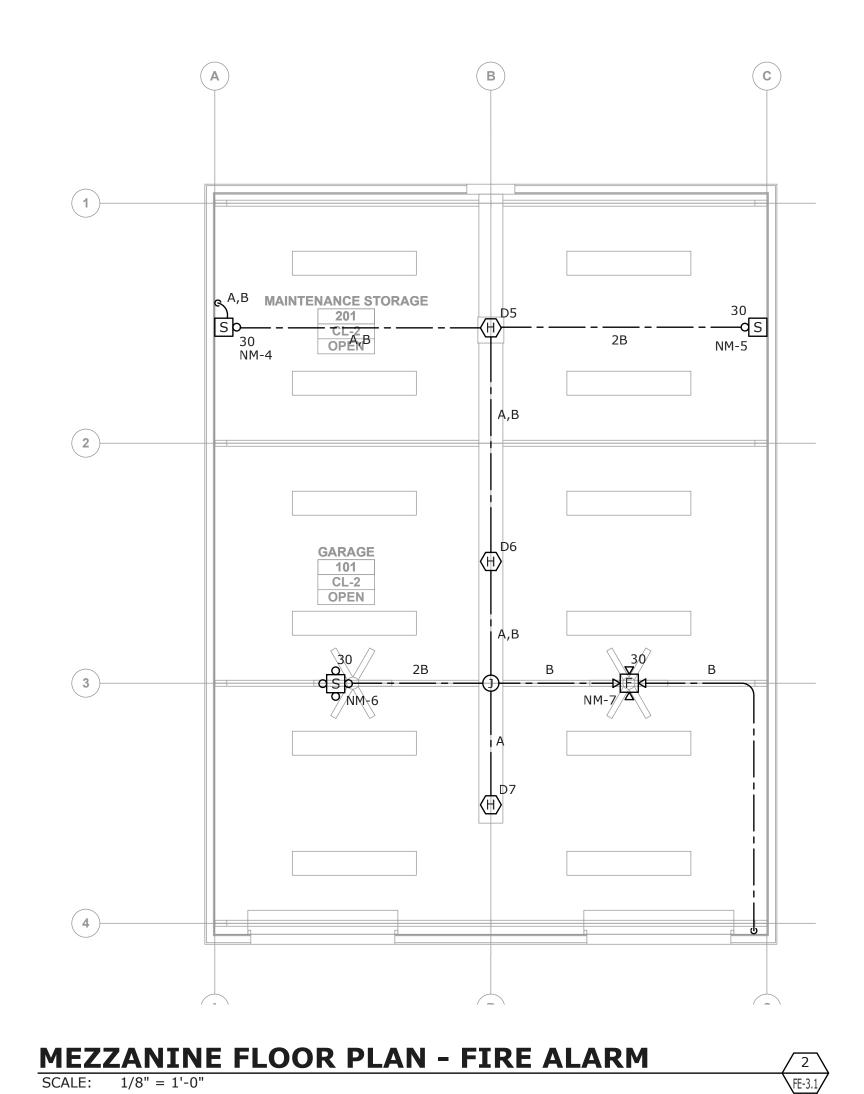
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SHEET TITLE

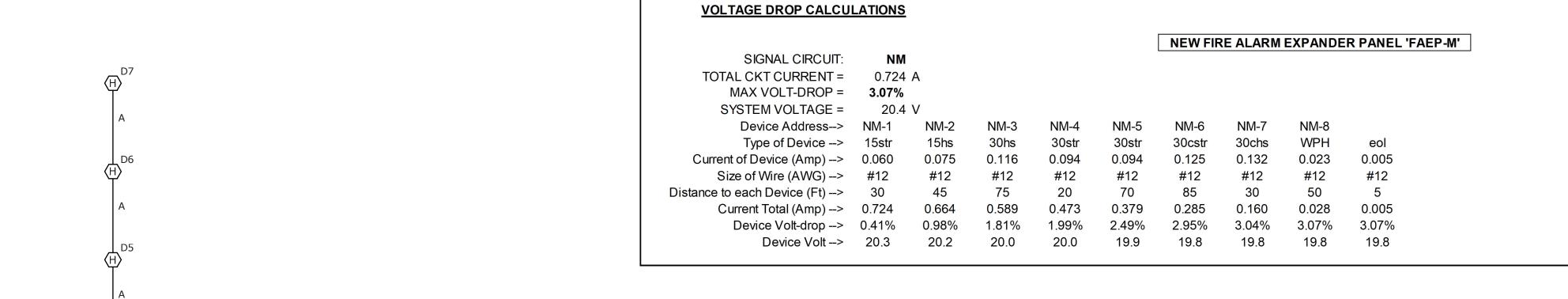


SEE FE-1.1 FOR CONTINUATION TO SITE —

(N) FIRE ALARM EXPANDER







FINE AL	ARM EX	(PANDER 'FAEP-M'
EA (A)	QTY.	CURRENT
0.087	1	0.087
0.000	7	0.000
0.000	7	0.000
ANDBY CUR	RENT =	= 0.087 A
JIRED (24 HC	OURS) =	2.088 AH
0.000 0.005	7 7	0.185 0.001 0.036 0.724
ALARM CUR	RENT =	= 0.945 A
EQUIRED (1	5 MIN) =	• 0.236 AH
	0.087 0.000 0.000 0.000 ANDBY CUR JIRED (24 HO 0.185 0.000 0.005 0.724 ALARM CUR EQUIRED (1	0.000 7 0.000 7 ANDBY CURRENT = JIRED (24 HOURS) = EA (A) QTY. 0.185 1 0.000 7 0.005 7

NOTE:
SYSTEM DEVICE EXPANSION VIA NEW
FAEP AT MAINTENANCE BUILDING. NO
ANTICIPATED ADDITIONAL LOAD ON
'FACP' BATTERIES.

EXISTING FIRE ALARM CONTROL PANEL ADMIN BUILDING A SIMPLEX #4100ES

TO EXISTING CENTRAL MONITORING STATION

RISER DIAGRAM - FIRE ALARM
SCALE: NO SCALE

SLC IN (IDNET)

EOL NM

30 S NM-5

70'

30 S NM-4

30 F NM-3

15 F NM-2

15 S NM-1

NAC

BATT SEE CALC

SLC OUT (IDNET)

NEW FIRE ALARM EXPANDER PANEL FAEP-M MAINTENANCE BUILDING

<u>SEE</u> FE-1.1

NM-8 H



EXISTING FIRE ALARM TERMINAL CAN

BUILDING H

<u>SEE</u> FE-1.1

(E) C

SLC (IDNET)



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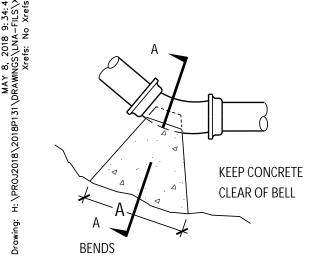
JANUARY 4, 2019 SHEET TITLE

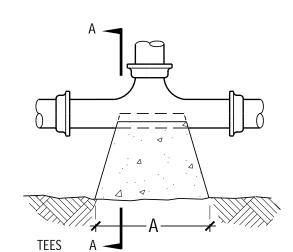
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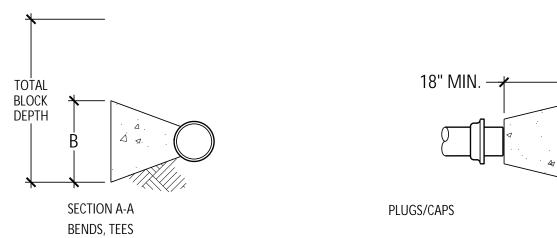
DIAGRAMS & CALCULATIONS

FIRE ALARM

SHEET NUMBER FE-5.1







SOIL BEARING CAPACITY 2000 PSF. SEE PAGE 13 OF PROJECT GEOTECH

THRUST BLOCK CALCULATIONS PER NFPA 13: TABLE A.10.6.1(b)

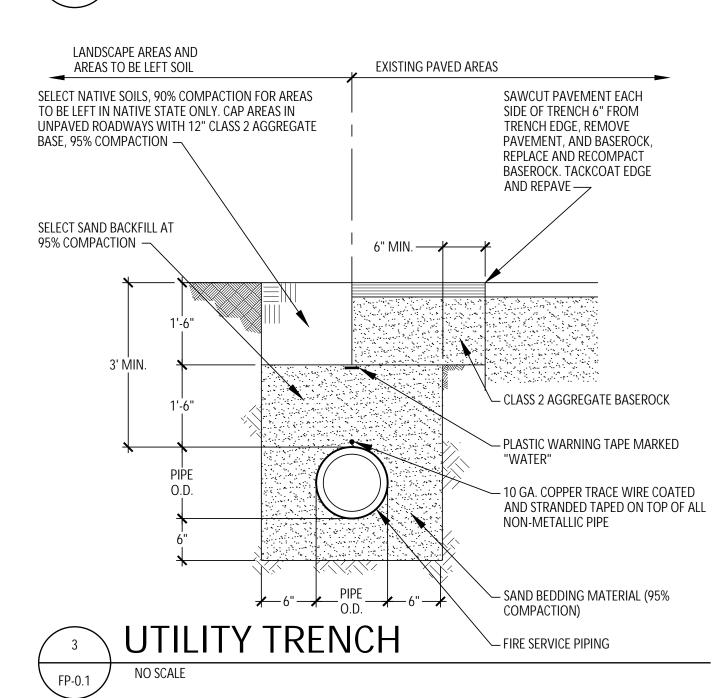
- 6" 90 BEND AREA = (7.9 S.F.)(225 PSI/100 PSI)(1000 PSF/2000 PSF) = 8.9 S.F.
- 6" 45 BEND AREA = 8.9 S.F. x 0.541 = 4.8 S.F.
- 6" 22.5 BEND AREA = 8.9 S.F. x 0.276 = 2.5 S.F. 6" - DEAD END AREA = (5.6 S.F.)(225 PSI/100 PSI)(1000 PSF/2000 PSF) = 6.3 S.F.

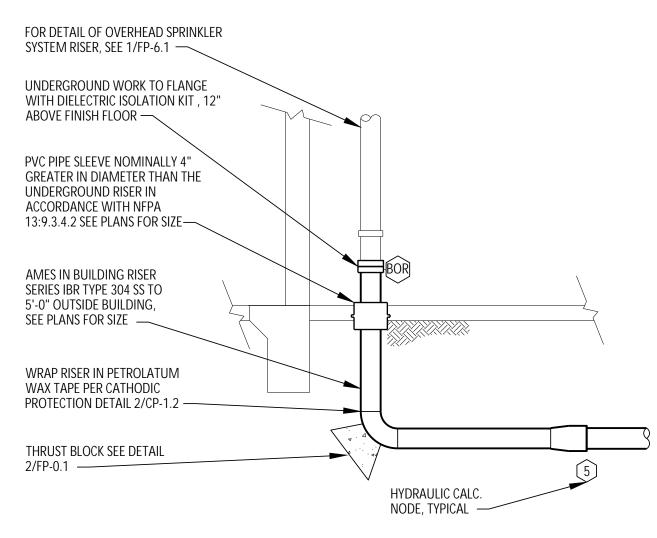
PIPE	Ó	90° BEND	S	45° BENDS			2	2.5° BEND)S	TEES and PLUGS			
SIZE	SIZE SQ. FT.	"A"	"B"	SIZE SQ. FT.	"A"	"B"	SIZE SQ. FT.	"A"	"B"	SIZE SQ. FT.	"A"	"B"	
6"	8.9	54"	24"	4.8	39"	18"	2.5	30"	12"	6.3	36"	24"	

BASED ON A WATER PRESSURE OF 225 POUNDS PER SQUARE INCH AND A SOIL RESISTANCE OF 2000 POUNDS PER SQUARE FOOT, PER NFPA TABLE A.10.6.1(b).

TOTAL BLOCK DEPTH SHALL BE AT LEAST TWICE THE BLOCK DEPTH "B" IN ACCORDANCE WITH NFPA 24.







NOTE: PROVIDE CATHODIC PROTECTION IN ACCORDANCE CP-1.2, CP-1.3, AND SECTION 13 4713. SEE DETAIL 2/CP-1.2

UNDERGROUND RISER NO SCALE FP-0.1

DSA GENERAL NOTES

BLOCK

DEPTH

- THE INTENT OF THE CONTRACT DOCUMENTS IS TO ADD A NEW BUILDINGS ON THE SCHOOL'S CAMPUS. SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, A CONSTRUCTION CHANGE DOCUMENT DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK.
- 2. ALL HANGERS AND SEISMIC SWAY BRACING SHALL BE DESIGNED AND INSTALLED PER NFPA 13 AND CHAPTER 16A CALIFORNIA BUILDING CODE.
- 8. Where anchorage details are not shown on the drawings, the field installation shall be SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.

FIRE DEPARTMENT CONNECTIONS:

NFPA 13 (2016) SEC. 8.17.2.5.1 CHECK-VALVE SHALL BE PROVIDED AT FIRE DEPARTMENT CONNECTION ASSEMBLY (FDC) TO PREVENT WATER (PRESSURE) AT INLET OF FDC VALVE.

TITLE 19 ARTICLE 906 (A) A LABEL OF THE SELF-ADHESIVE TYPE SHALL BE PLACED ON THE FIRE DEPARTMENT CONNECTION OR ON THE RISER FOR FIRE SPRINKLER SYSTEMS WITH THE DATE OF SERVICE AND/OR DATE INSTALLATION WAS PERFORMED AND LICENSE NUMBER OF PERSON PERFORMING SERVICE WORK.

FIRE DEPARTMENT SIGNAGE:

CONTRACTOR SHALL PROVIDE SIGNS AT FIRE DEPARTMENT CONNECTIONS SERVING THIS SYSTEM. SIGNS SHALL INDICATE BUILDINGS SERVED BY FIRE DEPARTMENT CONNECTIONS.

CONTRACTOR SHALL PROVIDE SIGNS AT EXISTING BACKFLOW PREVENTER. SIGNS SHALL INDICATE BUILDINGS AND HYDRANTS SERVED BY BACKFLOW PREVENTER.

SEE SITE PLAN FOR BUILDING AND HYDRANT MARKS/IDENTIFICATIONS.

LIST OF GOVERNING CODES:

2016 BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24, C.C.R. 2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R. 2016 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24, C.C.R. 2016 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, C.C.R. 2016 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R. 2016 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, C.C.R. 2016 CALIFORNIA FIRE CODE (CFC), PÁRT 9, TITLE 24, C.C.R. 2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R. TITLE 19, C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS. 2016 NFPA 13 AS AMENDED 2016 NFPA 24 AS AMENDED

- ALL SECTION NUMBERS BELOW REFER TO GROUP 1, CHAPTER 4, PART 1, TITLE 24, C.C.R.
- 1. ADDENDA, CHANGE ORDERS PER SECTION 4-338.
- 2. INSPECTOR APPROVED BY DSA. INSPECTOR AND CONTINUOUS INSPECTION OF WORK PER SECTION 4-333(b) AND 4-342.
- 3. TESTS AND TESTING LABORATORY PER SECT. 4-335.
- 4. SPECIAL INSPECTION PER SECT. 4-333(c).
- 5. CONTRACTOR SHALL SUBMIT VERIFIED REPORTS PER SECT. 4-336 AND 4-343(c).
- 6. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, C.C.R. DUTIES OF ARCHITECT, STRUCTURAL ENGINEER OR PROFESSIONAL ENGINEER PER SECT. 4-333(a) AND 4-341.
- 7. GOVERNING CODES: TITLE 24.
- 8. A COPY OF PARTS 1, 2, 3, 4, AND 5 OF TITLE 24 SHALL BE KEPT AVAILABLE IN THE FIELD DURING
- 9. DSA SHALL BE NOTIFIED OF START OF CONSTRUCTION PER SECT. 4-331.
- 10. SUPERVISION BY THE OFFICE OF REGULATION SERVICE PER SECT. 4-334.

UNDERGROUND FIRE SERVICE GENERAL NOTES:

NFPA 24 (2016) SEC. 10.1.6 ALL FERROUS METAL PIPE SHALL BE LINED, AND STEEL PIPE SHALL BE COATED AND WRAPPED WITH JOINTS FIELD-COATED AND WRAPPED AFTER ASSEMBLY. FOR BURIED PIPE, GALVANIZING, INTERNALLY OR EXTERNALLY, DOES NOT MEET THE REQUIREMENTS OF THIS SECTION.

NFPA 24 (2016) SEC. 10.3.6.2 ALL BOLTED JOINT ACCESSORIES SHALL BE CLEANED AND THOROUGHLY COATED WITH ASPHALT OR OTHER CORROSION-RETARDING MATERIAL AFTER INSTALLATION.

NFPA 24 (2016) SEC. 10.8.3.5 AFTER INSTALLATION, RODS, NUTS, BOLTS, WASHERS, CLAMPS, AND OTHER RESTRAINING DEVICES, EXCEPT THRUST BLOCKS, SHALL BE CLEANED AND THOROUGHLY COATED WITH A BITUMINOUS OR OTHER ACCEPTABLE CORROSION-RETARDING MATERIAL.

NFPA 24 (2016) SEC. 10.8.2 THRUST BLOCKS SHALL BE OF A CONCRETE MIX NOT LEANER THAN ONE PART CEMENT, TWO AND ONE-HALF PARTS SAND, AND FIVE PARTS STONE WITH A MINIMUM COMPRESSIVE STRENGTH (Fc) OF 2500 PSI. THRUST BLOCKS SHALL BE PLACED BETWEEN UNDISTURBED EARTH AND THE FITTING TO BE RESTRAINED, AND SHALL BE OF SUCH BEARING AS TO ENSURE ADEQUATE RESISTANCE TO THE THRUST TO BE ENCOUNTERED IN GENERAL, THRUST BLOCKS SHALL BE SO PLACED THAT THE JOINTS WILL BE ACCESSIBLE FOR INSPECTION AND REPAIR.

NFPA 24 (2016) SEC. 10.10.2.1 UNDERGROUND MAINS SHALL BE COMPLETELY FLUSHED TO REMOVE FOREIGN MATERIALS THAT MIGHT HAVE ENTERED THE MAIN DURING THE COURSE OF THE INSTALLATION PER TABLE 10.10.2.1.3 TO PRODUCE A VELOCITY OF 10 FEET PER SECOND IN PIPES. LOCAL FIRE JURISDICTION SHALL BE NOTIFIED OF DATE AND TIME OF TESTING SO THEY MAY OBSERVE TESTING

NFPA 24 (2016) SEC. 10.10.2.2 ALL NEW PRIVATE UNDERGROUND FIRE SERVICE MAINS SHALL BE TESTED HYDROSTATICALLY AT NOT LESS THAN 200-PSI PRESSURE FOR A MINIMUM OF TWO HOURS. LOCAL FIRE JURISDICTION SHALL BE NOTIFIED OF DATE AND TIME OF TESTING AND SHALL OBSERVE AND/OR AND/OR ASSIST IOR WHENEVER POSSIBLE.

THE AMOUNT OF LEAKAGE IN BURIED PIPING SHALL BE MEASURED AT THE SPECIFIED TEST PRESSURE BY PUMPING FROM A CALIBRATED CONTAINER. FOR NEW PIPE, THE AMOUNT OF LEAKAGE AT THE JOINTS SHALL NOT EXCEED TWO QUARTS PER HOUR PER 100 GASKETS OR JOINTS IRRESPECTIVE OF PIPE DIAMETER. NO VISIBLE LEAKAGE SHALL BE ALLOWED IN ABOVEGROUND PIPING. (ALSO SEE SEC. 10.10.2.2.6 FOR ALLOWABLE LEAKAGE)

HYDROSTATIC TESTS SHALL BE MADE BEFORE THE JOINTS ARE COVERED SO THAT ANY LEAKS MAY BE READILY

NFPA 24 (2016) SEC. 10.10 BEFORE ASKING FINAL APPROVAL OF AN INSTALLATION BY THE INSPECTOR OF RECORD, THE INSTALLING COMPANY SHALL FURNISH A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE TO BE SUBMITTED TO THE OWNER. A TYPICAL CERTIFICATE IS SHOWN IN FIGURE 10.10.1. THIS FORM SHALL BE GIVEN TO THE APPROVING AUTHORITY, OWNER, AND CONTRACTOR.

NFPA 24 (2016) SEC. 10.4 THE DEPTH OF COVER OVER WATER PIPES SHALL BE NOT LESS THAN 2'-6" TO PREVENT MECHANICAL DAMAGE AND SHALL BE BURIED A MINIMUM OF 3'-0" UNDER DRIVEWAYS.

* THE METHOD USED FOR UNDERGROUND FIRE-LINES WHEN ENTERING BUILDINGS UNDER CONCRETE FOOTINGS SHALL HAVE THE STRUCTURAL ENGINEER OF RECORD APPROVAL. NFPA 24 (2016) SEC. 12.2.6 NFPA 13 (2016) SEC. 9.3.4.2 REQUIRES A CLEARANCE BY A PIPE SLEEVE WITH A NOMINAL DIAMETER 4 IN. LARGER THAN THE NOMINAL DIAMETERS OF THE SUPPLY PIPING 4 IN. NOMINAL AND LARGER. (I.E.: FIRE-LINES NOMINAL 6 IN. REQUIRES 10 IN.

CPC SEC. 604.1 (2016) PVC PIPING MAY BE INSTALLED TO 5 FEET OUTSIDE THE FOUNDATION OF ANY BUILDING OR STRUCTURE OR PARTS THEREOF. IT SHALL BE BURIED IN THE GROUND FOR ITS ENTIRE LENGTH. IT SHALL NOT BE INSTALLED WITHIN OR UNDER ANY BUILDING OR STRUCTURE. (DUCTILE PIPE SHALL BE INSTALLED WITHIN 5 FEET OF BUILDING)

OVERHEAD FIRE SPRINKLER SYSTEM GENERAL NOTES:

NFPA 13 (2016) SEC. 9.2.1.3.3.4 WHERE FLEXIBLE SPRINKLER HOSE FITTINGS ARE USED TO CONNECT SPRINKLERS TO BRANCH LINES IN SUSPENDED CEILINGS, A LABEL LIMITING RELOCATION OF THE SPRINKLER SHALL BE PROVIDED ON THE ANCHORING COMPONENT.

NFPA 13 (2016) SEC. 10.10.2.1 UNDERGROUND MAINS AND LEAD-IN CONNECTION MADE TO OVERHEAD SPRINKLER PIPING SYSTEMS SHALL BE COMPLETELY FLUSHED.

NFPA 13 (2016) SEC. 10.10.2.2 ALL INTERIOR PIPING AND APPURTENANCES SUBJECTED TO SYSTEM WORKING PRESSURE SHALL BE HYDROSTATIC ALLY TESTED AT 200 PSI AND SHALL MAINTAIN THAT PRESSURE WITHOUT LOSS FOR 2 HOURS. LOCAL FIRE DEPARTMENT SHOULD BE NOTIFIED OF DATE AND TESTING SO THEY MAY

NFPA 13 (2016) SEC. 6.2.9 PROVIDE SPARE SPRINKLER HEAD CABINET, SPRINKLER WRENCH, AND NO FEWER THAT A TOTAL OF 6 SPARE HEADS MATCHING THE TYPES AND TEMPERATURE RATINGS IN EACH PROTECTED SPRINKLERS.

NFPA 13 (2016) SEC. 9.3.6.1 PROVIDE RESTRAINT OF BRANCH LINES BY USING ONE OF THE FOLLOWING:

- (1) LISTED SWAY BRACE ASSEMBLY (2) WRAPAROUND U-HOOK SATISFYING THE
- REQUIREMENTS OF 9.3.5.5.11 (3) NO. 12, 440LB (200KG) WIRE INSTALLED
- AT LEAST 45 DEGRÉES FROM THE VERTICAL PLANE AND ANCHORED ON BOTH SIDES OF
- THE PIPE. (4) CPVC HANGERS LISTED TO PROVIDE RESTRAINT (5) HANGER NOT LESS THAN 45 DEGREES FROM

VERTICAL INSTALLED WITHIN 6IN. OF THE VERTICAL HANGER ARRANGED FOR RESTRAINT AGAINST UPWARD MOVEMENT, PROVIDED IT IS UTILIZED SUCH THAT L/R DOES NOT EXCEED 400. WHERE THE ROD EXTENDS TO THE PIPE OR A SURGE CLIP HAS BEEN INSTALLED.

NFPA 72 (2016) SEC. 17.12.2 SPRINKLER FLOW SWITCH SHALL BE TESTED BY IOR TO CONFIRM THAT WHEN THE INSPECTOR'S TEST VALVE IS ACTIVATED AN ALARM WILL SOUND IN NOT MORE THAN 90 SECONDS.

NFPA 13 (2016) SEC. 6.9.3 FLOW SWITCH SHALL BE CONNECTED TO AN OUTSIDE ALARM BELL FOR EACH RISER. APPROVED IDENTIFICATION SIGN SHALL BE PROVIDED FOR OUTSIDE ALARM BELL "SPRINKLER FIRE ALARM -WHEN BELL RINGS CALL 911/FIRE DEPARTMENT".

NFPA 13 (2016) SEC. 25.5 FIGURE A25.5 HYDRAULIC CALCULATIONS DESIGN DATA PLACARD SHALL BE ATTACHED TO RISER. SHALL INCLUDE: 1) LOCATION OF DESIGN AREA(S). 2) DISCHARGE DENSITIES. 3) REQUIRED FLOW AND RESIDUAL PRESSURE DEMAND AT BASE OF RISER. 4) OCCUPANCY CLASSIFICATION. 5) HOSE STREAM DEMAND INCLUDED IN ADDITION TO SPRINKLER DEMAND. 6) THE NAME OF THE INSTALLING CONTRACTOR.

NFPA 13 (2016) SEC. 25.1 (3) SPRINKLER CONTRACTOR (C16) SHALL COMPLETE AND SIGN CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR THE OVERHEAD SPRINKLER SYSTEM USING FORM IN FIGURE 25.1. THIS COMPLETED FORM SHALL BE GIVEN TO THE APPROVING AUTHORITY, OWNER, AND CONTRACTOR.

NFPA 13 (2016) SEC. 25.2.3.4.1 THE MAIN DRAIN VALVE SHALL BE OPENED AND REMAIN OPENED UNTIL THE SYSTEM PRESSURE STABILIZES. THE STATIC AND RESIDUAL PRESSURES SHALL BE RECORDED ON THE CONTRACTOR'S TEST CERTIFICATE.

TITLE 19 ARTICLE (A) A LABEL OF SELF-ADHESIVE TYPE SHALL BE PLACED ON THE FIRE DEPARTMENT CONNECTION OR ON THE RISER FOR THE FIRE SPRINKLER SYSTEM WITH THE DATE OF SERVICE AND/OR DATE OF INSTALLATION WAS PREFORMED AND LICENSE NUMBER OF PERSON PERFORMING SERVICE WORK.

THE SPRINKLER CONTRACTOR SHALL HAVE A REPRESENTATIVE PRESENT AT THE ROUGH-IN/HYDRO INSPECTION.

NFPA 13 (2016) SEC. 9.3.4.2 WHERE PIPE PASSES THROUGH HOLES IN PLATFORMS, FOUNDATIONS, WALLS, OR FLOORS, THE HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLE IS NOMINALLY 2" LARGER THAN THE PIPE FOR PIPE 1" NOMINAL TO 3 1/2" NOMINAL AND 4" LARGER THAN PIPE FOR PIPE 4" NOMINAL AND

SYMBOL	ABBRV.	IDENTIFICATION	ABBRV.	IDENTIFICATION
F	F	FIRE WATER	(E)	EXISTING
— SPKR ——	SPKR	SPRINKLER	ELEC	ELECTRICAL
•		PENDENT ON 401 EXTENSION	ELEV	ELEVATION
•		RECESSED PENDENT	EQUIP	EQUIPMENT
Θ		UPRIGHT W/ 1" OUTLET BELOW	FFE	FINISHED FLOOR ELEVATION
0		UPRIGHT ON 1" SPRIG UP	FLA	FULL LOAD AMPS
0		UPRIGHT ON BRANCH LINE	FLEX	FLEXIBLE
•		UPRIGHT OVER PENDENT	FLR	FLOOR
$\overline{\Box}$		SIDEWALL	FS	FLOOR SINK
		GROOVED COUPLING	FPM	FEET PER MINUTE
—		EQ BRACE LOCATION	FT	FEET
\rightarrow		4WAY EQ BRACE LOCATION	FT HD	FEET HEAD
/		HANGER LOCATION	GPM	GALLONS PER MINUTE
<u> </u>		BRANCH LINE RESTRAINT	HP	HORSEPOWER
<u> </u>		HYDRAULIC CALCULATION NODE	HZ	HERTZ
<u> </u>	CHVA	CHECK VALVE	IE	INVERT ELEVATION
	OHVA	GATE VALVE	IN	INCH
×I——	T&PRV	TEMP & PRESS RELIEF VALVE	INV	INVERT
<u></u>	DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	KW	KILOWATTS
	DCDA	UNION	LBS	POUNDS
— ηι ⊘P		PRESSURE GAUGE		MAXIMUM
	FC		MAX	
	FC	FLEXIBLE CONNECTION	MBH	1000 BTU PER HOUR
X - X -	RPBP	REDUCE PRESS BACKFLOW PREVENTER	MFR	MANUFACTURER
		FIRE LIVER AND	MIN	MINIMUM
\(\frac{\frac{1}{3}}{2}\)	FH	FIRE HYDRANT	(N)	NEW
δ	PIV	POST INDICATING VALVE	NC	NORMALLY CLOSED
ĀD	AD	ACCESS DOOR	NIC	NOT IN CONTRACT
		BACK OF ELBOW	NO	NORMALLY OPEN
Ø	DIA	DIAMETER	OC	ON CENTER
<u>•</u>	P.O.C.	POINT OF CONNECTION	PH	PHASE
ą.		CENTERLINE	PRV	PRESSURE REDUCING VALVE
	&	AND	PSI	POUNDS PER SQUARE INCH
	@	AT	P/T	PRESSURE/TEMPERATURE
	°F	DEGREES FAHRENHEIT	QTY	QUANTITY
	AFF	ABOVE FINISH FLOOR	REQD	REQUIRED
	AMP	AMPERE	RLA	RATED/RUNNING LOAD AMPS
	APPROX	APPROXIMATE	RPM	REVOLUTIONS PER MINUTE
	ВНР	BRAKE HORSEPOWER	SOV	SHUT-OFF VALVE
	BLDG	BUILDING	STD	STANDARD
	CFH	CUBIC FEET PER HOUR	STRUCT	STRUCTURAL
	CI	CAST IRON	TEMP	TEMPERATURE
	CIRC	CIRCULATING	TYP	TYPICAL
	CLG	CEILING	UL	UNDERWRITER'S LABORATORIES
	CONC	CONCRETE	UON	UNLESS OTHERWISE NOTED
	CONN	CONNECTION	V	VOLT
	CONT	CONTINUED	VTR	VENT THROUGH ROOF
	COORD	COORDINATE	W/	WITH
	COORD	CONSTRUCTION	WC	WATER COLUMN
	DN	DOWN	WT	WEIGHT
	אוט	DRAWINGS	VVI	WLIGHT

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FIRE FLOW CALCULATIONS:

CODE REQUIRED SITE FLOW CONSTRUCTION TYPE: V-B SPRINKLED FIRE FLOW CALCULATION AREA: 3,990 SF 2016 CFC FIRE FLOW(TABLE BB105.1): 1750 GPM 1500 GPM 2016 CFC MINIMUM FIRE FLOW:

AVAILABLE WATER SUPPLY: CONTRA COSTA FIRE PROTECTION DISTRICT OCTOBER 23, 2018 STATIC PRESSURE: 48.6PSI SEE FP1.1 FOR LOCATION

RESIDUAL PRESSURE: 8.6 PSI OBSERVED FLOW: 1881 GPM AVAILABLE FLOW: 1569 GPM AT 20 PSI RESIDUAL

SEISMIC BRACING:

SPECTRAL RESPONSE: LATITUDE: 37.96894° N LONGITUDE: 121.72049° W

S_s = 1.496 (GEOLOGIC AND SEISMIC HAZARDS ASSESSMENT REPORT PAGE 24) SEE DESIGN CRITERIA ON STRUCTURAL DRAWING S-0.1

SEISMIC COEFFICIENT:

 $C_p = 0.7 (2016 \text{ NFPA } 13\text{-TABLE } 9.3.5.9.3)$

USE $C_p = 0.7$

SEE DRAWING FP6.2 FOR SPECIFIC SEISMIC BRACING DEATILS AND THIS SHEET FOR CALCULATIONS.

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LIBERTY UNION HIGH SCHOOL DISTRICT

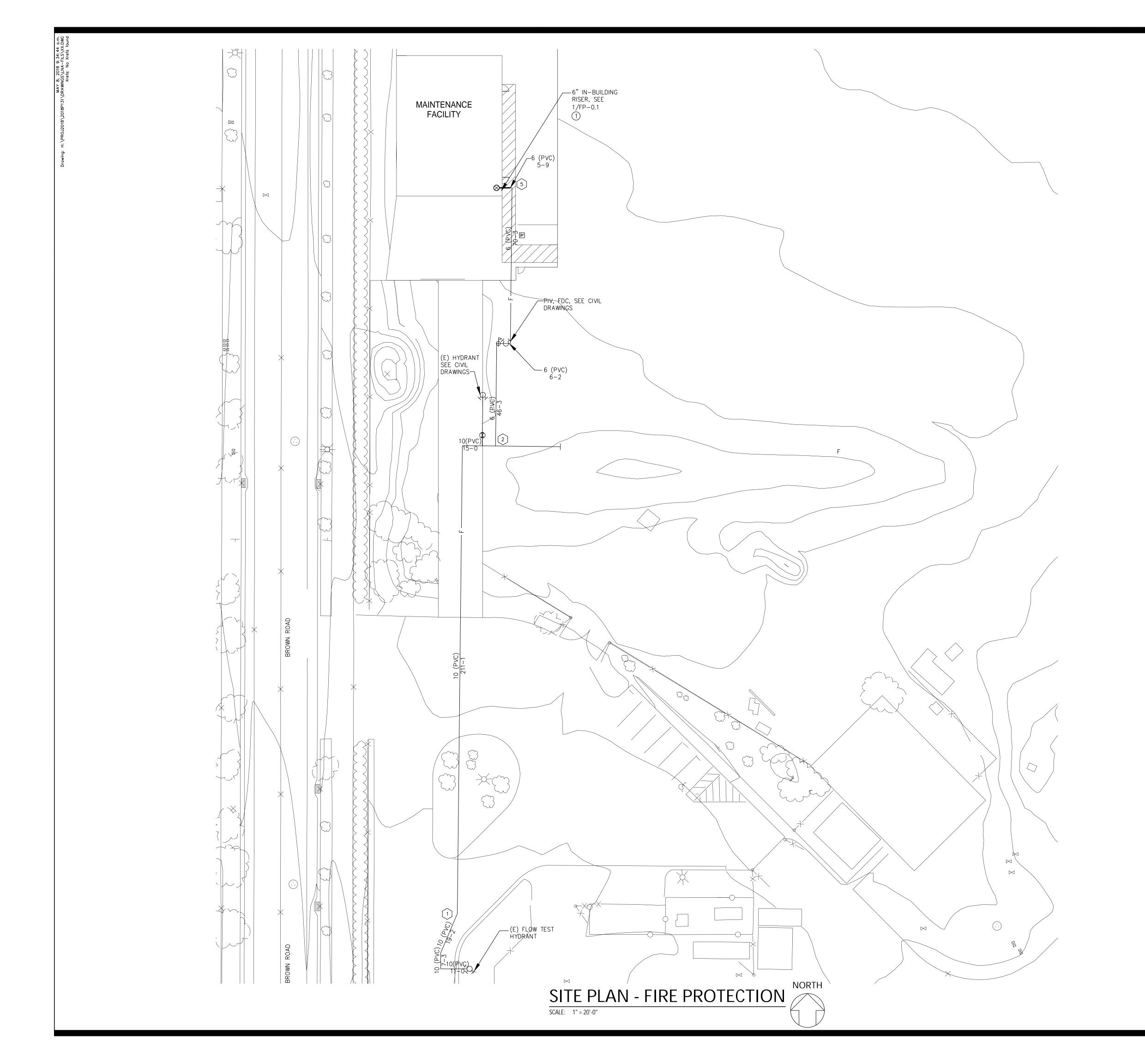
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JANUARY 4, 2019

SHEET TITLE

LEGEND, **NOTES, AND DETAILS-FIRE PROTECTION**



<u>NOTES</u>

1. FIRE SERVICE PIPING IS SHOWN ON DRAWING FP1.1 TO SHOW NODE LOCATIONS REQUIRED FOR OVERHEAD FIRE SPRINKLER HYDRAULIC CALCULATIONS. DESIGN AND SPECIFICATION NEW UNDERGROUND FIRE SERVICE PIPING IS BY THE PROJECT CIVIL ENGINEER, SEE CIVIL DRAWINGS AND SPECIFICATIONS.

KEY NOTES

1) FIRE RISER WITH CONTROL VALVE AND FLOW SWITCH THAT REQUIRES MONITORING BY THE FIRE ALARM SYSTEM



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SITE PLAN-FIRE PROTECTION

JANUARY 4, 2019

SHEET NUMBER

FP-1.1

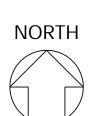
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AE Project #: 2018254

LOW PIPING PLANS-FIRE PROTECTION

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



			SPR	INKL	ERS				
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP. RATING	QTY	REMARKS
•	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	5	12
0	UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	200° F	10	
TOTAL SP	RINKLERS (THIS SHEET)							15	
TOTAL SP	RINKLERS (JOB)							45	

1) FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

(2) FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZE HOLE WITH VIKING 12620 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

NOTES:

- 1. ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 2. ALL PIPE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH CAST IRON THREADED FITTINGS IN ACCORDANCE WITH ANSI B16.4.
- 3. ALL PIPE 2" AND GREATER SHALL BE SCHEDULE 10 BLACK WITH GROOVED COUPLINGS AND WELDED OUTLETS.
- 4. ALL PIPE 1-1/2" AND SMALLER SHALL HAVE SUPPORT SPACING LESS THAN 12 FEET.
- 5. ALL PIPE 2" AND GREATER SHALL HAVE SUPPORT SPACING LESS THAN 15 FEET.
- 6. BRANCH LINES SHALL BE RESTRAINED AT END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 30 FT. SEE 4/FP6.1
- 7. PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.

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LOW PIPING
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PLANS-FIRE
PROTECTION

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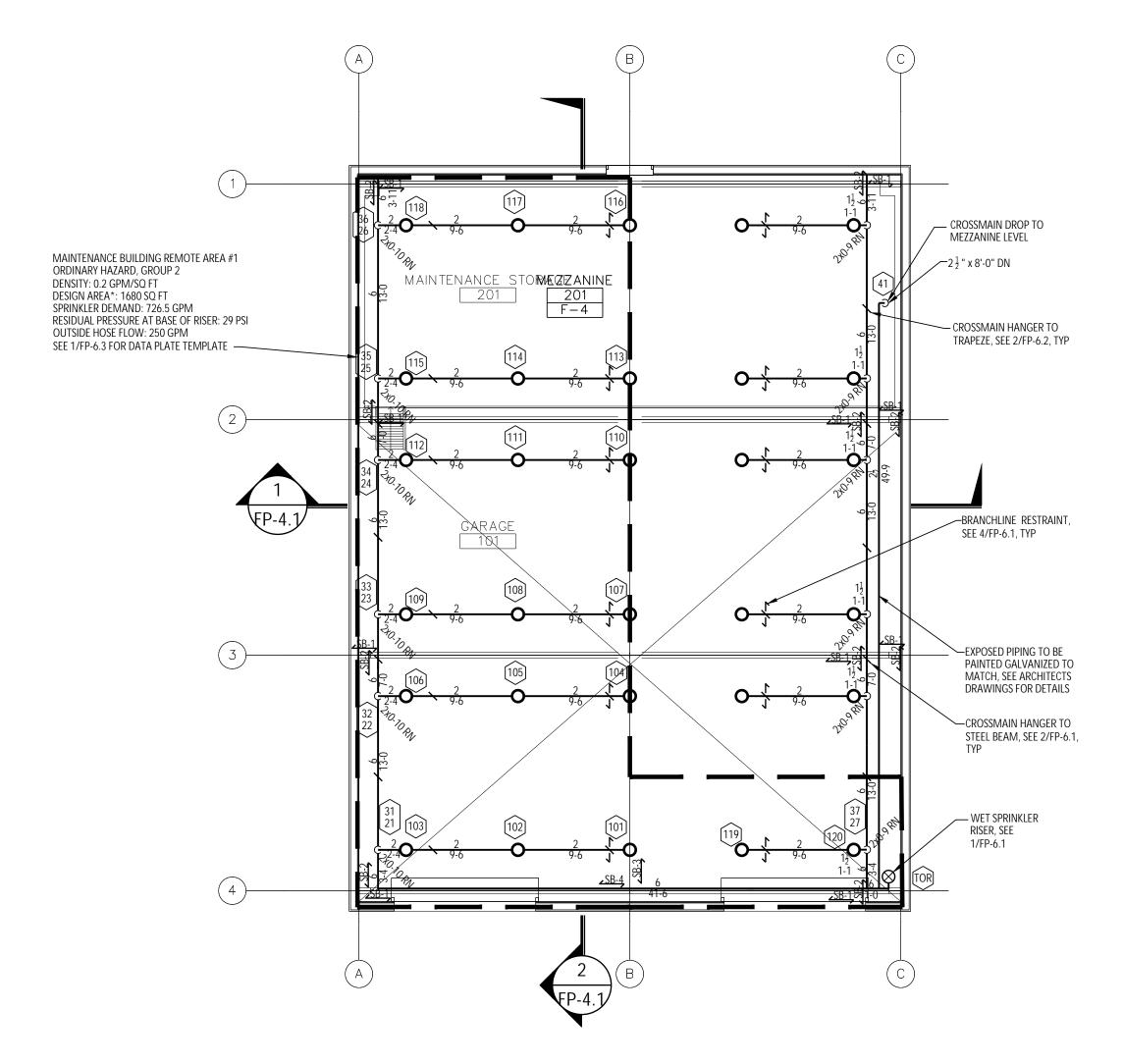
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HIGH PIPING PLANS-FIRE PROTECTION

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



			SPR	INKL	ERS				
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP. RATING	QTY	REMARKS
•	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	0	12
0	UPRIGHT	TYCO	TY-FRB	3131	SSU	5.6	200° F	30	
TOTAL SF	PRINKLERS (THIS SHEET)							30	
TOTAL SP	PRINKLERS (JOB)							45	

1 FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

(2) FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZE HOLE WITH VIKING 12620 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

NOTES:

- 1. ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
- 2. ALL PIPE 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL WITH CAST IRON THREADED FITTINGS IN ACCORDANCE WITH ANSI B16.4.
- 3. ALL PIPE 2" AND GREATER SHALL BE SCHEDULE 10 BLACK WITH GROOVED COUPLINGS AND WELDED OUTLETS.
- 4. ALL PIPE 1-1/2" AND SMALLER SHALL HAVE SUPPORT SPACING LESS THAN 12 FEET.
- 5. ALL PIPE 2" AND GREATER SHALL HAVE SUPPORT SPACING LESS THAN 15 FEET.
- 6. BRANCH LINES SHALL BE RESTRAINED AT END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 30 FT. SEE 4/FP6.1
- PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.



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HIGH PIPING PLANS-FIRE PROTECTION

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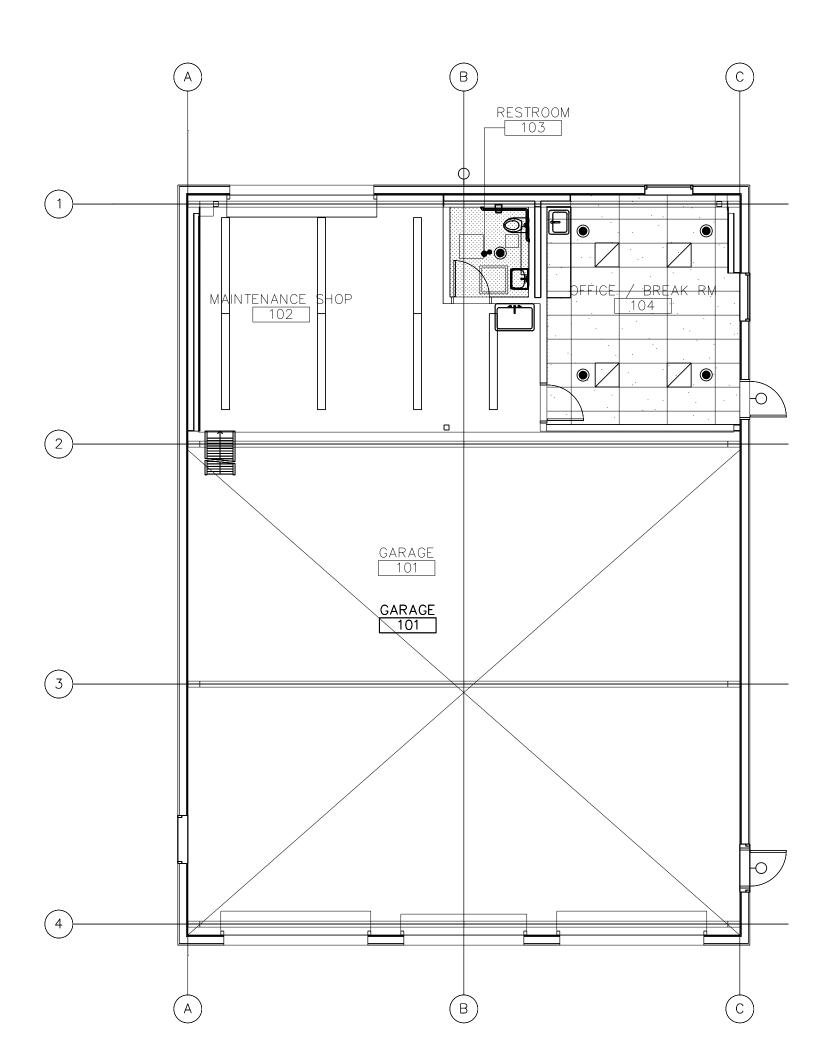
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LOW CEILING PLAN-FIRE PROTECTION

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



			SPR	<u>INKL</u>	ERS				
SYMBOL	DESCRIPTION	MANF.	MODEL	SIN	TYPE	K FACTOR	TEMP. RATING	QTY	REMARKS
•	RECESSED PENDENT	TYCO	TY-FRB	3231	SSP	5.6	200° F	4	12
0	UPRIGHT IN CONCEALED SPACE	TYCO	TY-FRB	3131	SSU	5.6	200° F	0	
TOTAL SP	PRINKLERS (THIS SHEET)							4	
TOTAL SP	PRINKLERS (JOB)						•	45	

1) FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

(2) FOR LAY IN PANEL SUSPENDED CEILINGS PROVIDE 1" ANNULAR CLEARANCE AROUND RECESSED ESCUTCHEON. CONCEAL OVERSIZE HOLE WITH VIKING 12620 EXPANSION PLATE. FINISH TO MATCH ADJACENT MATERIAL VERIFY WITH ARCHITECT

NOTES:

- 1. ALL DIMENSIONS ARE CENTERLINE TO CENTERLINE UNLESS OTHERWISE NOTED.
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- 6. BRANCH LINES SHALL BE RESTRAINED AT END OF BRANCH LINE, AND AT INTERVALS NOT EXCEEDING 30 FT. SEE 4/FP6.1
- 7. PROVIDE 1" ANNULAR CLEARANCE AT ALL SPRINKLER PENETRATIONS OF LAY IN PANEL SUSPENDED CEILINGS.

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CEILING
PLAN-FIRE
PROTECTION

SHEET NUMBER

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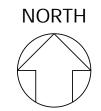
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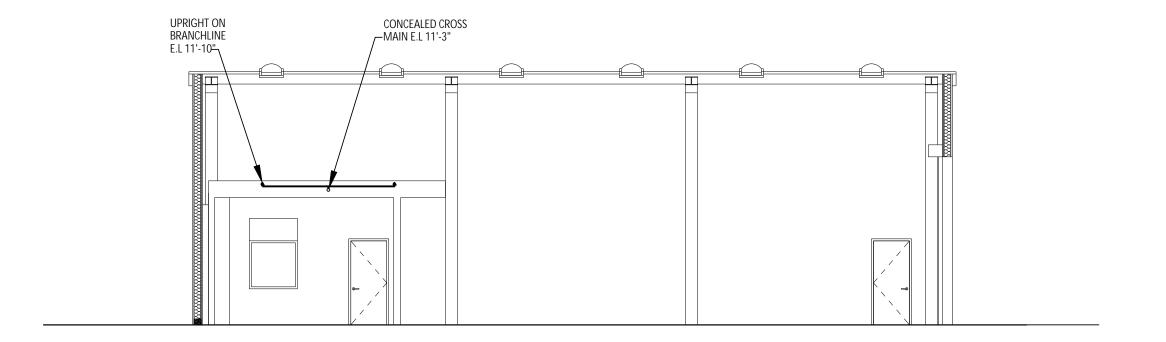
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CONSULTING MECHANICAL
ENGINEERS

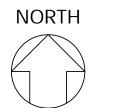
AE Project #: 2018254















FREEDOM HIGH SCHOOL

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FACILITIES

1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIO	NS	
ARCH PRO	DJECT NO:	1739.02
DRAWN BY	′ :	CADD
DRAWING	SCALE:	1/8"=1'-0"
PTN:		61721-0069
	BID	SET
JAI	NUAR	Y 4, 2019

SECTIONS
-FIRE
PROTECTION

SHEET NUMBER

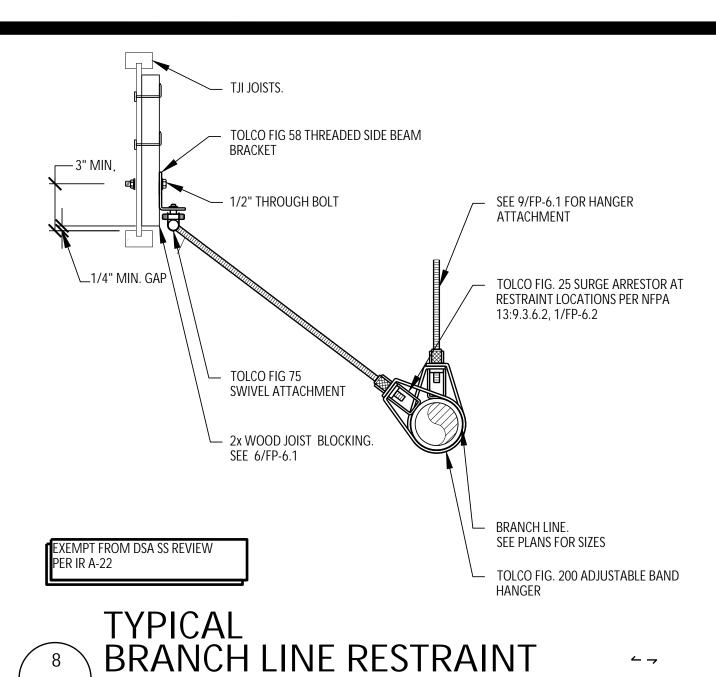
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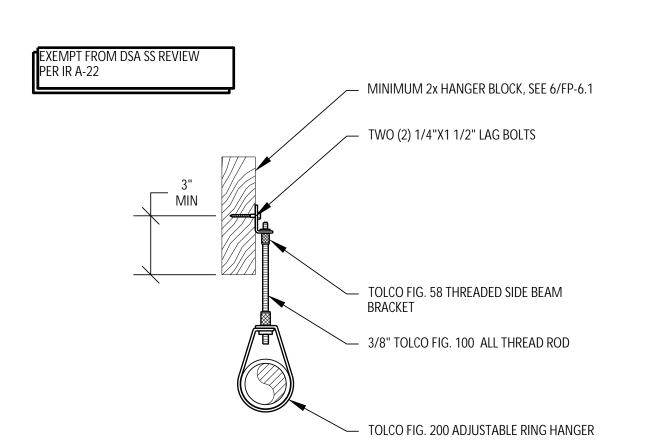
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AE Project #: 2018254

FP-4.1





NOTES: 1. FOR PIPE SIZES UP TO 2"

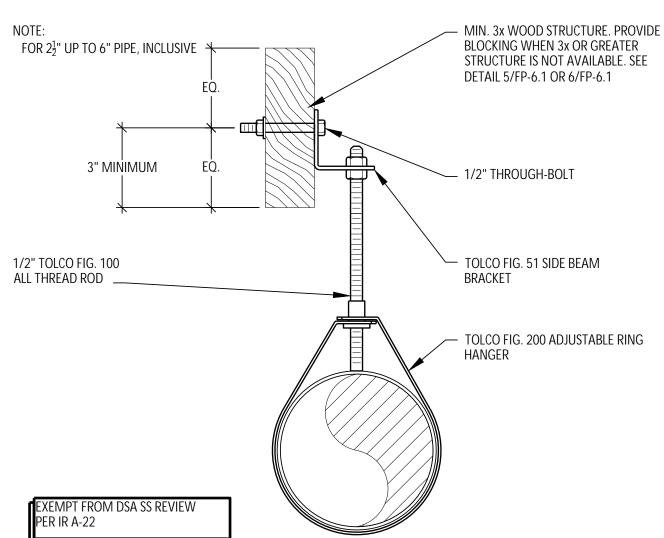
FP-6.1

NO SCALE

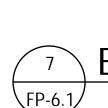
RING HANGER FP-6.1

RING HANGER

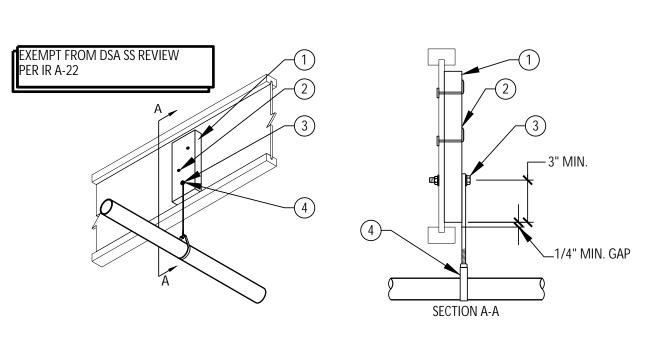
\ FP-6.1 ∕







BRACE WITH NAILED BLOCKING

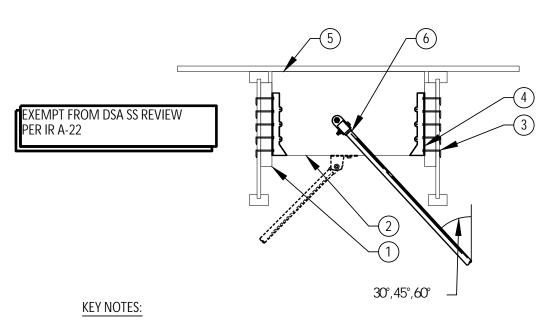


MAIN PERPENDICULAR OR PARALLEL TO PJI (AT MAXIMUM HANGER SPACING, MAX. PIPE SIZE IS 2" WITH A 3/8" MACHINE BOLT, OR 4" WITH 1/2" MACHINE BOLT)

KEY NOTES:

- 1. 2x6 DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED, GRAIN ORIENTED VERTICALLY WITH MINIMUM 1/4" GAP BETWEEN BLOCK AND FLANGE. 2. TWO 10D COMMON NAILS (0.148"x3"), CLINCHED
- 3. ONE 3/8" OR 1/2" DIAMETER MACHINE BOLT WITH WASHERS, TURNED TIGHT 4. SEE 10/FP-6.1 FOR THROUGH BOLT, SIDE BEAM CLIP AND RING HANGER

STRUCTURE ATTACHMENT



1. 2X12 X 1'-0" FILLER BLOCK. 2. 4X12 DOUGLASS FIR HANGER BLOCK. 3. ATTACH HANGER ASSEMBLY WITH TEN 10D COMMON NAILS CLINCHED 4. SIMPSON STRONG-TIE U410 HANGER (OR EQUIVALENT). 5. GLUED SURFACE 6. SEE 15/FP-6.1 OR 1/FP-6.2 FOR BRACE

ALLOWABLE HORIZONTAL SEISMIC LOADS (LBS)

SPECIES	AN	GLE TO VERTICAL	()
JE LUILS	30°	45°	60°
DF	465	720	980

LOADS ARE BASED ON THE CONTROLLING CONNECTION TO THE JOIST. THE CAPACITY OF THE BRACE FASTENER TO THE WOOD BLOCK MAY LIMIT THE CAPACITY OF THE DETAIL LOADS INCLUDE A 1.60 DURATION OF LOAD FACTOR ADJUSTMENT

BEFORE INSTALLING, TOP EDGE OF 4X BLOCKING WITH A SUBFLOOR ADHESIVE THAT MEETS THE REQUIREMENTS OF ASTM D 3498. FOLLOW MANUFACTURES'S RECOMMENDATIONS.

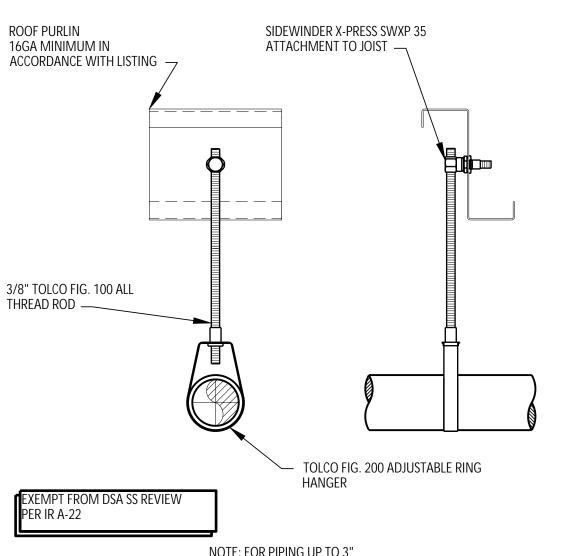
GLUED SURFACES MUST BE CLEAN AND DUST FREE.

ATTACHED 4X HANGER BLOCK BY NAILING THROUGH EACH HANGER, FILLER BLOCK, AND TJI JOIST WEB WITH TEN 10 COMMON

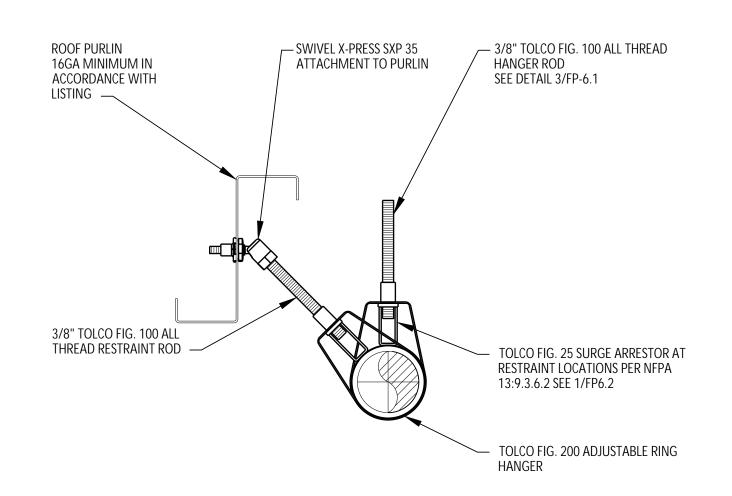
FOR LOADS PERPENDICULAR TO JOISTS, THE BRACE MUST BE LOCATED A DISTANCE OF AT LEAST 7X THE HOLE DIAMETER USED FOR BRACE ATTACHMENT, MEASURED FROM THE END OF THE BLOCK.

MAINTAIN A 4-HOLE-DIAMETER DISTANCE FROM ALL OTHER EDGES. FOR LOADS PARALLEL TO JOIST, THE BRACE MUST BE ATTACHED TO THE UPPER HALF OF THE 4X BLOCKING.

THE SAME END AND EDGE DISTANCE AS THOSE NOTED ABOVE FOR LOADS PERPENDICULAR TO JOIST MUST BE MAINTAINED.

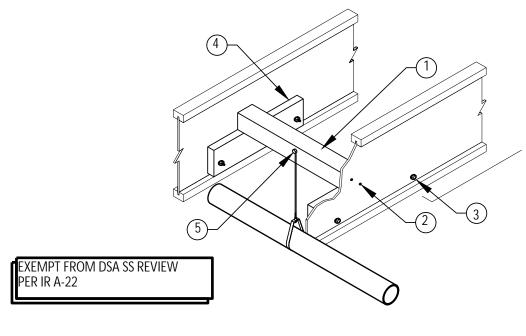






EXEMPT FROM DSA SS REVIEW PER

BRANCH LINE RESTRAINT

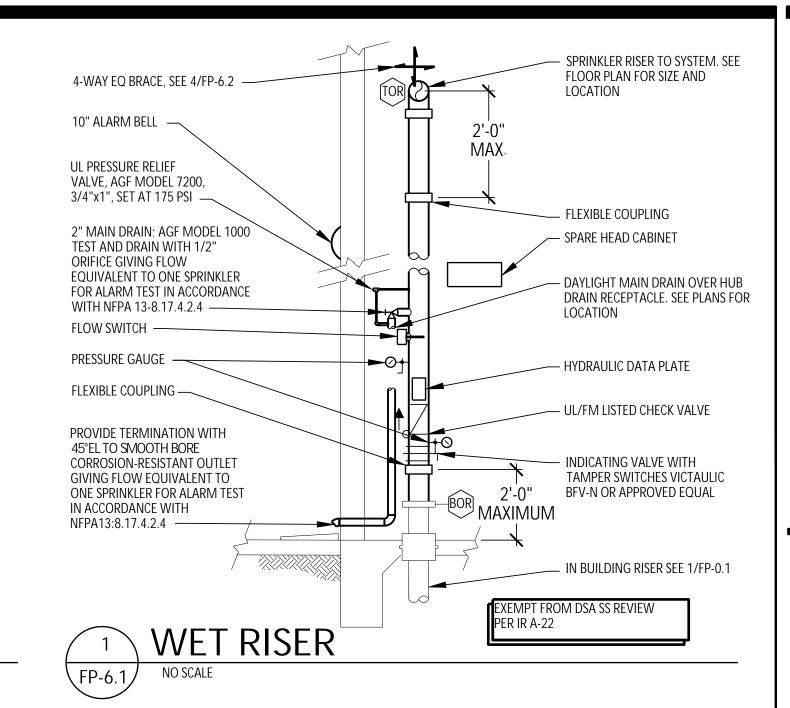


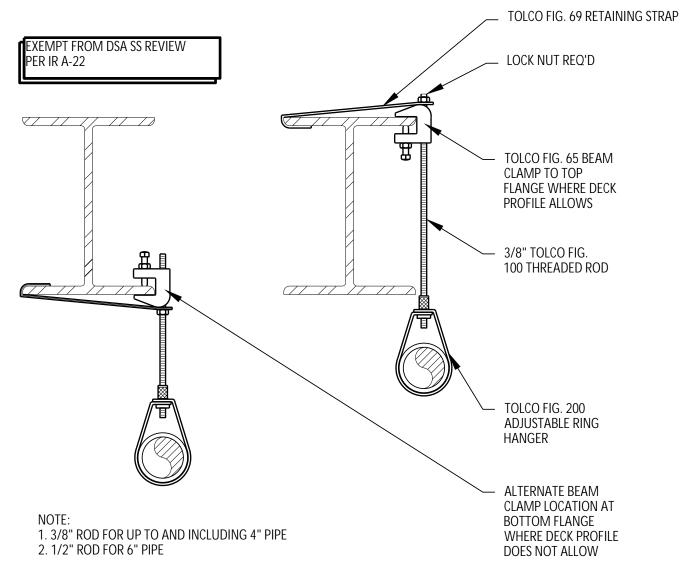
MAIN PERPENDICULAR OR PARALLEL TJI (FOR PIPE SIZES UP TO 6" WITH A MAXIMUM SUPPORT SPACING OF

KEY NOTES:

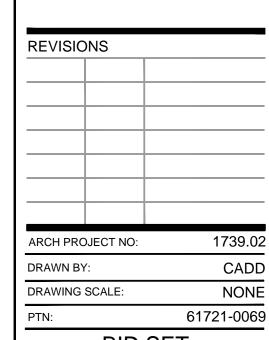
- 1. 4x6 DOUGLAS FIR NO. 2 WOOD HANGER BLOCK AS REQUIRED 2. TWO 16D COMMON NAILS
- 3. TWO 3" DIAMETER MACHINE BOLTS PER JOISTS WITH 1" WASHERS-CINCH TIGHT
- 4. 2X6 X 18" LONG MINIMUM 5. SEE DETAIL 10/FP-6.1 FOR THROUGH BOLT, SIDE BEAM CLIP AND RING HANGER (LOCATE FASTENER CENTERED BETWEEN







RING HANGER \FP-6.1/



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FREEDOM

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FACILITIES

1050 NEROLY ROAD

OAKLEY, CA 94561

LIBERTY UNION HIGH

SCHOOL DISTRICT

BID SET

JANUARY 4, 2019

DETAILS-FIRE

PROTECTION

SHEET NUMBER

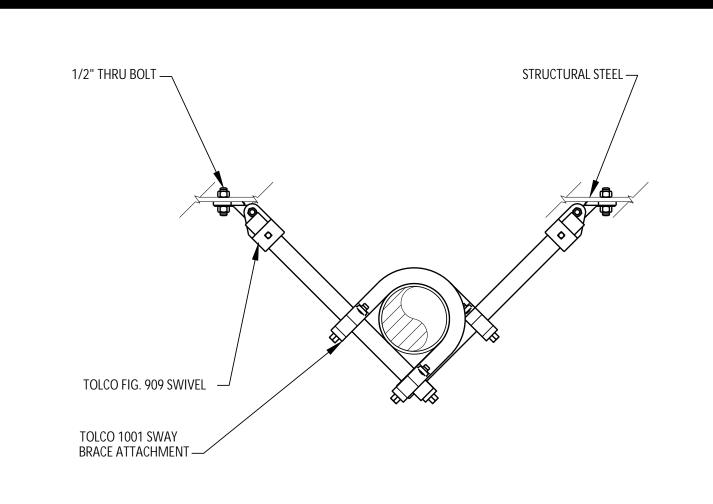
SHEET TITLE

FP-6.1

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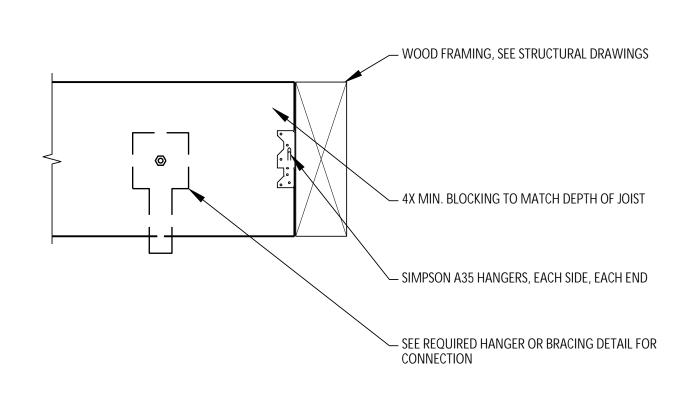
AE Project #: 2018254



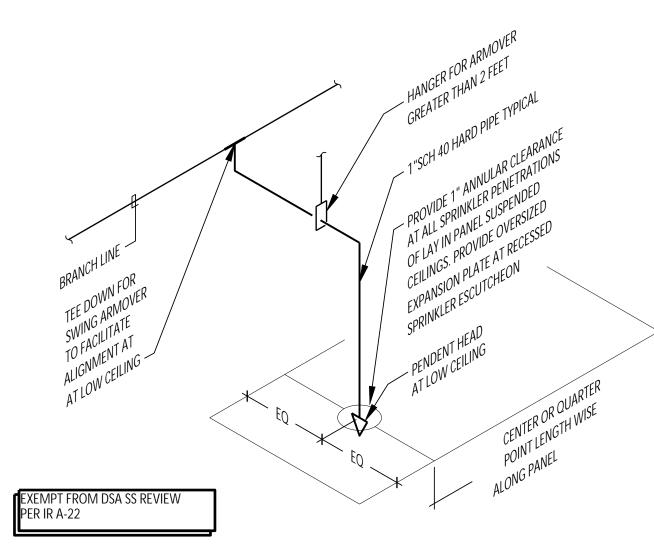
EXEMPT FROM DSA SS REVIEW

EXEMPT FROM DSA SS REVIEW

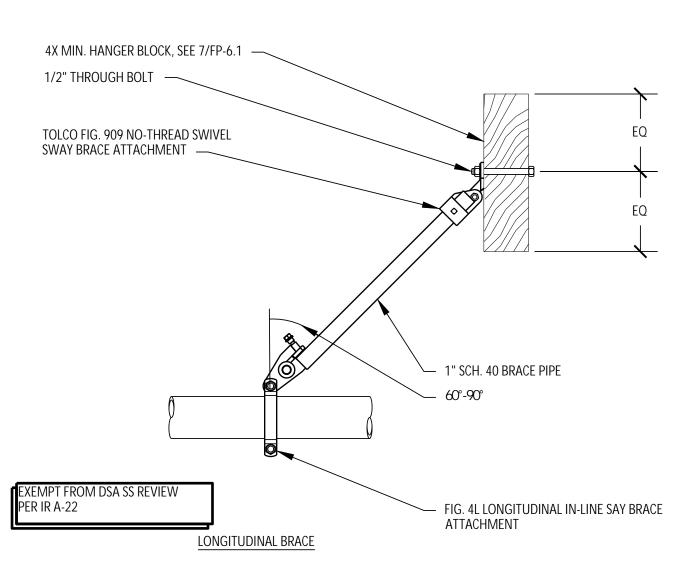
RISER BRACE \FP-6.2*/*



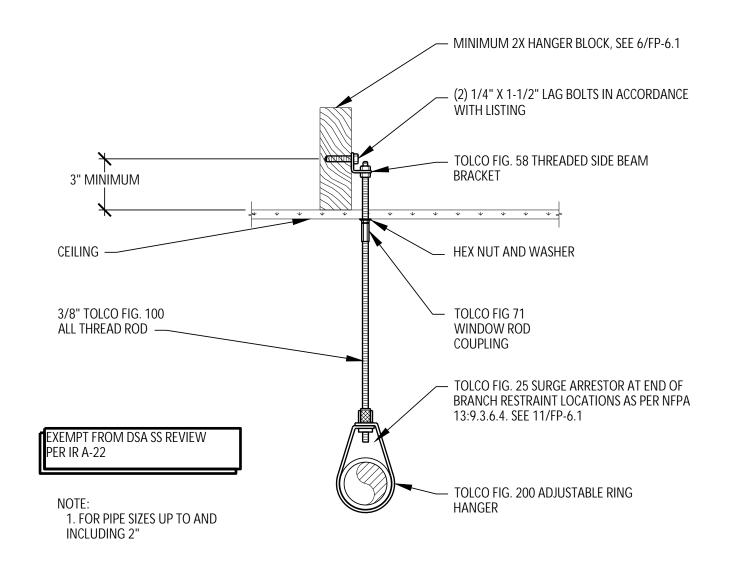
WOOD FRAMING BLOCKING



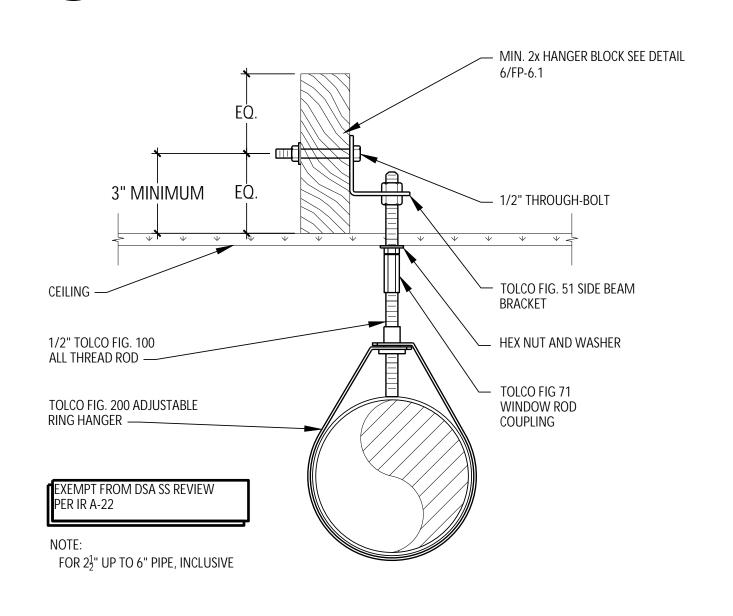
TYPICAL DROP TO CEILING



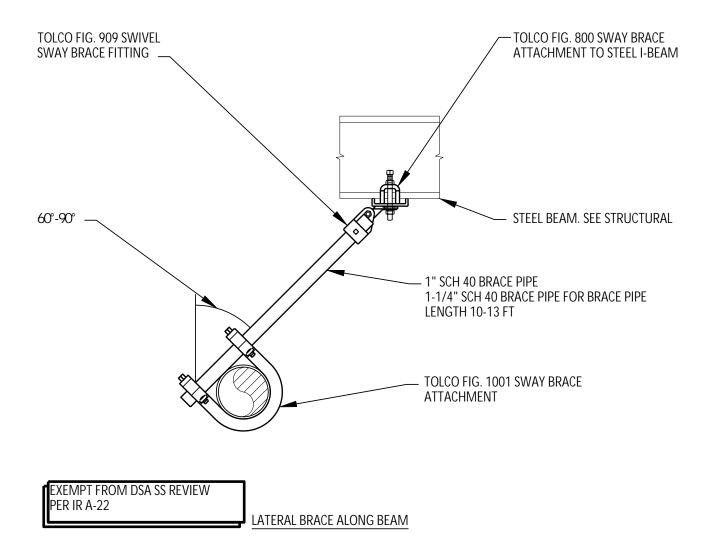
SEISMIC BRACE SB-4 FP-6.2



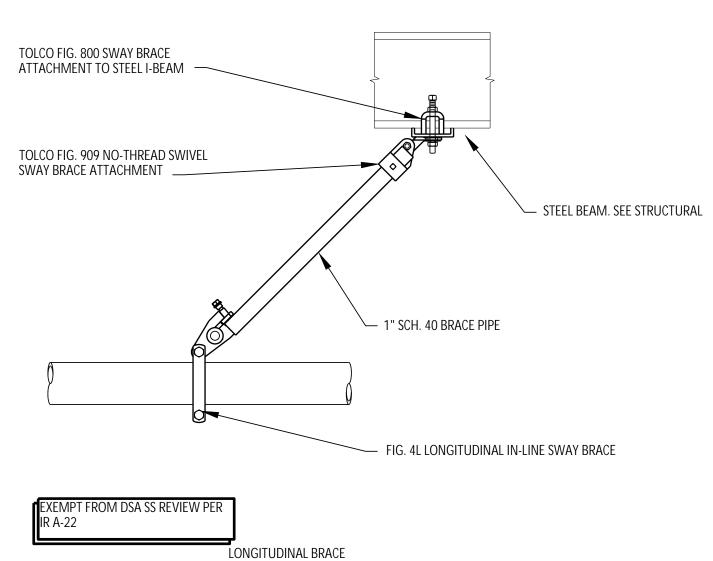




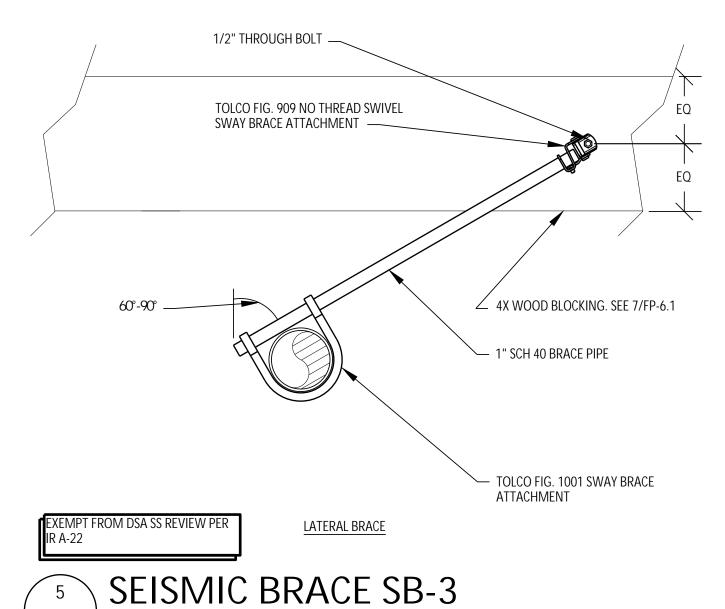
RING HANGER



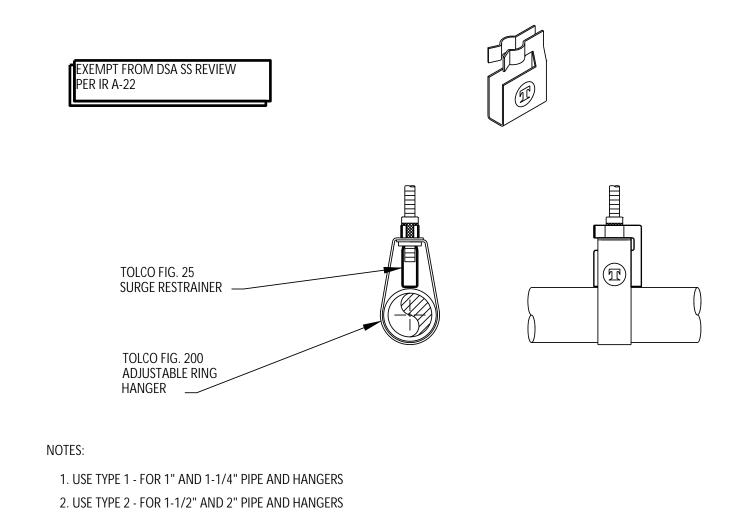






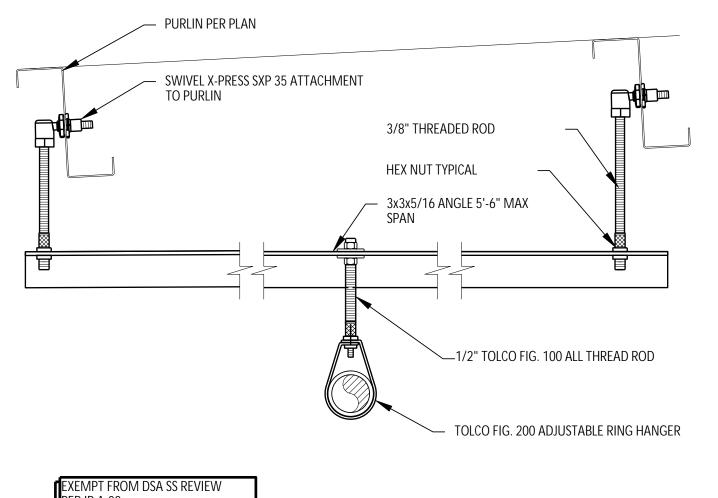


FP-6.1





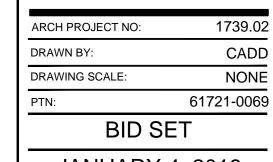
3. NOT REQUIRED IF ALL THREAD ROD IS INSTALLED TIGHT TO TOP OF PIPE





AE Project #: 2018254





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JANUARY 4, 2019

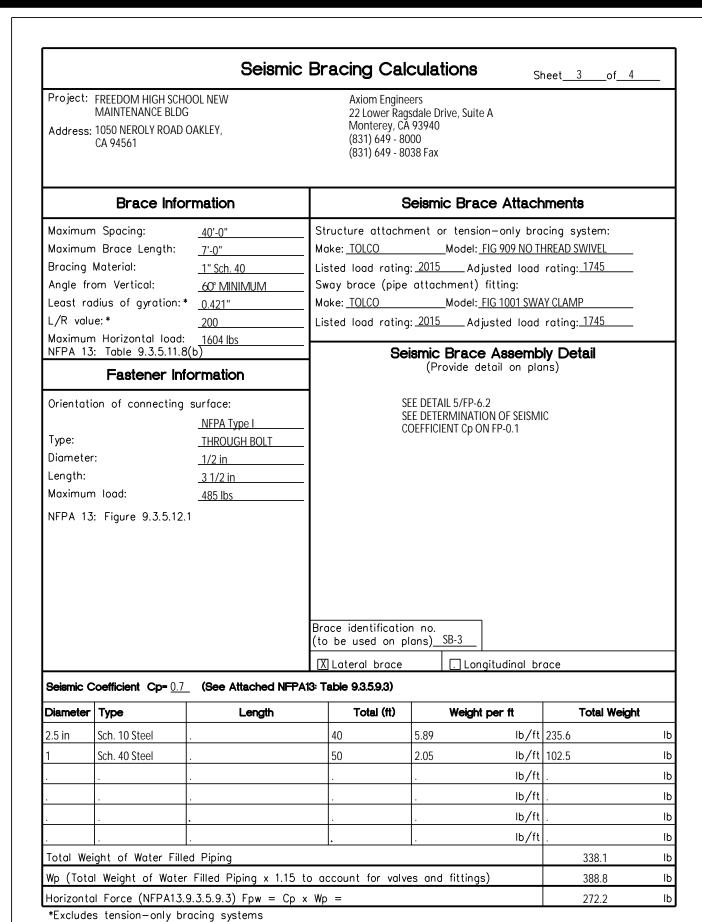
DETAILS-FIRE PROTECTION

SHEET NUMBER

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FP-6.2



			c Bracing Cal	Cuiations	Sheet <u>1</u> of <u>4</u>		
Project: FREEDOM HIGH SCHOOL NEW MAINTENANCE BLDG Address: 1050 NEROLY ROAD OAKLEY, CA 94561		Axiom Engineers 22 Lower Ragsdale Drive, Suite A Monterey, CA 93940 (831) 649 - 8000 (831) 649 - 8038 Fax					
	Brace Infor	mation	Seismic Brace Attachments				
Maximum	n Spacing:	_20'-0"	Structure attachi	ment or tension—only	bracing system:		
Maximum	n Brace Length:		-	Model: <u>FIG 909</u>			
Bracing	Material:	1" Sch. 40	Listed load rating	g: <u>2015</u> Adjusted I	load rating: <u>1745</u>		
Angle fro	om Vertical:	60° MINIMUM		e attachment) fitting:			
Least ra	dius of gyration:*	0.421"	Make: <u>TOLCO</u>	Model:_ <u>FIG 1001</u>	SWAY CLAMP		
L/R valu	ıe: *	200	Listed load rating	g: <u>2015</u> Adjusted I	load rating: 1745		
Maximum	n Horizontal load:	1604 lbs	_	,	•		
NFPA 13	: Table 9.3.5.11.8(b)	_ Se	eismic Brace Asse	embly Detail		
	Fastener Info	ormation		(Provide detail or	i pians)		
Orientati	on of connecting	surface:		SEE DETAIL 3/FP-6.2			
		NFPA Type C		SEE DETERMINATION OF SI COEFFICIENT Cp ON FP-0.1			
Туре:		THROUGH BOLT	_	OLITICILINI OP ON IT-0.1			
Diameter	·:	<u>1/2 in</u>	_				
Length:		<u>1/2 in</u>	_				
Maximum	n load:	2550 lbs	_				
	i: Figure 9.3.5.12.1						
			Brace identification	on no			
			Brace identification (to be used on p	on no. olans) <u>SB-1</u>			
Onless: C		(Occ. AM11-A)*******************************	(to be used on p	on no. olans) <u>SB-1</u> Longitudina	al brace		
	Coefficient Cp= 0.7		(to be used on p X Lateral brace PA13: Table 9.3.5.9.3)	olans)_SB-1 Longitudina			
Diameter	Туре	(See Attached NFf	(to be used on p X Lateral brace PA13: Table 9.3.5.9.3) Total (ft)	. Longituding Weight per ft	Total Weight		
	Type Sch. 10 Steel .		(to be used on p X Lateral brace PA13: Table 9.3.5.9.3) Total (ft) 20	Weight per ft	Total Weight		
Diameter	Туре		(to be used on p X Lateral brace PA13: Table 9.3.5.9.3) Total (ft)	Weight per ft 11.78 2.05	Total Weight b/ft 235.6 b/ft 53.3		
Diameter	Type Sch. 10 Steel .		(to be used on p X Lateral brace PA13: Table 9.3.5.9.3) Total (ft) 20	Weight per ft 11.78 2.05	Total Weight b/ft 235.6 b/ft 53.3 b/ft .		
Diameter	Type Sch. 10 Steel .		(to be used on p X Lateral brace PA13: Table 9.3.5.9.3) Total (ft) 20	Weight per ft 11.78 2.05	Total Weight b/ft 235.6 b/ft 53.3		

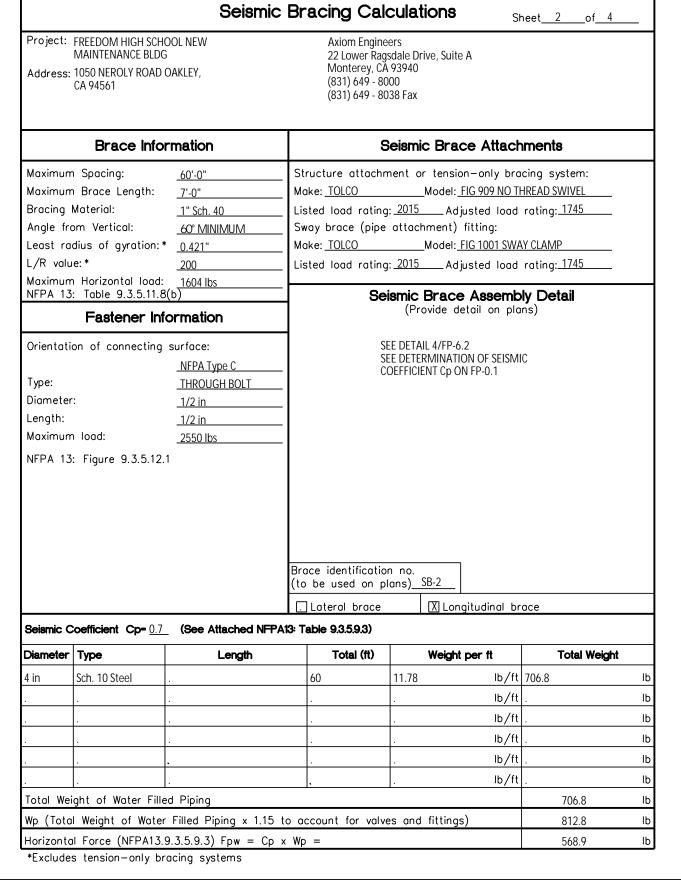
Total Weight of Water Filled Piping

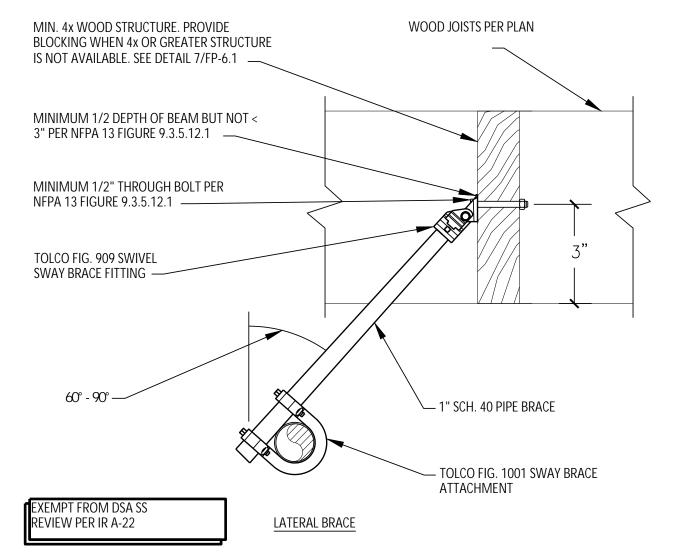
*Excludes tension—only bracing systems

Horizontal Force (NFPA13.9.3.5.9.3) Fpw = Cp x Wp =

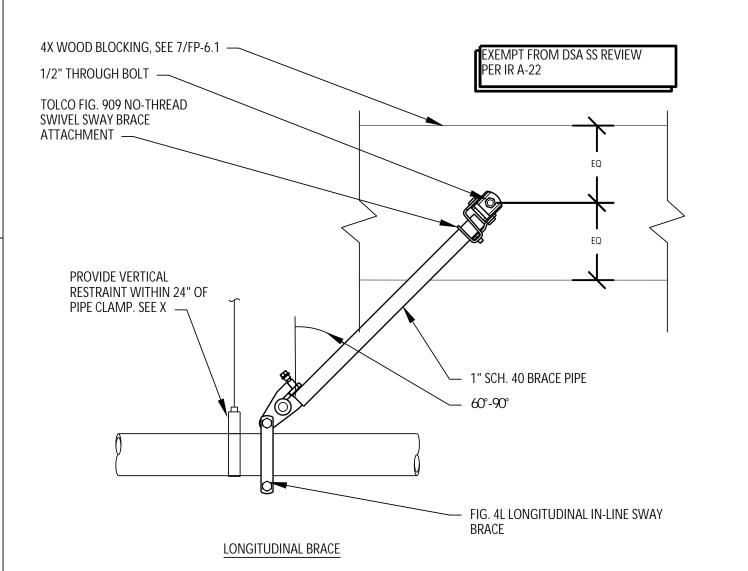
Wp (Total Weight of Water Filled Piping x 1.15 to account for valves and fittings)

		Seismid	c Brac	ing Cal	cula	tions	S	heet	l <u>of</u> 4	_
Project: FREEDOM HIGH SCHOOL NEW MAINTENANCE BLDG Address: 1050 NEROLY ROAD OAKLEY, CA 94561			Axiom Engineers 22 Lower Ragsdale Drive, Suite A Monterey, CA 93940 (831) 649 - 8000 (831) 649 - 8038 Fax							
	Brace Infor	mation		9	eism	ic Bra	ce Attach	nment	3	
Maximum Spacing: 40'-0" Maximum Brace Length: 7'-0" Bracing Material: 1" Sch. 40 Angle from Vertical: 60° MINIMUM Least radius of gyration: * 0.421" L/R value: * 200 Maximum Horizontal load: 1604 lbs NFPA 13: Table 9.3.5.11.8(b)			Make: _ Listed Sway I	Structure attachment or tension—only bracing system: Make: TOLCO Model: FIG 909 NO THREAD SWIVEL Listed load rating: 2015 Adjusted load rating: 1745 Sway brace (pipe attachment) fitting: Make: TOLCO Model: FIG 1001 SWAY CLAMP Listed load rating: 2015 Adjusted load rating: 1745 Seismic Brace Assembly Detail						
	Fastener Info	•	7		(Pr	ovide d	letail on pla	ins)	·	
Type: Diameter Length: Maximum	n load: : Figure 9.3.5.12.1	NFPA Type F THROUGH BOLT 1/2 in 3 1/2 in 600 lbs	(to be Lat	identificatio used on p eral brace	n no.	SB-4	5.2 ION OF SEISM ON FP-0.1			
Seiemic (coefficient Cn= 0.7	(OCC Allacinea III I	TIO TABLE	Total (ft)		Weigh	t per ft		Total Weight	
Seismic C	Coefficient Cp= 0.7 Type	Length	l				•			
	Туре	Length	40		5.89		lb/ft	235.6		lb
Diameter	· ·	Length	40	· · · · · · · · · · · · · · · · · · ·	5.89		lb/ft lb/ft	†		lb lb
Diameter	Туре	Length	40		5.89		•			
Diameter	Туре	Length			5.89		lb/ft			lb
Diameter	Туре	Length			5.89		lb/ft lb/ft			lb lb
Diameter	Туре	Length			5.89		lb/ft lb/ft lb/ft			lb lb
Diameter 2.5 in	Туре				5.89		lb/ft lb/ft lb/ft lb/ft		235.6	Ib Ib Ib
Diameter 2.5 in	Type Sch. 10 Steel					fittina	Ib/ft Ib/ft Ib/ft Ib/ft Ib/ft		235.6	Ib Ib Ib Ib

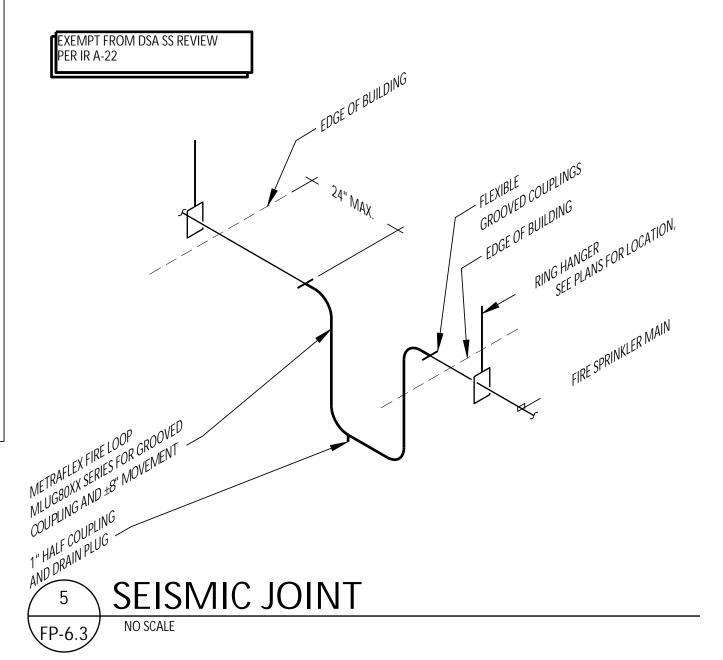


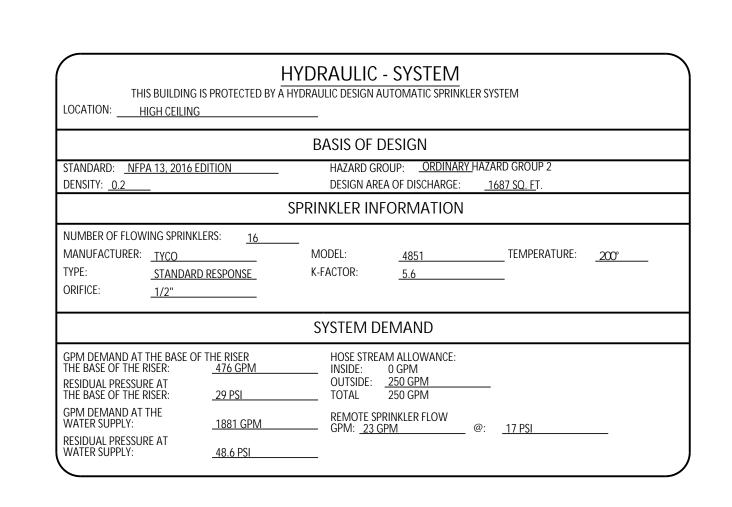




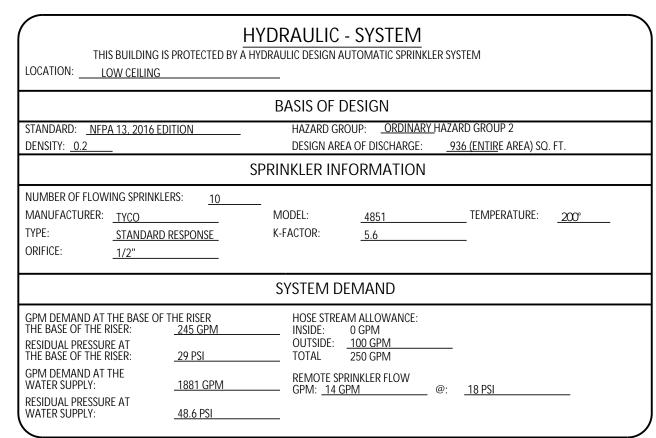


















FREEDOM HIGH SCHOOL

NEW MAINTENANCE **FACILITIES**

1050 NEROLY ROAD **OAKLEY, CA 94561**

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS

ARCH PROJECT NO:	1739.02
DRAWN BY:	CADD
DRAWING SCALE:	NONE
PTN:	61721-0069
BID SE	ĒΤ
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JANUARY 4, 2019

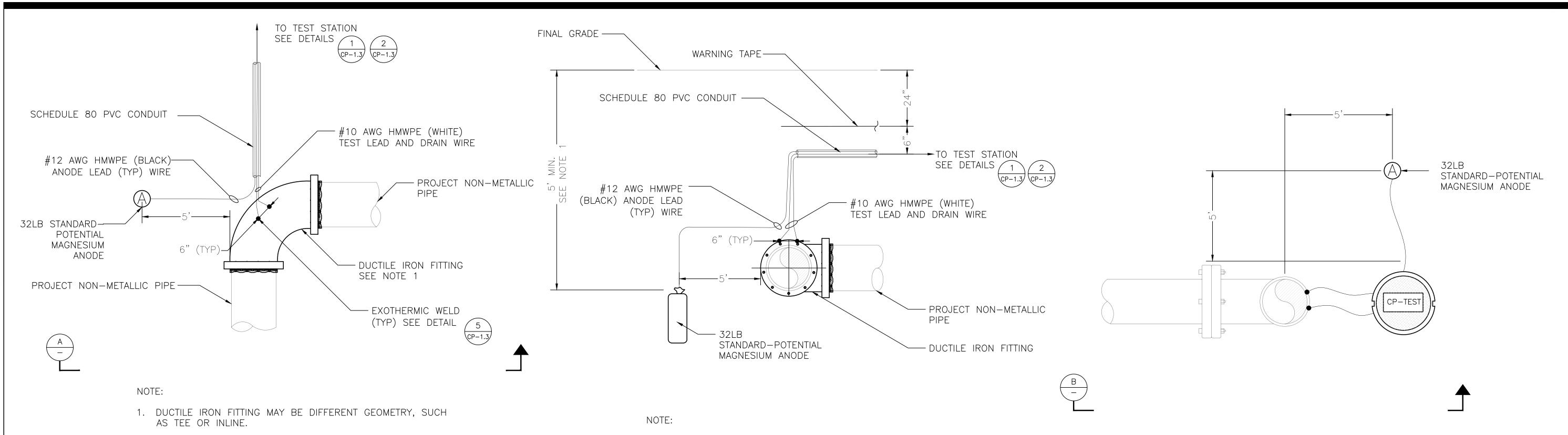
SEISMIC **BRACING AND DETAILS-FIRE PROTECTION**

SHEET NUMBER

FP-6.3

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AE Project #: 2018254

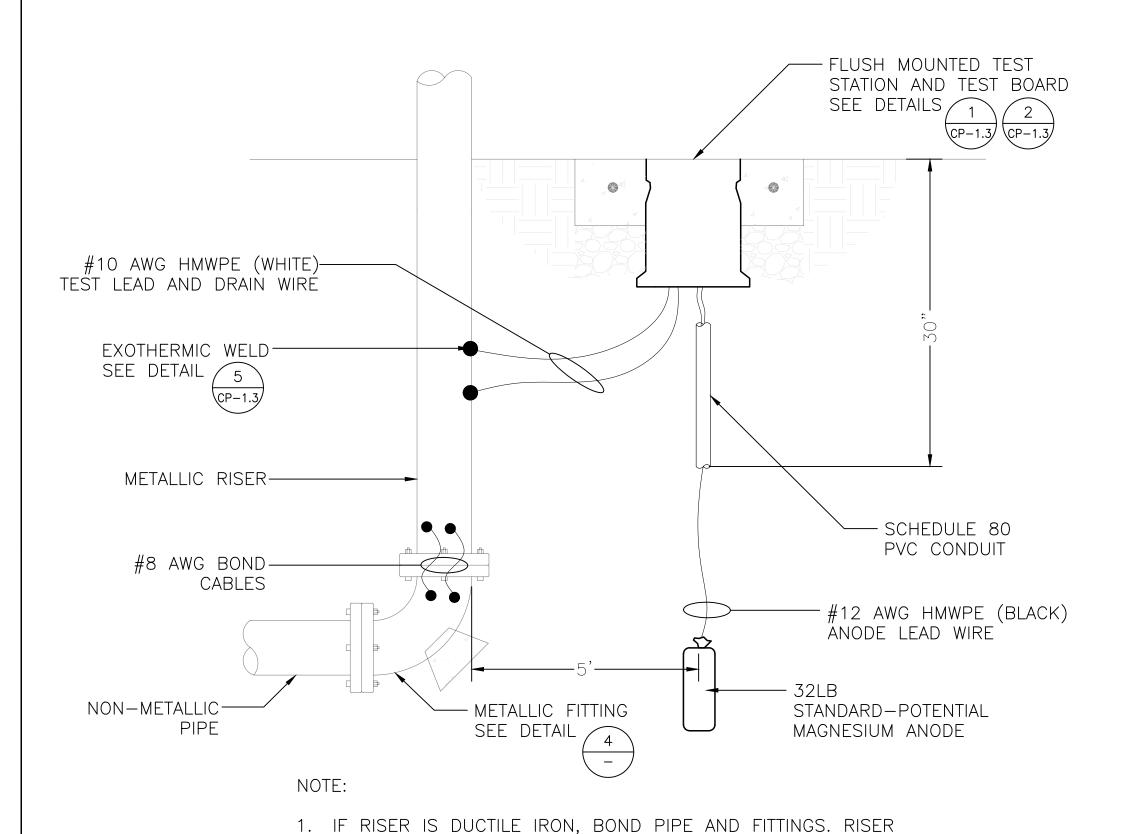


1. TOP OF ANODE SHALL BE AT OR BELOW PIPE INVERT.

ANODE TEST STATION (ATS) FOR METALLIC FITTING

OR VALVE ON NON-METALLIC PIPE SECTION VIEW

ANODE TEST STATION (ATS) FOR RISER
PLAN VIEW
NTS 2



MAY HAVE 90 DEGREE ELBOW OR TEE. DUCTILE IRON PIPE AND FITTINGS SHALL HAVE POLYETHYLENE ENCASEMENT.

ANODE TEST STATION (ATS) FOR RISER

SECTION VIEW

2. IF RISER IS STAINLESS STEEL, WRAP IN PETROLATUM WAX

TAPE.

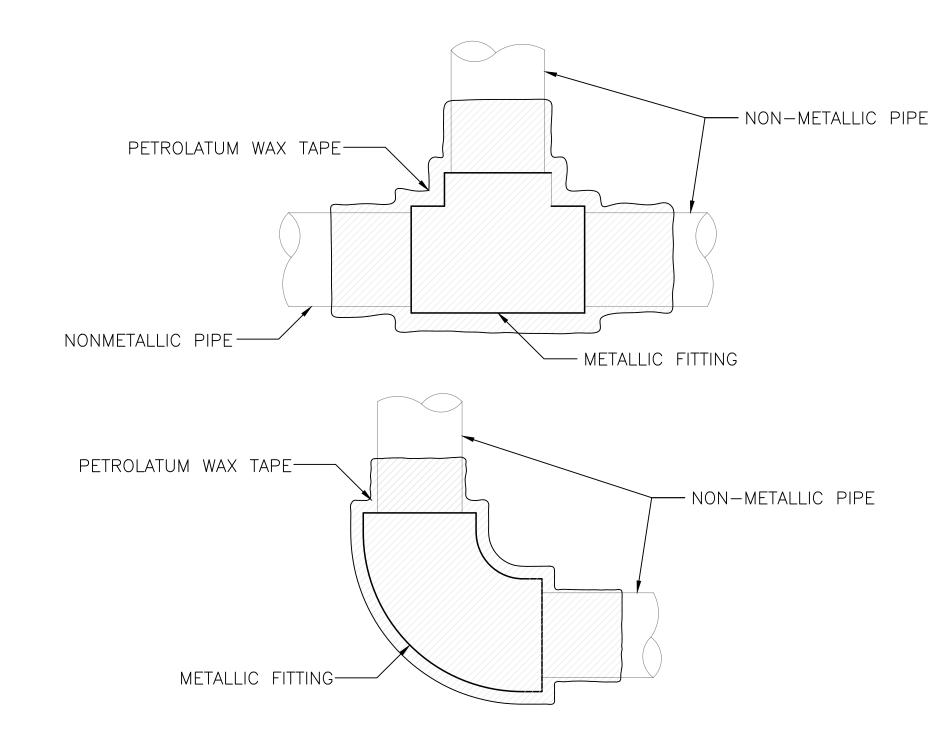
2. WRAP FITTING IN PETROLATUM WAX TAPE AND OVERLAP PIPE

ANODE TEST STATION (ATS) FOR METALLIC FITTING

OR VALVE ON NON-MÉTALLIC PIPE PLAN VIEW,

BY 2 TIMES THE PIPE DIAMETER.

DETAIL NOT USED



NOTES:

- 1. PETROLATUM WAX TAPE SHALL OVERLAP PIPE BY 2 TIMES THE PIPE DIAMETER.
- 2. ENCASE FITTING AND PETROLATUM WAX TAPE IN CONCRETE WITH 2-INCH COVER AT MINIMUM

CORROSION CONTROL FOR 2—INCH DIAMETER

METALLIC FITTING

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LIBERTY UNION HIGH SCHOOL DISTRICT

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ARCH PRO	DJECT NO:	1739.02

ARCH PROJECT NO: 1739.02

DRAWN BY: DRAFTSPERSON

DRAWING SCALE: SCALE

PTN: 61721-0069

BID SET

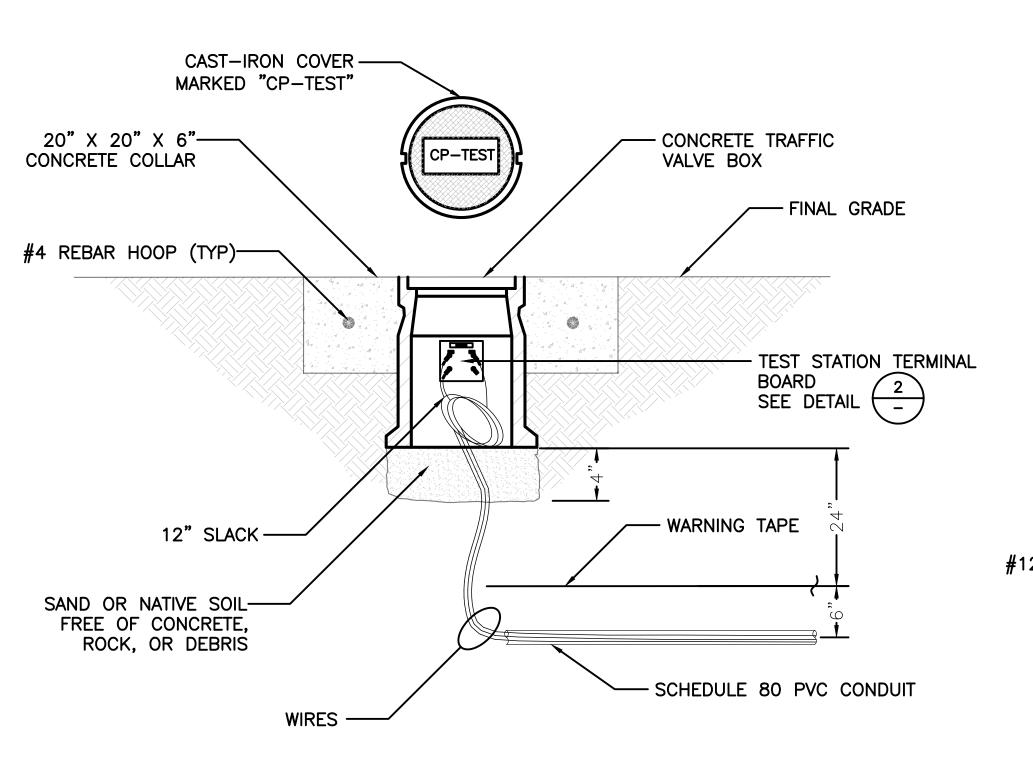
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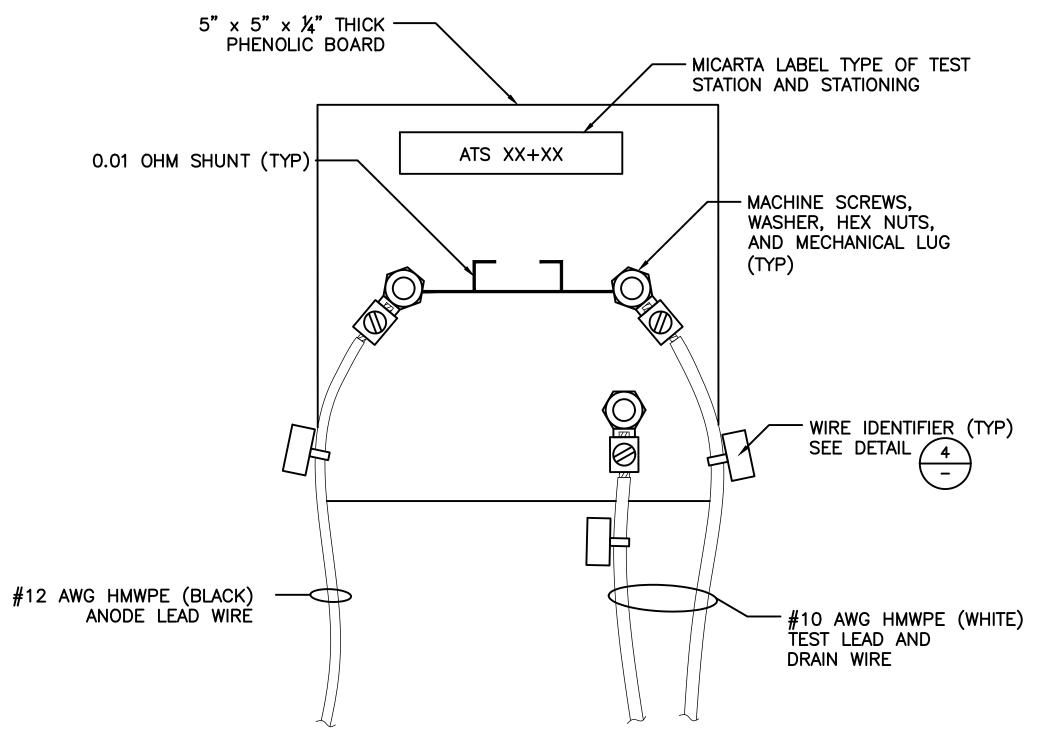
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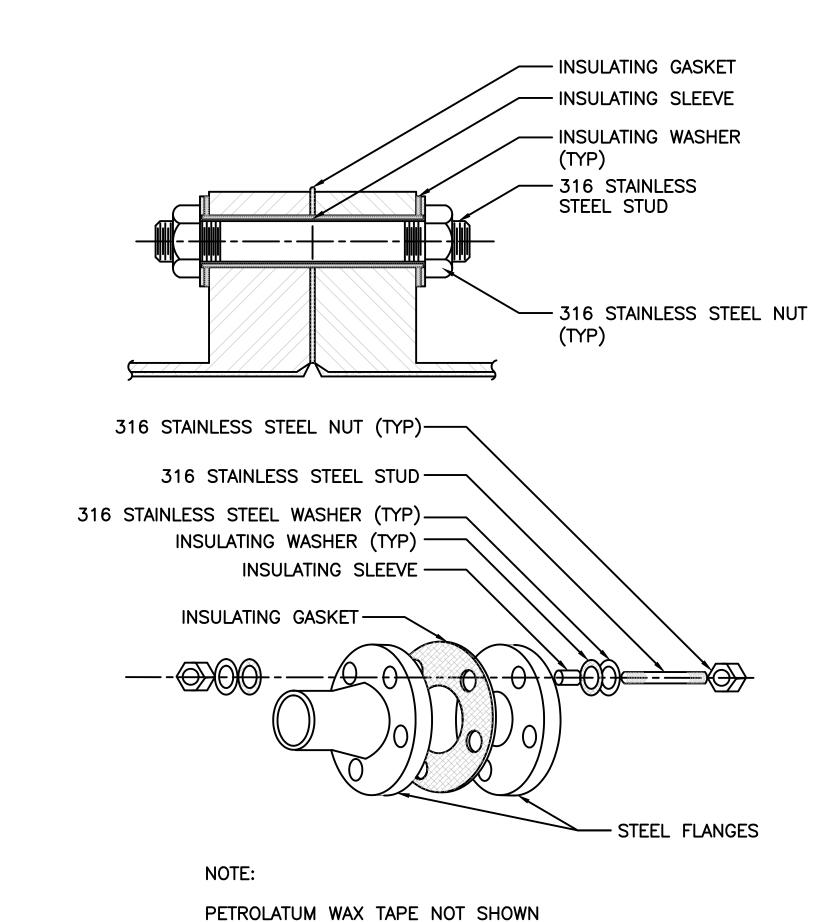
CP DETAILS

SHEET NUMBER

CP-1.2







1)

FLUSH-MOUNTED ANODE TEST STATION

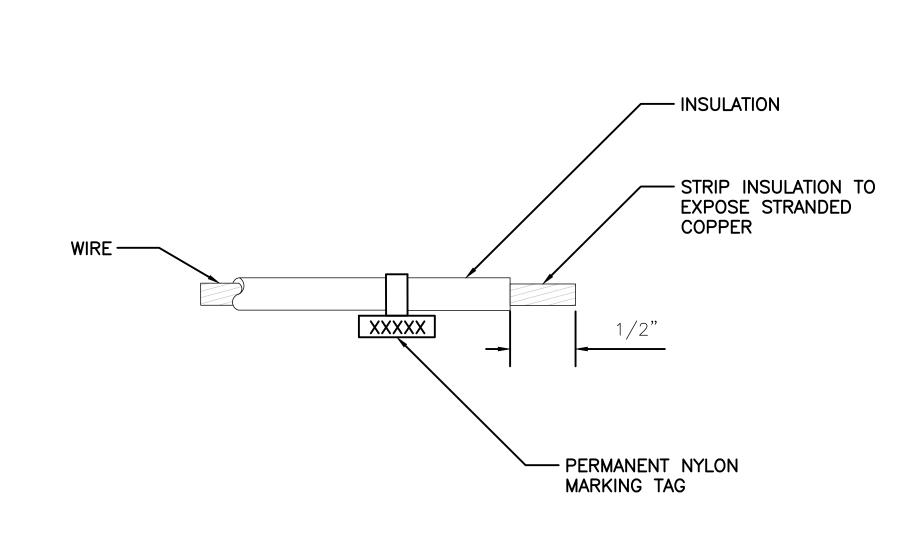
(ATS) TERMINAL BOARD DETAIL

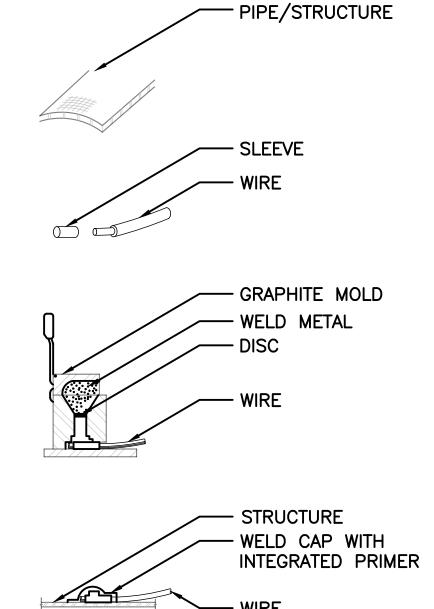
DIELECTRIC INSULATING FLANGE KIT DETAIL
WITH SECTION VIEW
NTS

3

FLUSH MOUNTED TEST STATION DETAIL

NTS 1





- GRIND PIPE/STRUCTURE TO BARE METAL AND CLEAN SURFACE.
 GROUND AREA SHALL BE LARGE ENOUGH FOR EXOTHERMIC WELD AND SMALL ENOUGH TO BE COMPLETELY COVERED BY WELD CAP
- 2. STRIP INSULATION FROM WIRE AND ATTACH SLEEVE.
- 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR. IGNITE WITH FLINT GUN. REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER. TEST WELD WITH 22 OZ HAMMER.
- 4. COVER CONNECTION WITH WELD CAP WITH INTEGRATED PRIMER. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH COATING AND LINING MFG RECOMMENDATIONS.

FREEDOM HIGH SCHOOL

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1050 NEROLY ROAD OAKLEY, CA 94561

LIBERTY UNION HIGH SCHOOL DISTRICT

REVISIONS	
ARCH PROJECT NO:	1739.0
DRAWN BY:	DRAFTSPERSO
DRAWING SCALE:	SCALI

DRAWING SCALE: SCALE
PTN: 61721-0069
BID SET

JANUARY 4, 2019

SHEET TITLE

CP DETAILS

SHEET NUMBER

CP-1.3

EXOTHERMIC WELD DETAIL FOR DUCTILE IRON AND STEEL PIPE 5

WIRE IDENTIFIER DETAIL 4